NATIONAL NUTRITION POLICY

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I. Introduction

Widespread poverty resulting in chronic and persistent hunger is the single biggest scourge of the developing world today. The physical expression of this continuously re-enacted tragedy is the condition of under-nutrition which manifests itself among large sections of the poor, particularly amongst the women and children. Under nutrition is a condition resulting from inadequate intake of food or more essential nutrient(s) resulting in deterioration of physical growth and health. The inadequacy is relative to the food & nutrients needed to maintain good health, provide for growth and allow a choice of physical activity levels, including work levels, that are socially necessary. This condition of under-nutrition, therefore, reduces work capacity and productivity amongst adults and enhances mortality and morbidity amongst children. Such reduced productivity translates into reduced earning capacity, leading to further poverty, and the vicious cycle goes on (figure 1 below).

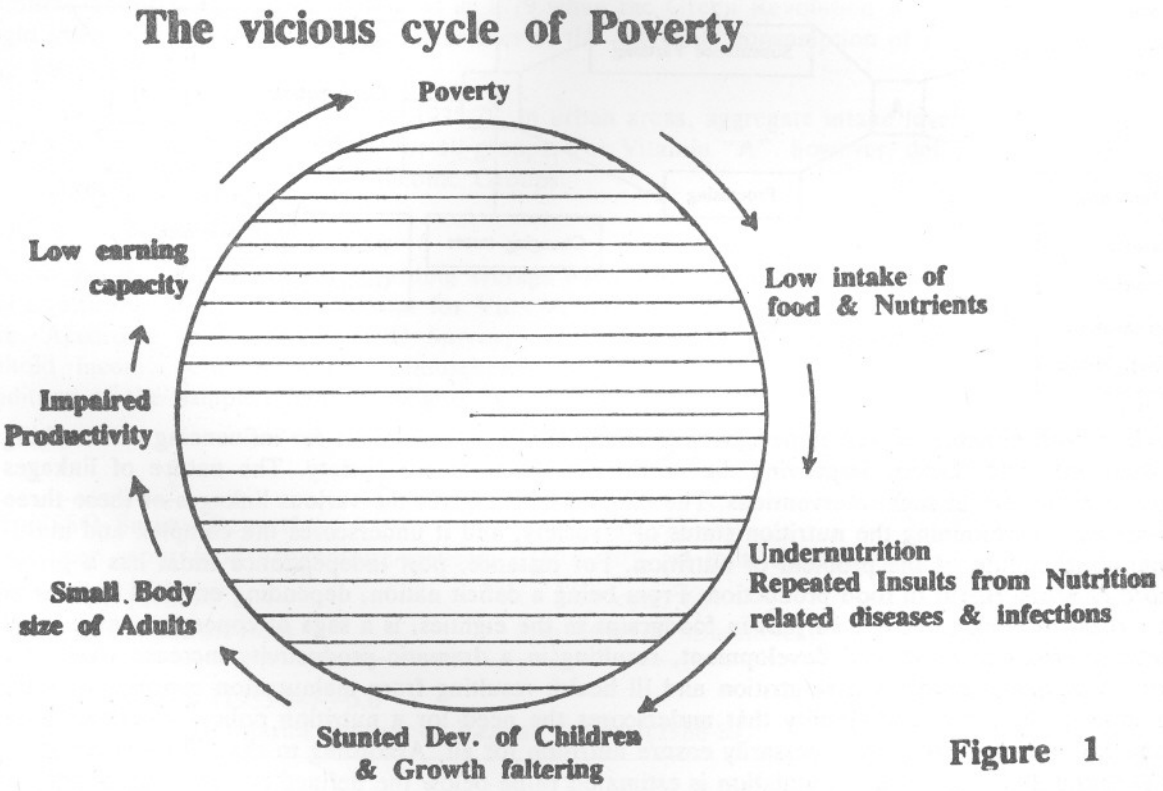

Figure 1

The nutritional status of a population is therefore critical to the development and well being of a nation.

II. Need for a Nutrition Policy within the Development Context:

The need for a National Nutrition Policy is implicit in both the paramountcy of nutrition in development as well as in the complexity of the problem. This general problem of under-nutrition should be seen as a part of a larger set of processes that produces and consumes agricultural commodities on farms, transforms them into food in the marketing sector and sells the food to customers to satisfy nutritional, aesthetic and social needs. Within this set, there are three sub-sets

of issues, within the broad sectors of agriculture, food and nutrition, with various linkages among them. In fact, the third subset, viz. Nutrition, is the net result of the other two subsets (figure 2 below).

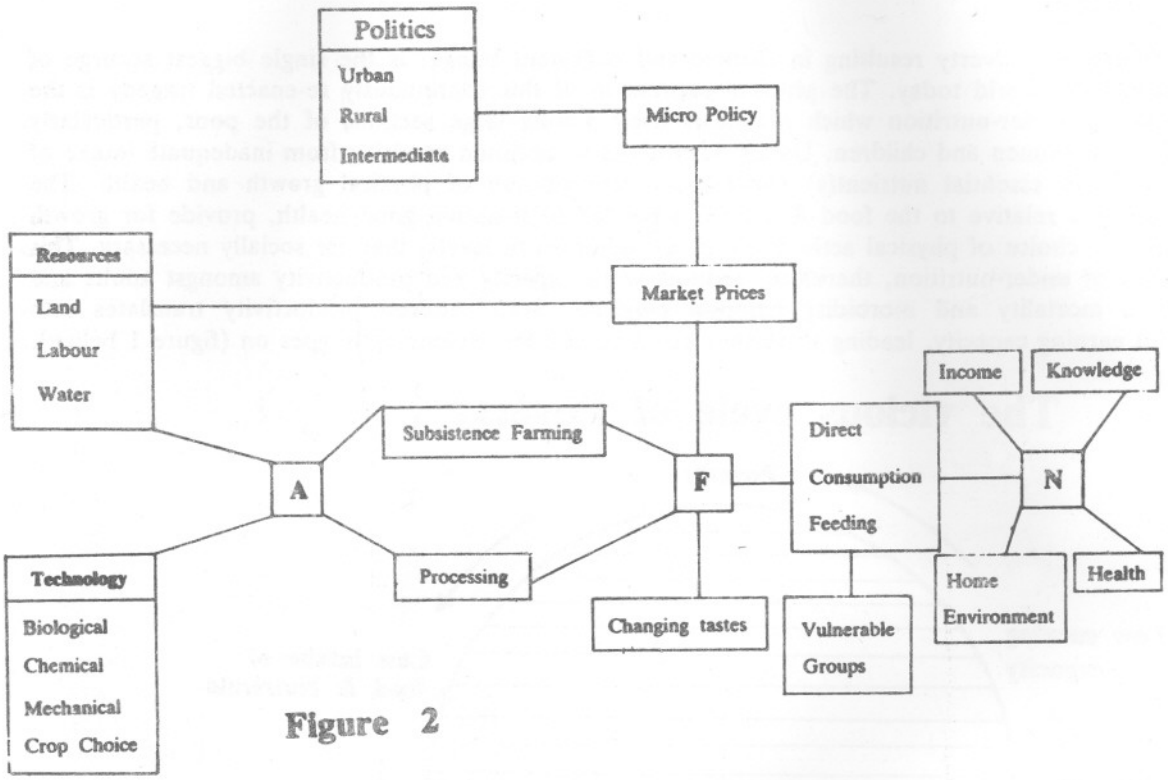

Figure 2

It is both possible as well as necessary to devise policy interventions for influencing the working of these sets and thereby improving the nutritional status of the society. The nature of linkages determine the fate of such interventions. The diagram above gives the various linkages of these three sub-systems, determining the nutrition status of a society, and it underscores the complex and multi-dimensional nature of the problem of nutrition. For instance, post independence India has a proud record of achievement in food production. From being a deficit nation, depending on food imports in the sixties, to having become surplus in foodgrains in the eighties, is a saga of concerted agricultural research, extension work and development, resulting in a dramatic productivity increase. And yet, from all accounts, endemic malnutrition and ill health resulting from malnutrition continue to stalk the country. It is this stark reality that underscores the need for a nutrition policy. Increased food production does not by itself necessarily ensure nutrition for all. According to the 1978—88 round of NSS, nearly 29.2% of India's population is estimated to be below the defined poverty line. While, at the macro-level, this group constitutes the nutritionally at risk population, even within this group the women and the children represent nutritionally the most fragile and vulnerable sections. This is the result of intra-household gender discrimination, which perpetuates the age old inequities. All this emphasise the complexity of the problem and the need for tackling the Nutrition Policy consciously and at several levels simultaneously. Mere economic development, or even the adequacy of food at household levels, are no gurantees for a stable and satisfactory nutritional status. At the same time, however, the overall development strategy of a country is likely to have a pronounced bearing on what nutritional planning can accomplish. Therefore, the task is not merely in terms of formulating a nutrition policy but also in terms of locating and grounding it in the overall development strategy of the country. Nutrition has to be tackled independently, alongwith other development issues. This is not all. The time dimension is also important. A Policy having a mere long term effect, even if beneficial for the nutritionally at risk population, would not suffice. After all, this group has too little

to live on in the long run and has too much to die of in the short run. Therefore, both short as well as long term strategies are called for, comprising both direct as well as indirect interventions.

