Understanding UMN's Nutrition Work & Achievements in Salyan District, 1995-1999

District Training Program Evaluation Report

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For: Nutrition Program
United Mission to Nepal

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ACRONYMS

ADHO	: Acting-District Health Officer
AHW	: Auxiliary Health Workers
ANM	: Auxiliary Nurse Midwife
CDO	: Chief District Officer
DHO	: District Health Office
DPHO	: District Program Health Office
DTPO	: District Training Program Office
DTP	: District Training Program
EPI	: Expanded Program of Immunization
FCHV(s)	: Female Community Health Volunteer(s)
GM	: Growth Monitoring
HMG	: His Majesty's Government
HP	: Health Post
HW	: Health Worker
INGO	: International Non-Governmental Organization
MCHW	: Maternal & Child Health Worker
MoH	: Ministry of Health
NGO	: Non-Governmental Organization
ORS	: Oral Rehydration Solution
SHP	: Sub-Health Post
VHW	: Village Health Worker
VDC(s)	:Village Development Committee(s)
UMN	: United Missions to Nepal
WHO	: World Health Organization

EXECUTIVE SUMMARY

Purpose:

The purpose of the this study is to evaluate the impact of United Missions to Nepal (UMN) Nutrition Program activities in the 5 target VDCs of Salyan district. As said by the WHO[1] (World Health Organization), "Evaluation is a systematic way of learning from experience so as to improve current activities and promote better planning by careful selection of alternatives for future action" (WHO, p.5). This study, following WHO's definition, tries to carefully analyze the results and impact of efforts made by the program in fulfilling its commitments, so as to provide better alternatives for its future work in nutrition.

Methods:

The study takes a look at the UMN's District Training Program (DTP) in two parts:

(1) through analysis of survey conducted among mothers with children aged 5 years old and under.

(2) through analysis of interviews conducted with concerned health personnel in the target VDCs.

The survey, which included 212 mothers (based on cluster sampling technique), gathered information on nutritional status of mothers, their children and their households. It is also important to mention that since the prior (baseline) survey[2] of the area used "different methodologies", it was not possible to fully compare these survey results with prior baseline results. Only those findings which did not use statistical inquiries are taken from the baseline survey to show the readers the difference between prior and present results.

Three sets of qualitative interviews were conducted with personnel concerned with the DTP. The first interview session was with a total of 8 health officers and development organization officers of Salyan district. Secondly, interviews through questionnaires were conducted amongst 106 health workers who had participated in training activities organized by the DTP. Thirdly, the UMN district program in-charge was interviewed at the conclusion of the survey work. All of these interviews focused on interviewees' thoughts about the DTP's work and achievements.

Major Findings:

The study looked at the work of the United Missions to Nepal's (UMN's) District Training Program (DTP) in multiple aspects. These observations or findings are detailed more meaningfully in Chapter 9; important findings are briefly mentioned here.

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[1] WHO, Health Program Evaluation, Guiding Principles, 1981.

[2] Bhatta, Paramanand, Salyan District Nutrition Survey Report, UMN Nutrition Program, July, 1995.

Indicators Showing Strong Impact

- overwhelming number (94.6 percent) of children were given colostrum (the base line results show only 58 percent of children were given colostrum) .
- mothers are increasingly consuming green leafy vegetables during pregnancy and lactation stages.
- green leafy vegetables along with rice and legume are given in increasing amounts during child weaning period.
- many mothers were taking soup made of omum after child birth.
- 80 percent of mothers surveyed had kitchen gardens in their households (the base line results show only 65 percent of mothers had kitchen gardens in their households).
- almost all malnourished children who were followed up had gained weight.
- health workers have learned about the importance of nutrition in detail; the training activities for health workers proved to be very fruitful.
- the DTP had a wide outreach in the community; concerned personnel of Salyan district appreciated the effort of DTP and have greatly requested the Nutrition Program to cover all VDCs of Salyan district with a similar program.
- 98 percent of mothers have exclusively breast fed their children up to 6 months (unfortunately, the baseline survey did not provide information in this regard, thus, this result may be or may not be due to the DTP's impact).

Indicators Showing Lack of Full Impact

- the proportion of malnourished children is still significant in the target VDCs; more than half of all children aged 6 to 36 months have chronic malnutrition.
- the rate of malnutrition was almost double among children of households who suffered from food shortages compared to children from households which did not have food shortages.
- many mothers are still using traditional medicines to cure measles; these medicines are not verified (on their effectiveness) by the DTP.
- majority of mothers did not mention Sarbottam Pitho as a food they would give to their children.
- nearly 70 percent of all respondents said they did not have enough food to feed their households (58 percent of households did not have enough food to feed their households at the time of base line survey).

Evaluation of the DTP:

The effort of UMN's DTP is indeed commendable. The DTP has aggressively tried to attain its program objectives in a relatively short period of time. The DTP has specially done well in areas of: child feeding practices; food behavior of mothers during pregnancy and lactation stages; training of health workers; growth monitoring of children; and demonstrative education on nutrition in the communities.

However, the Program has overlooked the issue of food security, which the study shows could be the most probable factor affecting the nutritional status of the children. It is also suggested that the Program rethink its program formulation, especially on ways of (1) attaining maximum returns from DTP-trained district health workers; (2) efficient program coverage on all households in the VDCs; (3) effective communicative means to disseminate nutrition messages to the community level.

METHODOLOGY

The study tries to take a broader look at multiple aspects of UMN Nutrition Program's work in Salyan. The analysis is divided into two main parts; 1) analysis of survey conducted among mothers with children aged 5 years old and under, and 2) analysis of interviews conducted with concerned health personnel in the target VDCs.

