

# SAMPLE SURVEYS OF CURRENT INTERE IN INDIA



SIXTEENTH AND SEVENTEENTH ANNUAL REPORTS

1964-65 & 1965-66

(*Combined Issue*)

CENTRAL STATISTICAL ORGANISATION  
DEPARTMENT OF STATISTICS  
CABINET SECRETARIAT  
GOVERNMENT OF INDIA  
NEW DELHI

*Price* : (Inland) Rs. 10.00 (Foreign) 23s.

## PREFACE

This is the combined issue of the Sixteenth and the Seventeenth Annual Reports on Sample Surveys of Current Interest in India conducted during the years 1964-65 and 1965-66 and which were proposed to be undertaken during 1966-67 by the various offices of the Central and State Governments, Universities and Research Institutions in the country. The Publication made its modest beginning in 1949-50 when it contained information on only 14 important sample surveys. Subsequently its coverage has gradually increased and the present issue contains summarised information in respect of 267 sample surveys conducted in 1964-65 and/or 1965-66 and 54 surveys proposed for 1966-67.

2. As usual, information about those surveys only has been included in which probability sampling technique was adopted in the selection of sample units at any stage of sampling. The Publication is divided into two parts. Part I contains detailed information about surveys conducted during 1964-65 and/or 1965-66, while in Part II brief descriptions of those proposed for 1966-67 are given. Some of the surveys reported are of a continuous and regular nature while others are only *ad hoc* or pilot surveys. The various surveys have been presented under broad subjects (*vide* Appendix) and under each subject by agencies responsible for the conduct of the surveys.

3. The Publication is intended to give a consolidated review of the experiences gained by various organisations in the conduct of sample surveys in diverse fields. Complete details about estimation procedure, results, etc., could not obviously be included in the present Report but can be had from the reporting agencies.

4. This Organisation expresses its deep appreciation to the various agencies for their cooperation in supplying the information utilised in the preparation of the present issue and would welcome suggestions for improvement in the future issues of the Publication.

(K. R. Nair)  
DIRECTOR.

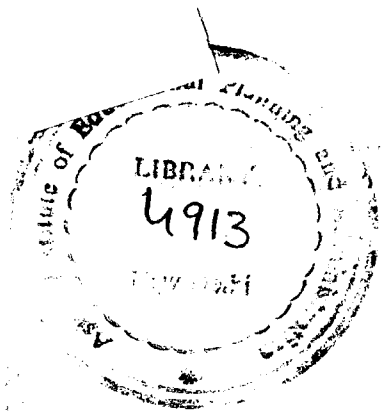
Central Statistical Organisation,  
Department of Statistics,  
Cabinet Secretariat,  
Government of India,  
NEW DELHI.

Dated            March, 1968

NIEPA - DC



04913



## CONTENTS

### PART I

PAGE

#### Sample surveys conducted during 1964-65 and/or 1965-66

#### 1. AGRICULTURE

##### 1.1 Land utilisation

*Department of Statistics, Directorate of National Sample Survey*

- 1.1.1 Land utilisation statistics in the N. S. S. 19th & 20th rounds . . . . . 1

*Ministry of Irrigation and Power, Damodar Valley Corporation*

- 1.1.2 Economics of conservation farming . . . . . 2

*Government of Bihar*

- 1.1.3 Survey of soil conservation measures . . . . . 3

*Government of Kerala*

- 1.1.4 Land utilisation survey . . . . . 3

*Government of Madhya Pradesh*

- 1.1.5 Survey of soil conservation . . . . . 4

*Government of Maharashtra*

- 1.1.6 Survey of soil conservation measures . . . . . 4

*Government of Mysore*

- 1.1.7 Survey of soil conservation . . . . . 4

*Government of Orissa*

- 1.1.8 Sample survey for estimation of area occupied by field bunds . . . . . 5

##### 1.2 Crop area, yield and production including those of high yielding varieties

*Department of Statistics, Directorate of National Sample Survey*

- 1.2.1 Crop cutting experiments in the N. S. S. 19th & 20th rounds . . . . . 5

- 1.2.2 Harvest stage inspection in a pre-assigned sample of villages by the National Sample Survey Central Supervisory Staff . . . . . 6

- 1.2.3 Circular cuts, square cuts and central driage experiments . . . . . 6

- 1.2.4 Special supervisory check on the field work of crop estimation surveys on cotton . . . . . 6

- 1.2.5 Type studies . . . . . 6

*Ministry of Food, Agriculture, Community Development and Co-operation; Indian Council of Agricultural Research.*

- 1.2.6 Sample survey for estimation of area and yield of arecanut and coconut . . . . . 7

- 1.2.7 Surveys of block level estimates for agricultural production . . . . . 7

- 1.2.8 Sample survey for the study of cultivation practices and yield of fresh fruits in Andhra Pradesh . . . . . 7

- 1.2.9 Sample survey for study of yield and cultivation practices of apple and other temperate fruits in Kumaon region of Uttar Pradesh . . . . . 8

- 1.2.10 Sample survey for the study of yield and cultivation practices of vegetables in Delhi . . . . . 8

- 1.2.11 Survey for the study of yield and cultivation practices of apple in Himachal Pradesh . . . . . 9

- 1.2.12 Pilot sample survey for the estimation of area and production of litchi, mango and banana in Muzaffarpur district, Bihar . . . . . 9

*Indian Statistical Institute*

- 1.2.13 Special studies on tobacco yield—Cooch Behar . . . . . 9

- 1.2.14 Special crop survey (NSS), spring, 1964-65 . . . . . 10

- 1.2.15 Special crop survey (NSS), autumn and winter . . . . . 10

*Government of Andhra Pradesh*

- 1.2.16 Crop estimation survey on principal food crops . . . . . 10

- 1.2.17 Crop estimation survey on principal non-food crops . . . . . 11

- 1.2.18 Sample survey for the estimation of area and yield of coconuts . . . . . 12

## (ii)

	PAGE
<i>Government of Assam</i>	
1.2.19 Crop estimation survey on principal food and non-food crops . . . . .	12
1.2.20 Sample survey for estimation of area and production of arecanut and coconut . . . . .	13
<i>Government of Gujarat</i>	
1.2.21 Integrated scheme of crop estimation survey on food and non-food crops . . . . .	14
1.2.22 Scheme for pilot survey to estimate the agricultural production in Mehsana district . . . . .	14
<i>Government of Jammu and Kashmir</i>	
1.2.23 Rationalised supervision of crop acreages by primary reporting agency . . . . .	15
1.2.24 Crop estimation survey . . . . .	15
<i>Government of Kerala</i>	
1.2.25 Sample survey for estimation of area under and production of coconut and arecanut . . . . .	15
1.2.26 Survey for the improvement of plantation statistics . . . . .	16
1.2.27 Crop cutting survey on paddy . . . . .	16
1.2.28 Crop cutting survey on tapioca . . . . .	17
1.2.29 Pre-harvest estimates of paddy, pepper, sugarcane and groundnut . . . . .	17
1.2.30 Crop cutting survey on sugarcane . . . . .	17
1.2.31 Crop cutting survey on ginger . . . . .	17
1.2.32 Survey on jack fruit production . . . . .	18
<i>Government of Madras</i>	
1.2.33 Sample survey for estimation of area and yield of coconut and arecanut . . . . .	18
1.2.34 Crop estimation survey on food and non-food crops . . . . .	19
1.2.35 Pilot survey for block level estimates of agricultural production in North Arcot district . . . . .	20
<i>Government of Maharashtra</i>	
1.2.36 Scheme for estimation of area and production of coconut and arecanut . . . . .	21
1.2.37 Evaluation of enquiry of special kharif and rabi campaign . . . . .	21
<i>Government of Mysore</i>	
1.2.38 Sample survey for study of cultivation practices, area and yield of coconut and arecanut . . . . .	22
1.2.39 Pre-harvest estimates of crop acreage . . . . .	23
1.2.40 Rationalised supervision of area enumeration . . . . .	23
1.2.41 Sample survey for estimation of area and yield of fruits and vegetables . . . . .	24
<i>Government of Orissa</i>	
1.2.42 Sample survey for estimating area, yield and production of autumn and winter rice . . . . .	24
1.2.43 Sample survey for estimation of area and yield of summer rice . . . . .	25
1.2.44 Sample survey for estimation of area and yield of coconut and arecanut . . . . .	25
1.2.45 Sample survey for estimation of area under green manure crops . . . . .	27
1.2.46 Sample survey for estimation of yield of jute . . . . .	27
1.2.47 Sample survey for estimation of area and yield of sugarcane . . . . .	28
1.2.48 Sample survey for estimating acreage under sugarcane around "Aska Sugar Factory" in Ganjam district . . . . .	28
<i>Government of Uttar Pradesh</i>	
1.2.49 Scheme for conducting crop cutting experiments in connection with Gram Sabha Challenges . . . . .	29
1.2.50 Pilot survey for estimation of area and yield and for study of cultivation practices of apple and other major temperate fruit crops in Nainital and Almora districts of the Kumaon region . . . . .	29
1.2.51 Survey for the assessment of increase in yield of groundnut crop due to the adoption of package practices . . . . .	30
1.2.52 Crop estimation survey on important food crops . . . . .	30
1.2.53 Crop estimation survey on important non-food crops . . . . .	31
1.2.54 Scheme on pre-harvest estimation of area, yield of principal crops given in the pre-final estimates . . . . .	31
1.2.55 Survey for formulating block level estimates of agricultural production . . . . .	31

	PAGE
1·2·56 Survey for estimation of area and production of principal crops in the non-reporting hilly areas of the State . . . . .	32
1·2·57 Joint crop cutting survey by the Directorate of National Sample Survey and the State Government—Type II study on wheat crop . . . . .	32
1·2·58 Crop estimation survey on important pulses . . . . .	33
1·2·59 Survey on production of castor . . . . .	33
1·2·60 Survey on production of sugarcane . . . . .	34
<i>Government of West Bengal</i>	
1·2·61 Sample survey for estimation of area and yield of coconut and arecanut . . . . .	34
1·2·62 Continuous sample surveys for estimating acreages and yield rates of important crops . . . . .	35
1·2·63 Paddy yield estimation surveys in Mayurakshi Reservoir (Development) project area and cost of production, storage and marketing survey . . . . .	35
<i>Himachal Pradesh Administration</i>	
1·2·64 Crop cutting surveys . . . . .	37
<i>Manipur Administration</i>	
1·2·65 Quick estimation of acreage and yield of potato, rape, mustard and chillies . . . . .	37
1·3 <i>Improved agricultural practices and their effects</i>	
<i>Deptt. of Statistics, Directorate of National Sample Survey</i>	
1·3·1 Sample surveys for estimating the extent of adoption of improved agricultural practices . . . . .	38
<i>Ministry of Food, Agriculture, Community Development and Co-operation; Institute of Agricultural Research Statistics (ICAR)</i>	
1·3·2 The benchmark and assessment survey under the Intensive Agricultural District Programme . . . . .	38
<i>Government of Andhra Pradesh</i>	
1·3·3 Sample survey for estimating the extent of adoption of improved agricultural practices . . . . .	39
<i>Government of Assam</i>	
1·3·4 Survey for estimating areas brought under improved agricultural practices . . . . .	39
<i>Government of Bihar</i>	
1·3·5 Survey of improved agricultural practices . . . . .	40
<i>Government of Gujarat</i>	
1·3·6 Survey to assess the additional yield per acre of crops due to intensive methods of cultivation in the pilot blocks . . . . .	40
1·3·7 Scheme for bench mark and assessment survey under the Intensive Agricultural District Programme in Surat and Bulsar districts . . . . .	41
<i>Government of Jammu and Kashmir</i>	
1·3·8 Improved agricultural practices survey . . . . .	41
<i>Government of Kerala</i>	
1·3·9 Sample survey for estimating the extent of adoption of improved agricultural practices . . . . .	42
<i>Government of Madhya Pradesh</i>	
1·3·10 Sample survey for estimating the extent of adoption of improved agricultural practices . . . . .	42
<i>Government of Madras</i>	
1·3·11 Resources and production benchmark and assessment survey under the Intensive Agricultural District Programme implemented in Thanjavur District . . . . .	43
<i>Government of Maharashtra</i>	
1·3·12 Survey of improved agricultural practices . . . . .	44
<i>Government of Orissa</i>	
1·3·13 Sample survey to assess benefits from improved agricultural practices in community development area in the State . . . . .	45
<i>Government of Punjab</i>	
1·3·14 Survey for estimating the extent of adoption of the improved agricultural practices . . . . .	45

	PAGE
<i>Government of Rajasthan</i>	
1.3.15 Survey of improved agricultural practices . . . . .	46
<i>Government of Uttar Pradesh</i>	
1.3.16 Resources and production benchmark and assessment surveys under Intensive Agricultural District Programme in Aligarh district . . . . .	46
1.3.17 Survey for assessment of increase in the yield of paddy as a result of adoption of the Japanese method of paddy cultivation . . . . .	47
1.3.18 Survey for assessment of increase in the yield of jowar and bajra as a result of adoption of line sowing . . . . .	47
1.3.19 Survey for assessment of increase in the yield of maize as a result of adoption of line sowing . . . . .	47
1.3.20 Survey for assessment of increase in the yield of wheat and barley as a result of adoption of Uttar Pradesh method of cultivation . . . . .	47
1.3.21 Survey for assessment of increase in the yield of rape seed (mustard) as a result of adoption of package practices . . . . .	47
1.3.22 Survey for assessment of increase in the yield of pea and gram as a result of application of superphosphate . . . . .	47
1.3.23 Survey for estimation of area brought under improved agricultural practices . . . . .	48
<i>Government of West Bengal</i>	
1.3.24 Survey for estimating the extent of improved agricultural practices— <i>kharif</i> and <i>rabi</i> . . . . .	48
<i>Himachal Pradesh Administration</i>	
1.3.25 Sample survey relating to area brought under improved agricultural practices . . . . .	48
1.4 <i>Cost of cultivation, farm management and farm practices</i>	
<i>Ministry of Food, Agriculture, Community Development and Co-operation</i>	
1.4.1 Farm management studies . . . . .	49
<i>Government of Madras</i>	
1.4.2 Inquiry on cost of production of rice . . . . .	49
<i>Government of Rajasthan</i>	
1.4.3 Cost of cultivation studies . . . . .	49
1.4.4 Assessment of the cost of production of food and non-food crops . . . . .	50
<i>Himachal Pradesh Administration</i>	
1.4.5 Diagnostic sample survey-cost of cultivation of important crops . . . . .	50
1.6 <i>Other agro-economic surveys</i>	
<i>Ministry of Food, Agriculture, Community Development and Co-operation</i>	
1.6.1 Survey for estimation of incidence of pests and diseases . . . . .	51
1.6.2 Survey of fertilizer and other manuring practices . . . . .	51
<i>Indian Statistical Institute</i>	
1.6.3 Multi-purpose surveys, spring, 1965-66 . . . . .	52
<i>Government of Andhra Pradesh</i>	
1.6.4 Agro-economic research survey . . . . .	52
<i>Government of Gujarat</i>	
1.6.5 Scheme for ascertaining the extent and causes of fallow areas in the State . . . . .	53
<i>Government of Kerala</i>	
1.6.6 Survey on the pattern of fertiliser consumption . . . . .	53
<i>Government of Orissa</i>	
1.6.7 Sample survey to assess the demand of agricultural implements . . . . .	54
1.6.8 Sample survey for estimation of crop damage on account of drought in the badly affected districts . . . . .	54
<i>Government of Uttar Pradesh</i>	
1.6.9 Pilot survey to estimate the incidence of pests and diseases on, and consequent losses to, wheat and maize crops in Aligarh district . . . . .	54

	PAGE
1.6.10 Survey of fertilizer practices . . . . .	55
1.6.11 Survey for collection of farm (harvest) prices of important kharif and rabi crops . . . . .	55
<b>2. ANIMAL HUSBANDRY</b>	
2.1 <i>Livestock and poultry population</i>	
<i>Government of Rajasthan</i>	
2.1.1 Livestock survey . . . . .	56
2.2 <i>Livestock products and by products</i>	
<i>Ministry of Food, Agriculture, Community Development and Co-operation; Institute of Agricultural Research Statistics</i>	
2.2.1 Sample survey for estimation of annual production of livestock products and study of their management practices . . . . .	56
2.2.2 Sample survey for estimating meat production in Madras State . . . . .	57
2.2.3 Study of rearing practices of sheep and yield of wool and mutton in Andhra Pradesh and Gujarat . . . . .	57
<i>Government of Rajasthan</i>	
2.2.4 Sample survey for the study of milk yield, egg production, breeds, feeding and management practices of bovine and poultry . . . . .	58
2.3 <i>Cost of production</i>	
<i>Ministry of Food, Agriculture, Community Development and Co-operation; Institute of Agricultural Research Statistics</i>	
2.3.1 Survey for assessing the cost of production of sheep and wool . . . . .	58
2.3.2 Study of economics of raising cattle and buffaloes . . . . .	59
2.4 <i>Others</i>	
<i>Ministry of Food, Agriculture, Community Development and Co-operation; Institute of Agricultural Research Statistics</i>	
2.4.1 Study of impact of milk supply scheme on rural economy in milk collection areas . . . . .	60
<i>Government of Maharashtra</i>	
2.4.2 Sample survey to assess the impact of milk and loan schemes on the income of members of dairy co-operatives . . . . .	60
<b>3. FORESTRY</b>	
<i>Government of Gujarat</i>	
3.0.1 Forest resources survey . . . . .	61
<i>Government of Maharashtra</i>	
3.0.2 Forest resources survey . . . . .	61
<i>Government of Uttar Pradesh</i>	
3.0.3 Tree enumeration in Pilibhit and Dehradun forest divisions . . . . .	62
3.0.4 Enumeration for collection of data in respect of revision of working plan of West Almora division . . . . .	62
3.0.5 Tree enumeration in hill forests . . . . .	63
3.0.6 Enumeration of Rohini forest . . . . .	63
3.0.7 Partial tree enumeration in the miscellaneous coppice with standard working circle forests in Varanasi forest division . . . . .	63
3.0.8 Regeneration survey for sal enumeration in hill, sal selection and bamboo survey . . . . .	64
3.0.9 Plantation survey in the plains in the Tarai belt of Uttar Pradesh forests . . . . .	64
3.0.10 Enumeration in sal conversion working circle . . . . .	64
3.0.11 Ringal (bamboo) survey in hill forests under Forest Resources Survey Scheme, Uttarakhand . . . . .	65
<b>4. FISHERY</b>	
4.1 <i>Inland fishery</i>	
<i>Government of West Bengal</i>	
4.1.1 Sample survey to assess the inland fishery resources . . . . .	65
4.2 <i>Marine fishery</i>	
<i>Ministry of Food, Agriculture, Community Development and Co-operation; Central Marine Fisheries Research Institute.</i>	
4.2.1 Survey for estimation of marine fish landing by species and the size composition of commercially important fishes . . . . .	65
<i>Government of Gujarat</i>	
4.2.2 Sample survey to estimate marine fish catch . . . . .	66



	PAGE
<i>Government of Madras</i>	
4.2.3 Sample survey for collection of marine fisheries statistics . . . . .	66
<b>5. IRRIGATION</b>	
5.1 <i>Assessment surveys</i>	
<i>Reserve Bank of India</i>	
5.1.1 Survey of benefits of Nagarjunasagar project to cultivators . . . . .	67
5.1.2 Ghod and Gangapur Irrigation Project in Maharashtra—a quick assessment of benefits to cultivators . . . . .	67
5.1.3 Tungabhadra Irrigation Project in Andhra Pradesh—a quick assessment of benefits to cultivators . . . . .	68
5.1.4 Tungabhadra Irrigation Project in Mysore—a quick assessment of benefits to cultivators . . . . .	68
5.1.5 Chambal Irrigation Project in Rajasthan—a quick assessment of benefits to cultivators . . . . .	68
<i>Government of Andhra Pradesh</i>	
5.1.6 Survey of private minor irrigation sources . . . . .	69
<i>Government of Bihar</i>	
5.1.7 Enquiry into the extent of utilisation of irrigation facilities and potentials . . . . .	69
<i>Government of Gujarat</i>	
5.1.8 Pilot survey for assessment of additional yield of paddy, jowar, wheat and cotton due to canal irrigation in Kakrapara project . . . . .	69
5.1.9 Benchmark and post irrigation survey—Machhu I Irrigation Project . . . . .	70
<i>Government of Kerala</i>	
5.1.10 Sample survey on minor irrigation facilities . . . . .	71
<i>Government of Madhya Pradesh</i>	
5.1.11 Survey on the extent of utilisation of minor irrigation facilities . . . . .	71
<i>Government of Maharashtra</i>	
5.1.12 Survey of minor irrigation works (private sector) . . . . .	72
5.1.13 Survey of minor irrigation works (public sector) . . . . .	72
<i>Government of Mysore</i>	
5.1.14 Survey of irrigation facilities . . . . .	72
5.1.15 Irrigation well survey—estimation of area brought under irrigation wells and pump-sets installed . . . . .	73
<i>Government of Orissa</i>	
5.1.16 Enquiry into the extent of utilisation of irrigation facilities and potentials . . . . .	73
5.1.17 Hirakud irrigation benefit survey . . . . .	74
<i>Government of Uttar Pradesh</i>	
5.1.18 Survey relating to the extent of utilisation of irrigation facilities and potentials of irrigation works . . . . .	74
<i>Government of West Bengal</i>	
5.1.19 Enquiry into the extent of utilisation of irrigation facilities and potentials . . . . .	75
<b>6. COMMUNITY DEVELOPMENT, CO-OPERATION AND PANCHAYATI RAJ</b>	
<i>Planning Commission; Programme Evaluation Organisation</i>	
6.0.1 Study on the working of post stage II Community Development Blocks . . . . .	75
<i>Government of Maharashtra</i>	
6.0.2 Sample survey to assess the reasons for low coverage of membership by service co-operatives . . . . .	77
6.0.3 Sample survey to find out the extent to which the weaker sections of the community get finance from service co-operatives . . . . .	77
<i>Government of Rajasthan</i>	
6.0.4 Democratic decentralisation study . . . . .	77
<b>7. INDUSTRY AND MINERALS</b>	
7.1 <i>Mining and fuel</i>	
<i>Ministry of Education; Central Fuel Research Institute</i>	
7.1.1 Sampling of coal and coke . . . . .	78

	PAGE
<b>7.2 Large scale manufacturing</b>	
<i>Department of Statistics, Directorate of National Sample Survey</i>	
7.2.1 Annual survey of industries . . . . .	78
<i>Government of Punjab</i>	
7.2.2 Industrial survey . . . . .	80
<b>7.3 Small scale industries</b>	
<i>Karnatak University, Dharwar, Mysore</i>	
7.3.1 Study of small scale industrial possibilities in Dharwar . . . . .	80
<i>Government of Assam</i>	
7.3.2 Study of cottage and small industries in Gauhati town . . . . .	80
<i>Government of Maharashtra</i>	
7.3.3 Survey to measure the growth of industries in urban areas . . . . .	81
7.3.4 Survey of cottage and small scale industries . . . . .	81
<i>Government of Mysore</i>	
7.3.5 Handloom survey . . . . .	82
<i>Government of West Bengal</i>	
7.3.6 Small industry survey . . . . .	83
<b>7.4 Village industries and handicrafts</b>	
<i>Government of Andhra Pradesh</i>	
7.4.1 Sample survey on rural industries . . . . .	83
<b>8. TRADE AND COMMERCE</b>	
<b>8.1 Distributive trade</b>	
<i>Government of West Bengal</i>	
8.1.1 Economic survey of trading establishments . . . . .	84
<i>Manipur Administration</i>	
8.1.2 Sample survey on retail and wholesale trades . . . . .	84
<b>8.3 Others</b>	
<i>Manipur Administration</i>	
8.3.1 Annual survey of trade and commerce. . . . .	84
<b>9. TRANSPORT AND COMMUNICATION</b>	
<b>9.1 Passenger traffic</b>	
<i>Government of Mysore</i>	
9.1.1 Socio-economic survey—mass transportation study of Bangalore . . . . .	85
<b>9.2 Goods traffic</b>	
<i>Government of Gujarat</i>	
9.2.1 Study of goods traffic on high-ways . . . . .	85
<b>9.3 Tourist traffic</b>	
<i>Ministry of Tourism and Civil Aviation</i>	
9.3.1 Foreign tourist expenditure survey . . . . .	86
<i>Government of Jammu and Kashmir</i>	
9.3.2 Tourist trade . . . . .	86
<b>10. HOUSING AND CONSTRUCTION</b>	
<i>Ministry of Works, Housing and Supply; national Buildings Organisation</i>	
10.0.1 State-wise study of tax incidence on housing . . . . .	87
<i>Government of Uttar Pradesh</i>	
10.0.2 Survey to assess the housing facility provided to workers of various industries . . . . .	87
<i>Government of West Bengal</i>	
10.0.3 Enquiry into the cost of maintenance and construction of buildings . . . . .	88
<b>11. EDUCATION</b>	
<i>Government of Andhra Pradesh</i>	
11.0.1 Sample survey on education and other facilities . . . . .	88

	PAGE
<i>Government of Assam</i>	
11·0·2 Survey on education, drinking water and other facilities . . . . .	89
<i>Government of Bihar</i>	
11·0·3 Survey on education, drinking water and other facilities . . . . .	89
<i>Government of Madhya Pradesh</i>	
11·0·4 Survey on education, drinking water and other facilities . . . . .	89
<i>Government of Maharashtra</i>	
11·0·5 Survey on education, drinking water and other facilities . . . . .	90
11·0·6 Investigation into the working of higher secondary schools in Vidharbha and Marathwada regions . . . . .	90
<i>Government of Punjab</i>	
11·0·7 Impact of Primary Education Act, 1960 in the rural areas . . . . .	90
11·0·8 Utilisation pattern of educated persons . . . . .	91
<i>Government of Rajasthan</i>	
11·0·9 Survey to study the utilisation pattern of educated persons . . . . .	91
<i>Government of Uttar Pradesh</i>	
11·0·10 Survey on education, drinking water and other facilities . . . . .	92
<i>Government of West Bengal</i>	
11·0·11 Survey on education, drinking water and other facilities . . . . .	92
<b>12. HEALTH</b>	
<i>Ministry of Health and Family Planning; Indian Council of Medical Research</i>	
12·0·1 Morbidity of peptic ulcer in Delhi with reference to epidemiological, clinical and laboratory investigations . . . . .	92
12·0·2 Epidemiological studies in dental health in Punjab . . . . .	93
12·0·3 Pilot investigation of incidence of mental disorders in India . . . . .	93
12·0·4 Diarrhoea of infants and children in Delhi . . . . .	93
12·0·5 Anaemia in school children of the city of Ahmedabad . . . . .	93
12·0·6 Incidence and clinical epidemiology of peptic ulcer in Bombay . . . . .	93
12·0·7 Diarrhoea of infants and children in Vellore, Madras. . . . .	94
<b>13. DEMOGRAPHY AND FAMILY PLANNING</b>	
13·1 <i>Demography</i>	
<i>Department of Statistics, Directorate of National Sample Survey</i>	
13·1·1 Population, birth and death survey in the N.S.S. 19th and 20th rounds . . . . .	94
<i>Ministry of Home Affairs; Office of the Registrar General, India</i>	
13·1·2 Sample registration scheme . . . . .	95
<i>Gokhale Institute of Politics and Economics, Poona</i>	
13·1·3 Demographic resurvey of North Satara district . . . . .	95
<i>University of Delhi</i>	
13·1·4 Widowhood and widow remarriages survey . . . . .	95
<i>Demographic Training and Research Centre, Bombay</i>	
13·1·5 Rural migration study . . . . .	96
<i>Government of Gujarat</i>	
13·1·6 Sample registration scheme . . . . .	96
<i>Government of Kerala</i>	
13·1·7 Sample registration (full scale) scheme . . . . .	97
<i>Government of Madhya Pradesh</i>	
13·1·8 Supplementary sample census count . . . . .	97
<i>Government of Maharashtra</i>	
13·1·9 Sample registration scheme . . . . .	98
<i>Government of Rajasthan</i>	
13·1·10 Sample registration scheme . . . . .	98

	PAGE
<i>Government of West Bengal</i>	
13·1·11 Sample census, 1964 and 1965 . . . . .	99
13·2 <i>Family planning</i>	
<i>Gokhale Institute of Politics and Economics, Poona</i>	
13·2·1 Study of Family planning clinics in Poona city . . . . .	99
<i>University of Kerala</i>	
13·2·2 Family planning communication research programme evaluation study . . . . .	100
14 LABOUR AND EMPLOYMENT	
14·1 <i>Labour force</i>	
<i>Department of Statistics, Directorate of National Sample Survey</i>	
14·1·1 Urban labour force survey in the N.S.S. 19th and 20th rounds . . . . .	101
<i>Karnatak University</i>	
14·1·2 Impact of rural manpower programme on employment situation in North Mysore State . . . . .	101
<i>Government of Gujarat</i>	
14·1·3 Survey on availability of rural manpower . . . . .	101
<i>Government of Maharashtra</i>	
14·1·4 Migration survey . . . . .	102
14·2 <i>Employment</i>	
<i>Department of Statistics, Directorate of National Sample Survey</i>	
14·2·1 Employment, unemployment and indebtedness of rural labour households in the N.S.S. 19th and 20th rounds . . . . .	102
<i>Ministry of Labour, Employment and Rehabilitation; labour Bureau, Simla</i>	
14·2·2 Contract labour in general engineering and electrical engineering industries excluding generation and transformation of electric energy . . . . .	103
<i>Government of Gujarat</i>	
14·2·3 Evaluation survey in respect of stone breaking and stone crushing industry . . . . .	103
<i>Government of Rajasthan</i>	
14·2·4 Rural employment, unemployment and under-employment survey . . . . .	104
<i>Government of West Bengal</i>	
14·2·5 Unemployment survey for construction of indices of employment and unemployment . . . . .	104
14·2·6 Survey for ascertaining the proportion of employed persons in the live registers of employment exchanges . . . . .	105
<i>Himachal Pradesh Administration</i>	
14·2·7 Sample survey of employment, underemployment and unemployment . . . . .	105
<i>Government of Pondicherry</i>	
14·2·8 Pilot survey of employment and unemployment . . . . .	106
<i>Tripura Administration</i>	
14·2·9 Survey of registrants at Agartala employment exchange . . . . .	106
15. PRICES AND WAGES	
<i>Department of Statistics, Directorate of National Sample Survey</i>	
15·0·1 Monthly retail prices of selected commodities in rural areas in the N. S. S. 19th and 20th rounds . . . . .	106
<i>Ministry of Labour, Employment and Rehabilitation; Labour Bureau, Simla</i>	
15·0·2 The second occupational wage survey . . . . .	107
<i>Government of Kerala</i>	
15·0·3 Survey on wage structure in the sectors of construction, trade and commerce . . . . .	107
<i>Government of Uttar Pradesh</i>	
15·0·4 Survey to study the working conditions and wages in (i) hotels and restaurants (ii) private printing presses (iii) metal industry (iv) foundary (v) glass bangle making industry . . . . .	108
15·0·5 Rural wage inquiry . . . . .	108

	PAGE
<b>16. LEVELS OF LIVING AND FAMILY BUDGET ENQUIRY</b>	
<i>Ministry of Labour, Employment and Rehabilitation; Labour Bureau, Simla</i>	
16·0·1 Himachal Pradesh family living survey . . . . .	108
16·0·2 Family living surveys at five selected centres . . . . .	109
16·0·3 Family living survey of industrial workers in Gor . . . . .	109
<i>Government of Kerala</i>	
16·0·4 Working class family budget survey . . . . .	110
<i>Government of Maharashtra</i>	
16·0·5 Family living survey . . . . .	110
<i>Government of Mysore</i>	
16·0·6 Study of impact of plan programme on levels of living, consumption and employ- ment and use of improved methods in agriculture . . . . .	111
<i>Government of Punjab</i>	
16·0·7 Family living survey of working class and middle class employees . . . . .	111
<i>Government of Rajasthan</i>	
16·0·8 Family budget enquiry for constructing cost of living indices for Ganganagar district	112
<i>Government of Uttar Pradesh</i>	
16·0·9 Urban consumption enquiry . . . . .	112
16·0·10 Rural consumption enquiry . . . . .	113
16·0·11 Rural consumption enquiry using aluminium containers . . . . .	113
16·0·12 Survey into the working and living conditions of workers employed in saw-mills and furniture industries at Bareilly and Pilibhit . . . . .	114
<i>Government of Goa, Daman and Diu; General Statistics Department</i>	
16·0·13 Middle class family living survey . . . . .	114
<b>17. INCOME, EXPENDITURE, SAVINGS, INVESTMENT AND INDEBTEDNESS</b>	
<i>Department of Statistics, Directorate of National Sample Survey</i>	
17·0·1 Integrated household survey in the N. S. S. 19th and 20th rounds . . . . .	115
<i>Ministry of Labour, Employment and Rehabilitation; Labour Bureau, Simla</i>	
17·0·2 Survey of labour conditions (4th round) . . . . .	115
17·0·3 Sample survey of indebtedness among workers in the iron and steel industry in India.	116
17·0·4 Rapid survey in non-coal mines . . . . .	116
<i>Reserve Bank of India</i>	
17·0·5 Sixth follow-up rural credit survey, 1963-66 . . . . .	117
<i>National Council of Applied Economic Research</i>	
17·0·6 All India survey of consumer expenditure . . . . .	118
<b>18. MISCELLANEOUS</b>	
<i>Tea Board</i>	
18·0·1 Market research and tea consumption survey . . . . .	119
<i>Tata Institute of Social Sciences, Bombay</i>	
18·0·2 Trade Union leadership survey. . . . .	119
<i>Demographic Training and Research Centre, Bombay</i>	
18·0·3 Evaluation of performance of voluntary workers . . . . .	120
<i>Delhi University</i>	
18·0·4 Social, economic and cultural study of the people of Ladakh . . . . .	120
<i>Gujarat University</i>	
18·0·5 Study of socio-economic conditions of woman workers in certain textile mills of Ahmedabad . . . . .	120
<i>Government of Assam</i>	
18·0·6 Socio-economic survey (hills) in the United Mikir and North Cachar Hills . . . . .	121
<i>Government of Kerala</i>	
18·0·7 Pre-action phase survey on applied nutrition programme . . . . .	121
<i>Government of Punjab</i>	
18·0·8 Socio-economic survey of the scheduled castes . . . . .	122
18·0·9 Evaluation of applied nutrition programme . . . . .	122

	PAGE
<i>Government of Rajasthan</i>	
18·0·10 Formulation of Fourth Five Year Plan . . . . .	123
18·0·11 Survey on working of industrial training institutes . . . . .	123
18·0·12 Working of design extension centres viz., textile, carpet, lacquerware and woollen felt . . . . .	124
18·0·13 Attachment of village level workers with village panchayat as Secretary and its impact on agriculture production programmes . . . . .	124
<i>Government of Uttar Pradesh</i>	
18·0·14 Gur manufacture enquiry . . . . .	124
18·0·15 Dietary habits . . . . .	125
18·0·16 Slaughtering of animals . . . . .	125
<b>PART II</b>	
<b>Surveys proposed for 1966-67</b>	
<b>1. AGRICULTURE</b>	
1·1 <i>Land utilisation</i>	
<i>Department of Statistics, Directorate of National Sample Survey</i>	
1·1·1 Land utilisation statistics in the N. S. S. 21st round . . . . .	129
1·2 <i>Crop area, yield and production including those of high yielding varieties</i>	
<i>Department of Statistics, Directorate of National Sample Survey</i>	
1·2·1 Crop cutting experiments in the N. S. S. 21st round . . . . .	129
<i>Ministry of Food, Agriculture, Community Development and Co-operation; Indian Council of Agricultural Research</i>	
1·2·2 Block level estimates of agricultural production . . . . .	129
1·2·3 Sample survey for the study of yield and cultivation practices of fresh fruits in Andhra Pradesh (second round) . . . . .	129
<i>Government of Maharashtra</i>	
1·2·4 Pilot scheme for collection of statistics on the extent of cultivation and production of cashewnut . . . . .	129
1·2·5 Scheme for pilot crop estimation survey on safflower/nigar . . . . .	129
1·2·6 Scheme for the study of yield and cultivation practices of vegetable crops . . . . .	130
1·3 <i>Improved agricultural practices and their effects</i>	
<i>Ministry of Food, Agriculture, Community Development and Co-operation</i>	
1·3·1 The benchmark and assessment survey under the Intensive Agricultural District Programme (IADP) . . . . .	130
<i>Government of Gujarat</i>	
1·3·2 The benchmark survey in areas under Intensive Agricultural Area Programme . . . . .	130
1·5 <i>Land holdings and land reforms</i>	
<i>Government of Kerala</i>	
1·5·1 Survey on land reforms . . . . .	131
1·6 <i>Other agro-economic surveys</i>	
<i>Ministry of Food, Agriculture, Community Development and Co-operation</i>	
1·6·1 Survey of fertilizer and other manuring practices . . . . .	131
1·6·2 Survey for estimation of incidences of pests and diseases . . . . .	131
<i>Karnatak University</i>	
1·6·3 Agriculture geography of Mysore State (Belgaum Division) . . . . .	131
<b>2. ANIMAL HUSBANDRY</b>	
2·1 <i>Livestock and poultry population</i>	
<i>Government of Pondicherry</i>	
2·1·1 Post livestock census, sample survey for collection of additional data, 1966 . . . . .	132
2·2 <i>Livestock product and by-product</i>	
<i>Ministry of Food, Agriculture, Community Development and Co-operation</i>	
2·2·1 Sample survey for estimation of annual production of livestock products and study of their management practices . . . . .	132
2·2·2 Study of feeding and rearing practices of sheep and yield of wool and mutton in Mysore, Maharashtra and Rajasthan . . . . .	132

	PAGE
<i>Government of Gujarat</i>	
2·2·3 Estimation of production of eggs and study of feeding and management practices of poultry in Surat district . . . . .	132
2·4 <i>Others</i>	
<i>Government of Gujarat</i>	
2·4·1 The benchmark and assessment survey for Intensive Cattle Development Project, Ahmedabad region . . . . .	132
<b>5. IRRIGATION</b>	
5·1 <i>Assessment survey</i>	
<i>Reserve Bank of India</i>	
5·1·1 Bhadra Irrigation Project in Mysore—a quick assessment of benefits to cultivators . . . . .	133
5·1·2 Kosi Irrigation Project in Bihar—a quick assessment of benefits to cultivators . . . . .	133
<i>Government of Gujarat</i>	
5·1·3 Post irrigation survey of Kakrapara Irrigation Project . . . . .	133
<b>7. INDUSTRY AND MINERALS</b>	
7·3 <i>Small scale industries</i>	
<i>Government of Madhya Pradesh</i>	
7·3·1 Type study on small scale industries . . . . .	133
<i>Government of Maharashtra</i>	
7·3·2 Survey of cottage and small scale industries . . . . .	134
<b>8. TRADE AND COMMERCE</b>	
8·1 <i>Distributive trade</i>	
<i>Government of Madras</i>	
8·1·1 Scheme for study on distributive trade . . . . .	134
<b>9. TRANSPORT AND COMMUNICATIONS</b>	
9·3 <i>Tourist traffic</i>	
<i>Government of Jammu and Kashmir</i>	
9·3·1 Tourist trade survey . . . . .	134
<b>10. HOUSING AND CONSTRUCTION</b>	
<i>Ministry of Works, Housing and Supply</i>	
10·0·1 Survey of house building activity in Delhi and New Delhi . . . . .	134
10·0·2 Socio-economic study for estimating the overall financial benefits as a result of suitable housing to the workmen . . . . .	134
10·0·3 Study of inventories of land of the co-operative builders especially in urban agglomerations . . . . .	135
10·0·4 Study of return of investment in housing . . . . .	135
10·0·5 Study on the production of housing as a result of "control and decontrol" of land in the metropolitan towns . . . . .	135
<b>12. HEALTH</b>	
<i>Ministry of Health and Family Planning; Indian Council of Medical Research</i>	
12·0·1 Epidemiological studies in dental health in South India . . . . .	135
<b>13. DEMOGRAPHY AND FAMILY PLANNING</b>	
13·1 <i>Demography</i>	
<i>Department of Statistics, Directorate of National Sample Survey</i>	
13·1·1 Population, birth and death survey in the N. S. S. 21st round. . . . .	135
<i>Ministry of Home Affairs; Office of the Registrar General, India</i>	
13·1·2 Sample census of population, births and deaths, 1966 . . . . .	136
<i>Government of Rajasthan</i>	
13·1·3 One per-cent sample census, 1966 . . . . .	136
<i>Government of Madras</i>	
13·1·4 Annual sample census of population, 1966 . . . . .	136
<i>Government of Mysore</i>	
13·1·5 Sample registration scheme, 1966-67 . . . . .	136
13·1·6 Sample survey of population, births and deaths, 1966 . . . . .	137

	PAGE
<i>Government of Orissa</i>	
13·1·7 Pilot survey for sample registration of births and deaths . . . . .	137
<i>Government of West Bengal</i>	
13·1·8 Sample registration scheme (pilot) in rural area . . . . .	137
<i>Himachal Pradesh Administration</i>	
13·1·9 Sample census, 1966 . . . . .	137
14. LABOUR AND EMPLOYMENT	
14·1 <i>Labour force</i>	
<i>Department of Statistics, Directorate of National Sample Survey</i>	
14·1·1 Urban labour force survey in the N. S. S. 21st round . . . . .	137
14·2 <i>Employment</i>	
<i>Government of Assam</i>	
14·2·1 Sample survey on tea-garden unemployment, 1966 . . . . .	138
15. PRICES AND WAGES	
<i>Department of Statistics, Directorate of National Sample Survey</i>	
15·0·1 Monthly retail prices of selected commodities in rural areas in the N. S. S. 21st round	138
<i>Government of Gujarat</i>	
15·0·2 Preliminary minimum wage survey in respect of employment in soap industry . . . . .	138
16. LEVELS OF LIVING AND FAMILY BUDGET ENQUIRY	
<i>Ministry of Labour, Employment and Rehabilitation</i>	
16·0·1 Family budget enquiry of railway porters and vendors . . . . .	138
17. INCOME, EXPENDITURE, SAVINGS, INVESTMENT AND INDEBTEDNESS	
<i>Department of Statistics, Directorate of National Sample Survey</i>	
17·0·1 Integrated household survey in the N. S. S. 21st round . . . . .	139
18. MISCELLANEOUS	
<i>Indian Institute of Public Administration</i>	
18·0·1 Citizen's grievances in development administration . . . . .	139
<i>Tata Institute of Social Sciences</i>	
18·0·2 Workers' image of his trade union . . . . .	139
18·0·3 Social problems of urban growth . . . . .	139
<i>Government of Assam</i>	
18·0·4 Socio-economic survey (hills) in the United Khasi and Jaintia Hills . . . . .	140
<i>Government of Gujarat</i>	
18·0·5 Techno-economic survey . . . . .	140
<i>Government of Kerala</i>	
18·0·6 Survey on Kerala Chitties Bill, 1964—fixation of percentage of commission allowable to the foreman of the Chitty . . . . .	140
<i>Government of Maharashtra</i>	
18·0·7 Utilisation of co-operative godowns . . . . .	141
<i>Government of Uttar Pradesh</i>	
18·0·8 Survey to assess the average rent paid by eligible industrial workers in several towns where houses under subsidised industrial housing scheme exist . . . . .	141





**SAMPLE SURVEYS OF CURRENT INTEREST IN INDIA**

Sixteenth and Seventeenth Annual Reports,  
1964-65 and 1965-66  
(*Combined Issue*)



**PART I**

**SURVEYS CONDUCTED DURING  
1964-65 and/or 1965-66**

## 1. Agriculture.

### 1.1. Land Utilisation.

#### DEPARTMENT OF STATISTICS, DIRECTORATE OF NATIONAL SAMPLE SURVEY.

##### 1.1.1 Land Utilisation Survey in the National Sample Survey 19th and 20th rounds (schedules 5.0 & 5.01).

1.1.1.1 The 19th and 20th rounds of the National Sample Surveys (NSS) were conducted from July, 1964 to June, 1965 and from July, 1965 to June, 1966 respectively. The Land Utilisation Survey formed an integral part of the socio-economic surveys conducted during these rounds.

1.1.1.2 *Responsibility.*—The survey was conducted on behalf of the Government of India. The Department of Statistics was responsible for the over-all planning of the survey. The field work *i. e.* data collection and primary scrutiny, was the responsibility of the Directorate of National Sample Survey, Department of Statistics, Government of India, except in West Bengal and Bombay city, where it was the responsibility of the Indian Statistical Institute (ISI). The technical work, which included planning the survey, processing the data, tabulating the results and preparing the final reports, was done by the ISI. A Programme Committee, consisting of the representatives of the various Ministries, Government Department, Central Statistical Organisation (CSO), NSS Directorate and ISI advised the Department of Statistics on the general plan of the surveys, the items of information to be collected and the tabulation programme.

1.1.1.3 *Participation of States.*—All the States and Union Territories excepting West Bengal, Delhi and Himachal Pradesh participated on full-matching basis in these rounds. The participating States undertook the responsibilities of both collection and analysis of data. The samples for the participating States were drawn using the same sampling design and sample sizes as for the corresponding Central sample, *i. e.*, the sample to be surveyed by the NSS Directorate field-staff. The programme of work for the State sample was also the same as for the Central sample.

1.1.1.4 *Purpose.*—The NSS is collecting various types of socio-economic and crop data mainly for the purposes of planning and research. The requirements of the data are submitted to the NSS Programme Committee by the different Ministries, Government Departments and other interested organisations.

1.1.1.5 *Date and duration.*—The field work for the 19th round started in July, 1964 and completed in June, 1965. The field work for the 20th round started in the first week of July, 1965 and was completed by the end of June, 1966.

1.1.1.6 *Geographical coverage.*—The survey covered both the rural and urban sectors of India excepting Andaman and Nicobar Islands, Lacadive, Minicoy and Amindivi Islands, Ladakh district of Jammu and Kashmir, Nagaland, North East Frontier Agency, Mao, Ukhrul and Tamonlong sub-divisions of Manipur.

1.1.1.7 *Method of data collection.*—In villages where only land utilisation survey was conducted, a circular systematic sample of 4 clusters of 5 plots each was selected using the cadastral map or the list of plots. If neither of them was available in a village, 4 households were selected circular systematically and all the plots possessed by these households were surveyed. In villages where both crop-cutting experiments and land utilisation survey were conducted, circular systematic sample of 6 clusters of 10 plots each was selected for the land utilisation survey. If no map or list of plots was available, 6 households were selected circular systematically and all the plots possessed by those households were surveyed. The same sample of plots were surveyed in each season.

1.1.1.8 *Reference period.*—The reference period for the schedules 5.0 and 5.01 was the date of survey.

1.1.1.9 *Type of information collected.*—Information on the proportion of the areas in the plots under different crops was obtained by direct observations of the plots in the field.

1.1.1.10 *Sampling frame (rural).*—The frame used was the list of villages as per the 1961 population census in all the States and the Union Territories.

1.1.1.11 *Interpenetrating net work of sub-sample.*—The sample was drawn in the form of four independent and interpenetrating sub-samples. Of these, sub-samples 1 and 3 were surveyed by one party of investigators and the remaining two sub-samples by another party of investigators; the sample villages and the sample blocks for the States, samples were drawn in the form of 4 independent interpenetrating sub-samples by linking the random starts for the State samples with those of the corresponding Central samples to ensure a better spread of the Central and State samples taken together.

1.1.1.12 *Sampling design (rural)*.—The sampling design in the rural sector was a stratified two-stage one for both the socio-economic and the land utilisation surveys. For the land utilisation survey, villages and clusters of plots formed the first and the second stage units respectively.

1.1.1.13 The sample design was self-weighting at the State level for all the socio-economic enquiries.

1.1.1.14 *Stratification*.—The country was divided into about 50 agricultural regions by grouping contiguous districts within each State having similar crop pattern and population densities. These were the same (with some minor changes) as were adopted in the two previous rounds. Within a region, continuous tehsils having similar population densities and good transport facilities were grouped together to form compact strata such that the sum of 'sizes' of the villages was same for each stratum within a State/Union Territory. That is, within a State/Union Territory, 'stratum sizes' were equal. The total number of strata formed was 355.

1.1.1.15 *Allocation*.—The total (Central) sample size of 8,472 (for 19th round) and 8,520 (for 20th round) sample villages was allocated to the different States on a joint consideration of their rural populations and areas under food crops. This allocation was modified to ensure a minimum sample size of 360 villages in each State and about 200 sample villages in each of the Union Territories which were participating in these rounds of the NSS. The available investigator strength in the different States was also taken into consideration in finalising the States allocations. The allocations were rounded off to 24 or multiples of 24 to facilitate having 4 sub-samples of 6 villages each per stratum.

1.1.1.16 *Selection of investigation zones*.—If a stratum had a very large area, it was divided into two or more investigation zones (groups of contiguous tehsils) of roughly equal areas. Two investigation zones were selected in each stratum with probability proportional to these sizes and with replacement. From each selected zone, two sub-samples of 6 villages each (1 & 3 or 2 & 4) were selected as described below. This procedure was adopted to restrict the area to be covered by an investigator in large strata.

1.1.1.17 *Selection of Villages*.—In each stratum, 4 independent interpenetrating sub-samples of 6 villages each were selected circularly systematically with probability proportional to size. The size of a village was the ratio of its population to the average population of a village in the population class 0-499 in that State. The unit of selection was 1951/1961 census village, but the revenue village corresponding to the selected census village was the unit of survey for both socio-economic and crop surveys.

1.1.1.18 If the area of the selected revenue village was more than 16 square miles, the village was divided into two or more sub-divisions each having an area of at least two square miles and one of them was selected at random with equal probability. The crop survey was limited to the selected sub-division.

1.1.1.19 *Programme of work*.—The land utilisation survey was conducted in all the sampled villages during the four crop seasons namely: autumn, winter, spring and summer.

1.1.1.20 *Personnel and equipment*.—As regards data collection, there were 756 (net) Investigators in the Central sample and a sufficient number of Inspectors so as to have one for each 3/4 Investigators, there being no separate workers for rural and urban work as in the previous round. Each State or State block (part of a big State) had one Superintendents one or more Assistant Superintendents and one or more Scrutiny Inspectors. A corresponding number of Investigators and Supervisors worked for the State samples also.

1.1.1.21 *Analysis of data*.—After a primary scrutiny by the Inspectors and a detailed scrutiny by the Scrutiny Inspectors in the field, the filled in schedule for the Central samples were sent to the Indian Statistical Institute. After a proper routine pre-punching scrutiny, the information contained in the schedules were transferred to punched cards. The original punching was verified after which the desire weighted estimates were calculated through machine tabulation. The results underwent post-machine scrutiny, after which the final tables were drawn up, on the basis of which the reports were prepared. The State sample data were analysed in a similar manner by the respective State Statistical Bureaus.

## MINISTRY OF IRRIGATION AND POWER DAMODAR VALLEY CORPORATION

### 1.1.2. Economics of conservation farming.

1.1.2.1 The survey which is of a continuing nature, was initially started in the latter half of 1957-58. It was conducted by the Director, Soil Conservation Department

Domodar Valley Corporation, Hazaribagh with a view to study the cost- benefit aspect of the conservation farming in Damodar Valley Corporation area so as to have an economic appraisal of the Soil Conservation Programme of Damodar Valley Corporation.

1.1.2.2 The study is proposed to continue for a period of ten years in each village to study the long-term effects of conservation measures. The Damodar Valley Corporation area *i. e.* the Chotanagpur region of Bihar and a part of Purulia district in West Bengal has been covered by the study. The villages selected were those where soil conservation farming had been carried out by the Soil Conservation Department, Damodar Valley Corporation and only the affected cultivators were taken into consideration.

1.1.2.3 Selection of villages and cultivators was based on stratified sampling. In the first stage, the villages were sampled out on the basis of representativeness. Since the study was purported to examine the economics of conservation farming, the universe consisted of all cultivating families of the sample village who had their land in the soil conservation demonstration block, irrespective of whether their main occupation was agriculture or any other. Ten families were randomly selected for the detailed study in each village.

1.1.2.4 The study is being carried out by one Supervisor and two Field Assistants assisted by casual Investigators employed on long-term basis. Compilation is carried out by one Computer and Casual Compilation Assistants employed on long-term basis.

1.1.2.5 The draft report for the period 1959 to 1962-63 has been prepared during the year 1965-66. The expenditure incurred in either of the years 1964-65 and 1965-66 was roughly of the order of Rs. 20,000.

### GOVERNMENT OF BIHAR

#### 1.1.3 Survey of soil conservation measures

1.1.3.1 The survey was sponsored by Programme Evaluation Organisation and was conducted by Directorate of Statistics & Evaluation, Bihar, with a view to assess the extent of contour bunding actually done against the reported figures. In addition, information relating to cropping pattern and soil type of the bunded area was also collected. The survey was carried out in the districts of Santhal Parganas, Ranchi, Hazaribagh, Palamau, Singhbhum and Dhanbad. Data were collected with reference period 1960-61 to 1964-65 through personal investigation.

1.1.3.2 A sample of six villages in each selected block was selected with probability proportional to the area benefited. The Khasra numbers benefited by the scheme constituted the ultimate sampling units.

1.1.3.3 Necessary training was imparted to the Investigators at the head office.

### GOVERNMENT OF KERALA

#### 1.1.4 Land utilisation survey.

1.1.4.1 This is an annual survey regularly conducted in two rounds by the Bureau of Economics and Statistics, Kerala, with a view to estimate the area under crops, land utilization statistics and crop-wise area irrigated by different sources of irrigation. The survey was conducted during 1964-65 and 1965-66.

1.1.4.2 The frame adopted for the survey was the list of census villages in each taluk and survey numbers from revenue records. The census villages were the first stage units and clusters of 5 plots in each village were the second stage units. Stratification was done on the basis of administrative divisions, each taluk being taken as a stratum. Simple random sampling was adopted for selecting sample units in different stages of selection. In each taluk, 15 census villages were selected with equal probability and in each selected village, 10 clusters of 5 plots each were chosen also with equal probability. The method of selection was the same for both the rounds of the survey. Villages were selected at the headquarters while clusters of plots were selected by the field staff.

1.1.4.3 In the analysis of the data, ratio method of estimation was used for estimation of major characteristics.

1.1.4.4 The field work was carried out by 55 Investigators, one in each taluk and supervised by 26 Statistical Inspectors at the taluk level. The overall supervision of the survey at the district level was attended to by the District Statistical Officers. The staff was employed permanently for the survey. The analysis of data was done in the head office by 6 Compilers and 1 Research Assistant employed permanently.

1.1.4.5 During 1965-66, the field work relating to one round (1st July, 1965 to 31st January, 1966) was completed and the analysis work of this round was taken up.

## GOVERNMENT OF MADHYA PRADESH

### 1.1.5 Survey of soil conservation

1.1.5.1 The survey sponsored by the Programme Evaluation Organisation (PEO), Planning Commission was conducted by the Directorate of Economics and Statistics, Government of Madhya Pradesh with a view to assess the extent of soil conservation measures (*viz.* bunding) actually done in the areas requiring such a measure and to collect information relating to soil type of the areas under soil conservation measures and the crop pattern for each of the four regions of the State. The field work started in December, 1964 and was completed in April, 1965. The reference period for the data relating to soil conservation measures in the selected villages was 1st April, 1956 to the survey day and reference period for the cropping pattern was the agricultural year 1963-64.

1.1.5.2. The survey covered only those villages where some contour bunding work had been undertaken since 1956-57. A two-stage sampling plan was adopted with village as first stage unit and survey numbers as the second stage units. A tehsil-wise list of villages covered under the soil conservation programme since 1956-57 was obtained from the Agriculture Department. Allocation of samples to each tehsil was done in proportion to total area covered in the tehsil. Within the selected villages, seven survey numbers were selected for detailed study.

1.1.5.3 Information regarding identifications and general particulars of the village (like the area of village), number of wells in the bunded area, nature and area under soil conservation programme etc. and particulars of selected survey numbers (like area, crop pattern) were collected through interview method as well as by personal observation of bunding done in the field.

1.1.5.4 The field-work was conducted by the State National Sample Survey staff under the supervision of District Statistical Officers. Scrutiny and analysis of the data was done by three Statistical Assistants under the supervision of one Statistician. Separate budget allocation for the survey was not available, as the PEO had sanctioned a bulk grant of Rs. 91,700 for four different surveys.

## GOVERNMENT OF MAHARASHTRA

### 1.1.6 Survey of soil conservation measures.

1.1.6.1 The Bureau of Economics and Statistics conducted this survey at the instance of Programme Evaluation Organisation, Planning Commission with a view to assess the extent of area brought under bunding, according to different conditions of bunds against the reported figures. Also, an additional study to assess the cropping pattern in the bunded area was made. The field work was carried out during October-November, 1964. The survey covered all the soil conservation blocks completed upto 31st March, 1964.

1.1.6.2 The survey covered the entire bunded area of the State where the work of soil conservation was undertaken. The information regarding areas covered or protected by the bunds in soil conservation blocks were collected from office records. Their physical and planting conditions were recorded by eye observation. The cropping pattern of these blocks were also obtained from office records.

1.1.6.3 The frame for the survey was the list of soil conservation blocks in the districts prepared from the records available in soil conservation offices. A multistage sampling design was adopted for the selection of soil conservation blocks. 367 villages were allotted proportionately according to bunded area in different districts and talukas. If the work load in certain talukas was heavy, the number of villages were suitably reduced. The selection of villages in the taluka was then made with probability proportional to size by systematic sampling method. Two soil conservation blocks were then selected from each selected village with probability proportional to the size of bunded blocks by systematic sampling method, through the agency of Field Investigators.

1.1.6.4 The field work of the survey was entrusted to District Statistical Officers, Statistical Assistants and Research Assistants of the Bureau. The processing of data was done by Research Assistants and Statistical Assistants at the headquarters.

## GOVERNMENT OF MYSORE

### 1.1.7 Survey of soil conservation.

1.1.7.1 At the instance of Programme Evaluation Organisation (Planning Commission), the Department of Statistics, Mysore undertook the survey during 1965-66. This survey was organised as a part of "impact of Plan Programme on level of consumption and living etc.". This particular survey was conducted in only 9 districts of northern

and southern regions where the soil conservation programme was intensive since 1955-56. It was excluded in coastal Malnad region where there was little progress in soil conservation programme. The object of the survey was to assess the extent of land under soil conservation measures actually undertaken against the reported figures. In addition, information relating to soil type of the areas under soil conservation measures and the area under different crops like cereals, pulses, oil seeds, cotton, sugarcane etc. was also collected by direct observation of the sampling units. The field work was started in the month of January, 1966 and completed by the end of March, 1966.

1.1.7.2 The selected districts were divided into the following three groups on the basis of the total area under soil conservation programme:

Group I—Gulbarga, Bidar & Raichur.

Group II—Belgaum, Dharwar and Bijapur.

Group III—Tunkur, Bangalore and Mandya.

1.1.7.3 The list of villages in each of the above three groups was taken as the sampling frame for the selection of villages. 11 villages from group I, 38 from II and 40 from III were selected in proportion to the acreage brought under different soil conservation measures. It was decided to carry out the survey in a minimum of 200 fields, chosen from the villages which fall under the same district group. For this purpose, 20 fields were selected from each of the 11 selected villages under group I, 5 fields from each of the 38 and 40 villages under groups II and III respectively. In all 89 villages and 610 fields were selected.

1.1.7.4 The survey was carried out departmentally with the help of Junior Statistical Assistants, Shanbogh and Gramsevaks. The Agriculture Demonstrators and the Department of Agriculture (soil conservation) extended help and co-operation by supplying necessary information. The overall supervision was done by the staff at the State Headquarters.

1.1.7.5 There was 90 per cent response in this survey. No cost details are available.

## **GOVERNMENT OF ORISSA**

### **1.1.8 Sample survey for estimation of area occupied by field bunds.**

1.1.8.1 The survey was conducted by Bureau of Statistics and Economics, Orissa during 1964-65 with a view to estimate the area occupied by field bunds. The survey was repeated during 1965-66.

1.1.8.2 The information on area occupied by field bunds was collected by actual survey and through personal investigation.

1.1.8.3 A stratified two stage sampling design was adopted taking sample villages as the first stage units and clusters of 10 plots each as second stage units. The survey was based on a sub-sample of the crop survey (autumn and winter paddy survey) scheme. 180 strata which were formed for main crop survey scheme, were adopted for this purpose also. From each stratum, 2 sample villages were selected for bund survey. These two villages were taken as a sub-sample from among the 20 sample villages already selected in each stratum for the area estimation of autumn and winter rice crops. In each of these two sub-sample villages in a stratum, two clusters of 10 plots each were selected for estimation of area under bunds. These two clusters were taken as sub-sample of these six clusters already selected in each village for area estimation survey of autumn and winter rice crop. In each stratum, the sample size was fixed at 40 survey numbers. In all, 7200 survey numbers were investigated and the area occupied by the peripheral and inside bunds were recorded. The percentage response was about 92.8.

1.1.8.4 The survey was completed during the years under review and "A report on the sample survey for estimation of area occupied by field bunds in Orissa, 1964-65 and 1965-66" was published.

1.1.8.5 During 1965-66, out of 7,200 plots/survey numbers planned to be surveyed, 7,100 plots/survey numbers were actually surveyed. The percentage of success was about 98.6.

### **1.2 Crop area, yield and production including those of high yielding varieties.**

#### **DEPARTMENT OF STATISTICS, DIRECTORATE OF NATIONAL SAMPLE SURVEY.**

### **1.2.1 Crop cutting experiments in the NSS 19th and 20th rounds (schedule 5.1 and 5.2).**

1.2.1.1 Details regarding the agency responsible for the conduct of the survey, purposes, States' participation, duration, geographical coverage, frame, design, and

personnel etc., may be seen on page 1 reported under Land Utilisation Survey of National Sample Survey (S. No. 1.1.1).

1.2.1.2 Information on the yield rate of specified cereal crops namely rice, wheat, barley, maize, jowar, bajra and ragi was collected in each of the four crop seasons. The reference period was the date of survey. Data regarding area figures were obtained from the land records. Information on yield was obtained by actually harvesting random circular cuts within the sample field and then threshing, drying and weighing the grains thus obtained. Crop cutting experiments were undertaken in half the sample villages of the sub-samples 1 and 2 only.

1.2.1.3 In each season, six plots were selected circular systematically with probability proportional to the gross area under the specified cereal crop from all the plots growing specified cereal crops in the sample of 6 clusters of 10 plots each selected for schedule 5.0, after arranging the plots in a suitable manner. In each selected plot, one or two circular cuts (depending on the crop grown in it) were selected by choosing the centres of the circular cuts at random. Land Utilisation Survey (schedule 5.0) was conducted in all the sample villages whereas crop-cutting experiment (schedule 5.1 & 5.2) was conducted in half the villages of sub-samples 1 and 2 only.

### **1.2.2 Harvest stage inspection in a pre-assigned sample of villages by the National Sample Survey Central Supervisory staff.**

1.2.2.1 The special programme of the Central Supervisory Staff of the NSS Directorate for inspecting the field work of crop estimation surveys in the States, especially at the harvest of sample cuts in a pre-assigned random sub-sample of villages (introduced in 1960-61) was continued during 1964-65 and 1965-66. Taking all the States together, a total sample of 2,391 and 2,560 experiments were respectively planned to be covered under this programme, distributed over the major cereal crops of rice, jowar, bajra, maize, ragi, wheat and barley as well as gram.

### **1.2.3 Circular cuts, square cuts and central driage experiments.**

1.2.3.1 As a part of the field programme for the NSS Supervisory Staffs for inspecting the field work of the crop estimation surveys in the States, circular crop cuts (using the ISI instrument) were also planned to be taken in 2,100 (above 88 per cent) of the 2,391 sample fields selected for harvest stage inspection during 1964-65. The sample of villages for these cuts was a random sub-sample of the sample for harvest stage inspection.

1.2.3.2 During 1965-66, square cuts were planned to be taken in 1,750 of the 2,560 sample fields selected for inspection at the harvest stage. The sample of villages for these cuts was also a random sub-sample of the sample for harvest stage inspection.

1.2.3.3 The Central driage experiments at the NSS Directorate headquarters for determining the recovery of dry grain from the harvested produce of the circular and square cuts taken by the NSS Supervisory Staff were also continued.

### **1.2.4. Special supervisory check on the field work of crop estimation surveys on cotton.**

1.2.4.1 The special programme of supervision of the field work of crop estimation surveys on cotton initiated in 1964-65 at the instance of the Indian Cotton Committee, was continued during 1965-66. The scheme envisaged use of double sampling technique by utilising the observations on all pickings from a small sub-sample and on the first two pickings from a large sub-sample of villages selected from the State sample. The correlation between the yields from the first two pickings and the total harvest was expected to be high and thus effected a reduction in the sampling error of the larger sample. The entire supervision was organised through whole-time supervisory staff appointed by the States with financial assistance from the Indian Central Cotton Committee. The total sample selected for supervision during 1964-65 and 1965-66 was 432 villages for both the years at all-India level covering all important cotton growing States except Punjab.

### **1.2.5 Type studies.**

1.2.5.1 According to the recommendations of the Technical Committee set up by the Planning Commission for reconciliation of the differences between the estimates of food production through crop cutting experiments by NSS staff (in the course of socio-economic enquiries) and the official estimates of production through the State series of crop estimation surveys, type studies (called Type II studies) were taken up in 5 State



on different crops during 1963-64. Such studies were conducted on maize crop in Bihar and on paddy in Andhra Pradesh. During the year 1964-65, a similar study was made on wheat crop in Uttar Pradesh in the rabi season, taking in the same fields for both types of crop cuts adopted in the two series of crop cutting experiments.

1.2.5.2 The sample for the study was comprised of the first village of the first sub-sample in each stratum of the State as well as Central sub-sample of villages selected for the NSS socio-economic rounds. Three strata falling in the hilly areas were excluded from the purview of the study. In each village, two fields were selected for the study by the method adopted for the State series of crop cutting experiments. Besides, the two types of crop cuts in the selected fields arrangements for observing whole field harvests were also made in 50 villages for purposes of comparison.

1.2.5.3 During 1965-66, these studies were carried out on kharif jowar in Mysore State. The sample for the study comprised of all the villages in Central and State sample selected for crop cutting experiments under the NSS socio-economic rounds. 75 out of these villages were selected for observing whole field harvest.