III. The Nutrition Status of India:

(A) The Aggregate Position Regarding Intake:

(1) **Calorie & Protein Intake:**—There has been a steady increase in aggregate consumption of calories at household level (Table 2). During 1957—79, in urban areas, the aggregate intake levels of protein were above the ICMR recommended level for all income groups except slum dwellers. Even in rural areas, between 1975 and 1989, aggregate consumption levels of all groups taken together were higher than the recommended levels. In fact, time trends show that the average intake of calories at the lowest income group had a definite increasing trend during the seventies (Graph 1).

However, there has not been a commensurate increase in consumption of proteins and protected foods like fats and oils (Table 1). Dietary patterns have also remained largely unchanged despite increase in calorie consumption. The bulk of calorie intake increase is ascribed to the intake of cereals. Some disaggregate data regarding rural areas show the vulnerability of the landless agricultural labour families even as late as in 1979 when the Green Revolution was well under way. Drought years have witnessed marginal decreases in the aggregate consumption of proteins and high energy foods (Table 1).

(2) **Micro-nutrient Intake:**—During 1975-79, in urban areas, aggregate intake levels of Iron were above the ICMR recommended levels for all groups. For Vitamin "A", however, deficiencies existed among all groups except the High Income Groups.

(B) The Dis-aggregated Picture

Although, the NNMB reports regarding average household food consumption levels do not point to any significant intake shortfall except for Vit. "A", these average figures actually mask the real picture. According to a NNMB-NSSO Survey, even at an aggregate level in terms of monthly household income, around 34% of household earn considerably less than the average food expenditure of the sampled families (Figure 3: NNMB 1983-84 below:)

Figure 3. NNMB—NSSO Survey Data

NNMB-NSSO Survey Report*	Rs. 73—80
'Average' per caput food expenditure/mensem	(60%-70% of total Expenditure)
NNMB Survey (1988)**	<Rs. 60
Household per caput/mensem	(in 34% of households)

Source:—*NNMB (1983-84)—p.6
**NNMB Interim Report of Repeat Survey (1988-89)

Thus, even though there has been a drop in the population below poverty line since 1960 (from 56.8% to 29.2% in 1987-88) in terms of numbers, a staggering 250 million people suffer from varying degrees of malnutrition in India. There is, however, no doubt that the impressive gains of the Green Revolution in terms of national food security and effective early warning systems have eradicated famines and situations of extreme hunger and starvation. What still remain are different degrees of chronic and endemic hunger which, in the context of prevailing patterns of intra-household food distribution particularly in rural families, translate into a grave danger for the nutrition status of women and children. This is the crux of the nutrition situation in India.

The major nutrition problems of India can be classified as follows:—

(1) Under-nutrition resulting in:

(a) Protein Energy Malnutrition (PEM);

(b) Iron deficiency;

(c) Iodine deficiency

(d) Vit. "A" deficiency.

(e) Low Birth Weight Children;

(2) Seasonal dimensions of Nutrition;

(3) Natural calamities & the landless.

(4) Market Distortion and Disinformation;

(5) urbanisation.

(6) Special Nutritional Problems of Hill People, Industrial Workers, Migrant Workers, and other special categories;

(7) Problems of Overnutrition, overweight and obesity for a small section of urban population.

For India and much of the Third World nutrition status is characterised by varying degrees of undernutrition for women and children.

(1) (a) **PEM: Protein Energy Malnutrition** is the most widespread form of malnutrition among pre-school children of our country. A majority of them suffer from varying grades of malnutrition. As many as 43.8* per cent children suffer from moderate degrees of PEM and 8.7* per cent suffer from severe extreme forms of malnutrition. The prevalence of malnutrition in children as reported in various survey reports is given in Table 4. Surveys conducted between 1975 and 1990 indicated that the percentage of normal children (for both the sexes pooled) has increased from 5.9% to 9.9% while the moderate form of malnutrition declined from 47.5% to 43.8%. The percentage of severely malnourished children declined from 15% to 8.7% (Table 4). The child population of urban slums had the lowest proportion of children with normal body weight and recorded the highest proportion of severely malnourished children (Table 4). Between 1975 and 1990, increase in the percentage of normal children was appreciable in all the States, except Karnataka and Orissa, where the increase was marginal as shown in Table 4. The percentage of severely malnourished children in the States of Gujarat and Madhya Pradesh failed to show any marked upward trend.

* NNMB, NIN (Table 4)

(b) **Iron Deficiency: Nutritional Anaemia:** Nutritional anaemia among the pre-school children and expectant and nursing mothers is one of the major preventable health problems in India. It has been estimated in various studies particularly those conducted by NIN that roughly 56 per cent pre-school children and almost 50 per cent of the expectant mothers in the third trimester of pregnancy suffer from iron deficiency, which is basically due to inadequate or poor absorption of iron from a predominantly cereal-based diet. Low iron intake, coupled with hookworm infestation and infections, further aggravates the problem. According to NNMB Report of repeat surveys (1989-90), between 1975 and 1990, a marginal decline of 1.8 mg/cu was observed in the mean Iron intake at an over all level. During 1989-90, the intakes were above the RDI levels in only Karnataka, Maharashtra, Gujarat and Madhya Pradesh.

(c) **Iodine Deficiency Disorder**

In India, nearly 40 million persons are estimated to be suffering from goitre and 145 million are living in the known goitre endemic regions. The prevalence of goitre in these endemic regions ranges from 1.5 per cent in Assam (Cachar Distt.) to 68.6% in Mizoram. It is also estimated that 2.2 million children are afflicted with cretinism and about 6.6 million are mildly retarded and suffer from varied degrees of motor handicaps. It is estimated that iodine deficiency also accounts for 90,000 still births and neo-natal deaths every year.

(d) **Vitamin 'A' Deficency:** Nutritional blindness which affects over seven million children in India per year results mainly from the deficiency of Vitamin A, coupled with protein energy malnutrition. In its severest form, it often results in loss of vision and it has been estimated that around 60,000 children become blind every year (Source: NIPCCD : Situational Analysis of Children: March 1989 : p42). Vitamin A deficiency is assessed on the basis of conjuctival xerosis and Bitot's spot. A study of NNMB has indicated that, while there were no manifestations of Vitamin A deficiency in infants, its prevalence increased with age (Table 5). Further, a higher prevalence was seen in school age children in all the income groups. In the urban areas it was the highest among slum children (7.8%), followed by industrial labour (6.3%), the middle income group (4.7%) and the low income group (4.1%). According to NNMB (1990), in none of the States was the average intake comparable to the recommended level.

(e) **Prevalence of Low Birth Weight Children:** The prevalence of low birth weight children is still unacceptably high for India. The nutritional status of infants is closely related to the maternal nutritional status during pregnancy and infancy. In India, 30% of all the infants born are low birth weight babies (Weight less than 2500 gms.) and this pattern is almost constant since 1979. An ICMR study reported that the average birth weight ranged between 2.5 and 2 kg. and the prevalence of low birth weight ranged between 26 and 57 per cent in the urban slums and 35 to 41 per cent in the rural communities. This is a matter of concern since 90 per cent of the deaths occur among infants with birth weight below 2000 gms. Low birth weight was found to be connected with several factors such as age of the mother, maternal weight, weight gain during pregnancy, interpregnancy interval, haemoglobin less than 8 gms. per cent and maternal illiteracy.

