EXECUTIVE SUMMARY

Genesis of Nutrition Programme for Adolescent Girls

Pregnant and lactating women have been identified as vulnerable groups from the nutritional point of view and food supplements to them are being provided under the ICDS programme; however data from the ICDS reports suggest that less than one fourth of the women come to the anganwadi and take the food supplements; majority do not come every day. Adolescent girls, who are undergoing rapid growth and development, are also a nutritionally vulnerable group but so far they have not got any benefit from ongoing ICDS programme. Prime Minister in his Independence Day address in 2001 stated that food grains will be provided to combat undernutrition in adolescent girls, pregnant and lactating women. The Tenth Plan has recommended a paradigm shift from untargeted food supplementation to universal screening of persons belonging to vulnerable groups, identification of undernourished individuals and focused intervention to improve their nutritional status. Taking these into account a Pilot Project was initiated in 2002, to operationalise the announcement of the Prime Minister. The project was named as Nutrition Programme for Adolescent Girls (NPAG) as the majority of the beneficiaries were adolescent girls.

NPAG implementation

NPAG was taken up in two of the backward districts in each of the major states and the most populous district (excluding the capital district) in the remaining smaller states/Union Territories. Funds needed for the Pilot Project were provided to the states as Additional Central Assistance, so that states provide food grains through TPDS, totally free of cost to the families of identified under-nourished persons. The Deptt. of Food and Civil Supplies allocated food grains to the states at BPL rates. Departments of Women and Child Development are implementing the programme in the centre and in the states.

In 2002-03 the Pilot Project envisaged that:

- All pregnant and lactating women and adolescent girls in the district will be identified and weighed by AWW once in three months.
- Pregnant and lactating women weighing < 40 kg and adolescent girls weighing < 35 kg will be identified. Their families will be provided 6 kg of food grains/month free of cost for the next three months.
- They and their families will be given nutrition education so that the undernourished persons do get additional portions from the family pot.

In 2002-03 and 2003-04 the programme covered all three groups in 51 identified districts. The programme was not funded in 2004-05 and from 2005-06 and 2006-07, only the component pertaining to adolescent girls is funded in 51 districts.

Evaluation of NPAG

Right at the time of initiation of the programme in 2002-03, it was envisaged that after two years of implementation, the project would be evaluated. The Ministry of Women and Child Development had entrusted the task of evaluation of the NPAG to Nutrition Foundation of India in April 2006.

The objective of the evaluation was to assess the performance of NPAG under existing conditions. Of the 51 districts where the programme was being implemented, ten districts in ten states were chosen for evaluation. The Principal Investigators (PIs) were working in the Home Science Colleges/Medical Colleges/ Research Agencies located near the district chosen for evaluation (Table 1). Because institutions in the vicinity of the district were taking up the evaluation travel costs were minimised. PIs were able to recruit investigators from local area who were adept in local language, customs and gained good cooperation from the service providers and the population. Another advantage of using this procedure was that the evaluation led to improvement in the awareness regarding ongoing nutrition programmes in the participating colleges and thus helped in human resource development.

Table 1: Districts and principal investigators carrying out the Evaluation of NPAG

S.No.	State	District	Principal Investigator	Designation and Institutional affiliation
1	Rajasthan	Banswara	Dr. M Kapoor	Professor (Retd) Deptt of Homes Science, University of Rajasthan, Jaipur.
2	Delhi	Delhi(North west)	Dr. Prema Ramachandran	Director, Nutrition Foundation of India, New Delhi.
3	Uttaranchal	Haridwar	Dr. Sushma Sharma	Consultant, Nutrition Foundation of India, New Delhi.
4	Orissa	Kalahandi	Dr. Saraswati Swain	NIAHRD, Kalyaninagar, Cuttack.
5	Mizoram	Lunglei	Dr. Lalrintluangi	Deputy Commissioner (Retd), Mott FW
6	Kerala	Palakkad	Dr. Saradha Ramadass	Reader Deptt of SMD, Avinashilingam University, Coimbatore.
7	Gujarat	Panchmahal	Dr. P.V.Kotecha	Professor & Head, Preventive & Social Medicine, Govt. Medical College, Vadodara.
8	Uttar Pradesh	Sonbhadra	Dr. S. Dwivedi	Prof. & Head Deptt. Of Community Medicine, MLN Medical College, Allahabad.
9	Chattisgarh	Surguja	Dr. Sunderaraman	State Health Resource Centre Chattisgarh, Raipur.
10	Tamil Nadu	Thiruvanamalai	Dr. Jayam	Director, Perinatal Research Foundation. Chennai.

Parameters for evaluation

Financial and administrative component

For the programme to succeed there has to be coordinated activity at the center, state and district level in terms **of timely release of funds and food grains.** Therefore information on this aspect was collected from the centre, state and district level officials from Finance, DWCD and PDS.

Implementation a the field level

Information in implementation of the programme was collected from the anganwadi, ration shop and the households.

The programme has been implemented in the most backward districts in major states. These districts may have problems in implementation of any programme; in order to eliminate this bias, efforts were made to compare the performance and coverage levels of NPAG with similar parameters for ICDS programme in the same anganwadi/ district.

