Chapter 9

Nutrition

Nutrition is to a human being what development is to a state. Article 47 of the Constitution of India, says "State shall regard the raising of the level of the nutrition and the standard of living of its people and the improvement of public health among its primary duties....." *The National Nutrition Policy (NNP) 1993* further iterates, "Nutrition affects development as much as development affects nutrition". The state of malnutrition has a direct bearing on social and economic progress. This section is geared to the task of understanding vital issues pertaining to nutrition in Himachal Pradesh. It is divided into sub-sections namely, government initiatives, current nutritional status of children, adolescents, adults, women and the elderly; food consumption patterns; the status of micronutrient deficiencies and the role of the private sector in the state. The recommendations and strategies are based on field reports.

Government Initiatives

The existing budgetary allocations for nutrition in the state in various plans indicate the interest that is evoked in alleviating the nutritional status of its human resource. Even though nutrition was part of earlier plans, real emphasis on the nutrition budget became evident in the Fifth Plan, when the Union Department of Women and Child Development introduced Integrated Child Development Scheme in the country, as well as in the states. Since the Seventh Plan, nutritional programmes have been receiving priority. Expenditure on these programmes have exceeded the outlay. The expenditure on nutrition-related programmes and schemes was 1.16 times the outlay in the Seventh Plan, 1.63 times that of the Eighth Plan and 1.18 times in the Ninth Plan. To combat malnutrition and micronutrient deficiencies, the state is implementing centrally-sponsored schemes as well as certain self-initiated ones. Some of these are:

Initiatives

Central Government Initiatives	*Aims/Objectives*
The Applied Nutrition Programme (1963-64)	The objective was to arrange nutritious food for pre-school children, expectant and nursing mothers. It was initiated in three blocks. Subsequent to the trifurcation of Punjab and reorganisation of Himachal Pradesh, another four blocks were added.
The Special Nutrition Programme (1970)	The objective was to provide high protein and nutritious diet to children below six years and pregnant and nursing mothers. It was initiated in three tribal blocks on an experimental basis in addition to some slum areas of Shimla. In 1970-71; the programme benefited 4,032 tribal and 440 urban children. The feeding programme was run for 300 days in a year. Initially, the target group was children below three years, but by 1971-72 the programme was extended to children up to six years of age and pregnant and nursing mothers.
Integrated Child Development Scheme (ICDS)	ICDS aims at reaching all needy children below six years (to improve their health and nutritional status), expectant and nursing mothers and women (to enhance their capability to look after their health and the nutritional needs of their children) covering the age group of 15-45 years with basic services to alleviate conditions of deprivation. At present, there is a wide network of workers to implement the programme. There are 72 ICDS projects, with 7,354 *Anganwari* centres, in different districts of the state. The beneficiaries' list includes 2,70,741 children below six years and 60,008 pregnant and nursing mothers.
Public Distribution System (PDS)	A network of 3,955 fair price shops has been set up to streamline the functioning of the PDS. The earlier policy of 1997 was amended in 2001 dividing the PDS into four categories, *viz.*, above poverty level (ABL), below poverty level (BPL), *antodaya* (poorest) and *annapurna* (indigient).

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Central Government Initiatives	Aims/Objectives
National Programme of Nutritional Support to Primary Education (1995)	The basic objective is to promote universalisation of primary education and also to improve the nutrition of children in primary classes. Foodgrains (wheat/rice) at the rate of three kg. per student per month is distributed, subject to a minimum of 80 per cent attendance in primary classes. The Ministry of Human Resource Development, Department of Education is implementing this scheme.
Udisha Project (1998)	Udisha is a nationwide training component of the World Bank-assisted Women and Child Development Project. The aim of Udisha is to develop all functionaries into agents of social change, people who can act positively at all times. The functionaries trained in the programme include Anganwari workers, supervisors, Additional Child Development Project Officers (ACDPO), Child Development Project Officers (CDPO), medical officers and para- medical staff. Under this project, 2500 Anganwari workers (AWWs) were trained by the year 2002-03. A batch of 35 Anganwari workers is being trained at four training centres at Suni and Theog in Shimla district, Rasmai in Sundernagar (Mandi) district and at Gaggal in Kangra district.
Kishori Shakti Yojana (11-18 years) (2000)	The basic objective of this scheme is to prepare adolescent girls to understand and learn the significance of personal hygienic environment, sanitation, nutrition, first aid, health and nutrition education, family life, child care and development etc. and to prepare healthy future mothers. At the All-India level, 2000 blocks were selected for implementation of the scheme; 15 of these blocks are in Himachal Pradesh.
Administration of Vitamin-A	The objective is to prevent blindness. Vitamin-A drops are orally administered to children every six months. This programme is implemented through the Department of Health and Family Welfare.
Distribution of iron and folic acid tablets	The objective is to prevent nutritional anaemia among women and children; the Department of Health and Family Welfare distribute IFA tablets.
National Iodine Deficiency Disorders Control Programme (NIDDCP)	The focus is on popularising the use of iodized salt consumption.
The National Nutrition Mission (2001)	The objective is to address the problems of malnutrition in a holistic manner and to review and implement the National Nutrition Policy and the National Plan of Action on Nutrition
Mobile Anganwari Centres (2000)	The objective is to cover the left-out children and mothers in rugged and inaccessible areas. The *Anganwari* worker organises a Mobile *Anganwari* Centre once in two weeks. The activities undertaken are to distribute food (nutrition), monitor growth of children and organise immunisation camps with the assistance of health functionaries. Of the total 7,123 *Anganwari* centres, 3,693 have mobile Centres (Department of Social, Women and Scheduled Castes, Government of Himachal Pradesh, February 2003).

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Central Government Initiatives	Aims/Objectives
Him Viyanjan (2000)	The Department of Social, Women and Scheduled Castes Welfare, Himachal Pradesh has collected from different districts of the state recipes along with their nutritive values. It is a compilation of information on improving the nutritional status of the people. This book is circulated among the functionaries of the department to disseminate the required information among the people.
Panchayati Raj Institutions	In view of the implementation of the 73rd and 74th Constitutional Amendment, the Welfare Department has handed over to the PRIs the task of appointing and ensuring smooth functioning of *Anganwari* workers and helpers. To ensure their effective and efficient functioning the department has produced a document outlining the functions of the PRIs in relation to ICDS.

Despite the strong efforts of the state to ensure food security to its people, there is need for an innovative and creative approach to uplift the nutritional status of the people. This calls for an intensive planning strategy.

Nutrition Planning in Himachal Pradesh

Planning at the national and state level has had the aim of achieving balanced growth. The process has moved from a sectoral to an integrated approach. Himachal Pradesh's emphasis on nutrition has been evident from the First Plan onwards, when for combating nutritional deficiencies such as goitre, rickets and tuberculosis, a doctor was specially trained in the science of nutrition. In the subsequent plans, the state formulated and implemented a number of schemes to enhance the nutritional level of its people. The national Tenth Plan marks a paradigm shift from food security at the state level to nutrition security at the individual level.