A) The Survey: A nutritional survey was conducted from the 5th to the 25th of Push 2055 in the 5 VDCs of Salyan district where the UMN Nutrition Program worked on various facets of nutritional development. The aim of the survey was to collect information from the mothers on various nutritional issues in order to understand the impact of the work done in these villages.

***Sampling Technique*:** As recommended by the UMN Health Services Department, cluster sampling technique was used for this survey. Sinha (1997), on Dailekh's baseline survey agrees that cluster sampling is an appropriate method for nutritional surveys because: 1) this technique allows a small number of the population to be sampled, reducing costs associated with the survey; 2) the method easily aligns with the existing ward divisions of the VDC (taking ward as a cluster). Sinha also mentions that this procedure follows the sampling model of the WHO immunization program (Sinha, p.9).

***Selection of Clusters*:** A total of 30 clusters (wards) were randomly selected from the existing 45 wards of all five VDCs. The clusters came out to be as follows:

Table 2.1 Wards by VDC in Sample

Name of VDC	Wards Selected	Total
Siddheswori	3,4,5,6,8,9	6
Laximipur	1,2,3,4,5,6	6
Kuvinde	4,5,6,8,9	5
Dhanwang	1,2,4,5,6,7	6
Triveni	1,2,4,6,7,8,9	7
Total		30

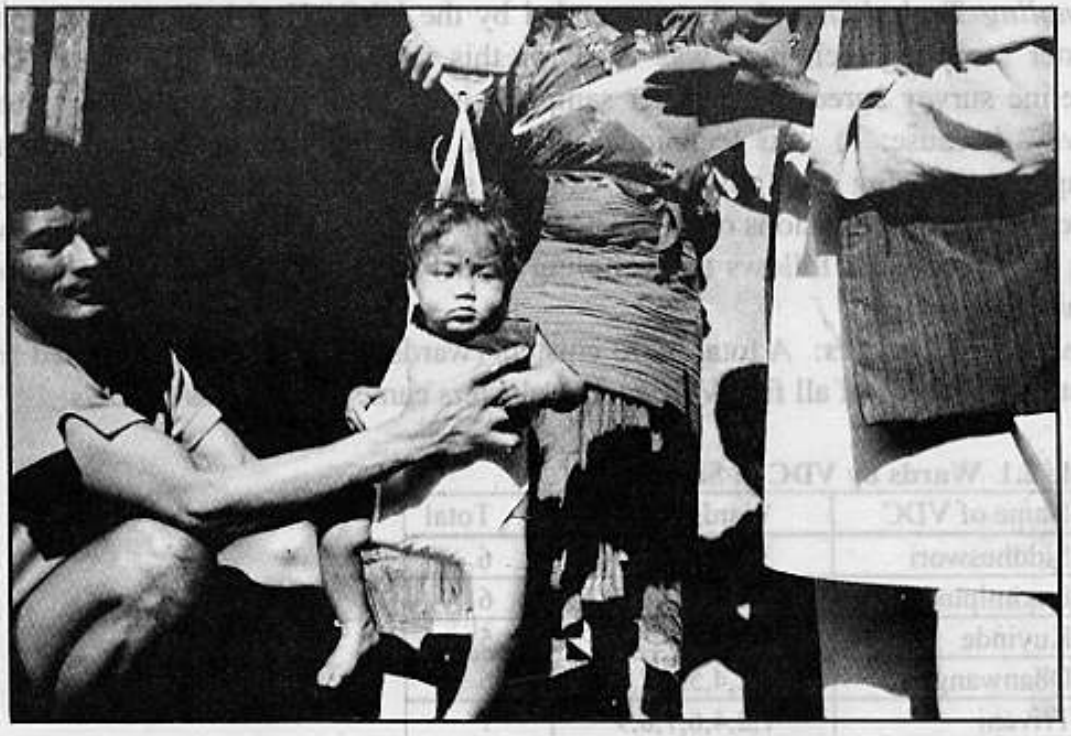
Each cluster required seven randomly selected households that had children aged 5 and under present at the time of the survey. This was done through rotating a stick in the center of a group of households. If children aged 5 years and under were not present at selected households, the nearest households with such requirement were selected. The minimum number of households required for the sample was 210 (30 clusters multiplied by 7 households).

Data Collection:

***The survey team*:** In each of the VDCs, one health post in-charge and a village health worker (VHW) or a maternal & child health worker (MCHW) were chosen to conduct the survey. These workers were hired from the district health office (DHO). The two DTP staff gave a day long orientation to the survey workers, covering the directives on implementing the survey.

A questionnaire prepared by the UMN Nutrition Program was used for the survey (copy attached in Appendix 1.1). The health post in-charge interviewed the mothers and recorded the responses in the questionnaire. The anthropometric measurements were taken by the VHW or MCHW; the health post in-charge recorded the readings in the questionnaire. The DTP in-charge supervised the survey work in all VDCs.