**MINISTRY OF FOOD, AGRICULTURE, COMMUNITY DEVELOPMENT  
& CO-OPERATION; INDIAN COUNCIL OF AGRICULTURAL RESEARCH  
(I.C.A.R.), REGIONAL OFFICES (ARECANUT AND COCONUT).**

**1.2.6 Sample survey for estimation of area and yield of arecanut and coconut.**

1.2.6.1 A special series of crop estimation surveys for estimating the area and production of arecanut and coconut was jointly sponsored by the two concerned Regional Offices of the I.C.A.R. in 1961-62 and have been conducted in different States every year since then. The details for each State in respect of the surveys carried out in 1964-65 and 1965-66 are furnished under the relevant States.

**1.2.7 Surveys for block level estimates of agricultural production.**

1.2.7.1 These are continuing pilot surveys launched by I.C.A.R. to study whether by a judicious combination of a large number of eye-estimates and a limited number of crop cutting experiments, reliable estimates of crop production at the block level could be obtained without unduly enhancing the existing work load of the field machinery available in the blocks. During 1962-63, the survey was taken up on wheat crop in three districts namely Patna, Dhulia and Meerut and in 1963-64, the survey covered 12 districts in 11 States. During the rabi season of 1964-65, the survey was extended to three more districts of Bihar and one more district of Maharashtra.

1.2.7.2 During 1965-66, these surveys were extended to 9 districts in Bihar, 3 each in Maharashtra and Uttar Pradesh, 2 in Punjab and 1 each in Assam, Andhra Pradesh, Gujarat, Mysore, Madras, Madhya Pradesh and Rajasthan, thus covering 24 districts in all.

1.2.7.3 In all the district, principal food grains were covered by the scheme. The crop cutting experiments were conducted by the revenue staff and the eye-estimates were obtained by Village Level Workers. Independent eye-estimates were also made by the revenue staff in respect of the fields allotted to them for drop cutting, for purposes of comparison.

1.2.7.4 The design of the survey was two phased stratified sampling with village level worker circles in each block taken as strata. Within each stratum, 4 to 5 villages were randomly selected and in each of these villages, 4 fields were selected at random for obtaining eye estimates of yield.

1.2.7.5 From the above selected villages, a sub-sample of two villages per stratum was selected for crop cutting. Within each of these villages, two fields were selected randomly out of the fields selected for eye estimates and in these fields, crop cutting was conducted selecting one plot per field.

**1.2.8 Sample survey for the study of cultivation practices and yield of fresh fruits in Andhra Pradesh.**

1.2.8.1 This pilot sample survey to study the extent of cultivation, cultivation practices and yield rates of important fruit crops like mango, banana, and citrus fruits was started in Andhra Pradesh from July, 1965. The second round of the survey was taken up from July, 1966. The survey covered the entire State of Andhra Pradesh.

1.2.8.2 The main objectives of the surveys were (i) to study the technical and organisational problems associated with the conduct of large scale sample surveys on fruit crops (ii) to obtain reliable estimate of acreage under major fruit crops as well as total acreage under all fresh fruit crops (iii) to obtain reliable estimates of yield rates and total

production of major fruit crops (iv) to collect reliable data concerning manurial and cultivation practices of major fruit crops and (v) incidence of pests and diseases.

1.2.8.3 The sampling design adopted for the first round as well as for the second round of the survey was a stratified two-phased multi-stage random sampling. All the taluks in the State were divided into four categories namely (1) taluks which grow mango in more than 8,000 acres under mango alone (2) taluks which grow citrus as major crop with more than 2,000 acres area reported under citrus alone (3) taluks which grow banana as major crop with more than 1,500 acres area reported under banana and (4) the remaining taluks. The taluks in the last category were grouped into three size strata on the basis of total reported area under fresh fruit crops. There were only 20 taluks in the first category and all of them were taken in the sample. From the remaining taluks, a sample of 12 taluks allocated to different strata in proportion to the area under total fresh fruits, was selected with probability proportional to the reported area under fresh fruits in a taluk.

1.2.8.4 The villages in each taluk were taken as second stage units for selection. A sample of 5 villages for each of the major three fruit crops was selected out of the villages reported to be growing the particular major fruit crop in each selected taluk. Additional sample of two villages for each of the major fruit crop, was also selected out of the villages not reported to be growing a particular major fruit crop in each of the selected taluks. The selection of villages in the former cases was made with probability proportional to area under the respective fruit crop while in the latter case the villages were selected with equal probability.

1.2.8.5 For the purpose of study of the extent of cultivation, all the selected villages were enumerated. The study of yield and cultivation practices of each of the major fruit crops was based on a sub-sample of three villages within 5 selected taluks. For this purpose, within each village, a sample of three clusters of four trees each, was selected out of the total number of trees under each of the important varieties of the major fruit crops. For the study of cultivation practices, a sample of one fruit bearing orchard of each of the important varieties of the major fruit crops and two young orchard were selected in each of the selected villages retained for the study of yield. The data in respect of cultivation practices were collected through enquiry every fortnight while the data on yield were collected by actual weighment and count. The field work of the survey was carried out by the field staff consisting of 32 Assistants supervised by six Supervisors under the overall control of a Field Officer. The administrative control of the scheme was exercised by the Agriculture Department, Andhra Pradesh while technical control of the scheme vested with the Indian Council of Agricultural Research, New Delhi.

### **1.2.9 Sample survey for study of yield and cultivation practices of apple and other temperate fruits in Kumaon region of Uttar Pradesh.**

1.2.9.1 This survey was started in 1963-64 and the details have already been reported on page 5 of the 15th Annual Report. The Second round of the survey was started from October, 1964. The sampling design of the second round remained the same as for the first round except for the fact that for the second round, stratification was based on the data collected during the first round and the area reported under orchards. For the second round, the data on yield and cultivation practices were collected for 5 major temperate fruit crops namely apple, pear, plum, apricot and peach.

1.2.9.2 The third and last round of the survey was started from November, 1965. The type of information collected and the sampling design adopted remained the same as for the second round. Further details are given under the survey reported by Government of Uttar Pradesh.

### **1.2.10 Sample survey for the study of yield and cultivation practices of vegetables in Delhi.**

1.2.10.1 This pilot sample survey was initiated by Delhi Administration during 1964-65 with a view to study the extent of cultivation, yield rates and cultivation practices of vegetables. The main objectives of the survey were to obtain reliable information of acreage, yield rates and cultivation practices of the vegetable crops in Delhi region and to evolve a suitable sampling technique for collection of such data.

1.2.10.2 The design adopted for the survey was stratified random sampling. The region under survey was divided into four strata consisting of (1) Nazafgarh block (2) Alipur and Kanjhawala blocks (3) Mehrauli and Shahdra blocks and (4) villages and urban areas not covered under the above blocks. Within each stratum, the villages were grouped into three sub-strata according to information available on the extent of vegetable cultivation. Within each sub-stratum, a simple random sample of 8 villages

was selected. For each of the selected villages all fields growing vegetables were surveyed and the area under vegetable in each field recorded along with the date of sowing and probable dates of first and last harvests. This information was collected every two months by surveying all the vegetable growing fields in the selected villages. The data regarding cultivation practices and yield was collected for seven vegetable crops *viz.* bhindi, brinjal, cabbage, cauliflower, lauki tori and tomato. For this purpose, within each selected village, out of the fields coming up for harvesting during each period of two months, one field growing each of the seven vegetables was selected. Within each field, a square plot of side 5 meters was located at random for recording the yield as and when the plot was harvested. The data on cultivation practices were collected through enquiry of the cultivators of the selected fields.

1.2.10.3 The field work of the survey was carried out by an *ad hoc* field staff of 13 Enumerators and 2 Supervisors. During 1964-65, the field work of the first round was completed and data collected were analysed. During 1965-66, the second round of the survey was completed and analysis of data was in progress. The field work of the third round is likely to be taken up during 1966-67.

### **1.2.11 Survey for the study of yield and cultivation practices of apple in Himachal Pradesh.**

1.2.11.1 The survey was planned on the lines of the apple survey in Kumaon region of Uttar Pradesh mentioned earlier and after some preliminary investigations, the field work for a full scale survey was taken up from January, 1966. Design, responsibility etc. for this survey are broadly the same as for the Kumaon survey. In all, a sample of 114 villages was selected for the purpose of complete enumeration of fruit trees out of which 40 villages were sub-sampled for the study of yield and cultivation practices.

### **1.2.12 Pilot sample survey for the estimation of area and production of litchi, mango and banana in Muzaffarpur district, Bihar.**

1.2.12.1 A sample survey to estimate area and production and to study cultivation practices of litchi, mango and banana, was started in September, 1965 in Muzaffarpur district of Bihar. The plan of the survey was one of multistage stratified random sampling with anchals (revenue circles) as primary units. All the forty anchals in the district were stratified into three strata according to total area under fruit cultivation as reported during 1964-65. From each of the strata, few anchals were selected without replacement and with probability proportional to the total reported area under fruit cultivation. In all, a sample of 15 anchals was selected for the survey. Further, from each of the selected anchals, seven villages in respect of each of the three crops, were selected with equal probability in such a way that five villages were reporting the area and two not reporting the area of the fruit crops specified above.

1.2.12.2 Thus a total of 315 villages were included in the sample. All the selected villages were completely enumerated for the purpose of area estimation under fruit cultivation. For yield study, a sub-sample of three villages out of five selected from the villages reporting the area for each of the three crops, was retained. From each of these three villages, three clusters of four trees each, were randomly selected in respect of all important varieties of the three fruit crops under study. The data on cultivation practices were collected from one fruit bearing orchard for each of the important varieties and two young orchards of the fruit crops were selected for yield study. These data were collected by enquiry.

1.2.12.3 The field work of the survey was carried out by a staff of 15 Field Assistants supervised by three Supervisors under the overall supervision of a Field Officer. The administrative control of the scheme was exercised by the Deputy Director of Agriculture, Tirhut range, Mauzaffarpur. The field work of the first round of the survey was completed and second round would start in October, 1966.

## **INDIAN STATISTICAL INSTITUTE**

### **1.2.13 Special studies on tobacco yield, Cooch Behar.**

1.2.13.1 A survey was conducted during the period January to March, 1965 by the Indian Statistical Institute to develop suitable technological factors to predict the tobacco production sufficiently in advance before all stages of harvesting.

1.2.13.2 Two villages of Cooch Behar district, West Bengal were covered by the survey. 80 fields growing tobacco were selected purposively. A sample of a 4 cluster of plants, 2 along row and 2 along column, was selected with equal probability. All plants of a square of size 30' x 30' within the selected cluster were completely counted.

1.2.13.3 Data were collected by actual measurement of tobacco leaves, height of tobacco plant and green weight of the harvested leaves. Four whole-time Investigators were employed under one Inspector.

### **1.2.14 Special crop survey (NSS), Spring, 1964-65 (consumption and cropping pattern).**

1.2.14.1 The Indian Statistical Institute conducted (from February to May, 1965) crop survey to study the consumption over small and large reference periods; to compare the crop estimates obtained by interview method with those estimated by direct plot to plot observation; to estimate the extent of land possessed by the households in different parts of the State and to ascertain crop rotation within the year.

1.2.14.2 The rural areas of West Bengal were covered by the survey. Data collected by interviewing the head of household related to consumption of cereals, pulses, fish, etc. in different reference periods. The information regarding utilisation of land possessed by the households during the current crop year was also collected.

1.2.14.3 The sampling design adopted was a two stage one, villages selected with probability proportional to area in the form of two independent interpenetrating sub-samples served as first stage units and the number of households selected systematically as second stage units. Each district was treated as stratum. 80 and 360 villages were allotted to different strata of North and South Bengal on a joint consideration of the geographical area of the stratum and the proportion of the area under rabi crop in multiples of 4 to make 2 sub-rounds with 2 sub-samples each. In each village, 2 systematic samples of 10 households each were selected from the list of households, one with equal probability and the other with probability proportional to area possessed by the households.

1.2.14.4 48 Investigators were employed under the supervision of 12 Inspectors and 3 Supervisors. The field staff was under the control of Indian Statistical Institute field branch.

### **1.2.15 Special crop survey (NSS), Autumn and Winter.**

1.2.15.1 The Indian Statistical Institute conducted special crop survey in autumn and winter, 1964-65 and 1965-66 with the object of developing sampling and field techniques for large scale crop surveys for estimating acreage and production with precision. The scheme was also designed to facilitate the sampling of unusually big villages and big plots. Crop cutting experiments were also tried with the help of local recruits. The duration of the autumn survey was from June to September, 1965 while for winter, it was October 1965 to January, 1966.

1.2.15.2 The rural areas of West Bengal except the hilly regions of Darjeeling district were covered by the survey. Data were collected on acreage under different utilisations by direct plot to plot observation and on yield by crop cutting experiments on jute and aus paddy in autumn and aman paddy and mesta in winter.

1.2.15.3 List of villages given in census hand book 1951 provided the frame for the survey. 648 and 216 villages had been allocated to 36 strata of South Bengal and 12 strata of North Bengal respectively. The allocation was done on a joint consideration of geographical area of the stratum and the proportion of area under jute and aus paddy for 1957-58 or aman area for 1959-60, as was the case. The allocation was rounded off to a multiple of six to make 2 half samples in 3 sub-rounds. A two stage sampling design was adopted for area survey with villages selected with probability proportional to area as first stage units. 6 clusters of 10 plots each, selected with probability proportional to size, were the second stage units for South Bengal and 6 grids of 2.50 acres each selected at random for North Bengal. For the yield survey, the design conformed to three stages namely revenue villages, clusters of plots or grids and a small circular area of 50 sq. ft. approximately, being the sampling units at the first, second and third stages respectively.

1.2.15.4 During 1965-66, 6 and 26 villages could not be surveyed in the case of autumn and winter surveys respectively because of border areas and other reasons and were treated as casualties.

1.2.15.5 During 1964-65, the field staff consisted of 48 Investigators, 12 Inspectors and 3 Supervisors while for 1965-66, 36 Investigators, 9 Inspectors and 3 Supervisors of Indian Statistical Institute (Field Branch) were employed for the field work.

## **GOVERNMENT OF ANDHRA PRADESH**

### **1.2.16 Crop estimation survey on principal food crops.**

1.2.16.1 The survey was sponsored by National Sample Survey and conducted by the Bureau of Economics and Statistics, Andhra Pradesh with a view to obtain reliable estimates of average yield and outturn of principal food crops in each district and for the State and also to revise the present set of normal yield of these crops in course of time.

The survey had been a regular annual feature and commenced with the start of the agricultural year. Seasonwise planning (*i.e.* kharif and rabi) of crop cutting experiments was undertaken in respect of paddy and jowar crops. Six principal food crops *viz.* paddy, jowar, bajra, ragi, maize and redgram were covered by the survey. Experiments were planned on each crop in proportion to the area in districts growing the crop.

1.2.16.2 Data were collected on seed rate and type, type of manure applied and quantities applied, particulars of developmental activities, sources of irrigation, use of improved agricultural practices, condition of crops at different stages, germination, stand etc. at the time of harvest and undried and dried yields in the selected plots. The printed forms were supplied to the Agricultural Assistants, Revenue Inspectors, Progress and Taluk Statistical Assistants. They were responsible for the field work, selection of survey and sub-division numbers, marking out plots, processing the weight of the final produce, filling of the forms and forwarding same to the District Statistical Officers after scrutiny and a copy to the Bureau.

1.2.16.3 The total number of sample villages were fixed at State level on the basis of previous year's analysis and were distributed among the different districts and different taluks within a district in proportion to the area under the crop. The sampling design adopted was one of multistage stratified random sampling with tehsils as strata, villages as primary sampling units, fields growing the requisite crops as units in the secondary stage and plots of defined size as ultimate units. The plot size in respect of paddy jowar, bajra, ragi and maize was 1/100th of an acre while for redgram 1/40th of an acre.

1.2.16.4 During 1965-66, the percentages of non-response in respect of kharif paddy, jowar, bajra, ragi, maize and redgram were respectively 13, 22, 9, 13, 8 and 35 while that of ragi paddy and jowar were 31 and 18 respectively. The field staff connected with survey were given training at the commencement of the survey. The services of the Extension Officers (Agriculture), Revenue Inspectors, Progress Assistants and Taluk Statistical Assistants were utilized for the collection of data. The staff employed at the State headquarters were 1 Assistant Director, 2 Senior Investigators, 1 Agricultural Assistant and 2 Computers. Kit boxes containing the crop cutting equipments were supplied to many of the field workers.

1.2.16.5 During the year 1965-66, the analysis of the results of the kharif and rabi crop was completed. The estimated average yields and production figures were published in "Season Crop Report" and in "Statistical Abstract" issued by the Bureau.

### 1.2.17 Crop estimation survey on principal non-food crops.

1.2.17.1 The survey was sponsored by National Sample Survey and conducted by the Bureau of Economics and Statistics, Andhra Pradesh during 1965-66. The purpose, type of information, frame and sampling design for the survey were the same as reported for principal food crops survey. The survey covered the non-food crops *viz.* groundnut, sesamum, castor, sugarcane, cotton and tobacco. The coverage of the survey on different crops was as follows :

Crop	No. of districts covered out of 20 districts	Percentage of area covered
1	2	3
Groundnut	18	99
Sesamum	14	95
Castor	9	91
Sugarcane	9	83
Cotton	10	98
Tobacco	6	87

Plot size for different crops was as follows :

Groundnut, tobacco and sugarcane.	One cent or 1/100th of an acre ( <i>i.e.</i> 50 links × 20 links)
Sesamum and Castor	2½ cents or 1/40th of an acre ( <i>i.e.</i> 50 links × 50 links)
Cotton	5 cents or 1/20th of an acre ( <i>i.e.</i> 100 links × 50 links)

1.2.17.2 Percentage of non-responses for groundnut, sesamum, castor, sugarcane, cotton and tobacco were respectively 10, 8, 21, 8, 28 and 31. The field work in respect of groundnut, sesamum and castor was entrusted to the Progress Assistants, Taluk Statistical Assistants belonging to the State Statistical Department and that of sugarcane, cotton and tobacco was entrusted to Agricultural Extension Officers and Special Agricultural Assistants of the State Agricultural Department. The personnel employed at the headquarters were 3 Senior Investigators, 4 Computers and 3 Supervisors.

1.2.17.3 The field work of the survey for the year under review was completed and results comm-unicated to the Directorate of National Sample Survey. The estimates of average yield and production in respect of all non-food crops were published by the Bureau in the annual "Season and Crop Report."

### **1.2.18 Sample survey for the estimation of area and yield of coconuts.**

1.2.18.1 The survey was sponsored by Indian Central Coconut Committee and the Indian Central Arecanut Committee and was conducted during 1964-65 by Bureau of Economics and Statistics, Government of Andhra Pradesh in consultation with the Statistical Adviser, Institute of Agricultural Research Statistics, I.C.A.R., New Delhi. The main object of the survey was (i) to estimate the total number of bearing and non-bearing palms, yield per bearing palm and ultimately the total production in the State (ii) to estimate the area under coconut and (iii) to collect ancillary data on the incidence of pests and diseases, cultivation practices, disposal of produce, etc. Similar surveys on both coconut and arecanut have been carried out annually from 1958-59 and reported in the Annual Report of the relevant years. The survey was confined to coconut during 1964-65 and covered the taluks of Amalapuram, Razole and Kotapet of East Godavari district and Narasapur of West Godavari district which constituted about 71 per cent of the total area under coconut in the State. Information was collected on the number of bearing and non-bearing palms, spacing between palms and number of rows, yield, cultivation practices, manuring, irrigation of crops, incidence of pests and diseases, disposal of produce and requirements of seedlings, etc. The data were collected by the field staff specially appointed under the survey.

1.2.18.2 The sampling design adopted for the survey was stratified multistage sampling with taluks as strata. A sample of 80 villages was taken both for area enumeration and yield estimation at the State level. The number of villages planned in the taluks were in proportion to the area under coconuts. The selection of villages for area enumeration and yield estimation within the strata was done with probability proportional to the area under coconut in the villages. As per instructions of the Institute of Agricultural Research Statistics, New Delhi, 50 per cent of the villages were retained from the second, third and fifth rounds of the survey and a fresh sample of 40 villages was drawn from the entire list of villages growing coconut. Sampling was done with replacement. For yield data, in the case of retained villages, the same set of palms were taken for harvesting experiments. In all these selected villages, 3 gardens were selected for detailed study and one cluster consisting of 6 bearing palms, each from the first 2 gardens and two clusters from the third garden were selected for conducting harvesting experiments 10 stray palms were randomly selected for harvesting experiments in all the selected villages.

1.2.18.3 The field work was carried out by seven Fieldmen and one Assistant Statistical Investigator while the scrutiny, tabulation, analysis and preparation of annual report at headquarters was done by seven Senior Investigators and one Junior Investigator.

1.2.18.4 During 1964-65, the field work in all the 80 villages was completed and the tabulation of the data was in progress. The amount of expenditure incurred for the survey was Rs. 30,664.

## **GOVERNMENT OF ASSAM**

### **1.2.19 Crop estimation survey on principal food and non-food crops.**

1.2.19.1 The crop estimation surveys are carried out every year under the administrative and technical control of the Director of Statistics, Assam in consultation with the Chief Director, National Sample Survey, Government of India. The field work was done by the Field Assistants of the Department of Economics and Statistics, Assam under the supervision of Inspectors and Statistical Officers.

1.2.19.2 The crops covered by these surveys were winter paddy, autumn paddy, winter potato, jute, rape and mustard, sugarcane and matikalai (black gram). In case of autumn paddy, the survey covered the seven plain districts and two hill districts (Garohills and United Mikir and North Cachar Hills) growing the crop but for winter paddy, the survey covered all the eleven districts of the State. In case of winter potato, seven plain districts were covered. The survey on matikalai was confined to only five main

matikalai growing districts of the State *viz.* Goalpara, Kamrup, Darrang, Nowgong and Sibsagar. Similarly for jute, the coverage was restricted to Goalpara, Kamrup, Darrang, Nowgong and Garo Hills districts. Seven plain districts and United Mikir and North Cochar (N.C.) Hills were covered by the survey for sugarcane while in case of rape and mustard, the coverage was restricted to all the seven plain districts and Garo Hills and United Mikir and N. C. Hills.

1.2.19.3 The statistical design adopted for all these surveys for plain districts was one of stratified multistage random sampling with revenue circles or sub-divisions as strata. In case of autumn paddy, winter paddy, winter potato and rape and mustard, the revenue circles were the strata while in case of jute, sugarcane and matikalai, the sub-divisions of the districts were the strata. In respect of hill districts, the districts themselves were considered as strata for all the crops except winter paddy where the development blocks were considered as strata.

1.2.19.4 Within each stratum, a certain number of villages were selected at random for each crop, the number of selected villages being roughly in proportion to the area under the individual crop in the respective strata. In case of hills districts, the list of villages growing the individual crops constituted the sampling frame for selection of villages.

1.2.19.5 In each selected village, two fields were selected at random and in each selected field, a crop-cutting experiment was conducted on a randomly located plot of size  $16\frac{1}{2}$  feet ( $1/16$ th of an acre) except in case of potato where the plot size consisted of 7 consecutive rows each measuring  $16\frac{1}{2}$  feet in length. Location of experimental plot, harvesting and threshing the produce thereof and recording the weight of the produce were the different stages of the experiment.

1.2.19.6 Central driage experiments were conducted in respect of winter and autumn paddy, rape and mustard and matikalai crop under the supervision of District Statistical Officers in order to arrive at estimates of reduction in weight due to driage of freshly harvested grains. In case of jute, supplementary operation like retting, extraction of fibres, drying of fibres, average ratio of dry fibres to green harvest etc. were carried out in 50 of the selected villages. In case of sugarcane survey, supplementary operations were conducted in a sub-sample of experiments for finding out the ratio of gur to cane.

#### **1.2.20 Sample survey for estimation of area and production of arecanut and coconut.**

1.2.20.1 The survey is being conducted every year in rounds since 1958-59 by the Directorate of Statistics, Assam under the technical direction of Institute of Agricultural Research Statistics, I.C.A.R., Government of India with a view to estimate the area and production of arecanut and coconut in the States. The duration of one round of the survey is one year beginning from the month of July. This was the 8th round of the survey and covered all the districts of the State excepting Mizo district where the acreage under these two crops was negligible. The reference period for the survey was July, 1965 to June, 1966. The field work of the 8th round of the survey was completed in June, 1966.

1.2.20.2 Information on number of bearing and non-bearing trees, number of trees removed and new trees planted, area of gardens and name of other crops grown in mixed gardens were collected from the villages selected for enumeration of trees. In addition, information on age classifications of garden trees, healthy and diseased trees, cultivation practices such as manuring, irrigation, soil type, spacing of garden trees, names of diseases and pests, yield of each selected tree, nature of disposal of the produce and harvest price were also collected from the villages selected for harvesting experiments.

1.2.20.3 For enumeration of trees, the villages constituted the frame while for harvesting experiments, the clusters of trees in gardens and selected scattered trees within the selected villages were taken as the sampling units. Sub-divisions of districts were the strata. Number of sample villages were allocated on the basis of the area under homestead and miscellaneous crops. The villages and the trees were selected at random. For harvesting and study of cultivation practices, a sub-sample from the sample villages selected for enumeration work was taken (size being about one third of the total number of villages selected for enumeration work). From each of the selected villages, 3 gardens and 10 scattered trees were selected for study of cultivation practices. Harvesting experiments were conducted in 4 clusters of trees (one cluster consisting of 8 arecanut/6 coconut trees) selected from these 3 gardens and also in 5 scattered trees out of the 10 scattered trees selected for study of cultivation practices.

1.2.20.4 Enumeration work was conducted in all the selected villages in respect of arecanut and coconut. Harvesting experiment were however carried out in all the selected villages in case of arecanut but only in 106 villages out of 107 selected villages in case of coconut.

1.2.20.5 The total expenditure incurred on the scheme was Rs. 59,645 in 1964-65 and Rs. 64,000 in 1965-66.

## GOVERNMENT OF GUJARAT

### 1.2.21 Integrated scheme of crop estimation survey on food and non-food crops.

1.2.21.1 The survey which is of a continuous nature was conducted during 1964-65 and 1965-66 by the Directorate of Agriculture, Government of Gujarat with the close co-operation of panchayat staff in all districts except Surat, Bulsar, Broach (Part) where revenue staff was associated. The purpose of the survey was (i) to estimate average yield per acre and total production of principal crops for the individual districts and the State as a whole and (ii) to determine the normal yields in course of time. The results of the State wide surveys were utilised for framing estimates of production at various stages of forecast reports. The field work of the survey commenced soon after the sowing of the kharif crops and concluded after the harvest of rabi crop. The whole of Gujarat State was covered by the survey. For commercial crops *viz.* isabgul, cumin and fennel, a pilot survey was conducted in major crop growing districts for estimating production of these crops before their extension on a State-wide scale.

1.2.21.2 Data regarding actual yield of the crop in the selected plot together with the ancillary information on various factors *viz.* soil type, rotation of crops, seed rates, fertilizers, irrigation, crop mixtures etc. for the sampled villages were collected by the panchayat staff in addition to their normal duties. The experiments in a sub-sample of villages selected for the survey were also conducted on food crops for estimating the moisture contents in the grain at the time of harvest of the crops. The information was collected by actual conduct of experiments and by interrogating the cultivators of selected plots.

1.2.21.3 The average of acreage figures as reported under different crops in the State final forecast and annual season and crop report over years was taken as the frame. Stratified multistage sampling was adopted wherein the villages, the first stage units, were selected with probability proportional to size of stratum. The fields within the selected villages and the plots within the selected fields were chosen by random sampling as the second and third stage units respectively, number of fields per village being 2 and the size of the plot being 1/40th acre except for cotton where it was 1/20th acre.

1.2.21.4 The scrutiny, compilation and analysis of data was done by 1 Senior and 4 Junior Statistical Assistants. The Panchayat staff *i.e.* Taluka Officers, Extension Officers (Agriculture block), Statistical Assistants, District Agriculture Officers and District Statistical Officers were associated in supervision in about 10 per cent of the villages entrusted to them at the time of harvest of crops.

1.2.21.5 The overall non-response was of the order of 30 per cent each year. As the field work was conducted by the panchayat staff and the Directorate of Agriculture, an amount of Rs. 15,308 during 1965-66 was spent for payment of only labour charges as against Rs. 20,950 in 1964-65. The budget provision for the additional staff provided in the scheme was Rs. 89,700/-.

1.2.21.6 During the year 1965-66, the entire work in connection with the survey was completed.

1.2.21.7 The results of the survey were utilised in estimating production of food and non-food crops at various stages of issue of forecasts. The estimates of average yields over a series of years are utilised for determining the normal yields of crops and the same have been done for principal crops *viz.* bajra, kharif, jowar, wheat, groundnut and cotton for some districts.

### 1.2.22 Scheme for pilot survey to estimate the agricultural production in Mehsana district.

1.2.22.1 The survey was conducted by the Assistant Statistician, Mehsana Development Block, Gujarat State for evolving a suitable sampling technique to obtain reliable estimates of production of principal food crops in respect of developmental blocks of the selected district through a combined approach of crop estimation surveys and eye appraisals. Duration of the survey would be for 2½ years and its further extension depends upon the success of the pilot survey.

1.2.22.2 During 1963-64, survey on only wheat crop was conducted. It was extended to kharif crops (bajra and jowar), besides rabi wheat, during the years 1964-65 and 1965-66. The plan adopted in the survey was a stratified random sampling with village level worker's circle in a block as primary unit, a field as a secondary unit and a plot of prescribed size *i.e.* 33' × 33' as the ultimate unit of sampling. In Mehsana



district, 3 to 6 villages were selected for eye estimation and yield. Out of these, first two villages were selected for conducting crop-cutting experiments by village level workers in two fields in each of the selected villages. Similarly, two fields were selected for eye-estimation for estimating yield by Talati-cum-Mantris. The data were collected by the staff by paying actual visit to the selected plot and getting all the operations from harvesting to threshing and separating of grains in their presence. Non-response was about 20 per cent.

1.2.22.3 The field work was done by Gramsevaks and Talati-cum-Mantris under Taluka Development Officers. The analysis of the data was done by two Computers, one Senior Statistical Assistant and one Aval Karkum under the supervision of an Assistant Statistician. Expenditure incurred during 1965-66 was Rs. 20,555 approximately.

## **GOVERNMENT OF JAMMU & KASHMIR**

### **1.2.23 Rationalised supervision of crop-acreages by primary reporting agency**

1.2.23.1 The survey was conducted by the Revenue Department under the technical guidance of the State Planning Department and the Ministry of Food and Agriculture, Government of India. The purpose of the survey was to work-out correction factor and to increase supervision of the primary workers by providing an element of surprise checks.

1.2.23.2 The survey was conducted both for kharif and rabi seasons. It covered whole of the State except Ladakh district. Besides, the estimation of acreages under different crops, data in respect of page-totals of khasra girdawari etc. were collected.

1.2.23.3 List of villages from Girdawar Qanungo Circle for the State formed the frame of the survey. Simple random sampling design was adopted.

1.2.23.4 Investigator at district level supplemented and supervised the work of Girdawar Qanungos. Statistician, Assistant Director and Director of the Land Records also supervised the work and Statistical Assistants tabulated the data collected.

1.2.23.5 The technical staff consisting of one Statistician, two Statistical Assistants two Junior Computers, nine Investigators (at the rate of one per district) were employed for the survey.

1.2.23.6 The total expenditure during the year 1964-65 was Rs. 32,200. Survey report for rabi and kharif 1964-65 was submitted to the government.

### **1.2.24 Crop estimation survey.**

1.2.24.1 The survey was conducted in the kharif and rabi seasons every year by the State Revenue Department under the direct control of the Financial Commissioner and technical guidance of the State Planning Department and the Directorate of National Sample Survey, Government of India. The purpose of the survey was to obtain accurated estimate of average yield per acre and total production of different food crops viz. paddy, maize and wheat. The survey covered all the districts of the State excluding Ladakh where these crops were not grown.

1.2.24.2 Information regarding (i) irrigated and unirrigated areas (2) area sown with manure and in mixture (3) manured and unmanured areas (4) area sown with improved and local variety of seed and (5) total out-turn of the crop in the State were collected by Girdawar Qanungos under the supervision of Tehsildar, Naib-Tehsildars and Investigators by listing revenue villages by Girdawar Qanungo Circle-wise.

1.2.24.3 List of revenue villages by Girdawar Qanungo circle-wise for the State formed the frame. Multistage stratified random sampling technique was adopted.

1.2.24.4 During the year 1964-65, non-response was 25 to 30 per cent. The survey report for 1964-65 was submitted to the Government.

1.2.24.5 The total expenditure during 1964-65 was Rs. 32,200.

## **GOVERNMENT OF KERALA**

### **1.2.25 Sample survey for estimation of area under and production of coconut and arecanut.**

1.2.25.1 This repetitive survey sponsored by the Government of Kerala was continued in the seventh round during 1965-66. The sixth round was conducted during 1964-65. The aim of the survey was to estimate (i) the area and number of coconut and arecanut palms (ii) the average yield per bearing palm (iii) the annual rate of change in the number of palms per acre of coconut and arecanut plots and (iv) to collect

ancillary data on cultivation practices prevalent in the State. The survey covered the entire Kerala State excluding the forest area. The data were collected by direct observation in the plots by the investigators posted for the survey supplemented by enquiry of cultivators. Besides the main items of enquiry viz. number of palms, average yield and cultivation practices, the data collected included disposal of the harvested produce. Pilot survey of three rounds, each for one year, was conducted during the agricultural years 1959-60 to 1961-62 with 200 villages as the sample size for each year.

1.2.25.2 The sampling method adopted for the survey was a stratified multistage sampling. Strata were formed by the cross-sections of the Revenue Districts with natural regions—Highland, Midland and Lowland. The total sample was distributed to the different strata in proportion to the area under coconut and arecanut crops together in the stratum. Within the stratum, villages were selected with equal probability. From each of the selected village, a sample of 10 per cent of the plots grouped in clusters of 10 plots each was selected systematically for enumeration of palms for area estimation. 5 clusters each containing at least one plot with 6 bearing coconut palms were randomly selected from the clusters selected for enumeration of palms. A plot with at least 6 bearing coconut palms was selected from each of the 5 clusters for yield observation and study of cultivation practices. If this plot also contained at least 16 bearing arecanut palms, selection of plots for crop cutting experiments on arecanut was not separately done in the relevant cluster. If, however, the plot did not contain 16 bearing arecanut palms, another plot with at least 16 bearing arecanut palms was selected at random for harvesting experiments on arecanut from each cluster. From each of the selected plot, 6 bearing coconut palms in 2 clusters of 3 palms each and 16 bearing arecanut palms were selected at random for observing the harvest. Harvesting observations on arecanut were confined only to the first six of the 16 selected palms. The remaining 10 palms were retained for studying the proportion of ripe and tender bunches plucked during the year. Data on cultivation practices were collected from all plots selected for harvesting experiments.

1.2.25.3 The staff employed for collecting field data consisted of 5 Upper Division Investigators and 21 Lower Division Investigators and analysis and tabulation work was handled by 1 Research Officer assisted by 3 Lower Division Compilers. The Assistant Director sanctioned for pilot and special surveys was in direct charge of the survey. The total cost of the survey for the year 1965-66 was Rs. 65,650 and for 1964-65, it was Rs. 54,613.

1.2.25.4 During the year 1965-66, the preparation of the report relating to the sixth round of the survey was in progress. The analysis of the data collected for the seventh round of the survey was also in progress.

### **1.2.26 Survey for the improvement of plantation statistics.**

1.2.26.1 During the year 1965-66, the fifth round of this survey was carried out by the Bureau of Economics and Statistics, Kerala, for preparing estimates of production and area under rubber, coffee and tea in the State. The fourth round was carried out in 1964-65. Survey on rubber covered all the districts of the State whereas in case of registered tea estate, it covered Kottayam district. The survey on coffee covered all the districts other than Alleppey and Trichur. In respect of the fifth round of sample survey on tea and rubber, the calendar year 1964 was the reference period and in case of coffee, the reference period was the Agricultural year 1964-65. Ratio method of estimation was used for estimating the characteristics.

1.2.26.2 Frame for the survey on rubber was the record maintained by the Rubber Board while for Coffee, the frame was prepared on the basis of data furnished by the Coffee Board. List of small tea estates were obtained from the Tea Board. A stratified random sampling design was adopted, the stratification being done on the basis of districts and the size groups of estates in different strata. The sample size was fixed at 5 per cent. The allocation of the total number of sample units to different strata was done in proportion to the area in the stratum.

1.2.26.3 During the period under review, filled in questionnaires were received and the analysis work was taken up. Estimates of area, production and employment were prepared. The cost of the survey was Rs. 15,608 and Rs. 16,596 for 1964-65 and 1965-66 respectively.

### **1.2.27 Crop cutting survey on paddy.**

1.2.27.1 This survey is regularly carried out in the State every year for estimating the average yield of three crops of paddy and the total production of rice for each taluk and for the State. The details of the survey remained same as reported on page 29 of the 14th annual report except that the survey was extended to a few more taluks. During 1965-66, the size of the ultimate sampling units was changed to the metric system with a square plot of side 5 metres replacing the earlier plot of 16½ ft. square. The second stage

sampling units namely survey sub-divisions were selected by systematic random sampling unlike in previous years where simple random sampling method was used at all stages of selection.

1.2.27.2 During 1965-66, the data were collected for the three crops of autumn, winter and summer paddy and estimates of average yield and total production of rice for each taluka and State were prepared.

### 1.2.28 Crop cutting survey on tapioca.

1.2.28.1 This is a regular survey conducted by the Bureau of Economics and Statistics for estimating the average yield per hectare and the total outturn of tapioca in the State. The details of the survey remained similar to those reported on page 30 of the 14th Annual Report except for a change in the number and size of crop cuts. From 1964-65, only one square cut of side 6 ft. was taken in each selected patch as against two square cuts of side 10 ft. as reported in the 14th Annual Report. The survey covered all the 55 taluks in the State.

1.2.28.2 Survey was conducted in all the villages selected in each taluk for the land utilization survey of the department. In each village, the list of dry land plots chosen for land utilization survey was used as the frame for the survey. From the list, two plots were selected for conducting crop cutting experiments with equal probability.

1.2.28.3 During 1964-65 and 1965-66, taluka-wise estimates of yield per hectare of tapioca in each district were prepared using ratio method of estimation.

### 1.2.29 Pre-harvest estimates of paddy, pepper, sugarcane and groundnut.

1.2.29.1 The survey is regularly carried out in the State every year by the Bureau of Economics and Statistics with a view to obtain the pre-harvest estimates of area and yield of paddy, pepper, sugarcane and groundnut. Some changes in coverage different from 1963-64, were reported as follows for the years 1964-65, and 1965-66 :—

	1964-65	1965-66
1. Paddy :		
Autumn crop . . . . .	52 taluks	51 taluks
Winter crop . . . . .	53 taluks	53 taluks
Summer crop . . . . .	29 taluks	29 taluks
2. Pepper :	All taluks	All taluks
3. Sugarcane	16 sugarcane growing taluks.	20 sugarcane growing taluks.
4. Groundnut	4 groundnut growing taluks.	4 groundnut growing taluks.

1.2.29.2 The frame used was the plots selected for land utilization survey. Three plots each selected for land utilization survey were selected by simple random method.

1.2.29.3 During both the years under review, the data were collected and the estimates were prepared. During 1965-66, the amount of expenditure incurred on the survey was Rs. 5,521.

### 1.2.30 Crop cutting survey on sugarcane.

1.2.30.1 The survey was conducted by the Bureau of Economics and Statistics during harvesting season—October, 1965 to February, 1966 with a view to estimate the average yield per hectare in all the districts where the crop was grown. The survey covered 20 taluks. Information was collected on the weight of sugarcane in the experimental plot, variety of sugarcane and the details of chemical manures by direct observation.

1.2.30.2 The sampling method adopted was the stratified multistage random sampling, the taluk being the stratum. 15 villages were selected at random from each taluk and a square cut of side 3 metres was taken in one random survey sub-division selected in each village. The observation made on the harvest from these square cuts constituted the data required. The characteristics under study were estimated by ratio method.

1.2.30.3 The planning of surveys, the field work and analysis of data were done by the regular staff of the department.

### 1.2.31 Crop cutting survey on ginger.

1.2.31.1 The survey was conducted by the Bureau of Economics and Statistics, Government of Kerala during harvesting season viz. November, 1965—January, 1966 with a view to estimate the yield per hectare of ginger in each district of the State. The

survey covered 10 taluks in the State selected in the head office. The information was collected on weight of ginger in the experimental plot, chemical manure used etc. by direct observation of sample units investigating personally.

1.2.31.2 The sampling design adopted for the survey was stratified multistage sampling with taluk as strata. The sample was drawn in 4 stages selecting 5 census villages in each taluk at first stage, 3 clusters of plots in each selected village at second stage and one plot in each selected cluster and a experimental plot of size 2x2 sq. metres in each selected plot at third and fourth stages respectively by simple random sampling method at each stage. The harvest from the plots was recorded and the total production of ginger was obtained by using ratio method of estimation.

1.2.31.3 The field work, processing and report writing work was carried out by 8 Statistical Inspectors and 10 Investigators belonging to the regular staff of the Bureau.

1.2.31.4 The estimates of the average yield of ginger per hectare in each district were prepared during the year 1965-66. The amount of expenditure incurred on survey was nil as no separate staff were employed for the survey.

### **1.2.32 Survey on jack fruit production.**

1.2.32.1 The survey was conducted by State Bureau of Economics and Statistics during the month of April, 1966 with a view to estimate the production of jack fruit in the State in the year 1965-66. The survey covered only a sample of 7 villages in each district from the midland region and 30 plots were surveyed in each village. Information on bearing and non-bearing proportion of jack trees and the yield per tree separately for the two major varieties 'Koozha' and 'Varikka' were collected by personal investigation and direct observation of sample units.

1.2.32.2 Two stage stratified sampling method was adopted for the survey. Districts in the State were taken as strata. List of census villages in each taluk of the district served as the sampling frame at first stage of selection and the dry land survey subdivision numbers from revenue records at the second stage of selection. In each district, 7 Census villages were selected and in each selected village, 30 dry land plots were chosen using simple random sampling at both stages of selections. The information was collected from the selected dry land plots.

1.2.32.3 The field work was carried out by the field staff employed for the survey. One Investigator was posted in each taluk for the field work. The field work was inspected and supervised by the Statistical Inspector at the taluk level. The overall supervision of the survey at the district level was attended to by the District Statistical Officer.

1.2.32.4 The field and analysis work was completed during the period under review. Number of jack fruits produced in 1965-66 was estimated and a report was published.

1.2.32.5 Separate cost details as well as total cost of the survey are not available.

## **GOVERNMENT OF MADRAS**

### **1.2.33 Sample survey for estimation of area and yield of coconut and arecanut**

1.2.33.1 The survey which is of continuous nature, was first taken up in December, 1958. Since then, sample surveys were conducted in different rounds on a State-wide scale. During the years 1964-65 and 1965-66, the 6th and 7th rounds were undertaken respectively. The purpose of the survey was to estimate (i) total area under and number of coconut and arecanut palms (ii) average number of bearing and non-bearing palms (iii) average yield per bearing palm per year and to collect information regarding the cultural practices of coconut and arecanut like manuring, irrigation, plant protection measures, replacement, disposal of produce etc. The data collected related to the fasli year viz. July to June. Data were collected by physical observation by an ad hoc field staff. During 1964-65, the survey was undertaken only for estimation of area and yield of coconut.

1.2.33.2 The villages were grouped for sampling frame as (i) villages growing coconut alone (ii) villages growing coconut and arecanut and (iii) villages growing arecanut alone. The plan of the survey was a stratified two stage one, village and garden being the first and second stage units. For yield estimation survey, the design was a three stage one with village, garden, and cluster of palms being the first, second, and third stage units respectively. Villages growing coconut/arecanut formed the stratum-I, villages growing both coconut and arecanut constituted stratum-II and all villages in Kanyakumari district and Shencottah taluk of Tirunelveli district formed the stratum III. 3 coconut/arecanut growing gardens in a village were surveyed for detailed classification of palms and study of cultivation practices and 10 coconut/arecanut palms grown

as stray in different survey numbers, were surveyed for collection of data on various cultivation practices. A sample of three gardens was selected for locating one cluster of 6 bearing trees in each of the I and II selected gardens and 2 such clusters selected at random in the III garden. During both the years 1964-65 and 1965-66, 50 per cent of the villages were selected afresh from out of 200 villages and the remaining 50 per cent were retained from the previous three rounds conducted in the years 1959-60, 1960-61 and 1961-62. Yield estimation was done only in the villages selected afresh and the enumeration of palms was carried out in all the 200 villages selected for the State as a whole. An additional sample of 40 villages from the category of villages which were reported to be not growing coconut/arecanut were selected for enumeration of palms, if any, in those villages.

1.2.33.3 The broad plan of the survey was designed by the Statistical Adviser, Institute of Agricultural Research Statistics, I.C.A.R., New Delhi. The selection of villages for the sample surveys on coconut and arecanut was done at the headquarters office, Statistics Department. At the field level, gardens, palms for yield estimation and 10 stray palms for cultivation practices were selected. Revisits to the villages were made to collect harvest particulars at different harvest stages.

1.2.33.4 The field staff were intensively trained in the method of work accompanied by spot demonstrations. An ad hoc staff of 2 Assistant Statistical Investigators and 10 Field Supervisors were appointed for the collection of data while ad hoc staff of one Statistical Inspector and one Computer were appointed at headquarters for compilation.

1.2.33.5 The field work relating to the survey in 1965-66 was completed in June, 1966. The scrutiny of schedules was completed and the analysis of the data was in progress.

1.2.33.6 The expenditure on the survey for 1965-66 was Rs. 33,774 and for 1964-65, it was Rs. 28,747.

#### 1.2.34 Crop estimation survey on food and non-food crops.

1.2.34.1 The crop estimation surveys were organised by the Department of Statistics, Madras at the instance of the Directorate of National Sample Survey, New Delhi. The purpose of these surveys was to estimate the average yield and total production of the food crops viz. paddy, cholam, cumbu and ragi and non-food crops viz. cotton, groundnut and sugarcane. The duration of the surveys was one year from 1st July to 30th June. The coverage of each crop was as follows :—

<i>Food crops</i>	<i>Coverage in districts</i>
1. Paddy I	13
2. Paddy II	11
3. Irrigated cholam	5
4. Unirrigated cholam	8
5. Irrigated cumbu	3
6. Un-irrigated cumbu	9
7. Irrigated ragi	10
8. Un-irrigated ragi	10
<i>Non-food crops</i>	
1. Cotton	7
2. Irrigated groundnut	6
3. Un-Irrigated groundnut	11
4. Sugarcane	9

1.2.34.2 Particulars regarding the fields, plots, drriage operations, harvesting and cane to gur ratio were collected in the prescribed forms. Data were collected by direct observation of sample units through personal investigation by the field staff.

1.2.34.3 Firka-wise list of villages growing the respective crops in each taluk was adopted as the frame. The surveys were based on the principle of stratified multi-stage random sampling technique where the taluks in a district constituted the strata. Villages in a stratum formed the primary unit of sampling. The number of villages selected

in each taluk was approximately in proportion to the area under the crop in the taluk. 2 fields in each selected village and a plot of required size in each field selected, formed the second and ultimate units of sampling respectively. The sample size i.e. number of experiments planned at the State level and plot size (2 experiments per village) for the different crops was as follows :—

<i>Crops</i>	<i>No. of experiment planed</i>	<i>Plotsize</i>
Paddy	1040	50 × 20 links (1/100th of an acre)
Cholam	560	do.
Cumbu	640	do.
Ragi	500	do.
Cotton	550	33 feet × 33 feet (1/40th of an acre)
Sugarcane	360	33 ft. × 16½ft. (1/80th of an acre)
Groundnut	650	50 links × 20 links (1/100th of an acre)

1.2.34.4 The villages in each taluk were selected at the Department of Statistics while two fields in the selected village and a plot of specified size in each selected field, were selected by the field staff. The selection of fields and plots in a village was done about a month in advance of the harvesting of the crop. The village was revisited at the time of harvest of the crop to carry out the harvesting and connected operations.

1.2.34.5 The field staff entrusted with the conduct of the crop cutting survey were given a refresher course of training in both the theoretical and practical aspects of the technique at the commencement of the survey by the District Statistical Officers and regional staff of National Sample Survey at Madras. The data were collected by the staff of the Agriculture Department in the case of crop estimation surveys on paddy and non-food crops and Revenue Inspectors of Revenue Department in case of crop estimation surveys on millets. The field work was supervised by the District Statistical Officers. The staff employed for data processing at the headquarters were 1 Assistant Statistical Officer, 3 Statistical Assistants, 3 Computers and 3 Assistants.

1.2.34.6 The percentage of non-response for the crops paddy, cholam, cumbu, ragi, total millets, cotton, sugarcane and groundnut were 7, 5, 11, 18, 11, 75 and 4 respectively. In order to avoid loss of experiments due to non-availability of crop in any of the main villages selected, provision for allotting substitute villages was made.

1.2.34.7 The details of expenditure for the surveys on food crops were not available separately as the survey was included in 'Integrated Scheme for the Development of Statistics'. On non-food crops, the expenditure was Rs. 36,747. During the year under review, the preliminary results of crop estimation surveys on food and non-food crops were worked out and utilised in the preparation of final forecast reports.

### **1.2.35 Pilot survey for block level estimates of agricultural production in North Arcot district.**

1.2.35.1 The survey was conducted by the District Statistical Officer, North Arcot under the overall technical direction of the Institute of Agricultural Research Statistics, New Delhi. The survey which was initiated in November, 1963 continued upto the year 1965-66.

1.2.35.2 The survey was conducted with a view to evolve a suitable design for estimating the production of principal cereal crops in each Community Development Block without unduly increasing the number of crop cutting experiments at the block level. The work of assessing the yield was entrusted to Village Level Workers and the work of conducting crop cutting experiments to the Karnams.

1.2.35.3 The list of villages in each village level workers' circle constituted the sampling frame. The sampling design adopted was one of stratified multistage random sampling. Village level workers' circle constituted the strata from each of which 5 villages were selected at random for collecting necessary data. From each selected village, 5 fields growing the crop were selected and the yield estimates by eye appraisal were recorded. The actual yields in two out of the five fields selected in each village were ascertained by conducting crop cutting experiments.

1.2.35.4 The staff strength for the survey was 1 District Statistical Officer, 5 Statistical Inspectors and 2 Computers. The expenditure incurred on the scheme for the financial year 1965-66 was Rs. 72,613. Due to good response, there was much improvement in collection of data during 1965-66.

## GOVERNMENT OF MAHARASHTRA

### 1.2.36 Scheme for estimation of area and production of coconut and arecanut.

1.2.36.1 The survey which is of a continuous nature, was undertaken by the Statistician, Department of Agriculture, Poona during 1964-65 with a view to (i) evolving a sampling technique for the annual estimation of average yield and production (ii) obtaining reliable statistics of area and number of bearing and non-bearing palms (iii) collecting ancillary data on the current cultural and manurial practices and on the incidence of pests and diseases.

1.2.36.2 The survey on coconut was carried out in all the four districts of Konkan viz. Ratnagiri, Kolaba, Thana and Bombay suburban while that on arecanut was restricted to Ratnagiri and Kolaba districts only. Items of information collected included area under the crop, yield obtained in the selected plots (clusters), number of total bearing palms, ancillary data on (a) soil type (b) extent of irrigation with details of source and mode of irrigation (c) extent of manuring (d) month-wise harvest (e) incidence of pests and diseases and their effect on yield (f) distribution of palms in different age groups (g) removal and replacement of palms (h) classification of harvested produce (i) mode of disposal of the produce. The data were collected by physical count and measurements wherever possible and by inquiring garden owners for the rest of the items.

1.2.36.3 The frames adopted for sampling were the lists of (i) villages reported to be growing the crop (ii) survey numbers and *pot hissas* growing the crop in the selected villages (for yield estimation survey only). The design adopted for the estimation of area and number of palms was one of stratified uni-stage random sampling with taluka or group of talukas (in case the taluka area under the crop was small) as stratum and village as the primary unit of sampling. Further, all the arecanut/coconut growing villages in each taluka were classified into two broad groups viz. group I consisting of villages with area under the crop upto 20 acres and group II with villages having area of more than 20 acres, so as to ensure due representation to the villages having large areas. In order to obtain the district estimate of acreage with a reasonable precision, a certain minimum number of villages was fixed for each group in each district. The number so fixed for each district was allotted to different strata approximately in proportion to the area under the crop in the stratum. The villages within each stratum were selected with equal probability. Further, a sample of villages was selected out of those reported to be not growing coconut or arecanut for verifying the actual position.

1.2.36.4 For estimation of yield rate, the design adopted was one of stratified multi-stage random sampling with a taluka as stratum. A minimum number of villages was fixed for yield estimation so as to obtain the district estimates of production with reasonable precision. The number in each group was allotted to different strata approximately in proportion to the area in each stratum. Three gardens were selected at random in each selected village and in each garden, except the first, a cluster of bearing palms was located at random. In the first selected garden, two non-overlapping clusters were located randomly in order to study the variation between clusters.

1.2.36.5 In order to study seasonal effects on the yield of the crops, the sample of villages was selected as follows :

- (i) 25 per cent of the villages as sub-sample of those retained in 1960-61 from the sample of 1959-60.
- (ii) 25 per cent of the villages as sub-samples of those selected in 1960-61.
- (iii) 50 per cent of the villages selected freshly from the entire population during the current year.

1.2.36.6 During the year 1964-65, 50 per cent of the sample was retained from the previous survey, the rest 50 per cent was selected afresh. 83 and 45 villages were selected for coconut and arecanut respectively.

1.2.36.7 The field work was carried out by ten Agricultural Assistants under the supervision of one Senior Statistical Assistant and two Junior Statistical Assistants.

### 1.2.37 Evaluation enquiry of special kharif and rabi campaign.

1.2.37.1 The survey was conducted during 1965-66 by Bureau of Economics and Statistics, Bombay, with a view to (i) estimate the extent of participation of cultivators in

special kharif and rabi campaign (ii) find out the extent of the coverage of area under the different items of work implemented under the programme and (iii) find out the possible reasons for not adopting different practices recommended under the campaign programme. The duration of the survey was October, 1965 to January, 1966 for kharif campaign and January to April, 1966 for rabi campaign. The survey was restricted to three kharif crops viz. jowar, paddy and nachani and for rabi campaign to rabi jowar and wheat only. Only those districts were covered which had at least one per cent of the total area under the crop in the State within the districts. All the blocks which were covered under the special kharif and rabi campaign programmes were considered. Two schedules were prescribed for collecting the information. The schedule 1 was canvassed at village level for collecting information regarding work done in the campaign through Gram Panchayat and Gram Sevak on items like distribution of fertilizers, seeds, chemicals and pesticides and area brought under various improved agricultural practices. Schedule 2 was designed to obtain information from the selected beneficiaries and non-beneficiaries regarding participation in adopting improved practices, area covered under the recommended improved practices and his problems and difficulties in not adopting any of those practices. The reference period for the survey was 1965-66. The data were collected by personal enquiry.

1.2.37.2 List of all Community Development Blocks covered under the programme for campaign was the frame for selection of first stage units. In the selected blocks, list of all the villages covered under the campaign was the frame for selection of second stage units (villages). For selection of last stage unit (cultivator), separate frame was prepared for beneficiary cultivating household and non-beneficiary cultivating household growing the specified crop in respect of each of the selected village. Each of the district selected for study in respect of specified crop was treated as an independent stratum. For selection of first stage units, 6 blocks from each district covered for the survey for the specified crop were selected by random sampling method and for selection of second stage units, five villages were selected from each of the selected blocks by random method. For selection of last stage units, separate frame was prepared for beneficiary cultivating households and non-beneficiary cultivating households growing specified crops and 10 beneficiaries and 10 non-beneficiaries were selected by systematic sampling method. Work of selection of districts was done in the Head Office while selection of blocks, villages and cultivators was done by District Statistical Officer.

1.2.37.3 The special training was given to the Field Investigators to canvass both the schedules. District Statistical Officers, Statistical Assistants and Community Development Block Statistical Assistants were employed for the survey work. Compilation work was done in Head Office. Tabulation work of kharif campaign was reported in progress while of rabi campaign, the field work was in progress.

## GOVERNMENT OF MYSORE

### **1.2.38 Sample survey for study of cultivation practices, area and yield of coconut and arecanut.**

1.2.38.1 This continuing survey was undertaken by the Department of Statistics, Government of Mysore during the agricultural year (July to June) 1964-65 and 1965-66. The survey was first started in 1958-59. The object of the survey was (i) to estimate acreage and number of arecanut/coconut palms (ii) to estimate the average number of palms per acre (iii) to estimate the average yield per bearing palm per year and total production and (iv) to collect ancillary information about cultural practices. The survey was conducted in 8 out of 19 districts of the State. 200 villages were selected from among these 8 districts annually. In these 200 villages, enumeration of area was done and in 100 villages out of these 200 villages, information about the yield was collected. Information about several aspects detailed in the objective above was collected by direct observation of sampling units.

1.2.38.2 The method adopted for the survey was one of stratified random sampling. But the method of "Matched Sampling Procedure" was adopted. The complete list of villages officially reported to be growing coconut and arecanut was prepared in respect of all districts. This list served as the frame. These villages were classified into 3 groups viz. villages officially reported to be growing (i) only coconut (ii) only arecanut (iii) both coconut and arecanut. The number of villages selected in each district was in relation to the total area under each crop in the district. 3 coconut gardens from group I villages, 3 arecanut gardens from group II villages and 3 coconut and 3 arecanut gardens from group III villages were selected for yield estimation from the complete extent of gardens. A cluster of 6 coconut palms of bearing age in the first two gardens and 2 clusters of 6 coconut palms from the 3rd selected garden of group I and group III villages were selected for yield data collection. In the case of arecanut, group II and group III villages, one cluster of 8 arecanut palms of bearing age from the first and second gardens and 2 clusters of 8 arecanut palms in the 3rd garden were selected. Sample size and sampling fraction has already been given in the 1st paragraph.



1.2.38.3 During 1964-65, 50 per cent of the first stage units i.e. villages were repeated from the first three rounds of the survey at the rate of 17 per cent for each round for a re-visit.

1.2.38.4 The field staff consisted of 25 Enumerators distributed over 8 districts. The Enumerators were thoroughly trained in the method of selection of various sampling units and were made responsible for the collection of information in the proforma designed for the survey. During 1965-66, there was one Senior Statistical Assistant to supervise the work of Enumerators whereas during 1964-65, 5 Senior Statistical Assistants supervised the field work. The extent of non-response was stated to be negligible as the staff was exclusively appointed by the Department for the purpose of the survey. Total cost of the survey was estimated at Rs. 60,700 for 1964-65. The corresponding figure for 1965-66 was not available.

### **1.2.39 Pre-harvest estimates of crop acreages**

1.2.39.1 The survey was undertaken during the kharif and rabi seasons of each agricultural year 1964-65 and 1965-66 by the Department of Statistics, Government of Mysore to collect the pre-harvest acreage statistics of the various crops. The crops covered by the survey were paddy, ragi, jowar, bajra, wheat, pulses, cotton and sugarcane. This survey would be conducted during 1966-67 also. 1000 villages in kharif and 450 villages in rabi were covered by the survey during each year in the State. The information was collected by direct observation of sample units on the area under various crops in order to give an advance estimate of the area before the actual harvests of the crops take place.

1.2.39.2 The list of villages obtained from the Revenue Department or published by the Department of Census Operations served as the frame in respect of all districts. The method adopted for the survey was stratified two stage sampling where the taluks within the districts served as the strata, the villages as the first stage sampling units and the survey numbers within the villages as the ultimate sampling units. The number of villages were selected in proportion to the total geographical area of the district and further allocation was made among the taluks of each district in proportion to the total geographical area of the taluks. In each selected village, the initial survey number was selected at random and further survey numbers were selected with systematic sampling interval of 20.

1.2.39.3 The field staff for the survey consisted of Progress Assistants working in Block Development Offices. In each district, there were about 8 to 10 such Progress Assistants, the number depending on the number of block offices in each district. Before entrusting the survey to the field staff, they were thoroughly trained in the method of collecting the information. The training classes were organised at the district level by the District Statistical Officers.

1.2.39.4 As the Progress Assistants worked as representatives of the Department of Statistics, the response from the field was considerably good.

1.2.39.5 The work of compilation and analysis of the data collected during 1964-65 and 1965-66 was undertaken at the Head Office by one Senior Statistical Assistant assisted by one Compiler. No cost details of the survey are available.

### **1.2.40 Rationalised supervision of area enumeration**

1.2.40.1 The survey was conducted during the kharif and rabi seasons of agricultural years 1964-65 and 1965-66 by the Department of Statistics, Government of Mysore and will be continued during 1966-67 also. The purpose of the survey was to (i) verify the accuracy of the figures relating to acreage statistics of different crops viz., paddy, jowar, ragi, pulses, oilseeds and cotton and to examine on scientific basis the extent of reliability that can be placed on the area figures collected by the Shanbhogs during their crop inspection from field to field in all the villages of their jurisdiction (ii) to evolve a suitable method of effective supervision of area recorded by the Shanbhogs and (iii) to obtain independent estimates of area under important crops.

1.2.40.2 The survey covered all the districts of the State. The data were collected by personal investigation through voluntary cooperation of the cultivators in the selected villages.

1.2.40.3 The sampling method adopted for the survey was a stratified systematic random sampling where the taluks within the district were taken as the strata, the villages as the first stage sampling units and the survey numbers within the villages as the ultimate sampling units. The list of villages obtained from Revenue Department or as published by the Department of Census Operations served as the sampling frame in respect of all the districts. During kharif season, 1000 villages and during rabi season, 450 villages

were selected in both the years. The selection of villages was done in proportion to the total geographical area of the district and further all location of villages among taluks of the district was made in proportion to the geographical area of each taluk. In each selected village, the initial survey number was selected at random and further survey numbers were selected with a systematic sampling interval of 20.

1.2.40.4 The field staff for the survey consisted of 8 to 10 Progress Assistants in each district. Senior Statistical Assistants and District Statistical Officers supervised the field work.

1.2.40.5 The data for the years 1964-65 and 1965-66 were collected and analysis was in progress.

#### **1.2.41. Sample survey for estimation of area and yield of fruits and vegetables**

1.2.41.1 The survey was undertaken by the Department of Statistics, Government of Mysore, on a pilot basis during the agricultural year 1965-66 with the object of (1) estimating the area under cultivation of different fruit and vegetable crops and (2) estimating the average yield and production of important fruit and vegetable crops grown in the State. The survey was confined to four districts of different climatic regions *viz.*, Bangalore, Coorg, Dharwar and Gulbarga with proposal to extend the survey to other districts subsequently. The information on area and yield of different fruits and vegetables grown in the selected districts was collected by direct observation of sample units. The reference period for the survey was the agricultural year 1964-65.

1.2.41.2 The frame adopted for the survey was the list of villages of each district as published by the Department of Census. In each district, 48 villages were selected at random, out of which 16 villages were retained from the previous round survey. The taluks were selected with probability proportional to the combined acreage of fruit and vegetable crops in the taluka without replacement. At the first instance, the enumerators visited all the selected villages allotted to them and noted the different fruits and vegetables grown and their area in each village.

1.2.41.3 Five fields growing the selected vegetables were selected at random in each village and two plots (non-overlapping) in each of these fields of size 3m x 3m were selected at random.

1.2.41.4 In case of fruits, selection of gardens was the same as in the case of vegetables. Five gardens growing the selected fruit trees were selected at random in each village and instead of selecting two plots in a field, 2 clusters of 4 fruit trees in a garden were selected. Harvests in the case of fruit trees were either in the form of seasonal harvest or pickings. Picking took place at regular intervals but seasonal harvests took place only once in a season in case of Mango, Orange, Banana etc. The produce of the clusters was given by weight.

1.2.41.5 The Director of Statistics was overall incharge of the survey. At the headquarters, he was assisted by an Assistant Director of Statistics and 2 Senior Statistical Assistants for compilation and analysis of the data.

1.2.41.6 The field staff consisted of 4 Junior Statistical Assistants and 16 Enumerators i.e. one Junior Statistical Assistant and 4 Enumerators in each district. The Enumerators attended the field work supervised by Junior Statistical Assistant. The District Statistical Officer of the concerned district was made responsible for the execution of the field work and watching the progress of the work in the district.

1.2.41.7 The field staff were given training by the District Statistical Officers of the concerned districts.

1.2.41.8 As the data was collected by departmental employees, the response was good. The data of 1964-65 was compiled and the report prepared. The report for the year 1965-66 was under compilation.

### **GOVERNMENT OF ORISSA**

#### **1.2.42 Sample survey for estimating area, yield and production of autumn and winter rice**

1.2.42.1 This repetitive survey is being conducted by the Bureau of Statistics and Economics, Government of Orissa, to estimate total area, average yield per acre and total production of paddy in Orissa with district-wise break-down since 1959-60. The round for 1964-65 of the survey was conducted during the period July and October, 1964 for autumn rice and continued till the middle of January, 1965 for winter rice. The reference period was from July, 1964 to January, 1965. Similarly the round for 1965-66 survey was conducted in the period July 1965 to January, 1966.

1.2.42.2 The whole State which was divided into 180 strata consisting of homogeneous groups of contiguous police stations taking into consideration the geographical area, cultivated area and topographical feature served as a frame. A total of 3,600 villages, taking 20 villages for each stratum, were selected for land utilization survey. Out of these 3,600 villages, 1,800 villages were selected for yield estimation survey. In each of the villages selected for yield survey, 2 plots were selected for crop-cutting experiments. In each of the 20 villages selected for area survey, 6 clusters of 10 plots (survey numbers) were selected by systematic sampling with random start for land utilization survey.

1.2.42.3 In autumn and winter crop seasons for 1964-65, the response for area enumeration survey was nearly 100 per cent and that for yield estimation survey was 55.0 and 96.7 per cent respectively whereas for 1965-66, the respective figures were 100, 67.15 and 96.45.

1.2.42.4 The field organisation consisted of 198 trained Amins for 1964-65 and 211 for 1965-66, besides there were 43 Field Inspectors and 1 Statistical Assistant in each of the 13 districts to look after the crop survey work at the district level. 2 Statistical Assistants and 9 Junior Statistical Assistants were engaged in processing the data at the State headquarters. The estimated cost for the survey for each year was Rs. 4,75,494.

1.2.42.5 A report on sample survey for estimating area, yield rate and total production of autumn and winter rice in Orissa for each of the year 1964-65 and 1965-66 was published.