Over a period, the state has reached close to ensuring food security for its people. The monthly per capita expenditure (availability of two square meals a day) indicates that almost all households (rural 99.7 per cent and urban 99.8 per cent) receive two square meals a day. While according to the latest survey by ORG MARG done in 1999, six per cent of the families still do not get two square meals in Himachal Pradesh as against 14 per cent at the all-India level. It is important that mere availability of adequate foodgrains in a state is not sufficient. What is required is to ensure the quality of the food available and the awareness to convert it into a balanced diet.

The National Nutrition Policy has outlined certain short-term and long-term interventions. It is imperative for the state to streamline the policy and integrate it with its own agenda.

Assessing Nutritional Status: Children, Adolescents, Adults, Women and the Elderly

Nutritional Status of Children

Low Birth-weight Children

It is pertinent to plan eradication of nutritional discrepancies among children. Infants born underweight (less than 2.5 kg) indicate a number of maternal complications such as malnutrition, anaemia, hypertension and infections. The percentage of underweight children in Himachal Pradesh has gone up in the last five years from 28.2 in 1992-93 to 35.1, even when 87 per cent of the mothers received antenatal care during pregnancy. Other states of the region, such as Punjab, Haryana and Jammu and Kashmir have experienced a decrease in the proportion of underweight births during the same period. This is the position at the national level too (Table 9.1). It appears that high-risk pregnancies are not being identified and an effective referral system does not exist. The state's goal of reducing the proportion of low birth-weight babies from the existing 30 per cent (2000) to 10 by 2020 (*Himachal Health Vision, 2020*), seems to be a far-fetched idea until the Departments of Welfare and Health work together to provide quality service to pregnant women.

The micro level situation indicates variations in the proportion of underweight children; Hamirpur had the highest (65.9 per cent) whereas Mandi had the lowest proportion (2.7 per cent) of low birth-weight babies (*Reproductive Health Survey, 1998*). The state is well placed in the matter of neonatal (22.1 per cent), post-neonatal (12.3 per cent), infant (34.4 per cent) and under five mortality rate (42.4 per cent) (NFHS-India, 1998-99). The state needs to take up urgently the health care of women and children, in addition to their survival, so that morbidities and other deficiencies due to lack of nutrition among adolescent girls and women is effectively taken care of. This would, in the long run, enhance the quality of the workforce of the state.

Malnutrition among Children

Malnutrition in Himachal Pradesh is a silently creeping crisis under the cover of an emerging developed state in terms of a decline in its infant mortality rate. At 60 per 1000 live births, it was lower than the national average of 68 per 1000 (SRS, 2000), but the problem of under-nutrition persists. An undernourished child is prone to morbidity and has longer periods of illness as compared to a well-fed child. Its impact is evident from late school entry, slow learning abilities and eventually becoming an under productive adult. A reduction in child malnutrition in Himachal Pradesh is evident during 1992-93 to 1998-99, but it was not as noteworthy as its neighbouring states (Table 9.2). The state government proposes to reduce malnutrition by less than five percent (*Himachal Health Vision, 2020*). It would be relevant for the state to replicate the Tamil Nadu Integrated Nutrition Programme, which is a success story as far as decreasing the proportion of underweight children is concerned.

TABLE 9.1

Underweight Children at Birth as per cent of Total Deliveries in Himachal Pradesh, Neighbouring States and India: 1992-93 and 1998-99

States	Weight less than 2.5 kg					
	1992-93			1998-99		
	Total	Rural	Urban	Total	Rural	Urban
Himachal Pradesh	**28.2**	**30.8**	**18.7**	**35.1**	**35.8**	**31.7**
Punjab	28.6	31.0	25.4	23.8	25.3	21.6
Haryana	26.0	26.5	25.5	24.3	29.1	18.5
Jammu & Kashmir	32.4	38.0	23.2	28.2	24.0	33.8
India	**26.0**	**24.7**	**26.3**	**22.7**	**23.9**	**21.1**

Source: Computed from the *National Family Health Survey, India* 1992-93 and 1998-99.

TABLE 9.2

Child Malnutrition in Himachal Pradesh, Neighbouring States and India : 1992-93 to 1998-99

States	Percentage of Malnourished Children	
	1992-93	1998-99
Himachal Pradesh	**47.0**	**43.6**
Punjab	45.9	28.7
Haryana	37.9	34.6
Jammu & Kashmir	44.5	34.5
India	**53.4**	**47.0**

Source: *National Family Health Survey, India,* 1992-93 and 1998-99.

Note: Age of children (under 4 years), 1992-93; Age of children (under 3 years), 1998-99.

The nutritional status of children (0-36 months) in Himachal Pradesh indicates that more than two-fifths are underweight and stunted. Twelve per cent of the children are severely underweight. The corresponding figures at the national level are 47 per cent, 45.5 per

TABLE 9.3

Nutritional Status of Children in Himachal Pradesh, Neighbouring States and India

State	Weight for Age				Height for Age				Weight for Height			
	% below-3SD		% below-2SD		% below-3SD		% below-2SD		% below-3SD		% below-2SD	
	1992-93	1998-99	1992-93	1998-99	1992-93	1998-99	1992-93	1998-99	1992-93	1998-99	1992-93	1998-99
H.P.	**12.9**	**12.1**	**47.0**	**43.6**	**—**	**18.1**	**—**	**41.3**	**—**	**3.3**	**—**	**16.9**
India	**20.6**	**18.0**	**53.4**	**47.0**	**28.9**	**23.0**	**52.0**	**45.5**	**3.2**	**2.8**	**17.5**	**15.5**

Source: *National Family Health Survey-India*, IIPS, Mumbai (1992-93 and 1998-99).

Note: — Not available because children's height/length was not measured.

cent and 18 per cent. Himachal Pradesh has a higher proportion of underweight children than the neighbouring states of Punjab, Haryana and Jammu and Kashmir. Apparently, the proportion of underweight males is higher than females. The standard of living has an impact on the nutritional status of the child. Nearly one-third of the children with a higher standard of living are undernourished (33.1 per cent) and stunted (29.0 per cent), as against nearly three-fifths (57.7 per cent) of children with a lower standard of living. The literacy level of the mother has a deep impact on the nutritional status of the child; the higher the education level of the mother, the lower the under-nutrition level of the children (NFHS 1998-99). This makes a case for focusing on children belonging to lower income groups and imparting education to women.