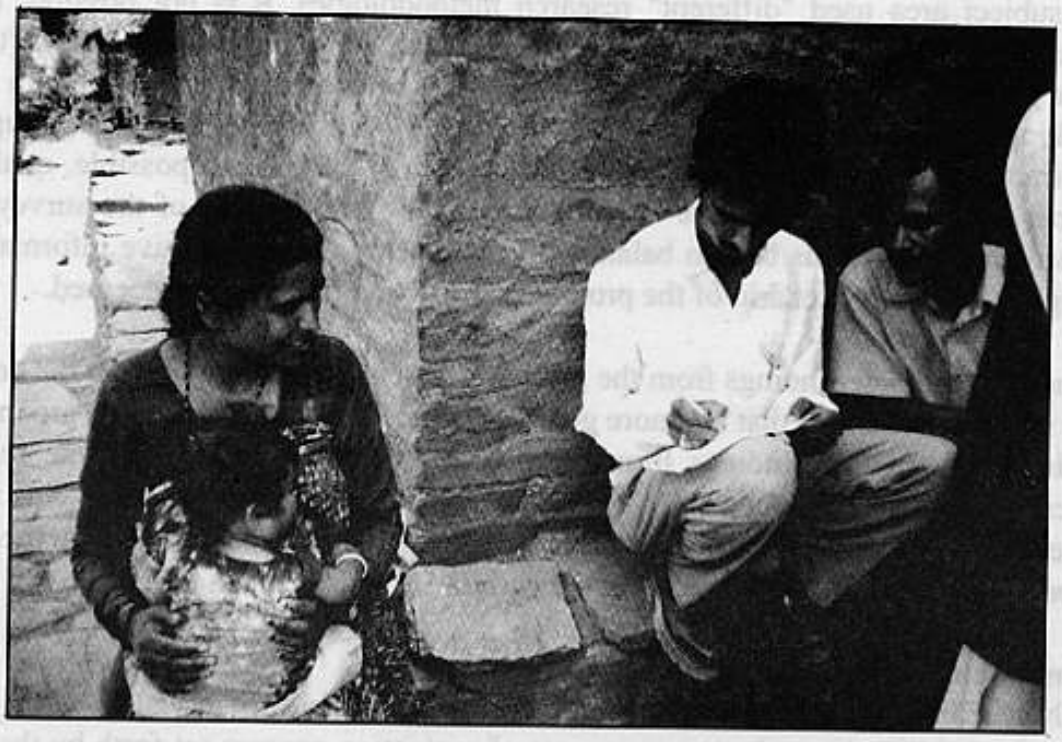
The survey equipment: A questionnaire form was the principle survey tool (see Appendix 1.1). In addition, each group was supplied with necessary survey equipment, which were as follows: weighing scale; measuring tape; and MUAC tape. Salter scales were used to measure weight (in kilograms) of children. The children were put in the scale with the help of the mother or the householder. The scale was adjusted to zero before each reading.



A measuring tape was used to measure the height of the children. Children were stood on a flat ground against a straight wooden stick, and measurement was taken by placing a plane wooden piece over the child's head. For infants, height was measured with a scale plotted board. The infants were laid on the scale plotted board, heels touching the zero mark. Their knees were extended by applying slight pressure and their heads were held straight against the board. The height was recorded to the nearest division in the scale.

Mid-upper arm circumference (MUAC) of mothers and children were measured with an inspection tape manufactured by TALC (teaching-aids at low cost). To measure the MUAC, the mid-point of the arm was first found by marking the point half way between the tip of the shoulder and the tip of the elbow. The tape was then wrapped around at the mid-point mark and the measurement was taken.

Ages of children were recorded by asking the mother their children's birth date. The age was then calculated by subtracting the date of birth from the date of survey. The age was recorded in months.



B) The Interviews:

Three sets of qualitative interviews were conducted with personnel concerned with the DTP. The first set of interviews was conducted by Miriam Krantz (consultant for UMN Nutrition Program) from the 9th to the 11th of December of 1998. The 8 people interviewed were: acting district health officer; health education technician; head nurse; Women's Development Officer; ANM (Auxiliary nurse midwife); Red Cross Program officer; district coordinator of WOREC; a female VDC member. A series of open ended inquiries were made to the interviewees to understand their thoughts on DTP's work and achievements.

Secondly, a written interview was conducted amongst a total of 106 health workers who had participated in training activities organized by the DTP. The interview was conducted at the end of the third year of DTP's work in the target area. The people interviewed were: assistant health workers; village health workers; maternal and child health workers; health assistants; staff nurse; senior assistant health workers; community medical assistants; Red Cross supervisors; NGO supervisor; and a health teacher.

A questionnaire prepared by the UMN Nutrition Program was used for the interview (copy attached in Appendix 1.3). In addition, a short nutrition quiz was also included in the questionnaire to test the health worker's knowledge on different nutritional issues taught in the training activities. Thirdly, the consultant interviewed the district training program in-charge to understand his thoughts on the DTP's work in the subject area.

The Use of Survey & Interviews in the Analysis:
The survey analysis proved to be valuable, however, its usefulness in thoroughly evaluating the program is somewhat limited. Since prior baseline research work on the subject area used "different" research methodologies, it is not possible for the consultant to fully compare these survey results with the prior base line results (to get a clear picture of the nutritional status of the VDCs, before and after the program started working). However, efforts are made to fill the void of any potentially important information with a strong interview analysis section. Whenever possible, qualitative claims from the interviews are backed factually by the findings of the survey. The consultant has tried his best to balance the qualitative and quantitative information to bring out a holistic scenario of the program's impact on the VDCs concerned.

Although complete findings from the prior base line study are not used in the analysis, few important findings that are more general and non - statistical in nature are included in this study. Other findings from the base line survey (fitting the same selection criteria) are included in appendix 1.8, in the form of graphs and charts. This is only done to give the readers an idea of what those findings looked like in their own respect; it is not to be compared with the current survey's results.

Components of Evaluation Process:
With the data and information available, the consultant will try to visualize the impact of DTP's work under various components of evaluation process set forth by the WHO (Health Program Evaluation, 1981). The World Health Organization gives important components under which evaluative processes for health organizations could bring out a greater and more sensible findings. The findings on different aspects of the study will be summarized under these components in order to give a holistic picture on the DTP's work.

The components selected for this study are briefly discussed below.
***Assessment of Adequacy*:** the consideration of adequacy relates to whether problems have been clearly defined, and/or, whether the programs have been adequately formulated (WHO, p.34).
***Assessment of Effectiveness*:** the consideration of effectiveness relates to the analysis of the attainment of objectives, expressed, if possible, in terms of health problems reduction or an improvement of an unsatisfactory health situation (WHO, p.41).
***Assessment of Impact*:** the consideration of impact relates to the analysis on whether the program brought an improvement in the overall health and quality of life, besides the attainment of program objectives (WHO, p.43).