Keeping in view the fact that birth weight is the most important determinant of child survival and that the maternal nutritional status is the most decisive factor in preventing low birth weight, the National Health Policy has set a goal of bringing down the incidence of low birth weight by 10 per cent and the present maternal mortality rate from existing rate of 4 per 1000 to 2 per 1000 live births by 2000 A.D. It was found by the NNMB in 1989 that, in the State of Karnataka, consumption of energy by women was the highest ie. 2992k calories, as compared to that of other States viz. West Bengal (2580k calories) and Orissa (2468k Calories). In the rest of the States, the consumption of calories was less than the recommended 2400k calories.

Women face high risks of malnutrition and disease at all the three critical stages, viz. infancy and childhood, adolescence and reproductive phase. Child mortality rate figures show high rates for female children than their male counterparts (Table 6). This is perhaps indicative of social prejudices leading to neglect of female babies.

When girls attain adolescence, they go through a second spurt of growth and their bodies grow much more rapidly to prepare them for child bearing. But, unfortunately, the intake of nutrients during this period is significantly low, the calories and protein gaps ranging from 300-400 calories and 2-22 gms. of protein respectively. Table 7 gives the energy and protein intakes of males and females of different age groups. It is seen that the daily intake of Vit. "A" by all age groups, including child, adolescent and adult population, is very much lower than the recommended level. The intake of iron is also lower than the recommended level in children of all age groups, adolescent girls and adult women.

(2) **Seasonal Dimensions:—** In the duality of the Indian situation, where high-yielding modern agriculture co-exists with rain-fed subsistence farming, there are serious seasonal dimensions of the nutrition question. In large parts of India, the rainy months are the worst months for the rural, landless poor. This is when cultivation, deweeding, ploughing and other works demand maximum energy from them, while food stocks at home dwindle and market prices rise. These are again the months when water-borne diseases are so frequent. This condition goes on aggravating till late October or even

November. These are the months of rural indebtedness and compulsive market involvement of the landless and the small/marginal cultivators. When the first kharif harvest arrives, the situation is no better with widespread distress sales by the small/marginal farmers. All these make nutrition a casualty during this period. Seasonality of employment in subsistence agriculture affects nutrition through the double jeopardy of high energy demand of peak work seasons and fluctuation in household level food availability, which tend to exacerbate differential food intake among men, women and children. As a result, in very poor households, women & children may actually fall below the survival line during lean periods.

(3) **Natural calamities & Nutrition:—** This same group of rural landless poor is most vulnerable to droughts, floods and famines. As has been established in famine periods, worst affected groups are the landless agricultural labourers, artisans, craftsmen and non-agricultural labourers in that order.

(4) **Market Distortion & Disinformation:—** A striking feature which has now been established is that famines are caused not so much by any real decline in food availability as by a sudden erosion of purchasing power of these marginal groups who compulsively depend on the market (landless labourers etc.). In fact lessons from all over the world have proved that it is not any substantial food shortage, but the psychosis of food shortage and the widespread belief regarding crop failure, that triggers off price rise spirals resulting in major malnutrition situations.

(5) **Urbanisation:—** Under-nutrition in urban areas is a major area of concern. Studies by NNMB have actually shown that the nutritional status of urban slum dwellers in India is almost as bad as that of rural poor. This is borne out both by figures relating to intake of food (Table 1) as well as intake of nutrients (Table 2 & 3). The deleterious effects of rural urban movements on nutrition, in much of the third world, is quite well known. The children of urban slum dwellers and of the urban informal sector are nutritionally the most fragile of all groups. Uncertainty of income and the absence of informal nutritional support systems within society, so common to rural areas of India, place many of these families on the very edge of survival. The fallout of a spreading urban culture, which encourages diversion of a high proportion of family expenditure to luxury goods & entertainment, aggravates the situation. Poor sanitary conditions, acute respiratory infections and communicable diseases characterize these urban settlements.

(6) There are some regional and occupational specificities of the problems of nutrition. The nutritional imbalance of hill people engaged in very strenuous labour, the special nutritional problems of some categories of Industrial Workers and migrant workmen are other examples which need a detailed and specific response.

(7) With the burgeoning size of Indian middle class, overnutrition with attendants of cardio vascular problems and other health hazards are affecting large number of people particularly in the cities.

IV. The Existing Policy Instruments for combating Malnutrition:—

Till the end of the IV Plan, India's main emphasis was on the aggregate growth of the economy and reliance was placed on the percolation effects of growth. In the face of continuing poverty and malnutrition, an alternative strategy of development, comprising a frontal attack on poverty, unemployment and malnutrition, became a national priority from the beginning of the V Plan. This shift in strategy has given rise to a number of interventions to increase the purchasing power of the poor, to improve the provision of basic services to the poor and to devise a security system through which the most vulnerable sections of the poor (viz. women and children) can be protected. The various intervention programmes, that we already have, are given in the Annexure-I.

V. Nutrition Policy Instruments:

The Strategy: Nutrition is a multi-sectoral issue and needs to be tackled at various levels. Nutrition affects development as much as development affects nutrition. It is, therefore, important to tackle the problem of nutrition both through direct nutrition intervention for specially vulnerable groups as well as through various development policy instruments which will create conditions for improved nutrition.

A. Direct Interventon—Short Term

(i) **Nutrition Intervention for specially vulnerable groups:**

(a) Expanding the Safety Net:— The Universal Immunization Programme, oral Rehydration Therapy and the Integrated Child Development Services (ICDS) have had a considerable impact on child survival (IMR for 1989 stood at 91 per 1000) and extreme forms of malnutrition. The position, however, is that the silent form of hunger and malnutrition continues with over 43.8% (1988-90)* children suffering from moderate malnutrition and about 37.6% (1988-90)* from mild malnutrition. Therefore, while more children are surviving today, an overwhelmingly large number of them are destined to remain much below their genetic potential. This is the enormity of the demographic trap which faces us as we move towards the next century. There is, therefore, an immediate imperative to substantially expand the Nutrition intervention net through ICDS so as to cover all vulnerable children in the age group 0 to 6 years. Presently, India's child population for 0-6 years is around 18% of the total population and, out of this, 30.76 million comprise the children from the households living below the poverty line in rural areas. Presently ICDS covers around 15.3 million children (most of them in the rural areas). It should be our conscious policy to cover the remaining 15.46 million children, who are nutritionally at risk, by extending ICDS to all the remaining 2388 blocks (5153 minus 2765 blocks existing) of the country by the year 2000.

***Source: Nutrition News Vol 12 No. 3 May 1991 (NIN)**

(b) With the objective of reducing the incidence of severe and moderate malnutrition by half by the year 2000 A.D. a concerted effort needs to be made to trigger appropriate behavioural changes among the mothers. Improving growth monitoring between the age group 0 to 3 years in particular, with closer involvement of the mothers, is a key intervention. Presently, growth monitoring has become a one-way process and the mothers are mere passive observers of the entire process. This needs to be changed because, after all, nutrition management of the children will have to be done by the mothers at home. Getting involved in the growth monitoring of her child will give her a feeling of control over the child's nutrition process and, combined with adequate nutrition and health education, empower her to manage the nutrition needs of her children effectively.

(c) Reaching the Adolescent Girls:— The Government's recent initiative of including the adolescent girl within the ambit of ICDS should be intensified so that they are made ready for a safe motherhood, their nutritional status (including iron supplementation in the body) is improved and they are given some skill upgradation training in home-based skills and covered by non-formal education, particularly nutrition and health education. All adolescent girls from poor families should be covered through the ICDS by 2000 A.D. in all CD blocks of the country and 50% of urban slums.

(d) Ensuring better coverage of expectant women:— In order to achieve a target of 10% incidence of low birth weight by 2000 A.D., such coverage should include supplementary nutrition right from 1st trimester and should continue during the major period of lactation, at least for the first one year after pregnancy.

(ii) **Fortification of Essential Foods:—** Essential food items shall be fortified with appropriate nutrients, for example, salt with iodine and/or iron. However, given the highly extensive

and decentralised process of salt marketing in the country, there is the need to identify a vehicle which can be better controlled. Research in iron fortification of rice and other cereals should be intensified. The distribution of iodised salt should cover all the population in endemic areas of the country to reduce the iodine deficiency to below endemic levels.