At the district level, more than three-fifths of the children (1-5 years) in the rural areas of Bilaspur, Sirmaur, Solan, Mandi and Kullu are underweight. While, more than half the children in the districts of Kangra and Hamirpur and more than two-fifths of the children in Shimla, Kinnaur and Una are underweight. The low proportion of underweight children in Shimla can be attributed to the impact of urbanisation (23.12 per cent), increased awareness and access to quality health services. In the tribal areas of the state, data are available only for Kinnaur, which also has the lowest proportion of underweight children among the 10 districts (Table 9.4). The better nutritional status of the tribals can be attributed to their consumption of local cereals, such as amaranthus, which has a high nutritive content. Non-availability of vegetables and fruits round the year increases the consumption of non-vegetarian food, which provides them with adequate nutrients.

The present nutritional status of children below six years is evident from the data provided by the Department of Social, Women and Scheduled Castes Welfare, which indicates trends similar to the ones

TABLE 9.4

Prevalence of Underweight, Stunting and Wasting at District Level (Rural) Children (1-5 years) in Himachal Pradesh

(in per cent)

Districts/State	Underweight			Stunting			Wasting		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Bilaspur	73.6	70.1	72.1	73.5	82.1	77.3	11.5	10.4	11.0
Hamirpur	59.8	50.7	56.0	67.6	60.6	64.7	2.9	1.4	2.3
Kangra	65.9	51.2	58.8	71.6	69.1	70.3	6.8	4.8	5.8
Kinnaur	45.9	43.5	44.5	52.4	56.6	54.9	11.5	14.1	13.1
Kullu	67.3	54.9	61.0	61.6	70.2	66.1	17.7	9.0	13.3
Mandi	58.3	64.9	61.2	71.8	77.0	74.1	10.4	10.9	10.6
Shimla	43.9	51.4	47.4	52.4	69.5	60.4	1.2	4.2	2.5
Sirmaur	63.7	63.4	63.5	79.6	75.6	77.7	4.5	4.9	4.7
Solan	52.3	69.8	61.7	61.6	63.2	62.5	10.7	13.1	12.0
Una	42.1	47.0	44.4	72.7	67.7	70.4	2.5	2.0	2.2
Himachal Pradesh	**57.6**	**55.9**	**56.8**	**67.3**	**68.8**	**68.0**	**7.8**	**7.4**	**7.7**

Source: *India Nutrition Profile*, Department of Women and Child Development, Ministry of Human Resource Development, Government of India (1998).

reported by the *India Nutrition Profile (1998)*. During 2000-03, the proportion of underweight children in the state marginally increased by 1.6 per cent points. In the four districts of Chamba, Bilaspur, Mandi and Kangra, the proportion of underweight children has increased during this period. In Chamba, the number of such children increased by 16.1 per cent points and in Bilaspur by 13.5 per cent points. On the other hand, in Solan this proportion decreased by 12.2 per cent points and in Kinnaur by 11.2 per cent points (Table 9.5). The reasons for this position in these districts need to be investigated.

TABLE 9.5

Underweight Children (0-6 years) in Himachal Pradesh (in %), 2000 to 2003

Districts/State	*2000*	*2001*	*2002*	*2003*	*Change in Per cent Points 2000 to 2003*
Lahaul & Spiti	51.41	54.76	42.35	51.42	0.01
Kangra	49.23	50.72	53.22	50.75	1.52
Sirmaur	49.24	49.10	47.89	49.29	-0.95
Bilaspur	32.59	39.77	39.04	46.13	13.54
Solan	57.83	46.59	44.59	45.58	-12.24
Chamba	26.21	25.62	27.49	42.28	16.07
Hamirpur	43.58	42.45	44.45	42.09	-1.49
Mandi	33.49	37.14	37.33	38.44	4.95
Kullu	37.68	36.64	34.56	37.12	-0.57
Shimla	38.13	39.34	38.37	36.60	-1.54
Una	35.72	38.10	42.17	31.59	-4.12
Kinnaur	37.24	33.52	25.07	26.04	-11.20
Himachal Pradesh	**40.47**	**41.22**	**40.85**	**42.05**	**1.58**

Source: Department of Social, Women and Scheduled Caste Welfare, Government of Himachal Pradesh, Shimla.

Overall, it is important to ensure nutritional and health care coverage of all children below six. Children up to three years can be covered by imparting awareness and healthy diet to the mother, and children in the 3-6 years age group should be encouraged to regularly attend the Anganwari Centre and eat the food supplied for them.

Adolescent Health and Nutritional Care

Adolescence is a period of tremendous stress, strain and turmoil and it is imperative to anticipate their problems and formulate suitable strategies for implementation. The National Population Policy 2000 has identified this age to be of great significance and has stressed on the need for prioritising it.

TABLE 9.6

Adolescent (15-19 years) Nutritional Status Based on Height, Weight for Height and Anaemia Levels in Himachal Pradesh, Neighbouring States and India

States/India	*Mean Height*	*Percentage below 145 cm*	*Weight for Height (% with BMI below 18.5 kg/m²)*	*Percentage of Women with any Anaemia*
Himachal Pradesh	**153.2**	**9.9**	**43.4**	**43.2**
Punjab	154.6	3.8	29.1	53.1
Haryana	153.3	6.9	27.0	49.8
Jammu& Kashmir	153.6	6.3	34.2	58.2
India	150.6	14.7	38.8	56.0

Source: National Family Health Survey 1998-99.

The NFHS 1998-99 reveals that ten per cent of the adolescent girls (15-19 years) in Himachal Pradesh were below the height of 145 cm. This is a clear indication of a high-risk pregnancy, particularly problems associated with labour. Anaemia levels during 15-19 years were also the highest when compared to other age groups. A comparison with other states reveals that a smaller proportion of girls in Himachal Pradesh are suffering from anaemia (Table 9.6). This problem will continue in the reproductive years of the girls. Due to their ill health, they will give birth to anaemic and underweight children. In the age group of 12-18 years, a higher percentage of girls (3.79 per cent) suffered from goitre while a higher proportion of boys (1.00 per cent) suffered from Angular Stomatitis (INP, 1998). Further, at 16 years of age, three-fourths of the children (74.6 per cent) were being immunised against tetanus toxoid in the state (*Family Welfare Year Book, 1997-98*), which reveals the lack of initiative among the medical staff as well as the community towards this vulnerable section of society, particularly girls who are getting ready for motherhood. Information pertaining to counselling services being provided to unmarried adolescent girls by the ANM, is available only in half the districts of Himachal; one out of every ten adolescents is getting counselling in Kangra (12.0 per cent), Chamba (11.7 per cent), Una (11.7 per cent) and Mandi (11.0 per cent) districts in comparison with one out of every 20 in Kinnaur (6.8 per cent) and Sirmaur (4.1 per cent) (*District Household Survey, Phase-II, 1999*).