#### **1.2.43 Sample survey for estimation of area and yield of summer rice**

1.2.43.1 The survey was conducted during 1964-65 and 1965-66 by the Bureau of Statistics and Economics, Orissa, with a view to estimate the area, yield rate and total production of summer rice crop in the State. The survey is of a repetitive nature. It commenced towards the last part of March and continued till first week of June in both the years under reference. The survey was confined only to such blocks where summer rice was extensively grown.

1.2.43.2 The frame consisted of those blocks in the State which had an area of 1000 acres or more under summer rice crop. In all, 35 and 32 blocks were included in the frame during 1964-65 and 1965-66 respectively.

1.2.43.3 A stratified sampling design was adopted taking each block as a stratum. From each block, 30 sample villages were selected by simple random sampling procedure for area enumeration survey and in each of the sample village, complete enumeration of all plots growing summer rice was undertaken. For yield survey, a sub-sample of 15 villages was taken by simple random sampling procedure from among all the villages growing summer paddy out of the 30 villages for area survey. When the number of summer rice growing villages in a stratum was found to be less than 15, the crop cutting experiments were conducted in all these villages. In each of these villages selected for yield estimation survey, two survey numbers were selected by simple random sampling procedure for the conduct of actual crop-cutting experiments. A circular cut of 4 feet radius was undertaken in the selected survey numbers and the harvested produce therefrom was recorded.

1.2.43.4 For crop-cutting purpose, the sample plots were revisited by the field staff. The interval of their visit varied according to the date of harvest of the crop.

1.2.43.5 During 1964-65, 100 per cent response was reported for area survey and only 43.24 per-cent for yield survey. On the basis of 10 villages per worker, 105 trained Amins were engaged for actual field investigation under the supervision of 26 Field Inspectors.

1.2.43.6 During 1965-66, 97.50 per cent response was reported for area survey and 50.94 per-cent for yield survey. About 100 trained Amins were engaged for actual field investigation under the supervision of 25 Field Inspectors.

1.2.43.7 The survey was completed in the scheduled time and reports on the surveys were brought out.

#### **1.2.44 Sample survey for estimation of area and yield of coconut and arecanut**

1.2.44.1 The survey was sponsored by the Director of Agriculture and Food Production, Orissa, and was conducted during agricultural years (July to June) 1964-65 and 1965-66 by the Bureau of Statistics and Economics, Orissa. The purpose of the survey was (i) to estimate the number of bearing and non-bearing coconut and arecanut palms (ii) to estimate the area and yield under arecanut and coconut palms and number of

nuts on the selected palms (iii) to collect the ancillary information about the prevailing cultivation practices of coconut and arecanut as regards topography of the fields, spacing, manuring, irrigation, plant protection measures, harvesting, disposal of products, number of seedlings supplied and required, replacement and age distribution of palms etc. The survey commenced in the beginning of July and terminated at the end of June of each agricultural year under reference. As coconut and arecanut trees in Orissa State are mainly grown in the four coastal districts *viz.* Puri, Cuttack, Balasore and Ganjam, the survey was confined only to these districts.

1.2.44.2 Information were collected by direct observation of sample units. For this purpose, 350 villages were selected at random and various data were recorded on visiting the selected units exhaustively. Out of these 350 villages, 90 villages were selected randomly to record harvesting results and ancillary information. In each selected village, complete enumeration of palms was carried out on field to field basis by the enumerator by direct observation. The area under palms in selected gardens in the selected village was noted by actual measurement.

1.2.44.3 A stratified multistage random sampling design was adopted for the survey. The frame consisted of 19,999 villages of the above four coastal districts. Each of the district was taken as individual strata. Each stratum was divided into three sub-strata on the basis of density of palms. As the survey was a combined sample survey of coconut and arecanut, the villages in each of the sub-strata were classified into four categories as shown below:—

Category I—Villages reported to be growing both coconut and arecanut palms.

Category II—Villages reported to be growing coconut palms only.

Category III—Villages reported to be growing arecanut palms only.

Category IV—Villages reported to be growing neither coconut nor arecanut palms.

Villages allocated to each category were as follows :—

Category	Sample size for enumeration	Sub-sample size for yield estimation
I	88	30
II	194	50
III	28	10
IV	40	—
TOTAL	350	90

1.2.44.4 These were further allocated to districts in proportion to number of villages growing palms. For this purpose, each of the strata was divided into three sub-strata on the basis of density of palms. For Puri, Cuttack and Balasore districts, the Community Development Blocks having an average of 1000 palms per village, were taken as the first sub-stratum. The villages having an average of 500 palms in Puri and 200 each in Cuttack, Balasore and Ganjam were taken as the sub-stratum II. The villages having an average of 100 palms and less in all the districts constituted the sub-stratum III. For Ganjam district where coconut and arecanut cultivation was very scanty, the villages having an average of 500 palms were taken as sub-stratum I. The number of sample villages allocated to the sub-stratum in each category was proportional to the total number of villages in them.

1.2.44.5 90 villages were sub-sampled from 350 sampled villages by simple random sampling at the second stage of selection. From each sub-sampled village, 3 gardens were selected at random for harvesting and collecting ancillary information and 10 palms were selected from the stray-holdings of sub-sampled villages for harvesting. These sub-sample units were visited every month to record the harvesting results and collect various ancillary informations.

1.2.44.6 During 1965-66, the sample and sub-sample units were selected from the first three categories mentioned above in proportion to the number of villages belonging to those categories. From the 4th category, only 40 sample units were taken to enumerate the number of palms assuming some palms might be available in those villages. Number of sample units for Cuttack, Puri, Balasore and Ganjam were 152, 70, 63 and 65 respectively. Number of sub-sample units for the above district were 37, 20, 17 and 16 respectively.

1.2.44.7 The field staff consisted of one Statistical Investigator, two Field Supervisors, 11 Enumerators and one Junior Statistical Assistant. The field staff was given adequate practical training in conducting the survey.

1.2.44.8 During 1964-65, the extent of non-response in coconut survey was nil while for arecanut survey, the non-response was 75 per cent due to non-availability of palms in sub-sample villages. During 1965-66, the response was satisfactory. In cases where a sub-sample village did not have any bearing palms, that village was substituted by another village.

1.2.44.9 The total expenditure incurred on the survey was Rs. 35,500 and Rs. 38,700 for 1964-65 and 1965-66 respectively.

1.2.44.10 The field work was completed in all the sample and sub-sample villages at the end of June, 1966. The data collected from the field during 1965-66 was being processed and compiled and would be published in the form of a report on coconut and arecanut in Orissa. The survey on coconut only will continue in the year 1966-67.

#### **1.2.45 Sample survey for estimation of area under green manure crops**

1.2.45.1 This sample survey was first undertaken by Bureau of Statistics & Economics, Orissa in 1963-64 with a view to estimate the area under green manure crops in the State. The survey during 1964-65 was started in May, 1964 and continued till the middle of July, 1964 along with the main crop survey programme. For 1965-66, the survey started during May, 1965 and continued till the end of July, 1965. The entire State was covered. Data were collected from revenue records, maps, actual survey of sample plots by direct observation of sample units and by interviewing respondents.

1.2.45.2 A stratified sampling design was adopted. This survey was integrated with the main crop survey programme and the revenue villages remained as the sampling units. The entire State was divided into 180 strata consisting of contiguous development blocks having more or less identical topography, cropping pattern and agricultural practices. From each of the strata, a sample of 10 villages was selected with probability proportional to area and with replacement. In each of these sample villages, the survey of area under green manure crop was done by the method of complete enumeration of all plots growing green manure. The sample size adopted for the entire State was 1,800 villages with an average of about 140 villages per district. The sample villages were selected at the State headquarters. The non-response was 4 per cent during 1964-65 and was reported nil during 1965-66.

1.2.45.3 The field and supervisory staff were imparted adequate training at district headquarters. During 1964-65 and 1965-66, the field organisation consisted of 198 and 211 trained Amins respectively, out of which 180 were engaged in field in 180 strata and the rest were kept at the district headquarters as leave reserves. There were 43 Field Inspectors for supervising the work of Amins.

1.2.45.4 During the years under review, the survey was completed and the report was finalised. The estimates of area under green manure crop were built up stratum-wise and aggregated for the district and State levels.

#### **1.2.46 Sample survey for yield estimation of jute**

1.2.46.1 The survey is an annual feature and was conducted by the Bureau of Economics and Statistics, Orissa during 1964-65 and 1965-66 in collaboration with the Jute Development Officer, Orissa who spared the primary field staff for conducting the field work. The purpose of the survey was to estimate the average yield per acre of jute in the State. The survey commenced in the month of August, the harvesting season for jute and continued till the end of September of both the years under reference. During 1964-65, the survey was confined to 5 sub-divisions of the State namely, Cuttack, Kendrapara and Jaipur sub-divisions of Cuttack district, Bhadrak sub-division of Balasore district and Anandpur sub-division of Keonjhar district where the crop is grown extensively. During 1965-66, the survey was extended to Jagatisingpur sub-division of Cuttack district and Balasore sub-division of Balasore district. The reference period was from August to end of September.

1.2.46.2 A pilot survey was conducted by the Bureau during 1960-61 in the Salilpur police station of Cuttack district. The results of the pilot survey were fully utilised in launching the main survey.

1.2.46.3 A list of all the jute growing villages in the specified sub-divisions of the State served as the frame. A stratified three stage sampling design was adopted taking the sub-division as a stratum, the revenue village as the first stage unit, a plot (survey number) as the second stage unit and the experimental field of size  $16\frac{1}{2}' \times 16\frac{1}{2}'$  as the third stage unit. Allocation of the sample villages numbering 100 for 1964-65 and 105 for 1965-66 was done in proportion to the area under jute in the sub-divisions. The villages were selected from each stratum by simple random sampling procedure. In each sample village, 2 plots were selected at random from among all the jute growing plots. In each of these two plots, an experimental field of square area  $16\frac{1}{2}' \times 16\frac{1}{2}'$  was randomly located for conduct of crop cutting experiments.

1.2.46.4. Out of 200 crop cutting experiments planned in 100 villages in 1964-65, 197 experiments could actually be conducted. During 1965-66, 202 sample cuts could be taken as against 210 proposed.

1.2.46.5. The reports for the years 1964-65 and 1965-66 were brought out.

#### **1.2.47 Sample survey for estimation of area and yield of sugarcane**

1.2.47.1. The survey was undertaken by Bureau of Statistics and Economics, Orissa during the year 1963-64 and was repeated during 1964-65 with some modifications. Some details of the survey had already been reported on page 62 of the 15th Annual Report. The survey work was started during May, 1964 and continued till middle of July, 1964. The crop cutting survey for estimation of yield rate was started from the middle of November, 1964 and continued till the end of February, 1965. 41 blocks of the State were covered by this survey which covered 70 to 80 per cent of the total area under sugarcane crop in the State. Information relating to area, yield rate and total production of sugarcane were collected along with some ancillary data through direct observation, actual survey of plots, study of revenue records, maps and also by personal contact.

1.2.47.2. A list of all the villages growing sugarcane in the Community Development Blocks was adopted as frame for the survey. Stratified self weighting sampling design was adopted taking each sub-division as a stratum, village as the first stage sampling unit, plot (survey number) as the second stage unit and the experimental field as the third stage unit. The sample villages were surveyed by the method of complete enumeration of all plots growing sugarcane crop. In each block, the required number of sample villages were selected by simple random sampling procedure for estimation of area. The number of such villages formed almost one third of the total number of villages in the selected block. In all, 1234 villages were selected for area enumeration. For the entire State, 410 crop-cutting experiments were planned in 205 sample villages. For yield estimation, the total number of sample villages taken in each district were distributed among the specified blocks in proportion to the total number of villages in these blocks. The required number of villages for crop-cutting formed a sub-sample of the sample villages where area survey was planned in each block. In each of these sub-sample villages selected for yield survey, 2 survey numbers/plots were chosen by simple random sampling procedure for conducting crop cutting experiments. In each of the selected plots/survey numbers, a square plot of size  $16\frac{1}{2}$  feet  $\times$   $16\frac{1}{2}$  feet was located at random.

1.2.47.3 The selection of sample villages for area and yield estimation was done at the State headquarters and the selection of survey numbers/plots for actual conduct of crop cutting experiments was done by the field staff. For crop-cutting purposes, the sample plots were revisited by the field staff.

1.2.47.4 The primary and supervisory staff were imparted necessary theoretical and field training at the district headquarters. Survey for area enumeration was successfully conducted in 1,230 villages out of 1,234 villages. The response was therefore nearly 99.7 per cent. For estimation of yield rate, 269 experiments were actually conducted out of 410 crop-cutting experiments. Thus the percentage response was 63.9. For conducting the area survey work, trained Amins and Field Inspectors of the Bureau were employed as primary and supervising agency respectively. Each Amin was given 15 villages to conduct area survey. Each Field Inspector was kept incharge of 4 Amins. The yield estimation survey was conducted jointly by the field staff of Bureau and the Field Demonstrators of the Directorate of Agriculture, Orissa. The processing of data was done by technical staff at the State headquarter.

1.2.47.5 The survey was completed and "A Report on sample survey for estimation of area and yield rate of sugarcane, 1964-65" was prepared.

#### **1.2.48 Sample survey for estimating acreage under sugarcane around 'Aska Sugar Factory' in Ganjam district.**

1.2.48.1 The survey was conducted by Bureau of Statistics and Economics, Orissa during December, 1965 with a view to estimating the area under sugarcane crop in 189 sugarcane growing villages around Aska Sugar Factory. The villages were divided into four strata according to intensity of area under sugarcane and a stratified sampling design was adopted taking the revenue villages as sample units. A sample of 70 villages was selected and these were surveyed by complete enumeration of all plots growing sugarcane.

1.2.48.2 The field work was carried out by the Bureau staff in the main crop survey programme and the filled-in schedules were scrutinised and processed by Junior Investigators at the district and State levels.

1.2.48.3 The survey was successfully completed in all the sample villages and a report on the results was published.

## GOVERNMENT OF UTTAR PRADESH

### 1.2.49 Scheme for conducting crop cutting experiments in connection with Gram Sabha Challenges

1.2.49.1 The surveys were launched under the technical direction of the Joint Director of Agriculture (Statistics) and under the administrative control of the Director of Agriculture, Uttar Pradesh and the regional Deputy/Assistant Directors of Agriculture with a view to estimate with statistical precision the average yield of the challenging 'gram' on the basis of which regional and State prizes were awarded to the gram sabhas attaining the highest average yield in respect of various crops. The surveys covered paddy, jowar, bajra, maize, wheat and barley crops in the plains and paddy, maize, wheat and barley crops in hilly region of the State. During the year 1964-65 and 1965-66, challenges were organised and collection of data was completed according to the instructions laid down.

1.2.49.2 A complete list of all the fields growing the particular crop on which the challenges were thrown constituted the frame in respect of each participating gram sabha. The design adopted was two stage random sampling with field as primary unit of sampling and a plot within the field as the ultimate unit of sampling.

1.2.49.3 Yield data were tabulated and average yield for each challenging gram sabha were calculated for each year by taking the simple arithmetic mean of the plot yields within the gram sabha.

1.2.49.4 The Staff employed consisted of one Senior Statistical Investigator one Statistical Assistant and two Computers.

### 1.2.50 Pilot survey for estimation of area and yield and for study of cultivation practices of apple and other major temperate fruit crops in Naini Tal and Almora districts of the Kumaon region

1.2.50.1 The survey which is of repetitive nature, was conducted in its third round during October, 1965 to October, 1966 with the purpose of evolving a suitable sampling technique for the estimation of area and yield and study of cultivation practices of apple and other temperate fruit crops in the Kumaon region of the State. The second round was conducted from October, 1964 to October, 1965. Besides, some villages of Champawat tehsil, district Almora, were also selected for purposes of enumeration only.

1.2.50.2 The complete list of all the villages, comprising of reporting and non-reporting orchards, growing the temperate fruits constituted the frame. The items of information and the plan of sampling remained generally the same as in the previous rounds that is, a stratified multistage random sampling. During the third round, however, the entire region was divided into eleven sub-strata given below :

Sub-stratum	Type of classification
I	Reported and selected in 1st round with number of trees upto 50.
II	As in I with number of trees 51—1,050.
III	As in I with number of trees 1,051—5,050.
IV	As in I with number of trees, 5,051—and above.
V	Reported but not selected in the 1st round having area below 0.5 acres
VI	As in V but having area 0.5 acres to 20 acres.
VII	As in V but having area above 20 acres.
VIII	Not reported but selected and having number of trees upto 50.
IX	As in VIII having number of trees 51—1,050.
X	As in VIII having number of trees above 1,050.
XI	Not reported and not selected in the 1st round.

Besides, a few villages out of those not selected in the first and second rounds and having an area under orchards greater than 10 aalis were also selected for purposes of enumeration only.

1.2.50.3 From each of the sub-strata mentioned above, a specified number of villages were selected at random with probability proportional to the number of trees enumerated in the first round in the case of sub-strata II, III, IV, IX and X and with probability proportional to the reported area under orchards in the case of sub-strata VI and VII. For the remaining four sub-strata, *viz.*, I, V, VIII and XI, the selection of villages was made with equal probability.

1.2.50.4 The second and third rounds of the survey were successfully completed and the scheme has now been wound up with effect from October 11, 1966. The non-response was very low as the survey was successfully conducted in about 90 to 95 per cent of the originally selected villages.

### **1.2.51 Survey for the assessment of increase in yield of groundnut crop due to the adoption of package practices**

1.2.51.1 The survey was conducted by the Department of Statistics, Uttar Pradesh during kharif, 1965-66 to assess the increase in the average yield of groundnut crop as a result of package programme. The survey was organised in five package districts of the State where the package programme on groundnut was in operation. The data were collected on (i) the type and quantity of fertilizers and manures applied (ii) the kind of seed and seed rate, irrigation and its source, cultural practices etc., and (iii) yield in kilograms, by the specially appointed package village Level Workers. No pilot survey was undertaken.

1.2.51.2 Three-stage stratified random sampling was adopted, the blocks constituting the strata, a village being the primary unit of sampling, field growing groundnut as a secondary unit of sampling and an equilateral triangular plot of side 10 metres as the ultimate unit of sampling. A specified number of villages in the package blocks having at least two fields, growing groundnut, were randomly chosen from amongst the total number of villages covered under the package programme in the block. In each village thus selected, two fields growing the groundnut crop were randomly chosen from amongst the total number of such fields in the village. Finally, within each selected field, an equilateral triangular plot of side 10 metres was randomly located and the produce therefrom harvested, cleaned and weighed. An equal number of experiments were also conducted in the non-package blocks of these districts.

1.2.51.3 Response was 91 per cent. One Statistical Assistant and 3 Computer-ware appointed for the survey.

1.2.51.4 No cost analysis of the survey was done. The survey was completed during kharif, 1965-66. Data were analysed and the preparation of report was in progress.

### **1.2.52 Crop estimation survey on important food crops.**

1.2.52.1 These surveys which are of repetitive nature were carried out under the technical direction of the Department of Agriculture, Uttar Pradesh and the administrative control of the Board of Revenue (Land Reforms), Uttar Pradesh. The purpose of the surveys was to estimate the average yield and outturn of the principal food crops for the State as well as for the major districts.

1.2.52.2 During the years 1964-65 and 1965-66, these crop cutting surveys were conducted on early paddy, jowar, bajra and maize crops during kharif season and during rabi season on wheat, barley, gram, arhar and pea crops in all the important plains of the districts of the State, covering about 95 percent of the total acreage under the crops. Information was collected on irrigation, manure, quality of seed, crop mixture, date of sowing and eye estimate of yield rate.

1.2.52.3 The design of the survey was a three stage stratified random sampling ; parganas (administrative sub-divisions of a tehsil) within a district being the strata; village within a pargana being the primary sampling unit ; fields within a village the sub-units of sampling and an equilateral triangular plot of side 10 metres as the ultimate unit of sampling. In each pargana, specified number of villages were randomly selected, while in each selected village two fields under the particular crop were selected at random for the conduct of the crop-cutting experiments. In each selected field, an equilateral triangular plot of side 10 metres was located at random and the produce therefrom harvested, threshed and its weight recorded. For purposes of these surveys, samples of about 1.5 percent of the villages for each of the wheat, barley, gram and paddy crops and about 0.6 percent of villages for each of the arhar jute, bajra and maize crops were taken.

1.2.52.4 The field work was carried out by Supervisor Kanungs in the Revenue Department assisted by the Lekhpal of the selected villages. It was supervised by the



statistical staff consisting of 1 Chief Statistician, 1 Statistician, 4 Statistical Assistants and 8 Computers. Sub-Divisional Officers, Tehsildars, Sadar Kanungos and other Revenue Officers in the districts also carried out surprise inspection and supervision over field work in their respective jurisdiction.

### **1.2.53 Crop estimation survey on important non-food crops**

1.2.53.1 These surveys which are repeated annually were carried out during 1964-65 and 1965-66 under the technical guidance of the Department of Agriculture, Uttar Pradesh and under the administrative control of (i) the Board of Revenue for groundnut, rapeseed, sesamum and linseed (ii) Jute Development Officer for jute (iii) Cotton Development Officer for cotton and (iv) Cane Commissioner for sugarcane. The purpose of the survey was to estimate the average yield and outturn of these crops for the State as well as for the districts.

1.2.53.2 The modifications of the survey on cotton made during 1961-62 continued to remain the same *i.e.*, 14 (instead of 16) important cotton growing districts of the State were selected for the survey and 600 experiments were planned for Desi (380) and American (220) cotton. In case of sugarcane survey, experiments were planned on plant and ratoon cane separately—195 villages were planned for plant cane and 105 villages for ratoon cane. In case of groundnut, rapeseed, sesamum and linseed it was planned in 18, 23, 10 and 13 districts respectively; the percentage of area covered being 97.1, 94.4, 92.5 and 93.1 during the year 1965-66.

1.2.53.3 The design adopted for the survey was a stratified multistage sampling one with village, field and the plot in the selected field as the successive units of sampling. The method of selection of village and field was the same as that adopted for the survey on food crops. The plot within the selected field was selected at random. The size of plot and its shape varied for different crops. For cotton, a rectangular plot of size 20 metres × 10 metres was located at random and produce therefrom collected at regular interval as warranted by the maturity of crop and the total weight of produce from all the pickings recorded. For the jute crop, the square plot of length 5 metres was selected. For the sugarcane, the sampling cutting of a square plot of side 10 metres was done in the field. For the other non-food crops, an equilateral triangular cut of side 33' was adopted.

1.2.53.4 The analysis of data was done at the Agriculture Department of the State.

### **1.2.54 Scheme on pre-harvest estimation of area and yield of principal crops given in the pre-final estimates**

1.2.54.1 The survey annual in nature, was carried out by the Department of Agriculture, Uttar Pradesh. The purpose of the scheme was to effect improvement in the existing defective pre-harvest estimates of area and yield of crops.

1.2.54.2 The survey was planned in all the districts of the State except the hilly districts of the Kumaon division. Data were collected about area irrigated and expected yield. The survey was carried out in the third week of August in the kharif season and in first week of January in the rabi season during 1964-65 and 1965-66.

1.2.54.3 Three villages on an average were randomly selected in each parganas of a district. In bigger parganas, 4 to 6 villages were selected. In all, 2,750 villages for kharif season and 2,600 for rabi season were selected for the survey. During kharif, 1964-65, 2,650 villages were selected.

1.2.54.4 The field work was carried out by Lekhpals of the villages and the data were analysed by the Statistical Assistants and Computers under the guidance of one Statistician.

### **1.2.55 Survey for formulating block level estimates of agricultural production**

1.2.55.1 The survey was carried out under the technical direction of the Statistical Adviser, I. A.R.S. (I.C.A.R.) Government of India, New Delhi and the Joint Director of Agriculture (Statistics), Uttar Pradesh, Lucknow and under the administrative control of the Secretary, Board of Revenue and the Development Commissioner, Uttar Pradesh. This scheme for formulating block level estimates of agricultural production is being operated on a pilot basis in the State on wheat crop in the Meerut district since rabi, 1962-63. It was subsequently extended to maize and late-paddy crops in all the blocks of Meerut and Varanasi districts respectively during the kharif season, 1963-64 and repeated on wheat crop in the district of Meerut only during the rabi season, 1963-64.

It has since been repeated in these districts in each season during the years 1964-65 and 1965-66. On the basis of the encouraging results obtained so far under the pilot survey, the survey was repeated on wheat crop in the Meerut district and extended to Lucknow district during the rabi season, 1965-66.

1.2.55.2 List of revenue villages prepared circlewise by the Lekhpals in respect of each block of the district was used as frame for the survey. A stratified multistage sampling technique was adopted, the Lekhpal circle in a block being the strata, a village within a circle being the primary unit of sampling, a field within a village being the sub-unit of sampling and a triangular plot having each side of 10 metres within a field being the ultimate unit of sampling. The Lekhpal circle constituted the strata during 1965-66 instead of the village level worker circles as in the previous years, in order to keep a reasonable work load on the Lekhpal. In each block a sample of 50 revenue villages, if the number of revenue villages in the block was greater than 50, was randomly selected, these villages being allocated to each of the Lekhpal circle in a block approximately in proportion to the number of revenue villages in each Lekhpal circle. In each village so selected, four fields growing the crop were randomly selected and eye estimates of average yield in respect of 200 randomly selected fields were obtained as near to the harvesting date as possible but not a fortnight before the harvesting of these fields. However, if the total number of villages in a block, was less than or equal to 50, number of fields to be selected in each of these villages was suitably increased so that the total number of fields for this purpose in a block came to about 200. For purposes of crop cutting experiments, a sub-sample of 25 villages was randomly selected from villages reporting eye-estimates. These 25 villages were distributed proportionately amongst the Lekhpal circles. In these 25 villages, a sub-sample of two fields out of the four or more fields selected for eye-estimation was taken for crop cutting experiments. In each of these fields, an equilateral triangular plot of side 10 metres was randomly located and the produce therefrom harvested, threshed and its weight recorded. Driage experiments were conducted on the produce of the first selected field in each village.

1.2.55.3 The survey is now proposed to be extended to another 14 districts from the kharif season, 1966-67.

### **1.2.56 Survey for estimation of area and production of principal crops in the non-reporting hilly areas of the State**

1.2.56.1 The survey which is repeated every year was carried out by the Directorate of Agriculture, Uttar Pradesh with a view to estimate the area and production of principal crops in the non-reporting hilly areas of the State.

1.2.56.2 The survey was undertaken in the Nainital tehsil of Nainital district and in Ranikhet tehsil of Almora districts during the kharif and rabi seasons of 1964-65 and 1965-66. The information was collected on mandua and wheat crops.

1.2.56.3 The survey design adopted was a multistage stratified sampling. Two villages from each of the patwari circles constituting the strata were selected and within each selected village, four clusters of 10 and 20 survey numbers were selected in Nainital and Ranikhet tehsils respectively. For purposes of crop-cutting experiments, two fields one in each of the first two clusters were selected under the mandua crop during the kharif and under wheat crop during the rabi season.

1.2.56.4 The field work was carried out by the revenue staff. Analysis of the data was done by the statistical staff of the Directorate of Agriculture.

### **1.2.57 Joint crop cutting survey by the Directorate of National Sample Survey and the State Government—Type II study on wheat crop**

1.2.57.1 The survey was carried out under the directive of a Technical Committee set up by the Planning Commission. The purpose of the survey was to find out the reasons for discrepancies between the two estimates of production of principal cereal crops obtained by two agencies, *viz.*, State series and Directorate of National Sample Survey (socio-economic surveys). The survey was launched in January, 1965 and continued till 30th June, 1965.

1.2.57.2 The survey was organised on wheat crop in 82 villages spread over 37 districts of the plain portion of the State selected by the Directorate of National Sample Survey. The main item of information collected under the scheme related to the yield of the triangular cut (equilateral triangle of side 10 metres) and two concentric circular cuts of 2'-3" and 4' radii respectively in each of the two fields of the selected villages. Besides the experimental produce obtained from triangular and circular cuts, the produce of the residual whole field was also harvested, threshed, dried and weighed in 50 villages, 25 villages from each sample, randomly selected out of these 82 villages.

1.2.57.3 A multistage stratified random sampling design was adopted for the survey. The villages with sampling serial number 1 of sub-sample I of both the Central and State samples from each of the 41 strata in which the plain portion of the State was divided for the 19th round of National Sample Survey (1964-65) was the primary unit of sampling, a wheat field in a village, the sub-unit of sampling and a triangular plot and concentric circular plots of 2'-3" and 4' raddi inside the selected fields the ultimate unit of sampling.

1.2.57.4 The field work was carried out by an *ad-hoc* staff consisting of one Statistician, four Field Officers, 20 Naib-Tehsildars and fifty Supervisor Kanungoes. Besides, the services the regular Supervisor Kanungos of the Board of Revenue Uttar Pradesh, Investigators of National Sample Survey and Assistant Economic Intelligence Inspectors of the Directorate of Economics & Statistics, Uttar Pradesh were utilised.

### 1.2.58 Crop estimation survey on important pulses

1.2.58.1 The survey was carried out during 1964-65 and 1965-66 in kharif and rabi seasons, by the Development staff under the technical direction and supervision of the Joint Director of Agriculture (Statistics), Uttar Pradesh, Lucknow and under the administrative control of Commissioner-cum-Secretary, Agriculture Production and Rural Development, Uttar Pradesh with a view to estimating the average yield and out-turn of important pulses. The survey was conducted for the first time during rabi season, 1963-64 on masur crop in 30 important masur growing districts of the plain portion of the State, covering about 95 per cent of the total acreage under the crop.

1.2.58.2 During the kharif season, 1964-65, the survey was carried out on urd and moong crops in 30 and 33 districts respectively of the plain portion of the State covering about 95 per cent and 90 per cent respectively of the total acreage under urd and moong crops. During rabi season, the survey was carried out on masur crop in 30 important masur growing districts of the plain portion of the State, covering about 95 per cent of the total acreage under the crop.

1.2.58.3 During the kharif season, 1965-66, the survey was carried out on urd and moong crops in 31 and 25 districts respectively of the plain portion of the State, covering about 96 per cent and 84 per cent respectively of the total acreage under urd and moong crops. During the rabi season, the survey was carried out on masur crop in 34 important masur growing districts of the plain portion of the State, covering about 98 per cent of the total acreage under the crop.

1.2.58.4 The information in respect of yield of the crop was collected by actual crop-cutting experiments in the randomly selected fields by village level workers of the Planning Department.

1.2.58.5 For 1964-65, a random sample of 900, 500 and 1,000 villages was taken from 30, 33 and 30 important urd, moong and masur growing districts respectively, the villages being distributed among the selected districts roughly in proportion to the area under urd, moong and masur crops in each district. In each selected village, two fields under urd, moong and masur crops respectively were chosen at random and within each field so selected, an equilateral triangular plot of side 10 metres was randomly located and the produce therefrom harvested and its weight recorded.

1.2.58.6 For 1964-65, the response in respect of urd, moong and masur crops was 44, 21 and 73 per cent respectively whereas for 1965-66, the response was 42, 25 and 63 per cent respectively.

1.2.58.7 During the years under reference, the data were collected and the estimates of production in respect of each crop under study were prepared.

### 1.2.59 Survey on production of castor

1.2.59.1 The Directorate of Economics and Statistics, Uttar Pradesh conducted the enquiry with a view to collect data on production of castor for the year 1964-65 and to build estimates on it since it was sown with other crops. The data were collected thrice during the quarter ending December, 1965 from all over the State except the three districts of Uttarakhand Division.

1.2.59.2 Stratified multistage random sampling design was adopted for the survey. The State was first divided into five regions *viz.* Eastern, Western, Central, Bundelkhand and Hill districts and each region was then stratified into non-over-lapping strata *i.e.* stratum consisting of one district. From each district, 6 villages were selected at random with probability proportional to their size, the size being measured by the 1961 census population of the villages. In case a village happens to be large one, it

was divided into hamlets of roughly equal population and one of the hamlets was selected at random. In these sample villages/hamlets the Economic Intelligence Inspector paid three visits during the quarter ending December, 1965 *i.e.* one-third of the villages were surveyed in each of the three months. Data were collected from all the households of the selected hamlet. In all, data were collected from 306 villages of 51 districts.

1.2.59.3 The field staff consisting of Economic Intelligence Inspectors collected the data in each district under the supervision of District Statistical Officers. The Director of Economic Intelligence and Statistics, Uttar Pradesh, was responsible for the scheme as a whole.

1.2.59.4 During the year under review, the data were scrutinised at the headquarters and results of the survey were proposed to be published in the quarterly Bulletin of Statistics of April-June, 1967.

### **1.2.60 Survey on production of sugarcane**

1.2.60.1 The Directorate of Economics and Statistics, Uttar Pradesh conducted the survey with a view to estimate the quantum of sugarcane put to various uses in the State. Each household in the selected village was asked to indicate the quantity of sugarcane produced and its various utilisation during the agricultural year, 1964-65. The data were collected from 6 sample villages in 3 months at the rate of 2 villages during the quarter ending December, 1965. Information was collected by interviewing respondents through personal investigation with voluntary cooperation.

1.2.60.2 Stratified multistage random sampling design was adopted. For this, the State was first divided into five regions *viz.* Eastern, Western, Central Bundelkhand and Hill. Each region was stratified into non-over-lapping strata *i.e.* each district was taken as stratum. From each district, 6 villages were selected randomly with probability proportional to size, size being measured in terms of population of villages in the 1961 census. In case a village happens to be large one, it was divided into hamlets of roughly equal population and one of hamlets was selected at random. Data were collected from all the households of the selected hamlet.

1.2.60.3 The field staff consisting of Economic Intelligence Inspectors collected the data in each district under the supervision of District Statistical Officers.

1.2.60.4 During the year under review, the collected data were scrutinised and tabulated and the results of the survey were proposed to be published in the quarterly Bulletin of Statistics of January-March, 1967.

## **GOVERNMENT OF WEST BENGAL**

### **1.2.61 Sample survey for estimation of area and yield of coconut and arecanut**

1.2.61.1 The survey sponsored by (i) Regional Office, Coconut Development Department and (ii) Regional Office, Arecanut and Spices Development and Co-operation Department was conducted by the Agricultural Branch of the State Statistical Bureau, West Bengal. The purpose of the survey was to prepare stable estimate of acreage under and production of coconut and arecanut in West Bengal with a view to making use of the results for the development of cultivation of the crops in the State. Five rounds of the survey covering five agricultural years have been contemplated for the present.

1.2.61.2 The third round of the survey commenced on 1st July, 1964 and completed on 30th June, 1965. The fourth round of the survey commenced from 1st July, 1965 and was completed on the 30th June, 1966. The scheme would be continued during the Fourth Plan period. The following types of information was collected :

- Schedule I Details regarding pure plot of coconut/arecanut palms.
- Schedule II Details regarding palms in the pure plot of cocounut/arecanut.
- Schedule III Details regarding plots having scattered palms of coconut/arecanut.
- Schedule IV Details regarding scattered palms of coconut/arecanut.
- Schedule V Details regarding yield of coconut/arecanut for selected palms round the year.

1.2.61.3 The survey covered the rural areas of six districts of West Bengal namely Jalpaiguri, Cooch Behar, 24-Parganas, Howrah, Hooghly and Midnapore. The list of mouzas of the aforesaid six districts had been used as the frame for the survey. The procedure of selection of samples for this round survey was as follows :

A sample size of 200 mouzas was selected at random for area enumeration, out of which a sub-sample of 50 mouzas was selected for harvesting experiments. While all the coconut and arecanut palms in the sample mouzas were enumerated for yield estimation, a selection of 5 plots was made at random from amongst those containing bearing palms in respect of each of the nuts and then a selection of 6 of the bearing palms at random or all the bearing palms in case it is less than 6 in each plot in respect of each of the nuts. 50 per cent of samples *i.e.* 100 sampled mouzas were kept common from the earlier two rounds—50 each from the second and third rounds. Out of the 50 retained samples of the second round, 12 samples selected for harvesting operations were kept common for the third round and also retained for the fourth round for harvesting operations. Out of the 50 retained samples from the third round, 13 samples selected for harvesting operations were kept common for the fourth round for the harvesting operations. The remaining, 50 per cent of the samples (*i.e.* another 100 sample mouzas) were selected in clusters of 5 mouzas each. Each of the 5 mouzas of a cluster was surveyed to ascertain whether there was any coconut or arecanut palm. Mouzas of the clusters were then stratified as those having coconut or arecanut palms and those having no palms and a mouza was selected from those having palms. Out of these selected mouzas, 25 sampled mouzas were chosen at random for harvesting operations. Out of 200 sampled mouzas only three mouzas could not be surveyed due to proximity of Pakistan border. The procedure remained the same for the third round also.

1.2.61.4 Data were collected by the Assistant Investigator of the Bureau. Manual tabulation programme was followed in respect of the collected data. A set of tables showing the number of bearing and non-bearing palms by districts, yield rates and production of palms, etc. had been prepared.

### **1.2.62 Continuous sample surveys for estimating acreages and yield rates of important crops**

1.2.62.1 This is a repetitive survey and was conducted by the Agricultural Branch of the State Statistical Bureau, West Bengal, for estimating acreages and yield rates of important crops during 1964-65 and 1965-66 in three crop seasons (i) bhadoi (July-October) for jute and aus paddy (ii) winter (November-January) for aman paddy and (iii) rabi (January-April) for wheat, barley, pulses, sugarcane, potato, mustard and linseed. The entire State, except for the hill tracts was covered, involving an area of about 30,000 square miles.

1.2.62.2 For area survey, the area was divided into 232 strata corresponding to police stations (as administrative units). Within each stratum, sample points were located at a density of about 0.5 per cent per sq. mile. At each sample point, the sample units were formed out of a square grid of 2.25 acres and a cluster of additional plots. The average size of the total unit so constituted was about 12 acres while their numbers in the three seasons were, 16, 143, 19,031 and 22,749 respectively.

1.2.62.3 For yield survey, each stratum was subdivided into 4 quadrants of approximately equal area. One random point was located in each quadrant and villages round each point covering an area of 3 to 4 sq. miles were listed. Crop cutting work was carried out in these villages in a number of grids (5 in aman and rabi, 3 in jute-aus) chosen at random from among the grids used in the acreage survey. Sample plots (2 in jute-aus, 1 in aman, 8 in rabi) under crop were selected at random from each of these grids and one sample cut was harvested from each plot.

1.2.62.4 Square shaped cuts of the size 15×15 sq. fts. were used for potato, sugarcane and arhar in the rabi season. For the other crops, a set of concentric circular cuts of size 2 ft., 4 ft. and 5 ft. 7½ inches were used in each plot.

1.2.62.5 The field work in respect of jute-aus, aman and rabi survey, 1965-66 was completed as scheduled and the crop estimates were duly submitted to the Government. Report on rabi season, 1963-64 and those of jute-aus and aman seasons, 1964-65 have already been prepared.

1.2.62.6 The sample survey for estimating acreages and yield rates of crops would continue as usual during 1966-67.

### **1.2.63 Paddy yield estimation survey in Mayurakshi Reservoir (Development Project) area and cost of production, storage and marketing survey**

1.2.63.1 These surveys were undertaken by Irrigation and Waterways Department, Government of West Bengal during 1965-66 and these would be continued in

1966-67. The purpose of the survey was to estimate the average increase in outturn of the produce from agricultural land in areas notified under section 8 and 10 of the Bengal Development Act No. XVI of 1935 and also to estimate net increase in the profits resulting from the improved work (the supply of irrigation water from the Mayurakshi Reservoir Project in the present case) and also calculating the net value of estimated increase in outturn. The survey covered 36 mouzas of police station Suri, 18 mouzas of police station Dubrajpur and 8 mouzas of police station Illambazar, all in the district of Birbhum in the State having a gross area of 23,000 acres and paddy area estimated at 17,400 acres. Crop-cutting experiments were conducted in respect of aus and aman paddy crops and data were obtained in respect of utilisation of all the cadastral plots which fell within the sample units. Reference period for land utilization crop cutting and cost of production surveys was aus season (May to October) for aus paddy and aman season (May to January) for aman paddy crop. For surveys relating to costs of storage and marketing reference period was one year from harvest to harvest.

1.2.63.2 Complete plot lists of the area covered were obtained from settlement records for each village along with area of individual plots and information regarding utilization of each plot at the time of settlement operations. These served the purposes of a frame for sampling. As the area under aus paddy was found very small, it was considered necessary to obtain some additional information regarding aus crop yield. For this purpose, a number of investigators were sent out to the area after transplantation of aus paddy for preparing a list of all plots in which aus paddy was transplanted. This list was used as a frame for selecting a number of additional sample units for carrying out crop cutting work. For random selection of sample units for purposes of survey relating to costs of production, storage and marketing, the owners of plots in which actual crop cutting was done were listed and this list was used as a sampling frame.

1.2.63.3 For purposes of the main area survey and crop cutting operations for both the aus and aman crops, sample units were selected strictly at random with the help of standard random number tables, from the list of the plots. The size of the sample was based on requirements for obtaining average rates of outturn from (i) canal irrigated (ii) tank irrigated and (iii) non-irrigated lands for both aus and aman crops. The sample size constituted of about 1,700 sample units. It was found that one sample unit for every 10 acres of estimated paddy area of the 'universe' gave about 1,700 sample units and selection of "first plots" of the plot cluster sample units from the plot list was made accordingly from each village on the basis of the estimated paddy area of the village as found from settlement records.

1.2.63.4 For the purpose of selection of sample units for survey regarding cost of production, storage and marketing, a list of owners of all plots of the regular sample from which crop was actually cut, was taken as the frame and from this frame 25 per cent of the persons were selected at random by the method of systematic sampling with randoms start. From the persons so selected, information regarding costs of production etc. were obtained by interview method, coupled with observation in respect of such matters for which observation was possible, in respect of the costs incurred for cultivation in the plot from which crop was cut.

1.2.63.5 As regards data regarding storage and marketing, the selected person's household as a whole was taken as the unit and the costs incurred by the household for storage of all crops obtained by him and also the costs incurred for marketing of crop over a whole area was obtained, by interview method. The main selection of sample units was done in the central Office in Calcutta. Selection of special samples for special aus crop cutting and selection of samples for costs of production, storage and marketing was made at the field head office by the application of random numbers lists.

1.2.63.6 The operation taken as a whole may be treated as a multi-subject survey because apart from ascertaining the average rates of yield from canal irrigated and other areas, the average costs of production, storage and marketing were also included as objectives as required by the Bengal Development Act. While carrying out the survey, a good deal of subsidiary information was also collected mainly for checking the accuracy and reliability of the data collected but which could also be used for obtaining other important information regarding different aspects of production, marketing etc.

1.2.63.7 The extent of non-responses were 2 to 3 per cent and 3 to 4 per cent in the case of crop-cutting and costs of production, storage and marketing. No special arrangement was made for treatment of non-response cases except for cases where the respondents were unwilling to supply information or permit crop cutting to be done. In such cases, senior officers visited the persons concerned to obtain their consent. They have succeeded so far in all cases regarding actual crop-cutting. As regards information about costs of production etc., some respondents stated that they could not recall data regarding cost incurred for different purposes.

1.2.63.8 The field work of area survey and crop cutting of aus and aman paddy were carried out by 10 Inspectors and 26 Investigators under the supervision of 2 Senior Technical Assistants while 7 Investigators were employed for cost of production, storage and marketing survey. The workers were engaged on purely temporary basis for the duration of the survey. Apart from field survey, some workers were engaged in the central office for doing pre-survey (sampling and connected) work and post-survey scrutiny, compilation and other processing and incidental work. This staff also worked for the general supervision of the 2 Senior Technical Assistants who themselves worked under the guidance of the Chief Estimating Officer.

1.2.63.9 A sum of about Rs. 35,250 was incurred on these surveys during the year, 1965-66 while Rs. 36,500 has been granted for the year, 1966-67. During the year 1965-66, the area survey and crop cutting work was completed. Survey for the costs of production, storage and marketing was in progress and expected to be completed by end of March, 1967. Processing of data etc., is in progress and likely to be completed by end of September, 1967.

## **HIMACHAL PRADESH ADMINISTRATION**

### **1.2.64 Crop cutting surveys**

1.2.64.1 This survey was conducted during 1964-65 and 1965-66 by Department of Agriculture, Himachal Pradesh under the overall technical guidance of the Directorate of National Sample Survey with the object of obtaining reliable estimates of average yield and total production of wheat and barley crops in rabi season and paddy and maize crops in kharif season every year.

1.2.64.2 A multistage stratified sampling technique was adopted with district as strata and kanungo circle as substrata, villages as primary units and fields as ultimate units of sampling. Villages were selected by simple random sampling in each Kanungo circle and two plots of size 10 metres  $\times$  2 metres were harvested at random in each selected village.

1.2.64.3 The field work was carried out by the Field Kanungos. The non-response reported during 1965-66 was nearly 18 per cent. The expenditure incurred on the survey was Rs. 8,360.00 for 1964-65 and Rs. 10,000.00 for 1965-66. The estimates of average yield and total production of important crops in the Pradesh were prepared. A Kanungo circle estimate was the simple average of all selected plot yields in the circle while the district estimates were obtained by weighing the Kanungo-circle average yield with the area under the crop in the Kanungo circle. Similarly, State average yield was obtained as weighted average yield of the district with the area in the district as weights.

## **MANIPUR ADMINISTRATION**

### **1.2.65 Quick estimation of acreage and yield of potato, rape and mustard and chillies**

1.2.65.1 The survey was conducted by Department of Statistics, Manipur with a view to estimate the acreage and yield of three crops, namely potato, rape and mustard and chillies. The survey covered all the villages in the valley of Manipur where field crops were grown. The duration of the survey was March to June, 1965. Data which related to one agricultural year, were collected by the direct observation of the sampling units and through personal investigation with voluntary co-operation of the households.

1.2.65.2 List of the villages growing the specified crops obtained from the Block Development Officers were taken as frame for the survey. The design adopted in the survey was stratified multistage random sampling where households having the fields of specified crops were the first stage units and the experimental plots of size (18'6"  $\times$  16'6") in the case of mustard and chillies and of size (16'6"  $\times$  7' rows) in the case of potatoes were the second stage units. In each village where specified crop was sown, two fields were selected at random. In each selected field, a crop cutting experiment was conducted in a randomly selected plot of specified size.

1.2.65.3 The field work of the survey was conducted by the Inspectors and Primary Investigators under the technical and administrative control of Statistical Officer and Deputy Statistical Officer. No separate funds were earmarked for the survey as it was taken up as normal departmental work,

### **1.3 Improved agricultural practices and their effects**

#### **DEPARTMENT OF STATISTICS, DIRECTORATE OF NATIONAL SAMPLE SURVEY**

##### **1.3.1 Sample surveys for estimating the extent of adoption of improved agricultural practices**

1.3.1.1 A sample survey for estimating, at the regional level, the extent of adoption of various improved agricultural practices, both in terms of number of cultivators and acreage benefited, was conducted in 1964-65 and 1965-66 as a part of a wider study of levels of employment, consumption and living etc., organised by the Programme Evaluation Organisation, Planning Commission. The survey covered all the States and the Union Territories of Himachal Pradesh and Manipur in both kharif and rabi seasons of 1964-65. Before 1964-65, similar surveys had been conducted in most of the States on the recommendations of the Working Group on Community Development Statistics. During 1965-66, the survey covered three States *viz.*, Punjab, Mysore and Uttar Pradesh in both kharif and rabi seasons.

1.3.1.2 The State-wise details of the survey are reported under the respective States. The surveys covered various items of improved agricultural practices such as use of improved seeds, application of chemical fertilizers, organic manures and chemical pesticides and adoption of improved cultivation methods. In addition, data were collected on the number of cultivators using improved implements and the number of implements possessed.

1.3.1.3 The sampling design adopted during 1964-65 was as follows:

In most of the States, all the stage I, stage II and post intensive blocks were taken up for the survey. In some States, however, a sample of blocks was selected for the survey. In each selected block, 4 to 6 villages were chosen at random from all the villages in the block and within each village, resident cultivators were listed and further classified into beneficiaries and non-beneficiaries according as they obtained/applied one or more of the specified in-put factors in their holdings during the season or not. A sample of 4 to 6 beneficiaries and 2 non-beneficiaries was selected for detailed enquiry regarding inputs in their holdings. For non-beneficiaries, the details of area sown under specified crops were also collected to facilitate estimation of total area under these crops.

1.3.1.4 During 1965-66, the survey covered all the development blocks in Mysore in the kharif. However in rabi, the survey was confined to all the blocks in 8 districts of the State, important for rabi crops. In Punjab, all the development blocks were covered during both the seasons. In Uttar Pradesh, the survey excluded the development blocks in 3 hilly districts.

1.3.1.5 The sampling design for 1965-66 was slightly different from that adopted during 1964-65 and was as reported below :

The plan in Mysore provided for selecting 6 villages per block and 6 beneficiaries and 2 non-beneficiaries in each village while in Punjab, 3 villages were selected from each block and 12 cultivators were selected at random from each village. In Uttar Pradesh, the plan provided for selection of 100 villages per block and 10 per cent each of the beneficiaries and non-beneficiaries in each village for detailed enquiry.

1.3.1.6 The primary field work was assigned to Progress Assistants/Agriculture Extension Officers/ Agriculture Sub Inspectors. The survey was organised by the Departments of Statistics in Mysore and Uttar Pradesh, whereas in Punjab, it was conducted under the auspicious of Statstician, Department of Agriculture.

1.3.1.7 As in the past, the Directorate of National Sample Survey continued its role of co-ordination, providing technical assistance, participation in the training of staff, and also undertaking field inspections of survey work, especially on the aspects of definitions, concepts, and methodology for collection of data, and its tabulation analysis etc.

#### **MINISTRY OF FOOD, AGRICULTURE, COMMUNITY DEVELOPMENT & CO-OPERATION, INSTITUTE OF AGRICULTURAL RESEARCH STATISTICS**

##### **1.3.2 The bench-mark and assessment survey under the Intensive Agricultural District Programme**

1.3.2.1 The bench-mark and assessment survey which has been in progress since 1960-61 is an integral part of the Intensive Agricultural District Programme launched in several selected districts located in different States with the object of increasing food production in the country. The survey is being conducted by the Institute of Agricultural Research Statistics with the object of studying the progress of the programme as it proceeds



and with a view to render assistance in determining the modifications to be introduced in securing greater efficiency of the project.

1.3.2.3 During 1965-66, the survey was continued in the Union Territory of Delhi and in all the 16 districts covered by the programme, namely, Ludhiana (Punjab), Aligarh (Uttar Pradesh), Shahabad (Bihar), Pali (Rajasthan), Raipur (Madhya Pradesh), West Godavary (Andhra Pradesh), Thanjavur (Madras), Sambalpur (Orissa), Bhandara (Maharashtra), Surat (Gujarat), Mandya (Mysore), Palghat and Alleppy (Kerala), Cachar (Assam), Burdwan (West Bengal) and Mandi (Himachal Pradesh). The yield estimates of important crops through random crop-cutting experiments were obtained. Besides, factual data on the use of improved cultivation practices such as application of fertilizers and manures, use of improved seeds, control of plant diseases and pests, credit and marketing facilities available to cultivators etc., were also gathered in the course of the survey.

1.3.2.4 The design adopted for crop cutting experiments was a multistage stratified random sampling with Community Development Blocks as a stratum, village level worker's circle as a substratum, a village as a primary unit of sampling, a survey number as a secondary unit of sampling, a field growing specified crops as tertiary unit of sampling and a plot of standard size as the ultimate unit of sampling.

1.3.2.5 An expenditure of the order of Rs. 40,000 per year is being incurred under the scheme for the field work in each district covered.

### GOVERNMENT OF ANDHRA PRADESH

#### 1.3.3 Sample survey for estimating the extent of adoption of improved agricultural practices

1.3.3.1 As a part of their study of impact of Plan, this survey was sponsored by Programme Evaluation Organisation, Planning Commission and was conducted by Bureau of Economics and Statistics, Government of Andhra Pradesh, Hyderabad with a view to estimate the extent of adoption of various improved agricultural practices both in terms of number of cultivators and acreage benefited during kharif and rabi, 1964-65. The kharif and rabi surveys were conducted at the rate of 4 villages in all the 321 blocks of the State in October-November, 1964 and in 106 selected blocks in March-April, 1965. Data on application of improved seed, fertilisers, improved cultivation practices, green manures, oil cakes, pesticides etc., were collected by interviewing respondents and direct observation of sampling units by personal investigation.

1.3.3.2 From each selected block, 4 villages were selected at random. Villages having more than 1,500 population were divided into equal parts. These parts were formed either by grouping houses or hamlets in a revenue village. After sub-dividing villages into different parts, one of these parts was selected at random. In each selected village or part-village, complete listing of households was done by the village level worker. All the cultivators were classified as beneficiaries and non-beneficiaries according as they obtained or applied one or more of the specified input factors in their holding. The sampling of cultivators was done separately for beneficiaries and non-beneficiaries and the sampling fraction varied from 1/20 to 1/10, but was constant for all blocks in a region. For each selected beneficiary, information was collected by enquiry on the size of his holding and the area in which the different inputs were applied. Data were collected by patches of land receiving different treatments. For non-beneficiaries the details of area sown under specified crops were obtained patch-wise.

1.3.3.3 The non-response for kharif and rabi surveys was 3 and 2 per cent respectively.

1.3.3.4 For kharif survey, 1,284 village level workers and 321 Progress Assistants were employed for data collection, while 11 Senior Investigators and 20 Junior Investigators were appointed for processing the data. For rabi survey 424 Village level workers and 106 Progress Assistants were engaged for data collection while 6 Senior Investigators and 6 Junior Investigators were appointed for processing the data.

1.3.3.5 It may be mentioned that similar surveys carried out by the Bureau in 1961-62 and 1962-63, were duly reported in the relevant Annual Reports.

1.3.3.6 No specific amount was budgeted for kharif survey but for rabi survey, amount of Rs. 10,000 was earmarked.

### GOVERNMENT OF ASSAM

#### 1.3.4 Survey for estimating areas brought under improved agricultural practices

1.3.4.1 The survey was sponsored by the Programme Evaluation Organisation, Planning Commission, Government of India as a part of the study of the impact of Plan

Programmes on levels of employment, living etc. and use of improved methods in Agriculture etc. The survey is being conducted regularly every year by the State Statistical Bureau with the object of estimating areas brought under improved agricultural practices which is expected to throw light on impact of Plan Programme on use of improved agricultural practices. The reference period for the survey was agricultural year 1964-65. This survey was conducted in two rounds. The first round was started in September, 1964 and completed in January, 1965. The second round was started in January, 1965 and completed in August, 1965. All the stage I, stage II and post stage II blocks of the State were covered by the survey. Information was collected regarding number of beneficiaries and non-beneficiaries by crop and by inputs and improved practices. Information in respect of each beneficiary was collected on area covered by improved seed, chemical fertilizers, chemical pesticides, other manures, improved implements and improved cultivation practices. These data were obtained crop-wise for non-beneficiaries.

1.3.4.2 List of census villages in each block provided the frame for selection of villages while the list of beneficiaries and non-beneficiaries provided the frame for selection of cultivators. From each of the stage I, stage II and post stage II blocks, 6 villages were selected at random. From each of these villages, 4 beneficiary and 4 non-beneficiary cultivators were selected at random for detailed study.

1.3.4.3 Out of 153 blocks, reports were received from 132 blocks in each of the first and the second rounds. In the remaining blocks the survey could not be undertaken for want of staff.

1.3.4.4 Data were collected by Sub-Inspectors posted in each block under the supervision of Statistical Inspectors.

## **GOVERNMENT OF BIHAR**

### **1.3.5 Survey of improved agricultural practices**

1.3.5.1 This survey was sponsored by the Programme Evaluation Organisation, Planning Commission and was conducted by Directorate of Statistics & Evaluation, Bihar with the object of estimating the extent of adoption of various improved agricultural practices both in terms of number of cultivators and acreage benefited so that the results may be utilised in working out a balanced plan for regional development.

1.3.5.2 The survey covered the entire State and was carried out during November, 1964 to March, 1965 for kharif crops and June, 1965 to November, 1965 for rabi crops. The data were collected with reference period 1964-65, through personal investigation. In order to obtain estimates at regional level, all the stage I, II, and post intensive blocks were covered. In each block, 4 to 6 villages were chosen at random and within each village, resident cultivators were classified into beneficiaries and non-beneficiaries. A sample of 6 beneficiaries and 2 non-beneficiaries was chosen for detailed enquiry regarding inputs in their holdings. For each selected beneficiary, information was collected by enquiry on the size of his holding and the area to which the different specific inputs were applied.

1.3.5.3 Training was imparted by the headquarters officers at the different district offices. Survey was carried out by Agricultural Extension Supervisors, Gram Panchayat Supervisors, Circle Inspectors and Junior Statistical Supervisors.

## **GOVERNMENT OF GUJARAT**

### **1.3.6 Survey to assess the additional yield per Acre of crops due to intensive methods of cultivation in the pilot blocks**

1.3.6.1 The survey was conducted by Director of Agriculture, Government of Gujarat with a view to assess the increase in yield per acre due to adoption of intensive methods of cultivation. The survey work commenced soon after the sowing of kharif crops and was continued till harvesting of rabi crop. The survey work during 1964-65 was conducted in 14 districts and covered the crops of paddy, bajra, jowar, wheat, cotton and groundnut.

1.3.6.2 The information regarding actual weight of produce in the experimental plots (local as well as intensive) in the different selected villages was collected in the prescribed proforma. The information was collected by direct observation of sample units thorough voluntary co-operation of the respondents. The reference period for the survey was 1964-65.

1.3.6.3 The list of cultivators adopting intensive methods of cultivation in a selected village was adopted for the frame. The design was a multistage stratified

random sampling with Agricultural Assistant or Gramsevak seja as the stratum, village as primary unit of sampling, a field as secondary unit of sampling and a plot of prescribed size as ultimate unit of sampling. In each pilot block, about 15—20 villages were selected at random for the survey. In each selected village two survey numbers cultivated by intensive method were selected at random by selecting two cultivators using intensive method; for each intensive field, a corresponding locally cultivated field was also selected for comparison. In each selected field, a plot of one guntha ( $\frac{1}{40}$  acre) was located at random. The selection of villages was done at the central office while rest of the selection was done by field staff. The non-response for all the districts taken together was 24 per cent during the year under report.

1.3.6.4 The field work of the survey was carried out by the Agricultural Assistants and Gramsevaks. At the headquarters one Assistant Statistician, one Senior Statistical Assistant and three Junior Statistical Assistants were employed.

1.3.6.5 The total provision for the staff at headquarters and for payment of labour charges was Rs. 26,500.

1.3.6.6 Data collected during the year under review were analysed and the report for the same was under preparation.

### **1.3.7 Scheme for bench-mark and assessment survey under the Intensive Agricultural District Programme in Surat and Bulsar districts**

1.3.7.1 The survey was undertaken from 1st April, 1962 for four years and continued during the years 1964-65 and 1965-66 under the guidance of Institute of Agricultural Research Statistics with a view to (i) estimating yield rate and the total outturn of the principal crops grown in Surat and Bulsar districts and the control blocks, (ii) measuring the changes in the yield rate and total production of principal crops in the above area and to investigate the possible causes and their relative contribution in bringing about the changes, and (iii) conducting agronomic and agro-economic survey in the above districts and the control blocks.

1.3.7.2 Items of information collected included data on crop cutting survey and ancillary information on agronomic practices, such as irrigation, application of manures and fertilizers, use of fungicides and pesticides and seed rate followed. Two sets of schedules were canvassed namely village schedules and holding schedules.

1.3.7.3 For crop cutting experiments, the Community Development Block served as a stratum, village level worker's circle as a sub-stratum, a village as a primary unit of sampling, a survey number as a secondary unit of sampling and field patch growing specified crops as tertiary unit of sampling and a plot of standard size as the ultimate unit of sampling.

1.3.7.4 For agronomic and agro-economic survey, the Intensive Agricultural District Programme districts and the control area have been divided into 12 zones—6 in Surat, 4 in Bulsar and 2 in control districts. One zone was allotted to each investigator. In each zone, 12 villages in Surat and 16 villages in Bulsar and control area were selected at random from a list of all villages in the stratum. In each village thus selected, cultivators, holdings were selected at random from the list of holdings prepared by Investigators.

1.3.7.5 The field staff consisted of Village Level Workers of the development blocks and Investigators of the Department of Agriculture. The technical staff at headquarters consisted of one Assistant Statistician, one Agricultural Officer, one Junior Statistical Assistant, one Agricultural Supervisor, 12 Field Investigators and 2 Computers.

1.3.7.6 The total cost of the survey for the year 1965-66 was Rs. 71,800. During the year 1965-66, the collection of data for the crop cutting as well as agronomic and agro-economic was over. The compilation and analysis of crop cutting experiments and the coding of agronomic and agro-economic data were also over.

## **GOVERNMENT OF JAMMU & KASHMIR**

### **1.3.8 Improved agricultural practices survey**

1.3.8.1 The survey was conducted by Statistics Bureau, Government of Jammu & Kashmir with a view to estimate the extent of adoption of various improved agricultural practices during kharif and rabi, 1964-65 both in terms of number of cultivators and acreage benefited. The survey was carried out during September-October, 1964 for kharif and April-May, 1965 for rabi. The information was collected regarding

the improved seeds adopted, chemical fertilizers and organic manures used, chemical pesticides and improved implements used. The data were collected by interviewing respondents by means of personal investigation.

1.3.8.2 The list of panchayat circle-wise villages in respect of each of the blocks, with an area of at least 3,000 acres under kharif crops was taken as the frame. The selection of villages from each block was made by the method of simple random sampling at the rate of one village for each 1,000 acres, subject to minimum of 4 and maximum of 8 villages.

1.3.8.3 The staff consisted of 355 Village Level Workers in field and 5 Assistants for tabulation. The results were tabulated.

## GOVERNMENT OF KERALA

### 1.3.9 Sample survey for estimating the extent of adoption of improved agricultural practices

1.3.9.1 The survey was conducted by the Bureau of Economics and Statistics, Government of Kerala with a view to estimate the extent of adoption of the various improved agricultural practices during 1964-65. The survey was conducted in the kharif and rabi seasons of 1964-65. The kharif part of the survey commenced from 1st December, 1964 and ended in February, 1965. The rabi part commenced from the last week of April, 1965 and ended in July, 1965.

1.3.9.2 Data were collected on (i) improved seeds, (ii) chemical fertilizers, (iii) manures namely green manure, oil cake, bone-meal and compost manure (iv) chemical pesticides applied for seed treatment, rate control to the standing crop (v) improved cultivation practices and (vi) improved implements.

1.3.9.3 All stage I, stage II and 50 per cent of post-stage blocks were covered by the survey. In each of the above blocks, 4 census villages were chosen at random from among all the villages in the block. Within each village, all households and the resident cultivators were listed in schedule where the number of households was less than 200. If the village consisted of more than 200 households then a group of 200 households were selected linear systematically by fixing a random start. Out of the cultivators listed, 4 beneficiaries and 2 non-beneficiaries were selected by simple random sampling for detailed enquiry regarding the use of inputs for crops in their holdings.

1.3.9.4 The field staff consisted of 4 Statistical Inspectors, and 18 Investigators. The field work of stage I and stage II blocks was attended to by the Junior Statistical Inspectors in the blocks. In the case of post stage blocks, the field work was done by the Investigators.

1.3.9.5 The analysis of data was done to prepare the end tables on the lines suggested by Programme Evaluation Organisation, Planning Commission. The expenditure incurred during 1964-65 was Rs. 57,593.

## GOVERNMENT OF MADHYA PRADESH

### 1.3.10 Sample survey for estimating the extent of adoption of improved agricultural practices

1.3.10.1 The survey, sponsored by the Programme Evaluation Organisation (P. E. O.), Planning Commission, was conducted by the Directorate of Economics and Statistics, Government of Madhya Pradesh to estimate the extent of adoption of various improved agricultural practices both in terms of number of cultivators and the acreage benefited in each of the four regions of the State. The field work started in September, 1964 and completed in October, 1964 for kharif season and for rabi season it was conducted in the period May, 1965 to July, 1965. The reference period for the survey was respective seasons of agricultural year 1964-65.

1.3.10.2 The sampling design adopted for all the four regions of the State was a multi-stage stratified sampling with variable sampling fractions at all stages except at first stage. The frame was the list of the development blocks in each region. A development block (except the pre-extension ones), a village level worker's circle, a village and a cultivator (beneficiary and/or non-beneficiary) were taken as the first, second, third, and ultimate stages of sampling units respectively for each region of the State. It was decided to select about 50 percent of the blocks where Progress Assistants were posted and 20 percent of the blocks where Progress Assistants were not posted thus making the total number of blocks selected to 170. Within each of the selected block, 5 village level worker's circles were selected and one village from each of the selected village level

worker's circle was further selected. Finally, within each selected village, 8 cultivators comprising 6 beneficiaries (*i.e.* cultivator who had used at least one aid during the reference season covered under the survey) and two non-beneficiaries were selected.

1.3.10.3 The information collected related to the extent of adoption of various improved agricultural practices in cultivators' operational holdings. The information for three specified kharif crops namely paddy, jowar and cotton was obtained separately. The rest of kharif crops were grouped under other crops and necessary information for these crops was collected. The required data were collected through two schedules. In a schedule I, general particulars of the sample village and information relating to each operating cultivator in the village was collected giving the aid or aids used by them during the current kharif season. In schedule II, the data regarding the cropping pattern in the operational holding of the non-beneficiary cultivator and information relating to the area in which the improved aid or aids were applied, besides the general particulars regarding the village and selected cultivators, were obtained.

1.3.10.4 The field work of the survey was conducted by the Progress Assistants under the supervision of Block Development Officers and District Statistical Officers. The scrutiny and analysis was done by the three Statistical Assistants under the supervision of one Statistician. This survey being one of the surveys sponsored by PEO, no separate details of the expenditure incurred were available as it formed a part of the bulk grant of Rs. 91,700 for four different surveys. The analysis of the data collected was scrutinised and completed in February, 1966 and tabulation was in progress.

1.3.10.5 There was no response from 4 blocks in case of rabi season and 3 blocks in case of kharif season.

## GOVERNMENT OF MADRAS

### **1.3.11 Resources and production bench-mark and assessment survey under the Intensive Agricultural District Programme implemented in Thanjavur district**

1.3.11.1 The survey which commenced in the year 1960-61 was extended up to the end of 1966-67. It was under the overall technical direction of Statistical Adviser to the Institute of Agricultural Research Statistics (Indian Council of Agricultural Research), New Delhi who was responsible for the design of the survey, drawing the proforma for the survey, the analysis of the data collected and the preparation of the survey reports. The purpose of the survey was to assess and evaluate the improvement brought about through the Package Programme year by year and also for providing guidance for introducing suitable modification in the programme as and when necessary.