(iii) **Popularisation of Low Cost Nutritious Food:—** Efforts to produce and popularise low-cost nutritious foods from indigenous and locally available raw material shall be intensified. It is necessary to involve women particularly in this activity.

(iv) **Control of Micro-Nutrient Deficiencies amongst vulnerable Groups:—** Deficiencies of Vit. "A", iron and folic acid and iodine among children, pregnant women and nursing mothers shall be controlled through intensified programmes. Iron supplementation to adolescent girls shall be introduced. The programme shall be expanded to cover all eligible members of the community. The prophylaxis programme, at present, do not cover all children. For example, the Vit. "A" programme covers only 30 out of about 80 million. It is necessary to intensify all these efforts and work on a specific time frame. Nutritional blindness should be completely eradicated by the year 2000 A.D. The National Nutritional Anaemia Prophylaxis Programme should be extended and strengthened to reduce anaemia in expectant women to 25% by 2000 A.D.

B. Indirect Policy Instruments: Long Term Institutional & Structural Changes:-

(i) **Food Security:** In order to ensure aggregate food security, a per capita availability of 215 kg/person/year of foodgrains needs to be attained. This requires production of 250 million tonnes of food grains per year by 2000 AD and buffer stocks of 30-35 million tonnes in order to guard against exigencies, such as flood and droughts (Table 8). However, taking into account the present trends and the possibility of improved availability of non-cereal food items, there should be a target of at least attaining 230 Million tonnes food grains production by 2000 A.D. (Table 9).

(ii) **Improvement of Dietary pattern through Production and Demonstration:** .Improving the dietary pattern by promoting the production and increasing the per capita availability of nutritionally rich foods. The production of pulses, oilseeds and other food crops will be increased with a view to attaining self sufficiency and building surplus and buffer stocks. The production of protective food crops, such as vegetables, fruits, milk, meat, fish and poultry, shall be augmented. Preference shall be given to growing foods, such as millets, legumes, vegetables and fruits (carrots, green leafy vegetables, guava, papaya and amla). For this purpose, the latest and improved techniques shall be increasingly applied, high-yielding varieties of food crops developed and extensively cultivated, adequate extension services made available to farmers, wastage of food in transit and storage reduced to the minimum, available food conserved and effectively utilised and adequate buffer stocks built up. Certain imbalances and anamolies in our agricultural policy need to be redressed immediately. Our Agricultural Policy has been hitherto concerned with production exclusively and not nutrition, which is the ultimate end. While the Green Revolution has largely remained a cereal revolution, with bias towards wheat, coarse grains and pulses, which constitute the poor man's staple & protein requirements, have not received adequate attention. The prices of pulses, which were below cereal prices before the Green Revolution, are now almost double the price of cereals. Our Food Policy should be consistent with our national nutritional needs and this calls for the introduction of appropriate incentives, pricing and taxation policies.

(iii) **Policies for Effecting Income Transfers so as to improve the entitlement package of the rural and urban poor.**

(a) **Improving the purchasing power:** Poverty alleviation programmes, like the Integrated Rural Development Programme (IRDP) and employment generation schemes like Jawahar Rozgar Yojana, Nehru Rozgar Yojana and DWCRA are to

be re-oriented and restructured to make a forceful dent on the purchasing power of the lowest economic segments of the population. In all poverty alleviation programmes, nutritional objectives shall be incorporated explicitly and the nutritional benefits of income generation shall be taken for granted. Existing programmes shall be scrutinized for their nutrition component. It is necessary to improve the purchasing power of the landless and the rural and urban poor by implementing employment generation programmes so that additional employment of at least 100 days is created for each rural landless family and employment opportunities are created in urban areas for slum dwellers and the urban poor.

(b) **Public Distribution System:** Ensuring an equitable food distribution, through the expansion of the public distribution system. The Public distribution system shall ensure availability of essential food articles, such as coarse grains, pulses and Jaggery, besides rice, wheat, sugar and oil; conveniently and at reasonable prices to the public, particularly to those living below the poverty line, not only in urban areas but throughout the country. For this purpose, encouragement shall be given to the consumer cooperatives and fair price shops shall be opened in adequate number in all areas. Effective price and quality control shall be exercised over the cooked foods in restaurants and other eating places.

The Public Distribution System should be strengthened especially during the monsoon months for giving special rations at specially subsidized rates for at least four months (July - October) to the seasonally "at risk" population. The beneficiaries of this programme should include landless labourers and their families and the migrant labourers and their families.

(iv) **Land Reforms:** Implementing land reform measures so that the vulnerability of the landless and the landed poor could be reduced. This will include both tenural reforms as well as implementation of ceiling laws.

(v) **Health & Family Welfare:** The health and family welfare programmes are an inseparable part of the strategy. Through "Health for All by 2000 AD" programme, increased health and immunisation facilities shall be provided to all. Improved pre-natal and post-natal care to ensure safe motherhood shall be made accessible to all women. The population in the reproductive age group shall be empowered, through education, to be responsible for their own family size. Through intensive family welfare and motivational measures; small family norm and adequate spacing shall be encouraged so that the food available to the family is sufficient for proper nutrition of the members.

(vi) **Basic Health and Nutrition Knowledge:** Basic health and nutrition knowledge, with special focus on wholesome infant feeding practices, shall be imparted to the people extensively and effectively. Nutrition and health education concepts shall be effectively integrated into the school curricula, as well as into all nutrition programmes. Nutrition and Health Education are very important in the context of the problems of Overnutrition also.

(vii) **Prevention of Food Adulteration:** Prevention of food adulteration must be strengthened by gearing up the enforcement machinery.

(viii) **Nutrition Surveillance:** Nutrition surveillance is another weak area requiring immediate attention. The NNMB/NIN of ICMR needs to be strengthened so that periodical monitoring of the nutritional status of children, adolescent girls, and pregnant and lactating mothers below the poverty line takes place through representative samples and results are transmitted to all agencies concerned. The NNMB should not only try and assess the impact of ongoing nutrition and development programmes but also serve as an Early Warning System for initiating prompt action.

Since the Department of Women & Child Development is the nodal Department for National Nutrition Policy, it is necessary for the NNMB to be accountable to this Deptt. in so far as Nutrition Surveillance is concerned.

(ix) **Monitoring of Nutrition Programmes:** Monitoring of Nutrition Programmes (viz ICDS), and of Nutrition Education and Demonstration by the Food & Nutrition Board, through all its 67 centres & field units, should be continued. The transfer of Food & Nutrition Board to the Department of Women & Child Development has already been approved by the Prime Minister. This will ensure an integrated set up to deal with the problem of nutrition with adequate technical & field level set up.

(x) **Research:** Research into various aspects of nutrition, both on the consumption side as well as the supply side, is another essential aspect of the strategy. Research must accurately identify those who are suffering from various degrees of malnutrition. Research should enable selection of new varieties of food with high nutrition value which can be within the purchasing power of the poor.

(xi) **Equal Remuneration:** Special efforts should be made to improve the effectiveness of programmes related to women. The wages of women shall be at par with that of men in order to improve women's economic status. This requires a stricter enforcement of the Equal Remuneration Act. Special emphasis will have to be given for expanding employment opportunities for women.

(xii) **Communication:** Communication through established media is one of the most important strategies to be adopted for the effective implementation of the Nutrition Policy. The Department of Women and Child Development will have a well-established, permanent Communications Division, with adequate staff and fund support. While using the communication tools, both mass communication as well as group or inter-personal communication should be used. Not only the electronic media but also folk and print media should be used extensively. The existing facilities in the Song and Drama Division and the Directorate of Advertising and Visual Publicity (DAVP) in the Ministry of Information and Broadcasting could help in a big way to improve nutrition and health education. To give a new direction to communication and media, efforts will be made for promoting sound feeding practices, which are culturally acceptable and based on local food habits. Alongside the information gap, existing social attitudes and prejudices, inherent in our milieu, which discriminate against girls and women and affect their health and nutrition, need to be countered through educational programmes. Further, the media policy shall focus on ways and means to combat malnutrition among girl children, adolescent girls and women in the reproductive age group. Educational programmes will be made meaningful and interesting to meet the growing needs of the population.

The role of information is crucial for nutrition. Such information is not only important with regard to improved health and nutrition practices but can also have a vital influence on the market, particularly during natural calamities, war etc. The role of information during such exigencies is to ensure that the market remain stable without any panic being created. This also needs to be carefully monitored.