FINDINGS I (Introduction of the Target Area)

District's Introduction (all socio-demographic information detailed below is taken from the Nepal District Profile [1999]): Salyan is located in the Rapti zone, in the Mid-western region of Nepal. The district covers 1,462 sq. kilometers of land. Salyan shares its borders with: Rolpa in the east; Surkhet in the west; Rukum and Jajarkot in the north; and Bakae and Bardia in the south.

Salyan is located at an elevation between 457 to 3,049 meters above sea level. Two thirds of the district's land is covered with forests and the average rain-fall in Salyan is 110 milli-meters. The 1991 census records show the total population of Salyan to be 1,81,785 of which 91,617 were females and 90,168 were males. Population projection for the year 1998 show the total population of Salyan to be 2,05,907, with a female population of 1,03,774 and a male population of 1,02,133. The annual population growth rate of Salyan stand at 1.78 percent.

Salyan is divided into 47 Village Development Committees (VDCs) and Khalanga is its district head quarters. The main crops grown in Salyan are paddy, corn, wheat, millet and barley. The literacy rate of Salyan according to the 1991 census (as well as for 1998 projection) is at 5.7 percent. Only 50.99 percent of the district's total population have access to drinking water. The are 10 health-posts, 36 sub health-posts, and 1 primary health center in Salyan. A hospital is also situated in Khalanga, which has bed capacity for 15 patients.

Magars and Gurungs make up the majority of the Salyan's population, in terms of ethnicity. They are followed by the Chettris, Brahmins, and the occupational castes (see Table 3.1).

Table 3.1 Ethnic Make-up of Salyan District

Caste/Ethnic groups	Count	Percent
Magar/Gurung	64,899	35.63
Chettri	57,539	31.6
Brahmin	26,629	14.6
Occupational Castes	19,326	10.6
Newar	10,893	6.0
Others	2,859	1.6
Total	1,82,145	100.0

Note: It is recommended that readers view the data only in general terms and not take the figures as exact. Source: Salyan District Development Committee.

Brief Discussion of the Target VDCs:

The UMN Nutrition Program worked in 5 target VDCs in Salyan district which were: Dhanwang, Kuvinde, Laximipur, Sidheswori, and Triveni. Dhanwang is about 30 miles south of the district head quarters. Kuvinde is about 18 miles west of the district head quarters and Laximipur is about 16 miles south of the head quarters. Sidheshowri and Triveni are located 18 miles east and 14 miles south of the district

head quarters, respectively. Figures for the population (1998 projection) of the 5 VDCs are detailed in Table 3.2.

Table 3.2 Population (1998 Projection) Profile of the VDCs

VDCs	Males		Females		Total Population		Total Households	
	Count	%	Count	%	Count	%	Count	%
Laximipur	2,058	18.7	2,108	18.7	4,166	18.7	734	18.3
Triveni	2,141	19.5	2,151	19.1	4,292	19.3	804	20.0
Dhanwang	2,122	19.3	2,126	18.9	4,248	19.1	802	19.9
Kuvinde	2,542	23.1	2,808	24.9	5,350	24.0	996	24.8
Siddheswori	2,131	19.4	2,077	18.4	4,208	18.9	684	17.0
Total	10,994	100.0	11,270	100.0	22,264	100.0	4,020	100.0

(Note: It is recommended for the readers to only view the data generally and not take the figures as such. Calculated from the Nepal District Profile, 1999)

Major Agricultural Production of the 5 VDCs:

1) Main Cereals: Corn, Wheat
2) Other Cereals: Rice, Millet
3) Fruits: Orange, Lemon, Banana, Apple
4) Others: Potato, Mustard, Ginger, Turmeric, Groundnut

Brief View of the Economic-Infrastructural Status of the 5 VDCs (as observed by the DTP in-charge):

Most of the householders in these VDCs (and in other VDCs as well) spend half a year for seasonal labor-work in India. The problem of unemployment and poverty, as observed by the DTP in-charge, is very serious in these VDCs. As the DTP in-charge puts it, "the people have very low purchasing power because of their low per capita income." On other issues, the DTP in-charge further says: "There is no sufficient supply of clean drinking water in these VDCs. During rainy seasons, worm, parasite, and bacterial infection are common. Furthermore, these VDCs also lack irrigation facilities. Farming in these VDCs (as well as in the whole of Salyan) is solely dependent on seasonal rainfall".

In terms of motor-able roads, the 'Dang-Salyan' highway runs through Dhanwang and Triveni VDCs. A road leading to Kharikot runs along Siddheswori VDC. A dirt road has been built from ward number 6 to ward number to 1 of Laximipur VDC; however, no means of transportation ply this road. A road is under construction in Kuvinde VDC with the help of a Food for Work program.

The following data (Table 3.3) drawn up by the DTP in-charge shows the accessibility of drinking water in these VDCs. In many wards, water reservoirs are built from which lines are supplied to water taps. People from a total of 8 wards travel between 1 to 2 hours to fetch water.

Table 3.3 Water Accessibility in 5 VDCS

Wards	VDCs in the Target Area				
	Laxmipur	Kuvinde	Dhanwang	Triveni	Sidheswori
1	tap	tap	tap	spring-walk	tap
2	tap	spring	tap	spring	tap
3	spring	tap	tap	tap	spring
4	spring-walk	spring-walk	tap	spring-walk	spring
5	spring	tap	tap	tap	tap
6	spring-walk	tap	spring	spring	spring
7	tap	spring-walk	tap	spring	spring
8	spring-walk	tap	spring	spring-walk	spring
9	tap	spring	spring	tap	spring

note: 'spring-walk' means 1 to 2 hours of walk to the nearest spring. Spring is translated from the Nepali word-'pani ko mul'. Source: Salyan District Development Committee.