Sampling frame

A multi-stage stratified sampling design adopted in District Level Household Survey under Reproductive and Child Health Survey (DLHS-RCH) was used in the evaluation. For DLHS, in each selected district, 40 Primary Sampling Units (PSUs – Villages/UFS) were selected with probability proportional to size (pps) using 1991 Census data. The target sample size in each district was set at 1000 complete residential households from 40 selected PSUs. In next stage, within each PSU, 28 residential households were selected with Circular Systematic Random Sampling (CSRS) procedure to take care of 10 percent non-response due to various reasons The National Sample Survey Organization (NSSO) provided the list of selected Urban Frame Survey (UFS) blocks on the basis of proportion of urban population in the district. The UFS were made available separately for each district for urban areas. The lists of PSUs (urban and rural) in the selected ten districts were obtained from International Institute of Population Sciences (IIPS), Mumbai.

The focus of the NPAG evaluation is the anganwadi (AW). Therefore for the NPAG evaluation the first step was to identify and locate the anganwadi in the PSU. If the PSU contained only one anganwadi, then the 28 households from the household listing done by the AWW were chosen using CSRS. If there were two anganwadis 14 households from eachwere chosen using CSRS; if there were more than two anganwadis in the PSU, two anganwadis were to be chosen randomly and from each anganwadi 14 households were taken using the anganwadi household list and CSRS. It is possible that the PSU is small and the anganwadi caters to a larger population. In this case also from the anganwadi household listing 28 households were chosen by CSRS and surveyed. Each of the households identified by CSRS was surveyed irrespective of the fact whether

the household had an adolescent girl or not. In the urban PSUs, in the selected UFS, there was no need of segmentation in most centres, as they were of almost equal size and had only one anganwadi. The anganwadi in the PSU was selected and from the anganwadi's household listing, 28 households were chosen by CSRS and surveyed.

Task force and investigator's meeting

NFI constituted a **Task Force** with representatives from the MWCD, NSSO, and other concerned agencies to over see the study. The Task force met on 18.4.2006, considered and approved the proposed study design, investigators, and the proforma for data collection and data analysis plan.

The **Principal Investigator's meeting** was organised at NFI on 11th and 12th May 2006. The study design, methodology and proformae for data collection were discussed in detail. All the investigators observed and participated in the orientation programme in North West Delhi where the NFI team was carrying out the evaluation. The first instalment of grant for the study was handed over to the investigators at the meeting, so that they could initiate the recruitment and training of the investigators as soon as they return. The forms for data collection were provided at the time of the investigators meeting so as to avoid any delay in initiation of the training and the data collection.

Evaluation Process

Table 2: NPAG evaluation Time Frame of activities

	Date
Evaluation project sanctioned	23.03.2006
Confirmation of participating centres/ PIs in centers Draft proforma sent to PIs	First week April
Task Force formation Draft proforma sent to task force members	Second week April
Task force meeting	18 April 2006
PSU lists obtained from IIPS	19 April 2006
Pretesting of proforma Proforma sent to investigators for comments	Third Week April
Finalization of proforma	Fourth Week April
Printing of proforma	8 May 2006
Investigators meeting PSU list sent to investigators Instalment release to investigators Dispatch of proforma	10-11 May 2006
Initiation and completion of data collection	May–Nov 2006
Initiation and completion of data cleaning	Aug- Nov 2006
Initiation and completion of data entry	Aug- Nov 2006
Presentation of interim report to the MWCD	25.7.2006
State specific data analysis and draft report preparation	Sept- Nov 2006
State specific draft report sent to PI	Oct –Nov 2006
Summary ten state report prepared	Nov 2006
Report of the Evaluation submitted to MWCD	Nov 2006

Data collection began in third week of May in some centres and was completed by end of August 2006 except in one centre, which completed evaluation in Nov., 2006. On receiving evaluation data from the centres, NFI under took the task of data scrutiny, data entry, data verification, data analysis and report writing. The draft report pertaining to each centre along with the tables were sent to each of the PIs for perusal, modification and comments. The PIs sent their inputs; some sent a concise summary of situation in their district. Others sent their comments. The evaluation report was finalised taking all these into account (Table 2).

Allocation and utilisation of allocated funds

Requirement of funds for the programme was computed by the Planning Commission utilising the data on district population and the target group from Census 2001; information on undernutrition rates in the district was not available in 2002; therefore undernutrition rates for the district was computed on the basis of undernutrition rates in the state as reported in the National Family Health Survey -2 (1998-99). There could be some underestimation of the number of persons who are undernourished because the most backward districts may have higher undernutrition rates than the state as a whole. It was felt that for the year 2003-04, the requirement of funds could be revised based on the data generated during the first six months of implementation of the programme.

Information on release of funds under NPAG and its utilisation between 2002-03 and 2006-07 and utilisation from 2002-03 to 2005-06 obtained from the Ministry of Women and Child Development (MWCD) is given in Table 3. Planning Commission allocated the funds as Additional Central Assistance in 2002-03; Finance Ministry released the amount to the state finance departments in Oct. 2002. State DWCDs were informed of the release and were requested to contact their finance department to get the funds and initiate the programme. However there were delays in the state DWCD getting the funds. Some states like

Table 3: Funds release and utilisation under NPAG(Rs in lakhs)

States	2002-03		2003-04		2005-06		2006-07
	Amount released	Amount utilised	Amount released	Amount utilised	Amount released	Amount utilised	Amount released
Chattisgarh	129.55	98.38	104	31.17	164.43		168.37
Gujarat	309.17	295.84	247	532.62	305		312.32
Kerala	266.21	Nil	213	84.51	247.87		260.37
Mizoram	6.93	12.5	6	15	16.86	17	7.04
Orissa	281.32	Nil	205	265.43	289.53	220.9	294.55
Rajasthan	184.95	Nil	148	75	236.49	88.33	241.7
Tamil Nadu	213.25	99.59	171	374.17	422.9	96.82	218.18
Uttar Pradesh	248.44	23.33	199	37.85	311.31		318.47
Uttaranchal	82.67	Nil	66		106.95		109.84
Delhi	116.47	7.5	177	3.39	148.62		80.01