1.3.11.2 The entire Thanjavur district, comprising 36 blocks and 5 control blocks outside the district, were covered by the survey. In the selection of fields for conducting crop-cutting experiments or of cultivators for collection of agronomic and agro-economic data, no distinction was made between intensive or non-intensive area, participants or non-participants in the programme. Information collected under the survey related to levels of yield per acre of paddy as ascertained through crop-cutting experiments and particulars on agronomic and agro-economic aspects. The reference period for the survey was agricultural year *viz.*, July, 1965 to June, 1966. The crop-cutting experiments were planned separately to cover kuruvai, samba and thaladi paddy crops raised during the period. Data were collected by Gramsevak/Statistical Inspectors by enquiries from cultivators, spot verification and with reference to village records. Yield data were obtained by conducting crop cutting experiments.

1.3.11.3 List of cultivator's holdings constituted the sampling frame. Sampling design for crop-cutting experiments was as follows :

- (a) Crop cutting experiments were conducted on kuruvai, samba and thaladi crops. The experiments were planned in district as well as in control areas selected in the adjoining districts of South Arcot and Tiruchirapalli. 150 Villages Level Workers in Thanjavur district were associated in the conduct of crop-cutting experiments while all the Village Level Workers in position in the control blocks selected were required to carry out crop cutting experiments. The Village Level Workers in Thanjavur district were drawn from all the 36 blocks in the district irrespective of the fact that all these were being covered by the Intensive Agricultural District Programme fully or not. The number of Village Level Workers drawn from each block was in proportion to the total areas under paddy crop in the block. The number of Village Level Workers, thus fixed for block was further allocated between the Package and Non-package area in the block in proportion to the crop

area under those two categories. Each Village Level Worker conducted six experiments in all during the year, distributed equally over the three crops of kuruvai, samba and thaladi. If any of these crops was not grown in the villages falling within the jurisdiction of a Village Level Worker, the experiments allotted for that crop were re-allocated to other crops. Villages and fields for conducting the crop-cutting experiments were selected independently for each of the three crops, *viz.*, kuruvai, samba and thaladi. For each crop, two villages were selected at random and a plot of size one cent located in a randomly selected field within each village growing the crop. With this sampling procedure, nearly 300 experiments were conducted in the Package district of Thanjavur on each of three paddy crops. In the control areas selected, 75 to 100 experiments were laid out on each of the crops.

(b) Sampling design for the agronomic and agro-economic enquiry was as follows

Each Statistical Inspector in Thanjavur district was required to conduct the enquiry in about 96 cultivators' holdings distributed over 12 randomly selected villages within the jurisdiction of each Statistical Inspector at the rate of 8 holdings per village. In case of control areas, each of the Statistical Inspectors were required to conduct enquiry in about 128 cultivators' holdings distributed over 16 randomly selected villages at the rate of 8 holdings per village.

1.3.11.4 The Statistical Inspectors and Village Workers were given necessary training by the special District Statistical Officer, Thanjavur before the commencement of the survey for the year 1965-66. One Special District Statistical Officer, 1 Statistical Assistant, 11 Statistical Inspectors, 1 Assistant Statistical Investigator and 2 Computers were employed for the survey.

1.3.11.5 Out of 1,200 crop-cutting experiments on paddy crop planned for 1965-66, 1,148 experiments were successfully conducted. The work relating to the agronomic and agro-economic-enquiry for 1965-66 continued in the year, 1966-67.

1.3.11.6 The total expenditure sanctioned for the survey for the period from 1960-61 till the end of 1965-66 was Rs. 3.73 lakhs. The filled in schedules relating to the crop cutting experiments conducted during the year under review were sent to the Institute of Agricultural Research Statistics, New Delhi after due scrutiny and coding. The schedules relating to the agronomic and agro-economic enquiry were also forwarded to the Institute after due scrutiny and coding.

## **GOVERNMENT OF MAHARASHTRA**

### **1.3.12 Survey of improved agricultural practices**

1.3.12.1 As a part of the study of impact of Plan sponsored by the Programme Evaluation Organisation, Planning Commission, two rounds of this survey were undertaken by the Bureau of Economics and Statistics, Maharashtra, Bombay with a view to assess the spread of improved agricultural practices in terms of the number of users and the area brought under them during kharif and rabi seasons of 1964-65. The duration of the survey was July to November, 1964 for kharif season and November 1964 to February, 1965 for rabi season.

1.3.12.2 The survey covered rural areas of the State. The information regarding adoption of different improved agricultural practices was collected from beneficiaries and non-beneficiaries by the Block Statistical Assistants through village records as well as by personal enquiry.

1.3.12.3 The State was divided into four regions and a three stage sampling design was adopted for each of the regions. The Community Development Blocks, villages and beneficiaries/non-beneficiaries were 1st, 2nd and 3rd stage sampling units respectively. All blocks with Statistical Assistants and one block (selected at random) from those without Statistical Assistants in each district were selected. From the selected blocks, urban areas were excluded and a systematic sample of 4 villages was selected from each block. A list of total cultivating households in the 4 selected villages of the sample blocks was prepared and a systematic sample of 20 beneficiary and 8 non-beneficiary households were taken. In all, 213 blocks were selected in the State and a sample of 4,260 beneficiaries and 1,704 non-beneficiaries were taken.

1.3.12.4 The staff for the survey consisted of District Statistical Officers, Statistical Assistants and Block Statistical Assistants. Compilation of the data was done at the headquarters by a Research Officer, one Research Assistant and 2 Statistical Assistants.

## GOVERNMENT OF ORISSA

### **1.3.13 Sample survey to assess benefits from improved agricultural practices in Community Development Areas in the State**

1.3.13.1 The survey was sponsored by the Programme Evaluation Organisation, Planning Commission and was conducted by the Bureau of Statistics and Economics Orissa with the help of Progress Assistants of the sample blocks to assess benefits from improved agricultural practices in Community Development Areas in Orissa during 1964-65 for kharif and rabi seasons. The purpose of the survey was to find out an estimate of (1) the quantity of aids obtained and applied by the cultivators to their holdings operated (2) the change in crop pattern in the development areas (3) the proportion of cultivator households adopting and/or applying aid and (4) the proportion of area covered by improved practices. Duration of the survey was from last week of November, 1964 to last week of December, 1964 for kharif season and from 1st March 1965 to 31st March, 1965 for rabi season. The data were collected by personal investigation and voluntary co-operation.

1.3.13.2 The survey covered all the Community Development Blocks of the State. List of Community Development Blocks in each of the four National Sample Survey regions of the State was taken as the sampling frame. A three stage stratified sampling design was adopted with blocks, villages and cultivators' households as the first, second and ultimate stage unit of sampling respectively. The blocks were stratified into three classes (1) stage II and post stage II blocks, (2) stage I blocks having completed one year and (3) others. From the lists of blocks under each of the above categories, 30 blocks for the State were selected at random so that in each region the proportion of the selected blocks remained same with the proportion of blocks existing in the region. In the sample blocks, for kharif season, a sample of six villages divided into two sub-samples of three villages each was selected by systematic sampling. For rabi season, out of the sample blocks, a sample of 12 villages divided into two sub-samples of six villages each was selected by systematic sampling. The resident cultivators in the sample villages were listed out and classified into beneficiaries and non-beneficiaries according as they obtained or applied one or more of the specified input factors in the holdings. Out of the cultivators in the sample villages, 10 cultivators consisting of 6 beneficiaries and 4 non-beneficiaries were selected for detailed enquiry.

1.3.13.3 The field work was carried out by Progress Assistants and the District Statistical Officers. They were imparted training before launching the survey.

1.3.13.4 During kharif season, information in respect of 5.6 per cent of blocks and 6.3 per cent of the villages could not be collected whereas during rabi season, about 79 per cent of the blocks had sent their filled in schedules in respect of 75 per cent of their villages.

## GOVERNMENT OF PUNJAB

### **1.3.14 Survey for estimating the extent of adoption of the improved agricultural practices**

1.3.14.1 This 'one time' survey was conducted by the Economic and Statistical Organisation, Government of Punjab, at the instance of Programme Evaluation Organisation Planning Commission, Government of India for estimating the extent of adoption of various improved agricultural practices both in terms of number of cultivators and the acreage benefited. The field work was undertaken during September and October, 1964 for kharif crops and March and May, 1965 for rabi crops.

1.3.14.2 The survey covered the entire State of Punjab except the district of Lahaul and Spiti. The frame of the survey comprised of lists of villages in each block as the first stage sample unit and the list of cultivators in the selected villages provided frame for the selection of sample cultivators as the second stage sample units. From each block, 5 villages were selected systematically with a random start. The total number of sample villages was 1,130. After the listing, the cultivators in the villages were classified as beneficiary and non-beneficiary. Out of the lists so prepared, 6 beneficiaries and 2 non-beneficiaries were selected at random. The information regarding use of improved seeds, improved agricultural practices, chemical fertilizers, green manure, oil-cake, improved implements, chemical pesticides etc. were collected from the cultivators. The investigators interviewed the sampled cultivators in regard to the different inputs applied in their holdings to different crops.

1.3.14.3 The field work was conducted by the staff provided by the Agricultural Department under the supervision of District Statistical Officer. One Research Officer looked after the survey at the headquarters.

## GOVERNMENT OF RAJASTHAN

### 1.3.15 Survey of improved agricultural practices

1.3.15.1 The survey was sponsored by the Programme Evaluation Organisation, Planning Commission and was conducted in kharif and rabi seasons, 1964-65 by Directorate of Economics and Statistics, Rajasthan to estimate the extent of adoption of various improved agricultural practices both in terms of crop area and number of cultivators. Information in respect of kharif and rabi crops *viz.* jowar, maize, cotton, wheat, barley and gram was proposed to be obtained. The survey was carried out in 18 districts in kharif and 20 districts in rabi, each district accounting for a total 20,000 hectares or more under the specified crops. Non-agricultural households were excluded.

1.3.15.2 The data were collected by personal interview method through voluntary co-operation of the respondents.

1.3.15.3 A pilot survey was conducted in the year 1961-62 and was reported on page 79 of the 13th Annual Report. In all the blocks of each stratum, three villages were selected through systematic random sampling after arranging the villages in each block in descending order of the net area cultivated in each, during the year 1963-64. Two stage stratified random sampling was adopted where villages and cultivators were the 1st and 2nd stage sampling units respectively. From each block, three villages were selected at random through linear systematic selection. Depopulated villages were excluded from the frame of the villages. The strata were formed by grouping contiguous districts on the basis of similarities of population, densities and crop pattern.

1.3.15.4 Special training to the District Statisticians was imparted by the headquarters, officers and they imparted training to the field staff in turn at their district officers. For kharif and rabi seasons, 184 and 196 Primary Workers (Progress Assistants) were employed for the field work. The work of the Primary Workers was supervised by District Statistician or District Statistical Inspector.

## GOVERNMENT OF UTTAR PRADESH

### 1.3.16 Resources and production bench-mark and assessment surveys under Intensive Agricultural District Programme in Aligarh district

1.3.16.1 Bench-mark and assessment survey has been an integral part of the Intensive Agricultural District Programme (I. A. D. P.) launched in several selected districts located in different States with the object of increasing food production in the country. The aim of the survey has been to study the progress of the programme as it proceeded with a view to rendering assistance in determining the modifications to be introduced in order to secure greater efficiency of the project.

1.3.16.2 The survey was carried out in those blocks of the district which were covered under the Intensive Agricultural District Programme. In addition, 'control blocks' located in the adjoining districts and having agricultural conditions similar to I. A. D. P. areas were also included for the survey. These blocks constituting the 'control area' provided comparison of the progress under the I. A. D. P. with the normal progress under the usual developmental activities. Besides obtaining yield estimates of important crops through random crop-cutting experiments, factual data on the use of improved cultivation practices such as application of fertilizers and manures, use of improved seeds, control of plant diseases and pests, credit and marketing facilities available to cultivators, etc., were also gathered in the course of the survey. Crop cutting experiments were conducted on maize and bajra during kharif season and on wheat, barley, gram and pea crops during rabi season of 1964-65 and 1965-66.

1.3.16.3 The sampling design was based on stratified multistage random sampling technique similar to the crop-cutting surveys. About 300 crop cutting experiments were conducted for each crop in the district. Similarly, about 100 to 150 crop cutting experiments were conducted on each crop in the control blocks. Information on other items was collected for about 1,600 to 2,000 randomly selected holdings in the district.

1.3.16.4 The field data were collected partly by the Village Level Workers and partly by the whole time *ad hoc* staff appointed for the survey. The *ad hoc* staff consisted of 9 Investigators, 1 Supervisor-cum-enumerator, 1 Inspector, 1 Statistical Assistant and a Statistical Officer.



### **1.3.17 Survey for assessment of increase in the yield of paddy as a result of adoption of the Japanese method of paddy cultivation**

1.3.17.1 The survey is of repetitive nature and was carried out under the technical direction of the Department of Agriculture and the administrative control of the Development Commissioner, Uttar Pradesh in order to assess the increase in the yield of paddy as a result of the adoption of the Japanese method of paddy cultivation. The survey covered 31 districts during 1964-65 and 32 districts during 1965-66, of the plains of the State which were the most important for this practice. Information in respect of "treated" and "control" fields on yield, variety of seed, kind and quality of manure etc. was collected. The survey was carried out during the kharif season from August to December, 1965.

1.3.17.2 The survey was planned in accordance with the multistage random sampling design. The districts were randomly selected in the State. In each selected district, two blocks were randomly selected. Five villages adopting the improved practices were randomly selected from amongst the total number of villages supplied by each of the two selected development blocks. In each selected village, a field under the improved practices from amongst all such fields in the village was randomly selected and was designated as the "treated" field. An adjoining field nearest to this "treated" field and growing paddy of the same variety and class but sown according to the local practice was selected as the corresponding "control" field. Finally, within each field so selected, an equilateral triangular plot of side 10 metres was located at random for crop-cutting.

1.3.17.3 The field work of this survey was done by the Village Level Workers of each of the selected blocks. The analysis was carried out by the staff of the Directorate of Agriculture.

### **1.3.18 Survey for assessment of increase in the yield of jowar and bajra as a result of adoption of line-sowing**

1.3.18.1 These surveys were launched in 4 districts each on jowar and bajra crops during kharif season of each year under reference (1964-65 and 1965-66). Details of the survey were exactly the same as in case of surveys on paddy crop except that four development blocks were randomly selected in each selected district in place of two blocks in the case of paddy. The survey was launched in 4 districts each on jowar and bajra crops.

### **1.3.19 Survey for assessment of increase in the yield of maize as a result of adoption of line-sowing**

1.3.19.1 The survey was launched for the first time during kharif, 1962-63. The details of the survey were exactly the same as in the case of surveys on jowar and bajra stated above except that this survey was launched in 10 districts *viz.*, all the districts of Meerut (except Dehradun) and Faizabad regions.

### **1.3.20 Survey for assessment of increase in the yield of wheat and barley as a result of adoption of Uttar Pradesh method of cultivation**

1.3.20.1 The survey is of annual nature and has been repeated during the rabi seasons of 1964-65 and 1965-66. The survey was conducted in 42 important districts of the State. During 1964-65, the survey was conducted on barley crop also in 30 important districts of the State. The sampling design and other details were the same as those adopted for the paddy crop mentioned above except that in the case of wheat crop, four blocks were randomly selected in a district.

### **1.3.21 Survey for assessment of increase in the yield of rape seed (mustard) as a result of adoption of package practices**

1.3.21.1 The survey was conducted for the first time during rabi, 1965-66 in 12 package districts of the crop. The other details of the survey were exactly the same as those for the Uttar Pradesh method of cultivation.

### **1.3.22 Survey for assessment of increase in the yield of pea and gram as a result of application of superphosphate**

1.3.22.1 These surveys were conducted during rabi, 1964-65 and 1965-66 in 10 districts for each crop. The details of these surveys are exactly the same as in case of the survey on paddy crop mentioned above.

### **1.3.23 Survey for estimation of area brought under improved agricultural practices**

1.3.23.1 The survey was conducted for rabi, 1963-64 and kharif, 1964-65 by the Directorate of Economics and Statistics, Uttar Pradesh under the guidance of a Technical Advisory Committee appointed by the Uttar Pradesh Government to estimate the area covered under the improved agricultural practices in the State. The duration of the survey was December, 1963 to June, 1964. The information collected related to the quantity of various input factors obtained and applied to different crops, area under different crops covered by improved practices and attitude of cultivators towards improvement measures. A pilot survey was conducted in rabi, 1960-61 and the survey was modified on the basis of experience gained by the pilot survey.

1.3.23.2 50 per cent of stage I and stage II blocks having Progress Assistants and one block from blocks having no Progress Assistant in each district were selected for the survey. From each selected block, two villages out of all the populated villages of the block were selected with equal probability and from every sample village, one-tenth of the cultivators were selected at random for detailed enquiry.

1.3.23.3 Progress Assistants under the supervision of the District Statistical Officer and with the technical assistance of District Agricultural Staff conducted the field work while analysis of data was done by the regular staff of the Directorate of Economics and Statistics.

## **GOVERNMENT OF WEST BENGAL**

### **1.3.24 Survey for estimating the extent of improved agricultural practices—kharif and rabi**

1.3.24.1 The survey was undertaken in the year 1964-65 by the Programme Evaluation Unit of the State Statistical Bureau at the instance of the Programme Evaluation Organisation, Planning Commission, Government of India. The aim of the survey was to study the impact of Plan Programmes on levels of living, consumption, employment and use of improved methods in agriculture. Type of information collected in this survey related to particulars of improved agricultural practices adopted by the cultivators in their operational holdings and area under different crops in these holdings having facilities of irrigation etc. The entire rural area of West Bengal was covered. Data were collected by interview method.

1.3.24.2 From each of the 335 development blocks of the State, 4 villages for kharif season and 6 for rabi season were selected at random out of the census villages of the blocks. In the second stage, complete list of cultivator's households was stratified into beneficiary and non-beneficiary households. 4 beneficiary and 2 non-beneficiary household for kharif and 5 beneficiary and 2 non-beneficiary for rabi seasons were selected at random.

1.3.24.3 The survey was carried out by the Progress Assistants and Villages Level Workers under the control of Block Development Officers of the State. The field work for the kharif crops was conducted during the period from November, 1964 to January, 1965 while for rabi crops, it was conducted from February to April, 1965.

## **HIMACHAL PRADESH ADMINISTRATION**

### **1.3.25 Sample survey relating to area brought under improved agricultural practices**

1.3.25.1 The survey was undertaken during both kharif and rabi seasons of 1964-65 by the State Statistical Bureau as per requirements of the Directorate of National Sample Survey to estimate the area brought under improved agricultural practices. The information collected related to the attitude of the cultivator to various improvement measures, cultivation practices, diversion of aids, if any, for purposes other than agriculture etc. The information also included the quantities of various improved input factors obtained and applied. Earlier, the survey had been conducted each year since 1961-62. The survey covered all the 30 blocks under the Community Development Programme except Pangri due to its inaccessibility. Data were collected by the Progress Assistants from the cultivators by interview.

1.3.25.2 A list of revenue villages having improved practices supplied by the Block Development Officers was taken as the frame. A multistage sampling design was used. Six villages were selected at random from each block. The list of all the beneficiary and non-beneficiary cultivators was prepared and on the basis of the same a few 'beneficiary' and 'non-beneficiary' cultivators were selected at random. Only such crops

for which there were at least two beneficiary cultivators, were selected for study. The non-beneficiary cultivators were selected at random in respect of each selected village who served as 'controls'.

1.3.25.3 The field work was carried out by Block Level Progress Assistants posted in each block under the supervision of District Statistical Officers.

1.3.25.4 During 1964-65, the field work of kharif and rabi seasons was completed. The finalisation of report on kharif, 1964 was reported to be in progress.

#### **1.4 Cost of cultivation, farm management and farm practices**

### **MINISTRY OF FOOD, AGRICULTURE, COMMUNITY DEVELOPMENT AND CO-OPERATION**

#### **1.4.1 Farm management studies**

1.4.1.1 The survey is of continuous nature and is being conducted by the Directorate of Economics and Statistics, Ministry of Food, Agriculture, Community Development and Co-operation in various States from time to time. The survey was extended to four more regions namely, Deoria district and Muzaffarnagar district (Uttar Pradesh), Surat district (Gujarat) and Thanjavur district (Madras) in 1965-66. The field work under the farm management studies would be conducted for a period of three agricultural years.

1.4.1.2 A multistage stratified random sampling with village as the primary unit and the holding as the ultimate unit of sampling was adopted. In each district, the investigation was carried out in 15 villages which were selected at random with probability proportional to the cultivated area in different homogenous zones, two to four in each district, formed on the basis of agro-climatic and physical conditions.

1.4.1.3 In each of the 15 selected villages, 10 operational holdings were selected. For the purpose of selection of holdings, in the first instance, the district of holdings according to size was worked out for the districts by pooling together all the holdings of the selected 15 villages. These holdings in 15 villages were then arranged into ascending order of their size. The list was then divided into five parts known as the size classes, representing roughly equal cultivated areas. Two holdings were selected at random from each of the five size classes thus making 10 holdings from each selected village and 150 holdings in all for the district. The size-class intervals from the various strata.

### **GOVERNMENT OF MADRAS**

#### **1.4.2 Inquiry on cost of production of rice**

1.4.2.1 These are continuing studies undertaken by Director of Statistics, Madras since 1962-63. Two districts are taken up at a time and the studies are carried out during two successive years. The survey was first implemented in Thanjavur and Coimbatore districts during 1962-63 and continued in the same districts during the year 1963-64. The details were reported on page 34 of the 14th Annual Report. During 1964-65 and 1965-66, the survey was done in Tiruchirapalli and Chingleput districts. Particulars relating to village economy like classification of area under different crops and its outturn and general particulars on cultivation practices were collected from each selected village. In each of the selected village, detailed inquiry regarding the extent of cultivated area, the number of cattle used and the number of agricultural implements etc., was made in regard to 12 paddy growing cultivators' holdings, chosen at random from the list of cultivators' holdings so as to be representative of different sizes of holdings, different types of cultivations and different types of cultivators.

1.4.2.2 A report on the results for 1962-63, 1963-64 and 1964-65 is expected to be brought out shortly.

1.4.2.3 The cost of the scheme for the year 1965-66 was about Rs. 85,000 of which Rs. 61,000 was spent on field work.

### **GOVERNMENT OF RAJASTHAN**

#### **1.4.3 Cost of cultivation studies**

1.4.3.1 The survey was conducted from July, 1965 to June, 1966 by the Directorate of Economics and Statistics, Rajasthan to determine the cost input factor applied in agricultural operations for arriving at norms for estimation of State income. The survey covered the entire rural area of Rajasthan.

1.4.3.2 The information on (i) improvements of land (ii) rent and water charges (iii) assets (iv) cost of seed, fertiliser and manure (v) cost of maintenance of livestock (vi) implements and equipments (vii) animal labour and human labour in agricultural operations and (viii) production, sale and disposal; were collected by personal interview method. The agricultural year 1964-65 was the reference period for the survey.

1.4.3.3 The 1961 census list of villages was used as a sampling frame for the selection of villages. The design of the survey was stratified interpenetrating two stage random sampling, where the villages constituted first stage sampling units and the cultivating households the ultimate sampling units. The State was stratified into four regions on the basis of similarities of crop pattern and population densities. Within regions, tehsils homogeneous with respect to climatic and crop conditions were grouped together to form strata such that the sum of the size measures of the villages was the same for each stratum. The size of a village was the ratio of its population to the average population of a village in the population class 0-499 rounded off to a suitable integer. The tehsils within each stratum were arranged in serpentine order by considering geographical contiguity. Independent sub-samples of 12 villages each were selected for 1st stage unit with probability proportional to size by using circular systematic sampling. For 2nd stage unit, random sampling method was adopted. 5 per cent of the cultivating households were selected through random selection method from the list of households. Sample villages were selected by the Directorate at the headquarters and sample households were selected in the field by Field Inspector.

1.4.3.4 Training was imparted to the field staff regarding instructions for filling in schedules. The personnel employed for the field work comprised of 32 Field Inspectors, 8 supervisors, 1 Statistician and 16 District Statisticians.

#### **1.4.4 Assessment of the cost of production of food and non-food crops**

1.4.4.1 This survey was conducted on pilot basis by the Director of Agriculture, Government of Rajasthan with a view to assess the cost of production of food and non-food crops in Rajasthan. In each of the four districts viz., Sri Ganganagar, Udaipur and Chambal commanded area of Kota and Bundi, 8 villages were selected. The survey started in 1963-64 and continued till the end of year 1965-66: Details of all expenditures made in connection with the fields, implements, bullock and tractors were collected in the prescribed proforma by personal enquiry by the Investigator from the cultivators of the selected villages.

1.4.4.2 The design of the survey was multistage stratified random sampling with probability proportional to size at the second stage. The selection of tehsils and villages at different stages was adopted only in districts of Shri Ganganagar and Udaipur while in Bundi and Kota districts, a frame of all the villages under the Chambal commanded area was prepared and then selection of 16 villages was done with probability proportional to area under cultivation. In each of the districts Shri Ganganagar and Udaipur, four tehsils were selected at random and from each tehsil two villages were selected with probability proportional to the area under cultivation. Thus in all, 32 villages were selected. In each village, again a frame of operational holdings was prepared. This frame was then divided into three almost equal sized groups consisting of large, medium and small sized holdings. From each of these three groups, three cultivator holdings were selected at random. Thus 9 holdings from each selected village were finally selected. Information for all the fields of these nine holdings was collected separately on separate forms. The method of collecting the information was by cost accounting method.

1.4.4.3 Before the posting of the staff in the villages, the training was imparted at the district head-quarters. The total staff provided for the survey consisted of one Senior Assistant Statistician, four Statistical Assistants, 34 Investigators and two Computers. During the year 1965-66, the data were collected for only 22 villages against the 32 villages selected. The survey is proposed to be continued in the year 1966-67.

### **HIMACHAL PRADESH ADMINISTRATION**

#### **1.4.5 Diagnostic sample survey—cost of cultivation of important crops**

1.4.5.1 The survey is of continuing nature conducted by Department of Agriculture, Himachal Pradesh with a view to obtain reliable estimates of cost of cultivation of wheat, maize, potato and ginger crops in different tehsils. The survey commenced in 1963-64 and would be continued till June, 1966. The survey covered six tehsils namely Theog, Bilaspur, Chamba, Jogindernagar, Renuka and Paunta. Detailed information on various cost components such as bullock labour, human labour, cattle maintenance and non-labour costs are being collected. The study is being carried out by cost accounting method by giving weekly visits to the selected holdings. Data are being collected by personal investigation.

1.4.5.2 Tehsils were selected purposively according to the importance of crops. In each of these tehsils, two clusters of three villages each have been selected randomly and within each cluster, nine operational holdings randomly selected from completed lists of operational holdings prepared with the help of revenue records, were studied. 108 operational holdings were selected in all.

1.4.5.3 The staff comprised of 6 Investigators and 13 Statistical Assistants. The collection of data for the years 1964-65 and 1965-66 have been completed.

1.4.5.4 An article on 'Cost of cultivation of potato, 1963-64 in Theog tehsil of Himachal Pradesh' had been published in the Statistical Newsletter of Indian Council of Agricultural Research, July, 1965.

## **1.6 Other agro-economic surveys**

### **MINISTRY OF FOOD, AGRICULTURE, COMMUNITY DEVELOPMENT AND CO-OPERATION**

#### **1.6.1 Survey for estimation of incidence of pests and diseases**

1.6.1.1 A pilot survey was carried out in Cuttack district of Orissa State for three years starting from 1959-60 with the object of evolving suitable sampling techniques for obtaining estimates of incidence of pests and diseases and to study the relationship with yield. Similar surveys on rice crop were extended to Thanjavur district of Madras State from January, 1962 and to West Godavari district of Andhra Pradesh from February, 1963. A pilot survey on wheat and maize crops with similar objectives was also started in Aligarh district of Uttar Pradesh in March, 1963. During the years 1964-65 and 1965-66, the survey continued in the three districts—Thanjavur (Madras) and Godavari (Andhra Pradesh) for rice crop and in Aligarh (Uttar Pradesh) for wheat and maize.

1.6.1.2 The sampling design was stratified multistage random sampling in all the districts. Each district was divided into number of homogeneous zones which constituted the strata. In each zone, six villages and in each village, four fields growing the crop were selected at random. In each selected field, sampling units (1 sq. meter for paddy and wheat crops and four sq. meters for maize crop) were located at random. In case of important diseases, five plants in each sampling unit were selected for taking detailed observations. Periodical observations on the incidences of pests and diseases were taken in each of the selected fields. Two of the sampling units in each selected field continued to remain the same for whole of the season while the remaining two were taken afresh on each occasion of sampling.

1.6.1.3 In order to assess the avoidable loss from incidence of pest and disease, two additional fields were selected in each village in the following manner. Out of the original fields selected in each method, two were first selected at random corresponding to one of these two fields. One was taken to ensure that as far as possible the fields of pair were similar in such experiments as namely, manuring etc. One field of each pair was taken at random and control measures were taken while the other field was left for natural infestation and harvest yield data were taken, based on sample cuts in each field.

1.6.1.4 The strength of the field staff in each of the three districts was one Field Officer and one Field Supervisor and eleven Field Assistants. The statistical staff at Lucknow consisted of one Statistical Assistant and three Computers. The statistical staff at the headquarters consisted of one Statistician, one Statistical Investigator, one Statistical Assistant and four Computers.

1.6.1.5 The total expenditure incurred under the scheme during the years 1964-65 and 1965-66 was Rs. 1,60,000 and Rs. 1,73,000 respectively.

#### **1.6.2 Survey of fertilizer and other manuring practices**

1.6.2.1 The Institute of Agricultural Research Statistics is carrying out series of pilot investigations of fertilizer practices in typical districts for the past few years. A survey was carried out in Kanpur District in 1964-65 and was repeated in Meerut district of Uttar Pradesh during 1965-66 in order to assess the changes in the extent and pattern of fertilizer consumption since the earlier surveys carried out during 1965-66. Information on (i) the distribution of manurial resources among the different crops grown in the district (ii) cultivators practices with regard to (a) the type and quantity of manure applied and time and method of its application (b) associated cultural practices like improved seed, irrigation etc., was collected.

1.6.2.2 The plan of the survey was a stratified multistage random sampling with tehsils or taluks as strata, village or kara as a first stage sampling unit, a resident cultivator as the second-stage unit and a field as the last stage unit. The method of selection consisted in selecting a certain number of villages with probability proportional (with replacement) to the cultivated area. Eight resident cultivators in each selected village with probability proportional to the number of khasra numbers cultivated by them and two random fields for each of the important crops and one random field for each of the remaining crops, out of all the fields under the crop grown by the selected cultivators, were selected.

1.6.2.3 The field work of the survey in Kanpur and Meerut districts of Uttar Pradesh was completed during 1964-65 and 1965-66 respectively.

## INDIAN STATISTICAL INSTITUTE

### 1.6.3 Multi-purpose surveys, spring, 1965-66 (consumption and cropping pattern)

1.6.3.1 The Indian Statistical Institute conducted the multi-purpose surveys with a view to study (i) the source of procurement of cereals consumed by the households (ii) marketing preferences of consumer items (iii) knowledge and practice of family planning (iv) crop rotation within last three years and (v) the extent of land possessed by the households in different parts of the State and also to collect information regarding crop prospect of the village. The duration of the survey was January to May, 1966. The survey covered the rural areas of West Bengal excluding the hilly region of Darjeeling and Jalpaiguri districts.

1.6.3.2 Reference period for consumption of cereals and marketing preferences utilisation of land and attitude towards family planning referred to last month, last three years and present period respectively. Head of the household was interviewed with the co-operation of villagers. Villagers were consulted for crop prospect.

1.6.3.3 The list of villages given in Census Hand Book 1951 for 1st stage unit and households within village as 2nd stage units were used as sampling frame. A stratified two stage sampling procedure with village selected with probability proportional to area as 1st stage and households selected at random within village as 2nd stage unit was adopted as design of the survey. Each district formed a stratum. The sample of 80 villages in North Bengal and 280 in South Bengal were allotted to different strata on joint consideration of the geographical area of the stratum and the proportion of the area under rabi crop and the allocation was rounded off to multiples of 4 to meet 2 sub-rounds and 2 sub-samples requirements. The selection of villages within a stratum was made in 4 instalments. 20 households were selected at random within a village.

1.6.3.4 Special training was given to field staff before the survey started. 3 villages could not be surveyed due to border areas and other reasons. 36 Investigators employed under the supervision of 9 Inspectors and 3 Supervisors. The field staff was under the control of the Indian Statistical Institute, Field Branch.

1.6.3.5 The survey was completed in May, 1966.

## GOVERNMENT OF ANDHRA PRADESH

### 1.6.4 Agro-economic research survey

1.6.4.1 The Bureau of Economics and Statistics, Andhra Pradesh initiated the survey in October 1961. The main object of the survey was to collect data on cost of cultivation, inputs and outputs in relation to the area of farmers. The survey continued for a period of 3 years. The first round comprising of the rabi season of 1961-62 and kharif season of 1962-63 commenced on 16th January, 1962. The rabi season of 1962-63 and kharif season of 1963-64 constituted the second round and similar was the case with the third round. The reference period for each round was one year comprising two agricultural seasons *viz.* rabi and kharif.

1.6.4.2 The survey covered 60 selected villages spread over 3 districts *viz.*, Krishna, Chittoor and Nizamabad. The study was confined to important food and non-food crops and 9 operational holdings in each of the selected villages. Information on general agricultural conditions (including livestock) of the villages and agricultural holdings of the selected cultivators was collected. Each field investigator collected data from 4 villages by cost account method from the village where he was posted as full time worker and by survey method from 3 surrounding villages.

1.6.4.3 The sampling design adopted for the survey was one of stratified random sampling. Each district was stratified into 3 zones, taking into consideration the geographical contiguity and homogeneity as regards (1) the cultivated area (2) irrigated

area (3) area under paddy (4) rainfall and (5) cultivating population. The number of villages to be surveyed in each zone was in proportion to the cultivated area of the district. Besides the randomly selected villages, 3 surrounding villages were also selected.

1.6.4.4 The staff employed for the survey consisted of 2 Senior Investigators and 2 Computers at the Bureau and 15 Field Investigators. The expenditure incurred for each round was Rs. 47,000.

1.6.4.5 During the year 1964-65, the field work of the survey was over and the tabulation of data was reported to be in progress.

## GOVERNMENT OF GUJARAT

### 1.6.5 Scheme for ascertaining the extent and causes of fallow areas in State

1.6.5.1 The scheme was started in 1959-60 in Gujarat State by the State Government and would continue till all the districts of Gujarat State having considerable large fallow areas are covered. The objects of the survey have been (a) to obtain reliable estimates of total area under fallow land in the district under three categories *viz.* (1) current fallows (2) other fallows and (3) culturable waste and (b) to ascertain the causes of the lands remaining fallow. The survey work has been completed in respect of 10 districts and was in progress in three more districts *viz.* Kaira, Broach and Kutch. The information was collected from the village Revenue records in the selected villages and the same was verified by personal investigation by Agricultural Assistants.

1.6.5.2 The sampling design adopted for the survey was stratified uni-stage random sampling with talukas as strata and villages as the unit of sampling. A sample of 100 villages was selected in a district under survey and was distributed in different talukas of the district approximately in proportion to the fallow areas, a minimum three villages per taluka. The villages in each taluka were selected by simple random method from all the villages. The information about the extent of total fallow area in each village was obtained by complete enumeration.

1.6.5.3 For ascertaining the causes for the lands being kept fallow in each selected village, a sub-sample of 50 survey numbers from all survey numbers under fallow was chosen and the concerned cultivators were interrogated and reasons for land kept fallow were noted.

1.6.5.4 The scrutiny, compilation, tabulation and analysis of the data received from the Agricultural Assistants was carried out by Junior Statistical Assistants employed on *ad hoc* basis under the scheme.

1.6.5.5 The amount budgeted for 1965-66 was Rs. 20,000 but the actual expenditure incurred was Rs. 41,202 while for 1964-65, the expenditure incurred was Rs. 17,411.

1.6.5.6 During 1964-65, the survey was completed in Surat, Ahmedabad and Surendranagar district.

1.6.5.7 During 1965-66, the survey was completed in Bular, Baroda and Bhavnagar districts and the compilation and tabulation of data collected in respect of these districts was in progress.

## GOVERNMENT OF KERALA

### 1.6.6 Survey on the pattern of fertiliser consumption

1.6.6.1 This repetitive survey was sponsored by Ministry of Food Agriculture, Community Development and Co-operation in 1963-64 and was conducted by the Bureau of Economics and Statistics of the State during 1964-65 and 1965-66 with the objective of collecting information on quantity of fertilisers and other manures applied to different crops grown in different seasons and the cultivation practices with regard to the application of manure, time and method of application and other cultural practices influencing yield such as irrigation; crop rotation, pest control etc. Information was collected on the items mentioned above. The survey covered all the cultivated holdings in the State.

1.6.6.2 The sampling procedure adopted was one of two stage stratified sampling. The district covered during the survey was divided into 3 strata *viz.*, low land, mid land and high land. Within the stratum, Kara was the first stage unit of sampling and a cultivating household the second stage unit of sampling. The sample Karas were allocated to each stratum in proportion to the total area excluding forests, roads etc. In

absence of Kara-wise details of that area, the selection of Karas within the stratum was made with equal probability. Within the selected Karas, cultivating households were randomly selected and information regarding fertilizers uses etc., was collected for all the fields of the selected cultivating household.

1.6.6.3 The survey during 1965-66 was completed in three rounds of visits a different times of agricultural operations. The tabulation and compilation of data collected during the first and second rounds of the survey were completed. The analysis of the data collected during the third round was in progress.

## GOVERNMENT OF ORISSA

### 1.6.7 Sample survey to assess the demand of agricultural implements

1.6.7.1 This one-time survey was undertaken by the State Purchasing Organisation, Orissa with a view to assess the demand for various types of agricultural implements by the cultivators in the State. The duration of survey was from July, 1964 to June, 1965. The reference period of the survey was the year 1964-65.

1.6.7.2 The data were collected by the Investigators by personal interview. List of blocks in the district, list of villages in block and list of cultivators in the village were adopted as frame. Multistage stratified random sampling design was adopted, taking development blocks in the first stage, villages in the second stage and cultivators in the ultimate stage unit. Three districts—Bolangir, Phulbani and Koraput, where there was no blacksmithy unit and 14 compact areas in the other ten districts, each consisting of a few blocks surrounding one blacksmithy unit, were taken as strata. From each stratum two blocks were selected, one was the block in which blacksmithy unit was located and the other block was selected by simple random sampling. From each sample block two villages and from each village ten households were selected by simple random sampling. In all, 680 households were selected. The number of sample units (households) which could not be surveyed was 46 (i.e. 6.8 per cent).

1.6.7.3 Two Statistical Investigators and the Progress Assistants were employed for data collection and two Statistical Investigators were employed for data processing under technical guidance of the Assistant Director. Estimation of a particular characteristic for each stratum was done by multiplying the average of such characteristic for the sample units in the stratum with the total number of cultivators in the stratum. Stratumwise estimation of demand for each item of implements as well as some general information have been planned to be presented in tabular form.

1.6.7.4 Total expenditure incurred for the survey was Rs. 1,200 only.

### 1.6.8 Sample survey for estimation of crop damage on account of drought in the badly affected districts

1.6.8.1 The survey was conducted by Bureau of Statistics and Economics during October, 1965 with the object of obtaining reliable information on the various aspects of damage to paddy and other crops on account of the drought in the year 1965-66. The survey covered the districts of Puri, Phulbani, Polangir, Sundergarh, Sambalpur, Dhenkanal and Kalahandi which were reported to have been badly affected by the drought. Information was collected under the two broad heads, viz. (a) areas where the crops were damaged completely and (b) areas where the crops were damaged partially. The loss of production of paddy crop was also estimated. The reference period was from 16th October, 1965 to 27th December, 1965.

1.6.8.2 The revenue villages of the seven districts stated above constituted the frame. A three stage sampling design was adopted using the same stratification and sample of crop cutting villages as in the main crop survey on autumn and winter rice. In each sample village, 3 cultivating households were chosen by simple random sampling and all plots belonging to each sample household were surveyed. In all 3,695 cultivating households were selected for the survey from 1,043 sample villages.

1.6.8.3 The field work was carried out by the crop survey staff. A report has been brought out.

## GOVERNMENT OF UTTAR PRADESH

### 1.6.9 Pilot survey to estimate the incidence of pests and diseases on and consequent losses to wheat and maize crops in Aligarh district

1.6.9.1 This repetitive survey was first launched during rabi, 1962-63 in Aligarh district on wheat under the technical direction of the Statistical Adviser, Institute of Agricultural Research Statistics (I.C.A.R.), New Delhi and the Joint Director of



Agriculture (Statistics), Uttar Pradesh and under the administrative control of the Director of Agriculture, Uttar Pradesh with a view to evolving a suitable sampling technique to estimate the incidence of pest and diseases on, and consequent losses to food crops. The survey was repeated during kharif and rabi of 1963-64, 1964-65 and 1965-66 in Aligarh district on maize and wheat crops respectively. The data were collected by direct observation and on yield by crop cutting experiments.

1.6.9.2 The design of the survey was that of stratified multistage random sampling. The district was divided into nine zones constituting the strata. From each stratum, six villages were selected at random and from each selected village, four fields growing the crop were randomly selected and from each selected field, four sampling units of one square metre each were randomly selected.

1.6.9.3 The field work was carried out by one Field Assistant provided for each of the nine zones. The supervision was done by one field Officer (gazetted) and one Senior Research Assistant provided at the district headquarters. Two more Field Assistants were provided to the Field Officer as reserve. For analysis of the data, one Statistical Assistant and two Computers were provided at the State headquarters.

#### **1.6.10 Survey of fertilizer practices**

1.6.10.1 This survey was conducted during 1964-65 and 1965-66 by Joint Director of Agriculture (Statistics), Uttar Pradesh with a view to (i) collect factual information on the distribution of manurial resources among the different crops grown in the tract and the cultivators practices with regard to

- (a) the quality and quantity of manures applied and the time and method of their application
- (b) associated cultural practices like irrigation, cropping pattern etc.
- (ii) to study the usefulness of sampling technique for collecting information on such topics. Similar survey had already been conducted in Barabanki and Varanasi districts of U. P.

1.6.10.2 During 1964-65, the survey covered all tehsils of Kanpur and Meerut districts. Meerut and Deoria districts were covered during 1965-66. The information was collected on :

- (i) the type and quantity of fertilizers and manures applied to different crops, the time and method of their application and distance of the source of procurement of fertilizers.
- (ii) crops grown, seed rate, irrigation by source, cultural practices etc.
- (iii) size of holding of cultivator and distribution of crops in it.
- (iv) live-stock number and agricultural implements possessed by the cultivator.

1.6.10.3 The general plan of sampling was stratified two stage random sampling. The tehsils of the district were treated as strata. A certain number of villages were randomly selected from each stratum. A total of 100 villages are thus selected. From each selected village, a sample of 8 cultivators was randomly selected for obtaining the required information.

1.6.10.4 The field work was carried out by 5 Investigators under the supervision of a Field Inspector by actually contacting the selected cultivators. The survey work in Kanpur and Meerut districts was completed during December, 1964 and December, 1965 respectively and was reported in progress in Deoria district during 1966.

#### **1.6.11 Survey for collection of farm (harvest) prices of important kharif and rabi crops**

1.6.11.1 The survey is of repetitive nature and is conducted every year by the Board of Revenue under the technical guidance of the Department of Agriculture, Uttar Pradesh with a view to estimating the average wholesale price at which a commodity is normally disposed of by the producer to the trader at the Village site.

1.6.11.2 During the years 1964-65 and 1965-66, data were collected in all the districts of the State except Almora, Garhwal, Tehri Garhwal and the hill patts of Nainital. Paddy, jowar, bajra, maize, cotton, groundnut, til, castor seed, sugarcane, jute, mandua, urd, moong, moth, kodon, sawar, kakun and kutki crops in the kharif season and wheat, barley, gram, arhar, linseed, rapeseed (mustard), potato, tobacco peas and masur crops in rabi season were included in the survey. The prices were

collected on each Friday for 6 to 8 weeks commencing just after the harvest of the crop during the months of September to January in the kharif season and February to May in the rabi season. The information collected refers to average wholesale price of a commodity at which cultivators disposed to their produce to traders at village site.

1.6.11.3 In regard to sampling design till 1959-60, three villages on an average from each tehsil were randomly selected for each crop whether major or minor for reporting of harvest prices by the Lekhpals of the selected villages. The villages selected during 1960-61, separately for kharif and rabi crops, remained fixed for the subsequent years also. In regard to allocation of villages, there was no change in 1960-61 in respect of the major crops but in case of minor crops, the allocation of villages was done on the basis of the area under a crop in each tehsil, the sample size remaining the same as for major crops. The simple arithmetic mean of the prices for all the selected villages in a tehsil was taken as the average harvest price for a particular week. The district weekly harvest price was arrived at by taking simple mean of tehsil averages for a particular week. The average harvest price of a crop in a district was arrived at by taking simple average of the prices for 8 weeks. The average harvest price of a crop for the State was obtained by taking the weighted mean of the district averages, the weights being the corresponding estimate production of the crop in the district.

1.6.11.4 Data were collected by the Lekhpals of the selected villages by actually visiting the most prominent market places in the village where the produce of the village was mostly disposed of by the cultivators. Where there was no such market place in the village, the prices were collected from the nearest market outside the village.

## **2. Animal husbandry**

### **2.1 Livestock and poultry population**

#### **GOVERNMENT OF RAJASTHAN**

##### **2.1.1 Livestock survey**

2.1.1.1 The survey was conducted by the Directorate of Economics and Statistics, Rajasthan with a view to estimate (i) the yield of milk per animal and the utilisation of milk for conversion into ghee and khoa etc., as well as the production of these products (ii) the number of animal slaughtered in relation to total population and yield of meat per animal (iii) the rate of growth of different categories of livestock (iv) the production of eggs and poultry per year (v) the production of hides and skins per year (vi) the trade margins of rearing by livestock rearers and (vii) the production of dung per year. The survey was started in July 1964 and covered both the rural and urban areas of the Rajasthan State.

2.1.1.2 The data were collected about the livestock population and per animal yield of milk, meat and eggs, cost of feeding of livestock, dung cakes and their consumption pattern, through enquiry method by Statistical Inspectors of the Directorate under the supervision of District Statisticians.

2.1.1.3 For sampling frame, the State was divided in two sectors—rural and urban. The rural sector was further divided into four strata by grouping contiguous districts having similar crop patterns and population densities. In each stratum, four independent inter-penetrating sub-samples of 36 villages were selected circular systematically with probability proportional to size. The urban sector was divided into four strata—first consisting of all cities and towns with population of 50,000 and above and the second consisting of remaining urban areas. The design of the survey was interpenetrating stratified two-stage random sampling. For urban areas also four independent sub-samples were drawn.

2.1.1.4 The staff employed for the field work comprised of 34 field Inspectors, 8 Supervisors, 1 Statistician and 1 District Statistician.

2.1.1.5 The survey was in progress by the close of year 1964-65.

### **2.2 Livestock products and by products**

#### **MINISTRY OF FOOD, AGRICULTURE, COMMUNITY DEVELOPMENT & CO-OPERATION, INSTITUTE OF AGRICULTURAL RESEARCH STATISTICS**

##### **2.2.1 Sample Survey for estimation of annual production of livestock products and study of their management practices**

2.2.1.1 The Institute of Agricultural Research Statistics has been conducting series of pilot investigations since the beginning of the the second Five Year Plan in typical tracts, chosen one from each of the animal husbandry regions of the country

with the object of evolving a suitable sampling technique for collecting reliable data on various practices relating to the rearing and feeding of cattle and buffaloes in the regions and for estimating live stock products.

2.2.1.2 The broad plan of sampling for each State was that of multistage stratified random sampling. Contiguous districts in each State were grouped into suitable number of strata taking into consideration the important categories of livestock, their level of production and livestock keeping practices etc. To have representative samples for estimating egg and wool production in each stratum the units such as taluks/tehsils/sub-divisions/thanas/blocks were suitably grouped into sub strata such as (i) consisting of units which were important for poultry alone (ii) units important for sheep alone (iii) units important for both sheep and poultry and (iv) remaining units.

2.2.1.3 Clusters of two adjacent villages selected at random with equal probability from each sub-stratum were the primary stage units. Depending upon the size of the state, a certain number of clusters were selected and allocated to different strata in proportion to bovine, sheep, poultry and total livestock population according as the main character under study for the year was milk, wool, eggs or meat production respectively. In other years, about 30 to 40 per cent of clusters selected for the main character were retained for obtaining correction factor for estimating the production in those years.

2.2.1.4 The sampling units in the subsequent stages were randomly selected clusters of households and animals/birds in a household.

2.2.1.5 The survey were carried out in Maharashtra and Kerala during 1964-65. During 1965-66, the surveys in Mysore and Madras were completed while in Bihar and Madhya Pradesh, the surveys were in progress.

## **2.2.2 Sample survey for estimating meat production in Madras State**

2.2.2.1 The survey was started in November, 1965 in the districts of Coimbatore, North Arcot, South Arcot, Salem and Tiruchirapalli for evolving a suitable sampling technique for objective estimation of meat production and collecting reliable data on factors influencing meat production. It would continue for 14 months.

2.2.2.2. The sampling technique adopted was a multistage stratified sampling with district as a stratum, a cluster of three villages each within a stratum as the primary stage sampling unit and a household as a second stage unit. A sample of 20 households (keeping animals and consuming meat) and 4 households (not keeping animals and consuming meat) were selected randomly in each selected village. In addition to collecting information from the selected households, all professional butchers, establishments and slaughter houses in the village were also surveyed.

2.2.2.3 The period was divided into three seasons namely summer, rainy and winter. The field work for summer season was completed while for rainy and winter, it was being taken up. Within a season, 12 clusters of villages in a stratum were being visited three times each for collection of data. Among other things, data were being collected on number of animals kept in the selected household, their feeding practices, their disposal other than by slaughter, utilisation of meat produced by slaughtering the animals etc.

2.2.2.4 The field work was being carried out through the State Department of Animal Husbandry.

## **2.2.3 Study of rearing practices of sheep and yield of wool and mutton in Andhra Pradesh and Gujarat**

2.2.3.1 The details of the above survey carried out in Andhra Pradesh were reported on page 51 in the 15th Annual Report.

2.2.3.2 A repeat survey was also started in Joria region of Gujarat State from December, 1964 (i) to assess the changes in wool production per sheep and total annual wool production (ii) to study changes in the sheep rearing practices as a result of development programmes (iii) to estimate mutton production. The previous survey in this region was carried out during 1959-60. The region comprised of northern districts of Sabarkantha, Banaskantha, Mehsana, the districts in the Saurashtra region and Kutch district. The field work of the survey was terminated in January, 1966. Some of the details of the survey have already been reported on page 51 of the 15th Annual Report and the remaining are as follows.

2.2.3.3. All the 115 taluks of this region were combined into sixty taluk groups of approximately equal geographical area. These taluk groups were classified into three size strata namely those having less than 20,000 sheep, 20,000 to 35,000 sheep and 35,000

sheep and above on the basis of sheep population in each taluk group as reported in 1961 livestock census. A sample of 20 taluk groups was chosen and the groups were allotted to the strata in proportion to sheep population in 1961. The selection of taluk groups within each stratum was with probability proportional to the sheep population of a taluk group. Within each taluk-group, 12 clusters of 3 villages were selected at random for collection of data.

2.2.3.4 The field staff consisted of one Field Officer, 3 Inspectors, 6 Supervisor-cum-relieving Enumerators and 20 Enumerators. The statistical staff consisted of one Statistician, two Statistical Assistants and 6 Computers.

## **GOVERNMENT OF RAJASTHAN**

### **2.2.4 Sample Survey for the study of milk yield, egg production, breeds feeding and management practices of bovines and poultry**

2.2.4.1 The Animal Husbandry Department of Rajasthan conducted the survey to establish basic data on the level of egg production and on the various breeds, feeding and management practices of poultry in the State for the years 1964-65 and 1965-66.

2.2.4.2 During the year 1964-65, a sample survey for study of milk yield, breeds, feeding and management practices were undertaken in the area comprising of Tharparkar and Kankrej tracts covering 23 tehsils of Sirohi, Jalore, Pali (Partly), Jaisalmer and Barmer districts, divided into ten suitable strata formed on the basis of the number of bovines, geographical contiguity, milk yield level and climatic factors.

2.2.4.3 During the year 1965-66, the survey covered the Hariana, Gir and Mewat cattle breed tracts of the State. Information regarding the egg production and prevailing poultry practices in the area covered, percentage of breed which are true to the type and those which are non-discript and statistics required in the comparative study of different zones was collected.

2.2.4.4 Data were collected by the enumerators through the personal visit, both by enquiry and actual weighment.

2.2.4.5 The design of the survey adopted was one of the stratified multistage random sampling. The stratification was done keeping in view the geographical contiguity, bovines and poultry numbers and climatic factors etc.

2.2.4.6 One Field Officer, 2 Research Assistants, 5 Statistical Inspectors, 6 Computers and 10 Enumerators were employed for the survey. The training relating to filling of schedules and to recognise the breeds etc., was imparted to the field staff before the start of the survey.

2.2.4.7 The surveys undertaken during the years under review were the part of the survey undertaken during the year 1962-63. Results of the survey are not yet estimated.

2.2.4.8 During the year 1966-67, sample survey for estimation of meat production in south-eastern regions of the State is proposed to be undertaken.

### **2.3 Cost of Production**

#### **MINISTRY OF FOOD, AGRICULTURE, COMMUNITY DEVELOPMENT & CO-OPERATION**

##### **2.3.1 Survey for assessing the cost of production of sheep and wool**

2.3.1.1 The object of the survey was to develop a suitable sampling technique for studying the economics of sheep rearing in relation to wool production under migratory as well as stationary types of management in hilly tracts and to obtain estimates of different components of the cost of production of sheep and wool both in monetary terms and in terms of volume of services and goods.

2.3.1.2 The survey was undertaken with effect from 1-6-1963 in Himachal Pradesh and continued during 1964-65 and 1965-66.

2.3.1.3 In all, 88 villages comprising of 44 villages from Mandi district and 44 from Mahasu were selected without replacement and with equal probability of selection for every village in each district for complete enumeration in order to secure information on the total number of sheep owning household of both types. Out of these, a random sample of 21 villages for the study of stationary flocks, and 7 groups of migratory flocks were selected for the study. The data on the feeds fed during the month and wool yield at sheering in the selected flocks were collected by actual weight. The information, for all the flocks in the selected villages, on various items of cost, viz.

labour, food, purchases etc. for the maintenance of sheep, together with the information on total produce in cash and kind from sheep was recorded every month. Further, the information on items such as land utilization, other livestock income from other sources, monthly household expenditure, describing the economic status of the flock-owner was also collected. A stationary enumerator collected the above data from all the flocks in about 7 selected villages allotted to him for the work. He visited all those villages in a given order in every month.

2.3.1.4 The enumerator collecting the information on migratory flocks accompanied with a group of such flocks to their place of migration and recorded all day to day expenses incurred by the flock-owner on the group during migration.

2.3.1.5 The field work of the survey was completed by the end of February, 1966. The data collected during 1963 have been analysed and a technical report on the results is reported to be under preparation. The data for the second year are being analysed.

### 2.3.2 Study of economics of raising cattle and buffaloes

2.3.2.1 With a view to studying the economics of raising and maintenance of cattle and buffaloes in a breeding tract, a sample survey was undertaken in June, 1963 by the Institute of Agricultural Research Statistics in Hissar district of Haryana. The data continued to be collected in 1964-65 and 1965-66. The survey aimed at involving estimate with objectivity and precision of the cost of raising young stock and maintenance of breeding adults as well as working males and the income from various sources connected with livestock keeping, accruing during the process. Thus a complete balance sheet of expenditure and income relating to livestock production was secured. The study has furnished estimate of cost of production of cow milk and buffalo milk in the tract both in monetary terms and in terms of physical quantities of volume of services and goods. The variation in the cost of maintenance and production and their components due to season, class of products, type of feed, etc., was also studied.

2.3.2.2 The design adopted was one of stratified multistage sampling. Villages in the district of Hissar (omitting all the towns and areas where milk supply scheme were operating) were divided into four strata each containing one or more Community Development Blocks such that the strata roughly equalled bovine population. In three strata, eight villages were first chosen. All the villages around each selected village which fell within a radius of 5 miles were listed and clusters of villages together with the selected villages were formed such that the bovine population in each cluster was roughly three times the average bovine population per village within the stratum. One cluster among them was selected at random thus taking 8 clusters of villages in each three strata and 10 in the fourth. After securing a frame through a complete enumeration of bovines in the households in the 34 clusters of selected villages, a representative sample of 12 households in each cluster was randomly selected in such a way that multiples of two households were located in each village. The selection of twelve households per cluster was evenly spread over the sub-strata formed by dividing the households into six categories *viz.* (a) cultivator and (b) non-cultivator households having (i) only cattle (ii) only buffaloes or (iii) both cattle and buffaloes. Thus 408 households were randomly selected from the 34 clusters for the collection of detailed data. The enumerators appointed for the field work collected the data fortnightly from 24 stalls of the selected households of the two clusters assigned to him. After completing the work in the 12 selected stalls in the first cluster within a period of 6 days, he proceeded to the second cluster and collected similar data from the the selected household.

2.3.2.3 The data on feed for all the animals and the milk yield of milking animal in the selected stalls were collected by actual weight both in the morning and evening by the enumerator. Data on animals in the household, incidence of labour both paid and unpaid, recurring expenditure, valuation of livestock and capital assets and equipment and income from all sources connected with livestock keeping and milk production were collected. Each enumerator visited one more household other than those selected for weekly enquiry every day and obtained information by enquiry regarding the production and procurement of milk products and their consumption and disposal.

2.3.2.4 The data collected from 408 randomly selected stalls spread over 103 villages during the first year of the enquiry were analysed and a report incorporating the results was prepared during 1965-66. The data collected during other years of the survey are being analysed at the Institute of Agricultural Research Statistics.

## 2.4 Others

### MINISTRY OF FOOD, AGRICULTURE, COMMUNITY DEVELOPMENT AND CO-OPERATION

#### 2.4.1 Study of impact of milk supply scheme on rural economy in milk collection areas

2.4.1.1 The object of the scheme was to study the impact of urban milk supply scheme on rural milk collection areas with a view to developing a suitable assessment technique for the purpose. Specifically, this involved the assessment of increases which occurred as a result of assessed market and guaranteed price of milk in respect of milk production in the area and its cost, employment due to milk production, economics of production of selected fodder and other crops and overall income both of milk producers and of non-producers.

2.4.1.2 In the first instance, the survey was initiated in December, 1965 in selected rural areas of Bulandshahar and Meerut districts of Uttar Pradesh and Gurgaon district of Punjab from where milk was collected for the Delhi Milk Scheme.

2.4.1.3 The design employed was stratified multistage sampling. Villages of each district were stratified into (i) those supplying milk to the Delhi Milk Scheme and (ii) 'control' villages, agro-biologically similar to those earlier type of villages but not supplying milk to any organised milk scheme. In all, 90 clusters of three villages each, being within a radius of three miles from one another, 60 from the first stratum and 30 from the second were selected at random without replacement. 60 clusters of the first stratum were distributed between the three districts in proportion to the quantum of milk collected from each district. Out of 30 'control' clusters, 12 were allocated to Gurgaon district owing to its being mainly a non-supplying district and 9 each to the other two districts.

2.4.1.4 After securing a frame through complete enumeration of households in the 90 clusters of selected villages, a representative sample of 8 milk producer households in each cluster, 4 among the commercial class who supply milk to organised milk schemes, 2 among those supplying to other agencies and the remaining 2 from among the non-commercial class were selected at random. Enquiry pertaining to cost of production of milk was confined only to the six commercial households whereas for the purpose of milk production and consumption of feeds, all the 8 households were covered. In the case of control clusters, the first two classes of producers were merged. All the eight selected milk producing households were also canvassed for studying the economics of cultivation of selected fodder and other crops. In case any of the selected milk producer household happened to be either a non-cultivating type or has no intention of growing any of the selected crops, it was substituted by another cultivating household at random from among the milk producing households in the same village. The replaced household was however continued to be canvassed for milk enquiry.

2.4.1.5 In addition to the households selected for milk and cost of cultivation enquiries, two more households were selected at random from among the non-producer-non-cultivator households for collection of information on income as well as consumption of milk and milk products. For detailed enquiry, each enumerator (30 in all) was in charge of three clusters of three villages each. Each selected cluster was visited for seven days every month for a whole year.

2.4.1.6 The data on the feeds fed to all the animals and the milk yield of milking animals in the selected household were collected by actual weight both in the morning and evening by the enumerator. The data on other aspects such as main and subsidiary occupations of households, cropping pattern, cost of production of fodder and other crops, returns from various crops, income from dairying, fodder production and all other sources were collected through direct observation and careful enquiry.

2.4.1.7 Provision was made for intensive supervision by the Field Officer who have qualified in dairying, assisted by two Inspectors and six Supervisors and also by the statistical staff at the headquarters. The data received were regularly scrutinised and processed at the Institute of Agricultural Research Statistics.

2.4.1.8 The field work of the detailed enquiry in rural milk pockets of Meerut and Bulandshahr districts of Uttar Pradesh and Gurgaon district of Haryana was reported during 1965-66 in progress and would continue till the end of July, 1967.

### GOVERNMENT OF MAHARASHTRA

#### 2.4.2 Sample survey to assess the impact of milk and loan schemes on the income of members of dairy co-operatives

2.4.2.1 This "one time" survey was carried out by the Registrar of Co-operative Societies, Maharashtra. The purpose of the survey was to assess the impact of milk and

loan schemes on the income of members of dairy co-operatives. The reference period of the survey was three years *i. e.* 1961-62 to 1963-64.

2.4.2.2 Eight districts of the State were covered under the survey. A two stage sampling design was adopted, the society and members being 1st and 2nd stage sampling units respectively. For studying the impact of milk schemes, three districts *viz.* Kolhapur, Poona and Dhulia were selected. The number of societies selected from these districts was 1, 2 and 3 respectively. 5 members from each society were selected at random for the purpose of study. For studying impact of milk and loan schemes, five districts *viz.*, Thana, Satara, Osmanabad, Nagpur and Sangli were selected. The number of societies selected was one each from the first three districts and 2 and 3 from 4th and 5th districts respectively. Two members taking advantage of milk scheme only and three taking advantage of both the schemes per society were selected at random.

2.4.2.3 The survey work was entrusted to Co-operative Officers and Assistant Co-operative Officers under the control of concerned District Deputy Registrars. The processing of data was done by the Computers appointed in the office of Registrar Co-operative Societies.

### 3. Forestry

#### GOVERNMENT OF GUJARAT

##### 3.0.1 Forest resources survey

3.0.1.1 This survey was conducted by Forest Department, Government of Gujarat with a view to collect quantitative data regarding the availability of various forest species of economic importance, particularly those producing and likely to produce raw material for industry. The survey commenced from October, 1961. Since then the survey is being continued. During the year 1964-65, the survey started in Dangs district and was expected to cover Surat district also by the end of 1964-65. The scope of the survey was limited to tree species, bamboos and natural regeneration of teak in reserve forests. Data were collected by direct observation to cover every inch of the forest ground.

3.0.1.2 Sample unit was a compact forest compartment, having homogenous tree growth as far as possible. Stratified systematic strip sampling with a random start was adopted. 10 per-cent enumeration was planned with stratification in such a way that the strips each of 2 chains width (132 ft.) run parallel to each other and 20 chains apart with a random start. In each of the compartments which were clearly demarcated on the maps, base line and strip lines were marked in such a way that base line ran along the general direction of the contour and strip lines across the contour. The base line was divided into parts of 20 chains having 10 strips, each 2 chains wide and running at right angles to the base line, so that each strip ran along the fertility gradient. For randomisation, any one strip out of the first 10 strips was selected at random. Then the next strip was enumerated along the base line by taking every tenth strip from the first random strip. One per-cent survey of bamboos, Resha grass and regeneration was carried out. Bamboo and Resha survey was done by stratified systematic strip plot sampling with a random start, while regeneration survey by milliacre quadrats laid all along the central line of the strips. 10 per-cent of the plots of bamboos known as repeater plots were proposed to be revisited every 5 years and bamboos resurveyed.

3.0.1.3 Field staff was given demonstration and explanation for a few days at the time of commencement of the scheme. The staff employed for the survey was one Sub-Divisional Forest Officer, three Range Forest Officers and fifteen Foresters under the supervision of Divisional Forest Officer and higher officers of the department.

3.0.1.4 During the year 1964-65 an area of 2,97,600 hectares was covered. The cost of the survey for the year 1964-65 was Rs. 74,283.

#### GOVERNMENT OF MAHARASHTRA

##### 3.0.2 Forest resources survey

3.0.2.1 The survey was conducted during 1964-65 and 1965-66 by the Forest Department, Maharashtra for estimating the availability of various timber and fuel resources and other minor forest produce to the extent feasible and manageable. The data would be utilised for formulation of Working Plans for exploitation and regeneration of forests. The survey is being conducted since 1962-63 in different regions of the State in successive years to cover forest areas of Western Maharashtra of about 7,500 square Kilometers.

3.0.2.2 The data collected related to: (a) number of trees according to girth classes for all the species (species varies from 50 to 80) (b) measurement of number of clumps of bamboos and clums (c) qualitative measurement of about 20 characters of

forest vegetation and other aspects of forestry. The surveyors carried out the lay out of the plots. In regard to the measurements, the investigators were instructed to measure the trees at 4½ feet height and to collect the qualitative data on a sub-sample thereof.

3.0.2.3 The forest areas were topographically mapped and the details of treatments received by different portions were also known. In organised forests there was a little difficulty in obtaining a suitable frame.

3.0.2.4 The sample unit was either a natural topographical unit or a strip or line-plots taken in the forest areas. The sample units were stratified on the basis (i) past treatment (ii) age of the stand (iii) contiguity and (iv) nature of terrain. The units were selected by systematic sampling. The intensity of sampling varied from 2½ to 10 per cent depending on various factors like value and nature of the forest.

3.0.2.5 During 1965-66, the field staff comprised of 2 Sub-Divisional Forest Officers, 3 Range Forest Officers, 30 Foresters and 15 Surveyors while statistical staff consisted of 1 Statistician, 1 Assistant Statistician and 2 Senior Statistical Assistants.