A specific programme under which they can be given access to information and counselling services pertaining to their health, nutritional and reproductive needs and problems cannot be overlooked. Age at menarche is a less researched area and a major

determinant of the nutritional status of adolescents and needs to be studied in-depth.

In this era of competitiveness, adolescents aspire to get admission to professional colleges or other institutions of repute. This implies that the adolescent moves out of parental care to acquire professional guidance and tuition. Under these circumstances, the adolescent's nutritional requirements need to be redefined. The challenge is to devise a diet plan for these aspiring achievers, which embraces a healthy cuisine and discourages excesses. Being out of parental care or under the stress of unforeseen events, such as rejection by professional courses, leads these adolescents into habits of smoking and drinking. A higher proportion of boys in the age group of 10-14 years in the state (9 per 1000 persons) take to smoking regularly in the urban areas, while in the rural areas the figure is two per 1000 persons (*Sarvekshana, 1998*). Strict law should be enforced against smoking by youths below 18 years of age. School authorities, both in rural and urban areas, need to be alerted on these matters. Where counselling is accessible at the primary health centres, it should be adequate to ensure dissemination and optimal utilisation.

Nutritional Status of Adults

The nutritional status of adults in Himachal Pradesh reveals that nearly two-fifths of the population in rural areas suffer from chronic energy deficiency, and nearly seven per cent of them from severe forms of chronic energy deficiency. Nearly three-fifths of the adults are normal, while less than five per cent are obese (Table 9.7), as against the national average of one-third chronically energy deficient and less than five per cent obese.

A district-wise nutritional status of the adults (Table 9.8) reveals a prevalence of both extremes in the state, i.e., chronically energy deficient as well as obese adults. More than two-fifths of the chronic energy deficient adults live in the rural areas of the districts of Solan, Bilaspur, Kangra, Shimla and Sirmaur. While, obesity patterns at the district level reveal a higher percentage of obese adults in the rural areas of the districts of Hamirpur, Bilaspur, Una and Shimla.

TABLE 9.7

Per cent Distribution of Adults According to Body Mass Index in Himachal Pradesh and India

(Prevalence %)

State	*Area*	*CED III*	*CED II*	*CED I*	*CED Total*	*Low Normal*	*Normal*	*Normal Total*	*Obese I*	*Obese II*	*Obese Total*
H.P.	**Rural**	**6.7**	**8.3**	**22.9**	**37.9**	**26.0**	**32.3**	**57.3**	**3.3**	**0.5**	**3.8**
India	Rural	8.6	7.8	18.2	34.6	20.9	40.5	61.4	4.1	0.7	4.1
	Urban	6.8	6.1	14.7	27.7	18.4	47.9	66.3	5.4	0.6	6.0
	Total	8.2	7.4	17.3	32.9	20.4	42.1	62.5	3.8	0.7	4.5

Source: *India Nutrition Profile*, 1998, Department of Women and Child Development, Ministry of Human Resource Development, Government of India.

Note: CED Stands for Chronic Energy Deficiency.

TABLE 9.8

Prevalence of CED, Normal and Obese at District Level (Himachal Pradesh-Rural)

(in per cent)

Districts/State	*CED III*	*CED II*	*CED I*	*CED (T)*	*Low Normal*	*Normal*	*Normal (T)*	*Obese I*	*Obese II*	*Obese (T)*
Bilaspur	10.1	10.5	27.2	47.8	20.4	26.8	47.2	4.8	0.3	5.1
Hamirpur	6.6	10.2	21.4	38.2	20.5	35.4	55.9	5.2	0.8	6.0
Kangra	9.3	10.5	25.6	45.4	24.9	26.3	51.2	3.0	0.4	3.4
Kinnaur	3.5	5.2	25.5	34.2	32.5	31.5	64.0	1.6	0.2	1.8
Kullu	3.5	6.8	20.0	30.3	32.8	34.1	66.9	2.6	0.2	2.8
Shimla	6.2	9.1	25.6	40.9	24.6	30.3	54.9	3.7	0.6	4.3
Mandi	5.7	5.9	17.2	28.8	26.4	42.5	68.9	2.0	0.3	2.3
Sirmaur	8.4	9.0	22.8	40.2	27.1	30.6	57.7	1.8	0.3	2.1
Solan	9.6	12.8	25.5	47.9	22.3	25.5	47.8	3.9	0.4	4.3
Una	4.9	4.4	22.7	32.0	28.5	34.3	62.8	4.0	1.1	5.1
Himachal Pradesh	**6.7**	**8.3**	**22.9**	**37.9**	**26.0**	**32.3**	**57.3**	**3.3**	**0.5**	**3.8**

Source: *India Nutrition Profile*, 1998, Ministry of Human Resource Development, Department of Women and Child Development, Government of India, New Delhi.

Note: CED – Chronic Energy Deficiency.

Lack of awareness and faulty dietary intakes could be the possible reasons for adults suffering from these extremes. An in-depth study is necessary to ascertain the underlying factors.

Nutritional Status of Women

The needs of pregnant, sick and disabled women have to be addressed more systematically. One of the vital indicators of women's health is the maternal mortality rate (MMR). The MMR of Himachal Pradesh is 456 per 1,00,000 against the all-India figure of 453 and Kerala's 87. This reflects the unhealthy status of women in the state.

Besides, more than one-fourth of the women suffer from chronic energy deficiency (30 per cent), i.e., they have a body mass index below 18.5 kg/m^2. These figures are higher than those of Punjab (16.9 per cent), Haryana (25.9 per cent) and Jammu and Kashmir (26.4 per cent). The all-India figure is 35.8 per cent. A higher proportion of women in the younger age group (15-19 years) are energy deficient and belong to families with a low standard of living. A higher percentage of children born to deficient mothers are malnourished (53.7 per cent), stunted (45.3 per cent) and wasted (22.7 per cent) (*NFHS-II*). The proportion of obese women is higher in Himachal Pradesh (13.1 per cent) than the national average of 10.6 per cent, although the state's terrain forces the women to consume more energy, which should mean a lower fat accumulation. Six per cent of the women in Himachal Pradesh are short with height below 145 cm. Stunted women have problems during labour and also have adverse affect on the nutritional status of their children. Severe stunting (40.4 per cent) is evident among children whose mother's height is below 145 cms. Special care needs to be given to stunted women during their medical check-up, particularly during antenatal care.

Sexually transmitted infections cause infertility, chronic pelvic inflammatory disease and ectopic pregnancy, which seriously affect child survival, by causing pre-term delivery of low birth-weight and immature infants (*Pachauri, 1996*). The status of women as regards the reproductive health problems in Himachal Pradesh is not favourable as more than one-third of them suffer from reproductive health problems (33.7 per cent). Morbidity and mortality among women in their reproductive period (15-49 years) can be reduced by providing quality antenatal care during pregnancy, increasing institutional deliveries and providing prompt postpartum services for all women (*NFHS-II*).