The District Training Program (DTP):

In accordance to the signed agreement with the Ministry of Health (MoH), the UMN Nutrition Program pledge to provide assistance and training to strengthen the nutritional work at the district level of Salyan (Agreement Paper, p.1). The Annual Report further details this commitment through 6 project objectives:

1) reduction in the level of protein energy malnutrition
2) monitoring of nutritional status of under 5 year old children and their mothers
3) training of health workers, NGO/INGO staff in nutrition.
4) promotion of nutrition messages in communities.
5) improvement in child feeding practices.
6) reduction of micro nutrient deficiencies in children and mothers.

The UMN Nutrition Program envisaged a district training program for four mid-western districts of Nepal, which are: Jajarkot, Rukum, Dailekh and Salyan. The DTP of Jajarkot district was phased out in July 1996, after successfully completing its three year program period. Work is continuing in Dailekh and Rukum districts where the DTP was started in July, 1997 and 1996, respectively. The program in Salyan has completed its three year period and with an extension of one year, is in the process of termination.

The joint agreement between MoH and UMN describes the involvement of UMN Nutrition program in Salyan in this way:

- The UMN staff of district nutrition program will work with the DPHO staff in the district for three years only; leaving in place increased awareness, knowledge about nutrition and health in the health staff and improved community level practices.
- The district nutrition program will use MoH training curriculum with adaptation if needed.
- The district program will offer/conduct training/workshop for the district health personnel such as HAs, AHWs, ANMs, VHWs, and MCH workers.
- The district program will assist in giving training to local people, especially CHVS, mothers clubs and non-formal education groups.
- The district program will assist in monitoring and evaluating nutrition activities and nutrition status of the work area.
- The district program will gather information on food and nutrition problems and practices and will use that information in training of different groups.
- The district program will assist in making available education materials for the training.
- The district program will gather information on available nutrition related programs in the district and will use them in nutrition training as much as possible.

An overview of the Annual Report Reviews on Salyan's DTP:

The annual reports for all four years of DTP work in Salyan attempt to detail the program's work and achievements. These reports were based on monthly as well as yearly reports documented by the DTP in-charge. Below is the compiled information on DTP's work for the last four years.

First Year Report (from the year 2052 to 2053):

In April 1995, the District Training Program was introduced in Salyan District with 2 days of inauguration and orientation workshop at Khalanga, Salyan. Thirty four participants from 12 Ilaka health posts, 17 sub-health posts, District Health Office, District hospital, Red Cross, and District representatives (Chief District Officer, Local Development Officer and District Development Chairman) participated in the workshop.

The initial phase of the DTP's work in the target VDCs started with several focus group meetings. These meetings proved to be an effective platform for introducing the DTP in the community; the staff of the UMN Nutrition Program met with community leaders and received necessary orientation of the area. In addition, separate focus group meetings were also organized to understand local food beliefs, food availability and food practices of the target VDCs.

Training activities for the first year are detailed in the table below.

Table 4.1 Nutrition Training Activities (1st year)

No.	Target Group	Participants	No. of days
1	Supervisors and field workers	13	1
2	Mother's group FCHV	150 25	1 1
3	Dipoholders Mothers' group	27 70	1 1
4	Dipoholders	80	1
5	FCHV	27	2
6	FCHV	54	2
7	Teachers,VHW/MCH W/ AHW/ANM/HA/ CMA/ VHW/MCHW	25 74 38 20	1 3 3 1
Total participants in all training activities = 603.			

Other Major Program Implementations:

Growth Monitoring: Monitoring growth of children (aged 5 years and under) in VDCs was implemented by the district health office (DHO) before DTP started its program in Salyan. Nevertheless, the DTP helps and supervises health workers in growth monitoring and considers this as one of its key activities. For the last nine months of the first year, growth monitoring was running in six health posts and sub health posts of Kuvinde, Triveni, Laximipur, Dhanwang, Sidheswori, and Khalanga VDCs; however, the work only covers those children who visit the health posts.

In specific, weight for age and mid-upper arm circumference were measured and recorded every month on a 'Growth Monitoring Chart'. The measurements are recorded in the chart with reference to the age of the child, from which the health posts and the sub-health posts keep track on whether the children visited were healthy or not healthy.

***Assessment of micro nutrient deficiencies*:** The program tried to assess the prevalence of micro nutrient iron and vitamin A deficiencies in the area. Nutrition education and consultations were provided. Vitamin A capsule and iron tablets were distributed to some severe cases.

***School Nutrition Program*:** School nutrition program was implemented in six selected schools of six VDCs with the coordination and support of the district education office and school personnel.

***Nutrition Demonstration/Education*:** Nutrition demonstration/education activities were organized in six VDCs and the community members widely participated in the programs.

***Follow-ups*:** Five severely malnourished children were followed up which involved timely advice, consultations and demonstrations to the parents (see Chapter 6).

***Formal and Informal Meetings*:** Formal and informal meetings were organized and were attended by key figures of the district and VDCs.

Second Year Report (from the year 2053 to 2054):

The training activities for the second year are detailed in the table below.

Table 4.2 Nutrition Training Activities (2ndYear)

No.	Participants	No. of Days	No. of Participants
1	Mothers	1	263
2	FCHVs	2	52
3	School Teachers	1	25
4	Students	1	162
Total participants in all training activities = 502			

Other Major Program Activities:

***Growth Monitoring*:** As per the previous year, growth monitoring remained one of the key activities of DTP and was running in the six previously mentioned VDCs through health posts and sub-health posts.

