

6.3.2 NUTRITION

6. At the time of Independence the country faced two major nutritional problems - one was the threat of famine and acute starvation due to low agricultural production and lack of appropriate food distribution system. The other was chronic energy deficiency due to poverty, low-literacy, poor access to safe-drinking water, sanitation and health care; these factors led to widespread prevalence of infections and ill health in children and adults. Kwashiorkor, marasmus, goitre, beri beri, blindness due to Vitamin-A deficiency and anaemia were major public health problems. The country adopted multi-sectoral, multi-pronged strategy to combat the major nutritional problems and to improve nutritional status of the population.

7. During the last 50 years considerable progress has been achieved. Famines no longer stalk the country. There has been substantial reduction in moderate and severe undernutrition in children and some improvement in nutritional status of all segments of population. Kwashiorkor, marasmus, pellagra, lathyrism, beri beri and blindness due to severe Vitamin-A deficiency have become rare. These improvements are attributable to improvement of dietary intake, improved health care and ongoing developmental process. However, it is a matter of concern that milder forms of chronic energy deficiency and micronutrient deficiencies continue to be widely prevalent in adults and children. During the last two decades, there had been major alterations in the life styles and dietary intake; obesity in adolescents and adults and consequent increased risk of non-communicable diseases and undernutrition associated with HIV/AIDS are emerging as newer public health problems.

BOX 6.3.2.1 Objectives Of The Ninth Plan

- freedom from hunger through increase in food production, effective distribution, improvement in purchasing power of the population;
- reduction in under nutrition and its health consequences through: universalisation of Integrated Child Development Services (ICDS); screening at risk groups, growth monitoring and better targeting of food supplement to those suffering from under-nutrition; close monitoring of under-nourished persons receiving food supplements; effective intersectoral coordination between health and nutrition workers to ensure early detection and management of health problems associated with or leading to under-nutrition;
- prevention, early detection and effective management of micro-nutrient deficiencies and the associated health hazards.

NUTRITIONAL IMPLICATIONS OF CHANGING FOOD PRODUCTION PATTERNS

8. One of the major achievements in the last fifty years has been the green revolution and self-sufficiency in food production. Food grain production has increased from 50.82 in 1950-51 to 200.88 million tons in 1998-99 (Prov.). It is a matter of concern that while the cereal production has been growing steadily at a rate higher than the population growth rates,

the coarse grain and pulse production has not shown a similar increase (Figure 6.3.2.1). Consequently there has been a reduction in the per capita availability of pulses from 60.7 grams in 1951 to 34 grams per day in 1996 (Figure 6.3.2.2).

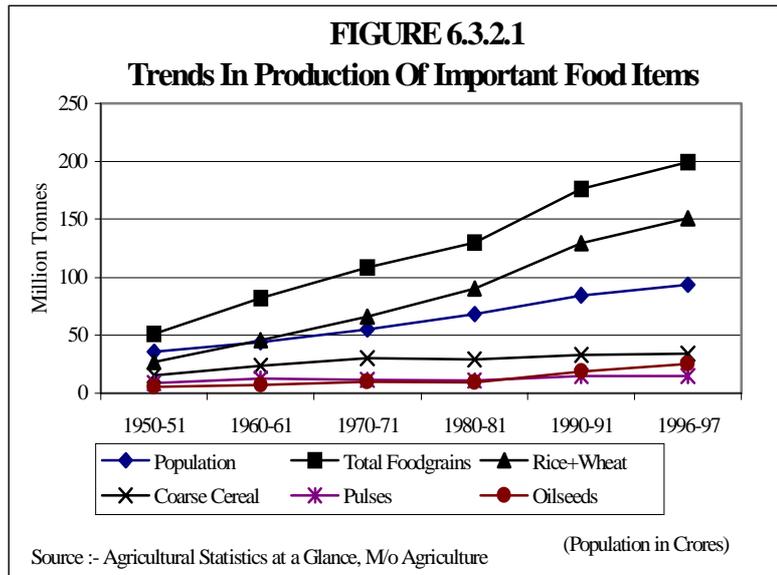
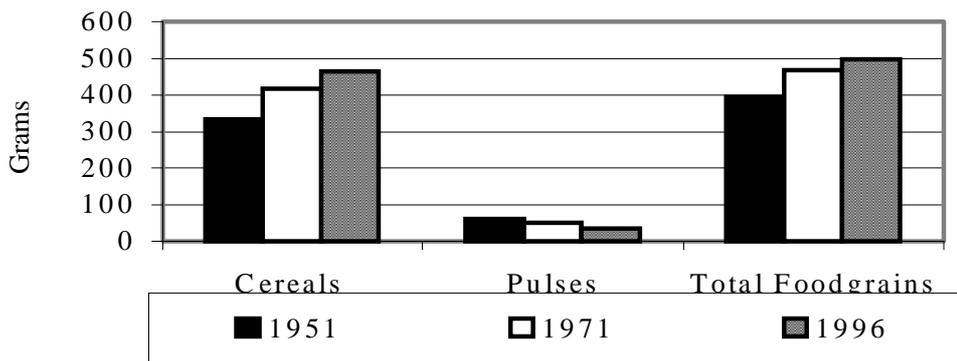


FIGURE 6.3.2.2
PER CAPITA NET AVAILABILITY OF FOODGRAINS



Source: NNMB

9. During the last few years the country has imported pulses to meet the gap. There has been a sharp and sustained increase in cost of pulses, so there is substantial decline in per capita pulses consumption among poorer segment of population. This in turn could have an adverse impact on the protein intake. The pulse component of the "Pulses and Oil Seeds Mission" need to receive a major thrust in terms of R&D and other inputs, so that essential pulse requirement of growing population is fully met.

10. Over years the coarse grain production has remained stagnant and per capita availability of coarse grain has under gone substantial reduction; there has been a shift away from coarse grains to rice and wheat consumption even among poorer segment of population. Coarse grains are less expensive than rice and wheat; they can thus provide higher calories for the same cost as compared to rice and wheat. Coarse grains which are locally produced and procured if made available through TPDS at subsidised rate, may not only substantially

bring down the subsidy cost without any reduction in calories provided but also improve "targeting" - as only the most needy are likely to access these coarse grains.