## **GOVERNMENT OF UTTAR PRADESH**

### **3.0.3 Tree enumeration in Pilibhit and Dehra Dun Forest Divisions**

3.0.3.1 These surveys relating to tree enumerations in North and South Pilibhit and East and West Dehra Dun forest divisions during 1964-65 and three enumeration in East Dehra Dun, South Kheri and Siwalik Forest Divisions during, 1965-66 were conducted by the Divisional Forest Officers, Forest Resources Survey Divisions, working under the guidance of the Conservator of Forests, Research and Development Circle, Uttar Pradesh, Lucknow with a view to assess the growing stock in the forest for planned management. The surveys are likely to be repeated in future.

3.0.3.2 The field work was completed during the period November, 1964 to March, 1965 for the survey 1964-65. Later it was conducted in the period April-May, 1965 and November, 1965 to March, 1966 for the survey 1965-66.

List of compartments and sub-compartments in the Divisions formed the frame. Strata were formed on the basis of working circle, felling series, range forest block, geographical contiguity and homogeneity of crop. Sampling fractions varying from 10 to 50 per cent enumeration of standing trees of all species in 10 cms. diameter classes down to a minimum diameter of 10 cms. at breast height was carried out. Trees above 30 cms. were classified into fit and unfit on the basis of bole length.

3.0.3.3 The field staff consisted of a number of enumeration gangs working under the supervision of District Forest Officer, Assistant Conservator of Forests, Range Officers and Foresters.

3.0.3.4 The actual cost of enumeration came to Rs. 2.40 per hectare enumerated for both the years.

3.0.3.5 An area of about 1,56,320 hectares was sampled out of which 31,120 hectares were actually enumerated during 1964-65 and an area of 11,090 hectares was sampled out of which 21,911 hectares was actually enumerated during 1965-66.

### **3.0.4 Enumeration for collection of Data in respect of revision of working plan of West Almora division**

3.0.4.1 The Working Plan Officer, West Almora Forest division under the guidance of Conservator of Forests, Working Plan Circle II, Naini Tal conducted the survey to assess the growing stock in the forest for planned management. The 1964-65 survey was carried out during the period April-June, 1964 and again from October, 1964 to March, 1965. The survey for 1965-66 was undertaken in the period April to June, 1965 and October, 1965 to March 1966.

3.0.4.2 List of compartments and sub-compartments in the forest of West Almora division formed the frame for sampling. 33½ per cent stratified random sampling by topographical units was adopted for sampling design. Number of trees of various species as enumerated in 10 cm. diameter classes and from 10 cm. and above.

3.0.4.3 10 gangs with 10 enumerators were employed for the field work of enumeration under the charge of one Forest Ranger and 2 Foresters. The estimated cost of the enumeration came to Rs. 1.45 per hectare for each year. Enumeration was fully completed to cover 27,972 hectares during 1964-65. During 1965-66 an area of over 19,410 hectares was sampled, of which 7,770 hectares was enumerated.



### 3.0.5 Tree enumeration in hill forests

3.0.5.1 This survey was conducted by the Divisional Forest Officer, forest Resources Survey Division, assisted by an Assistant Conservator of Forests and working under the guidance of the Conservator of Forests (additional working plans and research circle) Uttar Pradesh, Nainital with a view to assessing the availability of pulpwood and other resources of the hill region of the State. The survey was conducted also in 1962-63 and 1963-64. During 1964-65, the field work was carried out in April-June, 1964 and later again from October, 1964 to March, 1965. This work continued during 1965-66 also in North Garhwal Forest Division. All industrially important tree species growing in North and South Almora forests and North Garhwal Forest Division were covered in 10 cms. diameter classes down to a minimum diameter of 10 cms. at breast height. Trees above 30 cms. diameter were classified into fit and unfit on the basis of bole length.

3.0.5.2 The frame used for selection was the list of compartments in the divisions and smaller topographical units formed. The method adopted was stratified random sampling with topographical units. Each compartment was divided into two or more units of about 40 hectares bounded by definite contiguity and homogeneity of crop. 20 to 50% sampling in tensities were used for different types of crops in various management working circles and age groups (periodic blocks).

3.0.5.3 Data were collected by field enumerations in the forests by a number of enumeration gangs, each gang usually consisting of one Enumerator and 7 Mazdoors working under the supervision of Divisional Forest Officer, Assistant Conservator of Forests, Forest Rangers and Foresters.

3.0.5.4. An area of about 1,19,280 hectares was sampled in which about 23,600 hectares were actually enumerated during 1964-65.

3.0.5.5 The actual cost of enumeration was of the order of Rs. 3.25 per hectare.

### 3.0.6 Enumeration of Rohini forests

3.0.6.1. The Divisional Forest Officer, Forest Resources Survey Division, working under the guidance of the Conservator of Forests conducted the survey during 1964-65 to assess the availability of Rohini (*mollotus philippensis*) oilseed and Rohini pulpwood.

3.0.6.2 List of compartments and sub-compartments in the division formed the frame of the survey. The method of sampling adopted as 10 per cent stratified random sampling by compartments and sub-compartments. Strata were formed on the basis of working circles, ranges, felling series etc.

3.0.6.3 Information was collected by enumerating the standing trees of Rohini in 10 cms. diameters and classified into non-seed bearing and seed bearing trees respectively.

3.0.6.4 An area of about 31,160 hectares was sampled in which about 2,970 hectares were actually enumerated.

3.0.6.5 The actual cost of enumeration came to about Re. 0.75 per hectare enumerated.

### 3.0.7 Partial tree enumeration in the miscellaneous coppies with standard working circle forests in Varanasi Forest Division

3.0.7.1 The survey which started in February, 1964 was undertaken by the Working Plan Officer, Varanasi Division, under the guidance of Conservator of Forests, during 1964-65 with a view to assessing the growing stock in the forests for planned management. The present survey was conducted in April-May, 1964 and again from December, 1964 to March, 1965.

3.0.7.2 Forest areas in Chakia tehsil of Varanasi district under the above working circle were covered by the survey. Number of trees of various species in different diameter classes were enumerated in usual 10 cm. diameter classes. A list of compartments and sub-compartments in the division formed the frame of the survey. Areas for enumeration were selected by random topographical sampling, keeping in view the variation of soil, topography and any other local factors, with a sampling intensity of 33½ per cent.

3.0.7.3 One Forest Ranger and two Foresters were in overall charge of the entire enumeration work carried out in the field by 10 to 12 gangs each gang consisting of 8 to 9 men under the charge of an Enumerator,

3.0.7.4 Field cost of enumeration varied from Rs. 0.92 to 1.65 per hectare the type of area enumerated.

### **3.0.8 Regeneration survey for sal, enumeration in hill, sal selection and bamboo survey**

3.0.8.1 The working Plan Officer, Haldwani under the guidance of Conservator of Forests, Uttar Pradesh conducted the survey to assess in the initial stage the quality and quantity of sal regeneration and suitability of area for allotment to sal irregular shelterwood working circle and also to obtain information for division into sub-compartments. The survey conducted during 1964-65 covered an area of 3,710 acres for the regeneration survey while the area enumerated under hill sal selection and bamboo survey was 26,796 acres.

3.0.8.2 Revised forest boundaries of Haldwani forest division and part of Janlasal, Nandhaur and Chakrata ranges in Almora and Nainital districts were covered under the survey. The existing divisions of prospective forests into compartments and sub-compartments formed the frame of the survey.

3.0.8.3 Five categories of sal regeneration namely established, woody unestablished, whippy, sub-whippy and recruitment were recorded in 2m x 2m quadrats. Systematic strip sampling with an intensity of 4 per cent lines (100 metres apart) was employed for the survey.

3.0.8.4 3 to 4 gangs consisting of 6 to 7 Mazdoors under the supervision of 3 Foresters were engaged. The estimated cost of enumeration came to about Re. 0.77 per acre for the regeneration survey and Re. 0.87 per acre for the other two items together.

### **3.0.9 Plantation survey in the plains in the Tarai belt of Uttar Pradesh forests**

3.0.9.1 The Divisional Forest Officer, Forest Resources Survey Division, working under the guidance of Conservator of Forests, conducted the survey to assess the growing stock and actual density of stocking in the plantations raised in the Tarai belt in order to find out the pulpwood and other resources potential of these artificially raised crops.

3.0.9.2 Data collection started in 1963-64 and continued to be collected during 1964-65 by field enumeration in the plantation area in respect of standing trees of all species in 5 cms. diameter classes from between 0 cm. to 30 cms. and in 10 cms. diameter classes from 30 cms. onwards.

3.0.9.3 Field work during 1964-65 was carried out during April-May, 1964 and again from October, 1964 to March, 1965.

3.0.9.4 The selection of plantation lines was made using variable fractions from 5 per cent to 100 per cent depending on the size and shape of each individual plantation. The stratification was done according to composition by species in different blocks in each plantation, density and number of lines required for each stratum serially arranged, so that at least two lines were drawn in the sample from each stratum.

3.0.9.5 The field staff consisted of a number of enumeration gangs, working under the supervision of District Forest Officer assisted by an Assistant Conservator of Forests. Statistical analysis was done by the Statistical Officer.

3.0.9.6 A total area of plantations over about 7,500 hectares was covered by the survey. The cost of enumeration came to about Rs. 1.10 per hectare of plantation surveyed.

### **3.0.10 Enumeration in Sal Conversion Working Circle**

3.0.10.1 The survey which is one time in nature but would be repeated every tenth year was conducted in 1965-66 by the Working Plan Officer, East and West Dehra Dun Division under the guidance of Conservator of Forests, Working Plans Circle, U.P. to calculate the yield of sal and assess the growing stock position of various important species according to diameter class-wise. Reserved and vested forests of East and West Dehra Dun Division were covered by the survey. Diameter class-wise enumeration of various species was made from 10-20 cm. and above by engaging enumeration gangs under the supervision of Working Plan Rangers and Foresters.

3.0.10.2 The frame adopted for the survey was the list of total enumerations in P.B. II areas and 50 per cent in P.B.V and VI and 40 per cent in P.B. Inter of Sal Conversion Working Circle. Stratified random sampling was used.

3.0.10.3. For conducting field work, about 5 gangs of 7 Mazdoors under the supervision of 2 Foresters were engaged. Tapes and chalks were used for the purpose.

3.0.10.4 During 1965-66, enumeration was carried out over an area of 6,744 acres in Sal Conversion Working Circle. The data as under compilation and analysis.

3.0.10.5 The average cost of enumeration in Sal Conversion Working Circle came to Re. 0.96 per acre.

### **3.0.11 Ringal (bamboo) survey in hill forests under Forest Resources Survey Scheme, Uttarakhand**

3.0.11.1 The survey which was one time but may be repeated in future was conducted during November, 1965 to March, 1966 by the Divisional Forest Officer, Forest Resources Survey Division, working under the guidance of Conservator of Forests, Research and Development Circle, U.P., Lucknow. The purpose of the survey was to assess the availability of 'Ringal' resources for future planning of forest-based industries particularly small scale industries. The survey covered the forest lying in Uttarkashi Forest Division. Information about the number of Ringals in 20 m × 20 m quadrats in representative areas was collected by field enumeration in the forests.

3.0.11.2 The frame used for selection was the list of availability of Ringal areas and stock mapped areas showing Ringals. In the representative areas, 20 m × 20 m quadrats were taken and all Ringal culms were counted as in the pro-forma. Green and dry weights were also taken.

3.0.11.3 The field staff consisted of number of enumeration gangs, each gang consisting of one Enumerator and 7 Mazdoors, working under the supervision of Divisional Forest Officer, Assistant Conservator of Forests, Forest Rangers and Foresters. The actual cost of enumerations was about Re. 0.54 per hectare enumerated.

3.0.11.4 During the year under review, an area of about 97,605 hec. was sampled, out of which about 2,320 hec. was actually enumerated. The work in Uttarkashi Forest Division was completed and was continued in other divisions. The statistical analysis of data was in progress and preliminary results were being compiled for part of the survey. An accuracy of 10 per cent aimed at, was expected to be obtained.

3.0.11.5 Actual cost of the enumeration was about Re. 0.54 per hectare.

## **4. Fishery**

### **4.1 Inland fishery**

#### **GOVERNMENT OF WEST BENGAL**

#### **4.1.1 Sample survey to assess the inland fishery resources**

4.1.1.1 The continuous type of survey was conducted by the Director of Fisheries, Government of West Bengal with a view to collect dependable statistics with regard to the fisheries resources and their present condition for formulation of integrated fishery development scheme. The duration of the survey was from June-September each year 1964-65 and 1965-66.

4.1.1.2 The survey covered the whole of the State including the canal fisheries, beel fisheries and tank fisheries. The data pertaining to the number of fishery workers as well as the local 'hats' where fishing marketing took place, families engaged in the industries, market survey etc. were collected by direct observation during the survey of representative villages. A simple method of 10 per cent random sampling was used.

4.1.1.3 Staff consisted of 4 Inspectors, 19 Investigators & 2 Computers employed on *ad hoc* basis, progress reports for 1964-65 and 1965-66 were prepared.

### **4.2 Marine Fishery**

#### **MINISTRY OF FOOD, AGRICULTURE, COMMUNITY DEVELOPMENT AND CO-OPERATION CENTRAL MARINE FISHERIES RESEARCH INSTITUTE**

#### **4.2.1 Survey for estimation of marine fish landing by species and the size composition of commercially important fishes**

4.2.1.1 The survey is being carried out every year by Central Marine Fisheries Research Institute, Mandapam and is a repetitive one. The survey covered the entire coast line of India excepting that of Kutch. Information was collected from the selected

fishing unit on (i) total weight of landings, (ii) weights of various species of fish comprising the total landings, (iii) the type of fishing unit, (iv) number of crew and (v) time spent in fishing. From the sub-sample of the selected fishing units, specimens of a few commercially important fishes were measured for their weight and length. This information was collected for studying the changes taking place in the size-composition of landings of a particular fishery.

4.2.1.2 For sampling, the entire coast line of India was divided into number of zones, making each zone as homogeneous as possible from the point of fishing practices and fisheries. The whole of west coast was divided into several zones to conform to the sea coast of the re-organised maritime States. Each zone contained a number of landing centres. Instead of two centres from each zone observed in two clusters of two days each in a week as reported earlier, three centres were observed for two days in each zone in a cluster of six consecutive days out of a ten day period. The first cluster was chosen with a random start, the subsequent clusters were chosen systematically leaving a gap of ten days between the starting point of two consecutive clusters. On the first day, observations were made from 12 to 18 hours and on the second day from 6 to 12 hours. Data on night landings were collected by enquiry. Estimation was made for a quarter of a year. For quarters covering monsoon, suitable time stratification was introduced.

4.2.1.3 The stratified random sampling design was extended to east coast. Here also the design was similar to that in west coast but for the difference that in the cluster of six days, only two centres were observed, the first three days having been allotted to first centre and the last three days to the second one. The selected centre was kept under observation for only the first two days. The third day being meant for journey time. The difficult travel conditions along the east coast necessitated this slight difference. The period of estimation in east coast was a calendar month.

## GOVERNMENT OF GUJARAT

### 4.2.2 Sample survey to estimate marine fish catch

4.2.2.1 The survey was conducted by the Directorate of Fisheries, Government of Gujarat with a view to estimate the catch of marine fish in South Gujarat. The duration of the survey was from September, 1964 to June, 1965. The survey was also repeated during 1965-66 from September, 1965 to June, 1966. The data regarding (i) the details of catch and efforts, e.g., fishing unit, duration of actual fishing, fishing ground, depth in fathom, types of net used, crews, types of fish landed etc., (ii) utilisation of fish landed, e.g., for consumption, sale, curing conversion into oil etc., were collected by the Fisheries Assistant and Enumerators of Fisheries Department through actual observation of landing on the spot. The expenditure was estimated at Rs. 16,000 and Rs. 5,550 for 1964-65 and 1965-66 respectively.

4.2.2.2 The survey extended over the South Gujarat *i.e.*, Bulsar, Broach, Baroda and Kaira districts of the State. A systematic random sampling was adopted. List of landing centres and the fishing boats of South Gujarat constituted the first and the second stage sampling units respectively. Eight landing centres *i.e.*, five from 28 centres in the Surat Zone and three from 13 centres in Broach, Kaira and Baroda zone were selected afresh every week. A cluster of two days were allotted to each selected centre at random. Each day was again sub-divided in two intervals of six hours each *i.e.*, from 12 hours to 18 hours and 6 hours to 12 hours. All the boats landing during a particular time interval were recorded and detailed information was obtained from every fourth or fifth boat landed, according as the total number of boat landings were less than or more than twenty during the interval.

4.2.2.3 According to the estimate of fish catch worked out every calendar month on the basis of (i) catch per sample centre-day, and (ii) catch on monthly basis; it was assessed that the fish production during 1965-66 was better than 1964-65 though the fishing effort during 1965-66 was estimated to be less by about 20 per cent than that during 1964-65, which could be attributed to the better fishing season and partly to the effective implementation of the plan programme.

## GOVERNMENT OF MADRAS

### 4.2.3 Sample survey for collection of marine fisheries statistics

4.2.3.1 The continuous type of survey was conducted by the Director of Statistics, Madras with a view to estimate the annual catch of fish with its varieties and pattern of utilisation. The details for 1962-63 were reported on page 32 of the 14th Annual Report.

4.2.3.2 The survey was conducted along the coastal line of the seven districts of the State. Data were collected by actual field observation along the randomly chosen centre of sea coast. The geographical contiguous fish landing centres on the coastal line were grouped into number of blocks which constituted the frame. Multistage random sampling technique with blocks as the Strata was adopted. The successive stages of sampling units were landing centre, day within week and hours within the day for count type observation. For each type observation, a certain number of units arriving during specified hours were sub-sampled.

4.2.3.3 The reports for the earlier years were prepared but for the year 1965-66, analysis was taken up. The expenditure for the year 1965-66 was reported to be about Rs. 27,000.

## **5. Irrigation**

### **5.1 Assessment surveys**

#### **RESERVE BANK OF INDIA**

##### **5.1.1 Survey of benefits of Nagarjunasagar project to cultivators**

5.1.1.1 The Division of Rural Economics, Economic Department of the Reserve Bank of India conducted the survey under the sponsorship of Agricultural Refinance Corporation with a view to find out whether the increased benefits arising out of investments made by cultivators in the form of reclamation costs and other associated costs implicit in the utilisation of irrigation facilities, would be adequate to repay any loans taken for the purpose of such investments.

5.1.1.2 Area in Guntur and Nalgonda districts of Andhra Pradesh coming under the project was covered by the survey, Data were collected on farm costs and incomes, estimates of increase in farm incomes, investment requirements and co-operative credit.

5.1.1.3 The field work of this 'one-time' survey was started on 5th June, 1964 and completed by 17th June, 1964.

5.1.1.4 From among the villages scheduled to receive irrigation, six villages were selected which broadly represented the farming conditions of the entire project area. Three more villages which had the same soil-climatic complex as the project villages but were having irrigation facilities for the last five to ten years, were selected to serve as 'control' villages. These villages were taken to represent the agricultural conditions which would emerge in the project area after the introduction of irrigation. The selection of cultivators was done on the basis of simple random sampling.

5.1.1.5 Data relating to the agricultural year 1963-64 were collected by interviewing respondents. For the survey, 1 Deputy Director, 1 Research Officer, 1 Research Superintendent and 5 Economic Assistants were employed for field work while for data processing, 5 Economic Assistants and 1 Comptist were employed.

##### **5.1.2 Ghod and Gangapur Irrigation Project in Maharashtra—a quick assessment of benefits to cultivators**

5.1.2.1 The Division of Rural Economics, Economic Department, Reserve Bank of India conducted the survey under the sponsorship of Agricultural Refinance Corporation with a view to find out whether the increased benefits arising out of investments made by cultivators in the form of reclamation costs and other associated costs implicit at the utilisation of irrigation facilities, would be adequate to repay any loans taken for the purpose of such investments.

5.1.2.2. Area in Poona, Ahmednagar and Nasik districts of Maharashtra State coming under the project was covered.

5.1.2.3 The field work of this 'one time' survey was started on 7th December, 1964 and completed by 24th December, 1964.

5.1.2.4 From among the villages scheduled to receive irrigation, six villages were selected which broadly represent the farming conditions of the entire project area. Three more villages which had the same soil-climatic complex as the project villages were having irrigation facilities for the first five to ten years were selected to serve as 'control' villages. The villages were taken to represent the agricultural conditions which would emerge in the project area after the introduction of irrigation. The selection of cultivators was done on the basis of simple random sampling.

5.1.2.5 Data relating to the agricultural year 1963-64 were collected by interviewing respondents. For the field work, survey was carried out by 1 Deputy Director,

1 Research Officer, 1 Research Superintendent, 5 Economic Assistants while the data processing was done by 5 Economic Assistants and 1 Comptist .

5.1.2.6 Cost estimates are not available.

### **5.1.3 Tungabhadra Irrigation Project in Andhra Pradesh—a quick assessment of benefits to cultivators**

5.1.3.1 The Division of Rural Economic, Economic Department of Reserve Bank of India, conducted the survey under the sponsorship of Agricultural Refinance Corporation with a view to find out whether the increased benefits arising out of investments made by cultivators in the form of reclamation costs and other associated costs implicit in the utilisation of irrigation facilities would be adequate to repay any loans taken for the purpose of such investments.

5.1.3.2 The area in Anantapur district of Andhra Pradesh coming under the project was covered. Data were collected on farm costs and incomes, estimates of increase in farm incomes, investment requirements and co-operative credits.

5.1.3.3 The field work of this one-time survey was started on 8th May, 1965 and completed by 19th May, 1965.

5.1.3.4 From among the villages scheduled to receive irrigation, four villages were selected which broadly represented the farming conditions of the entire project area. Two more villages which had the same soil-climatic complex, as the project villages but were having irrigation facilities for the last ten years were selected to serve as "norm" villages. These villages were taken to represent the agricultural conditions which would emerge in the project area after the introduction of irrigation under the project. The selection of cultivators was done on the basis of simple random sampling.

5.1.3.5 Data relating to agricultural year, 1964-65 were collected by interviewing respondents. The regular staff employed for the survey consisted of 1 Deputy Director, 1 Research Officer, 1 Research Superintendent, 5 Economic Assistants and 2 Field investigators.

5.1.3.6 Cost estimates are not available.

### **5.1.4 Tungabhadra Irrigation Project in Mysore—a quick assessment of benefits to cultivators**

5.1.4.1 Details of this survey are similar to the above survey in Andhra Pradesh. 4 villages were selected which broadly represented the farming conditions of the entire project area. Three more villages which had the same soil-climatic complex as the project villages but were having irrigation facilities for the last 10 to 12 years were selected to serve as 'norm' villages. These villages were taken to represent the agricultural conditions which would emerge in the project area after the introduction of irrigation. The selection of cultivators was done on the basis of simple random sampling.

5.1.4.2 Area in Raichur district of Mysore State coming under the project was covered during the period January, 29 to February 10, 1966.

5.1.4.3 Cost estimates are not available.

### **5.1.5 Chambal Irrigation Project in Rajasthan—a quick assessment of benefits to cultivators**

5.1.5.1 Details of the survey were the same as for Tungabhadra irrigation project survey reported above *viz.* to find out whether the increased benefits arising out of investments made by cultivators in the form of reclamation costs and other associated costs implicit in the utilisation of irrigation facilities, would be adequate to repay any loans taken for the purpose of such investments.

5.1.5.2 Data were collected for the agricultural year 1964-65 in respect of farm costs and incomes, estimate of increase in farm incomes, investment requirements and co-operative credit in area in Kotah district of Rajasthan coming under the project. The field work commenced from October 28th, 1965 and was completed on November 5, 1965.

5.1.5.3 From among the villages scheduled to receive irrigation, three villages were selected which broadly represented the farming conditions of the entire project area. Two more villages which had the same soil climatic complex as the project village but were having irrigation facilities for the last 20—30 years were selected to serve as

'norms' villages. These villages were taken to represent the agricultural conditions which would emerge in the project area after introduction of irrigation. The selection of cultivators was done on the basis of simple random sampling.

5.1.5.4 The regular staff of the department consisting of one Deputy Director, 1 Research Officer, 1 Research Superintendent and 5 Economic Assistants were engaged for the survey.

5.1.5.5 Cost estimates are not available.

## **GOVERNMENT OF ANDHRA PRADESH**

### **5.1.6 Survey of private minor irrigation sources**

5.1.6.1 This survey was sponsored by Programme Evaluation Organisation, Planning Commission as a part of their study of impact of plan with a view to find out the extent to which the potentials of existing private irrigation facilities were being actually utilised. The survey was conducted in July, 1964. In each development block, a sample of villages at the rate of one village from each village level worker circle was selected by simple random sampling. A study of educational facilities was also made in these villages. The selected villages in each block were then arranged in alphabetical order and serially numbered. The villages bearing even numbers only were selected for conducting the survey on irrigation.

5.1.6.2 Information on total number of works in the selected villages under broad heads *viz.*, tubewells, wells with pumpsets, wells without pumpsets, tanks and others including ponds, irrigation potential, area irrigated, etc. were collected with reference to the year 1963-64.

5.1.6.3 The sampling design was a multistage one, where a village was the first stage unit. From each of the selected villages a list of all the private minor irrigation sources was made. The list was classified into five categories depending upon the source *viz.*, tubewells, wells with pump sets, tanks and others including ponds. From this a sample of three units by simple random sampling method, was selected for each of the five categories except in the case of wells without pump sets for which five units were selected. If the number of sources of irrigating works in the village fell short of the required sample, then the survey was conducted for all the sources.

5.1.6.4 Training was imparted to the junior Investigators and progress Assistants for the field work at block and district levels.

## **GOVERNMENT OF BIHAR**

### **5.1.7 Enquiry into the extent of utilisation of irrigation facilities and potential**

5.1.7.1 This survey was sponsored by Programme Evaluation Organisation, Planning Commission and was conducted by Directorate of Statistics and Evaluation, Bihar with a view to find out the extent to which the potential of existing irrigation facilities actually utilised for different categories. The survey covered the entire State during November, 1964 to March, 1965. Data were collected by personal investigation with voluntary cooperation.

5.1.7.2 Fifty per cent of the blocks were covered and three to six villages from each selected block were selected for the survey. A complete list of minor irrigation works were prepared for selected villages covering tanks, ahars, wells, tubewells. A sample of 3 other irrigational works and 6 wells were drawn for detailed study. The area benefited was enumerated by visiting the plots and cropping pattern was noted.

5.1.7.3 Training was imparted by the headquarters officers at different district offices. The survey was carried out by Agricultural Extension Supervisors, Gram Panchayat Supervisors, Circle Inspectors and Junior Statistical Supervisors.

5.1.7.4 During the year under review the survey was completed.

## **GOVERNMENT OF GUJARAT**

### **5.1.8 Pilot survey for assessment of additional yield of paddy, jowar, wheat and cotton due to canal irrigation in Kakrapara Project**

5.1.8.1 The survey was sponsored by the Department of Agriculture, Government of Gujarat and was conducted by the Assistant Statistician, Kakrapara Irrigation Project survey scheme, Surat, during the year 1963-64 to 1965-66 and would be undertaken during 1966-67 also. The object of the survey was to obtain per acre estimates of additional yield of irrigated crops over unirrigated crops in the command area of Kakrapara

Irrigation Project covering 12 talukas of Surat and Bulsar districts. For planning of crop cutting experiments, data regarding village-wise total irrigated area for paddy, jowar, wheat and cotton crops was collected from the records of the Irrigation Department.

5.1.8.2 The design adopted for the survey was stratified multistage random sampling with taluka as a stratum village as a primary unit of sampling, a field in the selected village a sub unit of sampling and a plot of prescribed size within the field as the ultimate unit of sampling. Simple random sampling was used at all stages of selection. The size of ultimate unit of sampling was 1/40 acres for paddy, jowar and wheat crops and 1/20 acres for cotton crops.

5.1.8.3 Selection of villages was done in the office of the Assistant Statistician. The selection of survey numbers, fields and location of plots was done by the field staff. The units were revisited at pre-harvest and harvesting stage and necessary supervision was exercised.

5.1.8.4 One Senior Statistical Assistant and 3 Junior Statistical Assistants were employed on long term basis responsible for collecting data in the field. During 1965-66, the crop cutting experiments (irrigated and un-irrigated) conducted were 156 on paddy, 147 on jowar, 138 on cotton and 41 on wheat. The report for the data collected for the year 1965-66 was in progress.

5.1.8.5 The budgeted amount for the survey was Rs. 1.50 lakhs.

### 5.1.9 Bench-mark and post irrigation survey—Machhu-1 Irrigation Project

5.1.9.1 The survey which is one time in nature was conducted during January, 1965 to March, 1966 by the Bureau of Economics and Statistics, Government of Gujarat, Ahmedabad, with a view to study the changes occurring in the command area as a direct result of the utilisation of canal irrigation facilities of Machhu Project in the field of agriculture in particular and in other socio-economic conditions in general. All the thirty villages of Wankaner and Marvi taluks in Rajkot district under the command area of the project were covered by the survey. The information was collected through four schedules *viz.* (i) village schedule, (ii) household schedule, (iii) opinion schedule for village panchayat and (iv) opinion schedule for selected households. In the Village schedule, the information was collected on land utilisation, area sanctioned for irrigation from Machhu Canal according to season-wise and crop-wise from 1958-59 to 1964-65, land holding, crop pattern, irrigation cropwise and source wise, agricultural implements, public offices and community facilities and income and expenditure of village panchayat. In the household schedule the following items were covered—land tenure and its utilisation, irrigation, potential area sanctioned for irrigation from Machhu canal, crop pattern, farm output and expenditure for production of crops, capital investment in land, livestock and agricultural implements, income from other sources, indebtedness of the household, demographic particulars of the households, economic activity status and occupation of members of the family employment status and household consumption and expenditure. In the Opinion schedules, the attitudes of village panchayats and selected households towards the use of canal irrigation was obtained. The reference period of the survey was from 1st July, 1964 to June, 1965. The data were collected by interviewing the selected households.

5.1.9.2 The sampling frame used for the survey was the list of all the cultivating households (*i. e.* households which possessed agricultural land in each village. The first stage units were all the thirty villages covered by the project. The second stage units were cultivating households within the village. The cultivating households were subdivided into two classes *viz.* (i) beneficiaries *i. e.* cultivating households using canal irrigation and (ii) non-beneficiaries. Fifteen percent households were selected from each of the two classes by simple random sampling.

5.1.9.3 The selection of 2nd stage units was done by the field staff. The field work was carried out by three Senior Investigators under the supervision of two Statistical Assistants. Prior to taking up the field work, the investigators were imparted training. The amount of non-response in the sample was negligible. The data was being processed by one Research Assistant and two Statistical Assistants under the supervision of the Research Officer. All the staff was employed on long term basis.

5.1.9.4 During the year under review, the editing work was in progress. The information collected in the village schedules and opinion schedules was being hand tabulated and in the household schedules, it was being mechanically tabulated by the help of punch card machines, sorters, tabulators etc.

5.1.9.5 The results of the survey have not been finalised yet.

5.1.9.6 The cost analysis is not available.



## GOVERNMENT OF KERALA

### 5.1.10. Sample survey on minor irrigation facilities

5.1.10.1 The survey was sponsored by the Programme Evaluation Organisation, Planning Commission as a part of the study of impact of plan and was conducted by the Bureau of Economics and Statistics, Kerala, with the object of studying the extent of utilisation of minor irrigation facilities and potential. The results of the survey were required for the formulation of Fourth Plan.

5.1.10.2 The field work of the survey on public minor irrigation works commenced in September, 1964 and was completed in April, 1965. The field work of private minor irrigation works was started in December, 1964, and was completed in May, 1965. The survey covered 50 per cent of N.E.S. blocks in each district.

5.1.10.3 For each category of works *viz.* (1) tubewells (2) wells with pump sets (3) wells without pump sets (4) tanks with pump sets (5) tanks without pump sets (6) others, the information on (a) the number of cultivators and survey sub-numbers of the plots of each cultivator served by the work (b) irrigation potential (c) area usually irrigated and (d) crops benefited, was collected. The reference period for the survey was 1963-64.

5.1.10.4 The frame of public minor irrigation works was obtained from the Irrigation Department, Panchayat Office and also by local enquiry; and that of private minor works was prepared by listing 200 households from each selected census village. For public minor irrigation works, in each of the selected blocks, 4 gram sevak circles were selected at random; and from each selected gram sevak circle, 3 units of works of each type were selected at random. In the case of private minor irrigation works, 10 census villages were selected at random in each selected N. E. S. block. From each selected village, 200 households were listed with a random start. The minor irrigation works were classified according to the types of works (as indicated earlier). Three units of each type were selected at random for detailed enquiry.

5.1.10.5 Special training was imparted to Junior Statistical Inspectors and Ggram-sevaks by senior officers of the Bureau. One Deputy Director, 3 Research Officers, 3 Research Assistants and 3 Compilers were appointed at the headquarters and 4 Statistical Inspectors, 3 Upper Division Investigators and 15 Lower Division Investigators were employed for the field work. The expenditure incurred during the year 1964-65 for the entire scheme was about Rs. 57,593. The field work of the survey was over and tabulation of data on the lines of the end tables suggested by the Programme Evaluation Organisation was in progress.

## GOVERNMENT OF MADHYA PRADESH

### 5.1.11 Survey on the extent of utilization of minor irrigation facilities

5.1.11.1 The survey sponsored by the Programme Evaluation Organisation, Planning Commission was conducted by the Directorate of Economics and Statistics, Government of Madhya Pradesh with the object of finding out the extent to which the potential of minor irrigation facilities (works) owned by the individuals or panchayats were utilized for different categories. The field work of the survey started in September, 1964 and was completed in March, 1965. The reference period for inclusion of minor works was 1956-57 to 1963-64 while for utilization particulars it was 1963-64.

5.1.11.2 A multi-stage sampling design was adopted. The State was divided into four regions. The first stage unit was a development block in the region. 50 per cent of the blocks (*i.e.* 150 blocks) where Progress Assistants were posted and 20 per cent of blocks (20 blocks) where Progress Assistants were not posted, were selected for the study. In the case of minor works owned by an individual, the second, third and fourth stage sampling units were the village level worker circle, a village and a minor irrigation work respectively, whereas in the case of minor works owned by panchayats, the two stages of sampling units were a village level worker circle and a minor irrigation work. The size of sample for works owned by private individuals at the second stage unit was 10 per village level worker circle and at the third stage, it was one village for each village level worker circle and in the last stage unit, 3 tubewells, 5 tubewells with pump sets, 3 wells without pump sets, 3 tanks and one any other irrigation work. The size of sample of works owned by panchayats at the second stage unit was 4 village level worker circles and at the third stage unit one well, one tank and one any other irrigation work for all the villages of a village level worker circle. The method of selection of all the units was simple random sampling without replacement. The sampling fractions at all the stages except the first (blocks) was varying.

5.1.11.3 In the case of private works of minor irrigation, the information regarding the general particulars of the sample village and list of works in the village, selection particulars of sample units, particulars like number, make, capacity etc. of the pumps fitted on wells and of private tubewells were collected. In the case of minor irrigation owned by panchayats, data regarding their list, selection and potential particulars were collected.

5.1.11.4 40 Investigators of the Directorate were utilized for the field work while supervision was exercised by Block Development Officers and District Statistical Officers. The data were analysed by 3 Statistical Assistants under the direct supervision of one Statistician. A bulk grant of Rs. 91,700 was sanctioned by the sponsoring authority for four different surveys and hence no separate cost estimate could be made.

## **GOVERNMENT OF MAHARASHTRA**

### **5.1.12 Survey of minor irrigation works (private sector)**

5.1.12.1 At the instance of Programme Evaluation Organisation, Planning Commission, the survey was undertaken by the Bureau of Economics and Statistics, Bombay with a view to frame estimates of utilisation and potential of minor irrigation works in private sector. The duration of the survey was November, 1964 to February, 1965. The works completed upto March, 1964 were considered for the survey.

5.1.12.2 The survey covered the entire rural area of the State. In the selected villages, a complete list of minor irrigation works under different categories, was prepared which served as the frame for the survey.

5.1.12.3 A three stage sampling design was adopted with Community Development Blocks, villages and the minor irrigation works as 1st, 2nd and 3rd stage sampling units respectively. The first and second stage units were selected in the same way as under the survey entitled "Survey of improved agricultural practices (kharif 1964-65)". Further, in each of these selected villages, the minor irrigation works were completely listed under five categories: (i) wells with pumps (ii) wells without pumps (iii) lift irrigation works with pumps (iv) lift irrigation works without pumps and (v) tanks, ponds etc. A sample of five works from 1st category, 4 works from 2nd category and another sample of 4 works from all the remaining three categories was taken.

5.1.12.4 The field work was carried out by the District Statistical Officers, Statistical Assistants and Research Assistants of the Bureau. The processing of the data was done by Statistical Assistants and Research Assistants at the headquarters.

### **5.1.13 Survey of minor irrigation works (public sector)**

5.1.13.1 The survey was sponsored by the Programme Evaluation Organisation, Planning Commission and was conducted by the Bureau of Economics and Statistics, Bombay. The purpose of the survey was to assess the extent to which potential of existing irrigation works was actually utilised in the case of minor irrigation works under public sector (both State Government and local bodies). The survey started in February, 1965 and ended in May, 1965. The reference period for the survey was the agricultural year 1962-63 and 1963-64.

5.1.13.2 The survey covered whole of the State of Maharashtra. Data on utilisation and potential of the works, in terms of acres, were collected from the office records as well as through personal enquiry.

5.1.13.3 Lists of minor irrigation works in each district were obtained through District Statistical Officers. All the minor irrigation works in public sector were classified under (a) ex-malgujari and nistar tanks and (b) others. Among the category (a), all the nistar tanks and a sample of 1/10th of ex-malgujari works from their total in the State were considered for the survey. As regards category (b), the works were further classified according to reported potential. All the works having a potential of 250 acres or more were considered whereas from the remaining works with a lower potential, a sample of 25 per cent was taken from their total number in each district.

5.1.13.4 The field work of the survey was entrusted to District Statistical Officers, Statistical Assistants and Research Assistants attached to the Bureau. Further processing of the data was done by the Statistical Assistants and Research Assistants at headquarters.

## **GOVERNMENT OF MYSORE**

### **5.1.14 Survey of irrigation facilities**

5.1.14.1 The survey was sponsored by Programme Evaluation Organisation, Planning Commission and was conducted during 1965-66 by the Department of Statistics, Government of Mysore with the object of finding out to which extent the potential of

the existing irrigation facilities were actually utilised under minor irrigation. The survey was undertaken as a part of the study of impact of Plan Programme on levels of living, consumption, employment and use of improved methods in agriculture. The survey covered all the districts of the three regions of the State. The information relating to utilisation of irrigation facilities, number of wells with pumpsets and without pumpsets, tanks, canals and other water resources like rivers etc. was collected by direct observation of sample units.

5.1.14.2 The Community Development Blocks in each district of the State were stratified in two strata—one in which the Progress Assistants were in position and the other in which they were not in position. 50 per cent of the blocks in the first strata and 20 per cent in the second strata subject to the minimum of two blocks in the second were selected at random. Villages were selected at random in each selected block of each strata. A list of irrigation units in selected villages enumerated at the time of the survey was prepared and taken as the frame. Three units of each kind *i.e.* wells with pump sets, tanks and others except wells without pump sets were selected and surveyed. In case of wells without pump sets, five units from each sample village were selected and surveyed. If the total number of units of any type in the sample village was less than the number fixed for the survey, all the units existing in the village were surveyed.

5.1.14.3 Out of 72 blocks and 637 villages, the information was received for 68 blocks and 582 villages only. The difficulty was observed in case of blocks where Progress Assistants were not in position. Progress Assistants were utilised in blocks where they were in position. They were imparted training before starting the survey.

5.1.14.4 Picture of cross-section of socio-economic conditions in 3 different regions of the State was brought out from the results of the survey.

5.1.14.5 Separate cost details were not available.

#### **5.1.15 Irrigation wells survey—estimation of area brought under irrigation wells and pump sets installed.**

5.1.15.1 The survey was undertaken by the Statistics Department under the orders of Government, in Planning, Housing and Social Welfare during 1965-66 with the objectives (i) to bring upto date the data pertaining to number of irrigation wells constructed, old wells repaired, pumpsets and Persian wheels installed with the financial assistance given by the Government during the Second Five Year Plan period and (ii) to study the economics of these minor irrigation programmes in their various aspects like (a) additional area brought under irrigation, (b) additional agricultural production, (c) net benefits accrued in terms of money. The survey covered all the districts in the State. The reference period was the second Five Year Plan period from 1st April, 1956 to 31st March, 1961. The cases where the assistance was sanctioned before 31st March, 1961 but used during the year 1961-62, were also covered. The data relating to items mentioned above in the objectives were collected by the Progress Assistants in the block area and by Senior Statistical Assistants in the non-block area under supervision of District Statistical Officer by actual on the spot investigation and also contacting the Shanbhogs and Talatis of the concerned villages and the agriculturists concerned.

5.1.15.2 The frame for selecting the wells, pumpsets and Persian wheels for enquiry consisted of only those wells which were constructed or renovated and such pump sets or Persian wheels which were installed during the Second Five Year Plan and with the financial help received from various Government Departments. These frames were prepared for each Community Development Block in the prescribed schedules. Stratified random sampling was adopted with each taluk as a stratum and well constructed, well renovated, pumpset installed and persian wheels installed as sampling units. Five per cent sampling units of each type—wells constructed, wells renovated, pumpsets installed and Persian wheels installed were selected subject to a minimum of four, two, two and two units respectively. If in any of the category even the minimum was not available, all units were included.

5.1.15.3 No extra cost was incurred on the survey as it was taken up as one of the regular items of the Department.

5.1.15.4 A draft report on the survey of irrigated wells was prepared during 1965-66.

### **GOVERNMENT OF ORISSA**

#### **5.1.16 Enquiry into the extent of utilisation of irrigation facilities and potential**

5.1.16.1 This one-time survey was sponsored by the Programme Evaluation Organisation, Planning Commission, Government of India and was undertaken by Bureau of Statistics and Economics, Orissa with the help of progress Assistants of the sample

blocks. The object of the survey was to find out the extent to which irrigation potentials and facilities were utilised during 1964-65. The survey was started on 1st January, 1965 and was completed by 31st January, 1965. The survey was conducted in all the Community Development Blocks of the State.

5.1.16.2 Information relating to irrigation works of the categories (a) canals (b) tubewells (c) tanks, wells and ponds etc. of public ownership (including those owned by grampanchayats) and (a) tube wells (b) wells with pumpsets (c) wells without pumpsets (d) tanks etc. of private ownership, was collected. Data on area having irrigation potentials, area usually irrigated in kharif and rabi and area irrigated in 1963-64 were also collected.

5.1.16.3 Lists of the Community Development Blocks in four N.S.S. regions of the State were adopted as a frame for the survey. Three stage sampling design was used taking irrigation sources, villages/village level worker circle, and blocks as first, second and third stage units respectively. For stratification the Community Development Blocks were divided into two groups *viz.* (i) blocks having Progress Assistants (ii) blocks not having Progress Assistants. 50 and 20 per cent of the blocks from the first and second groups respectively were selected by systematic sampling method. From each selected block of both groups five village level worker circles were selected, out of which five wells were selected without pump sets and three from each of the lists of tube wells, wells with pump sets, tanks and others. From different government irrigation works, 50 per cent of wells, tanks and other works were selected.

5.1.16.4 The District Statistical Officers of each district with assistance of the officer of the Bureau and the staff of National Sample Survey imparted the training to the Progress Assistants of the sample blocks.

5.1.16.5 3.6 per cent of the blocks did not respond in respect of 4.3 per cent on village level worker circles and 3.7 per cent villages.

5.1.16.6 131 Progress Assistants and 9 Extension Officers were posted for data collection at the block level.

5.1.16.7 The field work was completed before the end of 1964-65 and tabulation and report writing was in progress.

#### **5.1.17 Hirakud irrigation benefit survey**

5.1.17.1 The Bureau of Statistics and Economics, Government of Orissa, conducted the survey to assess the benefits derived from the irrigation system of Hirakud canals relating to agriculture only.

5.1.17.2 The survey was started from the kharif season of 1964-65 and covered all the irrigated blocks of the Hirakud canal system in Sambalpur and Bolangir districts,

5.1.17.3 Information relating to changes in land utilisation pattern, yield rates, cropping pattern, money income derived from agriculture, income and investments savings and capital formation, value of land and occurrence of pests and plant diseases were collected by interview, observation and experimental methods. The reference period was the kharif and rabi seasons of 1964-65 for agricultural data and agricultural year 1963-64 for other enquiries.

5.1.17.4 The list of irrigated villages formed the frame. The design adopted was stratified multistage random sampling. From the irrigated villages of a block, 20 villages were selected at random and from each village, of 25 cultivators were selected for the detailed agronomic and agro-economic data. For control purposes, 50 villages were selected from the non-irrigated villages in the blocks. For crop cutting experiments, some villages were selected from each village level worker centre and some plots were selected for particular crops.

5.1.17.5 The field staff consisted of 30 Investigators, 8 Inspectors and one Supervisor and the tabulation staff consisted of two Statistical Assistants and 3 Junior Statistical Assistants. For crop cutting experiments, only Village Level Workers were utilized who were supervised by Inspectors and Supervisors.

### **GOVERNMENT OF UTTAR PRADESH**

#### **5.1.18 Survey relating to the extent of utilisation of irrigation facilities and potentials of irrigation works**

5.1.18.1 The survey was conducted by the Directorate of Economic & Statistics, Uttar Pradesh under the technical guidance of Programme Evaluation Organisation, Planning Commission with the view to find out the extent to which the potential

of irrigation facilities existing in the State were actually utilised for different categories of works. The survey lasted from mid-September to mid-December 1964.

5.1.18.2 The works were divided into two categories (1) public ownership (2) private ownership. The first category was further divided into two parts (i) State works (ii) works owned by panchayat and local bodies. Data were collected about all State owned works, in terms of capacity and actual utilisation. For panchayat works, a sample of 50 per cent of blocks with Progress Assistants and two Non-Progress Assistant blocks were selected in each district and out of these selected blocks, 4 village level worker's (VLW) circles were further selected at random. For these works, information regarding potentials, area usually irrigated and actually irrigated in acres, during 1963-64 was collected separately for rabi and kharif seasons. Similar data were collected for minor irrigation works (private) for which 50 per cent blocks with Progress Assistants and two Non-Progress Assistant blocks were first selected and then one village per village level worker's circle was selected at random.

5.1.18.3 Selection of private minor irrigation works was done according to the specified categories, in each of which a random sample of 5 works was taken.

5.1.18.4 All the selection were made by the method of simple random sampling.

5.1.18.5 The data were collected by Progress Assistants through personal enquiry in the case of private owned works and official records for State owned works and were tabulated at the headquarters of the Directorate by staff employed on long term basis.

## **GOVERNMENT OF WEST BENGAL**

### **5.1.19 Enquiry into the extent of utilisation of irrigation facilities and potentials**

5.1.19.1 The survey was undertaken by the Programme Evaluation Unit of the State Statistical Bureau at the instance of the Programme Evaluation Organisation, Planning Commission, during 1964-65. The survey was meant, amongst other things, to find out the irrigation facilities derived by the agriculturists in West Bengal.

5.1.19.2 The village level worker circle-wise list of mouzas under the 335 development blocks of the State was taken as the frame of the survey. The sampling method adopted was that 10 mouzas were selected systematically with a random start from each of the blocks at the first stage of the survey. Then separate enquiries were made for privately owned minor irrigation works and owned by panchayats/beneficiary committees. For the first part, 3 tubewells, 3 wells with pump sets, 5 wells without pumpsets, 3 tanks and 3 other types of works were selected from each of the mouza for the detailed survey. The second part of the survey *i.e.* minor irrigation works owned by panchayats, however covered 5 wells, 5 tanks and 5 other types of works for each of the selected mouza. If the number of any type of minor small irrigation work in any mouza was less than or equal to the number to be selected, then all the works were surveyed.

5.1.19.3 During the year 1964-65, the mechanical tabulation and analysis of data were reported in progress.

## **6. Community Development, Co-operation and Panchayati Raj**

### **PLANNING COMMISSION; PROGRAMME EVALUATION ORGANISATION**

#### **6.0.1 Study on the working of post stage II Community Development Blocks**

6.0.1.1 The study was sponsored by the Ministry of Food, Agriculture, Community Development and Co-operation and was conducted by Programme Evaluation Organisation with a view to evaluate Community Development in the Post Stage II blocks in its varied aspects—the methods adopted the organisations built up, the democratic agencies set up, the nature, content and the tempo of development in different fields of socio-economic activity at different stages of blocks and the impact achieved on the area and the people. The study was designed in a more comprehensive frame work so as to find out also the adequacy of funds and departmental schemes, work load of staff, role of Panchayat Samities.

6.0.1.2 Block level data pertaining to general particulars of the block, the type of taxes imposed by the Panchayat Samities, tax and non-tax revenue, loans and grants received, departmental funds spent through block agency and directly, maintenance expenditure on fixed assets and the role of the block in planning and execution of schemes were collected. At the village level, information was obtained on land utilisation, crops

grown, irrigation facilities created, land development measures taken, agricultural demonstration and progress in animal husbandry, programmes for rural industries and craft and working of Panchayats and Cooperatives. The data for households included particulars of demography and social aspects, adoption of improved practices in agriculture, cropping pattern, participation in village programmes, attitude towards family planning, opinion on education and other facilities etc. were also collected. The study was extended in all the States of the Indian Union excepting Nagaland and Himachal Pradesh. Duration of the survey was December, 1964 to October, 1965. Data were obtained by referring to village, block and district level records, interview of respondents and through personal investigation with voluntary cooperation of informants. Besides the position as on the date of visit, the data collected mostly related to three points of time, the years corresponding to the end of stage I and stage II period and to the year, 1963-64.

6.0.1.3 The sample of blocks was chosen from the list of development blocks, available from the State development authorities. List of villages in respect of selected blocks were prepared from the revenue records and lists of households were prepared on the spot for the selected villages.

6.0.1.4 Stratified multistage random sampling design was adopted for the study. The different stages of selection were blocks, villages and households. The country was stratified into 39 regions by regrouping the regions as defined for National Sample Surveys and from each of these regions, one block was selected. The blocks thus selected included 18 blocks in which Bench Mark Surveys (B.M.S.) were conducted earlier. The villages in BMS blocks were divided into 6 strata of more or less equal population (1951) based on geographical consideration. Villages in the new blocks were divided into 4 strata of more or less of equal population and homogeneous in respect of geographical conditions, cropping pattern, etc. In both cases, villages which were very small were excluded. Households in the selected villages (from both old and new blocks) were grouped into six categories : (a) cultivators other than cultivator-cum-labourers and cultivators-cum-artisans (b) cultivators-cum-labourers (c) agricultural labourers (d) cultivator-cum-artisans (e) other artisans and (f) others.

6.0.1.5 Apart from the 18 B.M.S. blocks which were retained in the sample, other were selected at random from among blocks converted to Post Stage II before 1962. In the B.M.S. blocks, villages which were surveyed earlier were retained. They had been originally selected with probability proportional to population size in 1951. From the new blocks, villages were selected at random with equal probability. The selection of households from each category was determined on the basis of the proportion of households in that category to the total number of households in the village. In the case of cultivator households *i.e.* households in category (a) the list arranged in the descending order of the size of cultivator holding was divided into five equal sections and equal number of households was selected from each section at random. In all, the sample consisted of 39 blocks, 286 villages, 12,425 households. In addition, 358 leaders in agricultural production (for special enquiry on extent of adoption of improved practices in agriculture/animal husbandry) were selected for the purpose of household schedule. The blocks were selected at the centre (Programme Evaluation Organisation). The villages in new blocks and households within villages were selected by the field staff. For the new blocks, the design was self-weighting at the block level.

6.0.1.6 There were 39 field units of the Organisation, each under a Project Evaluation Officer and under his supervision and technical guidance two Economic Investigators were employed. The work of these units was supervised by five Regional Evaluation Officers stationed in the five regions. All the field staff were employed on a long term basis. Under the over-all guidance of the Director (Economist) and Joint Director (Statistician) there were five divisions, dealing with different aspects each under the charge of a Deputy Director. Each Deputy Director has a team of Research Officers, Economic Investigators and other analytical staff. The sanctioned staff strength below the Deputy Director's level was 3 Senior Research Officers, 14 Research Officers, 16 Senior Investigators, 46 Junior Investigators, 30 Deputy Investigators, 20 Tabulation Clerks and 3 Computers.

6.0.1.7 The extent of non-response was insignificant and whenever necessary, sample households were substituted.

6.0.1.8 During the year under review, the field investigation was completed towards the end of 1965. Scrutiny, coding and punching was reported under progress

## GOVERNMENT OF MAHARASHTRA

### 6.0.2 Sample survey to assess the reason for low coverage of membership by service co-operatives

6.0.2.1 This "one time" survey was undertaken during 1964-65 by the Registrar of Co-operative societies, Maharashtra, with a view to assess the reasons for the low coverage of membership by service co-operatives.

6.0.2.2 The sampling design adopted for the survey was a two stage one. In the first stage, two societies from each block of each district were selected purposively and then in the second stage from the list of eligible non-members from the jurisdiction of the society, 20 per cent of the non-members were selected at random. A total of 606 societies were selected throughout the state.

6.0.2.3 The reference period was the information as at the time of survey.

6.0.2.4 The field work of the survey was entrusted to the Supervisors who were under the control of District Deputy Registrars. The processing of the data was done by the Computers attached to the office of Registrar of Co-operative Societies.

### 6.0.3 Sample survey to find out the extent to which the weaker sections of the community get finance from service co-operatives

6.0.3.1 The "one time" survey was undertaken by the Registrar of Co-operative Societies during 1964-65 with a view to find out the extent to which the weaker sections of the community get finance from service co-operatives. The reference period of the survey was three years *i.e.* 1961-62 to 1963-64.

6.0.3.2 Two districts from each of the four divisions were covered by the survey. A two stage sampling design was adopted for the survey, the districts and societies being the 1st and 2nd stage sampling units. At the first stage two districts having the highest fraction of weaker sections covered by the societies were selected from each division, while at second stage one society per district was selected.

6.0.3.3 The survey work was carried out by the Supervisors under the control of Block Supervising Unions. The processing of data was done by the Computers attached to the office of Registrar Co-operative Societies.

## GOVERNMENT OF RAJASTHAN

### 6.0.4 Democratic decentralisation study

6.0.4.1 It is one of a series of similar surveys conducted every year by the Evaluation Organisation, Rajasthan with a view to evaluate the working of Panchayati Raj during the year at various levels and to draw conclusions for making such amendments in the set up of Panchayati Raj Institutions as are deemed necessary by the State in future. The study was conducted in the entire State during April, 1965 to March, 1966. Following information and facts were collected: (i) the behaviour of different functionaries in the meetings of the Panchayati Raj bodies; (ii) collection of documentary information available in the records of the Panchayati Raj Institutions; (iii) qualitative notes of the Investigating Officers regarding the working of Panchayati Raj; (iv) views of the Head of the Development Department and Collectors regarding working of Panchayati Raj; (v) our notes of District Development Officers and Heads of the Departments. The data were collected by direct observation of the sample units through personal investigation with voluntary co-operation.

6.0.4.2 For this study, the entire State was divided into three natural regions, namely, Eastern Plain, Dry and Southern Highlands. 28 Zila Parishads, 55 Panchayati Samities and 275 Village Panchayats were randomly selected for the observations of meetings. Apart from these main bodies, the standing committees of Zila Parishads, Panchayat Samities and Gram Sabhas were also observed for this study. All the 26 Zila Parishads were selected for observation. Two meetings of each Zila Parishad and one meeting of its Standing Committee was observed during the year. The scale of observation of meetings of the Panchayat Samities and their Standing Committees was kept the same as in the case of Zila Parishads. From each selected Panchayat Samiti, five Village Panchayats were selected randomly at the second stage and one meeting of each such Village Panchayat was observed. The selection of Gram Sabhas was not made systematically as

the date of meetings were not available in advance. In all, 150 meetings of Gram Sabhas were observed. The total size of the sample is given below :

Institution	No. selected	Total number of meetings to be observed
1. Zila Parishad	26	26
2. Standing Committees of Zila Parishad	26	26
3. Panchayat Samities	55	110
4. Standing Committees of Panchayat Samities	165	165
5. Village Panchayats	275	275
6. Gram Sabhas	150	150

The entire set of samples was drawn at the Central Office of the Evaluation Organisation.

6.0.4.3 Training was given to the field staff in connection with the observation of meetings of Panchayati Raj bodies and filling in observation schedules. Staff engaged in the survey were 4 Regional Evaluation Officers, 5 Investigators, one Research Assistant, 2 Investigators and 6 Computers. All of them were employed on long-term basis. The budget for the year 1965-66 for the entire organisational set up was Rs. 1.65 lakh.

6.0.4.4. About 75 per cent of the field work was completed by the end of 1965-66. The time limit was extended for a period of 2 months as a special case. During the year, under review the collected data were totalled up for each region and percentages were worked out according to the number of meetings observed. The data are yet to be processed.

## 7. Industry and minerals

### 7.1 Mining and fuels

#### MINISTRY OF EDUCATION, CENTRAL FUEL RESEARCH INSTITUTE

##### 7.1.1 Sampling of coal and coke

7.1.1.1 The survey was conducted by the Central Fuel Research Institute, Dhanbad, with a view to ascertain the average quality of the lot of coal/hard coke (with respect to both physical and chemical characteristics) at both producers' and consumers' end. The survey was started in February, 1965 and was expected to be completed in two years. Coals of different types *viz.* coking, non-coking (bituminous, anthracite or lignites occurring in different coal fields were covered. The hard coke manufactured by the coke ovens of existing steel plants, by the merchant plants and by the bee-hive ovens were also covered. Chemical analysis of the sample coal/coke were performed in respect of moisture, ash, volatile matter percentages. Samples for physical test like shatter test, micum tests, etc., would also be collected in future. The data were collected by actual laboratory analysis of the sample collected.

7.1.1.2 Three nominal sizes of coal mainly (i) run-of-oven (23 c.m.—0), (ii) coal large, (15 c.m.—15 c.m.), (iii) coal small (5 c.m.—0) and also three nominal sizes for hard coke namely (i) run-of-oven coke (20 c.m.—0) (ii) coke large (10 c.m.—3.8 c.m.) and (iii) small coke (a) 3.8 c.m.—2.5 c.m. (b) 2.5 c.m.—0 were taken as frame for the survey. The single stage systematic sampling method was adopted. The sampling unit was shovelful or scoopful of coal/coke. Units were drawn systematically at an interval of time. Sample size was variable depending on the top size of coal/hard coke to be sampled. Each sample was tested by several chemical and physical properties. The whole work was conducted by a team of scientific personnel at a central laboratory. The personnel employed for the survey comprised of one Deputy Director, two Scientists, two Scientific Assistants, one Attendant and three Sampling Khalasis.

7.1.1.3 The results of this study would be utilised in formulating and revising (if necessary) the Indian Standard Specifications for Sampling of coal and coke.

### 7.2 Large scale manufacturing

#### DEPARTMENT OF STATISTICS DIRECTORATE OF NATIONAL SAMPLE SURVEY (ASI)

##### 7.2.1 Annual survey of industries

7.2.1.1 *Previous Reference*—These are continuing surveys, the main object of which were to collect and compile industrial statistics for registered factories for purposes of research and national planning. The previous round of ASI has been reported on page 1 in the 15th Annual Report,



7.2.1.2 *Date and duration.*—The ASI, 1963 started in July, 1964 and was completed within a year. The reference period of this survey was the calendar year 1963. The ASI, 1964 started in March, 1965 and the field investigation was mostly completed within a year. The reference period for this survey was the calendar year 1964.

7.2.1.3 *Coverage.*—These surveys covered all the registered factories of the Indian Union as existing during 1962 with the exceptions of (i) factories registered under section 85 of the Factories Act, 1948 and (ii) hostels, technical training institutes, establishments for storage and distribution of oil and defence establishments.

7.2.1.4 *Type of information collected.*—The items included cover almost all aspects of manufacture, production and sale. Broadly speaking, the items are on location particulars; operation and ownership; inventory and transactions relating to the capital structures; working hours, shifts and working days; raw materials including chemicals, fuel, lubricant, electricity; products, by products, intermediate products, subsidiary products; labour employed, their emoluments and other benefits; miscellaneous and sundry expenses; repair and maintenance; service received and given; taxes and licenses; transport; trade; capital expenditure; installed capacity of production; management and labour relation; training facilities and industrial research.

7.2.1.5 *Method of data collection.*—A notice was issued to all the selected factories stating that they will be approached for collecting information under the collection of Statistics Act, 1953. The investigator handed over the blank schedule to the proprietor of the factory or the manager or some such knowledgeable person and explains the various items and the type of information required and left the schedule with the informant. After a suitable interval (of few weeks), he went again to collect the filled-in schedule. In the intervening period, the investigator had to go once or more to clarify the difficult items. Thus the method of collection was an admixture of interview and mailed questionnaire methods.

7.2.1.6 *Frame.*—The frame for the ASI, 1963 and 1964 was the list of registered factories which existed during the year 1962 and 1963 respectively.

7.2.1.7 *Sampling Design.*—The total number of factories considered for the survey were divided into two groups, *viz.* (i) group 1 (termed 'census sector') consisting of all those factories employing 50 or more workers with the aid of power and all those employing 100 or more workers without the aid of power and (ii) group 2 (termed 'sample sector') consisting of the remaining factories. The first group was completely enumerated. From the second group (sample sector), a sample of about 6,100 factories was selected. The total number of factories including the census sector from which returns were collected were about 16,000 and 18,000 for 1963 and 1964 surveys respectively.

7.2.1.8 The sampling design was a unistage stratified one, where the state-industry classifications form the strata and the sampling unit was the factory itself. The sampling frame in any stratum consisted of all the factories in that State and industry excluding, of course, the factories belonging to the census part and the factories outside the scope of the survey.

7.2.1.9 *Allocation.*—The allocations to the strata have been decided so as to ensure a coefficient of variation (c.v.) of about 5 per cent for the important characteristics in each industry at all-India level and a c.v. of about 10 per cent for the two biggest industries in each State. The allocations were rounded off to multiples of 2 to enable selection of two sub-samples of equal size in each stratum.

7.2.1.10 *Interpenetrating net-work of sub-samples.*—The sample in any stratum was drawn in the form of two interpenetrating sub-samples each of size half the allocation to that stratum. The two sub-samples were selected circular systematically and without replacement in such a way that the two sub-samples did not have any common unit between them.

7.2.1.11 *Special training given to the field staff of any for the survey.*—The primary workers, before they were entrusted independently with the field work, were imparted training both theoretical as well as practical. During the course of training, they were made conversant with the system of accounts keeping by the factories, concepts and procedure followed for collection of data in the return. Thereafter, every year a refresher course of training was imparted.

7.2.1.12 *Non-response.*—The extent of non-response was about 3 per cent for both the surveys.

7.2.1.13 *Personnel and equipment.*—For ASI, 1963, there were about 100 Manufacturing Industry Investigators, who did the primary work of data collection and about 20 Statistical Investigators who supervised their work. For ASI, 1964 there were about 125 Manufacturing Industry Investigators who did the primary work of data collection and 25 Statistical Investigators who supervised their work. There was one Assistant Director specially in charge of ASI. Other Zonal Assistant Directors and Superintendents who looked the NSS work also assisted in this work. One Deputy Director of the NSS Directorate was solely in charge of ASI surveys.

7.2.1.14 *Cost analysis.*—Total estimated expenditure on the staff employed in connection with the ASI surveys during the year 1964-65 and 1965-66 was of the order of Rs. 10.71 lakhs and Rs. 11.87 lakhs respectively.

7.2.1.15 *Analysis of Data.*—As in the case of NSS data, the techniques of punched cards and machine tabulation were resorted to. Results were given showing both the sub-samplewise and combined estimates.

## **GOVERNMENT OF PUNJAB**

### **7.2.2 Industrial Survey**

7.2.2.1 The survey was undertaken by Director of Industries, Punjab in consultation with National Sample Survey, Government of India and Statistical Adviser to Government of Punjab, with a view to assess the present position of large/medium/small scale industries and to draw plans for future developments. The survey commenced from July, 1965. The work of large/medium industries was completed by the end of December, 1965 and that of the small scale industries by the end of the financial year 1965-66. The industrial survey covered the whole State of Punjab. For large/medium industries, the survey was carried out on a census basis and for small scale industries on a sampling basis. The data relating to 1965-66 were collected from the records of the industrial units, by mailed questionnaires as well as by personal investigation with voluntary cooperation of informants.

7.2.2.2 3 Research Officers were employed at headquarters and an Inspector of Industries and Statistical Inspector was employed in the field.

7.2.2.3 The amount provided in the budget for the survey during 1965-66 was Rs. 48,330.

### **7.3 Small scale industries**

## **KARNATAK UNIVERSITY,**

### **7.3.1 Study of small-scale industrial possibilities in Dharwar**

7.3.1.1 The survey was conducted during 1965-66 by the Department of Economics, Karnatak University, Dharwar to study the prospect of developing new industries taking into consideration the resources available in the area. The information was collected on type of goods produced, volume, labour employed and capital for the year, 1964-65.

7.3.1.2 The list of the total producers in Dharwar obtained from the office of the Inspector of Wages was taken as the sampling frame. 20 per cent of the units were selected by simple random sampling method.

7.3.1.3 One Research Assistant was incharge of the field work.

## **GOVERNMENT OF ASSAM**

### **7.3.2 Survey of cottage and small industries in Gauhati town**

7.3.2.1 This survey was undertaken by the Department of Economics and Statistics, Assam with a view to provide data for filling up the gaps in the available statistics on various aspects of small industries and also to gain experience for launching a large scale survey in future. The survey commenced in March, 1965 and was completed in October, 1965. The data was collected in respect of the financial year 1964-65.

7.3.2.2 The survey was restricted only to Gauhati town. Information was collected on the fixed assets (land, building etc.) and the working capital of the establishments. Detailed particulars of consumption of raw materials, fuel and lubricants, etc. and production of finished goods, purchase and sale, means of transport of raw materials etc. were also collected. Ancillary information on employment and wages was also collected.

7.3.2.3 The list of establishments constituted the frame for the survey. The establishments in each industry were divided by type of organisation viz. ownership, partnership, co-operative etc. A flat 20 percent random sample was drawn for each industry under each type of organisation, subject to a minimum of 5. About 13 percent of the establishments selected were left out due to non-response.

7.3.2.4 The staff engaged for the survey consisted of six Primary Investigators and one Inspector of Statistics. Necessary training was imparted to staff engaged for field work.