The Auxiliary Nurse Midwives, the Village Health Guides, the Mahila Mandals and the PARIKAS (Parivar Kalyan Salahkar Samiti) need to join hands with ICDS teams to evolve strategies in the rural areas. The young girls in the state need to be targeted for imparting education related to importance of physical fitness, the appropriate consumption of vitamins and dietary modification, since they are the future mothers. It is vital that the average woman of Himachal Pradesh is made aware of 'balanced diet', so that she addresses her own needs directly and those of her family indirectly.

Nutritional Status of the Elderly

Improved health care facilities have enhanced life expectancy levels from 63.2 years in 1987-91 to 64.5 years in 1991-95 (*Statistical Abstract, Himachal Pradesh, 1999*). The rising number of the elderly requires special attention towards their nutritional needs too. Their nutritional care, in view of their decreasing energy levels and micronutrient deficiencies, needs to be highlighted and monitored effectively. 15 per cent of the currently married women (30-49 years) in Himachal are in the menopause stage (*NFHS 1998-99*). Cessation of menstruation results in nutritional deficiencies, which eventually lead to major health problems.

There is need to establish geriatric and menopause clinics. No fresh investment on staff or infrastructure is required. The existing staff can be trained and utilised and the medical officer at the primary health centre can devote one day in a week to imparting guidance and medical care to the elderly.

Food Consumption Patterns in Himachal Pradesh

Calorie, Protein and Fat Consumption

To ascertain the nutritional status of the community, it is imperative to study its food consumption patterns. An assessment of the food consumption level also includes an analysis of traditional diets and gender equality in food distribution. The National Sample Survey Organisation carried out sample surveys in 1971-73 (27^{th} round), 1981 (38^{th} round) and 1991-94 (50^{th} round) to assess the consumption of calories, proteins and fats. In Himachal Pradesh, the people were reported to be consuming calories and proteins as per the required dietary allocations i.e. calories 2425 Kcal and proteins 60g. Though an overall decline in the calorie and protein intake is evident in the 1971 to 1993-94 period, a significant decline in the calorie consumption in the

rural areas of the state is seen in 1993-94. Fat consumption has remained nearly constant in rural areas in the three survey periods, while in the urban areas a sudden decrease in the consumption is seen between 1971-73 and 1986. Thereafter a consistency is evident in 1993-94. A comparison with its neighbouring states of Punjab, Haryana and the all-India level reveals a decrease in the consumption of calories and proteins with an increase in fat intake (Table 9.9). A strong positive correlation between per capita expenditure and per capita per diem intake of calories, protein and fats is seen in the rural as well as urban Himachal Pradesh (*NSSO 50th Round, 1993-94*).

The overall change in dietary patterns is the result of increased literacy, awareness and preference for sedentary jobs. Facilities such as telephones (the number of subscribers has increased from 58,697 in 1994 to 2,25,103 in 1999) and other means of transport (the number of registered motor vehicles has gone up from 9,275 in 1994 to 20,485 in 1999), which reduce the need for walking have an indirect impact on the amount of food consumed.

Micro-level Variations in Food Consumption

Distinct inter-district variations are evident because of extreme climatic conditions, people's tastes and food habits. Consumption of wheat, rice and potatoes is dominant in the districts of Lahaul and Spiti, Kinnaur, Shimla, Solan and Sirmaur. In winter, an increase in the consumption of meat is reported in the districts of Lahaul and Spiti and Kinnaur. Chamba district also records a higher consumption of meat. An inter-state impact on food habits also emerges in districts touching Punjab such as, Kangra, Una, Kullu, Mandi, Bilaspur and Hamirpur, where, the consumption of maize flour, milk and milk products and green leafy vegetables is high. The consumption of milk and milk products in the state shows a gender bias against the females (1-18 years). A similar bias is also evident in the neighbouring state of Punjab. Caste-wise variation in the consumption of sugar and milk and milk products reveals that the consumption of these items is the lowest among the Scheduled Tribes although the consumption of fruits and flesh foods is the highest among them (*India Nutrition Profile, 1998*).

In 1995, under the Prevention of Food Adulteration Act (1954), 28 per cent of adulteration was found in various food products that were examined. Half the milk samples were found adulterated. Adulteration was also found in butter, ghee and ice cream, fruit products, edible oils, fats and vanaspati.

The state has the advantage of being able to grow a wide variety of fruits. Higher availability and consumption of fruits will enhance the nutritional level of its people. Milk production in the state has also increased, though per capita availability of milk has remained at 343 grams/day (*Economic Survey, 2002, Himachal Pradesh*). The contribution of major livestock

TABLE 9.9

Per Capita Intake of Calories, Protein and Fat Per Diem in Himachal Pradesh, Neighbouring States and India

States	Per capita per Diem Intake of								
	Calories according to			Protein according to			Fat according to		
	1971-73 (Kcal)	1981 (Kcal)	1993-94 (Kcal)	1971-73 (Kcal)	1981 (Kcal)	1993-94 (Kcal)	1971-73 (Kcal)	1981 (Kcal)	1993-94 (Kcal)
Himachal Pradesh									
Rural	**2954**	**2636**	**2324**	**86.0**	**80.0**	**70.5**	**45.0**	**46.0**	**44.6**
Urban	**2961**	**2429**	**2416**	**85.0**	**70.0**	**70.0**	**69.0**	**56.0**	**56.2**
Punjab									
Rural	3493	2677	2418	85.0	79.0	74.7	50.0	52.0	59.8
Urban	2783	2100	2089	70.0	63.0	61.8	52.0	49.0	53.7
Haryana									
Rural	3215	2554	2491	90.0	78.0	78.4	47.0	47.0	53.6
Urban	2404	2242	2140	67.0	67.0	63.6	42.0	49.0	49.4
Jammu & Kashmir									
Rural	3151	2569	2507	80.0	71.0	75.4	34.0	36.0	46.0
Urban	2467	2234	2392	62.0	60.0	69.1	33.0	41.0	58.6
India									
Rural	**2266**	**2221**	**2153**	**62**	**62**	**60.2**	**24**	**27**	**31.4**
Urban	**2107**	**2089**	**2071**	**56**	**57**	**57.2**	**36**	**37**	**42**

Source: Sarvekshana, October-December, 1997, National Sample Survey, 50th Round.

products during 2000-01 was 7.60 lakh tonnes, 81.56 million eggs and 3434 tonnes of meat.

Food Consumption by Women

Low food consumption levels of women have led to late menarche and early menopause. There is a higher probability of miscarriage and stillbirth among inadequately-fed pregnant women. In case such a women delivers a live baby, her lactational amenorrhea after parturition may be longer than that of a well-nourished woman (*Chen, Ahmed, Gesche and Mosley, 1974; Frisch, 1975; Frisch, 1977*).