Horticultural Production

11. India ranks as first & second in production of vegetables and fruits in the world. However, per capita consumption of these are very low. In addition to vital micronutrients, vegetables provide several phytochemical and fibre; and consumption of adequate quantities of vegetables is essential for health. At present, there is lack of sufficient focus and thrust in

BOX 6.3.2.2

Major Achievement Is Self-Sufficiency In Food Grains In Spite Of Population Growth

Challenges

- Continue to improve food grain production to meet the needs of the growing population.
- Increase coarse grain production to meet the energy requirements of the BPL families at lower cost.
- Increase pulse production improve affordability of pulses and increase consumption.
- Improve availability of vegetables at affordable cost through out the year in urban and rural areas.
- Opportunities Achieve substantial improvement in food security.
- Achieve decline in macro and micronutrient undernutrition.

Paradigm shift needed

- From self-sufficiency in food grains to meet energy needs to providing food stuffs needed for meeting all the nutritional needs.
- From production alone to reduction in post harvest losses and value addition through appropriate processing.

horticulture especially cultivation and marketing of the low cost locally acceptable green leafy vegetables and yellow vegetables and fruits; because of this, availability of vegetables especially green leafy vegetables and yellow/red vegetables throughout the year at affordable cost both in urban and rural areas has remained an unfulfilled dream. Health and nutrition education emphasising the importance of consuming these inexpensive rich sources of micronutrients will not result in any change in food habits unless there is harnessing and effective management of horticultural resources in the country to meet the growing needs of the people at affordable cost. States like Tamil Nadu and Himachal Pradesh have initiated some efforts in increasing vegetable production and improving marketing; similar efforts need be taken up in other states also. Processing of fruits and vegetables at or near the areas where they are grown would minimise the inevitable losses during transport and reduce transport costs. Processing units in rural areas would also provide employment opportunities and economic benefits due to value addition.

PREVENTION AND MANAGEMENT OF CHRONIC ENERGY DEFICIENCY (CED)

12. Major causes of CED remains to be inadequate food intake, infections and poor caring practices.

**BOX 6.3.2.3
Current Situation Of CED**

- While mortality has come down by 50 per cent and fertility by 40 per cent, reduction in under nutrition is only 20 per cent.
- There has been 50 per cent decline in severe under-nutrition.
- Reduction in mild under-nutrition is marginal.
- India with less than 20 per cent global children accounts for over 40 per cent under nourished children.
- Under-nutrition in pregnant women and 6-24 months children has not declined.

**BOX 6.3.2.4
Ninth Plan Operational Strategy Is To Improve The Dietary Intake Of The Family
And Improve Nutritional Status Of The Adults Through**

- Adequate agricultural production of cereals, pulses, vegetables and other food stuffs needed to fully meet the nutritional requirement of growing population.
- Improvement in purchasing power through employment generation and employment assurance schemes.
- Providing subsidised food grains through TPDS to the families below poverty line.
- Explore feasibility of providing subsidized coarse grains to families Below Poverty Line (BPL).

Details of these initiatives are dealt with in the respective chapters.

CED In Pregnant And Lactating Women

13. It has long been recognised that pregnant and lactating women and pre-school children are nutritionally the most vulnerable segments of the population and under-nutrition in them is associated with major health problems. Low dietary intake in already chronically under-nourished women has adverse effects on health and nutritional status of both the mother and her offspring. There are readily identifiable situations, which result in further deterioration of maternal nutrition and have adverse impact on outcome of pregnancy. Some such situations are:

- Reduction in habitual dietary intake (drought, pre-harvest season).
- Increase in work (newly inducted manual labourers).
- Combination of both the above (food for work programmes).
- Adolescent pregnancy.
- Pregnancy in a lactating woman.
- Pregnancy occurring within two years after last delivery.

14. The community, the health and ICDS systems are being sensitised to recognise these 'at risk' groups and respond by appropriate remedial measures to tackle the problem in these groups. Simultaneously it is important that the individual at risk of under-nutrition is identified and appropriate steps to improve her nutritional status is initiated by the AWW and ANM.

**BOX 6.3.2.4
Ninth Plan Strategy**

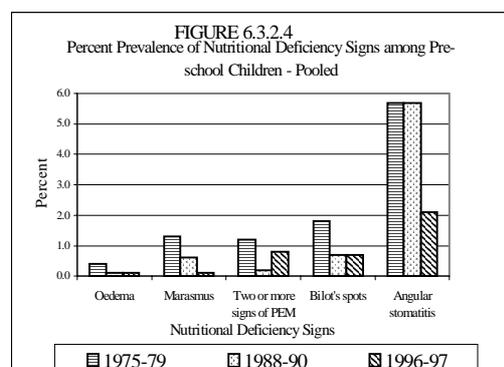
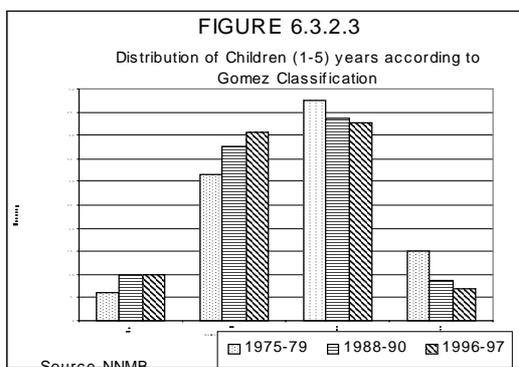
- Screen all Pregnant and lactating women for CED.
- Identify women with weight below 40 Kgs.
- Ensure that they/their preschool children receive food supplements through ICDS; adequate antenatal, intrapartum and neonatal care.
- Try to bring about some reduction in physical activity.
- Monitor for improvement in nutritional status.
- Provide adequate antenatal, intrapartum and neonatal care.