Source: MWCD

Chattisgarh, Gujarat suffering from drought during this period, took up the project rapidly in an attempt to improve the dietary intake of the vulnerable segments of the population. Mizoram had initiated the programme right in the first year and implemented it in all districts in the state. Other states took some time get the funds released and therefore utilisation was low during the year 2002-03. Some of the non-special category states were concerned that programme was to be implemented by the funds provided under the Additional Central Assistance and so they had to return 70% of the amount later. Haryana did not take up the NPAG in 2002-03 because unlike the ICDS, funds were given as Additional Central Assistance.

In 2003-04 funds were provided under Special Additional Central Assistance as a 100% grant and thereby enabling all the states to initiate the programme. In view of the fact that funds released in 2002-03 were unspent, most of the states sought and obtained revalidation of the ACA. Further release of funds could be done only after the utilisation certificates of funds already released were provided by the states. As a result there were considerable delays in the release of funds earmarked for the Programme in 2003-04 and funds were finally released in March 2004, after making the necessary adjustments for the utilisation. **The utilisation of the funds was best during this year.** Though the procedure of fund release was cumbersome, the state Departments had become familiar with the procedures to be followed and the programme was fully operational in the ICDS system in 2003-04.

No funds were released for the programme during the year 2004-05; as a result the programme came to a complete halt during this year. Some states used unutilised funds from 2003-04 in the initial months but later the programme had to be discontinued due to a paucity of funds. In 2005-06 the programme was revived. In order to avoid the problems in fund flow from the centre to the state the funds were released by the Ministry of Women and Child Development in July-Aug 2005 directly to the State Departments of Women and Child Development; only adolescent girls were included in the revised scheme. Mizoram, Orissa, Rajasthan and Tamil Nadu reported good utilisation of funds and operationalisation of the programme in 2005-06. In other states there were delays in restarting the programme and consequent poor utilisation of funds. For 2006-07, Ministry of Women and Child Development released the funds in June - July 2006 and all the states have initiated the programme.

Allocation of food grains

The Planning Commission computed the amount of food grains required, based on the estimates of the undernourished persons in the districts; Department of Food and Civil Supplies made the allocation of rice/wheat (on the basis of preferred food grain consumption in the districts selected) to be supplied to the states at BPL rates. The allocations made for the different states from 2002-03 to 2006-07 are shown in Table 4. The states DWCD were to make the payment to

the State Department of Civil supplies and lift the food grains to the districts. Funds were also provided for the transport of food grains to the district and to the fair price shops.

There were some initial teething problems in establishment of this system in all states. However all the states were able to establish this system in 2003-04 and lift the grains and supply it right down to the villages. Most states decided to run the programme mainly in the rural anganwadis, as the urban anganwadis were not well established. So supply of the food grains to the urban areas was limited.

Table 4: Allocation of food grains under NPAG (MTs)

States	2002-03	2003-04	2005-06	2006-07
Chattisgarh	1766.7	7100	2800	900
Gujarat	3233.3	12900	5200	
Kerala	2400	9600	4050	nil
Mizoram	66.7	300	100	90
Orissa	3033.3	12100	5000	1950
Rajasthan	2566.7	10200	4050	1270
Tamil Nadu	2133.3	8500	3550	840
Uttar Pradesh	3400.1	13700	5300	7100
Uttaranchal	1100	4400	1800	390
Delhi	700	2800	1150	20

Request to release 10400 MTs of maize in 2006-07 has been sent to M/CAF&PD

There had been delays in allocation of food grains both at the central and the state level. Allocated food grains were not lifted within the stipulated time frame. This led to problems in allocation of grains for the subsequent phases when the state requested for food grains. Thus as with the fund allocation, there was a vicious cycle, wherein earlier poor utilisation came in the way of optimal allocation for next phase and consequently poor performance and low utilisation. This is also responsible for the huge differences between years in terms of allocation of the food grains.

Information on the utilisation of the food grains in different districts was not readily available. Most of the district DWCD officials stated that they had faced problems in getting the timely supply of the food grains to the ration shops. The district Civil Supplies officials however stated that they faced major problems in timely allocation of the food grains because the food grains already allocated were not fully utilised within the stipulated three month period. It appeared that in 2003-04 these problems were beginning to get ironed out. Following the discontinuation of the Programme in 2004-05, most districts faced major problems in re-establishing the food grain supply chain and inspite of the fact that they had the required funds,. very few states were able to distribute food grains in 2005-06

All these have resulted in erratic and interrupted supply of food grains to the undernourished persons; and so it was not possible to assess of impact of food supplementation in terms of improvement in nutritional status of undernourished persons. **In 2006-07 the impetus developed during the evaluation resulted in all the districts (except Haridwar) receiving the food grains and distributing**

the grains to the identified undernourished adolescent girls within one month after the allocations were made. This demonstrated that allocation, purchase and distribution of food grain could be streamlined within existing system constraints.