(xiii) **Minimum Wage Administration :** Closely related to the market, is the need to ensure an effective, minimum wage administration to ensure its strict enforcement and timely revision and linking it with price rise through a suitable nutrition formula. A special legislation should be introduced for providing agricultural women labourers the minimum support, and atleast 60 days leave by the employer in the last trimester of her pregnancy. Excessive loss of energy during the working seasons has serious nutritional implications. The legislation should take care of this problem also.

(xiv) **Community Participation : The active involvement of the community is essential not only in terms of being aware of the services available to the community but also for deriving the maximum benefit from such services by giving timely feedback necessary at all levels. After all, communication must form an essential part of all services and people themselves are the best communicators.**

Community participation will include:

(a) Generating awareness among the community regarding the National Nutrition Policy and its major concerns;

(b) involving the community through their Panchayats or, where Panchayat do not exist, through beneficiary committees in the management of nutrition programmes, and interventions related to nutrition, such as employment generation, land reforms, health, education etc.;

(c) actual participation, particularly of women, in food production and processing activities,

(d) promoting schemes relating to kitchen gardens, food preservation, preparation of weaning foods and other food processing units, both at the home level as well as the community levels;. and

(e) Generation of effective demand at the level of the community for all services relating to nutrition.

(xv) **Education & Literacy :** It has been shown that Education & Literacy particularly that of women, is a key determinant for better nutritional status. For instance, Kerala State which has the highest literacy level, also has the best nutrition status despite the fact that calorie intake in Kerala is not the highest among all States in the country.

(xvi) **Improvement of the Status of Women:—** The most effective way to implement Nutrition with mainstream activities in Agriculture, Health, Education and Rural Development is to focus on improving the status of women, particularly the economic status. After all, women are the ultimate providers of nutrition to households both through acquisition of food as well as preparation of food for consumption. There is evidence that women's employment does beneficial household nutrition, both through increase in household income as well as through an increase in women's status, autonomy and decision-making power. Morever, female education also has a strong inverse relationship with IMR. Educated women have greater roles in household decision making, particularly those relating to nutrition and feeding practices.

Therefore emphasis on women's employment and education particularly nutrition and health education should provide the bedrock of the nation's nutritional intervention. If a self sustaining development model is to be pursued in which the community is able to manage its nutrition and health needs on its own. The socio-economic security of women is sine qua non.

This underscores the importance of improving the employment status of women. The groundswell of voluntary action created through the National Literacy Mission should be harnessed and channelised into the areas of child survival and nutrition.

VI. Administration and Monitoring

1. Implementation of National Nutrition Policy :

(a) The measures enumerated above have to be administered by several ministries/departments of the Government of India and various governmental and non-governmental organisations. There should be a close collaboration between the Food Policy, the Agricultural Policy, the Health Policy, the Education Policy, the Rural Development Programme and the Nutrition Policy as each complements the other.

The NNP should immediately be translated into forceful, viable and realistic sectoral action programmes. Special working groups shall be constituted in the Deptts. of Agriculture, Rural Development, Health, Education, Food and women & Child Development to analyse the nutritional relevance of sectoral proposals and to incorporate nutritional considerations in the light of the Nutrition Policy wherever necessary. Each concerned Central Ministry shall implement the measures for which it has direct or nodal responsibility.

(b) An Inter-Ministerial Co-ordination Committee will function in the Ministry of Human Resource Development under the Chairmanship of Secretary, Department of Women and Child Development, to oversee and review the implementation of nutrition intervention measures. Sectoral Ministries/Deptts. concerned, like health and Family Welfare, Education and Agriculture, Food and Civl supplies etc., will be represented on the Inter-Ministerial Co-ordination Committee. The Committee will meet once or twice a year. The Co-ordination Committee would be constituted with the sectoral representatives or administrators essential for decision making on policy matters. To analyse, discuss and resolve the technical issues and nutrition aspects of all plans and strategies during the implementation stage, technical experts from concerned areas would be associate members.

(c) A National Nutrition Council will be constituted in the Planning Commission, with Prime Minister as President. Members will include concerned Union Ministers, a few State Ministers by rotation, and experts, and representatives of non-governmental organisations. The Council will be the national forum for policy co-ordination, review and direction at the national level. The Council will meet once a year. The National Nutrition Council will be the highest body for overseeing the implementation of the National Nutrition Policy through the various sectoral plans of action and will issue policy guidelines based on latest nutritional surveillance feedback.

2. **Monitoring of Nutrition situation:** Nutritional surveillance of the country's population especially children and mothers, shall be the responsibility of the National Institute of Nutrition/ NNMB who in turn may involve the National Institute of Health and Family Welfare, Central Health Education Bureau, Home Science, Medical Colleges and NGOs. There shall be a mechanism to utilize the services of Food/Nutrition Science and Medical graduates trained every year, to manage the national nutrition programmes. NIN/NNMB should be accountable to the Deptt. of Women & Child Development in so far as Nutrition surveillance is concerned.

The paucity of reliable and comparable data from all parts of the country is a definite obstacle towards a realistic and disaggregated problem definition. This calls for a nation-wide monitoring system. To achieve this, it is necessary to restructure and strengthen the existing National Nutrition Monitoring Bureau (NNMB) and to develop a mechanism for generating nation-wide disaggregated data within a short period for use by the Centre and the States for taking corrective action wherever necessary. This would ensure a regular monitoring and surveillance system and develop a reliable data base in the country not only to assess the impact of on going nutrition and development programmes but also to serve as an early warning system for initiating prompt action.

3. **Role of State Governments :** In a federal polity like ours, the cutting edge of governmental interventions commences from the state level. Therefore, the successful actualisation of Nutrition Policy is largely dependent on the effective role of the state Governments.

The formal structure at the State level should be similar to that envisaged under the Government of India. There should be an apex State level nutrition council to be chaired by the Chief Minister and to comprise concerned Minister of the State Government, representatives of leading NGOs working in the state, experts and representatives of related professional bodies. There should be an Inter-Departmental Coordinating Committee to function under the Chief Secretary which will coordinate, oversee and monitor the implementation of the National Nutrition Policy. The Committee would also focus on the State level targets for the various nutrition related indicators based targets set under the NNP. The Secretary of the Department dealing with women and children should be the convenor of this Committee.

Special working groups will be set in the Departments of Agriculture, Rural Development, Health, Education, Food and Women and Child Development and this group will be responsible for vetting the various sectoral schemes from the point of view of nutrition before they are finalised.

4. Given the problem of mounting delivery cost of various nutrition interventions, it is necessary to mobilise resources from within the community in order to ensure sustainability of these interventions. This is a major area of concern and the State Governments, local bodies (including Municipal and Panchayat bodies); NGOs, cooperatives and professional organisations and pressure groups must take this up as a challenge. In a pluralistic society like ours, a concerted effort by all of them is the only way to build community support and ultimately community participation in these schemes. Successful examples of the community contributing the nutrition component of ICDS Scheme exists in certain States. It is possible to replicate these examples. Many State Governments have started a major mid-day meal programme funded out of the State resources. The other State Governments/Union Territory Admns. may also consider such an introduction in their primary and secondary schools. The private schools and schools which are capable of mobilising their own resources may be encouraged to introduce such schemes out of their own resources.

The State Governments may consider constituting similar bodies, i.e. State Co-ordination Committees and State Nutrition Councils, as well as such bodies at the district levels.

In a massive country like India, with autonomous states, each with its characteristic problems, priorities, approaches and resources, the state level nutrition policies would be better able to deal with the problems. After the NNP of India is operationalised with specific objectives, plans of action, strategies, targets and time frame, development of state level policies shall be encouraged.