Progress Achieved

15. Pregnant and lactating women had been an identified priority group for receiving food supplement through ICDS. However, experiences over the years indicate very few needy at risk pregnant women regularly access and benefit from ICDS food supplements. Effective antenatal care is also not readily available. During the Ninth Plan the ICDS programme aims to bring about a change in this scenario through focussed intervention in this group. Efforts are under way to improve intersectoral coordination between the ICDS and the FW workers so that 'at risk' groups/ individuals who are underweight are identified and receive food supplements though the existing ICDS centres; improvement in nutritional status will be monitored. Adequate antenatal and intrapartum care will be provided through the RCH programme.

Pre-school Children

16. Pre-school children constitute the most nutritionally vulnerable segment of the population and their nutritional status is considered to be a sensitive indicator of community health and nutrition. Over the last two decades there has been some improvement in energy intake (Annexure 6.3.1) and substantial reduction in moderate and severe under nutrition in pre school children (Figure 6.3.2.3).



17. Though there has not been any change in the intake of green leafy vegetables and other vegetables, there has been substantial decline in prevalence of nutritional deficiency signs (Figure 6.3.2.4).

Interstate Differences In Dietary Intake, Undernutrition And Under Five Mortality

18. State-wise data on energy intake, prevalence of severe CED and under five mortality are given in Figures 6.3.2.5 & 6.3.2.6.

FIGURE 6.3.2.5

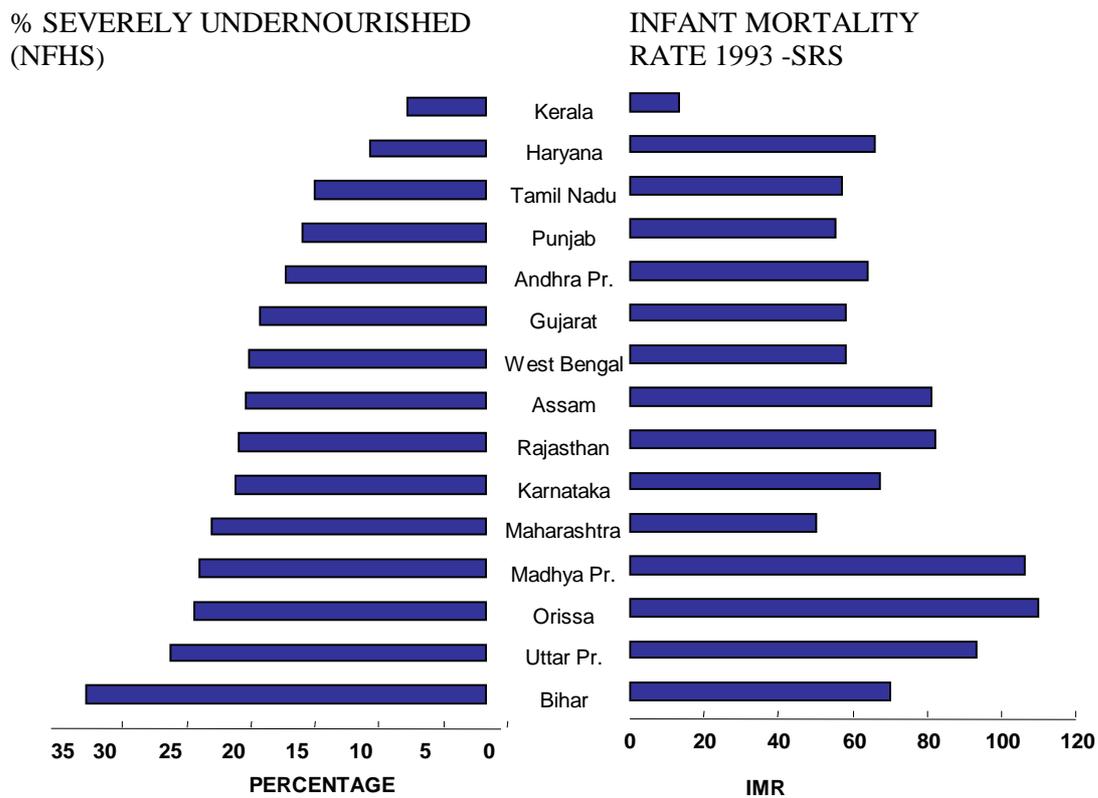
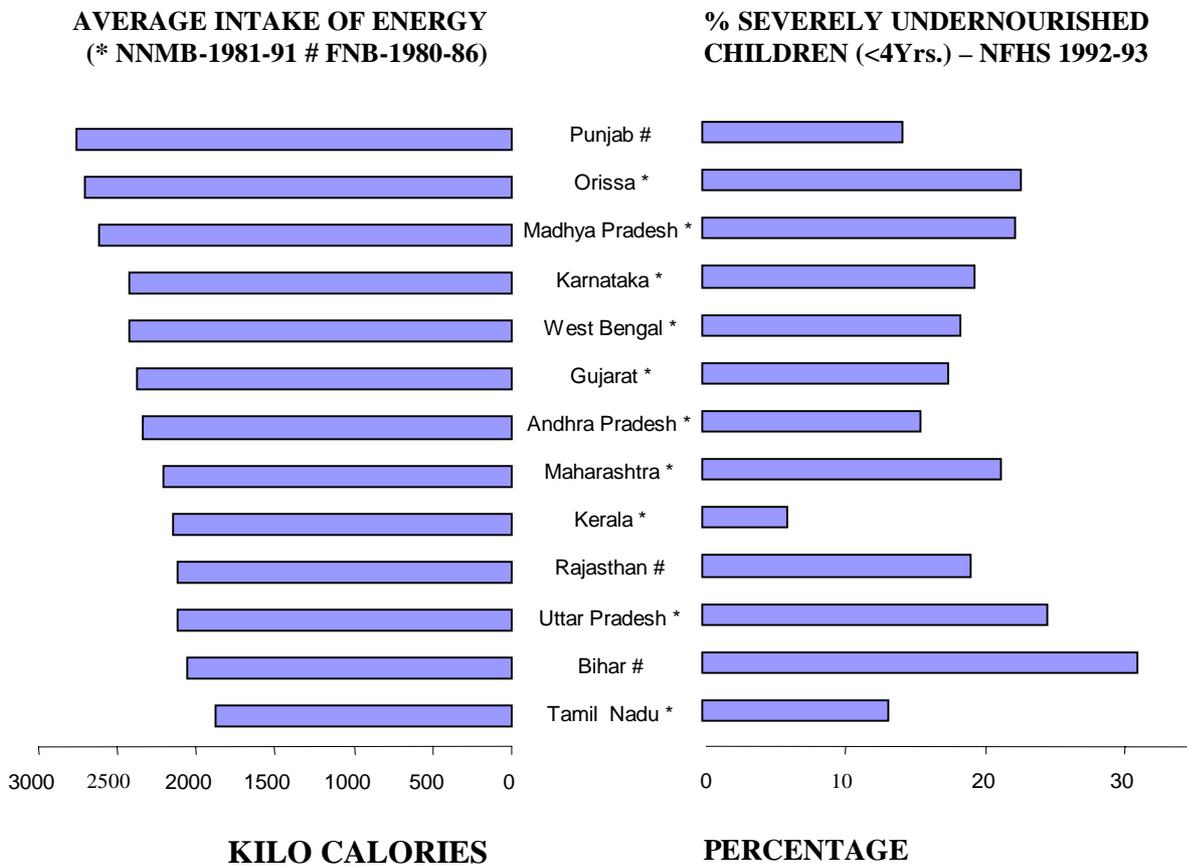