Training, IEC and operationalisation of the NPAG

The responsibility of training and development of appropriate IEC material was given to the state Departments of Women and Child Development. Right from the first year the IEC and training operations were completed on time in all the states. All the anganwadi workers understood the programme and how it is to be implemented. Every year, all the states fully utilised the funds provided for IEC and training. In the very first year adult weighing balances were procured and weighing of adolescent girls and pregnant and lactating women were initiated. Excellent IEC materials were prepared for the community and family regarding the programme. **The fact that community understood the rationale of weighing all the persons belonging to the vulnerable groups, identifying those who are undernourished and distributing the grains to them and extended full cooperation to the anganwadi worker in her task of identifying, weighing and detecting the undernourished persons is the best testimony both to the excellent skills of the AWW and the maturity of the community.** It is indeed remarkable that the paradigm shift was so well accepted by the community and very well operationalised by the anganwadi workers in the very first year.

The experience with the programme shows that the AWWs

- were able to identify majority of pregnant and lactating women and adolescent girls,
- adjusted the zero error in the balances and weighed the adolescents and adults correctly and
- list those who were under weight.

In most of the districts they gave the chits and the family collected the food grains free of cost from the ration shop. The families did experience some difficulty in accessing food grains from ration shops because they were not open on all days or did not have food grains on all days but majority collected the grains for three consecutive months.

Programme implementation in 2003-04

The programme with all the three vulnerable groups receiving the food grains supplements was implemented in the year 2003-04 which was the first year when programme had been implemented in all the states. The monitoring system for the programme was being set up during the year and therefore all the reports may not have been sent / compiled and reported during the year. For instance

according to the reports that were collected from Haridwar district during the evaluation, 17,360 pregnant women, 19,893 lactating mothers and 1,72,251 adolescent girls received food grains during 2003-04, but according to the reports available at MWCD only 4,778 pregnant women, 5,923 lactating women and 53,525 adolescent girls received food grain supplements. The reported number of undernourished adolescent girls, pregnant and lactating women who received food grains in 2003-04 in the ten districts taken up for evaluation according to the data available with the MWCD is given in Table 5. As expected over 70% of the persons who received the supplements were adolescent girls.

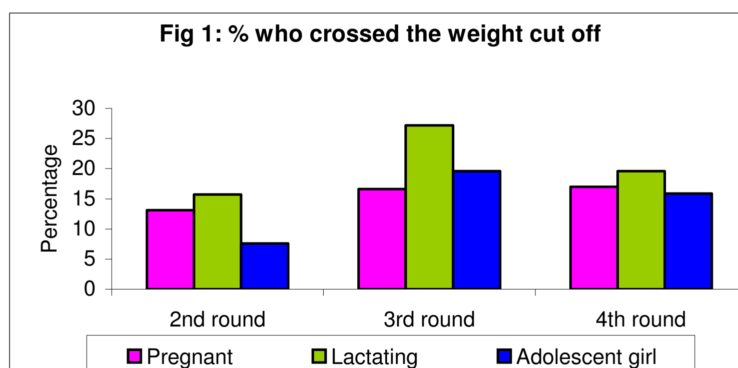
Table 5: Number of beneficiaries under NPAG in 2003-04

S. No.	States	Adolescent girls	Pregnant women	Lactating women	Total
1	Chattisgarh	64696	10285	13639	88620
2	Gujarat	41419	4288	4364	49964
3	Kerala	40680	2282	1719	44681
4	Mizoram				
5	Orissa	46526	5788	6488	58802
6	Rajasthan	20722	4147	4642	29561
7	Tamil Nadu				58656*
8	Uttar Pradesh	9603	6790	7170	25563
9	Uttaranchal	53525	4778	5923	64226
10	Delhi				
Total		277171	38358	43945	361417

Source: MWCD

Coverage and impact of the food grain supplementation

As food grains were to be collected once a month, majority of the families were able to collect the food grains for three consecutive months. The proportion of pregnant and lactating women accessing food supplements the ICDS services are no more than 20-30 % and even those who access do not do so consistently everyday for three to six months. The overworked undernourished pregnant or lactating woman cannot come daily to the anganwadi to collect the food but urgently needs additional food to improve both her and her child's nutritional status. **Unlike the other ICDS based food supplements, the NPAG programme in 2003-04 provided consistent food supplements to pregnant and lactating women throughout pregnancy and lactation effectively.**



Some states like Uttaranchal attempted to assess the impact of the NPAG on body weight. The data on changes in body weight reported in the three groups is given in Figure 1. There are

problems in using this approach. Analysis of the data from the three monthly weighment showed that majority of lactating women showed weight gain, though majority did not cross the cut off point of 40 kg, the proportion of underweight individuals crossing the cut off point was highest in this group. This might partly be due to the fact that the community and the family recognised that the lactating women require more food and gave them their due share in the food grains. The fact that with waning lactation, lactating women tend to regain some weight that they had lost earlier could also have contributed to this trend. However only about 20% crossed the cut off point, because even if they consume adequate quantities of food these women cannot gain more than a kilogram in three months; if she weighed less than 35 kg earlier she is unlikely to cross the cut off point of 40 kg even if she continued to receive food grains for 6-12 months.

Most households reported that they did ensure that the pregnant woman received her due share in food grains but it is not possible to assess the proportion of who gained weight due to food grains. All pregnant women gain weight during pregnancy; weight gain cannot be attributed to the food grain supplementation because foetal growth and physiological changes during pregnancy also contribute to weight gain. Substantial numbers of women deliver and so lose about 5 kg of weight; so apparent failure to gain weight may be due to delivery and not lack of improvement in dietary intake. Thus neither the weight gain nor the apparent lack of weight gain can be related to the food grain supplements in pregnant women.