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ANNEXURE—I

INTERVENTION PROGRAMMES TO COMBAT MALNUTRITION

Integrated Child Development Services

1. The Government of India is making concerted efforts to reduce the prevalence of malnutrition in the country. In consonance with this, the scheme of Integrated Child Development Services (ICDS) was launched in 1975. This programme is implemented by the Nodal Department i.e. the Department of Women and Child Development. Starting with 33 experimental projects in 1975-76, the ICDS programme has been expanded to 2765 projects upto December 1992. The package of services provided to the beneficiaries of the programme are supplementary nutrition, Immunization, Health check-up, Referral services, Non-formal pre-school education and Nutrition and health Education. Supplementary nutrition is one of the major components of the programmes. The coverage of beneficiaries for supplementary nutrition in ICDS as on December 1992, are as follows:

Children below 3 years	:	69.40 lakhs
Children in the age group of 3—6 years	:	83.13 lakhs
Women beneficiaries	:	30.08 lakhs

The strategy adopted in ICDS is one of the Integrated delivery of early childhood services so that their synergistic effect will fulfill the objective of the programme. The beneficiaries of the programme are children below 6 years, pregnant and lactating mothers and women in the age group 15—44 years. This programme supplements the health, nutrition and family welfare activities with appropriate cooperation and coordination between functionaries of the Health Department and nodal department.

2. The other programmes in this direction are the Special Nutrition Programme, Balwadi Nutrition Programme, Wheat Based Supplementary Nutrition Programme, Tamil Nadu Integrated Nutrition Programme, Mid Day Meals Programme for school children and other intervention programmes for combating specific nutritional Deficiency Diseases such as Nutritional Anaemia Prophylaxis Programme, Goitre Control Programme and Programme for Prevention of Nutritional Blindness due to Vitamin A Deficiency.

Special Nutrition Programme

3. The special Nutrition Programme (SNP) was launched in the country in 1970-71. It provides supplementary feeding to the extent of about 300 calories and 10 gm. of proteins to pre-school children and about 500 calories and 20 gm. of protein to expectant and nursing mothers for 300 days a year. At present SNP is operated, as a part of the Minimum Needs Programme in the various states. The nutrition component of the ICDS programme is funded by States and Union Territories from the SNP budget. At present about 21.5 million beneficiaries are covered under this programme.

Balwadi Nutrition Programme

4. The Balwadi Nutrition Programme (BNP) is being implemented since 1970-71 through five national level voluntary organisations. The Central grant is given for supplementary feeding of children. It consists of 300 calories and 10 gm. of protein per child per day for 270 days a year. During 1991-92, about 0.23 million children in the age group 3—5 years in 5640 balwadis were covered by the scheme.

Wheat Based Supplementary Nutrition Programme

5. A centrally sponsored scheme called Wheat-based Supplementary Nutrition Programme (WNP) was introduced in 1986. This programme follows the norms of SNP or of the nutrition component of the ICDS. Central assistance for the programme consists of supply of free wheat and supportive costs for other ingredients, cooking, transport etc. At present around 3 million children and expectant and nursing mothers are covered under this programme. This scheme is now being transferred to the State Sector.

Tamil Nadu Integrated Nutrition Programme

6. Tamil Nadu Integrated Nutrition Programme (TINP) is being implemented in the State of Tamil Nadu since 1981. At present the scheme covers 316 blocks in Tamil Nadu. Under this project nutritional surveillance and supplementary nutrition is being provided to children below six years and expectant and nursing mothers. The project is assisted by World Bank. The total outlay for the project is Rs. 321 crores.

Mid Day Meal Programme

7. In 1956 the erstwhile Madras State launched the mid-day meal programme of providing free meal to the elementary school children with a view to (a) enrolling poor children who generally remain outside the school due to poverty; and (b) giving one meal to the children attending the school. The MDM operated as a Centrally sponsored scheme from 1962-63 in all the states. The objectives were (a) to improve nutritional status of the school children; and (b) to attract children to enroll themselves into school and to encourage regular attendance by providing supplementary nutrition.

Nutritional Anaemia Prophylaxis Programme

8. Taking cognizance of this problem, the Government of India launched a Prophylaxis programme in 1970 to prevent nutritional anaemia in mothers and children. Under the programme, the expectant and nursing mothers as well as women acceptors of family planning are given one tablet of iron and folic acid containing 60 mg elemental iron (180 mg of ferrous sulphate and 0.5 mg of folic acid) and children in the age group 1—5 years are given one tablet of iron containing 20 mg elemental iron (60 mg of ferrous sulphate and 0.1 mg folic acid) daily for a period of 100 days. This programme covered children and pregnant women with haemoglobin level less than 8 gm per cent and 10 gm per cent respectively.

9. There has been an increase in the number of beneficiaries under this programme from 3.52 million in 1975-76 to 41.20 million in 1988-89. About 30 million women and 50 million children have, however, been identified as eligible beneficiaries for the prophylaxis programme. During 1988-89, the programme envisaged to cover 22 million women and 30 million children.

10. Fortification of salt with iron, a universally consumed dietary article, has been identified as a measure to control anaemia. Efficacy of fortified salt in both rural and urban communities was assessed by a multicentric study and revealed that iron fortified salt when consumed over a period of 12—18 months reduced prevalence of anaemia significantly. Accordingly, fortification of salt with iron as a public health approach is piloted in Tamil Nadu and Rajasthan.

Prophylaxis Programme Against Blindness Due to Vitamin A Deficiency

11. The programme was initiated by the Government in 1970. Under this programme children in age group 1—5 years are given an oral dose of 0.2 million I.U. of Vitamin A in oil every 6 months. The number of beneficiaries covered under this programme has increased steadily from 4.48 million in 1975-76 to 30.12 million in 1986-87. It is hoped to achieve universal coverage of the target population of about 50 million children in the age group 1—5 years by 1990.

12. An interim evaluation in the States of Kerala and Karnataka after two years of implementation of the programme showed that the coverage was over 75 per cent and there was a 75

per cent reduction in the prevalence of conjunctival signs of Vitamin A deficiency. The evaluation also confirms the administrative feasibility of this approach within the existing health infrastructure.

13. During 1980, the Department of Food introduced a scheme of Fortification of Milk with Vitamin A to prevent nutritional blindness. At present there are 42 dairies in the country implementing this scheme. During 1988-89, the total quantity of milk fortified with Vitamin A through these dairies was 3.2 million litres per day.

14. MCH Division of the Ministry of Health & Family Welfare has been implementing the programmes on anaemia prophylaxis and prophylaxis against Vitamin 'A' deficiency. These programmes were reviewed by two groups of experts and accordingly certain modifications have been made with concentrated efforts on all pregnant mothers receiving 100 tablets of Iron Folic Acid and universalisation of Vitamin 'A' to be provided to all children between 9 months and 3 years of age. The lactating women and those who have accepted certain family planning devices will continue to get the drugs as per earliest schedule. Suitable linkages have also been developed for these programmes with immunisation and arrangements have been made for regular monitoring through the same programme.

Goitre Control Programme

15. A National Goitre Control Programme was initiated by the Government of India in 1962 to identify goitre endemic regions and to assess the impact of goitre control measures. The availability and production of iodized salt, strengthening of administrative machinery controlling the entry of non-iodized salt in the endemic regions have been recommended as measures to improve the implementaion of the programme.

16. There is an increasing awareness about the broad spectrum of Iodine Deficiency Disorder (IDD) in the country. The Goitre Control Programme has gained momentum in recent years. The Government of India has started a scheme with effect from 1.4.1986 envisaging 'Universal Iodisation of Edible Salt' in a phased manner to cover the whole country by 1992. It has liberalised production of iodized salt under the private sector by issuing license to 700 salt manufacturers out of which 307 have commenced production. As a result thereof, the production of iodised salt in the country has steadily increased to 25.06 lakh M.T. in 1990-91 from 7.72 lakh M.T. in 1986-87. Since the inception of this programme in 19 States/Union Territories have so far established Goitre Control Cells in their State Health Directorates for effective implementation and monitoring of the programme. Till date 20 States/UTs have prohibited the sale of edible salt other than iodised salt in their respective States/UTs under the Prevention of Food Adulteration Act. The remaining States/UTs have been requested to issue a similar ban expeditiously. The States/UTs have also been requested to arrange for distribution of iodised salt through their Public Distribution System. It is estimated that about 200 million people will have to be protected against goitre by 2000 A.D.