FIGURE 6.3.2.6

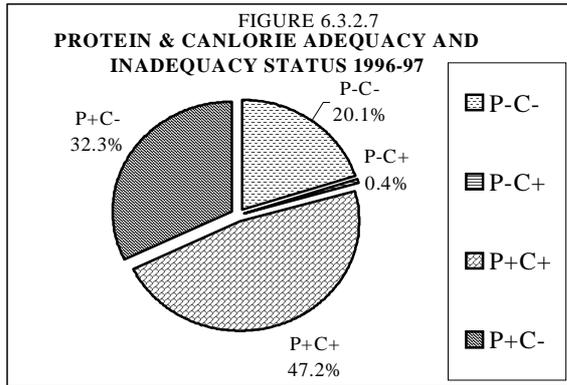


19. Low dietary intake is the most important cause of under-nutrition. Low birth weight, poor infant feeding practices, infections due poor sanitation, lack of safe drinking water and poor access to health care are other major factors responsible for under-nutrition. In spite of low dietary intake prevalence of severe under-nutrition is lower in Kerala because of more equitable distribution of food between income groups and within families and better access to and utilisation of health care. In spite of higher average dietary intake under-nutrition rates are higher in UP, MP, Orissa because of lack of equitable distribution of food and access to health care. Identification and appropriate nutrition and health intervention among ‘at risk’ groups and in under-nourished children are essential for optimal results. This is currently being attempted in ICDS programme in Orissa.

20. Under-nutrition increases susceptibility to infections. Infection aggravates under-nutrition. If uninterrupted this vicious circle could result in death. In most of the states with high under-nutrition the infant mortality is high. In Kerala both severe under-nutrition and IMR are low. In spite of high per capita income, dietary intake and access to health care, both under-nutrition and IMR are relatively high in Punjab. It is therefore imperative that health and nutrition programmes are co-ordinated to achieve optimal synergy between the two interventions so that there is improvement in nutritional and health status.

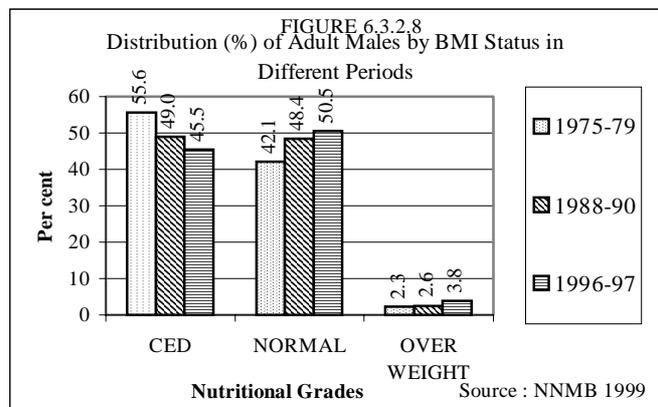
Time Trends In Dietary Intake

21. Over the last three decades there have been substantial changes in socio-economic status as well as life style of the population,



this in turn could have led to changes in dietary intake. The data from NNMB surveys during the last three decades were analysed to find out the changes in dietary intake and nutritional status of the population (Annexure 6.3.2). These data indicate that there has been an increase in energy intake in adult - both men and women over the last three decades. The distribution of households according to protein-energy adequacy status is presented in

Figure 6.3.2.7. About 47 per cent of the households consumed adequate amount of both protein and calorie, while 20 per cent of households consumed inadequate amounts of the same nutrients. In about 48 per cent of the households, in general, the energy intakes were adequate. Data from NNMB also indicate that there has been some decline in CED over years and simultaneously an increase in obesity (Figure 6.3.2.8).