7.3.2.5 The tabulation work was reported to be in progress.

## **GOVERNMENT OF MAHARASHTRA**

### **7.3.3 Survey to measure the growth of industries in urban areas**

7.3.3.1 The survey was sponsored by the Programme Evaluation Organisation, Planning Commission, New Delhi and was conducted by the Bureau of Economics and Statistics, Bombay. The object of the survey was to measure the growth of new industries and the new entrepreneurial class developed in urban areas of the State. Duration of the survey was from June to August, 1965. The survey covered the industrial establishments not covered under the Factories Act in urban areas of the State, excluding corporation cities—Greater Bombay, Poona, Nagpur and Sholapur. For collection of data, two schedules were used. Schedule-1 was meant for listing and selection of industrial establishments and the information as regards type of ownership, use of power, whether establishment was seasonal or perennial was collected. In schedule-2, detailed information for selected establishments was collected as regard to date of establishment, ownership, industry of father and grand father of the owner, his own previous industry, changes in the units during the previous 10 years, availability of raw materials, marketing practices etc. Information as on the date of enquiry was collected except for some items for which reference period had been mentioned in the schedule itself. The data were collected by personal enquiry.

7.3.3.2 List of urban areas according to 1951 census was the frame for selection of first stage units, *i.e.* towns. In the selected towns, list of industrial establishments not covered under Factories Act was the frame for selection of second stage units, *i.e.* industrial units. For the survey, two stage stratified sampling design was adopted. Two strata, major towns and minor towns were formed on the basis of number of units located in the town. The first stage sampling units were towns and within a town, industrial establishments were the second stage units of selection. In each district, two towns where total number of all industrial units were the highest as per 1961 census were considered as major towns and the remaining towns were considered as minor towns. All the major towns were selected while 24 minor towns were selected by systematic random sampling method after arranging these minor towns for the State as a whole in descending order according to the number of industrial units in these towns. A sample of about 2,000 final stage units that is industrial establishments was selected. The sample was distributed among the selected industry groups roughly on the basis of the number of units in each of these groups. In the same manner, the number of units were allocated to the selected town roughly on the basis of number of units of that industry in the selected town. In major towns, only those industries having more industrial units, were covered. The industries were allocated to the major towns in such a way as to cover about 80 percent of the total industrial units. In the selected minor towns, however, all the selected industrial groups were covered. In the case of minor town apart from allocated sample, all listed units were covered in respect of those industries for which allocation was not made. Thus from 74 selected towns (50 major and 24 minor towns), 2,315 industrial units were selected. The selection of towns and allocation of industrial units was done by the head office of the Bureau of Economics and Statistics, Bombay. Selection of final units was done by the field staff. Selected industrial establishments were first visited at listing stage and then re-visited while collecting the detailed information.

7.3.3.3 Special training was given to the Field Investigators to canvass both the schedules. District Statistical Officers, Statistical Assistants and Block Statistical Assistants were employed for the field work. Compilation work was done partly in the regional office and partly in the head office. Hand tabulation was done in the head office. The tabulation work was in progress.

### **7.3.4 Survey of cottage and small scale industries**

7.3.4.1 The survey was conducted by the Bureau of Economics and Statistics, Maharashtra. The main object of the survey was to estimate district-wise income of

the families engaged in selected industries in the small and cottage sector (non-factory sector) and to assess the value added for purpose of national income estimation. The duration of the survey was from November, 1965 to November, 1966.

7.3.4.2 The survey covered all the districts of the State except Greater Bombay and cities in the State having a population of more than 50,000 as per 1961 census. 19 industries, the establishment of which do not come under the purview of the Factory Act 1948, had been taken up for the survey. The industries covered were : (1) weaving (2) dyeing and printing (3) coir making (4) blacksmithy (5) metal works (6) carpentry (7) cane and bamboo products (8) bricks and tiles (9) other potteries (10) leather working and tanning (11) oil pressing (12) gur making (13) bee keeping (14) soap making (15) match making (16) paddy husking (17) hand papers (18) fibres and rope and (19) engineering workshops. For bricks and tiles, leather working and tanning and fibres and rope industries, the reference period was the last two months prior to the day of visit to the household of the establishment and for the remaining industries, it was the last one month.

7.3.4.3 Information was collected regarding : (1) type of establishment (2) demographic particulars of the household members and hired workers of the selected establishments (3) capital investment and working capital of selected establishments (4) expenditure on fuel and lubricants raw material and other cost of production (5) products and by-products of the establishments (6) source and place of getting raw material (7) source and place for the sale or products (8) indebtedness of establishments.

7.3.4.4 A list of centres having concentration of cottage and small scale industries was prepared by District Statistical Officers. From the selected centres, a list of establishments in the selected industries was prepared. A two stage sampling method with town, village or group of villages as first stage units and establishments from town, village or group of villages as second stage units, was adopted for the survey.

7.3.4.5 The field staff engaged for the survey consisted of 14 Investigators, 5 Field Assistants, 16 Fieldmen and a Supervisor. The supervisory work was entrusted to 4 Deputy Directors, 25 District Statistical Officers and 5 Inspectors.

## **GOVERNMENT OF MYSORE**

### **7.3.5 Handloom survey**

7.3.5.1 The survey was conducted by the Director of Statistics, Government of Mysore during 1964-65 and 1965-66 with a view to assess the production, sales and stock of handloom cloth in Mysore State. The survey covered 11 districts out of 19 districts in the State which were considered important for the concentration of handlooms. The data regarding production, sales and stock of handloom cloth etc. were collected by 15 regular Enumerators and some of Departmental Officials through oral methods on monthly basis.

7.3.5.2 The sampling plan adopted was two stage sampling technique with stratified random sampling in the first and simple random sampling at the 2nd stage, centres being the 1st stage sampling units and the weavers, households within the selected centres the second stage unit. In each district, all the centres were grouped in 4 strata depending upon the number of looms in each stratum. The first stratum consisted of centres with looms above 500, the 2nd between 200 to 500, the third between 50 to 200 and the fourth below 50. In the first stratum, all the centres were taken where as in the fourth, all were left. From the second and third stratum, a suitable number of centres was selected by optimum allocation.

7.3.5.3 The list of weavers' households in the selected centres was used as the sampling frame. Five percent of the weavers' households were selected for canvassing the schedules. The weavers were classified into following categories : (i) weavers who owned and operated the looms completely on own account. This category of weavers purchased raw material by themselves and sold the goods either directly or through some intermediary body and co-operative societies (ii) weavers who only owned looms and operated them but the raw materials was supplied by co-operative societies and the manufactured goods were sold through those cooperative societies (iii) weavers who owned and operated looms but got raw material from the master weavers and sold most of the manufactured goods to their master weavers (iv) master weavers who supplied raw material to weavers and got the goods from them.

7.3.5.4. The ultimate sampling unit was the household of the weaver who belonged to the first three categories. The field work was done by regular Enumerators trained by the concerned Statistical Officers. The Enumerator's work was supervised by some Departmental Officials consisting of one Fieldman, 5 Field Assistants etc.

7.3.5.5 The data were analysed by punch card method. During the year 1964-65, the production of handloom cloth in the State was 112.7 million yards valued at 223.3 million rupees. Out of this 112.7 million yards cloth produced, about 100.3 million yards valued at 199.8 million rupees was sold and the remaining 12.4 million yards worth Rs. 23.5 million was kept in stock. Analysis of the data for 1965-66 was in progress.

7.3.5.6 The data regarding cost analysis are not available.

## **GOVERNMENT OF WEST BENGAL**

### **7.3.6 Small industry survey**

7.3.6.1 The State Statistical Bureau, Government of West Bengal conducted the survey during 1965-66 with a view to estimate the number of establishments of small industries of the different regions belonging to different product groups, categorised by worker strength and use of power. The purpose was also to prepare a frame for the detailed enquiry of the industries. The Bureau had conducted surveys of this nature in 1952-53, 1954 and in 1958. Field work of the survey started from 1st April, 1965 and terminated in January, 1966 and covered the entire State.

7.3.6.2 Data were collected regarding main products, number of persons employed, form of power used, value of products and by-products, etc. of the industrial establishments. The reference period of the survey was one year ending the day preceding the date of enquiry. Data were collected by interview methods.

7.3.6.3 The list of towns and mouzas was used as frame for sampling. In case of Calcutta, however, the list of census blocks was used as the frame. The entire urban areas excluding Calcutta, one third of the census blocks of Calcutta and 5 per cent of the mouzas of each of the districts of the State were treated as strata and were completely enumerated. In case of Calcutta and the rural areas of the districts, the samples were, however, divided into two sub-samples. Owing to proximity of Pakistan border, one mouza of the district of Jalpaiguri and two mouzas of the districts of Cooch-Behar and due to some other reasons, one mouza each of the districts of Darjeeling and Purulia could not be surveyed. Field staff of Calcutta Sample Survey Office and Nucleus Unit of the Bureau conducted the survey in Calcutta and Howrah cities and two towns of 24 Parganas. For conducting the survey in the mofussil areas, the services of the field staff of the Agricultural Statistics Officer of the Bureau were utilised during their marginal time.

7.3.6.4 Data of 1.3 lakh industrial establishments were collected during the survey scrutiny and prepunching coding work were also completed for all the schedules by the compilation staff of the Bureau. Arrangements were made for mechanical tabulation of the filled in schedules of the survey.

### **7.4 Village industries and handicrafts**

## **GOVERNMENT OF ANDHRA PRADESH**

### **7.4.1 Sample survey on rural industries**

7.4.1.1 This survey was sponsored by the Programme Evaluation Organisation, Planning Commission as part of the study of impact of Plan and was conducted by Bureau of Economics and Statistics, Government of Andhra Pradesh. The object was to ascertain the number and nature of industries in the rural areas of the State and to study the extent of new industries started since the inception of Five Year Plan. It was also aimed at studying the output of industries and man-power employed. The duration of the survey was July to September, 1964.

7.4.1.2 A two stage sampling design was adopted. It was carried out in all the development blocks from each of which a sample of villages at the rate of one village per village level worker circle was selected by simple random sampling. The villages thus selected were arranged in alphabetical order and serially numbered. The villages having odd numbers only were selected for conducting the surveys in each block.

7.4.1.3 Information regarding nature of establishments, number of workers in each establishment by category, viz. skilled trained, skilled untrained, semi-skilled and unskilled, type of financial help received at the time of inception and after inception, current year and previous years' output were collected. The non response was reported to be 2 percent.

7.4.1.4 The field staff namely the Village Level Workers and the supervising staff were given training at the block and district levels.

## **8. Trade and Commerce**

### **8.1 Distributive trade**

#### **GOVERNMENT OF WEST BENGAL**

##### **8.1.1 Economic survey of trading establishments**

8.1.1.1 The main object of the survey was to study the investment pattern, employment structure, hours of work, total transactions etc. for the different types of trading establishments engaged both in wholesale and retail trades. The coverage was confined to urban and rural areas of the State excluding those of Calcutta Metropolitan District. The survey started from August, 1964 and continued till the end of the financial year 1964-65.

8.1.1.2 The urban areas were divided into four strata according to the density of their population. Trading establishments in each of the strata were divided into three employment groups as per the number of employees in the establishments. Each of these employment groups was again classified into two establishment groups—(1) wholesale trade and (2) retail trade. Similarly, the rural areas were divided into five strata for the survey. The details about what constituted the strata for rural areas and the further sampling of units in both urban and rural areas have not been furnished by the State Bureau.

#### **MANIPUR ADMINISTRATION**

##### **8.1.2 Sample survey on retail and wholesale trades**

8.1.2.1 The Department of Statistics, Government of Manipur conducted the survey on retail and wholesale trade with a view to obtain reliable estimates of per head earnings of the different workers in this sector and value added from 'trade and commerce' to the State income of Manipur. The field work was started on the 1st July, 1965 and continued up to the 30th October, 1965. The survey covered all commercial enterprises including hotels, restaurants and entertainment centres, cinema houses, etc. existing within the geographical boundary of Manipur. Information regarding the assets, employment and wages, gross annual turn over, trade margin, expenditure on account of freight and sale tax and other miscellaneous expenditures were collected. The reference period of the data was the year 1964-65. Data were partly collected from the establishment records and partly from the direct observation of sample units in the case where no written records were available for particular unit. The data were collected by the investigators through direct observation. The reference period was the year 1964-65.

8.1.2.2 The list of all the commercial establishments furnished by Taxation Department was taken as frame for the survey. The design adopted for the survey was stratified multistage random sampling where commodities dealt in were classified into wholesale trade and retail trade groups as the first stage units and the establishments the ultimate stage units. The list of establishments was divided into six different commodity groups. Establishments were selected by systematic random sampling. About 20 to 50 percent units in each strata were covered. All the sample selections were done at headquarter.

8.1.2.3 A training was conducted for field staff at the headquarters. One Inspector and 8 Primary Investigators were employed for field work. One desk calculator was used.

### **8.3 Others**

#### **MANIPUR ADMINISTRATION**

##### **8.3.1 Annual survey of trade and commerce**

8.3.1.1 The survey was conducted by the Department of Statistics, Government of Manipur with a view to obtain reliable per head earning of the persons engaged in trade and commerce in the territory and value added by trade and commerce to the State income. The duration of the survey was from July to September, 1965. The survey covered all important trades and commercial establishments in the territory. Information was available partly from establishment records and partly from direct observation of sampling units through voluntary cooperation.

8.3.1.2 A list of business firms obtained from the Taxation Department, Manipur was taken as frame for the survey. The list was classified into six groups viz. (i) retail trade in food stuff; (ii) retail trade in textiles; (iii) storage and warehousing; (iv) retail trade in fuels; (v) wholesale trade in food stuffs and (vi) retail trades unclassified.

The design of the survey was stratified unistage random sampling taking groups of trading and commercial establishments as strata. All the samples were drawn at the head office after ascertaining the number of suitable samples according to number and size in each group.

8.3.1.3 The field work was carried out by Inspectors and Primary investigators under the direct supervision of one Deputy Statistical Officer. No separate expenditure was earmarked for the survey as it was taken up as a normal departmental work.

## **9. Transport and communication**

### **9.1. Passenger traffic**

#### **GOVERNMENT OF MYSORE**

##### **9.1.1 Socio-economic survey—mass transportation study of Bangalore**

9.1.1.1 The survey was sponsored by the office of the Town Planning Officer, Bangalore Metropolitan Area and was conducted by the Department of Town Planning, Mysore with a view (i) to collect information about the quantum of interlocality movement of the people of Bangalore Metropolitan Area and utility of existing transport facilities in Bangalore city (ii) to study the distribution of some basic civic amenities in different localities (iii) to study the effect of socio-economic factors such as (a) activity status (b) sex (c) age and (d) income on inter-locality movement. The field work was conducted over a period of about eight weeks starting from 16th March, 1966. The area which was covered by the survey was Bangalore Metropolitan Area as per 1961 Census. The information was collected by interviewing personally every normal resident of the selected household. The reference period was a normal working day preceding the day of visit.

9.1.1.2 The city was stratified by combining 2 to 3 adjoining municipal divisions and taking 8 non-municipal areas and treating each one of them as a stratum assuming that homogeneous groups of people live in adjoining municipal areas. The city was thus stratified into 32 strata. From each stratum, 10 percent of blocks were taken as first stage units using simple random sampling and from each selected block, 50 percent of the households were selected systematically as second stage units. The schedules for the survey were canvassed for all the members of the household.

9.1.1.3 The field staff consisting of 30 Enumerators employed on ad hoc basis was briefed two times during the course of the survey : once at the initial stage and secondly after 2 or 3 days of their work in the field.

9.1.1.4 The non response was almost nil. The estimated total cost incurred on the survey was Rs. 26,349 only.

### **9.2 Goods traffic**

#### **GOVERNMENT OF GUJARAT**

##### **9.2.1 Survey of goods traffic on high ways**

9.2.1.1 The survey was conducted by the Bureau of Economics and Statistics, State Government, to obtain information in regard to goods traffic and vehicles moving on the highways. The survey was conducted round the clock for two weeks (i) 5-6-1965 to 12-6-1965 and (ii) 25-12-1965 to 1-1-1966 at check posts which were set up at selected points on the different sections of highways and particulars in respect of vehicles and commodities moved were collected for all the goods vehicles which passed the selected checkpoints in either direction during the survey period. The information was collected in three schedules through appointed investigators. In schedule 1, the information was collected for mechanical goods vehicles in respect of make of vehicles, ownership, registered laden weight, un-laden weight, the nature and volume of goods carried, their origin and destination and the distance between the two points. In schedule 2, information was collected for animal drawn vehicles in respect of type of vehicles, the nature and volume of goods carried and their origin and destination which in schedule 3, complete count of all vehicles excluding cycles, scooters and motor-cycles, was recorded. In order to stop the vehicles, constables were posted at each checkpost. The survey involved a complete count of all vehicles passing at the selected checkpost.

9.2.1.2 A pilot survey was conducted at Junagadh in March, 1965 for 7 days round the clock for purposes of estimating staff requirements and the expenditure involved.

9.2.1.3 The sampling was used only in the selection of period of : one week for the survey. This was done on a purely representative way.

9.2.1.4 The officers of the Regional Transport Survey imparted training to the District Statistical Officers which in turn imparted training to the Recorders. Rehearsal of the field work was arranged by each District Statistical Officer for proper training of the field staff.

9.2.1.5 For each checkpost, 6 Recorders (12 Recorders for the checkposts situated on the National Highways), 6 Police Constables and one Attendant were employed.

9.2.1.6 The data were coded and punched on the IBM machine and tabulation work was done on the IBM equipment available with the Bureau.

9.2.1.7 Intensity of traffic per day was estimated by using simple average. Precision limits were not estimated.

9.2.1.8 As the survey was undertaken as a part of the Regional Transport Survey, detailed cost analysis was not possible. The results of the survey will form a part of the report of the Transport Survey of the State which was under preparation.

9.2.1.9 As regards the cost details of the survey, Rs. 8,430/- were paid as honorarium for 1st survey and Rs. 5,720/- for the second survey to the Recorders and Attendants.

### **9.3 Tourist traffic**

#### **MINISTRY OF TOURISM AND CIVIL AVIATION**

##### **9.3.1 Foreign tourist expenditure survey**

9.3.1.1 The survey commenced during 1965-66 and is being carried out by the Department of Tourism. The survey will conclude in 1966-67. The survey is a part of the larger economic study of the Tourist Industry in India with the object to evaluate the foreign exchange earnings from tourism through the different components of the industry.

9.3.1.2 The survey is being carried out at four international airports in Bombay, Calcutta, Delhi and Madras besides two seaports in Bombay and Madras during the last week of every month, for twelve months from July, 1965 to June, 1966. Certain specified fraction of tourists selected at random, who departed from India through the above mentioned ports during the survey periods, are being interviewed for collecting the information pertaining to the foreign tourist expenditure in India under different heads along with the information pertaining to (i) nationality (ii) purpose of visit (iii) occupation (iv) other countries visited in the trip (v) tourist centres visited, transport used, accommodation and amenities availed of and duration of stay (vi) utilisation of travel agencies (vii) annual income etc., all together giving a background to the expenditure pattern of the tourists.

9.3.1.3 As no ready made frame for such type of surveys are generally available, a self generating frame was used for drawing representative sample. The number of tourists visiting the country is compiled nationalitywise and regionwise. The preparation of the list (frame) of tourists as they were about to leave the country was to be based on the embarkation card, filled in by the foreign visitor at the time of leaving the country. These cards give information about the nationality of the visitors. Separate frame is prepared at each port for each nationality and sample selected from each of them. In all, 6,000 tourists are expected to be interviewed assuming the margin of error to be at 5 percent level. Sample is selected systematically with a random start with suitable interval.

9.3.1.4 About 8 to 9 Officers/Investigators are being utilised each month for about a week to ten days for supervising the survey. Other staff consists of about 45 Interviewers who are hired for the survey.

#### **GOVERNMENT OF JAMMU & KASHMIR**

##### **9.3.2 Tourist trade**

9.3.2.1 The survey was conducted by the Directorate of Tourism, Government of Jammu & Kashmir with a view to study the part played by tourist industry in building up the economic structure of the State. In the questionnaire, visitors were required to give their suggestions regarding the improvements needed in the places of tourist interest in the State. The survey work was carried out during July—October, 1964.

9.3.2.2 The information from the tourists was collected at random with reference period as 1964-65. The statistical staff of the department was to collect data in the field as well as in the office. Some of them were deputed to different places of tourist



interest to get the required information from the visitors. The field workers move from one place to another where the tourists generally visit. The tourists were asked to fill in questionnaires.

9.3.2.3 Three Statistical Assistants and two Junior statistical Assistants were deputed for the survey. The comments and suggestions made by the tourists were forwarded to the concerned authorities for making necessary improvements in the arrangements. The survey report for the year 1964-65 was prepared and sent to concerned departments *viz.* Planning Department, Tourist Department and Government of India. The survey for the year 1965-66 was conducted only for a short period due to disturbances in the country.

## **10. Housing and construction**

### **MINISTRY OF WORKS, HOUSING AND SUPPLY; NATIONAL BUILDINGS ORGANISATION**

#### **10.0.1 Statewise study of tax incidence on housing**

10.0.1.1 The survey was conducted at the instance of the National Buildings Organisation by the National Council of Applied Economic Research, New Delhi.

10.0.1.2 The object of the survey was to assess the tax incidence on housing (*i.e.* taxes and levies which raise the construction costs and which constitute a permanent impact on rental housing and to study the effects of these taxes on the profitability of investment in housing and the extent to which it tended to weaken the inducement to investment in housing.

10.0.1.3 The duration of the survey was about a year. The survey covered the State capitals of Andhra Pradesh, Bihar, Gujarat, Madras and Delhi. In Delhi, the study was confined to houses completed during 1963-64 and constructed on plots measuring less than 300 square yards and costing less than Rs. 25,000/- per housing units. In other State capitals, the number of new houses assessed for the first time during 1963-64 was obtained. The survey was confined to three zones in which maximum number of houses were constructed. The total number of houses which were to be covered were distributed between the selected three zones in proportion to the total number of new houses completed during 1963-64 in three selected zones in Madras, Ahmedabad and Hyderabad. In Patna where the population was less than 5 lakhs, 24 houses were covered. Systematic sampling was used for the selection of the households.

10.0.1.4 During the year 1965-66, the survey was completed and a draft report prepared. Ratio method of estimation was adopted.

### **GOVERNMENT OF UTTAR PRADESH**

#### **10.0.2 Survey to assess the housing facility provided to workers of various industries**

10.0.2.1 The "one time" survey was conducted by Labour Commissioner, Uttar Pradesh with a view to obtain the information on number of workers employed in income group of Rs. 350 per month and above, monthly income of workers and whether the selected worker was living in a quarter. The data relating to the year 1965-66 was collected by personal interview method. The survey was carried out in all the registered units employing 50 or more workers in the various industries of the State.

10.0.2.2 The design of the survey was stratified multi-stage sampling. Each industry was taken as stratum. Factories within a stratum and workers in the selected factories were taken as first and second stage sampling units respectively. 20 percent of the factories from each industry with the minimum of 2 factories were selected from a particular industry. A sample of 10 percent workers from the selected factories were selected from each of the two income groups. The selection of the factories was done on simple random sampling basis while the selection of the workers was done by systematic sampling method.

10.0.2.3 No special training was given to the staff. The field work was carried out by Labour Inspector, Chief Investigators and Investigators of the department,

## GOVERNMENT OF WEST BENGAL

### 10.0.3 Enquiry into the cost of maintenance and construction of buildings

10.0.3.1 The survey was undertaken by State Statistical Bureau, Government of West Bengal, under the Third Five Year Plan schemes. Purpose of the survey was to estimate the cost of maintenance and construction of buildings and result was expected to be utilised for State income estimation. Field work commenced from the middle of July, 1965 and terminated during the second week of February, 1966 and covered whole of the State. Data collected were particulars on ownership, land auxiliary items, general information on houses, details regarding new construction and costs thereto and details regarding maintenance and repair including renovation of old houses along with cost incurred. Period of reference in case of new construction ready for use and maintenances of old houses was taken as the last one year. Data were collected by personal investigation with voluntary cooperation of the interviewing respondents. Bureau had the experience of an exploratory survey for construction activity in rural areas during 1963.

10.0.3.2 The entire State was divided into two areas viz., rural and urban, but Calcutta and Howrah cities were treated as two separate zones in the urban areas. In the first stage, 'mouza' and in the second stage, 'houses' were the sampling units adopted in rural areas; similarly 'towns' in the first stage, 'census blocks' in the second stage and 'houses' in the third stage were the sampling units adopted in urban areas; though for Calcutta and Howrah cities, census blocks and houses were the sampling units for first and second stages respectively. Sampling units were selected with the help of random numbers. For the final stage, ten percent houses in urban areas and fifty percent houses in rural areas were selected systematically with random start. Mouzas and towns were stratified according to population. The urban areas excepting Calcutta and Howrah cities were divided into five strata, Calcutta and Howrah were taken as two separate strata. In urban areas excepting Calcutta and Howrah, first stage samples (towns) were allocated in different strata in such a way that the expected total number of samples of all the strata covered ten percent of the population and at the same time the over-all variance was minimised. Ten percent of second stage samples (census blocks) were drawn from among the selected first stage sample. For Calcutta and Howrah each, one percent of census blocks were taken as samples. All the households in each census block were completely enumerated. All units excepting those at the final stage were selected at Central Office. Units at final stage were selected by field staff.

10.0.3.3 The field work was done by the staff of the Bureau. There were 55 Assistant Investigators as primary staff. They were given both theoretical and practical training in filling up the schedules. Definition and concepts were also explained during theoretical training. Non-response was negligible. Tabulation work has not yet been taken up.

## 11. Education

### GOVERNMENT OF ANDHRA PRADESH

#### 11.0.1 Sample survey on education and other facilities

11.0.1.1 The survey was sponsored by Programme Evaluation Organisation, Planning Commission and was conducted by Bureau of Economics and Statistics, Government of Andhra Pradesh, with a view to ascertain the extent of educational facilities available in the villages and to find out the nature of equipment in the schools and training status of teachers. The survey was undertaken from 20-7-1964 to 30-7-1964 and data were collected for the academic year 1964-65. The survey was carried out in all the development blocks in the State. Information on existence, non-existence of primary and secondary schools, equipments in schools, number of teachers and their training status, existence of other facilities such as railway station, bus stop, post office, primary health centres, doctors, marketing centres etc. were collected by Village Level Workers under the guidance of Progress Assistants.

11.0.1.2 The design adopted for the survey was stratified two stage random sampling. One village was selected at random from each of the village level workers' circle and the enquiry was covered in all schools. In all, 4,355 villages were randomly selected for the survey from 447 Community Development Blocks. The non-response was 0.26 percent.

11.0.1.3 No special staff was appointed and no specific amount was earmarked for this survey as it constituted one of the several surveys sponsored by the Programme Evaluation Organisation. During the year under review, schedules were scrutinised and data were tabulated regionwise.

## GOVERNMENT OF ASSAM

### 11.0.2 Survey on education, drinking water and other facilities

11.0.2.1 At the instance of Planning Commission and as a part of the study of impact of Plan, this survey was undertaken by the State Statistical Bureau with a view to give an insight into the availability of drinking water, primary education and other facilities. The duration of the survey was from January, 1965 to October, 1965.

11.0.2.2 The data were collected by Sub-inspectors posted in various blocks through personal investigation. The information related to the number of different sources of drinking water within the village, if not, the distance of the nearest source; whether usable by scheduled castes/scheduled tribes also; availability of different types of communication; education and medical facilities in the village, if not, the distance of the nearest one; number and types of different schools; equipments available and their adequacy and the particulars of the teachers.

11.0.2.3 The list of census villages in the blocks served as the frame for the survey. Ten villages from each block were selected at random. Out of 153 blocks, survey work was completed in 141 blocks. In the remaining blocks, the survey could not be undertaken.

## GOVERNMENT OF BIHAR

### 11.0.3 Survey on education, drinking water and other facilities

11.0.3.1 The survey was sponsored by Programme Evaluation Organisation and was conducted by Directorate of Statistics and Evaluation, Government of Bihar with the object of ascertaining the extent of education facilities available in the villages. The survey covered the entire State during November, 1964 to March, 1965. Information on nature of equipment in schools, training status of the teachers, drinking water facilities with a particular reference to schedule caste and tribe and other facilities such as railway station, bus stop etc. were collected by personal investigation with voluntary cooperation.

11.0.3.2 The enquiry was conducted in all the development blocks where the sample survey for estimating the extent of adoption of improved agricultural practices was carried out. In each of these blocks, one village was selected at random from each village level workers' circle. In each selected village, all the schools run by government or aided/recognized by the government/local bodies were covered. As regards the survey of drinking water and other facilities in the village, the information was collected in the prescribed proforma by interviewing the knowledgeable persons of the village and physical verification of drinking water facilities.

11.0.3.3 Training was imparted by headquarters officers at the different district offices. Survey was carried out by Agricultural Extension Supervisors, Gram Panchayat Supervisors and Junior Statistical Supervisors. The tabulation was reported to be in progress.

## GOVERNMENT OF MADHYA PRADESH

### 11.0.4 Survey on education, drinking water and other facilities

11.0.4.1 The survey was sponsored by the Programme Evaluation Organisation, Planning Commission and was conducted by the Directorate of Economics & Statistics, Government of Madhya Pradesh with the object of ascertaining (i) the extent to which education facilities were available in the villages (ii) to find out the nature of equipment in the schools and the training status of teachers (iii) to collect information on the availability of facilities like drinking water with special reference to schedule castes and schedule tribe (iv) primary health centres and (v) bus-stop and railway station etc., for each of the four regions of the State. The field work of the survey started in September, 1964 and was completed in October, 1964. No pilot survey was conducted. The survey covered the whole of the rural part of the State.

11.0.4.2. The sampling design was two stage stratified simple random sampling with varying sampling fractions at the second stage of selection. The first stage unit was a development block (excepting the preextension area). 50 percent of the blocks (150 blocks) where Progress Assistants were posted and 20 percent of the blocks (20 blocks) where Progress Assistants were not posted, were selected. The second stage unit was a village. The size of sample was one village from each village level workers' circle in the block.

11.0.4.3 The field work was done by Progress Assistants under the supervision of Block Development Officers and District Statistical Officers. Report for the year 1964-65 had been published.

## GOVERNMENT OF MAHARASHTRA

### 11.0.5 Survey on education, drinking water and other facilities

11.0.5.1 The survey was sponsored by the Programme Evaluation Organisation, Planning Commission as a part of the study of impact of plan and was conducted by the Bureau of Economics and Statistics, Bombay. The object of the survey was to study the extent of equipment in the schools, training status of school teachers and availabilities of other facilities like railway station, bus stop, post office, etc. in the villages. The survey started in July, 1964 and was completed in December, 1964.

11.0.5.2 Information was collected for villages reporting different types of schools. For villages having schools, information regarding number of schools by type, total number of students, number of teachers, number of trained teachers, availability and adequacy of facilities like building, black board, desks etc. were collected. Apart from this, information was also collected on facilities like railway station, bus stop etc. For villages not having schools, the data on the distance from nearest school and the type of road linking the nearest school etc. were collected.

11.0.5.3 The frame adopted for sampling was the list of villages for each village level worker's circle. A two stage sampling design was adopted with Community Development Blocks and villages forming 1st and 2nd stage units. All blocks with Statistical Assistants and one block (selected at random) from those without Statistical Assistants were selected. For each selected block, a list of villages was prepared circlewise and a village level worker was incharge of each circle. From each of the circles, a village was selected at random. In the case of blocks where village level worker circles did not exist, ten villages were selected in each of the community project administration type of blocks, by circular systematic sampling method with equal intervals. In all, 213 blocks were selected in the State and a sample of 2,740 villages was drawn.

11.0.5.4 The field work was carried out by the District Statistical Officers, Research Assistants and Statistical Assistants of the Bureau of Economics and Statistics and Gram Sevaks. Further processing of the data was done by the Research Assistants and Statistical Assistants at the headquarters.

### 11.0.6 Investigation into the working of higher secondary schools in Vidarbha and Marathwada region

11.0.6.1. This survey was conducted by the Research Unit in the Directorate of Education, Poona. The purpose of the survey was to study the working of higher secondary schools of Vidarbha and Marathwada with a view to assess how far the objectives underlying the establishment of these institutions have been realised in practice; and also to consider, what remedial measures would be necessary to overcome the difficulties experienced. The survey started in the month of May, 1964 and was completed by December, 1965. The reference period was the position as on 31st March, 1964.

11.0.6.2 The survey was intended to cover eight districts of Vidarbha region and five districts of Marathwada region. Information relating to various aspects of higher secondary schools was collected *viz.* (1) admission to various courses (2) expenditure (3) building and equipment (4) staff (5) medium of instruction (6) internal evaluation (7) pupils and external examiners (8) administration and organisation (9) time table and holidays (10) syllabus and text books etc. All the information was collected through mailed questionnaire.

11.0.6.3 Out of about 114 higher secondary schools in these two regions, 50 schools were selected by the method of simple random sampling.

11.0.6.4 The compilation and analysis of the data was undertaken by the Research Unit of the Directorate.

## GOVERNMENT OF PUNJAB

### 11.0.7 Impact of Primary Education Act, 1960 in the rural areas

11.0.7.1 The survey was sponsored by State Government and was conducted by the Economic and Statistical Organisation, Government of Punjab from middle of January, 1966 to middle of February, 1966. The objective was to find out how far the Punjab Primary Education Act of 1960 was being implemented and the extent of the impact it had made on the people living in the rural areas of the State and the various problems of its implementation. The study was confined to 8 districts only. The data were collected for villages with school, distribution of schools according to population size of village, availability of schools in neighbouring villages, primary schools, population

covered by primary schools, enrolments in primary schools, population of Harijan children on roll, distribution of schools according to number of teachers attendance, authorities, proportion of children of age-group 6-11 years not attending schools and occupational groups. Information was also collected on building facilities and the aids in schools, housing, background of children and their schooling, administrative set up and working of primary education. Economic information was obtained both by interviewing the concerned teachers and by consulting the relevant records maintained at the school level in the selected schools.

11.0.7.2 The method adopted for sampling was four stage sampling. The whole of the State was divided in 4 regions, region I consisting of Hoshiarpur, Ambala, Kangra, Simla, Kulu and Lahaul and Spiti districts, region II comprising of Ludhiana, Jullundur, Amritsar, Kapurthala and Gurdaspur districts, region III comprising of Ferozepur Bhatinda, Sangrur, Patiala and Hissar districts and region IV forming Karnal, Rohtak, Mohindergarh and Gurgaon districts. From each of these regions, two districts one with high percentage of enrolment and other with low percentage of enrolment of children between 6-11 years of age were selected on purposive sampling basis. In each of the selected districts, three blocks were selected and from each block, 5 villages were selected on random basis. In all, 120 villages were selected for the study. In the selected villages, household lists were prepared for detailed investigation. The total households were then divided into occupational categories namely agriculturists, agricultural labour, artisans, traders and others. Three households having children in the age group 6-11 years were then selected at random out of the list of households having children of school-going age in each of the above mentioned categories. The categorisation of households was done to find out the categories of occupation where the enrolments were not upto the mark and to ascertain the reasons for not sending the children to schools.

11.0.7.3 For this survey, 13 Technical Assistants were deputed for collection of data. 4 Technical Assistants and 6 Computers were assigned for compilation work. As the survey was conducted by the regular staff of the Evaluation Unit of Economic and Statistical Organisation, cost analysis for the survey has not been worked out.

#### **11.0.8 Utilisation pattern of educated persons**

11.0.8.1 The survey was conducted by Economic and Statistical Organisation, Government of Punjab, at the instance of Programme Evaluation of Organisation, Planning Commission, Government of India, with a view to find out the utilisation pattern of educated persons. It would provide an insight into the relationship between the expansion of courses of study at college level and the employment of graduates of different faculties. These data were utilised for forecasting the future requirements of personnel at various levels. The survey was conducted during November, 1965 to February, 1966 to cover graduates and post graduates in all faculties and diploma in technical subjects. The reference period for the data related to years 1959, 1961 and 1963. The data were collected by mailed questionnaires through voluntary cooperation of informants.

11.0.8.2 The lists of graduates, post graduates and diploma holders in technical subjects were obtained from universities and technical institutions in Punjab during the year 1959, 1961 and 1963 to serve as a frame for the survey. The design of the survey was stratified random sampling with a random start. Different faculties of the universities were taken as different strata for the survey. The allocation of the total sample in different strata was done on the principle of variable sampling fraction in such a way that larger proportion was sampled from strata of smaller sizes, so as to obtain estimates with reasonable degree of precision. Relatively more weightage was given to technical personnel in the matter of sample sizes. 50 per cent and 25 per cent of post graduates and graduates in engineering, medicine, agriculture and science subjects, 20 per cent and 10 per cent of postgraduates and graduates in arts, and 10 per cent of diploma holders in technical subjects were taken.

11.0.8.3 No additional staff was recruited for this survey since the survey was conducted by the existing staff.

### **GOVERNMENT OF RAJASTHAN**

#### **11.0.9 Survey to study the utilisation pattern of educated persons**

11.0.9.1 The Directorate of Economics and Statistics, Government of Rajasthan conducted the survey to find out the utilisation pattern of graduates, post graduates and diploma holders who came out successful during 1959, 1961, and 1963 batches from colleges of general and professional education including polytechnics. The survey was conducted during 1965-66. Data regarding utilisation pattern after obtaining first degree including opinion about stability of job and adequacy of employment etc. were collected in questionnaires through postal enquiry. The reference period referred to the period after obtaining first degree till 1966.

11.0.9.2 List of successful candidates obtained from selected institutions for each year's batch under study was taken as sampling frame. Stratified two stage random sampling design was adopted where institutions and candidate were taken as first and second stage units respectively. Non-response cases were about two third i.e. 66 per cent.

## **GOVERNMENT OF UTTAR PRADESH**

### **11.0.10 Survey on education, drinking water and other facilities**

11.0.10.1 The survey was undertaken by the Directorate of Economics and Statistics, Uttar Pradesh, under the technical guidance of the Programme Evaluation Organisation, Planning Commission. The purpose of the survey was to ascertain the extent to which the education, drinking water and other facilities were available in the villages. The survey was carried out in the second half of September, 1964.

11.0.10.2 The survey covered all development blocks where a Progress Assistant was posted and two blocks, per district where no Progress Assistant was posted. For each selected block, one village from each village level worker's circle was selected for the collection of data.

11.0.10.3 Information regarding existence of facilities like sources of drinking water, railway station, bus stop, post office, marketing centres, health centre, number of primary and secondary schools, number of teachers and students, nature of equipment in schools and training status of teachers was collected.

11.0.10.4 The data collection was done by Progress Assistants through personal inquiry. The tabulation of data was done at the headquarters of the Directorate with the help of regular staff.

## **GOVERNMENT OF WEST BENGAL**

### **11.0.11 Survey on education, drinking water and other facilities**

11.0.11.1 This 'one time' survey was undertaken during 1964-65 by the Programme Evaluation Unit of the Bureau at the instance of the Programme Evaluation Organisation (Planning Commission), Government of India. The aim and purpose of the survey was to study the impact of plan programmes on levels of living, consumption and employment and use of improved methods in agriculture etc. This survey aimed to show the educational aspect of rural Bengal. The information collected as on the date of enquiry pertained to schooling facilities with details of equipment and teachers in the school, drinking water and other facilities available in the village. The survey was conducted during November-December 1964.

11.0.11.2 Village level worker-wise lists of mouzas under 335 development blocks of the State of West Bengal were taken as the frame of the survey and the data were collected by Progress Assistants and Village Level Workers etc. by interview method. Random selection of as many villages as there were village level worker's circles in a block was made. These villages were treated as the selected samples for the survey. The work progressed in the year 1964-65 and the entire rural area of West Bengal was covered.

## **12. Health**

### **MINISTRY OF HEALTH AND FAMILY PLANNING; INDIAN COUNCIL OF MEDICAL RESEARCH**

#### **12.0.1 Morbidity of peptic ulcer in Delhi with reference to epidemiological; clinical and laboratory investigations**

12.0.1.1 The survey was sponsored by Indian Council of Medical Research (ICMR), New Delhi and was conducted by All-India Institute of Medical Sciences, New Delhi with a view to determine the general incidence/prevalence of peptic ulcer in different ethnological and regional groups; and to carry out clinical, laboratory and field investigations relating to the disease syndrome to different persons, social and environmental factors with a view to elicit etiology—and define epidemiology. The survey covered rural and urban areas of Delhi. The data were collected by direct observation of sample units through personal investigation with voluntary cooperation. The duration of the survey was 1964-66.

12.0.1.2 List of patients attending the medical out-door department and individuals residing in certain pre-selected localities was adopted as the frame. The random sampling technique was adopted. 240 out-patients and 167 patients in the field area were surveyed. 2 Computers and 4 Operators were employed on long term basis by the Statistical Section of the Council. A sum of Rs. 52,565 was sanctioned for the survey.

### **12.0.2 Epidemiological studies in dental health in Punjab**

12.0.2.1 The survey was sponsored by Indian Council of Medical Research, New Delhi and was conducted by its Statistical Section with a view to obtain epidemiological information. The duration of the survey was 1965-68. The survey covered the urban and rural areas of Mahasu, Ferozepur and Bhatinda districts. Data were collected by direct observation of the sample units through personal investigations with voluntary cooperation.

12.0.2.2 The design adopted for the survey was multistage stratified sampling. Tehsils, villages and households were taken as first, second and ultimate stage sampling units. The selection was at random. A sum of Rs. 88,000 was earmarked for the survey. The data were compiled by the statistical staff of I.C.M.R. During the year 1965-66, 3,531 individuals were studied for dental diseases.

### **12.0.3 Pilot investigations of incidence of mental disorders in India**

12.0.3.1. The survey was sponsored by Indian Council of Medical Research, New Delhi and was conducted by Superintendent, Mental Hospital, Agra, with a view to carry out a sample survey of the incidence of mental illness in rural and urban population and to find out the prevalence of various types of mental illness and to study demographic, ecological and etiological factors in mental illness contributing to present knowledge about the possible ecology. The duration of the survey was 1961-65. The survey covered the rural and urban areas of Agra. The data were collected by direct observation through personal investigation with voluntary cooperation.

12.0.3.2 The list of urban and rural population of Agra was adopted as frame for the survey. Random sampling technique was adopted. The data were compiled by the staff of Statistical Section of I.C.M.R. The total cost of the survey was estimated at Rs. 84,105.

### **12.0.4 Diarrhoea of infants and children in Delhi**

12.0.4.1 The survey was conducted by All-India Institute of Medical Sciences, New Delhi, with a view to make epidemiological and clinical investigations of diarrhoea in infants and children. The duration of the survey was 1964-66. The survey was carried out in rural and urban area of Delhi. Data were collected by direct observation of sample units through personal investigation with voluntary cooperation.

12.0.4.2 List of children living in Moth-ki-Masjid, Atali and Kurali were adopted as frame. Simple random sampling technique was adopted for the survey, 1,000 children were surveyed. A sum of Rs. 1,85,520 was earmarked for the survey. A report is available on the results. The information collected was processed by the statistical staff of I.C.M.R.

### **12.0.5 Anaemia in school children of the city of Ahmedabad**

12.0.5.1 The survey was sponsored by Indian Council of Medical Research, New Delhi and conducted by Municipal General Hospital, Saraspura, Ahmedabad with a view to determine the incidence of anaemia in school children and to assess the nutritional status of the school children studying in the Corporation schools. The survey covered whole of Ahmedabad during 1964-65. Information on blood examination, height, weight and other nutritional data were collected through direct observation of sample units through personal investigations with voluntary cooperation.

12.0.5.2. The list of Corporation schools, students was taken as frame. Three-stage random sampling design was adopted with school, students and anaemic and normal children as first, second and ultimate stage units respectively. 1,679 children were surveyed. The field staff comprised of 2 Computers and 4 Operators. A sum of Rs. 5,955 was provided for the survey. During the year under review, the survey was completed. It was found that percentage of anaemic boys and girls residing in industrial zones were higher than those coming from non-industrial zones.

### **12.0.6. Incidence and clinical epidemiology of peptic ulcer in Bombay**

12.0.6.1 The survey was sponsored by the Indian Council of Medical Research, New Delhi and was conducted with a view to assess the incidence, recurrence and evaluation of constitutional and nutritional factors responsible for the production of ulcer and morbidity and relapse rate. During 1964-65, the study was carried out mainly among the clerical and supervisory staff of the Bombay Municipal Head Office. A random sample of 1,482 employees out of a total of 2,330 was selected. Data were also obtained on dietary intake, economic, social and educational background. A report has been brought out.

### 12.0.7 Diarrhoea of infants and children in Vellore (Madras)

12.0.7.1 At the instance of Indian Council of Medical Research, Ministry of Health and Family Planning, the survey was conducted by the Christian Medical College, Vellore on lines similar to the one conducted in Delhi by the All India Institute of Medical Sciences. The duration of the survey was from 1961 to 1966. The survey was conducted in rural areas by direct observation of sample units. The list of families in rural areas provided the frame. About 1,000 children were selected at random. 13 persons were employed for field work on an ad hoc basis. The estimated cost of the survey worked out to Rs. 1,92,000 nearly. A report has been brought out.

## DEPARTMENT OF STATISTICS, DIRECTORATE OF NATIONAL SAMPLE SURVEY

### 13. Demography and family planning

#### 13.1 Demography

#### 13.1.1 Population, birth and death survey in the NSS 19th and 20th rounds (schedule 12)

13.1.1.1 Details regarding the responsibility, purpose, states participating, duration, geographical coverage, interpenetrating network of sub-samples and personnel have been reported on page 1 under Land Utilisation Survey of N.S.S.

13.1.1.2 Information was collected on some broad household characteristics, demographic particulars of the members and the number of births and deaths in the past two years. The interview method of data collection was adopted.

13.1.1.3 The sampling design adopted during the two rounds was a stratified two-stage one with the urban blocks/villages as the first stage units and the households as the second stage units in the urban/rural sector. The frame for the rural sector and method of selection of the village have been detailed under Land Utilisation Survey of N.S.S. The self-weighting design was adopted at the State sector level.

13.1.1.4 In the urban sector, the blocks formed in the NSS Urban Frame Survey (1960) were used for all sector 1 towns (those with 1961 census population of 50,000 and above), whereas in all the remaining towns, two types of frames were used, *viz.* the Urban Frame Survey (UFS) list of blocks and the 1961 census list of blocks.

13.1.1.5 *Stratification (urban).*—The whole of urban India was divided into two sectors, sector 1 consisting of towns and cities with 1961 census population 50,000 and above and sector 2 consisting of the remaining urban areas. These two sectors formed two strata in all the States except in Maharashtra where 3 strata were formed. Bombay City (Sector 0) constituted one stratum, while all other towns belonging to sectors 1 and 2 formed two more strata. The total number of strata was 39.

13.1.1.6 *Allocation.*—The total (Central) sample size of 4,596 blocks was allocated to the States in proportion to their 1961 urban population with twice the weightage to the sector 1. In finalising the allocations to different States, the available investigator strength and the rural work loads were taken into consideration. The allocation was modified to ensure a minimum of 144 sample blocks in each State and 48 in each Union Territory participating in the work of the NSS. For the two sectors within a State, allocation was in proportion to the number of blocks in them with twice the weightage to sector 1.

13.1.1.7 *Selection of Blocks.*—In each sector, 4 independent and interpenetrating sub-samples of blocks were selected circular systematically with independent random start. In sector 1, the sample blocks were selected systematically from the list of blocks prepared by the NSS in the Urban Frame Survey (UFS) with probability proportional to size which was the block population rounded off to the next multiple of 1000. In sector 2, the sample blocks were selected circular systematically with equal probability either from UFS blocks or 1961 census blocks in that order of priority depending on the type of frame available in a town, after arranging the towns according to their means of livelihood pattern as per the 1961 census data.

13.1.1.8 *Selection of sub-blocks.*—In cases of some big blocks, the investigator formed the specified number of sub-blocks according to instructions and selected one of them with equal probability. The survey was confined to the selected sub-block.

13.1.1.9 *Sampling within the sampled block/village.*—The sampling design was made a *self-weighting* for each State. A linear systematic sample of households was selected from each of the sampled block/village using the sampling interval and the random start as provided after arranging all the households in 6 classes on the criteria of their major source of income and household size. A sub-sample of this sample was selected linear



systematically with 11 as the sampling interval for schedule 16. Another linear systematic sub-sample was selected with interval 2 from the households selected for schedule 16, the households with next sampling serial numbers taken up for schedule 17. The remaining households of the combined samples were taken up for schedule 12. On an average 2, 1, 20 and 1 households were selected per sample block/village for the schedules 16, 17, 12 and 17.1 respectively.

13.1.1.10 *Method of data collection.*—Interview method was adopted and informant was a knowledgeable person in the sampled household. The survey period was divided into 6 sub-rounds of two months each for both the rural and the urban areas. Almost all the investigators were required to do both rural and urban work. The work load was so planned that each investigator surveyed 2 sample villages and 1 urban block on an average in each sub-round. Purely urban investigators surveyed about 27 blocks each during the whole round.

## **OFFICE OF THE REGISTRAR GENERAL, INDIA, MINISTRY OF HOME AFFAIRS**

### **13.1.2. Sample registration scheme**

13.1.2.1 The scheme was sponsored by the Office of the Registrar General, India Ministry of Home Affairs. The sampling design and instructions were prepared by the Registrar General's office. The field work, processing of data and report writing was done by the agency responsible for the implementation of the scheme in their concerned States under the guidance of the Registrar General. The object of the scheme was to obtain reliable estimates of annual birth and death rates at State and national levels. The events of births and deaths were recorded continuously as and when they occurred, checked and matched by half yearly and yearly surveys. These surveys would be continued during the Fourth Plan period. The technical details of the scheme as and when implemented by the different States, have been reported in various issues of this Annual Report.

## **GOKHALE INSTITUTE OF POLITICS AND ECONOMICS, POONA**

### **13.1.3 Demographic resurvey of North Satara district**

13.1.3.1 The survey was conducted by the Gokhale Institute of Politics and Economics, Poona, with a view to assess the change in the demographic set up of the village and to study the impact of economic change on the demographic set up. The fieldwork of the survey was started from January, 1965 and continued upto March, 1966.

13.1.3.2 The six villages included in the resurvey were Pusegaon, Panchwad, Gove, Khatgun, Kese and Helwak. All families in these villages were resurveyed. Information on socio-economic characteristics of all the family members, fertility and marriage history of all married women, attitude towards family planning of all married women and that of the male head of the household and data on migration between the survey and resurvey period were collected by personal investigation. Reference period for the socio-economic and demographic information was the date of enquiry and that for fertility history during twelve months preceding the date of enquiry.

13.1.3.3 The staff employed for the survey was comprised of two Investigators, three Junior Research Assistants and one Tabulation Assistant.

## **UNIVERSITY OF DELHI**

### **13.1.4 Widowhood and widow remarriages survey**

13.1.4.1 This one-time survey was conducted by Demographic Research Centre, Institute of Economic Growth, University Enclave, Delhi with a view to find out the incidence of widowhood and widow remarriages by age, cast, occupation and number of living children. All the households in the villages of Rohtak district in Punjab and Mathura and Saharanpur districts in Uttar Pradesh were covered. People not normally residing in the villages were excluded. In each district, the survey was conducted for two months. Information on age, marital status, fertility, widow remarriages and family planning was collected through personal interview by the investigators.

13.1.4.2 At first stage, all the villages in the district were numbered according to their population of the 1951 census. Every tenth village was selected. At the second stage of sampling, each household in the selected village was numbered and then every tenth household was taken up for detailed investigation. Investigators were given

special training in field method. The investigators were instructed to make a maximum of three visits to a household to obtain necessary information. In case the information could not be collected even after three visits, the next higher number of household was taken. 8-10 Field Investigators and two Supervisors were selected for each district. During 1964-65, the data were collected and processed. Report writing was reported to be in progress.

## **DEMOGRAPHIC TRAINING AND RESEARCH CENTRE, BOMBAY**

### **13.1.5 Rural migration study**

13.1.5.1 The survey was conducted by the Demographic Training and Research Centre, Bombay, with a view to measure the extent of out-migration and destination of out-migrants from rural areas and the factors which favoured rural out-migration. The survey was also planned to measure the extent of return migration and the origin of return migration. Field work commenced during November, 1965 and terminated in April, 1966. The same areas are proposed to be resurveyed at the end of 3 years to find out who have left and where they went.

13.1.5.2 1961 census village lists of Kolhapur, Sangli and Sholapur districts were adopted as frame for the survey. Single stage sampling design was used with village as a sampling unit. The villages in the three districts were classified into the strata by population size namely, under 500, 500 to 999, 1000 to 1,999 and above 2,000. The selection of villages within each stratum was made at random. 15 villages were selected from all the villages of Kolhapur, Sangli, and Sholapur districts of Maharashtra State. All the households in these 15 villages were covered by the study. Characteristics of immigrants, out-migrants and non-migrants were studied. Social, economic and demographic characteristics of each member from every household of 15 villages were collected. Number of movements of more than three months duration made by each member of every household and the description of each movement *i.e.* type (rural/urban) within district, outside the district, etc., the duration, number of persons accompanied, kind of work done, the reasons for the movement etc. were collected. Social, economic and demographic characteristics of out-migrants before and after migration and the factors, *i.e.* push and pull factors which favour rural out-migration were obtained. Economic condition of each household was also investigated. Opinions on a few questions about living conditions in the village, about his own work, future plans and opinions regarding the migration from the village to a town or city to improve living conditions and the advantages of city life and that of the village life were sought from all the male members of age between 15 and 40 years.

13.1.5.3 Data were collected through interviewing respondents.

13.1.5.4 A pilot survey was conducted in Bankikodla village of Kumta Taluk of Mysore State. From the experience of that survey, improvements in the schedules were carried out.

13.1.5.5 Interviewers were trained orally and by practicals. 12 Investigators and 2 Supervisors were employed on adhoc basis. The estimated expenditure was of the order of Rs. 31,000.

## **GOVERNMENT OF GUJARAT**

### **13.1.6 Sample registration scheme**

13.1.6.1 The survey was sponsored by the Registrar General, India, Ministry of Home Affairs and is being conducted by the Director of Health and Medical Services, Government of Gujarat to obtain reliable estimates of annual births and deaths rates for the State by recording the births and deaths in sampled rural areas of all the Districts in the State. The urban centres would be taken up separately. The field work started on 1st October, 1965 and would be completed on 30th September, 1966. The survey would continue for the next five years. All births and deaths occurred during the reference period were recorded.

13.1.6.2 Stratified random sampling was used for selecting the sample. The State was divided into four groups of different strata according to population. Three regions included all the districts except Kaira which formed the fourth region where a special scheme namely Kaira Sample Registration Research Project was taken up. The villages in a region were divided into strata according to population (i) under 500 (ii) 500 to 999 (iii) 1,000 to 1,999 and (iv) 2,000 and above. Of the last strata *i.e.* 2,000 and over, the villages were divided into segments having population of about 2,000. Villages in each strata were selected by random sampling method. Out of 136 units of the first three divisions, a sub-sample of 20 villages was selected,

13.1.6.3 The technical staff engaged for the survey consisted of 1 Statistical Officer, 2 Statistical Assistants, 166 part time Registrars and 166 part time Supervisors.

13.1.6.4 The amount budgeted for the survey was Rs. 34,000 for 1965-66 against which Rs. 57,402.92 was incurred on field operations, data processing, analysis and preparation of the report.

## GOVERNMENT OF KERALA

### 13.1.7 Sample registration (full scale) scheme

13.1.7.1 The survey was sponsored by the Office of the Registrar General India and was conducted by the Bureau of Economics and Statistics, Government of Kerala with a view to have reliable estimates of the birth and death rates of the State and to devise a system by which all events could be noted. The survey started on 1st July, 1965 and would continue for 5 years. All births and deaths occurred during the period would be recorded.

13.1.7.2 The data regarding (i) number of residential, partially residential and non-residential households, (ii) demographic particulars of the usual residents and visitors such as age and marital status (iii) educational standards of the current mothers (iv) death and birth occurred to usual residents and visitors (v) medical attention at delivery and death time (vi) number of children born alive (vii) age at death of those children born alive (viii) the vocation of the informants about birth and death to the enumerators are being collected by the enumerators through household enquiry. The informants would remain fix for the purpose of enquiry.

13.1.7.3 A pilot survey in both rural and urban sectors was conducted during 1964-65, 1965-66 and partly during 1966-67. The sampling method adopted for the survey was a stratified two stage one. Census villages formed the first stage unit and segments of population near about 2,000 formed the second stage units in villages with population above 2,000. The villages were grouped into 3 natural divisions viz. low land, midland and high land. The villages in each of these groups were further classified according to 1961 census population as (1) below 500, (2) 500-999 (3) 1,000-1,999 (4) 2,000 and above. 150 samples in rural sector comprising of 36 samples in the low land, 91 samples in the midland and 23 samples in the high land natural divisions were selected at random for the year 1966-67. However, in the fourth group, one more stage of sampling was introduced to select the sampling units. The villages in the fourth group in each division were again divided into segments, the criterion being that each segment should contain less than 2,000 persons in 1961. From the list of villages and segments in each stratum, the required number of segments were selected by simple random sampling. Within each village, segments were formed by grouping 1961 census blocks. The 1961 census house number in each segment was noted from the census records. All the households in the selected segment were re-visited after the lapse of every six months. In addition to it, every household was re-visited at frequent intervals by the enumerator in order to ascertain if any event of death or birth had occurred there.

13.1.7.4 The field work is being carried out by Enumerator, Investigator and Supervisors under the supervision of District Statistical Officer at the district level and Chief Supervisor at the regional level.

13.1.7.5 The field work of the survey was reported to be in progress. The budgeted cost for the years 1965-66 and 1966-67 was Rs. 56,000 and Rs. 64,000 respectively.

## GOVERNMENT OF MADHYA PRADESH

### 13.1.8 Supplementary sample census count

13.1.8.1 The survey was conducted by the Department of Economics and Statistics, Government of Madhya Pradesh at the instance of the Registrar General, India. The object was to check the death and birth rates as obtained from sample census 1963 and to assess the reliability of 'recall' of the local informants. The duration of the survey was from April-June, 1964. The reference period of the survey was (i) from Diwali 1962 to the survey day of the Supplementary Sample Census Count and (ii) from the survey day (in 1963) of Sample Census Count 1963 to that of Supplementary Sample Census Count. The details have been reported on p. 57 of 15th Annual Report.

13.1.8.2. The frame was the total number of villages according to 1961 Census. The State was divided into 7 natural divisions as per 1961 Census. Villages were stratified according to their population size. The allocation of nearly half per cent

of the total villages (*i.e.* 350 villages) to the various strata was proportional to the respective total population. The total number of villages so allocated to each population size stratum was distributed in each natural division in proportion to the total number of villages in the stratum. Information regarding births *i.e.* its sex, date, nature of birth etc. and death *i.e.* its date, place, sex and age of the deceased in the village was collected from the local informants.

13.1.8.3 Field work was done by the Investigators of the Directorate. The survey was completed and result of the analysis of the data collected were submitted to the Registrar General, India. It was found that birth and death rates as obtained by the supplementary surveys were better than those of Sample Census Survey, 1963.

## GOVERNMENT OF MAHARASHTRA

### 13.1.9 Sample registration scheme

13.1.9.1 The survey was sponsored by the Registrar General, India and conducted by the Bureau of Economics and Statistics, Maharashtra with a view to work out reliable estimates of birth rate and death rate at State level. The survey which is of five years duration, started from 1st July 1965, and would continue upto 30th June, 1970.

13.1.9.2 Information regarding births and deaths of normal residents inside or outside the selected village (*de jure*) and also births and deaths of visitors who came as visitors to some normal residents was collected by a locally fixed person. Events to visitors who came as visitors to institutions was excluded. Apart from this additional information such as mothers' age, ages of previous issues, type of maternity attendance, etc. in respect of births and type of medical attendance in last sickness in respect of deaths was also collected. Another fixed person from taluka visited the village once in six months and recorded the addition and changes in the normal resident households including immigration and out-migration, the first visit corresponding to the date of commencement of day-to-day survey registration for verifying the registration records. The data were collected by interviewing the respondents.

13.1.9.3 A pilot survey was also conducted in 20 villages from 1-1-1964 to 31-12-1964 and in 5 towns from 1-1-1964 to 31-12-1965.

13.1.9.4 Uni-stage sampling was envisaged. List of villages in various population size groups within each of 4 geographic divisions constituted the frame. Villages in each stratum were grouped into 4 population groups *viz.*, (i) less than 500 (ii) 500 to 999 (iii) 1,000 to 1,999 and (iv) 2,000 and above. In respect of villages having population of less than 2,000, the villages were taken as the sampling units. In respect of villages having population 2,000 and above, they were further divided into segments of about equal size and the segment was taken as the sampling unit. The number of segments into which the village was divided was decided by dividing its population by 2,000 and adding one to the quotient. Total number of 150 sample of units were selected at random.

13.1.9.5 150 part-time Enumerators for day to day registration on *ad hoc* basis were recruited mostly from amongst primary teachers. Likewise, 150 part-time Investigators were taken for six-monthly house-to house survey. These investigators were mostly graduates and well trained in survey work and guided the Enumerators in the day-to-day registration. The headquarters staff consisted of a Statistical Officer, a Statistical Assistant and two Clerk-typist computers on long term basis.

## GOVERNMENT OF RAJASTHAN

### 13.1.10 Sample registration scheme

13.1.10.1 The pilot survey was sponsored by the Registrar General, India and was conducted by the Directorate of Economics and Statistics, Rajasthan with a view to work out reliable estimates of birth and death rates at the State level. The survey was conducted for one year and proposed to be continued in future. The reference period of the survey was 1st November, 1965 to 31st October, 1966. Data regarding number of births, deaths, migrations occurring during the reference period, by sex and age group break ups were collected from the rural areas of the State by direct observation through personal investigation with voluntary cooperation.

13.1.10.2 The list of villages/urban blocks for 1961 census as available with the census authorities was used as frame for selection of the village/urban blocks. Stratified random sampling design was adopted for the survey. Villages having population less than 200, 200 to 499, 500 to 999, 1,000 to 1,999 and 2,000 and above formed the different strata. From each stratum, villages were selected with probability proportional to population. Villages were selected by Central office and all households of the

selected village were investigated by the field workers. Revisit of the sample units was done after every 6 months.

13.1.10.3 Field staff was given special training for this survey. The field work was done by the Enumerators such as school teachers and village level workers. The supervision was exercised through the permanent agency *i.e.* Progress Assistants, District Statistical Inspectors and District Statistician. During the year under review, the field work was reported to be in progress.

## **GOVERNMENT OF WEST BENGAL**

### **13.1.11 Sample census, 1964 and 1965**

13.1.11.1 The survey was undertaken by the State Statistical Bureau, Government of West Bengal, under the Third Five Year Plan schemes. Purpose of the census was to estimate the population, birth and death rates, magnitude and pattern of migration during the preceding one year. Field work for the year 1964 was from April-August, 1964 while that for the year 1965 commenced from April, 1965 and terminated during July, 1965 and covered the whole of the State. Details about the usual residents—name, age, sex, marital status, mother tongue as and on the date of survey were collected. Last day of the Bengali year *i.e.* 14th April, 1964 for 1965 census, was fixed as the standard festival day and information had been collected for the period intervening between the last day of the Bengali year and the date of survey. Data were collected by personal investigation with voluntary cooperation of the interviewing respondents.

13.1.11.2 A uni-stage sampling procedure was adopted for rural areas and mouza was the sampling unit. In urban, areas two stage sampling procedure was adopted, towns as the first stage and census blocks as second stage units. In Howrah and Calcutta cities, a uni-stage sampling procedure was adopted with census blocks as the sampling units. Sample units were selected with the help of random numbers. Mouzas and towns were stratified according to population. The urban areas excepting Calcutta and Howrah were divided into 5 strata. Calcutta and Howrah were taken as two separate strata. In urban areas excepting Calcutta and Howrah, first stage samples (towns) were allocated amongst different strata in such a way that the expected total number of samples of all the strata covered 10 per cent of the population and at the same time the overall variance was minimised. 10 percent of second stage samples (census blocks) were drawn from the selected first stage samples. For Calcutta and Howrah, one per cent of census blocks was taken as sample. All the households in each census block were completely enumerated. Bureau's own staff was employed for field work. They were given both theoretical and practical training in filling up of schedules. Definition and concepts were also explained. Non-response cases were negligible.

### **13.2 Family planning**

## **GOKHALE INSTITUTE OF POLITICS AND ECONOMICS, POONA**

### **13.2.1 Study of family planning clinics in Poona city**

13.2.1.1 The survey was conducted by the Gokhale Institute of Politics and Economics, Poona, with a view to assess the work done by the family planning clinics in the city of Poona and the changes in the attitude towards family planning. The survey consisted of three parts (1) analysis of records of family planning clinics, (2) a sample study of clinic visitors and (3) assessment of the attitudes of residents of the city of Poona towards family planning. Field work of part (1) consisted of copying case histories from the nine clinics in Poona City extended over a period of eight months, from January, 1964 to August, 1964. Under part (2) of the survey, a twenty percent sample of the visitors to these nine clinics were covered in part (1). In part (3), 1 per cent of households from the city of Poona were sampled. The field work of part (2) was done during May, 1964 to December, 1964 and the field work for part (3) started in 1964. the survey was expected to be completed by June, 1965.

13.2.1.2 Information was collected in part (1) on socio-economic and demographic characteristics of clinic visitors and the history of use of contraceptives; in part (2), on the socio-economic and demographic characteristics of the clinic visitors, a full history of the use of contraceptives before and after visiting the clinic, reasons for change in the contraceptives attitude towards clinic facilities and attitude towards sterilization and in part (3), on age, education, occupation etc. of family members, attitude towards family planning of every married couple, use of family planning methods if any and attitude towards sterilization. Reference period for part (1) of the

survey was 1961-63 while in part (2) and (3), information as existing on the date of interview was taken into account. In part (2) and (3), personal interview method was used for collecting data.

13.2.1.3 Part (1) of the survey was not a sample survey. Case cards from part (1) and 1961 census list of households for the city of Poona were adopted as the frames for the part (2) and part (3) of the survey respectively. In part (2) of survey, a twenty per cent sample of clinic visitors was selected from each of the clinic separately in the following way. The clinic visitors were first classified as regular users, irregular users and closed cases. The first two categories were again classified as living within the area of the clinic and outside the area of the clinic and then a systematic sample was selected from each category by accepting every fifth clinic visitors. In part (3) of the survey, cluster sampling design was adopted to select one per cent of families in the city of Poona. Each cluster was supposed to consist of 12 households. From 37 wards of the Poona city, 98 clusters were selected with the use of random numbers. Each ward was given a weight proportional to the number of households in that ward. The selected random number served as the central household in the cluster and every fifth household on both sides of the central household was selected to form a cluster of 12 households.