Above 90 per cent of the women consume pulses or beans, green leafy vegetables, and other vegetables. Above four-fifths of them consume milk or curd (87 per cent) and nearly three-fourths of them consume fruits. The consumption of eggs and chicken, meat or fish is a little low. In spite of a rich dietary pattern and adequate iron and folic acid supplementation, more than two-fifths of the women in Himachal Pradesh (40.5 per cent) suffer from anaemia. The Scheduled Caste and other backward caste women consume relatively less milk or curd and fruits. A high standard of living is indicated by increased consumption of pulses, leafy vegetables and other vegetables, roots and tubers, fruits, milk and milk products and sugar (*NFHS II, Himachal Pradesh*). Intra-familial disparities in food consumption, with particular reference to the left-over food available to the woman, after all at home have been fed, calls for immediate intervention to create awareness about her health needs. Further, an empowerment of women with education related to income-generation activities, which will enable her to buy food, will ensure a healthy woman and a healthy family.

Infant Feeding Practices in Himachal Pradesh

Infant feeding practices are mutually supporting for the mother and the child. The child gets life-saving colostrums from the mother and fertility level is controlled. To monitor nutritional deficiencies in children and to improve the nutritional status of children, mothers need to be made aware of the importance of breast-feeding. UNICEF recommends breast-feeding immediately after birth. In Himachal Pradesh, the situation in this respect is dismal. One out of every ten women (12.2 per cent) in 1992-93 followed the appropriate breast-feeding practices. By 1998-99 the number increased to two out of every ten women. Even this is quite low, though the proportion of infants being breast-fed within one hour of birth was higher than in the neighbouring states of Punjab (6.1 per cent) and Haryana (11.7 per cent) or even at the national level (15.8 per cent). We need to look at the better performing states such as Tamil Nadu (50.3 per cent) and Kerala (42.9 per cent). Immense scope for improvement in breast-feeding practices exists in Himachal Pradesh. A higher literacy level of the mother and delivery in public hospital has enhanced the proportion of mothers who initiate breastfeeding within one hour of birth. Lack of awareness makes more than four-fifths of the mothers (86.2 per cent) squeeze out the first milk from their breasts, thus underestimating the importance of colustrum in the first milk. In Himachal Pradesh, exclusive breast-feeding of infants (0-3 months) came down from 36.4 per cent to 17.5 per cent during the period 1992-93 to 1998-99.

It is imperative to understand the reasons for the decline in breast-feeding practices. The change could be attributed to the impact of urbanisation, i.e., availability of infant feeds, increase in the work burden of women and inadequate awareness. A strategy needs to be evolved to encourage breast-feeding in the urban areas and improve it further in the rural areas.

Overall, the most cost-effective way to achieve a healthy population is to create awareness about locally available nutritious food products and to overcome beliefs against the consumption of non-vegetarian food. The state needs to ensure the availability of unadulterated, nutritionally balanced and hygienically prepared food.

Micronutrient Deficiencies

Anaemia

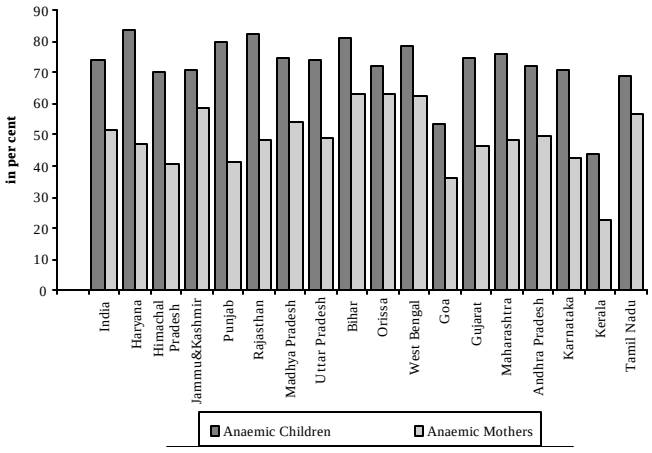
Anaemia in a child leads to impaired cognitive performance, behavioural and motor development, and ultimately affects academic performance (*Seshadri, 1997*). It is one of the micronutrient deficiencies, which needs constant vigil. Its consequences are very far reaching as it could lead to reduced immunity and increased morbidity. Seven out of every ten children (6-35 months) in Himachal Pradesh are anaemic, 2.2 per cent of them severely anaemic, while the corresponding all-India figures are 74.3 and 5.4 per cent. A comparison with Kerala (44 per cent) indicates scope for improvement in Himachal (Figure 9.1). Children in the age group of 24-35 months are more prone to anaemia (71.3 per cent). Anaemia is also high among rural (70.3 per cent) and other backward class (77.9 per cent) children in the state.

Anaemia among pregnant women leads to maternal mortality, risk of premature delivery and low birth-weight. Himachal Pradesh (40.5 per cent) has almost

double the number of anaemic women than Kerala (22.7 per cent). The all-India figure is 51.8 per cent. The percentage of anaemic women in the age group of 15-19 years (43.2 per cent) is higher. A large percentage of anaemic women are illiterate (40.9 per cent) and live in rural areas (40.7 per cent). Severe anaemia is reported among women with height <145 cm (1.4 per cent) and body mass index <18.5 kg/m^2 (1.1 per cent). Of them, only 0.6 per cent consume fruits and vegetables. Anaemia level is higher among non-pregnant and non breast-feeding women. Iron supplements are being supplied to pregnant and nursing mothers, while due care is not being provided to women under normal conditions.

FIGURE 9.1

Anaemia Amongst Women and Children in Selected States, 1988-99



Source: National Family Health Survey, India 1998-99.

Detection of the actual cause of anaemia is important. It could be due to worm infestation, malaria or inadequate absorption of dietary iron. A high incidence of malaria has been reported from the districts of Solan, Sirmaur, Bilaspur, Kangra and Una. Worm infestation is also widely prevalent in the state (*Directorate of Health and Family Welfare, Himachal Pradesh 1993-95*). Rich sources of dietary iron include fish and poultry, but their intake may be inadequate because of their high cost and also religious and cultural inhibitions. To combat nutritional anaemia, the Department of Health and Family Welfare and the Department of Social, Women and Scheduled Castes, have included distribution of iron and folic acid tablets (IFA) to pregnant women. In 1999-2000, 97.5 per cent of the mothers received iron and folic acid (IFA) tablets from the department. The question of actual consumption of iron and folic acid tablets, and deworming medicines being distributed among anaemic women and children needs to be addressed.