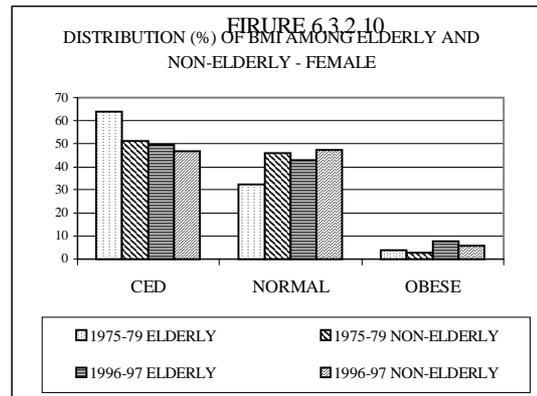
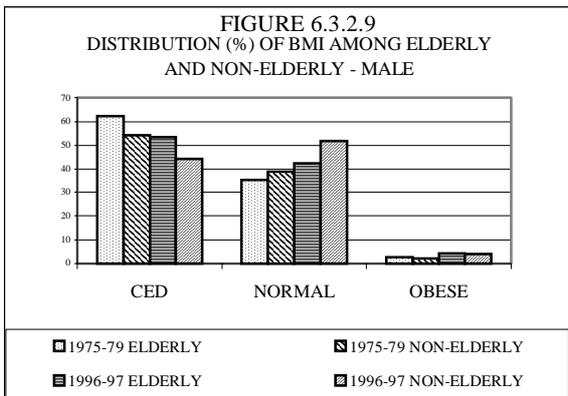
Emerging Nutritional Problem

Adolescent Nutrition

22. Adolescents who are undergoing rapid growth and development are one of the nutritionally vulnerable groups who have not received the attention they deserve. In under-nourished children rapid growth during adolescence may increase the severity of under-nutrition. Early marriage and pregnancy will perpetuate both maternal and child under-nutrition. At the other end of spectrum among the affluent segment of population, adolescent obesity is increasingly becoming a problem. Available data from NNMB on nutrition status of adolescents indicate that under-nutrition continues to be a major problem in adolescents. In addition over year there has been some increase in obesity (Annexure 6.3.3 and 6.3.4). In view of these problems, nutrition education, health education and appropriate nutritional interventions for adolescent are being taken up under ICDS and RCH Programmes. In order to reduce anaemia, supplementation of iron and folic acid to adolescent is also being taken up on a pilot basis under both these programme. Department of Women and Child Development has launched an adolescent girls scheme to take care of specific needs of adolescent girls in 507 blocks. The Department proposes to cover 1493 additional blocks during the remaining period of the Ninth Plan.

Geriatric Nutrition

23. With increasing longevity the proportion and number of persons in the age group 60 and beyond is rapidly increasing. It is noteworthy that in this age-group women outnumber men. Available data from nutrition surveys indicate that in this group also the dual problem of chronic energy and micro nutrient deficiency on one hand and obesity on the other hand are increasingly seen (Figure 6.3.2.9 & 6.3.2.10). Lack of social support, breaking up of joint family system, changing life-styles all aggravate with health and nutritional problems in elderly age group. Innovations such as providing societal support, health care and nutrition services to the elderly are currently being taken up by several agencies. Simultaneously there are efforts to improve family and societal support to elderly according to the existing cultural ethos in different regions. Successful models for improving quality of life will be replicated elsewhere in the country.



Overeating And Obesity

24. During the last two decades there has been a major alteration in life styles and activity pattern among all segments of population. With the ready availability of cooking gas, piped water supply and labour saving gadgets and ready transport there had been a substantial reduction in the physical activity pattern and energy expenditure especially in middle and upper income group. However, the dietary intake has not undergone any reduction; in fact ready availability of fast foods, ice creams and other energy rich food items at affordable costs have resulted in increased energy consumption of these by all members of the family. All these have lead to increasing energy intake over and above the requirement especially among urban and rural affluent population and consequent obesity in these segments of population (Figure 6.3.2.9 & 6.3.2.10). Nutrition and Health Education to convince the population about need for restricting food intake and increasing exercise so that energy balance is maintained are being taken up.

Food Supplementation Programmes

Nutritional Component Of The Integrated Child Development Scheme (ICDS)

25. ICDS, perhaps the largest of all the food supplementation programmes in the world, was initiated in 1975 with the following objectives:

- To improve the health and nutrition status of children 0-6 years by providing supplementary food and by coordinating with state health departments to ensure delivery of required health inputs;

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- To provide conditions necessary for pre-school childrens' psychological and social development through early stimulation and education;
- To provide pregnant and lactating women with food supplements;
- To enhance the mother's ability to provide proper child care through health and nutrition education;
- To achieve effective coordination of policy and implementation among the various departments to promote child development.

26. The initial geographic focus was on Scheduled tribes, drought-prone areas and blocks with a significant proportion of scheduled caste population. In 1975 there were 33 ICDS blocks. Over the last two decades the ICDS coverage has progressively increased. As of 1996, there are 4,200 ICDS blocks with 5,92,571 anganwadis in the country; the number of beneficiaries rose from 5.7 million children and 1.2 million mothers in 1985 to 18.5 million children and 3.7 million mothers in 1996.

BOX 6.3.2.6 ICDS During Ninth Plan

Ninth Plan envisages that efforts are to be made to - (a) ensure that bottlenecks in food supply are eliminated; (b) improve the regularity and quality of services (c) effective inter sectoral coordination between health, family welfare and nutrition programmes. Growth monitoring, targeted nutritional supplements to children and mothers with CED, nutrition and health education are to be intensified through the joint coordination of activities of Anganwadi Workers/ANMs; active community/PRI participation in planning, implementation and monitoring of ICDS activities at village level is to be attempted. The efforts should be to focus on detection of severely undernourished children and women who will receive available supplements on priority basis from existing ICDS programme.

Funding Of Nutritional Component Of ICDS

27. The State Govt funds the nutrition component of ICDS programme. In addition to ICDS, some states have other supplementary feeding programme e.g. Tamil Nadu - Mid-day Meal Programme. Table 6.3.2.1 provides the information on expenditure relating to nutrition in 12 major states. It is obvious that expenditure does not have any correlation with level of under-nutrition or State Domestic Product. States, which have higher prevalence of under-nutrition, are not investing higher amount in food supplementation programme. However, expenditure on supplementary nutrition is not the only critical determinant of level of under-nutrition. Kerala, which is spending very little on nutrition programmes, has the lowest under-nutrition rates, perhaps due to more equitable distribution of food and effective health care.