13.2.1.4 50 percent of non-response was reported in part (2) of survey. Part (3) of the survey was still to be completed. Two Investigators, one Tabulation Assistant, one Junior Assistant and one Senior Research Assistant were employed for the survey.

## UNIVERSITY OF KERALA

### 13.2.2 Family planning communication research programme evaluation study

13.2.2.1 The survey was conducted by the Department of Statistics, University of Kerala, Trivandrum, with the object of getting data on fertility behaviour and attitudes of a population subjected to an intensive family planning education programme. Data on social, economic and demographic differentials in fertility behaviour and attitudes are expected. The survey was conducted in two parts. The first part *viz.*, the interviewing of current married women in the selected sample of households, commenced on 4th December 1964 and terminated on 31st March 1965. The second part consisting of interviewing the husbands of the respondents of the first part, started on 1st July, 1965 to be completed by December, 1965.

13.2.2.2 The survey covered the panchayats of Ulloor, Chettivilakom and Vattiyurkavu, all of them touching the northern boundry of Trivandrum and being covered by the action area of the family planning communication research programmes. Residents in hotels, hospitals etc. were not included. Data on (i) household composition (ii) marriage, pregnancies and births (iii) fecundity (iv) family size (v) attitude towards family limitation and postponement of pregnancies (vi) knowledge and use of contraceptives (vii) channels of communication (viii) socio-economic background of the couple etc. were collected by personal interview method through voluntary co-operation of the respondents.

13.2.2.3 The frame adopted for the survey was the list of all households with at least one married woman aged 15-44, living with husband. The design adopted for the survey was simple random sampling. Whenever a selected household contained more than one eligible respondent, one was selected at random. In all cases, random numbers were used to select samples. The sampling fraction was 33 per cent, the total size of the sample being 2,196 households.

13.2.2.4 The interviewers were given intensive training for one month in the techniques of interviewing. In the case of 14 per cent of the eligible respondents, it was not possible to get any information due to one reason or the other out of which 6 per cent being due to the shifting of residence of the selected persons and consequent difficulty of tracing the current address. The rest was due to difficulties of contacting the sample persons even after repeated visits or due to refusal or the respondent being ill etc. The field work was done by eight female and four male interviewers.

13.2.2.5 The coding work on the data obtained through wife's schedules was over and that of husband's schedules were being coded by three Research Assistants. The tabulation work was being done by the tabulation section of the department. For the processing of data, mechanical tabulation equipments and several desk calculators were utilised.

## **14. Labour and employment**

### **14.1 Labour force**

#### **DEPARTMENT OF STATISTICS, DIRECTORATE OF NATIONAL SAMPLE SURVEY**

##### **14.1.1 Urban labour force survey in the NSS 19th and 20th rounds (schedule 10)**

14.1.1.1 Details regarding design, responsibility, geographical coverage etc. have been reported on page 1 under Land Utilization and on page 94 under Population Birth and Death Survey of the N.S.S. This schedule was canvassed at the instance of Labour Bureau, Ministry of Labour, Employment and Rehabilitation.

14.1.1.2 The object of the survey was to collect information on nature of employment, extent of unemployment, labour force participation and earnings in the urban areas. With this end in view, demographic and economic activity particulars from each member and details of labour time disposition during the reference week from gainfully employed persons were collected. The reference period was the week preceding the date of enquiry. The procedure of selection of household was the same as for schedule 10.1 of N.S.S. (Survey No. 14.2.1, page 102). On an average 7 households were expected to be selected per sample block.

#### **KARNATAK UNIVERSITY**

##### **14.1.2 Impact of rural manpower programme on employment situation in North Mysore State**

14.1.2.1 The survey started in March, 1966 and is being conducted by the Department of Economics, Karnatak University, Dharwar to assess the impact of different rural works programmes on employment situation in rural areas. The duration of the survey would be fifteen months. The enquiry would be done twice in busy season and in the slack season covering 8 blocks namely, Hadagali (Bellary district), Jamakhandi (Bijapur district), Santpur (Bidar district), Shirahatti (Dhavar district), Haveri (Dharwar district), Aland (Gulbarga district), Kushtagi (Raichur district) and Bhatkal (North Kanara).

14.1.2.2 Information is being collected on (i) existing magnitude of unemployment and under-employment variations therein and existing skills (ii) employment generated on site and off site (iii) purchasing power pumped in the area and its impact in terms of new productive activity generated (iv) capital formation (v) organisation of rural works programmes and their employment orientation (vi) effect of programmes on supply of labour (vii) attitudes to and effects at building up community assets (viii) voluntary contributions (ix) rural works programmes *vis-a-vis* other development programmes (x) co-ordination problems (xi) expenditure on rural works programmes (xii) degree of success from block to block. The reference period relate to 1961 onward.

14.1.2.3 A pilot study on "Community Development and Employment" was undertaken in 1963 in Dharwar block to improve upon the design and tools of analysis for the study in question.

14.1.2.4 All the centres where rural works programmes had been implemented were arranged according to the expenditure incurred in each of the selected blocks. Three centres from each of the selected blocks on the basis of highest average and the least or negligible expenditure were selected for the intensive field work. The 24 centres in all are being covered for intensive field work at the village and household levels. Ten per cent of the households in each of the centres were selected on a stratified random sampling basis. The classification adopted was cultivator, cultivator-cum-tenant, tenant, tenant-cum-agricultural labourer, agricultural labourer, artisan, artisan-cum-agricultural labourer.

14.1.2.5 Two Economic Investigators are being employed for the survey.

#### **GOVERNMENT OF GUJARAT**

##### **14.1.3 Survey on availability of rural manpower**

14.1.3.1 The Bureau of Economics & Statistics, Government of Gujarat conducted the survey to assess the availability of man power in rural areas for work during slack agricultural season. The survey covered the 20 blocks of the State. The field work was started in January, 1963 and the field work of one block was completed in about one month. The survey continued in 1964-65 and 1965-66.

14.1.3.2 Three different schedules were canvassed, one for collecting the general village particulars from the village leaders regarding agricultural slack and busy seasons, availability of work and manpower etc., the second schedule was designed to collect information regarding works in progress, employment pattern, wage rates and the third schedule was intended to collect household information such as the size of household, employment pattern, distance upto which persons available for work would be willing to go. The data relating to agricultural year were collected by interview method and concensus of panchayats and group discussions.

14.1.3.3 Primary sampling units, *i.e.* villages were stratified and a sample of villages from each stratum was drawn with equal probability, varying the first stage sampling fractions  $f_1$  between strata. A sample of household *i.e.* secondary units was taken from the selected villages taking into account the second stage sampling fraction  $f_2$  for each strata so that  $f_1 \times f_2$ . First stage units were selected by central office and second stage units were selected by field staff under the guidance of central office.

14.1.3.4 During the year 1964-65, the field work of 8 blocks and tabulation of data of 5 blocks was completed. The total estimated expenditure during 1964-65 was Rs. 15,025.

14.1.3.5 During the year 1965-66, the field work of Naswadi, Sagbara, Borsad was completed and that of Dangs was about to be completed. Tabulation of 7 blocks *i.e.* Tharad Malpur, Sayla, Sagbara, Borsad, Dediapada and Bansada was completed. Report writing was in progress. Report for Patna block was prepared and published during the year 1965-66. The total estimated expenditure during 1965-66 was Rs. 25,937/-.

## GOVERNMENT OF MAHARASHTRA

### 14.1.4 Migration survey

14.1.4.1 The survey was undertaken by the Commissioner of Labour and Director of Employment, Bombay with a view to study the trend of migration of labour and to assess the availability of manpower for the ensuing plan in the State. The survey commenced in June, 1964 and was completed by December, 1964.

14.1.4.2 The survey covered 160 undertakings from 13 centres. Only factories using power and employing 50 or more workers were covered. The information in respect of persons recruited during 1962-63 according to their mother tongue and the position of all employees as on 30-4-1964 was collected. Information according to state of origin was collected from the undertakings in Bombay alone.

14.1.4.3 A pilot survey was conducted in the first week of November, 1963 in five establishments in Greater Bombay. In the light of pilot enquiries the schedules were amended.

14.1.4.4 The factories were stratified on the basis of employment size and into private and public sectors. 41 factories in private sector were selected by sampling method while 119 factories in public sector were covered on census basis. Response was fairly high.

14.1.4.5 The normal staff in the socio-economic section of the Directorate was entrusted with the work of the survey.

14.1.4.6 The report of the survey has been prepared and submitted to the State government.

### 14.2 Employment

#### DEPARTMENT OF STATISTICS, DIRECTORATE OF NATIONAL SAMPLE SURVEY

##### 14.2.1 Employment, unemployment and indebtedness of rural labour households in the NSS 19th and 20th rounds (schedule 10.1)

14.2.1.1 The details regarding responsibility, duration, participation of State, geographical coverage, interpenetrating net work of sub-samples, frame and design etc. are the same as for the Land Utilization Survey reported on page 1. This schedule was canvassed at the instance of Labour Bureau, Ministry of Labour, Employment and Rehabilitation.



14.2.1.2 *Information collected.*—Information on the nature of employment, intensity of unemployment, labour force participation, earnings and indebtedness was collected together with some demographic and economic activity particulars of the household members. The schedule was meant for households having wage-paid manual labour as the main source of income.

14.2.1.3 This schedule was only canvassed for first sub-round. From amongst households having some trading activity, a linear systematic sample was selected with specific interval and random start.

14.2.1.4 *Reference period.*—The period of reference was the week preceding the date of survey.

### **MINISTRY OF LABOUR, EMPLOYMENT AND REHABILITATION LABOUR BUREAU, SIMLA**

#### **14.2.2 Contract labour in general engineering and electrical engineering industries (excluding generation and transformation of electric energy)**

14.2.2.1 The surveys were conducted by Labour Bureau, Simla, Ministry of Labour, Employment and Rehabilitation. The Second Five Year Plan recommended the gradual abolition of contract labour wherever feasible and where it was not possible, to provide regulations of their working conditions and ensuring them continuous employment. For this purpose, the plan recommended that studies should be undertaken to ascertain the extent and nature of problem involved in different industries. Duration of the survey was from October, 1964 to January, 1965.

14.2.2.2 Data regarding employment, method of recruitment, advances, hours of work and other working conditions, weekly off, leave and holidays, wages and earnings, welfare facilities and amenities, social security and industrial relations, were collected by personal investigation from establishment records and interviewing respondents. Employment data were collected for the period October, 1963 to September, 1964 whereas the other information was collected for the year ending 30th September, 1964 or later, if available.

14.2.2.3 The list of registered factories for the year 1962 formed the sampling frame for the enquiry. The total number of factories covered was 4,946. A two stage sampling was adopted for this survey. In the first stage, out of 4,946 units, 1,370 were selected at random by adopting 25 per cent and 50 per cent as sampling fraction for lower (employing 100 workers or less) and upper employment size (employing more than 100 workers) groups respectively for ascertaining the employment of contract labour. In the second stage, sampled units were classified under the following groups on the basis of replies received : (i) employing contract labour (ii) not employing contract labour and (iii) non-responding units. Out of 1318 units (excluding 52 units reported closed), 235 were selected at random state-wise by adopting 50 per cent and 75 per cent as sampling fractions for the lower and upper employment size groups respectively from group (i) i.e. employing contract labour and 10 per cent and 12.5 per cent as sampling fraction from groups (ii) and (iii) respectively.

14.2.2.4 One Supervisory Investigator and Primary Investigators were engaged for the collection of primary data.

### **GOVERNMENT OF GUJARAT**

#### **14.2.3 Evaluation survey in respect of stone breaking and stone crushing industry**

14.2.3.1 The survey was conducted by the Commissioner of Labour, Government of Gujarat, Ahmedabad with a view to study the comparative conditions prevailing before and after the fixation of minimum wages. The first round of the field work was done in May, 1964, the second round in the later half of March, 1965, the third round in one week from May 28, 1965 and the fourth and final round of the survey was taken up and completed in November, 1965. The survey covered all the establishments engaged in stone breaking and stone crushing industry in the State.

14.2.3.2 The information regarding employment particulars, implementation of the provisions of Minimum Wages Act and maintenance of records, method of wage payments, hours of work, levels of wages and occupations receiving less than minimum rates of wages, bonus and cash gifts, holidays and leave entitlements, finances, current rates of wages and employment particulars, complaints and claims, housing, social security, maternity benefits, uniforms, recreational facilities, electricity and fuel,

medical facilities and welfare facilities were collected from the records with voluntary cooperation of the employees. Reference period was varying from block to block and in some cases from item to item.

14.2.3.3 The list of establishments engaged in stone breaking and stone crushing industry registered under the Factories Act, 1948 was prepared separately to serve as a frame for the survey. A sample of 30 per cent of stone crushing concerns was covered for the entire State. The stone breaking concerns were first grouped into three groups according to the three administrative divisions *viz.* Baroda, Ahmedabad and Rajkot and from each of these divisions, a sample of 10 per cent was taken up for the survey.

14.2.3.4 The field staff consisted of 6 Senior Labour Investigators and 12 Junior Labour Investigators and the staff at headquarters comprised of 2 Research Officers and 3 Scrutinizers.

## GOVERNMENT OF RAJASTHAN

### 14.2.4 Rural employment, unemployment and under-employment survey

14.2.4.1 The survey was conducted by the Directorate of Economics and Statistics, Rajasthan with a view (i) to measure the extent of employment, unemployment and under-employment in the rural areas of the State and (ii) to have a periodical assessment of the information collected on those characteristics of individuals which have a bearing on the problems of unemployment. The data were collected through personal interview method by Progress Assistants posted at each block of the State. The survey is of continuing nature since June, 1963. The first round related to the period June, 1963 to July, 1964. From the second round, the periodicity conformed to the agricultural year *i.e.* from July, 1964 to June, 1965.

14.2.4.2 Data regarding demography and activity particulars of household members and details of labour time disposition of each member during the reference week as also the particulars of daily work done were collected. Information was collected for the week preceding the date of survey. Pilot survey was conducted in five blocks to finalise the schedules on the basis of the field experiences.

14.2.4.3 For the purpose of this survey, the State was divided into 7 strata on the basis of similarities of crop pattern, population density and contiguity of the districts. Selection of households from the selected villages required the preliminary stratification of the households in two strata namely (i) agriculture and (ii) non-agriculture. Category (i) was again sub-divided in two classes namely cultivators and agriculture labour. The determining factor in any category was the major source of income during last 365 days. For the purpose of present enquiry, 9 households of cultivators, one of agriculture labour and two of non-agriculture labour were selected through linear systematic selection. This proportion was fixed keeping in view the general occupational pattern as per 1961 census results. Each selected village was repeated four times in a year after an interval of 3 months.

14.2.4.4 The District Statisticians were given training about concepts, definitions and procedure for filling up the schedules before commencement of each round and in turn they imparted training to the field staff in their respective districts. The field work was conducted by Progress Assistants under the supervision of District Statistician.

14.2.4.5 During the year 1965-66, the results were tabulated for each month and released through the Quarterly Digest of Economics and Statistics, Rajasthan. Field work upto March, 1966 was over.

## GOVERNMENT OF WEST BENGAL

### 14.2.5 Unemployment survey for construction of indices of employment and unemployment

14.2.5.1 The repetitive survey was undertaken at the instance of the Directorate of Labour, West Bengal and the State Statistical Bureau conducted the survey under the Third Five Year Plan schemes. Purpose of this survey was to assess the employment and unemployment position in Calcutta and its industrial area including Asansol by constructing periodical indices of employment and unemployment. Duration of this survey during 1964-65 was from November, 1964 to February, 1965. The survey for 1965-66 commenced from November, 1965 and terminated during the first week of April, 1966.

14.2.5.2 Types of information collected were details about family members (normal residents) such as name, age, sex marital status, place of origin, mother tongue, educational qualification and activity. Details about employment seekers as well as about persons having some employment during the last seven days preceding the date of enquiry *viz.*, number of days employed and unemployed, occupation, industry, average weekly income, occupation preferred, normal working hours etc. were collected by personal investigation by interviewing the respondents.

14.2.5.3 Unistage random sampling procedure was adopted and households were stratified into two classes (i) middle class and (ii) other class. The households surveyed during "Unemployment Survey, 1959" were used as frame for this survey. The sampling fraction was 33½ per cent. All the sample units were selected in the central offices of the organisation responsible for the design. Total sample size for Calcutta and its industrial areas was of the order of 10,000 households. Half of the sample units selected in previous year were retained and the other half was drawn afresh in each group.

14.2.5.4 Field staff were given both theoretical and practical training in filling up schedules. Non-response cases were pursued by repeated visits.

#### **14.2.6 Survey for ascertaining the proportion of employed persons on the live registers of employment exchanges**

14.2.6.1 The survey was conducted by the State Statistical Bureau at the request of the State Director of National Employment Service, with a view to study the proportion of employed persons on the live registers of the different employment exchanges classified by occupation preferred. The survey was conducted in respect of sample registrants as on 31-8-63.

14.2.6.2 All the registrants from the live registers of each of the employment exchanges were classified into different occupational divisions as per standard occupational classifications recommended by the Central Statistical Organisation. Different occupational divisions were considered as different strata and samples were drawn systematically with random start separately for each stratum. Uniform sampling fraction was not adopted since the number of registrants varied widely from stratum to stratum. The sampling fraction varied from ½ to 20 per cent in different strata. There were over 5,10,000 registrants on the live registers of the different employment exchanges. Of them, 4,285 registrants were selected for the survey.

14.2.6.3 Data were collected by interview method and related to the general particulars of the normal resident members of the households of the registrants with educational qualification, duration and condition of employment and unemployment, etc. Information about employment was collected as on 31-8-63 and as on the date of enquiry as well.

14.2.6.4 During the year 1964-65, a preliminary report on the findings had been submitted to the State Director of National Employment Service.

### **HIMACHAL PRADESH ADMINISTRATION**

#### **14.2.7 Sample survey of employment, under-employment and unemployment**

14.2.7.1 The survey was undertaken by Directorate of Economics and Statistics Himachal Pradesh with the object of studying the nature and extent of employment under-employment and unemployment in both urban and rural areas and to get a broad picture of the occupational structure of the labour force. It also served as a pilot survey for pre-testing the sampling design, schedules and instructions for detailed surveys to be undertaken at suitable intervals. The field work of the survey in the rural areas started in the second half of November, 1965 and was completed within a period of about one and a half months. Thereafter, the survey was launched in the urban areas. The Pangri sub-tehsil of Chamba district was excluded from the survey due to inaccessibility.

14.2.7.2 Data were collected about the family composition of the household, their employment categories, particulars of employed persons during the reference week and the previous week and supplementary information on the activity of the members in labour force during last year with the extent of period during which they were partly or fully employed. Data collection was done by interviewing the respondents.

14.2.7.3 In the rural areas, the frame for the selection of sample villages was the list of 1961 census villages prepared tehsil-wise. The appropriate frame and method of selection etc. for urban areas was not finalised. Selected villages and households

were taken as first and ultimate units. The district boundaries in Himachal Pradesh were taken as the basis of stratification. In each district, the tehsils/sub-tehsils were arranged at random and the order of villages was taken to be one used by the Census Department for the tabulation purposes. Lahiri's method of selection with probability proportional to the population of the villages during 1961 census was used. A sample of 100 villages was taken for the whole of the Pradesh. In each stratum, the sample was apportioned in the ratio of the rural population of the district to the entire rural population. Selection of villages was done at the headquarters of Directorate of Economics and Statistics.

## **GOVERNMENT OF PONDICHERRY**

### **14.2.8 Pilot survey of employment and unemployment**

14.2.8.1 The survey was conducted by Bureau of Statistics and Evaluation with a view to ascertain the pattern of employment and the structure of labour force in Pondicherry town. The field work for the survey commenced in August, 1964 and was completed in November, 1964. Detailed information regarding sex, age, marital status, educational qualification, employment status, weekly hours at work, earning etc. was collected by Statistical Inspector by interviewing the selected households on a voluntary basis. The week preceding the date of enquiry was adopted as the reference period for the survey.

14.2.8.2 The 1961 population census enumeration blocks constituted the frame for the survey. Two stage sampling design was adopted for the survey where enumeration blocks and households constituted the first and second stage sampling units respectively. The first stage sampling units were selected with probability proportional to size, size being the population (of census) in blocks. The list of households was prepared for the selected blocks and ten percent of the households were selected from each sample block circular systematically for collection of detailed information. The first and second stage units were selected at the headquarters of the Bureau.

14.2.8.3 No special staff was appointed for the survey. One of the Statistical Inspector at the headquarters of the Bureau had attended to the field work on part-time basis. During the year 1964-65, the field work was completed and the tabulation analysis and report writing was in progress.

## **TRIPURA ADMINISTRATION**

### **14.2.9 Survey of registrants at Agartala employment exchange**

14.2.9.1 At the instance of the State Committee on employment, the Statistical Department, Tripura conducted a sample survey in 1965-66 in respect of the registrants at Agartala employment exchange, having matriculation and higher qualification with a view to ascertain the unknown contents of the registrants on the live register and also to study some other related characteristics. The object of the survey was to estimate the proportion of employed persons shown as unemployed on the live register of the employment exchange. Information on other items such as educational standards, salary expected, jobs preference etc. of the registrants were also collected through mailed questionnaires or personal investigation with voluntary co-operation of informants.

14.2.9.2 List of all the registrants in the live registers as on 31st July, 1965 was taken as frame for the survey. 13,102 registrants were classified into two groups. One was registrants having matriculation and upward qualification and the other group was of unskilled (below matriculate). From first group of classification (both male and female), a sample of 257 was selected which was 5 percent of the total population of 5,140 by systematic random sampling method. From the second group, a sample of 398 was selected from a total population of 7,962.

## **15. PRICES AND WAGES**

### **DEPARTMENT OF STATISTICS, DIRECTORATE OF NATIONAL SAMPLE SURVEY**

#### **15.0.1 Monthly retail prices of selected commodities in rural areas in the N.S.S. 19th and 20th rounds (Schedule 3.01).**

15.0.1.1 The details regarding the responsibility, purpose, States participation, duration, geographical coverage, frame, design etc. of the survey are reported on page 1 under Land Utilisation Survey of N. S. S.

15.0.1.2 Information regarding rural retail prices of selected commodities which included items of food, fuel and lighting, clothing and footwear, medicine, stationery goods and personal effects, furniture, utensils and miscellaneous services was collected from the same set of villages (known as price villages) which were selected for this enquiry during the last few rounds.

15.0.1.3 Reference period was the date of survey only. In each of price village, enquiry was undertaken in the first week of every month. The data were collected by interview method. The informants were the retail shopkeepers and the vendors in the market.

## **MINISTRY OF LABOUR, EMPLOYMENT AND REHABILITATION, LABOUR BUREAU, SIMLA**

### **15.0.2 The second occupational wage survey**

15.0.2.1 The survey was conducted by Labour Bureau, Simla, Ministry of Labour, Employment and Rehabilitation at the instance of Planning Commission, Government of India with a view to collect details of occupational wage rates and actual earnings of workers employed in different occupations in various industries so that a study could be made of the changes which had taken place in wage structure in different industries since the time of first wage census (1958-59). The survey was started in September, 1963 and continued upto February, 1965.

15.0.2.2 The survey was of an all-India character and was conducted among the 45 manufacturing, mining and plantation industries which were divided into two size groups, large and small on the basis of average employment in the industry as the cut off point for the division. The various regional strata in different industries were the same as were adopted in the first wage census. The sample size for each of the stratum and size group in an industry was so chosen that the permissible error in the average general maximum wage rate at the unit level was 5 per cent. All the units within each stratum and size group were arranged by contiguous States and within each State in descending order of size. After such an arrangement, the required number of units were selected by systematic sampling with a random start. The frame on the basis of which sampling units were selected, was the latest available list of registered factories/ plantations/mines. Sampling units found to be closed or which had changed their line of production were ignored and no substitution for such cases was made, for it was not allowed to affect the error of estimates appreciably. To study the pay roll of workers in important occupations, a sample of workers was drawn from each of the important occupation, depending upon the total number of workers in occupation.

15.0.2.3 Information regarding (i) occupational wage-rates and dearness allowance (ii) wage revision (iii) pay-roll earnings of sample workers (iv) over-time working (v) incentive bonus schemes were collected by Investigators from the records of the establishments by personal visits. The reference period for sampling unit was the pay period just preceding the date of visit of the Investigator to the sampled unit during the period September, 1963 to February, 1964. Thus a moving reference period was adopted.

15.0.2.4 The field work which was done in two rounds namely 1963-64 and 1964-65 have been completed.

## **GOVERNMENT OF KERALA**

### **15.0.3 Survey on wage structure in the sectors of construction, trade and commerce**

15.0.3.1 The repeat survey was sponsored by the Government of Kerala and conducted during 1964-65 and 1965-66 by the Bureau of Economics and Statistics with a view to collect data on the wage structure in the sectors of construction, trade and commerce. The data were collected in every quarter of the year so as to enable comparison of wages for different types of workers and also for the purpose of studying the changes in the level of earnings of workers in these sectors. The survey is conducted every year.

15.0.3.2 The surveys covered the entire State. The sampling design was a multi-stage random sampling. For the urban sector, in addition to all the district headquarters, one more municipality from each district was selected by simple random sampling method. For the rural sector, three panchayats from each district were selected by the simple random method. The list of shops and construction units in the selected municipalities and panchayats served as the sampling frame for the selection of second

stage units. From each municipality, five construction units and from each panchayat, three construction units were selected. For trade and commerce sector, two wards were selected from each municipality and from each ward, three shops engaged in (i) wholesale trade of foodgrains, (ii) clothing, (iii) metals etc., (iv) retail trades in food-grains, (v) clothings and (vi) stationery toilets etc. were selected. From each panchayat also, three shops were selected from each of the type mentioned above. The lists of the shops as obtained from municipality/panchayat was supplemented by the records of Sales Tax Officers.

15.0.3.3 The daily wage rate including imputed cost of meals etc. for the different type of workers were collected by contacting the employers etc.

15.0.3.4 During 1964-65 and 1965-66, all the four rounds of the surveys were conducted by the regular staff of the Bureau and the quarterly statements of wages were issued.

15.0.3.5 The expenditure incurred on the survey during 1964-65 and 1965-66 was Rs. 13,200 and Rs. 5,000 respectively.

### GOVERNMENT OF UTTAR PRADESH

#### 15.0.4 Survey to study the working conditions and wages in (i) hotels and restaurants (ii) private printing presses (iii) metal industry (iv) foundry and (v) glass bangle making industry

15.0.4.1 The survey was undertaken by the Labour Commissioner, Government of Uttar Pradesh for the fixation of minimum wages in the above enterprises. The survey was in operation from April, 1965 to October, 1965. The survey covered all the important towns of the State where these industries were located. Data were collected by interview method by eliciting information from trade unions and associations of employers.

15.0.4.2 All the Units of the five industries located in the important towns of the State were taken as frame. Stratified random sampling method was employed. The survey was conducted under two phases. Phase I of the survey was the census of existing units of the establishments pertaining to the five industries. Under phase II of the survey, a sample of approximately 12 percent of the units from the 52 important towns was selected by simple random sampling.

15.0.4.3 The information collected for sample was the number of employees, prevalent wage rate, working hours, weekly rest, festival holidays, benefits in kind and the status.

#### 15.0.5 Rural wage inquiry

15.0.5.1 The survey was conducted by the Directorate of Economics and Statistics, Government of Uttar Pradesh, during 1965-66 with a view to secure a record of wage-rates for the skilled and unskilled labour in rural areas of the State. The wage inquiries for the previous years were reported in the earlier issues of the Report. The new inquiry, based on the bigger number of sample villages, aimed at providing a supplementary basis to the estimate of wage rate collected by the Economic Intelligence Inspector.

15.0.5.2 The data in the new enquiry which was initiated in November, 1965, were collected by the Progress Assistants posted in the blocks from 717 villages *i.e.* at the rate of one village per Development Block within a radius of 5 miles from the block. The design for the prevailing rural wage inquiry by the Economic Intelligence Inspector was a unistage one with the five regions of the State as the strata. Six villages from each district in each region were selected with probability proportional to population size during 1961 and with replacement. The data were collected from the whole sampled village.

15.0.5.3 During the year under review, monthly and annual rural wage indices with agricultural year 1955-56 as base for various types of workers, were prepared for the five regions and for the State as a whole and the same were also published in their "Monthly Bulletin of Statistics".

### 16. LEVEL OF LIVING AND FAMILY BUDGET ENQUIRY

#### MINISTRY OF LABOUR, EMPLOYMENT AND REHABILITATION, LABOUR BUREAU, SIMLA

##### 16.0.1 Himachal Pradesh family living survey

16.0.1.1 The survey was sponsored by the Himachal Pradesh Government and was conducted by Labour Bureau, Ministry of Labour, Employment and Rehabilitation

for obtaining weighting diagram for construction and maintenance of a series of consumer, price index numbers for the industrial workers in urban and semi-urban areas of Himachal Pradesh. The duration of the survey was from December, 1964 to December, 1965.

16.0.1.2 All the urban and semi-urban localities where there were concentration of industrial workers, were covered. Pay rolls of all the manual workers employed in registered factories, mines, plantations and public motor transport undertakings formed the frame of the enquiry. Data regarding (i) demographic particulars relating to the working class families, (ii) receipts, (iii) expenditure, (iv) indebtedness, (v) saving and investment and (vi) births and deaths were collected by the investigators by visiting the 480 sampled families and personally interviewing some members of the family who were in a position to supply the required information. Reference period for the receipts and the expenditure was the previous calendar month but for other items of information, it was the day preceding the date of interview.

16.0.1.3 Systematic sampling with random start was adopted for selecting the sample units. The enquiry was conducted on 512 sampled families, the sampling fraction being 1/5. Non-response was reported minimum as there was provision for substitution in case of non-response.

16.0.1.4 The field staff consisted of 3 Investigators under the supervision of 1 Field Supervisor. Two Investigators and two Computers were engaged for analysis.

### **16.0.2 Family living surveys at five selected centres**

16.0.2.1 The survey was conducted by the Labour Bureau, Ministry of Labour, Employment and Rehabilitation with a view to obtain weighting diagram for the construction and maintenance of series of consumer price index numbers for the industrial workers in five centres namely Bhilwara (Rajasthan), Bhilai (Madhya Pradesh), Chhindwara (Madhya Pradesh), Rourkela (Orissa) and Kothagudium (Andhra Pradesh). Duration of the survey was from September, 1965 to August/September, 1966.

16.0.2.2 Data regarding (i) demographic particulars relating to the working class families, (ii) receipts, (iii) expenditure, (iv) indebtedness, (v) births and deaths, (vi) saving and investment, (vii) condition of work and levels of livings were collected by the team of investigators by visiting and interviewing the sampled families. Reference period for receipts and expenditure was the previous calendar month and for other items of information, it was the day preceding the date of survey.

16.0.2.3 Pilot survey was conducted only for testing the schedules and instructions.

16.0.2.4 Pay rolls of registered factories and mines were adopted as frame. Random sampling at first stage and systematic sampling with random start at the second stage was adopted as sampling design. Registered factories/mines and workers were taken as first and second stage units. The sample size was, 2,250. It was 4 percent of the total number of workers covered by the survey. The first stage units were selected by Labour Bureau while the second stage units were selected by field staff.

16.0.2.5 The field work of the survey was carried out by 9 Field Investigators under the supervision of 2 Field Supervisors while the analysis work was done by three Investigators Grade I, 10 Investigators Grade II and 5 Computers.

16.0.2.6 During the year 1965-66, the work relating to processing of data was reported in hand.

### **16.0.3 Family living survey of industrial workers in Goa**

16.0.3.1 The survey was sponsored by the Ministry of Labour, Employment and Rehabilitation, Government of India and was started on January 25, 1966 by the Labour Bureau, Simla in order to derive a weighting diagram for construction and maintenance of a series of consumer price index numbers for industrial workers employed in factories, mines and ports at Goa and to collect data about demographic particulars, receipts, expenditure and indebtedness, birth and death, savings and investments relating to the working class families. The survey would last upto February 25, 1967. Reference period for receipt and expenditure data was the previous calendar month and for other items of enquiry, it was the day preceding the date of survey.

16.0.3.2 A pilot survey was undertaken during 15th May, 1965 to 20th June, 1965 in order to test the suitability of the schedules and instructions. Modifications in schedules and instructions were made by the experience gained by the pilot survey.

16.0.3.3 Systematic sampling with random start was adopted for the survey. The pay rolls of employees in the factories, mines and port were taken as the frame. 576 families in all *i.e.*, about 3 percent of the universe, were selected systematically for conducting the enquiry.

16.0.3.4 The data were collected by one Field Supervisor and three Field Investigators. Separate cost of the survey for Goa was not available. Combined amount sanctioned for 1965-66 for all the family budget enquiry schemes was Rs. 13,78,384.

16.0.3.5 Relevant literature on Family Budget Enquiries conducted in India and International Labour Organisation's Symposium on Family Living Surveys were duly consulted at various stages.

## GOVERNMENT OF KERALA

### 16.0.4 Working class family budget survey

16.0.4.1 The one-time survey was sponsored by the Government of Kerala and was conducted by the Bureau of Economics and Statistics with a view to derive the weighting pattern for constructing the consumer price index numbers and to conduct a study of the levels of living of the working class families. The field work of the survey commenced on 28-9-65 and completed on 30-9-66. The analysis and preparation of report would be completed by 30-9-1967. The survey covered 13 centres namely Trivandrum, Alleppey, Ernakulam, Kozhikode, Quilon, Punalur, Kottayam, Munnar, Chalakudy, Trichur, Palghat, Meppady and Cannanore of which the first four were classified as major centres and the rest 9 as minor. The information on income and expenditure of the household, besides demographic particulars, were collected in the schedule by interview method. The reference period for certain items was one month previous to the date of visit and for other items, it was previous one year.

16.0.4.2 Two stage sampling method was adopted for the survey. From each selected centre, 12 wards were selected at random which formed the 1st stage sampling units. In the major centres, 600 working class families and in the minor centres, 300 working class families *i.e.* 50 and 25 respectively in each ward were selected systematically for detailed study. The households constituted the second stage sampling units. The selection of wards and households was done by field staff who were specially trained before the commencement of the survey.

16.0.4.3 The field work was carried out by Special Officer, 1 Statistical Inspector, 2 Upper Division Investigators and 14 Lower Division Investigators, all appointed on *ad-hoc* basis. The processing, analysis and report writing work was done at the headquarters by 1 Research Officer, 1 Research Assistant, one Upper Division Compiler and 4 lower division computers who were also on *ad-hoc* basis. The total cost of the survey was Rs. 38,657.

16.0.4.4 The field work was completed on 30-9-66. The tabulation work was being done in the ICT (80 col.) data processing equipment installed in the Bureau.

## GOVERNMENT OF MAHARASHTRA

### 16.0.5 Family living survey

16.0.5.1 The survey was conducted by the Commissioner of Labour and Director of Employment, Bombay with a view to construct the weighting diagram for building up consumer price index numbers and to make a study of consumption pattern and levels of living. The duration of the survey was from 1st November, 1964 to 31st October, 1965. The reference period was the previous month for all twelve months.

16.0.5.2. The survey covered industrial workers from Dhulia, Akola, Khamgaon and Kamptee (Kanhana). The data were collected by direct observation of sample units and by interviewing respondents.

16.0.5.3 One factories were classified into three strata and forty workers were sampled out by the method of double sampling. Response from the workers selected for the survey was reported good.

16.0.5.4 One Senior Investigator and two Junior Investigators were provided for each of the four centres. Special training was imparted to the field staff before the commencement of the survey.



## GOVERNMENT OF MYSORE

### **16.0.6 Study of impact of plan programme on levels of living, consumption and employment and use of improved methods in agriculture**

16.0.6.1 The survey was sponsored by Programme Evaluation Organisation, Planning Commission and was conducted by the Department of Statistics, Government of Mysore during June, 1964 to September, 1964 for kharif and January, 1965 to March, 1965 for rabi. The object of the survey was to study the impact of plan programme on levels of living, consumption and employment and improved agricultural methods in different regions in the State and to bring out changes that have taken place in the recent past. For rabi season, the survey covered only northern plain of the State comprising of Dharwar, Belgaum, Bijapur, Bidar, Raichur and Gulbarga districts whereas for kharif, it covered northern plain as described above and the southern plain consisting of Bangalore, Chitaldurg, Mysore, Mandya, Kolar, Tunkur, Bellary, Hassan and the coastal region of Coorg, Shimoga, Chikmagalur, South Kanara and North Kanara districts. The information was collected on number of cultivators, beneficiaries and non-beneficiaries, number of cultivators using improved seeds classified by sources and crops and area benefitted etc., by voluntary co-operation of the respondents.

16.0.6.2 All taluks which are co-terminus with the blocks consisting of Stage I and Stage II block units were selected for the survey. In all these selected blocks, 6 villages were selected at random. In the selected village, from the list of cultivators grouped as 'beneficiary' and 'non-beneficiary', 6 beneficiary and 2 non-beneficiary cultivators were selected systematically with a random start. Thus out of 172 blocks, 1032 villages were selected. The total number of cultivators selected for the study was 8,256.

16.0.6.3 There was good response for the survey. The difficulty was observed in case of blocks when the Progress Assistant was not in position. Out of 172 blocks comprising of 1,032 villages and 8,256 cultivators, only 136 blocks forming 763 villages and 5,958 cultivators could be surveyed.

16.0.6.4 The District Statistical Officers were called for being briefed about the survey work along with other items at the State headquarters in May, 1964. In turn, the Progress Assistants were trained by the District Statistical Officers at the district level along with the Supervisors. The training programme was participated by National Sample Survey.

16.0.6.5. The data relating to cost analysis are not available.

## GOVERNMENT OF PUNJAB

### **16.0.7 Family living surveys of working class and middle class employees.**

16.0.7.1 This one time survey was conducted by the Economic and Statistical Organisation, Punjab with a view to prepare weighting diagrams for the construction of consumer price index numbers and to make a study of the levels of living of the working class and middle class employees. The duration of the survey was 1st May, 1965 to 30th April, 1966 and the reference period in regard to the information collected related generally to the last month preceding the date of survey. For certain items of information, it related to the last year preceding the date of survey. The working class survey covered Palampur, Dhariwal, Phagwara, Ludhiana, Nangal, Surajpur, Pinjore, Patiala, Abohar, Sonapat, Bhiwani, and Faridabad whereas the middle class survey covered Amritsar, Ludhiana, Chandigarh, and Patiala. Two types of schedules A and B were canvassed and data were collected on ceremonials and meals consumed during last calendar month preceding the date of survey, dependents living away from the family, demographic particulars of members of household, family members enterprises account during the last calendar month and one year preceding the date of the survey, items received free and at concessional rate from the employer and gift received during the last calendar month preceding the date of the survey, receipts, expenditure on food, fuel and light, housing, clothing, saving and investment, debts etc. during the last calendar month preceding the date of the survey and birth and deaths during the one year preceding the date of the survey. Information were collected on sickness and medical treatment, literacy (general education), skill and technical education and training, service condition of the employees, opinion of employees on condition of work place and amenities, association with trade union, social security benefits, rights and benefits under labour laws and employees awareness thereof, utilisation of leisure time by employees during one week preceding the date of survey, housing conditions, indebtedness, saving and assets, distance from the house and other particulars of important places, family habits and welfare etc. These data were collected by interviewing respondents through personal investigation with their voluntary co-operation

16.0.7.2 Lists of registered factories and National Sample Survey Frame of census blocks were adopted as frame for the survey for working class and middle class respectively. Factories were the first stage units and the worker's families the second stage units in the case of the working class survey. Urban blocks were the first stage units and the families the second stage units in the case of middle class survey.

16.0.7.3 Systematic sampling design was adopted except in the case of the selection of factories for which stratification of the factories was done according to the number of workers and from each stratum, a certain number of factories were selected depending upon the proportion of workers in that group to the total number of workers at the centre. In small working class centres like Abohar, Dhariwal, Surajpur, Pinjore etc., all the factories were selected. In the case of working class, no sample size was fixed for the first stage unit. However, at the second stage, the number of workers covered by a Field Assistant every month was fixed at 25. Out of these 25 workers, 20 workers were interviewed for filling up schedule A and 5 for Schedule B. In the case of middle class centres, every Field Assistant did the listing work of the three blocks in a month. Further, he covered 20 middle class employees in a month (15 for schedule A and 5 for schedule B). First stage sample selection was done at the headquarters and the second stage sample selection was done by the field staff under the supervision of head office. First stage sample unit was revisited after every three months for drawing a fresh sample of workers. In each middle class centre, the sample of first stage units was drawn in as many independent sub-samples as there were Field Assistants covering that centre.

16.0.7.4 For field work, 25 and 12 Field Assistants were employed for working class and middle class survey respectively. A total sum of Rs. 2.20 lakhs was provided for the survey.

## **GOVERNMENT OF RAJASTHAN**

### **16.0.8 Family budget enquiry for constructing cost of living indices for Ganganagar district**

16.0.8.1 The survey was undertaken by the Directorate of Economics and Statistics, Government of Rajasthan covering the families of workers of factories registered at Ganganagar city with a view (i) to prepare weighting diagram for preparation of cost of living indices of workers, (ii) to know consumption pattern of the working class people of Ganganagar, (iii) to represent the average change over time in the price paid by the ultimate consumer for specific basket of goods and services. The field work of the survey was started in January, 1965 and completed in December, 1965. Data relating to income and expenditure were collected with varying reference period as one month for some blocks and as one year for few others. The data were collected by personal interview method with voluntary co-operation of the informants.

16.0.8.2 A list of the workers of the different factories of Ganganagar was used as the frame for selection of sample households. From the list of all the households of workers of the registered factories at Ganganagar, 300 households were selected through circular systematic random sampling. For the selection of households, two methods namely tenement sampling and pay-roll sampling methods were used. The total number of families listed under pay-roll method were 1526 and under tenement method 770. Out of a total of 2296 working class families, 101 households were selected by tenement method and 199 households by pay-roll method respectively.

16.0.8.3 Field work was conducted by one Statistical Inspector posted at Ganganagar under the supervision of District Statistician.

## **GOVERNMENT OF UTTAR PRADESH**

### **16.0.9 Urban consumption enquiry**

16.0.9.1 The survey was conducted by the Directorate of Economics and Statistics, Uttar Pradesh, with a view to show six-monthly variation in the consumption and expenditure pattern of persons residing in urban areas of the State. It covered all the towns of the State except Chamoli, Pithoragarh and Uttar Kashi. Hostel inmates, policemen living in Kotwali were all included in the survey while inmates of jails and hospitals were excluded. Data were collected from 174 sample blocks in the State in each quarter, one-third of the sample blocks in each district being spread over equally in each of the quarter. The data were collected by the Economic Intelligence Inspectors posted at each district headquarters under the direct supervision of District Statistical Officers. Personal interview method was adopted to collect the data. The data on consumption were collected partly by consumption approach and partly by expenditure approach. The data relating to most food items-cereal, pulses, sugar, oil and oil-seeds, vegetables

and fruits, milk and milk-products, meat, fish and eggs, cooked meals and some non-food items namely tobacco and pan were collected by consumption approach for a reference period of three days, preceding the date of enquiry. Data in respect of some food items *viz.* hydrogenated oil, salt, betelnuts, pickles and spices and refreshment and the remaining non-food items namely fuel and light, clothing and foot-wear, housing, education, medicine, litigation, ceremonies, taxes, furniture, utensils and miscellaneous goods and services were covered by expenditure approach for a reference period of 30 days preceding the day of enquiry which was apportioned into two parts—one falling in the current and the other in the preceding calendar month. This apportionment was utilised to obtain the data exactly for each month in a quarter.

16.0.9.2 List of blocks formed under the urban frame survey of the National Sample Survey, was adopted as a frame for the enquiry. Where these blocks were not available list of enumerator blocks formed according to 1961 census were utilised. The stratified multistage sampling design was adopted. The whole of the State was divided into four regions *viz.* eastern region, central region, western region and hilly region. Further, each region was divided into non-overlapping strata and consisting of a district. In each district, six blocks were selected to be covered in a period of six months. The blocks were selected by simple random sampling with equal probability and without replacement. To reduce the work load in the blocks consisting of 200 households or more, two or more parts of the block were formed of approximately equal population and one of them was selected by random sampling with equal probability. From the households of a selected block or part of the block, seven households were selected by systematic random sampling for the estimation of domestic consumption.

16.0.9.3 During the year under review, the survey was in progress. The data received was scrutinised and tabulated per household value of consumption, percentage expenditure on various terms of domestic use and the quantity of per-capita daily consumption of cereals were published six monthly in the "Monthly Bulletin of Statistics". The annual estimates were also published.

#### **16.0.10 Rural consumption enquiry.**

16.0.10.1 The Directorate of Economics and Statistics, Uttar Pradesh, conducted the enquiry in rural areas to find out the variation in consumption pattern of persons residing in rural areas of the State. It was also intended to estimate cash purchases made in the total consumption. It covered all the rural areas of the State except rural areas of Chimoli, Pithoragarh and Uttar Kashi. Type of information collected remained the same as reported for "Urban Consumption Enquiry".

16.0.10.2 The sample design used for the enquiry was first to divide the State into five regions—eastern region, central region, bundelkhand region, western region and hilly region and then each region was stratified into non-overlapping strata each consisting of one district. Multi-stage sampling was used involving (i) selection of 6 villages from each district with probability proportional to size and with replacement, size being measured by population in the year 1961 (ii) stratification of all households in each sample village into two classes namely, agricultural labourer and other on the basis of their principal occupation (iii) selection of a set of 15 households consisting of 5 agricultural labourers and 10 of other category. If the requisite number of selected sample in any type was less, then the deficit was made good from the other type to make the total selected households equal to 15. If the required quota of samples was not available in the sampled village, then all the available samples were selected. 15 households were once selected in July, 1964 and data from them were collected in each month.

16.0.10.3 The field staff of the Directorate consisted of Economic Intelligence Inspectors at the district headquarters. The supervisory staff consisted of District Statistical Officers. At the headquarters, one office was responsible for supervision while technical direction was given by other officers and the work of these officers was coordinated by another senior. The Director of Economic Intelligence and Statistics guided and supervised control over the entire staff.

16.0.10.4 During the year under review, the data were collected from the villages on monthly basis and results were published in the "Monthly Bulletin of Statistics" of the Directorate.

#### **16.0.11 Rural consumption enquiry (using aluminium containers)**

16.0.11.1 The Directorate of Economics and Statistics carried out the survey in the same villages as under 'Rural Consumption Enquiry'. The survey intended to serve as a supplementary enquiry to the already one of "Rural Consumption Survey" to collect

actual and better information from the respondents by measurement of containers provided to the respondents. Out of 5 samples of agricultural class in the rural consumption enquiry, one sub-sample was selected by random sampling method and 2 sub-samples from the 10 remaining samples in the other class. The data were collected for 3 succeeding days on the arrival of the investigator in the village for actual cereal consumption with certain measurement marked on them.

16.0.11.2 The personnel were the same as under "Rural Consumption Enquiry". During the year under review, the data were scrutinised and the final report prepared.

#### **16.0.12 Survey into the working and living conditions of workers employed in saw mills and furniture industry at Bareilly and Pilibhit**

16.0.12.1 The one-time survey was undertaken by the Labour Commissioner's office, Kanpur, Uttar Pradesh. It was started in the month of November, 1964 and completed in the month of May, 1965. The survey covered all the units and workers employed in the saw mills and furniture industry at Bareilly and Pilibhit.

16.0.12.2 In part I of the prescribed schedule, information was collected on (i) application of the labour laws (2) employment, (3) recruitment system, (4) wages and dearness allowance, (5) working condition, etc. In part II of the schedule, information was collected about employees as to (i) whether native or migrator (ii) condition of house in which he lives and its rent, (iii) distance of house, (iv) income, (v) size of the family etc. The data were collected with reference period as 1964-65.

16.0.12.3 For the purpose of sampling, first all the units were divided into three groups namely units (i) units employing less than 5 workers, (ii) units having 5 to 9 workers and (iii) units having 10 and more workers. Then 30 to 50 per cent of the units were selected as sample from each group. Secondly, from the selected units, all the workers, if less than 10 in a particular unit, were contacted and in case of units having more than 10 workers, then 50 per cent of them were selected on simple random basis.

16.0.12.4 Field work was done by the investigation staff posted in the Bareilly region of the Department.

### **GOVERNMENT OF GOA, DAMAN & DIU GENERAL STATISTICS DEPARTMENT**

#### **16.0.13 Middle class family living survey**

16.0.13.1 The one time survey sponsored by the Government of Goa, Daman and Diu, was conducted by the General Statistical Department with the object of constructing the cost of living index numbers to settle the disputes in respect of salaries between employers and employees and also to serve as a benchmark to assess the Government achievements in its efforts in bringing down the prevailing high cost of living in the territory. The field work was started in August, 1964 with the duration of 12 consecutive months. No pilot survey was conducted.

16.0.13.2 The survey covered families of non-manual employees engaged in non-agricultural activities in the six purposively selected localities of Goa town. The frame used for the survey was the list of census blocks adopted for the purpose of population count of urban areas in 1963. The sampling design was two-stage stratified sampling where the cluster of blocks was the first stage and family the second stage unit. The survey was spread over a year and sample of families surveyed was staggered uniformly over 12 months. With this purpose, the survey was organised in 12 monthly sub-rounds, each sub-round based on a representative sample. The sample size was 600 households, 300 for the interview and 300 for accounting method.

16.0.13.3 Information was collected by two methods, namely, interview method and accounting method. In the interview method, beside the schedule for listing the families in the selected blocks, two different schedules each for different set of families were canvassed. In schedule A (Family Budget), data on demographic particulars of the members of the family were recorded as on the day preceding the day of interview, data on births and deaths were recorded in respect of preceding year, data on income and other receipts were recorded for the last calendar month as well as for the preceding 12 months, the data on expenditure, saving and investment were recorded for the preceding calendar month and in case of housing and households, requisite data were collected in respect of the preceding 12 months. In the schedule B (condition of work and living), data on sickness were recorded in respect of the last two months and regarding employment and unemployment etc. in respect of the last 12 months. The information recorded through accounting method included (a) demographic particulars of the family, (b) family income and other receipts (c) family expenditure regarding consumption, saving and investments and was collected continuously for 12 months.

16.0.13.4 The personnel employed for the field work comprised of six field Investigators and one Inspector.

### **17. Income, Expenditure, Saving, Investment and Indebtedness**

#### **DEPARTMENT OF STATISTICS, DIRECTORATE OF NATIONAL SAMPLE SURVEY**

##### **17.0.1 Integrated household survey in the NSS 19th and 20th rounds (schedule 16, abridged schedule 17 and its supplementary).**

17.0.1.1 Details regarding the responsibility, purpose, duration, frame, design etc. for both rural and urban sectors have been reported on page 1 in connection with Land Utilization and on page 94 in connection with the Population, Birth and Death Surveys.

17.0.1.2 *Integrated Household Schedule (Schedule 16)*.—This schedule was introduced in this round in both rural and urban sectors with a view to obtaining a complete and comprehensive picture of the socio-economic activities of the household as a whole which could enable suitable cross-checks and cross-tabulations. The schedule was intended to cover data relating to consumer expenditure, savings and debt, housing condition, population, births and deaths, demographic particulars, employment and occupations, household enterprises, capital formation etc.

17.0.1.3 *An abridged version* of this schedule (schedule 17) was also canvassed for comparing the results obtained from it with those of the detailed schedule 16.

17.0.1.4 Along with this condensed schedule, data on land use were collected in one-sixth of sample villages through *schedule 17 supplementary*.

17.0.1.5 An abridged integrated schedule (17.1) with emphasis on *household trade* was also canvassed in this round.

17.0.1.6. *Reference period*.—The reference period used for collecting the data varied according to the item of information. Some of the items referred to the date of survey (e.g. price) some to the week preceding the date of survey (e.g. income of rural labour households and urban labour force), some to the month preceding the date of survey (e.g. household enterprises, items of consumption) and some to last one or two years (e.g. information on capital formation, births and deaths).

17.0.1.7 *Method of data collection* was the interview one. Informant was a knowledgeable person in the sampled households. Households were selected from each block/village using the sampling interval and random start as provided after arranging all the households in 6 classes on the criteria of their major source of income and household size. On the average, 1,20 and 1 households were selected in each sample village/block for schedule 16, 17 and 17.1 respectively.

#### **MINISTRY OF LABOUR, EMPLOYMENT AND REHABILITATION LABOUR BUREAU, SIMLA**

##### **17.0.2 Survey of labour conditions (4th round)**

17.0.2.1 The survey which is of a continuing nature was jointly sponsored by the Ministry of Labour, Employment and Rehabilitation (Department of Labour and Employment) and Planning Commission, Government of India and was conducted by the Labour Bureau, Simla, with a view to collect comprehensive information relating to employment, wages and earnings, welfare, working conditions, social security, industrial relations and a labour cost etc. of workers in 47 different industries which were covered in four rounds. The first round was started in December, 1959 and the fourth and final round of the survey was started in April, 1965 and was completed by the end of February 1966. During the present round, 19 industries were covered. The data in general related to 1965-66 but for some items, information related to a special date, the 31st March, 1965.

17.0.2.2. Before launching the first round of the survey, a pilot survey was undertaken in September, 1959 to test the schedule and the instructions and also to assess the time taken for completing the schedule and requirements of staff for the enquiry etc. The schedule and instructions were suitably modified in the light of the experience gained in pilot survey.

17.0.2.3 A multi-stage sampling procedure with industry as a stratum, with further regional strata for those industries which were found to be highly concentrated in particular regions or areas was followed. The registered factories belonging to those industries for which regional stratification was found necessary were stratified and each centre or area of high concentration was taken as a separate regional stratum of the industry and the remaining scattered factories were clubbed together into a single residual stratum. Units in each industry/regional stratum were divided into two size-groups namely Large factories and small factories, on the basis of an optimum cut-off point derived for each industry which varied from industry to industry and was approximately equal to the average size of employment in the industry.

17.0.2.4 The sampling frame was the list of factories registered under the Factories Act, 1948 for the latest year (1962 and 1963) for which the lists were available. A sample of 25 per cent of large and 12½ percent of small establishments was taken but it was suitably enlarged keeping in view the danger of undue shrinkage due to closures or change in the time of production of the units to be covered as experienced in the Second Wage Census conducted by the Labour Bureau. Having thus increased the sample size, the units which were found to be closed or which had changed their time of production were simply ignored and substitution for such cases was made only in case of the high percentage of closures.

17.0.2.5 The ultimate sampling units namely registered factories, mines or plantations within an industry/regional stratum were arranged by contiguous States and within each State by contiguous districts in a serpentine fashion so that districts formed a contiguous chain from one State to another. Having arranged the list of units in the above manner, the units above the optimum cut-off point were taken in the upper-size class and the rest in the lower size class. From these size groups, the required number of units were selected by systematic sampling with a random start.

17.0.2.6 For conducting the survey, the country was divided into suitable regions. Each region was placed under the charge of one Investigator Grade I with a team of four Investigators Grade II who visited each sampled unit and collected the entire information in the prescribed schedule.

17.0.2.7 The survey work of the current (fourth) round in all the 19 industries was completed by the end of February, 1966. Tabulation and analysis of data were in progress. The cost of the survey was Rs. 2 lakhs.

### **17.0.3 Sample survey of indebtedness among workers in the iron and steel industry in India**

17.0.3.1 The survey was conducted by the Labour Bureau, Simla with a view to assess, the degree to which workers were indebted, the factors responsible for such indebtedness, etc. This survey was undertaken in pursuance of a recommendation made by the Tripartite Committee set up by the Ministry of Labour and Employment, to study service conditions and welfare activities in the iron and steel industry. The survey starting from November, 1965 lasted for about seven months, i.e. upto May, 1966.

17.0.3.2 The survey covered (i) Tata Iron and Steel Company, Jamshedpur, (ii) Bhilai Steel Works, Bhilai, (iii) Durgapur Steel Works, Durgapur, (iv) Rourkela Steel Works, Rourkela, (v) Mysore Iron & Steel Ltd. Bhadravati, (vi) Indian Iron & Steel Company, Kulti. Information regarding the average monthly income and expenditure of the families of the sampled workers, extent of indebtedness, purpose of which debt was incurred, etc. was collected through personal interview. Information in respect of monthly income and expenditure related to the month immediately preceding the date of interview whereas data regarding indebtedness related to the overall position on the date of interview of the workers.

17.0.3.3 Employees including supervisory and clerical staff drawing a basic wage/salary of Rs. 500 or below per mensem served as frame for sampling. Systematic sampling with a random start was adopted. The sample size was one per cent of the worker drawing a basic wage/salary upto Rs. 500 per mensem.

17.0.3.4 The staff for the collection and analysis of data consisted of five Investigators and a Computer.

### **17.0.4 Rapid surveys in non-coal mines**

17.0.4.1 The survey which was sponsored by the Ministry of Labour, Employment and Rehabilitation (Department of Labour and Employment), Government of India, was started in November, 1965 by the Labour Bureau, Simla, and is proposed to be completed in May, 1966. The object of the survey was to find out the prevailing wage

structure, level of earnings, conditions of work etc. of the workers engaged in non-coal mines. The survey when completed would cover whole of India excluding Jammu & Kashmir, Tripura and Manipur. Information regarding employment, method of recruitment, hours and conditions of work and social security was collected as on 31st October, 1965 through personal investigation. In case of statistics of absenteeism and labour turnover, the reference period was the year ending October, 1965 while in case of wages and earnings, it was the pay period preceding the reference date i.e. 31st October, 1965.

17.0.4.2 The list of 42 types of non-coal mines coming within the purview of the Mines Act, 1952, compiled from the Office of Chief Inspector of Mines, Dhanbad was taken as the sampling frame. The total number of non-coal mines reported in the list was 1811. For sampling purposes, the mines in the frame were classified into three broad groups on the basis of the returns submitted under the Mines Act, 1952 and each group was taken as a stratum. The groups and sampling fraction within each group were as follows :

<i>Groups</i>	<i>Sampling fraction (percent)</i>
I. Mines submitting returns and employing 500 or more workers (reporting)	100
II. Mines submitting returns and employing less than 500 workers (reporting):*	
(i) Minerals having upto 10 miles	100
(ii) Minerals having upto 50 miles	50
(iii) Minerals having upto 50 miles	20
(iv) Minerals having over 50 miles	15
III. Mines not submitting returns†	12½

\*Subject to a minimum sample of a 2 mines in each State and in each mineral.

†Subject to a minimum sample of one unit in each State and in each mineral.

17.0.4.3 Samples were drawn out at random group-wise and State-wise accordingly. A recourse was taken to substitute at random the closed mines in an attempt to cover 65 per-cent of the original sample size.

17.0.4.4 The work of collecting primary data was being carried out by 2 Investigators Grade I and 6 Investigators Grade II. For processing data, 1 Investigator Grade I and 4 Investigators Grade II were employed.

17.0.4.5 During 1965-66, major portion of field investigations was completed in respect of all the 42 types of non-coal mines.

17.0.4.6 Separate account for the cost of the survey was not kept.

## RESERVE BANK OF INDIA

### 17.0.5 Sixth follow-up rural credit survey, 1963-66

17.0.5.1 The survey was conducted by the Reserve Bank of India with a view to find out the extent to which co-operative credit was contributing towards agricultural production and was helping the borrowers to increase their productive capacity. The survey commenced during August-September, 1964 and the field investigation was expected to be over by the middle of 1967. Data were collected in five rounds of investigations.

17.0.5.2 The design of the survey was multi-stage stratified sampling. In the first stage, a district at the rate of one each from the 12 States namely Andhra Pradesh (Anantapur), Gujarat (Baroda), West Bengal (Birbhum), Punjab (Gurdaspur), Mysore (Mandya), Madras (Madurai), Uttar Pradesh (Mathura), Rajasthan (Pali), Orissa (Puri), Madhya Pradesh (Raipur), Bihar (Shahabad) and Maharashtra (Yeotmal) were selected primarily on the basis of growth of principal crops. Working credit societies, villages in the jurisdiction of selected society and the household in the selected villages were the successive stages of sampling units.

17.0.5.3 According to the plan of enquiry, Field Investigators covered ten primary working credit societies randomly selected from the stratified regions of each selected district. In addition, one or two large-size primary credit societies were selected purposively in some districts where they were important and were not falling in the sample.

One village in the jurisdiction of each society reporting the largest membership was selected. The scope of the survey was restricted to cultivating households only. The list of cultivating households was classified into two categories. One category included those households in which no person was a member of any co-operative society while the other category comprised of those households in which one or more persons were members of the selected primary credit society. A sample of 30 cultivators' households was investigated in each village. Of these households, 20 belonged to the category of members and 10 to the category of non-members. The main object in drawing a sample from the non-members group was to have a 'control' with which the performance of members could be compared. In addition to the selected cultivators and selected primary co-operative credit societies, the investigation extended to the study of primary co-operative marketing societies, central co-operative banks and primary land mortgage banks operating in the selected districts.

17.0.5.4 In the schedule for cultivators, information was collected on the size of cultivated holding, assets formation, current and capital expenditure on farm, household expenditure on specific items, debt, borrowing, repayments, gross produce, sale of agricultural commodities, cash receipt from other resources, financial loss due to natural calamities and adoption of improved agricultural operations. Also from each selected cultivator, information regarding his credit requirements and his reaction to the co-operative and agricultural development schemes were also canvassed. In studying co-operative institution, data were collected on the area of operation management, memberships, financial structure, marketing, loan operations etc.

17.0.5.5 During the year 1965-66, three rounds of field investigation were completed and the fourth round was nearing completion. The entire survey would be over before June, 1967.

## **NATIONAL COUNCIL OF APPLIED ECONOMIC RESEARCH**

### **17.0.6 All-India survey of consumer expenditure**

17.0.6.1 The survey was conducted with a view to compare and contrast the pattern of consumer expenditures in areas which were exposed to economic developmental efforts and areas which were not exposed to any developmental efforts. The ultimate object was the assessment of the impact of economic development as a result of planning and the major changes in the pattern of consumption of important items like rice, wheat, pulses etc. The survey was conducted in four rounds, each of which extended over a period of three to four months approximately. The field work was from May, 1964 to August, 1965.

17.0.6.2 The frame of the survey was the total number of the district (i.e. 321) in the country which was stratified into 16 strata on the basis of change in per capita gross agricultural product, change in agricultural employment and the value added per worker by the manufacturing industries during the period 1951 and 1958. All the 12 districts having a population of 5 lakhs or over were selected in the first stage unit and headquarters (place as second stage unit) of these districts were selected. Also from the remaining 309 districts, 32 districts were selected, two from each stratum with probability proportional to population of the district (according to 1961 census) without replacement. Again from each of 32 sample districts, 2 places were selected from the group of places having a population between 5,000 and 10,000 with probability proportional to population and without replacement and 4 places were selected from the group of places having a population of less than 5,000 with probability proportional to population and without replacement. The selection of households from each selected place was done in two stages. From each place one or two blocks of households were selected and then a sample of households was selected from each of selected blocks. These blocks coincided with N.S.S. frame of blocks.

17.0.6.3 About 5,400 households were covered which were selected on the basis of three stage sampling design with districts as primary units, places in the districts as the second stage units and households within the selected places as third stage units. The survey covered in all a sample of 328 places (cities, towns and places) out of which 264 places were selected randomly. The remaining 64 places which were representative of places exposed to different developmental activities including Community Development programmes were purposively selected.

17.0.6.4 Data on the land utilisation particulars of place, consumption of cereals, cereal products and other items, consumption practices and preferences, expenditure on miscellaneous goods and services, housing conditions, income from agriculture, salaries and miscellaneous sources etc. were collected by interview method. The households selected for interviewing in first, second and third rounds of the study were different,



However, in the fourth round, the same set of households which were selected for the first round were re-interviewed. The survey had been completed and report was published.

## **18. Miscellaneous**

### **TEA BOARD**

#### **18.0.1 Market research and tea consumption survey**

18.0.1.1 The survey which is of continuous nature was conducted by the Tea Board Government of India during 1964-65 and 1965-66 with a view to assess the rate of increase or decrease in tea consumption in any part of the country and to provide data for the long term studies based on income and price elasticity of demand for making precise projected estimates of tea consumption. Details of previous survey may be seen on page 13 of the 15th Annual Report. The surveys were conducted in towns only. Data collected related to tea viz. extent of its popularity among members of the family, level of consumption of tea, type of tea consumed, reasons for taking tea or for not taking it, income and occupation of the family and the local tea trade—both wholesale and retail. Reference period of the data was related to period of one week prior to the date of contact. Data were collected by interview method with voluntary co-operation of the families.

18.0.1.2 A preliminary survey was first conducted in each of the selected towns with a view to collect basic information about its area, population, number of houses etc. This information was used in deciding the type of sampling to be employed as well as the size of the sample to be taken in the town concerned. This survey was, however, an overall survey of conditions in towns and not a sample survey of households.

18.0.1.3 Municipal assessment registers were taken as the frame for the purpose of drawing the samples in the case of the municipal towns and other similar registers maintained by the appropriate authorities in the cantonments and railway colonies. About five per cent of the houses in the towns were selected at random from any ward in proportional to the total number of houses therein. In smaller towns, this sampling fraction had to be slightly increased keeping in view the fact that the total number of houses selected did not become too small to draw any general conclusion. The ultimate sampling unit was a family. When any of the houses was found to contain two or more families, only one amongst them was randomly chosen for inclusion in the sample.

18.0.1.4 The Investigators were thoroughly trained by Inspector, Sub-inspector for conducting the survey. The survey work in each town was conducted with the help of 4 locally recruited investigators who worked under the supervision of an Inspector or Sub-inspector belonging to the regular establishment of Statistics Branch of the Tea Board. The analysis of data was done in the Head Office.

18.0.1.5 During the years 1964-65 and 1965-66, 18 and 15 towns were respectively surveyed. The extent of non-response due to untraceability of the selected family, etc. generally remained within 15 per cent and in some towns it was much less. Bulletins were issued giving the results of each surveyed town and an annual publication containing information on all the towns surveyed during the year was also published under the title "Tea Surveys".

### **TATA INSTITUTE OF SOCIAL SCIENCES, BOMBAY**

#### **18.0.2 Trade Union leadership survey**

18.0.2.1 The Tata Institute of Social Sciences, Bombay undertook the 'one-time' survey under the sponsorship of International Institute of Labour Studies. The object of the survey was to know the extent of the 'outside' leadership and its quality, the role of trade union in the industrial development of the country. The duration of survey was from October, 1963 to July, 1964. The details were reported on page 66 of 14th Annual Report.