Available data on three monthly weighment in adolescent girls indicates that average weight gain over one year is about 2 kg but only very small proportion crossed the cut off point of 35 kg. Majority of girls between 10-14 years weighed less than 30 kg and it will not be possible for them to cross the cut off point even if they did get substantial amount of the food grain supplementation. Except in Delhi, majority of the girls in the 15-19 year age group also weighed less than 35 kg. In all centres some of the adolescent girls whose weights were near the cut off point did cross 35 kg over one year. But weight gain in one year in girls from Mizoram who received food grains through out the year was not substantially different from Delhi girls who did not get any food grain supplements.

Programme in 2005-06

The programme was modified to take care of the major bottlenecks in fund release. The funds for the year 2005-06 were released in July- Aug. 2005 directly by MWCD to the state Department of Women and Child Development. The Guidelines for the revised programme with only adolescent girls as the target group were issued by the MWCD. The Central Food and Civil Supplies Department made the allocation of food grains as per the request from the central MWCD. The revised programme was discussed with the state DWCD secretaries during the State Secretary's meeting in 2005. As all the states had earlier implemented the programme well in the very first year (2003-04) and the

only change over time was that the programme no longer covered pregnant and lactating women and was restricted only to adolescent girls, the central MWCD had expected that the implementation would start immediately. There were however difficulties in restarting the programme in most states. Of the ten states in which evaluation was taken up only Mizoram, Orissa were able to utilise all the funds released; Tamil Nadu and Rajasthan partly utilised the funds.

Programme in 2006-07

NPAG evaluation was taken up between June and October 2006 in most of the states. In all the states the AWW had completed weighing adolescent girls at least once, had prepared the list of adolescent girls and sent it to CDPO. Data from the Evaluation showed that there were wide variations in the proportion of girls who were identified and weighed. In some states like Delhi, families were reluctant to allow the weighing of adolescent girls because though they had been weighed and undernourished girls were identified, their families had never received any food grains during the previous three years. At the other extreme was the state of Mizoram where the programme had continued and adolescent girls received food grains irrespective of their weight without any interruption during the last three years and the population cooperted in weighing of girls. In states like Uttaranchal, where the programme was fully operational through out 2003-04, the families cooperated because they felt that the programme will again result in the undernourished girls getting food grains so that nearly 90% of the girls were identified and weighed by AWW. In most of the states the families were not getting the food grains at the time of evaluation though ICDS functionaries informed the families that they were expecting the fund release and food grain allocation to be done shortly. The state and the district officials stated that they would be able to initiate the programme as soon as they receive the funds. Follow -up with the district officials and the population showed that the programme was fully operational in all states except Uttaranchal within two months after release of funds and food grain allocation.

Implementation of NPAG by Anganwadi Workers
Acceptance of the concept of food grains for undernourished persons

Initially some AWWs faced problems in some areas when the weighing to identify the undernourished persons was used as the criterion for providing the food grain supplements. However once the concept was explained, the community, families and PRI understood the rationale, they supported the programme**. During the evaluation in response to specific query on use of weight as the criterion for selection of undernourished persons requiring food supplements and providing food grains to their families, vast majority of the households agreed that it is right to have a nutrition criterion to identify those requiring nutritional supplement to improve nutritional status. AWW are able to provide chits to the undernourished persons so that their family could collect the food grains from the ration shop.** In some states the AWW has

been given the task of distributing the food grains because there were no ration shops in the vicinity. In some areas the distribution of food grains by AWW has been found to improve access but there were other areas where the community did not think so.

Nutrition education

One major intervention under NPAG was nutrition education. Under the NPAG all AWW were trained in and were given specific messages pertaining to the project. These included

- Pregnant, lactating women and adolescent girls are nutritionally vulnerable groups.
- Undernutrition is identified through weighment.
- Families of all undernourished persons identified will get 6 kg of food grains/month.
- The food grains should be mainly given to the undernourished person so that over the next three months there is improvement in nutritional status.

These messages were clearly communicated especially in rural areas; in urban areas where there was space and time constraint and the NPAG programme was not operationalised well, messages did not get reiterated as often as in rural areas. AWW's knowledge on steps to improve nutritional status in women and children and their communication skills were sub optimal; their nutrition education attempts for 0-3 and 3-6 year old children were often outdated (not stressing on exclusive breast feeding, timely complementary feeds from home food), sketchy and not comprehensive.

Pregnant and lactating women

It would appear that the anganwadi workers have performed their role quite effectively in implementing the programme NPAG programme for pregnant women in 2003-04. They have shown that is possible for them to identify all pregnant and lactating women. However household survey showed that **in 2005-06 none of the centres identified 100% of all the pregnant and lactating women. It is important that the AWW identifies all pregnant and lactating women so that they can benefit from the ICDS programme or NPAG. In most centres pregnant and lactating women not weighed once in three months i**n 2006-07, even though, AWWs had the adult weighing balance and knew how to use it to define women as undernourished and normal using cut off points.