TABLE 6.3.2.1
Nutrition Spending In Selected States, 1992-95

State	Population Below Poverty line (%)	Severe and Moderately Mal- nourished Children (%)	Net Annual State Domestic Product Per Capita (Rs.)	Nutrition Spending As a % of State Domestic Product		
				92-93	93-94	94-95
	93-94	92-93	94-95	92-93	93-94	94-95
Andhra Pradesh	0.23	0.49	57.18	0.11	0.10	0.10
Assam	0.41	0.50	49.73	0.11	0.12	0.17
Gujarat	0.24	0.50	81.64	0.31	0.31	0.29
Haryana	0.25	0.38	90.37	0.17	0.17	0.16
Karnataka	0.33	0.54	63.15	0.08	0.08	0.10
Kerala	0.25	0.29	57.68	0.10	0.09	0.12
Madhya Pradesh	0.43	0.57	45.44	0.20	0.16	0.18
Maharashtra	0.37	0.54	98.06	0.08	0.08	0.08
Orissa	0.49	0.53	41.14	0.32	0.33	0.36
Rajasthan	0.27	0.42	52.57	0.09	0.12	0.13
Tamil Nadu	0.35	0.48	66.70	0.62	0.53	0.58
West Bengal	0.36	0.57	55.41	0.07	0.08	0.08

Note: Nutrition spending figures include GOI and state government expenditures on ICDS, NMMP and other nutrition programs.

Source: World Bank - India Wasting Away.

28. Outlays and expenditures for food supplementation through ICDS during the Ninth Plan are given in Annexure 6.3.7.

29. Planning Commission reviewed the State Governments funding of nutrition component of ongoing ICDS programme in 1999. The current norms envisage that funds for feeding 72 beneficiaries are to be provided to every anganwadi (against the average of about 200 eligible children and women in the community). The programme guidelines are uniform for all blocks. At the national level only 30 million out of the country's 162 million children are covered. The 'covered' children may not be the most needy - groups or individuals. There are no guidelines for targeting the available food to the most needy.

30. Planning Commission computed the State-wise requirement of funds as per the existing ICDS guidelines and if supplements were to be given only to women and (0-4) children from BPL families taking into account state specific birth rates (1997) and BPL rates (1994). The gap in funding under these two scenario were calculated and the data is presented in Annexure 6.3.5. It is obvious that under both these scenario there are huge gaps between required funds and amount actually provided. The State Governments have been requested to initiate steps to fill this critical gap to the extent possible. In addition to funds under BMS, the funds under PMGY may have to be effectively utilised to cover/reduce the gaps.

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Progress During The Ninth Plan And Suggestion

31. The Department of Women and Child Development proposes to operationalise 318 new projects under ICDS-III in the states of Uttar Pradesh, Maharashtra, Kerala and Rajasthan and 143 projects under ICDS-APER in the state of Andhra Pradesh. In order to improve coverage in hilly and tribal blocks the department has suggested that a mini anganwadi can be opened where the population of the hamlet is 150 and there are a minimum of 20 beneficiaries.

Pradhan Mantri's Gramodaya Yojana (PMGY)

32. A new initiatives Pradhan Mantri's Gramodaya Yojana (PMGY) has been announced in the budget 2000-01 with the objective of enabling sustainable human development at the village level. The total allocation for the scheme is Rs.5000 crore; of this Rs.2500 crore have been allocated for improving rural connectivity. An allocation of Rs. 2500 crore have been made to States and UTs for investment in selected basic minimum services viz. Primary health, primary education, rural shelter, rural drinking water and nutrition; 15 per cent of the outlay is earmarked for each of the five sectors. The sectoral allocation of the remaining 25 per cent has been left to the decision of the states. The concerned Administrative Department would set up a Committee to approve the proposals and recommend to the Ministry of Finance for release of funds. The concerned central Ministries have been entrusted with the responsibility of drawing up the guidelines for preparation of the schemes by the states in consultation with the Planning Commission, releasing of the funds and monitoring the progress. Department of Women and Child Development has drawn up the guidelines that the entire amount of Rs.375 crore earmarked for the nutrition sector will be utilised to provide take home food supplements based on locally acceptable cereal, pulse oilseed mix for providing food supplements to the nutritionally most vulnerable under three year children; the Dept has also requested the states that they may contribute as much as possible for nutrition sector so that the large gaps in availability of food supplements under the ICDS programme can be bridged.

Monitoring of ICDS

33. ICDS monitoring format utilised by the Department of WCD had contained mainly process indicators. Information on nutritional status though collected at Anganwadi & reported to CDPO was not being sent to DWCD. As a part of PMGY initiative, Planning Commission has designed a simple format for reporting district-wise dis-aggregated data on nutritional status of under-three and under-five children (Format given in Annexure 6.3.6). Collection, compilation and use of this data may improve monitoring the impact of ongoing programmes in prevention and management of under-nutrition, and enable district specific intervention.

34. In Orissa attempts were made to improve the monitoring not only regarding the coverage but also quality of services such as the identification of the 'at risk' children, ensuring that they do take supplements, assessing the response to food supplements and if there are any non- responders referring them to the PHC for examination and management. It has been reported from data on three monthly moving average of children with severe under-nutrition in those blocks during the last two years that there had been a decline in the severe

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grades and reduction in the seasonal variation in prevalence of severe grades of under-nutrition. These efforts should be sustained in the state.

35. At the request of the Department of Women and Child Development the National Institute of Nutrition has carried out a study in Andhra Pradesh for improving the monthly progress reports of the ICDS workers and improve monitoring of nutritional component of ICDS programme at district level. The data from the study indicated that it was possible to train and orient the ICDS functionaries to improve the quality and timeliness of the reporting; analysis of the data and discussions on the implications of the reports with the functionaries facilitated the implementation of midcourse corrections and led to improvement in performance. Careful monitoring of the data on prevalence of undernutrition in under five children will also be the first step towards building up of a nutrition surveillance and response system at the critical district level. Under the Reproductive and Child Health initiatives the ANMs are to identify, and refer 'at risk' undernourished women and children. Collaboration between the ANM and the AWW at the village level would improve implementation and monitoring of both health and nutrition programmes.