***Assessment of micro nutrient Deficiencies*:** Investigation of the prevalence of micro-nutrient deficiencies were carried out as in the previous year. Nutrition education and consultations were provided based on locally available foods, especially, green leafy vegetables GLVs), yellow fruits and vegetables. De-worming, personal hygiene and sanitation were also taught. Severe vitamin A deficiency cases were given vitamin A capsules and for severe anemic cases, iron tablets were distributed from the health posts.

***School Nutrition Program*:** The school nutrition program continued with same six schools selected last year. Importance of food(s), food values, local foods, food during illness, and food for pregnant and lactating mothers, weaning foods, personal health and environmental sanitation, kitchen garden, etc. were topics discussed in the school nutrition programs.

***Nutrition Demonstration/Education*:** Nutrition demonstration was regarded as one effective medium to improve or increase awareness among rural communities. Demonstrations were organized in six VDCs , and the report mentions of participation by 263 mothers in the area.

***Follow-up Cases*:** 23 severely malnourished children were followed up in the second year. Timely advice, consultations and demonstrations were made to the parents. Follow-up visits were conducted on homes of severely malnourished children.

***Follow-up of Trainers*:** The report mentions the follow-ups of 37 trainers (MCHWs/FCHVs/VHWs) from six VDCs. Discussions, question-answers, clarification, and feed-back on the program were the main activities carried out.

***Nutrition Meetings*:** The program organized formal and informal nutrition meetings in co-ordination with DPHO, DHO, CDO, local leaders, community leaders, local NGO, club members, teachers, VDC chairman, and social workers.

***Relation with HMG officials, INGOs, NGOs, and others*:** The program reported good understanding and cooperation with the DHO and other related government offices and as well as with NGOs and clubs.

Measles Epidemic: A measles epidemic hit ward number 1 of Kuvinde VDC around the month of Chaitra. The DTP reported that 8 children died from the epidemic. Thus, door-to-door health and nutrition education sessions and distribution of vitamin A capsules were carried out for one week in the epidemic area. The report mentions that the DTP's week long intervention helped prevent further measles out-breaks and death among affected children.

Third Year Report (from the year 2054 to 2055)

Training activities for the third year are detailed below.

Table 4.3 Nutrition Training Activities (3rd Year)

No.	Trainees	No. of Participants	No. of days
1	Health post/sub health post in-charge	51	3 days
2	MCHW/VHW	60 (17+43)	
3	FCHVs	67	3 days
4	School students	413	2 days
5	School teachers (high school health teachers)	13	2 hours
6	Mothers group	517	
7	NGO/INGO representatives	62	3 hours
8	Dhaami/Jhakris	11	1 day
9	Sub health post staff (orientation)	47	1 day
Total participants in all activities = 1,241			

Other Major Program Activities:

***Growth Monitoring*:** Monitoring of children's growth (weight for age and MUAC) were recorded in the program's target area.

***Assessment of Micro-Nutrient Deficiencies*:** Children under 5 years old and their mothers were assessed for suspected micro-nutrient deficiencies. Vitamin A supplements and iron tablets were provided to suspected deficiency cases. Nutrition education was provided along with the promotion of home gardening and consumption

of vitamin A and iron-rich foods. Cases of night-blindness, malnutrition and prolonged diarrhea were also treated with vitamin A supplements, as part of the government National Immunization Day program.

Assessment of Breast feeding practices: For the first time, record keeping was done on the number of women with children under 6 months (boys) or 5 months (girls), who were breast fed. Of the 57 mothers surveyed, 98 percent of mothers exclusively breast fed their children.

Follow up of Malnourished Children: With an annual target of home visits set for 72, 45 severely malnourished children were followed up. Through follow-up visits, 81% of these malnourished children were found to have improved their health (with an 1 kg. average weight gained per visit).

Follow up of Trainers: With a target of 100, 73 trainers were followed up on their capabilities. They were given encouragement and were helped with problems they faced on their work.

Nutrition Meetings: Several formal and informal meeting were reported to have been conducted with DHO staff, local leaders, and with NGO and INGO representatives.

Additional Activities: A) Child Exhibition: 44 children participated in a "children's exhibition" organized by the DTP and DHO on Children's Day.

B) Women's Skill Development Exhibition: DTP displayed nutrition posters, flip charts, food varieties, Sarbottam Pitho, and distributed vitamin A supplements to mothers and children at an exhibition in Khalanga on International Women's Day.

Fourth Year Report (from the year 2055 to 2056)

Training activities for the fourth year are detailed below.

Table 4.4 Nutrition Training Activities (4th year)

No.	Participants	No. of Days	No. of Participants
1	Mothers	1	269
2	FCHVs	2	123
3	School Students	2 hours	505
4	School Teacher	1	7
5	VHW/MCHW	2	58
6	SHP/HP In-charge	2	19
Total participants in all training activities = 1,029			

Other Major Program Activities:

Growth Monitoring: Monitoring of children's growth (weight for age and MUAC) were recorded in the program's target area.

Assessment of Micro-Nutrient Deficiencies: Children under 5 years old and their mothers were assessed for suspected micro-nutrient deficiencies. Vitamin A supplements and iron tablets were provided to suspected deficiency cases.

Follow up of Malnourished Children: Consultations were provided to 53 children suffering from malnutrition.

Follow up of Trainers: 125 trainers were followed up on their capabilities for the fourth year.

Children's Exhibition: On the occasion of 'International Children's Day', the DTP along with DHO organized a Children's Exhibition in Khalanga on the 4th of Bhadra. Children who had good nutritional status were given prizes.

Health Education Exhibition: Two exhibitions on health and nutrition were held in Khalanga. Teaching materials, posters, and pamphlets on health and nutrition were displayed and distributed in these exhibitions. A demonstration was also given on how to make Sarbottam Pitho. Also, a puppet show aimed at giving suggestions to pregnant and lactating mothers was held in one of the exhibitions.