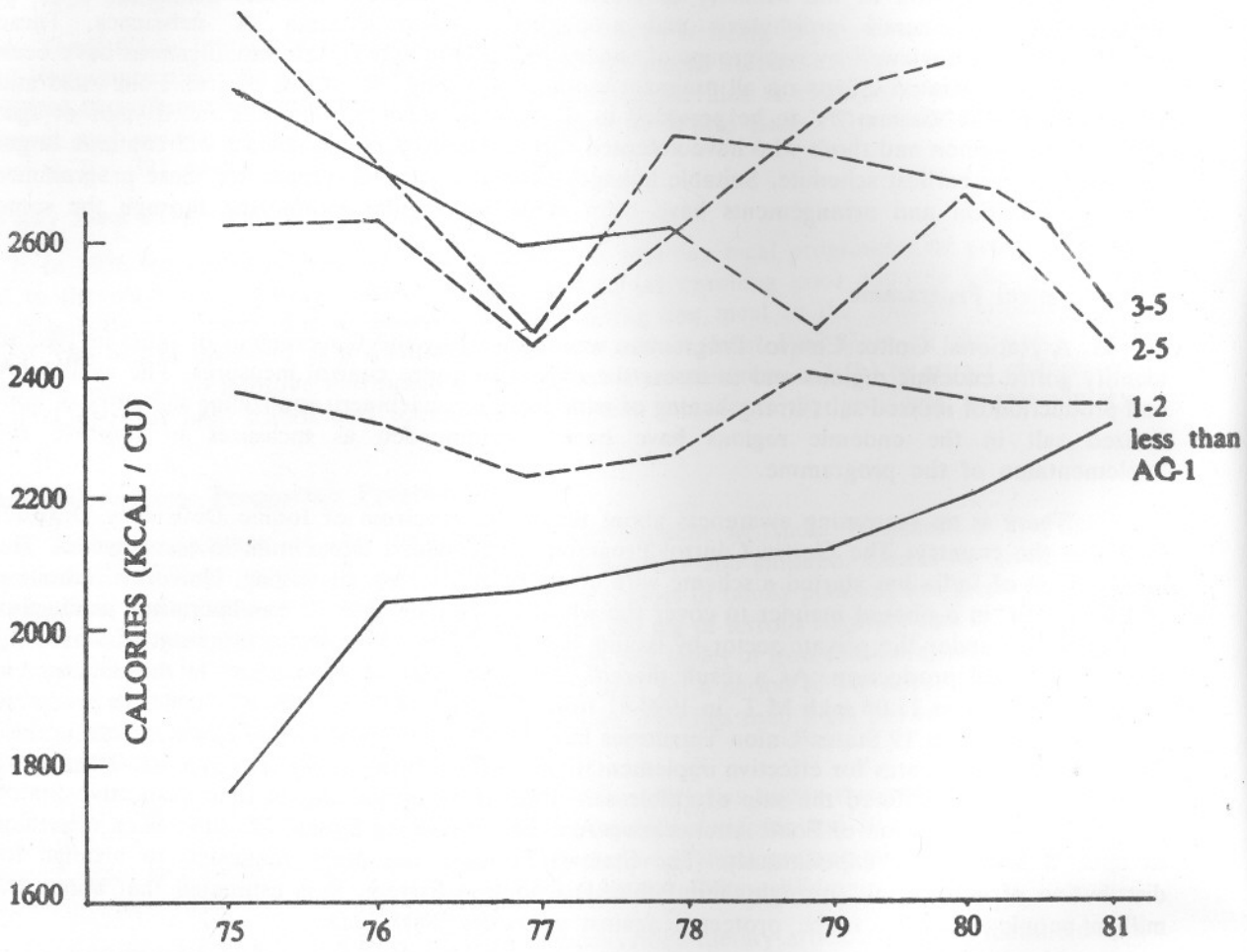
National Diarrhoeal Diseases Control Programme

17.The programme was launched in 1981 to reduce the mortality in children below five years due to diarrhoeal diseases through introduction of Oral Rehyderation Therapy (ORT). The high priority accorded to the Programme is part of the package of services rendered under the MCH programme which was initiated during 1980-85 has now been strengthened extensively. The Anganwadi Centres of the ICDS Scheme have served as nucleus for the propagation of Oral Rehydration Therapy (ORT) which has been found to be an effective measure of preventing dehydration caused by diarrhoea.

Functions of the Food & Nutrition Board

18. The Food & Nutrition Board, as reconstituted on 26 July 1990, advises Government, coordinates and reviews the activities in regard to food and nutrition; extension/education; development, production & popularisation of nutritious Foods and Beverages; measures required to combat deficiency diseases; and conservation and efficient utilisation as well as augmentation of food resources by way of food preservation and processing.

GRAPH—I



Graph—I Calorie intakes in different income groups druing 1975—81.

SOURCE:— NUTRITION PROFILE IN INDIA OVER A DECADE:
N. Prahlad Rao & J. Gaurinath Sastri, National Institute of Nutrition.
"Towards the implementation of a National Nutrition Policy in India." Pub:
ICMR, 1986

TABLE 1: **Average intake of food stuffs (g/cu/day) in urban and rural areas**

Food	Urban — 1975—79					Rural								Least Cost
	HIG	MIG	LIG	IL	SD	1975	1976	1977	1978	1979	1980	1981	1982	1988-89	Balanced Diet
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Cereals	316	361	428	420	416	641	633	614	617	570	613	553	498	521	460
Pulses	57	49	42	41	33	32	43	34	36	37	33	35	30	37	40
Leafy Vegetables	21	21	16	13	11	11	12	11	14	13	14	14	23	14	40
Other Vegetables	113	89	55	56	40	51	51	58	56	58	75	51	53	53	60
Milk	424	250	95	98	42	80	103	88	66	90	88	70	78	88	150
Fats and Oils	46	35	22	23	13	9	11	12	9	12	10	9	10	14	40

** Recommended by ICMR (1981) for adult sedentary male

HIG - High Income Group
MIG - Middle Income Group
LIG - Low Income Group
IL - Industrial Labour
SD - Slum Dwellers

Source:

(i) National Institute of Nutrition, National Nutrition Monitoring Bureau, Report on Urban Population, Hyderabad, 1984.

(ii) National Institute of Nutrition, National Nutrition Monitoring Bureau, Report of the year 1981, 1982, Hyderabad.

(iii) National Institute of Nutrition, Nutrition News 7(2), March 1986, Hyderabad.

(iv) National Institute of Nutrition, National Nutrition Monitoring Bureau, Intrim Report of Repeat Survey, Phase-I, 1989.

TABLE 2: **Average intake of nutrients (per/cu/day)**

	RDA ICMR (1981)	Urban 1975—79					Rural									
							1975	1976	1977	1978	1979	1980	1981	1982	1983*	1988-89
Nutrients		HIG	MIG	LIG	IL	SD										
Calories (K Cal)	2400	2603	2364	2230	2243	2008	2296	2369	2306	2341	2366	2404	2409	2243	2481	2419
Proteins (g)	55.0	73.4	63.2	57.8	59.4	53.4	63.6	65.4	61.9	62.6	62.3	62.3	64.4	58.7	63.8	64.5
Iron (mg)	24.0	27.3	26.7	26.5	26.3	24.9	31.8	31.4	29.3	31.1	30.3	29.6	31.7	30.4	31.1	30.5
Vit. A (μ g. Retinol)	750	881	555	332	352	248	263	292	262	307	270	313	373	366	300	352

* During 1983, the surveys were conducted on a sub-sample of NSSO in only 4 states RDA — Recommended Dietary Allowance

Source:

(i) National Institute of Nutrition, National Nutrition Monitoring Bureau, Report on Urban Population, Hyderabad, 1984.

(ii) National Institute of Nutrition, National Nutrition Monitoring Bureau, Report of the year 1981, 1982, Hyderabad.

(iii) National Institute of Nutrition, Nutrition News 8(6), Nov. 1987, Hyderabad.

(iv) India. Ministry of Planning, Central Statistical Organisation, Second Seminar on Social Statistics, February 4-6, 1988. New Delhi, 1988.

(v) National Institute of Nutrition, National Nutrition Monitoring Bureau, Interim Report of Repeat Survey, Phase-I. 1989.