36. Nutritional status based on weight for age is documented and reported in ICDS project. They are seldom analysed and used because of the fear that the data may not be robust enough to permit its use for monitoring trends. Utilising the data sent by 'routine' reporting of ICDS workers block-wise GIS mapping of the severe and moderate under nutrition in 0-3 years age groups and 4-6 age groups have been done in Orissa and in Andhra Pradesh. The GIS maps clearly brings out trends in under nutrition in different areas for Andhra Pradesh. Based on the data, appropriately targeted interventions could be initiated. Increasing use of the data would encourage workers to correctly file their monthly reports. The CDPOs will develop confidence in the AWW's report and utilise the data to organise intervention at appropriate time right at the village level.

37. These encouraging state level studies need to be utilised to improve monitoring of ICDS. Efforts should be made to improve quality of weighing and reporting of under nutrition in all ICDS blocks. Once good quality data on a regular basis become available at block and district level it should be used as an instrument for:

- Monitoring ICDS activities in terms of reduction in under nutrition.
- Planning appropriate interventions based on the data and
- Nutritional surveillance in vulnerable groups.

The National Programme For Nutritional Support To Primary Education

38. In order to improve the nutritional status and school retention rates among primary school children, the programme for Nutritional Support to Primary Education (popularly known as the Mid-day Meal Scheme) was launched in 1995 as a 100 per cent Centrally funded, Centrally Sponsored Scheme. Under this scheme, all school children in the primary schools in government and government aided schools are to be covered. It was envisaged that children will get pre-cooked food for 10 months in a year where this is not possible, ready to eat foods or food grains are to be provided. Details of the programme are given under the Chapter on Education

Micronutrient Deficiencies

Anaemia

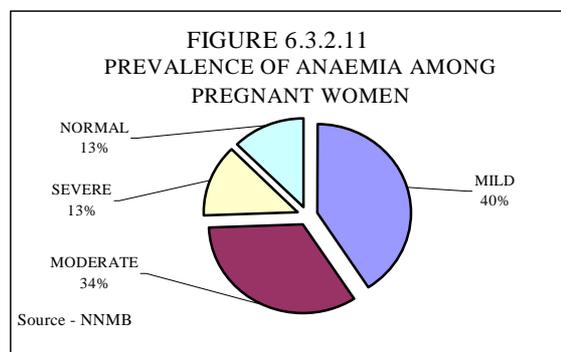
39. Anaemia is the most widespread yet most neglected Micronutrient deficiency disorder. India has the dubious distinction of being one of the countries with the highest prevalence of anaemia in the general population. Poor dietary intake of iron and folic acid are the major factors responsible for anaemia. Poor bio-availability of iron from the phytate,

BOX 6.3.2.7

Ninth Plan Strategy For Prevention & Management Of Anaemia In Pregnancy

Under the RCH programme a beginning is being made to use a multi-pronged strategy for prevention and management of anaemia in pregnancy. The programme components aimed at the control of anaemia in pregnancy includes: (a) nutrition education to increase intake of iron and folate rich foodstuffs, (b) screening of all pregnant women using a reliable method of hemoglobin estimation for detection of anaemia, (c) oral iron folate prophylactic therapy for all non-anaemic pregnant women (Hb > 11 g/dl), (d) iron folate oral medication at the maximum tolerable dose throughout pregnancy for women with Hb between 8 and 11 g/dl, (e) parenteral iron therapy for women with Hb between 5 and 8 g/dl if they do not have any obstetric or systemic complication, (f) hospital admission and intensive personalised care for women with Hb < 5 g/dl, (g) screening and effective management of obstetric and systemic problems in all anemic pregnant women and (h) improvement in health care delivery system and health education to the community to promote utilisation of available facilities for antenatal and intrapartum care.

fibre rich Indian diet aggravates the situation Anemia affects all age groups of population from all strata of the society. Anemia present from childhood through adolescence antedates pregnancy and it gets aggravated during pregnancy and perpetuated by blood loss during labour. Pregnant women and pre-school children are the worst affected. Prevalence of anaemia among pregnant women ranges between 50-90 per cent (Figure 6.3.2.11). Anaemia is associated with reduction in work capacity and increased susceptibility to infection. Association between anaemia and low birth weight are well documented. Anaemia continues to be responsible for a substantial proportion of the perinatal and maternal morbidity and mortality. Realising the magnitude of the problem, obstetricians made screening and effective management of anaemia an essential component of antenatal care. The National Anaemia Prophylaxis Programme of iron and folic acid distribution to all pregnant women was initiated in 1972. Available data from hospital records and information from community-based surveys on prevalence of anemia in urban and rural population, suggest that the prevalence and the adverse consequences of anaemia in pregnancy have remained essentially unaltered over the past three decades.



Progress And Suggestions

40. Training programmes to improve screening of pregnant women for anaemia and initiating appropriate therapy have been initiated as a part of RCH programme. However, the programme is yet to be operationalised. Serious shortage of iron & folic acid and problems of the quality of tablets at the peripheral level have plagued the programme. The Department of Family Welfare is now strengthening logistics of drug supply in all the States, so that this does not reoccur. Ensuring adequate availability of the drugs and rapid operationalisation of the programme has to be given high priority.

Anaemia In General Population

BOX 6.3.2.8

Ninth Plan Operational Strategy For Prevention Of Anaemia In The General Population Includes

- Fortification of common foods with iron to increase dietary intake of iron and improve hemoglobin status of the entire population including children, adolescent girls and women prior to pregnancy.
- Health and nutrition education to improve consumption of iron and folate rich foodstuffs such as green leafy vegetables,
- Horticultural interventions to improve availability of green leafy vegetables in urban and rural areas at affordable costs throughout the year.

Progress And Suggestions

41. There are on going clinical and operational research studies on double fortified salt, which are being funded by various agencies. Health education and horticultural intervention are receiving attention, though the outreach and achievement in terms of changed consumption pattern of vegetables are still far from satisfactory. The pace of these activities needs to be stepped up.