Trial with Direct Reading Scale: This participatory method of growth monitoring was started as a trial in Kafle village of Laximipur VDC. Participating mothers found it exciting to monitor the growth of their own children.

Consultation Services for DHO: The DTP in-charge provided consultation services to the DHO including writing and producing health and nutrition pamphlets.

FINDINGS III (Maternal Data)

A) Socio-Demographic Information of Mothers in Sample:

Some important socio-demographic inquiries about mothers were covered in this study to better understand the study sample. This information is displayed in Table 5.1. On the ethnic and caste identity of mothers (and their households) surveyed for the analysis, the majority (60.4 percent) belonged to the Brahmin/Chettri/Thakuri ethnic group. About 25 percent were Magars and Gurungs (combined), and about 15 percent were of the occupational castes.

In terms of the age of mothers surveyed, the strongest concentration (32.1 percent) were in the age group of 20 to 24 years. This was followed by mothers around the age group of 25-29 with a proportion of 28 percent. About 10 percent of mothers included in the survey were 19 years old or under.

The educational level of the mothers in the study showed a majority of them (69.9 percent) to be illiterate. About 21 percent of mothers reported of being literate or attending literacy classes. Less than two percent of all mothers surveyed had SLC degrees or more.

When asked about their occupation, the majority (96.2 percent) of the mothers said they were involved in agriculture. Less than 5 percent were involved in teaching, or running their own business.

Socio-Demographic Characteristics of Study Sample (Table 5.1)

A) Caste/Ethnic Identity of Mothers

Caste/Ethnicity	Count	Percent
Brahmin/Chettri/Thakuri	128	60.4
Magar/Gurung	52	24.5
Occupational Castes	32	15.1
Total	212	100.0

B) Age of Mothers in Years

Age	Count	Percent
19 and under	22	10.5
20-24	67	32.1
25-29	58	27.8
30-34	27	12.9
35-39	19	9.1
40-45	16	7.7
Total	209	100.1

C) Education Level of Mothers

Education Level	Count	Percent
Not Literate	146	68.9
Literate*	44	20.8
Classes 1-4	6	2.8
Classes 5-8	9	4.2
Classes 9-10	3	1.4
S.L.C	3	1.4
College +	1	0.5
Total	212	100.0

* those attending literacy classes are also considered literate.

D) Occupation of Mothers

Occupation	Count	Percent
Agriculture	204	96.2
Teaching	1	0.5
Business/Office	7	3.3
Total	212	100.0

B) Pregnancy Information:

Information on the mother's number of pregnancies was collected in this study. A majority of mothers (35.5 percent) had two to three pregnancies to date. The number was slightly less (27 percent) for mothers who had had four to five pregnancies. Interestingly, around 8 percent of the mothers reported to having more than seven pregnancies to date (Table 5.2).

Table 5.2 Past Pregnancy Information of Mothers in Sample

No. of Pregnancies	Count	Percent
One	46	21.8
Two to three	75	35.5
Four to five	57	27.0
Six to seven	15	7.1
Eight to nine	12	5.7
More than nine	6	2.8
Total	211	99.9

C) Mothers' Nutritional Status:

Mid-upper arm circumference (MUAC) was measured for mothers in order to understand their nutritional status. Standards for the MUAC test are based on those used by organizations such as PAHO (Pan-American health organization), WHO, and USAID. The measurements show that more than half of all mothers (55.7 percent) in the target area were "at risk" of nutritional disorders. About 33 percent of the mothers had "good" nutritional status, and about 12 percent of the mothers were shown to have poor nutritional status (Table 5.3).

Table 5.3 Nutritional Status of Mothers (MUAC measurements)

Total no. of Mothers	Poor [<211 mm.]		At Risk [211-235 mm.]		Good [>235 mm.]	
	Count	Percent	Count	Percent	Count	Percent
210	25	11.9	117	55.7	68	32.4

D) Child Feeding Practices:

A majority of mothers gave supplementary foods to their children after they had reached 6 months old. In general, no wide differences were seen in separate feeding practices (e.g. females given supplementary foods earlier) for either male or female children. Interestingly, about 20 percent of the mothers reported to have given supplementary foods to their children before they reached 5 months old (see Table 5.4).

Table 5.4 Information on Supplementary Foods Given to Children, by Age/Sex

	1-3 Months		4 Months		5 Months		6 Months		7-11 Months		12-24 Months	
Children	N	%	N	%	N	%	N	%	N	%	N	%
Males	6	4.5	17	12.8	14	10.5	73	54.9	10	7.5	13	9.8
Females	5	4.4	24	21.1	25	21.9	41	36.0	10	8.8	9	7.9
Total	11	4.5	41	16.6	39	15.8	114	46.2	20	8.1	22	8.9

(note: percent for males and females are proportion of their respective totals, total percent calculated as proportion of the total 247 children who were given solid food).

Nearly 95 percent of all children were reported to have given colostrum, a positive change brought about by the program, as reported by the DHO (Table 5.5).

Table 5.5 Colostrum (Given or Not)

Colostrum	Count	Percent
Yes	263	94.6
No	15	5.4
Total	278	100.0

E) Reported Feeding Behavior:

This chapter analyzes food belief of mothers during pregnancy and after child birth. The responses are categorized in similar ways as the food belief responses presented in Dailekh's base-line survey report (i.e., according to their similar ethnic and economic background) (Sinha, 1997). The categories are: group A (Brahmins, Chettris, Thakuris), group B (the Occupational castes), and group C (Magars, Gurungs).

Responses for this section were more open-ended and casual, thus, responses are simply listed without statistical analysis. Counts (number of responses) are mentioned in the table for the readers to visualize the responses in terms of the priorities placed on certain food by the respondents.