18.0.2.2 Two stage sampling technique was used. States and Unions were the two stages of sampling. A 10 per cent stratified proportional sample of all registered unions in Kerala, Madras, Gujarat, Uttar Pradesh and West Bengal were selected for assessment of leadership. Trade Unions in Maharashtra were stratified and selected according to the proportional membership. Over all, 10 per cent unions were selected and the President and Secretary of each union were contacted.

18.0.2.3 Information regarding the personal details of leaders, their role and views with regard to trade unions etc. were collected by mailing method. During the year under review, the report was prepared and brought out.

## **DEMOGRAPHIC TRAINING AND RESEARCH CENTRE, BOMBAY**

### **18.0.3 Evaluation of performance of voluntary workers**

18.0.3.1 The 'one-time' survey was conducted by Demographic Training and Research Centre, Bombay with a view to study the demographic and socio-economic characteristics of voluntary workers, to know their experience in community, their educational activity, reactions to voluntary workers system and to know the motivating factors for their voluntary association with family planning programme. The survey commenced on 7th December and ended on 22nd December, 1963. Two residential colonies of the Maharashtra Housing Board (Sahakar Nagar and Tilak Nagar) in Chembur, which is a part of the action area for Family Planning Communication Action Research Project, Demographic Training and Research Centre were covered. Data with reference to the period from January, 1964 to the date of the survey were collected from official records and personal investigation with voluntary cooperation.

18.0.3.2 The voluntary workers working for family planning programme in two housing colonies constituted the frame. The names of voluntary workers were written colony-wise and a systematic sample with random start was adopted for the survey. The sample size was 20 per cent.

18.0.3.3 Four Investigators were employed for the field work who were trained by the Project staff.

## **DELHI UNIVERSITY**

### **18.0.4 Social, economic and cultural study of the people of Ladakh**

18.0.4.1 The one time survey which commenced from 4th May, 1965 for a duration of 1½ years was undertaken by the Department of Anthropology, University of Delhi with the objective of (i) studying the social, economic and cultural aspects of the people of Ladakh, (ii) determining the impact of new laws of inheritance by the Jammu and Kashmir Government on the structure of their polyandrous society (iii) evaluating various programmes of the community development, betterment of animal husbandry and promotion of new industries and (iv) studying the extent and influence of Lamaism on the life of the people. The field work was conducted during this period 20-10-65 to 24-11-65 and is being proposed from 8-7-66 to 17-9-66 again. The whole of Ladakh region was covered under the study. The information was collected on (1) economic data relating to agriculture, forestry, fishery and livestock, cooperation and community development, industry, commerce and trade, social service and (2) social data relating to (a) identification of the population groups on the basis of habitations, ethnographic characteristics, economy, religion, sects and castes, if any and education (b) inter communication among the various groups and the comprehension of the values dear to each and (c) assessment of the problems of cooperation, communication and transport for extensive field work through the region. A four weeks pilot survey was conducted in Leh with a view to know the relevancy of information sought in the light of field experience.

18.0.4.2 Stratified random sampling was used for selecting sampling units at various stages. The whole region under study was stratified on the basis of population, income and elevation. The successive stages of sampling units namely town, zone or ward and households were selected by simple random sampling method. The design was self weighting one. Both interview and direct observation methods of data collection were adopted for the period of the survey. A sum of Rs. 75432,00 was sanctioned. The staff consisted of 2 Directors, 2 Supervisors and 6 Investigators employed on ad hoc basis.

## **GUJARAT UNIVERSITY**

### **18.0.5 Study of socio-economic conditions of women workers in certain textile mills of Ahmedabad**

18.0.5.1 The survey was conducted during 1965-66 by the School of Social Sciences, Gujarat University with a view to analyse both industrial as well as home environment of women workers in order to study the causes of the decline of textile women employees. The survey covered all the women workers serving in the textile mills of Ahmedabad. Two separate schedules of questionnaire were prepared. One for the women workers in the textile industry and the other for the employer. Interviews were held individually with women workers as well as with employers. The data were collected under the major headings—(1) general information (2) working Conditions (3) job relationship (4) health (5) marital relations (6) children (7) Economic conditions and (8) recruitment (for employees).

18.0.5.2 Within a month, 23 textile women employees were interviewed from a local mill for a pilot survey. Questionnaire was slightly modified on the basis of the experience of the pilot survey.

18.0.5.3 A random sampling method was used. Out of 3000 women workers, 500 women i.e. about 16% women workers were interviewed. Mills employing less than 50 women workers were dropped out from the study.

18.0.5.4 A list of women workers was gathered from each mill and every 3rd or 5th woman worker was selected for the interview on the basis of random sampling. In the case where a woman worker was absent, the next number from the list was selected.

18.0.5.5 Two Investigators for six months, one Investigator and one Statistical Assistant each for two months were employed for the survey. Statistical Assistant did the job of processing in the last two months on ad hoc basis. The total expenditure incurred on the survey was Rs. 3000.

## **GOVERNMENT OF ASSAM**

### **18.0.6 Socio-economic survey (hills) in the United Mikir and North Cachar hills**

18.0.6.1 The 'one time' survey was undertaken by the Department of Economics and Statistics, Government of Assam, with a view to collect the benchmark data on socio-economic conditions of rural population in the districts of the State.

18.0.6.2 The survey covered the Garo hills districts where village and household schedules were canvassed. In the village schedule, information on topography of the village, conditions of housing, sanitation, etc., usual conveyance, civic and educational condition, drinking water, marketing facilities, cottage industry of the village, co-operation, cultivation and miscellaneous information such as existence of fair price shop, participation of villagers in relief work, etc. was collected. The household schedule collected information relating to demographic particulars, employment, land possessed, cultivation, disposal of agricultural produce, household fishery, household industry, livestock, indebtedness, loan and subsidy, food subsidy, household consumption and expenditure, receipt and disbursement for household enterprise. The field work was spread over the period from June, 1964 to May, 1965 and the tabulation work from June, 1965 to March, 1966.

18.0.6.3 A complete and upto date list of villages in the district provided the frame for village samples and a complete list of households in the sample villages provided the frame for household sample. Two stage random sampling design was adopted for the survey. The first and second stage sample units were villages and the households respectively. The sample units in different stages were selected systematically. 96 villages out of 1869 inhabited villages in all the districts were selected. 50 percent households of the total number of households listed in the sampled villages were selected for detail enquiry. The sampled villages were selected in the headquarters office of the Department and sample households were selected by the field staff. Sampling design was the same for all the subjects covered by the survey.

18.0.6.4 The field staff was given necessary training for filling up the schedules before they were sent to the field. Four field Assistants were engaged for data collection under the supervision of two Sub-inspectors of Statistics. Processing of data upto certain level was done by field staff while writing of the report was done in the headquarters.

18.0.6.5 The tabulation of data has been completed by the end of 1965-66. Preparation of the report is expected to be completed by the end of 1966-67.

18.0.6.6 An amount of Rs. 31,025.00 was spent during the year under review for the hill survey scheme.

## **GOVERNMENT OF KERALA**

### **18.0.7 Pre-action phase survey on applied nutrition programme**

18.0.7.1 This is a one time survey and was conducted during October, 1964—April, 1965 for the first time by the Department of Agriculture and Rural Development, Government of Kerala with a view to studying the existing general conditions and standard of living of the people of the locality where 'Applied Nutrition Programme (ANP)', was introduced. The survey covered 5 blocks in the State where the ANP was introduced during the reference period 1963-64. Information on size of the family with age and sex distribution, educational and marital status and occupation of the family members

extent of land owned and cultivated with the approximate value of property, crops cultivated and the quality and value of produce, livestock and poultry wealth owned, number and value of agricultural implements and the quantity of food materials consumed by the family during each month was collected by interviewing the respondents personally.

18.0.7.2 One panchayat ward from the total number of wards in each panchayat was selected by simple random sampling. The households in the selected ward were then listed serially in accordance with the panchayat house number. This list served as the sampling frame which was stratified according to the size of holding of land. At the second stage, a systematic random sample of 10 per cent of households from each category of holding size group was selected. The sampling units were selected at the central office only.

18.0.7.3 The field work was carried out by 5 Investigators of the Department while the processing and report writing was done in the Bureau of Economics and Statistics by one Research Assistant and one Compiler. Tabulation was done with the help of hand operated machines.

18.0.7.4 During the period under review, enumeration was completed in respect of 4 blocks but continued in the remaining block. The tabulation of data using the method of ratio estimation was in progress.

## **GOVERNMENT OF PUNJAB**

### **18.0.8 Socio-economic survey of the scheduled castes**

18.0.8.1 The survey was sponsored by the Punjab Evaluation Committee on Welfare and conducted by the Economic and Statistical Organisation, Govt. of Punjab with a view to study the present socio-economic conditions of the scheduled castes and measure the progress, if any, made as a result of planning since 1952. The period of survey was from third week of February, 1966 to middle of April, 1966. The survey covered the entire State of Punjab except the district of Lahaul and Spiti, Kulu district was, however, combined with Kangra district for the purpose of allocation of sample units and drawing of samples. In the urban areas, eight cities/towns namely Amritsar, Jullundur, Ludhiana, Patiala, Yamunanagar, Panipat, Faridabad and Bhiwani were taken as areas of operation. Two census blocks/localities were selected from each of the above cities with population exceeding one lakh and one census block/locality for each of the rest of the towns.

18.0.8.2 Complete information, bearing on the socio-economic life of the people, on items like land particulars, drinking water facilities, removal of untouchability exploitation of agriculture labour, complete particulars of the members of household, educational concessions, financial assistance for settling in trade, business or industry, housing conditions, particulars of livestock and indebtedness was collected. In addition to the above, some additional information concerning the sweepers/scavengers such as the provision and utility of improved implements like metallic tasalas, buckets and wheel barrows etc., was also collected. The information was collected by interviewing respondents through personal investigation. The period of reference for most of the items was 'on the date of survey' while for housing condition and livestock, it was both on the date of survey and during 1950-51.

18.0.8.3 The sampling method adopted for the survey was a uni-stage random sampling. In rural areas, district-wise list of villages and in urban areas census blocks/localities of the eight selected cities/towns were taken as the sampling frame. 100 villages in respect of rural areas and 12 census blocks in respect of urban areas were selected randomly. Sampling fraction was 0.0047.

18.0.8.4 The field work was carried out by 10 regular Technical Assistants of the Plan Evaluation Section under the supervision of 5 Research Officers from the head Office. Four Computers and eight Technical Assistants were engaged in the various stages of data processing while one Research Officer prepared the final report.

### **18.0.9 Evaluation of the Applied Nutrition Programme**

18.0.9.1 The survey was sponsored by the Director, Health Services, Government of Punjab in pursuance of the recommendations of Annual Conference on Community Development and Panchayati Raj and the Conference of the State Ministers of the Community Development and Panchayati Raj and conducted by the Economic and Statistical Organisation, Government of Punjab with a view to evaluate the effectiveness of efficiency in implementation of the programme in rural areas in respect of (i) production of nutrition foods (ii) their consumption and (iii) nutritional education among the

people. The field work of the survey commenced from third week of September, 1964 and was completed by the second week of October, 1966. The survey was confined to 5 Community Development Blocks out of the 20 Community Development Blocks in the State where the Applied Nutrition Programme was introduced. Information was obtained on the role of village institutions and block level official functionaries connected with the programme. The reference period for most of the items was the date of survey while for other items, it was the period since the inauguration of Applied Nutrition Programme in September, 1964.

18.0.9.2 Three stage systematic sampling method was adopted for the survey. Community Development Blocks, villages and the households were the successive stages of sampling. Fifteen villages in each of the five selected Community Development Blocks covered by the programme in the first stage served as the frame. In the second stage, 6 villages out of the 15 villages covered by the programme in the first stage were selected in each of the 5 Community Development Blocks. In the third stage, 30 households in each of the 6 sampled villages were selected for the survey.

18.0.9.3 The field work was carried out by 5 Technical Assistants of the Plan Evaluation Section under the supervision of 3 Research Officers from the head office. 2 Computers and 5 Technical Assistants were engaged in various stages of data processing while one Research Officer prepared the final report.

## **GOVERNMENT OF RAJASTHAN**

### **18.0.10 Formulation of Fourth Five Year Plan**

18.0.10.1 The 'one time' study was carried out by the Evaluation Organisation Government of Rajasthan with a view to evaluate the process of plan formulation by Panchayati Rai bodies and role of officials and non-officials and the people's interest in formulating the plan. The study commenced in September, 1965 and was continued at the end of the year under review. Knowledge and views of the officials, non-officials and cultivators with regard to process of plan formulation, difficulties and problems faced in formulation of the Fourth Plan etc. were collected through personal interview and establishment records with voluntary cooperation.

18.0.10.2 Stratification was done by dividing the entire State into three homogeneous geographical regions viz. Plain, Dry and Southern Highlands and from each region, representative sample units were selected. Zila Parishad, Panchayat Samitis and village Panchayat were selected randomly. 9 Zila Parishads were selected with probability proportional to the number of Zila Parishads in each region. A sub-sample of 23 Panchayat Samitis out of 55 was selected by circular systematic sampling with replacement. 69 village Panchayats were selected by arranging the Village Panchayats selected for democratic decentralisation study in an alphabetical order and 1st, 3rd and 5th Village Panchayats from each Panchayat Samiti were selected. The selection of Zila Parishads, Panchayat Samitis and Village Panchayats was done at the head quarters of the Evaluation Organisation while the selection of cultivators was done by the field staff in the selected Village Panchayats. Substitute sample provision was made in case of non-availability of selected respondents. The survey would continue during 1966-67 also.

### **18.0.11 Survey on working of industrial training institutes**

18.0.11.1 The 'one time' survey was undertaken by the Evaluation Organisation, Government of Rajasthan with a view to assess the working and the utility of (1) Leather Working and Training Institute (2) Artistic Crafts Training Institute (3) Tailoring and Embroidery Centre and (4) Woollen Cottage Industries Training Centre for the years 1962-63 to 1965-66, 1961-62 to 1965-66, 1959-60 to 1965-66 and 1956-57 to 1965-66 respectively. Information in respect of providing trained craftsmen in different crafts and the adequacy of training programmes in these institutes was collected. The study was undertaken in the months of November-December, 1965.

18.0.11.2 Data on the working of these institutes was obtained from the records of the institutes concerned. The views of the officers of the institutes and trainees (both current and old) were also obtained through interview with voluntary co-operation.

18.0.11.3 The list of the trainees supplied by the institutes was adopted as sampling frame. The sample for various institutes was as follows :

- (i) Principal/Incharge of the training institute
- (ii) Lecturers and Supervisors selected on random basis
- (iii) 25 per cent trainees selected on random basis from the current batch.
- (iv) 10 per cent ex-trainees selected on random basis.

18.0.11.4 The respondents were selected by systematic sampling from the list of the first stage units (lecturers, supervisors, trainees and ex-trainees). The selection of units were done at the headquarters of the Evaluation Organisation.

18.0.11.5 The survey was completed during the year under review. No separate budget provision was made for the survey and the expenditure was met from the budget of the organisation for the year 1965-66.

**18.0.12 Working of design extension centres viz. textile, carpet, lacquerware and woollen felt**

18.0.12.1 The survey was undertaken by Evaluation Organisation, Government of Rajasthan with a view to assess the working of Design Extension Centres in respect of textile, carpet, lacquerware and woollen felt and to determine the extent to which these centres had been useful in promoting the art by providing new designs or improving the old traditional designs. Data relating to 1962-63 to 1965-66 were collected through personal interview and establishments, records by personal investigation with voluntary co-operation.

18.0.12.2 The list of design users supplied by the different centres was used as the sampling frame. Design Incharge of the design centres and fifty per cent of the design users were selected at random from the list of the design users.

18.0.12.3 5 Investigators, 6 Computers and 1 Research Assistant were employed for the survey. The study was completed during the year under review and a report was submitted to the State Government for taking further administrative action on the results of the study. The report has not been published so far. No separate funds were provided for the study. The expenditure was met from the total budget of the Organisation.

**18.0.13 Attachment of Village Level Workers with Village Panchayat as Secretary and its impact on agriculture production programmes**

18.0.13.1 The 'one-time' study was conducted by the Evaluation Organisation, Government of Rajasthan with the object to assess the impact of attaching the Village Level Workers (VLW with the Village Panchayats as Secretaries on Agricultural Production Programmes). The working, performance and achievement of the sampled village Panchayats were compared with the performance and working of Village Panchayat where Village Level Workers did not work as Secretaries also. Informations were collected by interviewing respondents through personal investigation with voluntary co-operation. Duration of the survey was from October, 1965 to March, 1966.

18.0.13.2 A sample of 6 Panchayat Samitis (25 per cent) out of 24 Panchayat Samitis where V.L.W. worked as Secretaries was selected at the first stage. The Panchayat Samitis were selected with probability proportional to the total number of Panchayat Samitis in the each region. The various stages of development of the Panchayat Samitis were taken as the strata and three Panchayat Samitis from post second stage, two from second stage and one from first stage were selected. At the second stage, a sample of 30 Village Panchayats were selected according to circular systematic sampling procedure. Specified categories of respondents were interviewed at District, Panchayat Samiti and at Village Panchayat Levels. At the third stage, five cultivators were selected from each of the selected Village Panchayats who were interviewed by Investigators. The selection of Panchayat Samitis and Village Panchayats was done at headquarters of the Evaluation Organisation while the selection of cultivators was done by the Investigators in field. Substitute sample was provided in case particular respondents were not available.

18.0.13.3 The study was completed in the year 1965-66. No separate budget was allocated for this study. Expenditure was incurred from the total budget of the Organisation.

**GOVERNMENT OF UTTAR PRADESH**

**18.0.14 Gur manufacture enquiry**

18.0.14.1 The enquiry was conducted by the Directorate of Economics and Statistics, Government of Uttar Pradesh during 1965-66 with a view to estimate total gur production, cost of gur production per maund, cost on the different items of production and the utilisation of gur along with the utilisation of improved practices in the production and manufacture of gur. It covered all the rural areas of the State leaving aside the hill districts of Chamoli, Pithoragarh and Uttar Kashi.

18.0.14.2 Data relating to cost of production of gur and utilisation of improved practices regarding gur production were collected by interviewing respondents through personal investigation with voluntary co-operation.

18.0.14.3 The list of villages of the rural areas of the State was taken as the frame. The sample design used for the enquiry was stratified multistage one. The region, district, village and the cane growers were the successive stages of sampling units respectively. The State was divided into five regions namely, Eastern region, Central region, Bundelkhand region, Western region and hilly region and then each region was stratified into non-overlapping strata, each consisting of one district. 6 villages from each district were selected with probability proportional to size and with replacement, size being the population in the year 1961. The data were collected from 10 samples at the most in the selected village, the samples being selected from the population of cane growers of 1964-65. The sample selection was done by random selection. The data were collected once in a month from all the six villages, the reference period being the month of the survey.

18.0.14.4 During the year under review, the data received from the field staff were scrutinised and tabulated at the head-quarters.

### **18.0.15 Dietary habits**

18.0.15.1 The Directorate of Economics and Statistics, Government of Uttar Pradesh conducted the enquiry during 1965-66 in the same villages as under "Rural Consumption Enquiry". The purpose of the enquiry was to know the dietary habits of rural people of the State. Data from those persons taking egg but not taking meat, those who take egg and fish but do not take meat, and lastly from those who take egg, fish and meat, were collected once in a month by interviewing respondents through personal investigation with voluntary co-operation. All the families in the sampled villages were contacted for the enquiry.

18.0.15.2 The frame for the survey was the total number of villages selected for 'Rural Consumption Enquiry'.

18.0.15.3 During the year under review, the data were scrutinised and tabulated. The report writing was in progress.

### **18.0.16 Slaughtering of animals**

18.0.16.1 The Directorate of Economics and Statistics, Government of Uttar Pradesh conducted the survey in the same villages as under "Rural Consumption Enquiry" during 1965-66. The purpose of the survey was to collect data which might throw light on number and use of different parts of slaughtered animals apart from those slaughtered in the registered slaughter houses. It covered all the rural areas of the State except rural areas of Chamoli, Pithoragarh and Uttar Kashi. The data were collected from 10 slaughterers per village once a month, in the same villages as for 'Rural Consumption Enquiry' related to animals slaughtered during last 365 days. For this purpose, five types of animals were included viz. (i) goat or she-goat (ii) pig (iii) buffalo or she-buffalo (iv) sheep and (v) others. The data were collected by interviewing respondents through personal investigation with voluntary co-operation.

18.0.16.2 The sampling was done by circular systematic method. The population was the entire number of slaughterers of the village out of which 10 sample families were selected. If the required number of 10 samples were not available, then the data were collected from all the available numbers.

18.0.16.3 After the data were received from the districts, it was scrutinised and compiled. The report writing was reported to be in progress. As the same staff was engaged in conducting and performing other duties in addition to their own, separate cost analysis was not available.





**SAMPLE SURVEYS OF CURRENT INTEREST IN INDIA**

Sixteenth and Seventeenth Annual Reports,  
1964-65 and 1965-66  
(*Combined Issue*)



सत्यमेव जयते

**PART II**

**SURVEYS PROPOSED FOR 1966-67**



## **1. Agriculture**

### **1.1 Land utilization**

#### **DEPARTMENT OF STATISTICS, DIRECTORATE OF NATIONAL SAMPLE SURVEY**

##### **1.1.1 Land utilization statistics in the N.S.S. 21st round, (schedules 5.0 and 5.01)**

1.1.1.1 Details regarding the agency responsible for the conduct of the survey, purpose, States participating, geographical coverage, frame, design, interpenetrating net work of sub-samples and personnel etc. for this round of the survey would remain the same as in the 20th round of NSS reported under Part I.

1.1.1.2 The field work for this round would start in the third week of July, 1966 and is scheduled to be completed by the end of June, 1967.

##### **1.2 Crop area, yield and production including those of high yielding varieties**

#### **DEPARTMENT OF STATISTICS, DIRECTORATE OF NATIONAL SAMPLE SURVEY**

##### **1.2.1 Crop cutting experiments in the N.S.S. 21st round (schedules 5.1 and 5.2)**

1.2.1.1 Details regarding agency responsible for the conduct of the survey, State participating, geographical coverage, frame, design, interpenetrating net work of sub-samples etc., for the survey would remain the same as in the 20th round of the NSS reported under Part I.

1.2.1.2 The survey would start in the third week of July, 1966 and is scheduled to be completed by the end of June, 1967. Information would be collected on the yield rate of crops namely, rice, wheat, barley, maize, jowar, bajra and ragi in each of the four crop seasons.

#### **MINISTRY OF FOOD, AGRICULTURE, COMMUNITY DEVELOPMENT AND CO-OPERATION; INDIAN COUNCIL OF AGRICULTURAL RESEARCH**

##### **1.2.2 Block level estimates of agricultural production**

The relevant details of the survey are similar to the one reported under the same head in Part I of this Annual Report. During 1966-67, it is proposed to extend the coverage of the scheme to 24 districts in Maharashtra, 17 districts each in Bihar and Uttar Pradesh and one district each in the remaining States except in West Bengal, Orissa and Kerala. Thus 68 districts would be covered in all. In all, the districts, the principal foodgrains would be covered by the scheme.

##### **1.2.3 Sample survey for the study of yield and cultivation practices of fresh fruits in Andhra Pradesh (second round)**

As reported in Part I of this Annual Report, the survey for the study of yield and cultivation practices of fresh fruits was started from July, 1965. The second round of the survey was taken up from July, 1966. The sampling design and other details about the survey during the 2nd round would remain the same as those reported for the first round.

#### **GOVERNMENT OF MAHARASHTRA**

##### **1.2.4 Pilot scheme for collection of statistics on the extent of cultivation and production of cashewnut**

The sample survey would be conducted under the technical and supervisory control of the Statistician, Department of Agriculture, Maharashtra. The technical programme of the work would be drawn in consultation with the Institute of Agricultural Research Statistics (I.A.R.S.), New Delhi. The schedules for the survey and instructions for field work would be finalised in consultation with the concerned crop specialist of the Department and officers of the I.A.R.S. The survey would be confined to Ratnagiri District. Information would be collected on area enumeration and crop cutting experiments in randomly selected villages.

##### **1.2.5 Scheme for pilot crop estimation survey on safflower/nigar**

The survey would be sponsored by Directorate of National Sample Survey, Government of India and would be conducted under the technical and supervisory control of the Statistician, Department of Agriculture, Maharashtra. The technical programme

of work would be finalised in consultation with Directorate of National Sample Survey. The survey would be undertaken on pilot basis for a period of 3 years commencing from the year 1966-67. Survey on nigar would be conducted during the kharif season of 1966-67 and on safflower in the rabi season of 1966-67. The purpose of the survey would be to improve the area and yield statistics of these oilseeds crops. The survey would be confined to Ahmednagar for safflower and to Nasik district for nigar in the first instance. Information regarding the area under the crop/crops mixed, pattern of cultivation etc., would be collected. In regard to crop cutting experiments, the information on date of sowing, particulars about manuring, irrigation details, grow more food measures, date of harvesting fixed for the crop, mode of approach to the selected villages and eye estimation would be collected. Details of weighments of harvested produce, fodder weights, labour employed for harvesting, incidence of pests and diseases would also be collected. The information would be collected by direct observation of the experimental plots in selected villages by field staff and from the village records maintained at village level with the help of departmental staff and in cooperation with the Revenue Department and cultivators.

### **1.2.6 Scheme for the study of yield and cultivation practices of vegetable crop**

The survey would be carried out by Department of Agriculture, Maharashtra under the technical guidance of Indian Council of Agricultural Research, New Delhi with a view to improve the area and yield statistics of vegetable crops in the State. It would cover the Nasik and Poona districts of the State. The survey would be continued throughout the year. The Agricultural year, would be divided into six periods viz. (i) July-August (ii) September-October (iii) November-December (iv) January-February (v) March-April (vi) May-June and the data would be collected for each of the six periods independently. The information would be collected by referring to the revenue records, spot inspection of field and enquiry from the selected cultivators. The cultivation practices adopted by the cultivators and complete enumeration of area under vegetable crops in the selected villages along with estimates of produce by sample cuts in randomly selected fields would be collected. Information would also be collected regarding the marketing of the produce.

### **1.3 Improved agricultural practices and their effects.**

#### **MINISTRY OF FOOD, AGRICULTURE, COMMUNITY DEVELOPMENT AND CO-OPERATION**

##### **1.3.1 The benchmark and assessment survey under the Intensive Agriculture District Programme (I.A.D.P.)**

Details regarding purpose, sampling design etc. have been reported in Part I of this Report. During 1966-67, the survey will be continued in all the 17 districts already covered by the I.A.D.P. It is also expected to be initiated in the districts of Jammu and Anantnag of Jammu & Kashmir State during the year 1966-67.

#### **GOVERNMENT OF GUJARAT**

##### **1.3.2 The benchmark survey in areas under Intensive Agricultural Area Programme (I.A.A.P.)**

1.3.2.1 The survey to be conducted by the Directorate of Evaluation, Gujarat State would commence on 16th May, 1966 and is expected to be completed by the 25th July, 1966 except for a few villages for which the field work would be completed by the end of August, 1966. The purpose of the survey is to obtain the data regarding the adoption of improved seeds, fertilisers and pesticides and membership in cooperative societies, etc. The data would indicate the extent of acceptance of practices in different areas. The results would be utilised in assessing the impact of I.A.A. Programme in respect of increased agricultural production and other objects of the scheme. The survey would cover those areas where I.A.A. Programme was introduced with effect from 1st May, 1966 for the Fourth Five Year Plan. The six districts namely Kaira (all talukas), Junagadh (all talukas), parts of Bansakantha (six talukas), parts of Mehsana (eight talukas), parts of Bhavnagar (five talukas) and parts of Rajkot (five talukas) would be covered by this programme from 1966-67.

1.3.2.2 For the purpose of collecting benchmark data, two schedules have been designed. The schedule 1 is for the selected villages and seeks to collect information from all the cultivators in the village in regard to land holding, irrigation facilities, membership in cooperative societies, adoption of improved practices such as improved seeds, fertilisers and pesticides etc. for paddy, groundnut, cotton, maize (kharif), jowar (kharif), bajra (Kharif), wheat (irrigated and unirrigated), maize (rabi), bajra (rabi) and jowar (rabi) and other important crops of the area, if any.

1.3.2.3 Schedule-2 seeks to collect data regarding the area under each crop, area under improved seeds, chemical fertilizers and manures (types and quantity), irrigation etc. This information is to be collected for all the crops grown by the cultivators in the operational land holding. In addition to the above, data regarding the marketing of agricultural produce, loans received from various sources, reasons for discontinuation of adoption of fertilisers, pesticides etc. would be covered by the schedule.

1.3.2.4 The reference period for the survey would be agricultural year 1965-66. Information would be collected for kharif, rabi and summer crops for the year 1965-66 by interviewing the respondents.

1.3.2.5 No pilot survey has been undertaken. However, the experience gained from the surveys conducted for I.A.D.P. (Intensive Agricultural Districts Programme) in Surat district and study of the impact of Plan Programmes on levels of living, consumption and employment and use of improved methods in agriculture etc. has been utilised in designing the survey.

## **1.5 Land holdings and land reforms**

### **GOVERNMENT OF KERALA**

#### **1.5.1 Survey on land reforms**

The survey which is one time in nature, was sponsored by the State Government and would be conducted by the Bureau of Economics and Statistics with the object of formulating a satisfactory policy of land reforms in the State by collecting data on land holdings, land tenure and the effect of land reform measures. The field work of the survey would commence on 15-10-1966 and would be completed on 14-2-1967. The reference period would be 1966-67. The survey would cover all the 9 districts of the State. The information on (i) number of landlords and turnnauts (ii) holding size and distribution (iii) land classification (iv) land alienations-extent by reason for a decade (v) conditions of fixity of tenure, purchase of land-lord's rights (vi) fixation of fair rent and remission of rent (vii) resumptions of land and evictions of tenancies (viii) kudikidappu registration and (ix) impact of land reforms on capital investment in agriculture and cultivation practices would be collected from village records, land tribunals, published literature and heads of selected households by direct contact.

#### **1.6 Other agro-economic surveys**

### **MINISTRY OF FOOD, AGRICULTURE, COMMUNITY DEVELOPMENT AND CO-OPERATION**

#### **1.6.1 Survey of fertiliser and other manuring practices**

Details of the survey have been reported in Part I of this Report. During 1966-67, the field work of the survey would be initiated in the districts of Deoria (U.P.), Baroda (Gujarat), Bangalore (Mysore) and Nizambad (Andhra Pradesh). Two repeat surveys, one in the district of Ferozepur (Punjab) and the other in Coimbatore (Madras) would also be carried out during 1966-67 in order to assess the changes in the extent and pattern of fertiliser consumption. The earlier surveys in Ferozepur and Coimbatore were conducted during 1957-58 and 1961-62 respectively.

#### **1.6.2 Survey for estimation of incidence of pests and diseases.**

The details of the survey regarding purpose, information to be collected, sampling design etc. have been reported in Part I of this Report. During the year 1966-67, the survey will be continued in West Godawari and Aligarh but will be terminated in Thanjavur district from 1st July, 1966. Anticipated expenditure under the scheme for year 1966-67 will be of the order of Rs. 1,57,000.

### **KARNATAK UNIVERSITY**

#### **1.6.3 Agriculture geography of Mysore State (Belgaum Division)**

The survey which is one time in nature, has been sponsored by Research Programme Committee, Planning Commission, Government of India and will be conducted by the Department of Geography, Karnatak University, Dharwar. The purpose of the study is to examine the agricultural conditions of this region, shifts in the crop choice of the farmer, attitude towards the future crops and their functional association, distributional and combinational pattern and regional variations, relationship between crop yields and various climate elements, relative and absolute changes in farming techniques, fertilizers, irrigation facilities and yield etc. The survey will be of one year duration commencing from 1st July, 1966. The region covered by the survey

would be Belgaum Division consisting of Belgaum, Dharwar, Bijapur and North Kanara districts. The information would be collected by interviewing respondents and from records of the concerned offices. The reference period of the study would be 1965-66.

## **2. Animal husbandry**

### **2.1 Livestock and poultry population**

#### **GOVERNMENT OF PONDICHERRY**

##### **2.1.1 Post livestock census, sample survey for collection of additional data, 1966**

Bureau of Statistics and Evaluation would undertake the survey on the basis of the model scheme circulated by the Ministry of Food and Agriculture, Government of India. The purpose of the survey would be to collect detailed data on age composition, breed, order of cattle and period of lactation completed in respect of cattle and buffaloes and distribution of sheep, goats and poultry by breed. The field work of the survey would be from 20th April to end of May, 1966. Pondicherry and Karaikal regions would be covered under the survey. The date of enquiry would be adopted as the reference period. Data would be collected by interviewing the sample households in urban and rural areas.

### **2.2 Livestock products and by-products**

#### **MINISTRY OF FOOD, AGRICULTURE, COMMUNITY DEVELOPMENT AND CO-OPERATION**

##### **2.2.1 Sample survey for estimation of annual production of livestock products and study of their management practices**

Details of the survey have been reported in Part I of this Report. During 1966-67, the surveys are likely to be initiated in Andhra Pradesh, Punjab, West Bengal, Orissa and Eastern districts of Madhya Pradesh. The surveys would be so planned as to cover all livestock products viz., milk, wool, eggs, meat, hides and skins and dung in a single survey. The information would be collected from a large sample on one livestock product in all the States for estimation of production and study of livestock practices which in regard to other products, information on production alone would be collected from a smaller sample. This programme when implemented on all India basis during subsequent years would provide Statewise estimates of production and livestock practices in respect of one livestock product in each year and all India estimates for other livestock products every year.

##### **2.2.2 Study of feeding and rearing practices of sheep and yield of wool and mutton in Mysore, Maharashtra and Rajasthan**

The surveys in Maharashtra and Mysore States are proposed to be started from December, 1966 on the lines of the similar surveys for Gujarat State reported in Part I of this Report. It is also proposed to conduct a repeat survey in Rajasthan from November, 1966 (1) to assess the changes in wool production per sheep and annual wool production (2) to study changes in sheep rearing practices as a result of development programmes and (3) to estimate the mutton production. The previous survey in this region was carried out during 1960-61.

#### **GOVERNMENT OF GUJARAT**

##### **2.2.3 Estimation of production of eggs and study of feeding and management practices of poultry in Surat District**

The survey would be conducted during January, 1967 to December, 1967 by the Directorate of Animal Husbandry, Gujarat State in consultation with State Bureau of Economics and Statistics. The purpose of the survey would be to obtain district level estimates of egg production. The survey will also serve as a benchmark survey for the Intensive Poultry Development Project implemented in Surat and Bulsar districts. Whole of Surat district would be covered by the survey. Information regarding egg production and feeding and management practices of poultry would be collected through interview with the respondent.

### **2.4 Others**

#### **GOVERNMENT OF GUJARAT**

##### **2.4.1 The benchmark and assessment survey for Intensive Cattle Development Project (I.C.D.P.), Ahmedabad Region**

The survey would be conducted by the Directorate of Animal Husbandry, Gujarat in consultation with the State Bureau of Economics and Statistics to study the present level of milk production and the feeding and management practices for bovines. The

survey would commence in January, 1967 and would be completed in December, 1967. It is likely to be repeated after some years. The survey would be carried out in area covered by the Project. An area consisting nearly 40,000 adult female bovine population would be covered. Information will be collected on (i) seasonwise milk production per animal both for cows and buffaloes (ii) feeding practices (iii) veterinary aid availed (iv) births and deaths and (v) utilisation of milk etc.

## **5. Irrigation**

### **5.1 Assessment surveys**

#### **RESERVE BANK OF INDIA**

##### **5.1.1 Bhadra Irrigation Project in Mysore—a quick assessment of benefits to cultivators**

Details of this survey are similar to the Tungabhadra irrigation project survey reported in Part I of this Report. The area in Shimoga and Chitradrug districts of the Mysore State would be covered. Data relating to agricultural year 1964-65 would be collected during a period of 10 days in April, 1966.

##### **5.1.2 Kosi Irrigation Project in Bihar—a quick assessment of benefits to cultivators**

Details of this survey are similar to the Tungabhadra irrigation project survey reported in Part I of this Report. The area in Purnea and Saharsa districts of the Bihar State coming under the project would be covered. Data relating to agricultural year 1965-66 would be collected during a period of 15 days in April, 1966.

#### **GOVERNMENT OF GUJARAT**

##### **5.1.3 Post irrigation survey of Kakrapara Irrigation Project**

The survey would be conducted by the Bureau of Economics and Statistics, Government of Gujarat, Ahmedabad with the objective of comparing the results with the findings of the bench-mark survey conducted by the Bureau of Economics and Statistics of old Bombay State during 1953-54 and 1954-55 and thereby to study the changes in agriculture sector due to canal irrigation. The report of findings of the bench-mark survey was published in the Bulletin of Economics and Statistics (Vol. II, No. 4), January, 1959. The field work would be started in May, 1966 and is expected to be completed by September, 1967. The survey would cover 79 villages of Bardoli, Olpad, Chorasi, Mandvi, Mahava, Mangrol, Palsana, Kamrer, Nawsari, Gandevi, Chikhli and Bulsar talukas in Surat and Bulsar districts within the command area of Kakrapara Project. The information would be collected through two schedules *viz.*, (a) village schedule in two parts—(i) village statistics (ii) village panchayat's opinion regarding canal irrigation and (b) household schedule being in two parts (i) statistical data regarding the selected household (ii) respondents' opinion regarding canal irrigation. The items covered under the village schedule would be land tenure and utilisation, area sanctioned for irrigation from Kakrapara Canal—seasonwise and cropwise, land holding, land development, crop pattern, area irrigated cropwise and sourcewise, livestock and agricultural implements, cooperative societies, harvest prices, rates of wages paid to agricultural labour seasonwise, public offices and community facilities while in the household schedule, the items of information would be land tenure and utilisation, irrigation potential, area sanctioned from Kakrapara canal for irrigation—seasonwise and cropwise, crop pattern, farm output and expenditure for the production of the crops, capital investment in land, livestock and agricultural implements, annual income from other sources, indebtedness of household, demographic particulars of household, economic status and occupation of the members of the family, employment status and household consumption and expenditure. In the village schedule, Part II and household schedule, Part II, the attitude of village panchayat and selected households towards and use of canal irrigation would be obtained. The reference period of the survey would be July, 1965 to June, 1967. The data would be collected by interviewing the head of the household.

## **7. Industry and minerals**

### **7.3 Small scale industries**

#### **GOVERNMENT OF MADHYA PRADESH**

##### **7.3.1 Type study on small scale industries**

The survey would be conducted by the Directorate of Economics and Statistics, Madhya Pradesh with the object of collecting the basic data regarding capital, employment and output with a detailed breakdown in their structural components and interpret them in their relationships so as to throw light on the productivity aspect of small

scale industries in the State besides collecting other information on the general nature, type and problems of small scale industries, as also to obtain picture of how and where they compete with large scale units and their relative advantages. The field work of the survey would be carried out at 12 centres *viz.*, Raipur, Bilaspur, Durg, Rewa, Satna, Jabalpur, Sagar, Bhopal, Gwalior, Indore, Ujjain and Ratlam during April-June, 1966. Information relating to year 1964-65 would be collected by personal visit of the investigators through seven schedule. In schedules I, general particulars of the sample unit, motive power, working period, building (type), source of income and accounting year of the factory would be collected. In schedules II, III, IV, V, VI & VII, data regarding the capital structure, inputs of materials and services, production, State aid, employment and wages and marketing and finance would be collected respectively.

### **GOVERNMENT OF MAHARASHTRA**

#### **7.3.2 Survey of cottage and small scale industries**

The organisation, purpose, coverage and sampling design of the survey would be the same as given in Part I of this Report for the survey under the same head. The survey would be started on 1st December, 1966 and proposed to be continued till 30th November, 1967.

### **8. Trade and commerce**

#### **8.1. Distributive trade**

### **GOVERNMENT OF MADRAS**

#### **8.1.1 Scheme for study on distributive trade**

The scheme would be initiated by the Director of Statistics, Madras, in August, 1966 to study the pattern of distribution of trade, goods dealt with, types of transactions, capital investment, employment, wages and salaries, turnover, operational costs and profit etc. The scheme would continue probably in future years also. The coverage would be in respect of dealers in the State registered under the Madras General Sales Tax Act.

### **9. Transport and communication**

### **GOVERNMENT OF JAMMU AND KASHMIR**

#### **9.3 Tourist traffic**

##### **9.3.1 Tourist trade survey**

The survey would be conducted by the Director of Tourism, Jammu and Kashmir State, Srinagar with a view to (a) study the part played by the tourist industry in raising the economic structure of the State (b) ascertain the location of the tourists resorts that are being visited by the largest number of tourists and the reason of their visit, (c) assess the difficulties and inconveniences the tourists face on their tour to Kashmir and (d) to record their impressions and suggestions for rectification and development of tourism in the State on scientific lines. The survey would commence in May, 1966 and would be completed by October, 1966. Other details of the survey would remain the same as reported for the survey under the same head in Part I of this Report.

### **10. Housing and construction**

### **MINISTRY OF WORKS, HOUSING AND SUPPLY**

#### **10.0.1 Survey of house building activity in Delhi and New Delhi**

The project would be taken up by the National Council of Applied Economic Research as a study connected with the one reported under the title "Statewise study of tax-incidence on housing", at an additional cost of about Rs. 30,000 by adding some more items of information in the questionnaire for that study reported in Part I of this Report. The present study would be restricted to Delhi and New Delhi and would confine itself in determining the level and intensity of house-building activity, the number of dwellings and rooms completed per 1,000 inhabitants, useful floor area and living floor area per 1,000 inhabitants, dwellings completed by type of investor, important building materials consumed, amount spent on dwelling construction and employment in them per 1,000 inhabitants etc.

#### **10.0.2 A socio-economic study for estimating the overall financial benefits as a result of suitable housing to the workmen**

The Tata Institute of Social sciences, Bombay, would conduct the survey under the sponsorship of the National Buildings Organisation. The object of the survey would



be to estimate the financial effects of housing on income and expenditures pattern of workmen and to assess the non-financial benefits thereon. It would cover the industrial workers in Greater Bombay whose earnings are less than Rs. 350- per month and who moved into the houses provided by the employers on the Maharashtra Housing Board during the period 1959 to 1964. Information would be collected on the particulars of housing, financial position and effects and non-financial benefits etc. arising out of the provisions of housing to the workers. Primary data would be collected by interview and secondary data by access to administrative records.

#### **10.0.3 Study of inventories of land of the operative builders especially in urban agglomerations**

The Institute of Economic Growth, Delhi, would conduct the survey under the sponsorship of the National Buildings Organisation with a view to collecting information as to whether inventories of land were important factors in influencing the land prices as also to study as to how the operative builders were induced to wither away from the main objective of locating land sites and developing them, thereby turning to make unduly huge profits, taking advantage of the poor supply and demand position in this field especially in urban agglomerations.

#### **10.0.4 Study of return of investment in housing**

Sponsored by the National Buildings organisation, the Department of Economics, Calcutta University, would undertake the survey with a view to examining the various aspects of investments in housing, especially the returns from such investment in comparison to investments in other sectors of the economy. The study would cover the buildings whose constructions were completed during 1962-64 in the Calcutta Corporation, covering (i) residential buildings, owned and occupied by middle-class people and (ii) tenanted residential buildings.

#### **10.0.5 Study on the production of housing as a result of 'control' and de-control' of rent in the metropolitan towns**

Similar survey on this subject was undertaken in municipal area of Hyderabad, by Indian Institute of Economics, Hyderabad with a grant-in-aid from National Buildings organisation, Ministry of Works, Housing and Supply. Details of the survey have already been reported on page 65 of the 14th Annual Report. After the study of the draft report of the Hyderabad project, it was felt that a survey in a medium sized city like Hyderabad was not sufficient for purposes of policy formulation. It was proposed to conduct more studies of this kind in metropolitan cities on Bombay, Calcutta, Delhi and Madras. These studies would be undertaken by Indian Institute of Public Administration, New Delhi; Tata Institute of Social Sciences, Bombay; Indian Institute of Management, Calcutta and Department of Economics, Madras University, Madras in the respective cities. In order to ensure the comparability of data to be collected in different cities, it is proposed to have common concepts, definitions and the schedule at these places. A technical note giving the sampling design, methodology, etc., has been prepared in the National Buildings Organisation in this context.

### **12. Health**

#### **MINISTRY OF HEALTH AND FAMILY PLANNING; INDIAN COUNCIL OF MEDICAL RESEARCH**

##### **12.0.1 Epidemiological studies in dental health in South India**

The survey is sponsored by Indian Council of Medical Research, New Delhi and would be conducted during 1966-68 by the Dental Wing, Madras Medical College to obtain epidemiological information about dental diseases. The survey would cover urban and rural areas of Salem, South Arcot and Tanjore districts. The data would be collected through personal investigation with voluntary cooperation, reference period being 1966-68.

### **13. Demography and family planning**

#### **13.1 Demography**

##### **DEPARTMENT OF STATISTICS, DIRECTORATE OF NATIONAL SAMPLE SURVEY**

##### **13.1.1 Population, birth and death survey in the N.S.S. 21st round (schedule 12)**

Details regarding the agency responsible for the conduct of the survey, purpose, States participating, geographical coverage, frame, sampling design etc. would be the same as reported for the survey under the same subject head in Part I of this Report,

The survey would start in the third week of July, 1966 and is scheduled to be completed by the end of June, 1967. Information would be collected on some broad characteristics, demographic particulars of members and number of births and deaths in the past two years.

## **MINISTRY OF HOME AFFAIRS**

### **OFFICE OF REGISTRAR GENERAL, INDIA**

#### **13.1.2 Sample census of population, births and deaths, 1966**

13.1.2.1 The scheme of sample census has been sponsored by the Registrar General, India, and would be conducted in each State by the State Statistical Bureau in close collaboration with office of the Registrar General. The purpose of the survey would be to obtain reliable estimates of population for each State and all India by rural urban break up and also to obtain estimates of birth, death and infant mortality rates.

13.1.2.2 The survey would be conducted for about 15 days around Dussehra festival. The institutional houses such as jails, hospitals, messes, hotels, hostels, orphanages, vagrant houses etc. falling in the sampled areas would be covered by the survey. Information relating to normal residents of the household and their demographical composition like age, sex and marital status and differential characteristics like education, religion and also data on population, births and deaths would be collected. Provision would also be made to list out visitor present on the survey day and to record migrants by rural urban and district/State of origin. With regard to birth and deaths, items like whether registered, place of registration, place of occurrence etc. would also be collected so as to facilitate matching with registration records. This matching would be taken up in a sub-sample at a later stage, if resources permit. The data on vital events would be collected for a reference period of one year reckoned from a standard festival day in 1965 *i.e.*, Diwali which fell on 22nd October, 1965.

## **GOVERNMENT OF RAJASTHAN**

#### **13.1.3 One per cent sample census, 1966**

The survey sponsored by the Registrar General, India would be conducted from first week of January, 1967 to fourth week of January, 1967 by the Directorate of Economics and Statistics, Rajasthan with a view to obtain reliable and accurate annual estimates of population for the State with rural—urban break up and also to obtain estimates of birth, death and infant mortality rates. The entire State would be covered except hospitals, jails, nursing homes. The period of reference would be 14th January, 1966 to 14th January 1967. The number of persons in a household present on the survey day would be divided into three categories (i) normal residents (ii) normal residents but temporarily absent (iii) visitors to the household. Birth and death occurred during the reference period to the members in the three different categories as stated above would be collected by interviewing respondents through personal investigation with voluntary co-operation.

## **GOVERNMENT OF MADRAS**

#### **13.1.4 Annual sample census of population, 1966**

The survey would be undertaken by Department of Statistics, Madras at the instance of Registrar General, India, New Delhi, with a view to obtain reliable estimates of population for the State and for the districts by rural—urban break up and birth, death and infant mortality rates during the intercensal years. The field work would be carried out in the period from 16th to 30th October, 1966 in 230 villages and 135 urban blocks each of 750-1000 population according to 1961 census. Primary data such as normal residents, visitors by sex, their age, religion, marital status, educational standard, migrants, births and deaths were collected by interviewing respondents through personal investigation with voluntary co-operation.

## **GOVERNMENT OF MYSORE**

#### **13.1.5 Sample registration scheme, 1966-67**

The survey which would be conducted by the Department of Statistics, Mysore during the year starting from 1-6-66 and likely to continue during the Fourth Plan period, has been sponsored by the Registrar General, India with a view to estimate the correct rate of births and deaths in the State. The entire State would be covered by the scheme but the survey in urban units (towns/cities) would be taken up on a pilot basis. Listing of houses would be done and the information would be collected by interview method

on the initial population of the selected villages and particulars in respect of each member on items relating to sex, age, educational standard and conjugal condition would be recorded in the household schedule. Also, all events of births and deaths as when those occurred to the normal resident of the selected village during one year period would be recorded by part time Enumerators. The reference period would be one year from 1st June, 1966 in rural and from 1st August, 1966 in urban except in two units. A pilot survey to estimate birth and death rates for rural and urban separately, to list the suitability of concepts and definitions and to determine the agency most suitable for field work, was conducted in 20 rural units in 1964 and in 5 urban units in 1965.

### **13.1.6 Sample survey of population, births and deaths, 1966**

The survey which is one time in nature is sponsored by the Registrar General, India and would be conducted by the Department of Statistics, Government of Mysore during 1st November, 1966 to 15th November, 1966 with the purpose of obtaining estimates of population growth rate and birth and death rates for the intercensal year 1966. The results would be used mainly for plan schemes like family planning etc. The survey would cover the entire State of Mysore including hotel residents and persons living in hostels, institutions etc. Information would be collected about the number of normal residents of the household and number of visitors on the date of survey and number of events of births and deaths and migration occurred to normal residents of the household during the reference period one year from Deepavali 1965 to Deepavali 1966. The data would be collected by interviewing the household members.

## **GOVERNMENT OF ORISSA**

### **13.1.7 Pilot survey for sample registration of births and deaths**

A pilot survey would be conducted by the Directorate of Health, Orissa during August, 1966 to February, 1967 as a prelude to a full-fledged survey for obtaining reliable estimates of annual birth and death rates at State and National levels and for studying fertility and mortality patterns. The pilot survey would cover 20 units both from urban and rural areas, out of 200 units envisaged for the longer survey. The technical details of the survey would be as finalised by the Registrar General of India under whose technical direction the survey would be carried out.

## **GOVERNMENT OF WEST BENGAL**

### **13.1.8 Sample registration scheme (pilot) in rural areas**

The pilot scheme has been sponsored by the Registrar General, Government of India on the basis of sharing the cost in the ratio of 3:1 by the Centre and State Government. The purpose of the scheme would be to obtain reliable estimate of birth and death rates on State and National levels and to study the practical problem in organising the scheme on full scale basis. Bureau of Health Intelligency, Directorate of Health Services, West Bengal would be responsible for field work, data processing and report writing. The scheme would be started on 1st July, 1966 which would be followed by full scale scheme.

## **HIMACHAL PRADESH ADMINISTRATION**

### **13.1.9 Sample census, 1966**

The survey would be conducted by Directorate of Economics and Statistics, Himachal Pradesh in consultation with the Registrar General, India with a view to obtain reliable estimates of population for each State and all-India with break up for ward and urban areas and estimates of birth, death and infant mortality rates. The field work would be carried out during November-December, 1966. The survey would be carried out in 100 sample villages in rural area covering one per cent of population and half of the census enumerator's sub-block in the urban area accounting for 50 per cent of urban population. Information collected would relate to sex, age, marital status and education of usual residents of the households as on the date of survey and also births, deaths and migration occurring in the household during a year.

## **14. Labour and employment**

### **14.1 Labour Force**

## **DEPARTMENT OF STATISTICS, DIRECTORATE OF NATIONAL SAMPLE SURVEY**

### **14.1.1 Urban labour force survey in the NSS 21st round (Schedule 10)**

Details regarding the responsibility for the conduct of the survey, purpose, States participating, geographical coverage etc. would be the same as reported under the same head in Part I of this Report. The survey would start in the third week of July, 1966

and is scheduled to be completed by the end of June, 1967. Information on the nature of employment, extent of employment, labour force participation and earnings would be collected together with some demographic and economic activity particulars of household members. The reference period would be the week preceding the date of enquiry.

#### **14.2 Employment**

### **GOVERNMENT OF ASSAM**

#### **14.2.1 Sample survey on tea-garden unemployment, 1966**

The survey would be undertaken in peak season from July to September, 1966 and in lean season from December, 1966 to January, 1967 with a view to study the current unemployment situation in tea-gardens of the State. The survey would cover all the tea gardens of the Brahmaputra Valley and the Cachar district. Employment and unemployment particulars of household members aged 12 years and above on two different reference periods *viz.* (i) on the date preceding the date of enquiry (ii) through the whole week preceding the date of enquiry, would be collected. Employment particulars would include household members with job in the garden, self employed or with the job outside the garden.

#### **15. Prices and wages**

### **DEPARTMENT OF STATISTICS, DIRECTORATE OF NATIONAL SAMPLE SURVEY**

#### **15.0.1 Monthly retail prices of selected commodities in rural areas in the N.S.S. 21st round (Schedule 3.01)**

Details regarding agency responsible for the conduct of the survey, purpose, States participating, geographical coverage, frame, design, interpenetrating network of sub-samples etc. for the survey would remain the same as reported in Part I of this Report under Land Utilisation Survey. The survey would start in the third week of July, 1966 and is scheduled to be completed by the end of June, 1967. Information regarding rural retail prices of selected commodities which includes items of food, fuel and lighting, clothing and footwear, medicines, stationery goods and personal effects, furniture, utensils and miscellaneous services would be collected from the same set of villages (known as price villages) selected for this enquiry during the last few rounds. The enquiry would be taken in the first week of every month.

### **GOVERNMENT OF GUJARAT**

#### **15.0.2 Preliminary minimum wage survey in respect of employment in soap industry**

The survey would be conducted by the Commissioner of Labour, Gujarat, Ahmedabad under the technical guidance of the Bureau of Economics and Statistics, Gujarat, Ahmedabad, to study the social and economic conditions of workers employed in soap industry. The field work would commence in the first week of May, 1966 and would be completed by the end of May, 1966 covering all the establishments registered under the Factories Act, 1948 as well as those not covered by the Act. The information regarding identification particulars, employment particulars, wage payment, hours of work, holidays and entitlements, bonus and cash gifts, working conditions and welfare facilities, finances, current rates of wages and employment particulars, housing facility and social securities would be collected from the records of the employers with voluntary cooperation. The reference period would vary from block to block and in some cases from item to item. A pilot survey was conducted in few centres to test and improve upon the draft schedules, instructions to Investigators, code list etc.

#### **16. Levels of living and family budget enquiry**

### **MINISTRY OF LABOUR, EMPLOYMENT AND REHABILITATION**

#### **16.0.1 Family budget enquiry of railway porters and vendors**

The survey which is one time in nature was sponsored by Ministry of Labour, Employment and Rehabilitation, Government of India and would be conducted during October, 1966 to January, 1967 by the Labour Bureau, Simla for making an assessment of the general pattern of income and expenditure and levels of living of the railway porters and vendors. The survey would cover 8 selected centres *viz.*, Bombay, Calcutta, Lucknow, Delhi, Ahmedabad, Bangalore, Madras and Jaipur. The information regarding economic and demographic particulars, receipt, expenditure, assets and other durable goods, indebtedness, housing conditions and working conditions would be collected

by interviewing respondents. A pilot survey which would last for 10 days only would be conducted in September, 1966 with a view to test the schedule and instructions and to have a first hand knowledge of the problem.

### **17. Income, expenditure, saving, investment and indebtedness**

#### **DEPARTMENT OF STATISTICS, DIRECTORATE OF NATIONAL SAMPLE SURVEY**

##### **17.0.1 Integrated household survey in the N.S.S. 21st round (Schedule 16 and abridged schedule 17)**

Details regarding the responsibility for the conduct of the survey, purpose, States participating, geographical coverage, design, interpenetrating network of sub-samples and frame for the survey would be the same as reported in Part I of this Annual Report under same subject. The survey would start in the third week of July, 1966 and is scheduled to be completed by the end of June, 1967. Information would be collected on consumer expenditure, housing condition, population, births and deaths, demographic particulars, employment and occupations, household enterprises, capital formation, savings and debt etc., with a view to obtaining a complete and comprehensive picture of the socio-economic activities of the household as a whole in both rural and urban sectors. Abridged version (Schedule 17) would also be canvassed for comparing the results obtained from it with those of the detailed schedule 16. Along with this condensed schedule, data on land use would also be collected in one-sixth of sample villages through schedule 17 supplementary.

### **18. Miscellaneous**

#### **INDIAN INSTITUTE OF PUBLIC ADMINISTRATION**

##### **18.0.1 Citizen's grievances in development administration**

The survey which is sponsored by the Administrative Reforms Commission would be conducted during July, 1966 to November, 1966 by the Indian Institute of Public Administration, New Delhi with the purpose to determine at the village level the extent of support or alienation of the people toward administration from the overall point of view of public grievances. The survey would be conducted in the districts of Meerut (U.P.) Karnal (Punjab) and Mysore (Mysore). Functional heads of households in villages and officials at village, block, tehsil and district levels, concerned with programmes concerning seeds, fertilizers, irrigation, public health and public complaints, would be interviewed.

#### **TATA INSTITUTE OF SOCIAL SCIENCES**

##### **18.0.2 Worker's image of his trade union**

This survey which is one time in nature has been sponsored by Ministry of Labour, Employment and Rehabilitation and would be conducted during April, 1966 to March, 1967 by the Labour Research Centre, Department of Social Research, Tata Institute of Social Sciences, Bombay. The objectives of the survey are (1) to find out what information the member of the trade union possesses regarding the activities and achievements of his union (2) to find out his expectations as a member and to what extent he is satisfied (3) to know the image of union that each member possesses and (4) to study how and why the attitudes of committee members, ordinary members and non-members vary with reference to trade unions. The data are expected to help in understanding the working of union and to suggest ways of improving the structure and function of union. The study would be limited to some unions in the three major industries viz. (a) textiles (b) engineering and (c) pharmaceuticals and chemicals in Bombay. The items of information included in the survey would relate to personal data, service data, union member relationship, role of the union participation in union meetings, union strikes, union leadership, office-bearers and non-members. The information on these items would be collected from the records of (a) Labour Commissioner's Office, Government of Maharashtra; (b) Union Offices of Indian National Trade Union Congress, All India Trade Union Congress and Hind Mazdoor Sabha by personal investigation. A pilot survey of about a months duration was undertaken wherein a pretest schedule was served to 15 respondents. On the basis of the results of the pilot survey, a final schedule was prepared.

##### **18.0.3 Social problems of urban growth**

18.0.3.1 The survey sponsored by the Ministry of Labour, Employment and Rehabilitation, Government of India, would be conducted by the Labour Research Centre, Tata Institute of Social Sciences, Bombay with a view to study (i) the urban characteristics of sex ratio, age structure, family composition, etc. (ii) the extent and nature of the

social problems of industrial workers impact on family life, adjustment to community life, care of children and utilisation of leisure time and (iii) to suggest, on the basis of the study, areas for further research on the social problems of industrial workers. The one time survey would be conducted during May, 1966 to April, 1967. The study would be limited to two areas in Greater Bombay, namely, Bhandup—a newly developing suburb and Worli—an old industrial area of Bombay. The main study would be conducted in Bhandup while Worli would be taken only for purpose of comparison from design.

18.0.3.2 Primary data would be collected from respondents and secondary data regarding educational institutions, hospitals, clinics, recreational centres located in the area of the study, would be collected from the records available at the municipal office, welfare centres etc. through personal investigation.

18.0.3.3 A pilot study would be undertaken in July, 1966 to know (a) whether the required information would be available (b) the extent to which the questions are answerable and (c) whether the questions in the schedule have a proper sequence from the point of view of interviewing etc. For this purpose, 50 persons would be interviewed and on the basis of the available data and the experience of the investigators, the schedule would be modified.

### GOVERNMENT OF ASSAM

#### 18.0.4 Socio-economic survey (hills) in the United Khasi and Jaintia Hills

Details of the survey are similar to Socio-economic survey (Hills) in the United Mikir and North Cachar Hills reported in Part I of this Report. The survey would cover 40 villages scattered throughout the district.

### GOVERNMENT OF GUJARAT

#### 18.0.5 Techno-economic survey

At the instance of Planning Commission, Government of India, the Bureau of Economics and Statistics, Government of Gujarat would conduct this survey during the period from 1st April, 1966 to 30th September, 1966 to assess existing situation in respect of agriculture, animal husbandry, cooperation, rural industries, communications, basic amenities such as drinking water supply, primary education, health and sanitation facilities, welfare of backward class, fisheries and other related information to assess the socio-economic structure of the district in order to formulate integrated district plans. Jamnagar and Broach Districts would be covered by the survey. For collecting information on above items, the following schedules would be canvassed.

- (1) Village Schedule I— for household listing
- (2) Village Schedule II—for general information of village.
- (3) Family Schedule I for collecting information regarding selected agricultural family to assess the agricultural practices adopted by the cultivators as well as to study the monetary conditions of persons engaged in agriculture.
- (4) Family Schedule II—for information regarding selected households for household and small scale industries.
- (5) Family Schedule III—for information regarding selected household for fishing industries.
- (6) Attitude Schedule—for assessing overall opinion of the village people regarding present development activities. A pilot survey was conducted to assess the response of the people and feasibility of schedules to be canvassed and the type of information available. This pilot survey helped in formulating schedules and preparing instructions for the main survey. The field work was completed in about fifteen days.

### GOVERNMENT OF KERALA

#### 18.0.6 Survey on Kerala Chitties Bill, 1964—Fixation of percentage of commission allowable to the foreman of the chitty.

The survey 'one-time' in nature, would be conducted by the Bureau of Economics and Statistics, Government of Kerala to assess the rate of commission allowable to the foreman of the chitties. As the State has no unified legislation on chitties and kuries after the reorganisation of the State in 1956, the necessity of introducing the Kerala Chitties Bill, 1964 was felt. This bill is now under preparation by the Government. The field work of the survey would be conducted during July, August and September, 1966. Six districts—Trivandrum, Quilon, Alleppey, Kottayam, Ernakulam and Trichur would be covered. Detailed information would be collected on the income and

expenditure of the chit funds which comprises of chit registration expenses, audit charges, rent interest, wages and salaries to employees, legal charges etc. by interviewing respondents personally. The reference period for the collection of data on income and expenditure would be the calendar year 1965.

### **GOVERNMENT OF MAHARASHTRA**

#### **18.0.7 Utilization of cooperative Godowns**

The one time survey would be conducted by the Office of the Registrar, Co-operative Societies, Maharashtra State, Poona with a view to assess the extent to which the godowns are utilised in details by members, traders etc. and to study the economics of the godowns and to take suitable actions as would be required after obtaining the results. The survey would cover the whole State and would be repeated if found necessary. Field work would be carried out in the first two weeks of December, 1966. The schedules duly scrutinised would be submitted to the Office of the Registrar, Cooperative Societies, Poona, in middle of January, 1967 by the Office of the Divisional Joint Registrar. Particulars of godowns *viz.* per day quantity stored by members of society, traders etc. for every month, highest and lowest quantity stored in every quarter of the year, rates charged for storage, expenditure on godowns, income by way of rent from members, traders, society itself would be collected for years ending 30th June, 1964, 30th June, 1965 and 30th June, 1966 from establishment records by personal investigation by field staff and with executive orders.

### **GOVERNMENT OF UTTAR PRADESH**

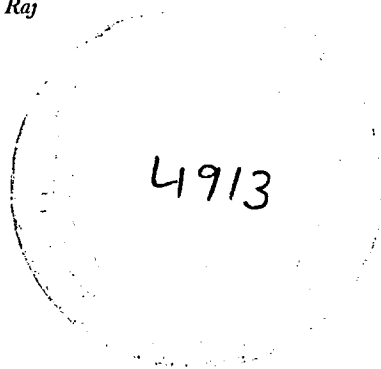
#### **18.0.8 Survey to assess the average rent paid by eligible industrial workers in several towns where houses under subsidised industrial housing scheme exist**

The survey would be undertaken by the Labour Commissioner, Uttar Pradesh, Kanpur with a view to assess the average rent paid by eligible industrial workers in several towns of the State where houses under subsidized industrial housing scheme exist. The field operation would be started in April, 1966 in all registered units situated in the town. Information would be collected on (i) total number of eligible industrial workers (ii) average monthly wages of industrial workers (iii) number of eligible industrial workers housed and average rent paid by them for (a) houses under subsidized industrial housing scheme, (b) quarters built by employers without government assistance and (c) private accommodation. The data would be collected by personal interview.

## APPENDIX

List showing subjects under which sample surveys have been classified for the purpose of presentation in the Report.

1. *Agriculture*
  - 1.1 Land utilisation
  - 1.2 Crop area, yield and production including those of high yielding varieties.
  - 1.3 Improve agricultural practices and their effects.
  - 1.4 Cost of cultivation, farm management and farm practices.
  - 1.5 Land holdings and land reforms.
  - 1.6 Other agro-economic surveys
2. *Animal Husbandry*
  - 2.1 Livestock and poultry population
  - 2.2 Livestock products and by-products
  - 2.3 Cost of production
  - 2.4 Others
3. *Forestry*
4. *Fishery*
  - 4.1 Inland fishery
  - 4.2 Marine fishery
5. *Irrigation*
  - 5.1 Assessment surveys
  - 5.2 Cost-benefit studies
  - 5.3 Others
6. *Community Development, Co-operation and Panchayati Raj*
7. *Industry and Minerals*
  - 7.1 Mining and fuel
  - 7.2 Large scale manufacturing
  - 7.3 Small scale industries
  - 7.4 Village industries and handicrafts
8. *Trade and Commerce*
  - 8.1 Distributive trade
  - 8.2 International trade
  - 8.3 Others
9. *Transport and Communication*
  - 9.1 Passenger traffic
  - 9.2 Goods traffic
  - 9.3 Tourist traffic
  - 9.4 Communication
  - 9.5 Others
10. *Housing and Construction*
11. *Education*
12. *Health*
13. *Demography and Family Planning*
  - 13.1 Demography
  - 13.2 Family Planning
14. *Labour and Employment*
  - 14.1 Labour force
  - 14.2 Employment
15. *Prices and Wages*
16. *Levels of Living and Family Budget Enquiry*
17. *Income, Expenditure, Savings Investment and Indebtedness*
18. *Miscellaneous*



NIEPA - DC



04913