Iodine Deficiency

Iodine is a vital micronutrient. Iodine deficiency disorders have been identified as a public health issue and have been accorded importance since the mid-twenties. The National Goitre Control Programme (NGCP) was launched in 1962, after a successful trial of iodized salt in Kangra valley. Initially it was aimed at the well-recognised sub-Himalayan 'goitre belt'. But the sale of non-iodised salt did not decline, and the problem remained. Subsequently in 1992 the NGCP was renamed National Iodine Deficiency Disorders Control Programme, which has concentrated on iodisation of salt before use.

UNICEF's goal was to achieve virtual elimination of iodine deficiency disorders. However, 2.47 per cent of the rural inhabitants still suffer from goitre, which is higher than the all-India figure of 0.74 per cent (INP, 1998). The prevalence rate of goitre in Mandi district was 34.5 per cent in 1981 and came down to 13.9 per cent in 1998 (*Health Information, 1997-98*). Over 90 per cent of the households in Himachal Pradesh use iodized salt *(NFHS, 1998-99*). Households not using iodized salt belong to the Scheduled Castes (4.1 per cent), other backward castes (3.4 per cent), persons living in rural areas (3.5 per cent) and persons with a low standard of living (5.3 per cent) (*NFHS, 1998-99*). Kapil *et al.* (1997) conducted a study in Kullu district and found that 9.5 per cent of the women had iodine excretion less than 10 ug/dl, indicating that pregnant women were suffering from iodine deficiency disorders in this area. A study conducted on school-aged children (6-11 years) in Kangra revealed a goitre prevalence rate of 12.1 per cent. If more than five per cent of school-aged children in an area suffer from goitre, it should be declared as endemic. Overall, Kangra district was found to be in a transition phase from an iodine deficient district to an iodine sufficient district (Kapil *et al., 2000*). Under the Iodine Deficiency Disorder Control Programme, testing of salt is a regular activity and the proportion of samples of salt tested and found to have zero iodine content doubled in the last one year (*Department of Health and Family Welfare, 2001*). A drive to promote the use of iodized salt by the below poverty level families is feasible, if provided through the public distribution system.

Vitamin-A Deficiency

Vitamin-A deficiency can lead to blindness. It causes increased morbidity and mortality among infants, children and pregnant women. Prevention and control of Vitamin-A deficiency by administering the Vitamin-A solution to children below three years of age is a shared

responsibility of the Health Department and the ICDS team. Eradication of Vitamin-A deficiency as visualised by the state government is possible by strengthening interlinkages between the two departments. Seven out of every ten children aged 12-35 months received at least one dose of Vitamin-A. A higher proportion of male children as compared to female children was administered Vitamin-A solution (*NFHS, 1998-99*). The achievement of Himachal Pradesh's Department of Health and Family Welfare in administering Vitamin-A drops to children in 1999-2000 was 91.09 per cent.

Thus, nutritional deficiencies can be attributed to inadequate purchasing power, wrong dietary patterns, inadequate availability of preventive (testing facilities against anaemia, Vitamin-A deficiency during pregnancy, supplementary medication) and curative (de-worming) services and lack of adequate knowledge regarding right eating habits.

Role of the Private Sector

The emergence of concepts such as privatisation, liberalisation and open market economy, will redefine the role of the public sector in enhancing the nutritional status of the people. As in other development sectors, we also need to strike a balance between the public and private sectors in nutrition. The state has a progressive juice processing industry and this can be the stepping-stone for the creation of a state food fortification authority, which forms rules and regulations keeping in view the nutritional health of the people. The people of the state will be ready to pay if the nutritional supplements (such as iron supplements and infant formula food or complementary food) are quality controlled, fairly priced and have the government's stamp. This would serve as the entry point for private corporations through the public window, with an assurance to the private sector about economic returns and to the public about freedom from the malnourishment trauma.

State level officials' views on private sector involvement is in terms of involving the NGOs, who can set up nutrition counselling units in every *panchayat* and intensive research can be conducted to identify the causes of malnutrition.

Glimpses from the Field

The Centre for Research in Rural and Industrial Development (CRRID), Chandigarh conducted a district level primary survey to evolve a strategy to cope with the problem of malnutrition in the state. A questionnaire was prepared in English and Hindi and sent to the Secretary, Department of Planning, and the Secretary, Department of Social, Women and Scheduled Castes, Government of Himachal Pradesh. They sent it to all 12 district level officers and subsequently to Child Development Project Officers (CDPOs) and *Anganwari* workers in their area. Of the total 72 CDPOs and 7,354 *Anganwari* workers in the state, responses was received from 49 CDPO's and 6278 *Anganwari* workers. All questionnaires were processed and tabulated. All CDPOs and five per cent of the total *Anganwari* workers formed the sample for the study.

The CDPOs stressed the continuing role of the government in providing services related to nutrition and also on co-ordination with the Health Department to reduce the proportion of low birth-weight babies. The need to generate awareness among the people regarding health and nutritional care (Table 9.10) was also considered important. One CDPO has put forth a SMART (Sustainable, Manageable, Actionable, Reliable and Time bound) Action Plan for enhancing the nutritional status of the people.

The response of the Anganwari workers matched those of the CDPOs as far as strengthening the linkage with the Health Department and also on generating awareness among the people were concerned. In addition, they also felt that creating employment avenues, reducing poverty and increasing the intake of locally available seasonal fruits, vegetables and non-vegetarian food could enhance the level of nutrition in the state (Table 9.11). Besides giving their opinions, they also drew attention to certain strategies to make the functioning of the *Anganwari* centres more effective. Training of the Panchyati Raj Institutions on health and nutritional aspects was emphasised.

The views of state level officials on controlling malnutrition also reinforced the importance of generating awareness among the masses besides expanding the ICDS programme to all villages, introducing health and nutrition education as a compulsory subject in all schools (government or private) and integrating and strengthening the nutrition module in the training of the staff of the sectors concerned, *viz.*, Agriculture, Health, Education and Rural Development, who in turn would strengthen communication on malnutrition through the existing infrastructure.

Strategy for Nutrition-energised Growth

Nutrition enhancement is not the task of the Department of Welfare alone or of the centrally

TABLE 9.10

Opinions of the CDPOs to Enhance the Nutritional Status of People of Himachal Pradesh

Task	*Strategy*	*Sample (N)*
Reduction in the proportion of low birth-weight babies	Provide adequate and timely antenatal care.	27(55.1)
	Impart health and nutrition education through camps and village level meetings.	27 (55.1)
	Check age at marriage, which will ensure that the woman conceives after the age of 20 years, control frequent childbirths and increase spacing between children.	8 (16.3)
	Emphasis on adolescent health and nutrition education and provision of services/ counselling to them.	5 (10.2)
	Others	8 (16.3)
Reduction in the proportion of malnutrition in Himachal Pradesh	Provide health services, i.e., preventive (immunisation, antenatal care, iron and folic acid tablets, Vitamin-A solution, calcium tablets) and curative (safe deliveries, de-worming tablets).	42(85.7)
	Organise seminars and camps to impart nutrition and health education pertaining particularly to the kind, quantity and timing of consuming diet.	40 (81.6)
	Increase literacy and generate awareness.	18 (36.7)
	Alleviate poverty.	12 (24.4)
	Improve environmental sanitation, hygiene and provide safe drinking water.	9 (19.5)
	Improve breast feeding practices and weigh children every month.	8 (16.3)
	Check age at marriage and counsel on spacing between children.	6 (12.2)

Source: *CRRID Field Survey*, 2003.