Iodine Deficiency Disorders

42. Iodine deficiency disorders (IDD) have been recognised as a public health problem in India since mid-twenties. Initially, IDD was thought to be a problem in sub-

BOX 6.3.2.9

Operational Strategy For Prevention Of IDD In The Ninth Plan Includes

- Production of adequate quantity of iodised salt of appropriate quality;
- Appropriate packaging at the site of production to prevent deterioration in quality of salt during transport and storage;
- Facilities for testing the quality of salt at production level, at retail outlets and household level so that consumers get and use good quality salt;
- IEC to ensure that people consume only good quality iodised salt and
- Reduction in the price differentials between iodised and non-iodised salt through subsidy to people below poverty line, improving ready access to iodised salt through TPDS.

Himalayan region. However, surveys carried out subsequently showed that IDD exists even in riverine and coastal areas. No State in India is completely free from IDD. Universal use of iodised salt is a simple inexpensive method of preventing IDD.

43. The National Iodine Deficiency Disorders Control Programme has concentrated largely on ensuring the iodisation of salt and is one of the successful micronutrient programmes. However, production of iodised salt has been short of requirements, quality control is inadequate and transportation bottlenecks remain. Although most states have banned the sale of non-iodised salt, this is still available widely, even in goiter-endemic areas. The poor probably benefit least from IDD programme as they are more likely to consume uniodised salt which is cheaper.

Progress And Suggestions

44. There has been substantial improvement in production but still 100 per cent requirements are not met. Not all States have imposed ban on sale of non-iodised salt for human consumption. Quality of salt has improved; quality control at production level has been stepped up. Availability of good quality of iodised salt at household level is still not universal.

45. The quality of salt at the user, state and the consumer level assessed in states like UP and Himachal Pradesh suggests that there is a need to focus on salt with adequate iodine content reaching the consumers - by using powdered salt, quality control of iodisation, packaging of salt in consumer packs, and ensuring that there is no deterioration in quality during transport and storage.

46. As a part of its drive to prevent IDD among the general public, the Central Government had issued a notification w.e.f. May, 1998 making it mandatory for all manufacturers of edible salt to iodise their product. There had been debates whether as a public health measure iodisation should be enforced through such statutory provision; in view of this, the Central Government have issued a preliminary notification in May 2000 proposing a future withdrawal of the compulsory statutory iodisation of edible salt. The issue is now open for public debate.

National Prophylaxis Programme Against Nutritional Blindness

47. Vitamin A deficiency in childhood is mainly due to inadequate dietary intake of

BOX 6.3.2.10 **Ninth Plan Strategy**

- To improve the coverage of all doses of massive dose Vitamin A administration. Increased intersectoral coordination between ICDS and FW workers – Anganwadi workers may be requested to administer 2nd and subsequent doses.
- Ensure adequate availability of Vitamin A.
- Health education to improve consumption of foods rich in B-carotene will be continued and backed up by efforts to improve their availability at affordable cost.
- The target for the Ninth Plan is to control Vitamin A deficiency so that the incidence of blindness due to Vitamin A deficiency becomes less than 1/10,000 not only at the national level but also in every State.

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Vitamin A. Increased requirement of the Vitamin A due to repeated infection aggravated the magnitude and severity of the deficiency. In 1970 the National Prophylaxis Programme Against Nutritional Blindness was initiated as a Centrally Sponsored Scheme (CSS). Under this CSS, all children between ages of one and five years were to be administered 200,000 IU of Vitamin A orally once in six months. Therapeutic doses are given to those with detected deficiencies; programme promotes improved dietary intake of Vitamin A rich food. Coverage under massive dose of Vitamin A has been low.

48. In an attempt to improve the coverage especially in the vulnerable 6 months to 23 months age-group Government of India took a decision to link up Vitamin A administration to the ongoing immunisation programme during the Eighth Plan period. Under the revised regimen a dose of 100,000 IU of Vitamin A is to be given to all infants at 9 months along with measles vaccine and a second dose of 200,000 IU is to be administered at 18 months of age along with booster dose of DPT and OPV. The reported coverage figures under the modified regimen indicate that there has been some improvement in coverage with the first dose (50-75 per cent). However, the coverage for subsequent doses is low, because of persistent shortage of Vitamin A restrict the programme, poor logistics and low community awareness. However, in spite of these short comings, there has been a substantial reduction in the prevalence of blindness due to Vitamin A deficiency from 0.3 per cent in 1971-74 to 0.04 per cent in 1986-89. Repeat surveys carried out by National Nutrition Monitoring Bureau indicated that the incidence of Bitot's spots came down from 1.8 per cent in 1975-79 to 0.7 per cent in 1988-89.

Progress And Suggestions

49. In an attempt to improve coverage for second and subsequent doses of Vitamin A, some States like Orissa had linked administration of Vitamin A with pulse polio immunisation campaign. It is reported that the State took precautions to prevent overdosing by stopping Vitamin A administration in preceding 6 months. The State reported improved coverage. Problems with this strategy include:

- Special efforts need be made to ensure that only children between 1-3 years received Vitamin A and 0-5 years old children receive polio. This may not be easy as PPI is a massive campaign covering over 12 crore children and the booths are manned by persons who are not health professionals.
- Second dose of Vitamin A for the year has to be administered through alternative strategy.

50. In view of this it might be preferable to use the sustainable strategy for improving Vitamin A status of children i.e.

- Administration of massive dose of Vitamin A through AWW twice a year say April and October every year
- Nutrition education by AWW to improve intake of green/yellow vegetable

National Nutrition Policy

51. The National Nutrition Policy adopted in 1993 advocates a comprehensive inter-sectoral strategy for alleviating the multi-faceted problem of malnutrition and achieving an

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optimal state of nutrition for all sections of the society. Several of the concerned sectors have since reviewed the progress achieved and have revised their targets for the Ninth Plan/2010 AD. For instance the Family Welfare programme has undergone paradigm shift and under the RCH programme, FW targets have been revised. The goals set in National Plan of Action for Nutrition may have to be revised accordingly.