Many AWW and DWCD officials suggested that using the same cut off point for pregnant and lactating women is inappropriate; inspite of being undernourished pregnant women may be above the cut off point because during pregnancy there is gain in weight due to growth of the foetus. This is a valid point. When the

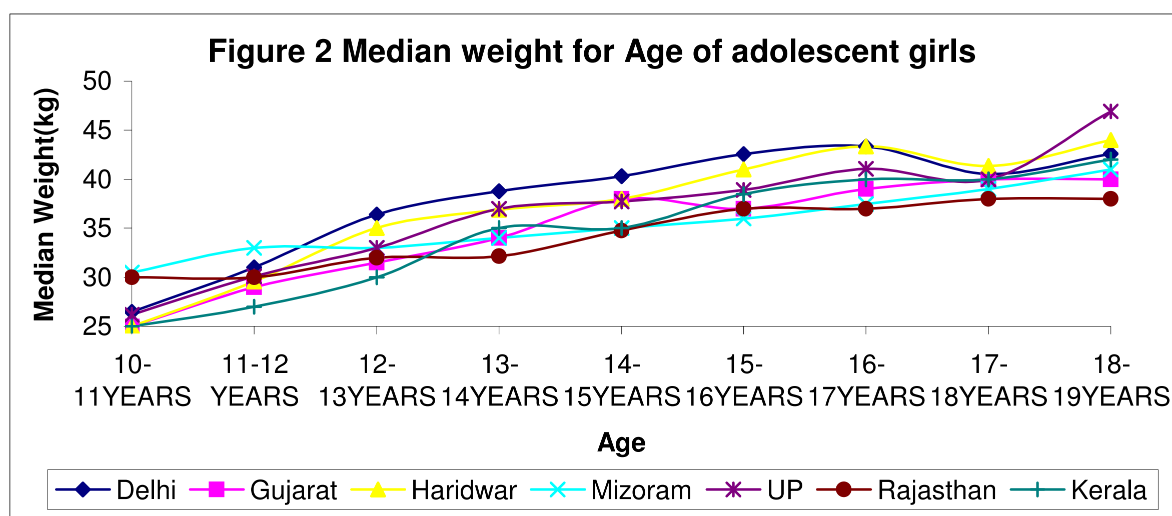
NPAG project guidelines were finalised it was felt that giving different cut off points for pregnant and lactating women may lead to confusion and come in the way of effective screening of the women for undernutrition by the AWW. **However data from 2003-04 showed that AWW handled identification of undernourished persons using different cut off points (35 kg for adolescent girls and 40 kg for pregnant and lactating women) quite well. In view of this experience, it may be appropriate to define separate cut off points (40 kg for lactating women and 45 kg for pregnant women) for detecting undernourished pregnant and lactating women.**

Adolescent girls

Table 6 Body weight of adolescent girls in different states

Age in yrs		10	11	12	13	14	15	16	17	18	19	Total
Delhi	N	16	51	55	48	65	57	52	42	46	25	**457**
	Mean Wt	25.9	29.2	31.8	35.3	39.1	41.4	41.8	44.2	42.5	44.1	**37.9**
	SD	2.79	7.59	6.17	7.54	6.47	7.47	10.73	9.43	9.18	6.58	**9.55**
Gujarat	N	13	31	58	68	51	53	45	34	42	10	**405**
	Mean Wt	27	25.7	29.7	32	34.2	38.2	39.2	38.6	41.3	39.6	**34.6**
	SD	6.99	4.09	5.34	7.11	5.52	6.54	8	6.51	6.19	5.17	**7.91**
Haridwar	N	34	56	75	67	68	57	77	42	40	19	**535**
	Mean Wt	25.9	26.3	29.9	35.5	36.5	37.3	41.3	43.7	42.2	43.4	**35.7**
	SD	7.59	4.46	4.27	7.11	5.18	5.29	5.23	5.46	6.79	6.59	**8.18**
Mizoram	N	26	76	95	73	107	93	110	110	104	32	**826**
	Mean Wt	26.1	30.9	31.8	32.1	34.4	35.4	37.3	37.3	39.5	40.7	**35.1**
	SD	5.23	3.53	3.85	5.33	4.66	3.83	4.2	2.9	5.31	4.44	**5.43**
Uttar Pradesh	N	68	32	86	53	47	58	37	28	37	3	**449**
	Mean Wt	26.9	27.2	31.9	33	36.4	37.3	39	40.2	41.3	45.2	**34.1**
	SD	6.53	4.52	8.36	5.91	6.38	6.33	7.02	4.49	7.12	4.27	**8.2**
Rajasthan	N	4	46	84	42	42	42	42	27	49	2	**380**
	Mean Wt	32.8	29.4	30.5	31.9	33.1	36.3	36.6	37	37.5	38	**33.6**
	SD	5.97	4.84	4.78	3.79	5.75	5	5.64	3.14	4.9	0	**5.68**
Kerala	N	22	23	34	41	34	46	44	33	45	29	**351**
	Mean Wt	25.9	24.7	27.1	31.7	33.9	37.5	38.5	41.8	41	41.4	**35.2**
	SD	7.1	6.34	5.52	5.61	6.39	8.73	9.58	10.27	4.64	5.45	**9.28**
Orissa	N	43	62	117	112	102	93	87	47	71	15	**749**
	Mean Wt	25.9	24.2	27.4	32	33.7	36.1	35.9	37.4	37.5	37.5	**32.5**
	SD	5.25	4.75	4.72	5.69	6.39	4.63	4.72	5.4	5.37	5.34	**6.88**
Chattisgarh	N	8	18	32	19	22	11	13	2	7	2	**134**
	Mean Wt	24.5	26.2	29.6	27.3	30.6	31.4	36.5	31	37.7	37.5	**30.1**
	SD	10.09	3.93	4.09	7.61	4.12	3.07	4.43	5.66	2.21	0.71	**6.16**
Tamil Nadu	N	3	23	45	66	51	62	58	55	40	20	**423**
	Mean Wt	34.1	25.7	28.8	32.9	35.2	37.7	40	43.2	41.7	42.4	**36.7**
	SD	0.81	5.25	6.29	6.26	6.78	5.2	6.37	5.68	6.56	11.06	**8.17**

During the evaluation all the adolescent girls in the identified households were weighed and the weight was compared with the weight recorded by the AWW in her register. In all the states most of the weights recorded by AWW in their register were within + or - one Kg from the weight recorded by the evaluation team indicating that the weighment by AWW was reasonably accurate.