TABLE: 3 **Intake of Nutrients in different Demographic Groups**

	No Land	Less then 5 Acres	5-10 Acres	More than 10 Acres	Labourers	Cultivators	others
Calories (Per consumer unit per day)							
Kerala	1824	1904	2232	1589	1718	2040	2015
Tamil Nadu	2108	2320	2671	2718	2012	2548	2321
Karnataka	2312	2576	2860	3099	2338	2901	2526
Andhra Pradesh	2274	2480	2824	2974	2358	2805	2338
Maharashtra	2006	2178	2251	2517	1948	2413	2150
Gujarat	1999	2042	2234	2444	1941	2219	2097
Madhya Pradesh	1977	1939	2108	2403	1905	2221	2059
West Bengal	1866	2346	3055	3052	1806	2543	2414
Uttar Pradesh	1991	2116	2227	2377	2000	2192	2043
(gm per consumer unit per day)							
Kerala	44.2	44.3	57.5	34.6	37.7	49.3	49.0
Tamil Nadu	52.3	56.6	66.7	67.2	49.6	62.4	57.7
Karnataka	63.3	65.3	76.3	86.5	63.2	77.0	67.0
Andhra Pradesh	53.8	59.7	72.3	74.3	55.7	70.4	55.9
Maharashtra	58.8	62.5	65.7	73.8	57.5	70.3	62.3
Gujarat	57.2	60.1	64.5	70.6	56.9	65.0	58.0
Madhya Pradesh	58.0	59.9	67.1	74.5	57.3	69.5	61.5
West Bengal	48.7	59.2	76.3	75.2	46.7	63.3	61.3
Uttar Pradesh	64.2	66.2	73.9	77.7	64.4	69.9	65.1

Source:— Annual Report (1979) of National Nutrition Monitoring Bureau, National Institute of Nutrition, Hyderabad, Reported by Rajaram Dasgupta, Economic & Political Weekly, Vol. XVIII No. 28, July 9, 1983.

TABLE—4

PERCENT DISTRIBUTION OF CHILDREN (1-5 YEARS) ACCORDING TO NUTRITIONAL GRADES*

State	Period	n	Normal	Mild	Moderate	Severe
Kerala	1975—79	737	7.5	35.7	46.5	10.3
	1988—90	882	17.7	47.4	32.9	2.0
Tamil Nadu	1975—79	1183	6.2	34.2	47.0	12.6
	1988—90	3337	8.0	42.0	45.8	4.2
Karnataka	1975—79	1065	4.6	31.1	50.0	14.3
	1988—90	2035	4.8	38.1	48.8	8.3
Andhra Pradesh	1975—79	809	6.1	32.4	46.1	15.4
	1988—90	2838	8.7	39.5	44.3	7.5
Maharashtra	1975—79	760	3.2	25.4	49.5	21.9
	1988—90	1666	6.7	38.0	47.5	7.8
Gujarat	1975—79	718	3.8	28.1	54.3	13.8
	1988—90	1262	7.3	33.9	45.8	13.0
Madhya Pradesh	1975—79	585	8.4	30.3	45.1	16.2
	1988—90	237	17.7	27.4	38.9	16.0
Orissa	1970—79	571	7.5	35.9	41.7	14.9
	1988—90	1175	8.1	34.6	46.6	10.7
Pooled	1975—79	6428	5.9	31.6	47.5	15.0
	1988—90	13432	9.9	37.6	43.8	8.7

*Based on NCHS standards

Source : National Nutrition Monitoring Bureau Report of Repeat Surveys (1988—90) published by National Institute of Nutrition. Indian Council of Medical research, Hyderabad.

Table 5 : **Incidence of Bitot's spot among children in rural Areas (percentage)**

Year	pre-school children (1—5 years)	School going children (5—14 years)
1975	0.6	1.7
1976	1.4	4.1
1977-78	1.4	4.2
1979	0.9	1.3
1980	1.5	3.1
1981	2.7	5.1
1982	1.8	3.1

Figures indicated are the median values of the prevalence levels in the surveyed states.

Sources : Rao, N. Pralahad and Gowrinath, S.J. Diet and Nutrition Profile in Ten States of India over a Decade in the implementation of a National Nutrition Policy in India, October 28—30, 1985, Srinagar.

Table—6: **Child Mortality rate (0—4 yrs.) by sex and rural urban residence**

Years	Rural			Urban			Combined		
	Male	Female	Pers.	Male	Female	pers.	Male	Female	Pers.
1971	53.2	59.3	56.2	31.1	33.3	32.2	53.2	59.3	51.9
1981	43.1	48.0	45.5	20.0	20.9	20.4	39.2	43.3	41.2
1982	42.2	45.7	43.9	21.2	20.5	20.9	31.9	40.5	39.1
1983	40.5	43.1	41.8	21.1	21.7	21.4	36.5	38.7	37.6
1984	44.2	48.2	46.2	22.6	23.8	23.2	39.5	43.0	41.2
1985	41.4	45.3	43.3	19.4	22.1	20.7	36.6	40.4	38.4
1986	36.6	43.3	40.8	20.3	21.5	20.9	34.7	38.6	36.6

Source:- India, Office of the Registrar General, Vital Statistics Division, Sample Registration System, 1971, 1981—1986.

Table-7: **Energy and Protein Intake by Males and Females of Different Age Groups**

Age Group	Energy, Kcal / d				Protein, g / d			
	R D A		Intake		R D A		Intake	
	female	male	female	male	female	male	female	male
Children								
1—3 Years	1050	1200	773	780	22.5	23.5	21.9	22.0
4—6 years	1500	1700	1097	1112	28.5	30.0	30.9	31.5
7—9 years	1800	2050	1320	1325	43.0	43.0	36.0	39.0
10—12 years	1950	2150	1483	1550	62.0	59.0	41.0	42.9
Adolescents								
13—15 years	2050	2400	1620	1773	65.0	76.0	42.9	49.1
16—18 years	2050	2600	1721	1937	66.0	81.0	47.7	58.6
Adults (sedentary)	1800	2350	1789	2169	50.0	60.0	50.4	62.0

Intake based on NNMB Survey in 10 States, 1975—80

Table 8: **Crop production performance and Production Projections for 1989-90 1994-95 and 2000 A.D.**

Crop	1988-89 Act. Ach.	1989-90 Target	1994-95 Projections (million Tonnes)	2000 Projections
1. **Foodgrains**				
i) Rice	70.47	72.50	88.0	106.0
ii) Wheat	54.12	54.00	67.0	80.0
iii) Coarse Grains	32.65	34.00	37.0	42.0
iv) Pulses	14.92	14.50	18.0	22.0
Total	172.16	175.00	210.0	250.0
2. oilseeds	17.50	18.00	22.5	27.0
3. Sugarcane	210.00	217.00	270.0	320.0

Source: Ministry of Food & Civil Supplies, Food and Nutrition Board, Department of Food, National Workshop on Dietary and Nutritional Guidelines for food and agriculture planning, October 4-6, 1989, New Delhi.

Table-9 CURRENT LEVEL OF PRODUCTION 1988-89 AND PROJECTIONS FOR 2000 A.D.

The demand and supply balances for 2000 AD in respect of commodities shown below alongwith production figures for 1988-89.

Sl. No.	Items	Production** in 1988-89 (Million Tonnes)	Demand*** (Million Tonnes)		Supply*** (Million Tonnes)
			Low	High	
1.	Total Foodgrains	170.25	205	225	230
	Cereals	156.55			195
	Pulses	13.70			35
2.	Oils	—	8.3	10.2	9.7
	(Oilseeds equivalent)	17.88	—	—	(26.0)
3.	Milk	49.10	49.4	64.4	64.40
4.	Meat	N.A.	1.57	2.11	2.10
5.	Eggs (million nos.)	18,666	17,419	28,513	27,882
6.	Fish	3.15	4.6	5.5	8.0
7.	Vegetables	N.A.	50.00	55.00	N.A.
8.	Fruits	N.A.	N.A.	N.A.	N.A.

N.A.—Not Available

Comments:

1. The nutritional needs require consumption of vegetables of 200 gm per adult per day. The requirement would be 55 million tonnes of vegetables. considering the potential for internal demand as well as for export, production could be planned for 80 million tonnes for vegetables for 2000 AD on an area of 4 million hectares, assuming an average target yield of 20 tonnes per hectare.
2. The total production of oils from field crops and other sources i.e. exploitation of cotton seed, rice bran, maize, coconut, oil palm etc. is estimated at 9.7 million tonnes in 2000 A.D.

Source: **Annual Report 1989-90, Deptt. of Agriculture, Govt. of India.

***Report of the National Commission on Agriculture, 1976 (abridged) Ministry of Agriculture, Govt. of India, New Delhi.