Note: (i) The figures in parentheses are in per cent.
(ii) Multiple responses permitted.

sponsored scheme of ICDS. It needs proper inter-departmental co-ordination, disciplined execution and systematic implementation. The state has to play the role of a facilitator. Here are some steps it should take:

- Establish a nutrition surveillance system under state authorities, so as to identify and regularly monitor nutritional deficiencies at the grassroot level. It should co-ordinate closely with the Health Department to enforce a mandatory anaemia-testing facility in rural and urban areas. Consumption of IFA tablets and worm infestation tablets should be ensured. The use of iodized salt can be promoted by organising awareness campaigns.
- Set up a Therapeutic Nutritive Care Unit under the paediatrician posted at every primary health centre to help malnourished children, referred by the ICDS project area and to monitor their growth.
- Ensure effective co-ordination with the agriculture/horticulture universities at Nauni and Palampur to carry out regular research projects to identify local foods rich in iron, Vitamin-A, proteins and calcium and how their productivity can be increased.
- Enhance co-ordination with the Health Department to provide adequate antenatal care to pregnant women and provide facilities to make institutional deliveries more functional.
- Involve the community, through self-help groups and provide them with training to bring about a behavioural change among the people towards their health and nutritional needs.
- Make the *Anganwari* Leaving Certificate mandatory for admission to a primary school. This will improve attendance at the *Anganwari* centre and also ensure that growth patterns of all children are monitored.
- Generate purchasing power of the people to obtain nutritive food by creating employment opportunities.
- Ensure sustained nutrition security of the families by making the woman the central figure, with educational and economic empowerment.
- Network with the school authorities in the state to enhance the nutrition level of the children. School canteens should provide milk and milk products, fruits and other high protein food. Monthly talks on health and nutrition should be held in the schools. The school authorities can finalise a diet plan age-wise with the state authorities and have it circulated among the

TABLE 9.11

Opinions of the Anganwari Workers to Enhance the Nutritional Status of the people of Himachal Pradesh

Task	*Strategies*	*Sample (N)*
Reduction in the proportion of low birth-weight babies at birth	Impart health and nutrition education through camps and village level meetings.	221(68.2)
	Provide adequate and timely antenatal care.	202(62.3)
	Consumption of locally available fruits, vegetables and non-vegetarian food, such as eggs and meat to be encouraged.	31(9.5)
	Check age at marriage. Special care to adolescent girls and promote institutional deliveries.	19(5.8)
Reduction in the proportion of malnutrition in Himachal Pradesh	Organise seminars and camps to impart nutrition and health education pertaining particularly to the kind, quantity and timing of consuming diet.	234(72.2)
	Alleviate poverty.	115(35.4)
	Provide health services, i.e., preventive (immunisation, antenatal care, iron and folic acid tablets, vitamin-A solution, calcium tablets) and curative (safe deliveries, deworming tablets).	112(34.5)
	Improve environmental sanitation, hygiene and provide safe drinking water.	73(22.5)
	Increase literacy.	62(19.1)
	Promote breast feeding practices and weigh children every month.	32(9.8)
	Check age at marriage and counsel on spacing between children.	20(6.1)
	Special attention to be paid to adolescent girls and women's nutritional needs.	17(5.2)
	Ensure provision of Hyderabad Mix and double diet to all undernourished women and children.	16(4.9)

Source: *CRRID Field Survey*, 2003.

Note: (i) The figures in parentheses are in per cent.
(ii) Multiple responses permitted.

parents for effective implementation. Regular health check-ups in school is essential.

- *Him Viyanjan* is a book with tips on nutrition, compiled by the state to promote low-cost nutritious food and recipes from locally available raw material. It must be ensured that it is optimally utilised, periodically upgraded and duly promoted by the functionaries, particularly in the rural and tribal belts of the state.
- Popularise a more cost-effective strategy to make the public distribution system more effective. A wider variety of nutritious products, such as pulses, millets, coarse grains and iodized salt should be introduced to increase their consumption.
- Formulate a state plan of action for the elderly to help them cope with problems related to their health and nutritional needs.
- Enforce the Prevention of Food Adulteration Act, 1954, to ensure the sale of unadulterated, nutritionally balanced and hygienically prepared food in the market not only for local inhabitants but also for tourists. Wayside food stalls and sale of cut fruit need to be checked.
- Seasonality of nutrition plays a vital role in the state, particularly in the higher reaches. Assured supply round the year will help the people cope with their nutritional problems.
- A public-private initiative towards social marketing of iron supplements, infant formula foods and complementary food at affordable prices needs to be worked out.
- Form a state food fortification authority, which could be made responsible for the supply of fortified food to reduce micronutrient deficiencies in the state.
- Enforce nutrition enhancement as a movement, as it is the most cost-effective measure towards promising a healthy and productive human resource.

Conclusions

Nutritional planning for Himachal Pradesh is a challenging task since the diverse structure and composition of its population leads to differences in its food habits as well. Besides implementing the centrally sponsored schemes effectively, the state has formulated certain state-specific approaches towards ensuring food security and working towards the well-being of its people. It provides integrated services through various departments such as Agriculture, Health and Family Welfare, Food and Supply, Rural Development, and the Social, Women and Scheduled Caste Welfare Department.

The increase in the proportion of underweight children at birth and the slow decline in the percentage of underweight children under three years of age is a matter of concern for the state. Chronic energy deficiency is high among the adults, particularly among women and this needs immediate intervention. Though the proportion of children being breastfed within one hour of birth is higher than in the neighbouring states of Punjab and Haryana, and the proportion of anaemic children is lower, yet, there is scope for improvement. Enhancing the socio-economic status of the people, their awareness regarding a balanced diet and the positive impact of timely-health seeking behaviour will result in favourable nutritional outcomes.

Apart from focusing on inadequate food consumption, there is need for identifying causes of anaemia, high incidence of gastrointestinal and respiratory infections, lack of safe drinking water and poor access to health care and such behavioural factors as faulty breast-feeding and weaning practices, which contribute to low absorption of nutrients from the food consumed and result in malnourished individuals.

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