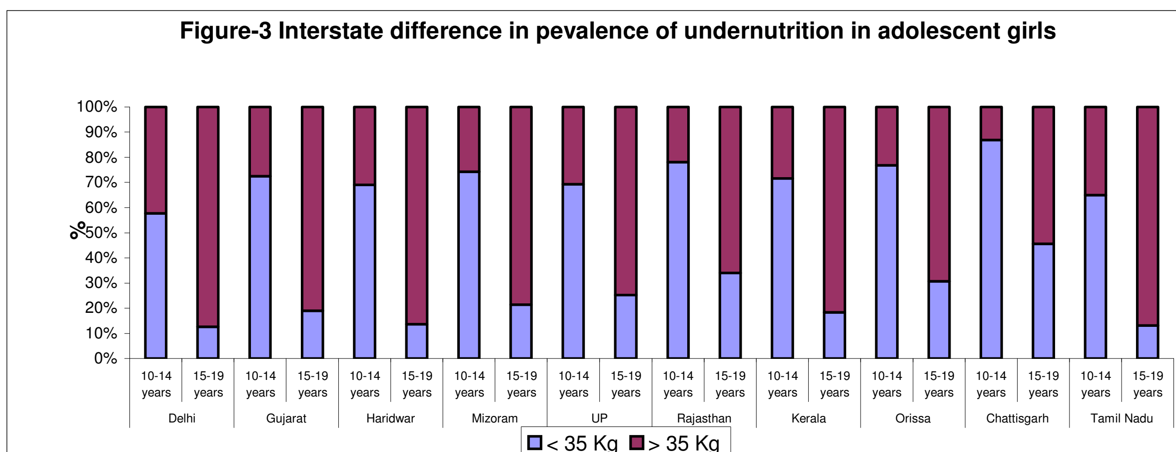
Data on median and mean body weight of girls(year wise) between 10-18 years in different states computed form the data collected by the evaluation team is shown in Figure 2 and Table 6. It is obvious that there are considerable differences between states in weight of adolescent girls; between 10-19 years the girls gain between 12-20 kg of weight (Table 6). In spite of the fact that none of the girls in Delhi had received any food grain supplement during the period 2002-03 to 2005-06 under NPAG programme, their body weight is higher than that of the Mizoram girls, majority of whom had received food grain/food supplements continuously for the period 2002-03 to 2005-06. **From the data it would appear that food/ food grain supplements even when continued for 3-4 years as has been done in Mizoram might not result in significant impact in terms of improvement in body weight in adolescent girls. This is in line with the findings from NPAG reporting formats sent by different states which indicate that food grain supplements upto 12 months in adolescent girls resulted in only 10 % of girls crossing the cut off point of 35kg.**

AWW and DWCD officials had repeatedly raised the issue of appropriateness of use a single weight cut off point for detection of undernutrition in adolescent girls between 10-19 years. They pointed out that by this criterion over 75% of the 10-14 year old girls are undernourished and will not cross the cut off point for several years. In view of this some DWCD officials even suggested that AWW may be given a weight for age chart for adolescent girls, similar to the **weight for age chart for children which have been in use in anganwadi for over three decades in the anganwadi for identifying undernourished adolescent girls.**

However when tested AWW's performance on assessment of nutritional status of children using weight for age charts was sub optimal. It is therefore unlikely that they will be able to use weight for age charts for adolescent girls and correctly identify under nourished girls.

Median weight of adolescent girls in the 10-14 year age group is around 30 kg and median weight of girls between 15 and 19 is 35Kg (Figure 3). So it

Figure-3 Interstate difference in pevalence of undernutrition in adolescent girls



may be useful to use two cut off points 30kg for those below 15 and 35kg for over 15 years of age may be attempted. However before adopting these criteria, it should be realised that even if two cut off points are used majority of girls will not cross the cut off point within one year (Figure-3).

Identification and weighing efficiency

There are substantial differences between districts in the efficiency with which the AWW identified and weighed the adolescent girls, pregnant and lactating women. The identification and weighing efficiency under NPAG was essentially similar to the completeness of the identification and weighing of the preschool children in these anganwadis. The identification and weighing efficiency is higher in rural areas as compared to the urban areas.

Perception of the Households

Data from the Household survey indicated that Anganwadi is known to majority of the urban and rural community; the community regarded Anganwadi as a place where food supplements are distributed to vulnerable groups. **The families accept that preschool children, adolescent girls, pregnant and lactating women are nutritionally vulnerable and require care. They understand the rationale for weighment and identification of undernourished persons and accept the concept that priority should be on providing food supplements to undernourished persons.**

Majority of the household both in urban and rural areas have ration card and obtain at least part of the food grains required for the family from the ration shop. In most areas the food grain distribution for NPAG is through the ration shops**; while majority stated that they had faced problems in accessing the food grains through PDS, they accepted that it is the most viable option available.** Alternative modes of distribution of food grains to the undernourished person's family, which have been tried, include distribution through anganwadis and PRI. In some areas where there are no ration shops they may be the only mode available but each of these the alternatives have their own sets of disadvantages.

Women in these households stated that they would try to provide adequate food to the undernourished persons especially to pregnant and lactating women so that their nutritional status improves. There was a clear understanding that food supplements given for a limited period (till they deliver in pregnant women or until they complete one year of lactation in lactating women) to undernourished pregnant and lactating women will benefit both the mother and her offspring. The community and the family were therefore willing to do their best to ensure that undernourished pregnant and lactating women get additional food.

Pregnant and lactating women are two groups that have been receiving supplements from ICDS right from its inception. But available data suggest only about a fourth of all pregnant and lactating women are able to come to anganwadi and receive food supplements; only about a fourth of those who came are able to come and collect food for more than 20 days in a month. Data from NPAG in the first two years of implementation suggest that majority of pregnant and lactating women were able to collect rations for three months as food grains are to be collected once a month. NPAG was thus able to provide food grain supplements continuously for three months in pregnant and lactating women. **In view of the experience with NPAG and the fact that women from poorer segments of population will not have the time to come to anganwadi every day to collect food, it might be appropriate to universalise weighing, identification of undernourished pregnant (<45 kg) and lactating women (<40kg) and providing 6 kg of food grains/month free of cost to identified undernourished pregnant women for the remaining period of pregnancy or lactating women for the remaining period of first year of lactation.**

The attitude of families towards food grain supplements to adolescent girls was rather equivocal. Some of the better off segments of the population felt that they are providing adequate food to adolescent girls and did not feel there was need for additional food grain supplements to be given to them. There were anecdotal reports from some centres that some households during the school re-opening period sold the food grains and used to money for buying books or school uniform. Among the poorest sections of the population both in urban and rural areas, the women of household felt when there are other persons in the

family who are also not having adequate food and so they have to use the food grains to improve the household food security; therefore they cannot give all the addtional food grain they got to the identified undernourished adolescent girl. Many educated family members stated **that majority of younger adolescent girls were catogorised as undernourished by using a single cut off weight and very few of the adolescent girls crossed the cut off point even after several months of supplements; they raised the question whether it feasible to give food grains supplements to families of adolescent girls for several years continuously**

WAY FORWARD

Fund release: The evaluation has shown that the present mechanism of fund release from the Central Ministry of WCD to state Deptt of WCD is efficient so **this should be continued.**

Food grain allocations: **The present central mechanism of allocation of food grains on the basis of estimated number of undernourished persons requiring food grain supplements is a reasonable approximation and may be used for the first year. Thereafter the data from the district regarding the number of undernourished persons may be used to modify the requirement for the next year.** A similar procedure may be used at the district level instead of waiting for the anganwadi workers lists to be consolidated and used for procuring the food grains required for the district. This will avoid delays in getting the first and subsequent food grain releases.

Implementation of NPAG by AWW: The anganwadi workers have been able to communicate the paradigm shift from providing food supplements to all those who come to the anganwadi to universal weighing to identify undernourished persons and providing them with food grains. The communities and families have understood the rationale and have accepted the modified programme well. **The anganwadi workers have been able to get community cooperation in weighing and identification of undernourished persons. They are able to accurately weigh and identify undernourished persons according to cut off points. So they may be given this responsibility in future too.**

Ration shops: Food grain distribution to the undernourished women through the ration shops may be the most sustainable option, except in areas where there are no ration shops. **The problems in collecting food grains from the ration shop may get minimised if food grains are given on the monthly Health and nutrition days; this would also improve health coverage for the undernourished persons and their children. If for any reason they are unable to collect the food grains on that day they may collect it from the ration shop any day there after.**

Food Grain supplementation to pregnant and lactating women: Pregnant and lactating women currently receive cooked food supplements under the ICDS programme but they have to come daily to collect food from the anganwadi. This is not a feasible option for many needy women and hence majority do not benefit from food supplementation. It is suggested that in **all anganwadis in the country pregnant and lactating women should continue to be major target groups for food grain supplements. They should be weighed and all undernourished persons should receive food grain supplements once a month. For pregnant women it is recommended that cut off point used may be 45 kg and they should receive the food grain supplements of 6 kg/month for remaining period of pregnancy. For lactating women the cut off point should be 40 kg and they should receive food grain supplements for the remaining period of first year of lactation**.

Food Grain supplementation to adolescent girls: While assessing the need for food grain supplements to undernourished adolescent girls it is important to take into account the fact that median weight of adolescent girls in the 10-14 year age group is around 30 kg and median weight of girls between 15 and 19year age group is 35 Kg. The use of two cut off points 30 kg for those below 15 and 35 for over 15 years of age may be tried. However before adopting these criteria, it should be realised that even if two cut off points are used majority of girls will still not cross the cut off point within one year. From the current data it would appear that food/ food grain supplements even when continued for 3-4 years as has been done in Mizoram might not result in significant impact in terms of improvement in body weight in adolescent girls. This is in line with the findings from NPAG proforma sent by different states which indicate that **food grain supplements upto 12 months in adolescent girls resulted in less than 10 % of girls crossing the cut off point of 35 Kg. In view of the fact the NPAG has not been implemented continuously for two years, it may be preferable to continue with the programme in the 51 districts over the next two years to see if this trend is seen consistently in all states, before taking a final decision regarding the programme.**

District Level Household Survey (2002-04) has shown that prevalence of anaemia in adolescent girls is very high. In view of this a programme of iron and folic acid supplementation once a week to begin with in these 51 districts and later extended to all districts should be considered. Popularizing use of double fortified salt and dietary diversification through nutrition education can be universally implemented in all AWs.