E.1) Food Beliefs During Pregnancy:

Food beliefs according to the three ethnic groups are detailed in Tables 5.6 a,b,c,d,e,f. Cereals, Legumes, Green leafy vegetables and meat were reported as given during pregnancy for majority of mothers in all three groups.

In terms of foods that were not eaten during this stage, the majority of respondents in all three groups reported not having any food restrictions. However, certain foods such as pumpkin, Lentils and the use of tobacco and alcohol were reported to be ignored during the pregnancy stage.

Table 5.6a) Foods Eaten During Pregnancy - Group A

Foods Given	Count	Reason(s)
Cereal	99	for appetite, to survive, good for both mother & children,it is available, gives stren-, gth.
Legumes	91	
Green leafy vegetables	82	
Meat	77	
Milk	41	
Fruits	19	
Sour (sinki, sour fruits)	12	
Fats/oil	5	
Tubers (potato, colocassia, root, yam)	3	
Honey	2	
City foods (horlicks , biscuits, etc.)	1	

Table 5.6b) Foods Eaten During Pregnancy - Group B

Foods Given	Count	Reason(s)
Green leafy vegetables	25	good for mother , and child, it gives strength, it is available, don't know.
Cereals	22	
Legumes	20	
Meat	16	
Milk	13	
Fats/oil	5	
Fruits	4	
Sinki	2	
Tubers	1	

Table 5.6c) Foods Eaten During Pregnancy - Group C

Foods Given	Count	Reason(s)
Legumes	48	for appetite, to survive, good for mother and child, it is available, don't know.
Cereals	47	
Meat	37	
Green leafy vegetables	36	
Milk	26	
Fruits	10	
Sinki	4	
Tubers	3	
Pumpkin	3	
Honey	2	
City products	1	
Alcohol	1	
Fats/Oil	1	

Table 5.6d) Foods Not Eaten During Pregnancy - Group A

Foods Not Given	Count	Reason(s)
Pumpkin	10	
Alcohol	8	
Tobacco	8	
Lentils	7	
Green peas	5	
Hot/sour foods	4	
Greenleafy vegetables	3	
Tubers	3	
"Kuvindo"	2	
Black gram	1	
Don't know	19	
No restriction	82	

Table 5.6e) Foods Not Eaten During Pregnancy - Group B

Foods Not Given	Count	Reason(s)
Lentils	5	
Green peas	4	
Pumpkin	4	
Tubers	1	
Black gram	1	
Alcohol	1	
Papaya	1	
Hot/sour foods	1	
Sweet	1	
Don't know	5	
No restrictions	19	

Table 5.6f) Foods Not Eaten During Pregnancy - Group C

Foods Not Given	Count	Reason(s)
Lentils	6	
Pumpkin	6	
Tobacco	5	
Green peas	4	
Alcohol	4	
Greenleafy vegetables	2	
Tubers	2	
Hot/Sour foods	1	
Papaya	1	
Don't know	8	
No restrictions	35	

E.2) Food Beliefs After Child Birth:

Similar food patterns were recorded for all three groups of mothers on the issue of foods given after child birth. Meat products and soup made of omum were given to mothers of all groups. Soyabeans, Lentils, and Tubers were generally ignored by mothers during this period. See Tables 5.7 a,b,c,d,e,f for more details.

Table 5.7a) Foods Eaten After Child Birth - Group A

Foods Given	Count	Reason(s)
Meat	104	good for mother and child, promotes breast feeding, health recovered, nutritious, good for mother's health.
Omum seeds	97	
Fats (oil/ghee)	42	
Milk products	37	
Legumes	30	
Colocasia	30	
Green leafy vegetables	23	
Honey	12	
Horse gram	8	
Fruits	4	
Eggs	4	

Table 5.7b) Foods Eaten After Child Birth - Group B

Foods Given	Count	Reason(s)
Omum seed	31	good for mother and child, promotes-breast feeding - good for mother's body.
Meat products	29	
Colocasia	10	
Ghee	8	
Horse gram	7	
Legumes	6	
Green leafy vegetables	5	
Milk products	4	
Honey	3	

Table 5.7c) Foods Eaten After Child Birth - Group C

Foods Given	Count	Reason(s)
Meat	54	good for mother and child, promotes, breast milk, good for mother's health, gives strength, nutritious.
Omum seeds	49	
Milk products	33	
Colocsa	20	
Green leafy vegetables	19	
Legumes	17	
Ghee	17	
Honey	9	
Alcohol	7	
Horse gram	4	

Table 5.7d) Foods Not Eaten After Child Birth - Group A

Foods Not Given	Count	Reason(s)
Soyabeans	60	
Tubers	27	
Legumes	24	
Green peas	24	
Corn	23	
Ground nuts	21	
Pumpkin	15	
Hot foods	14	
Green leafy vegetables	11	
Wheat	11	
Fruits	7	
Tomato	4	
Rape leaves	4	
Tobacco	3	
Black gram	3	
Bengal Gram	1	
Don't know	11	
No restrictions	21	

Table 5.7e) Foods Not Eaten After Child Birth - Group B

Foods Not Given	Count	Reason(s)
Lentils	16	
Pumpkin	15	
Green leafy vegetables	14	
Tubers	14	
Green peas	13	
Soyabeans	12	
Ground nuts	12	
Yogurt	8	
Sour foods	6	
Wheat	6	
Rape leaves	3	
Legumes	2	
Corn	1	
Fruits	1	
Don't know	1	
No restrictions	4	

Table 5.7f) Foods Not Eaten After Child Birth - Group C

Foods Not Given	Count	Reason(s)
Soyabeans	10	
Green leafy vegetables	10	
Yogurt	9	
Sour foods	9	
Hot foods	7	
Ground nuts	6	
Tubers	6	
Alcohol	6	
Legumes	5	
Wheat	5	
Lentils	5	
Pumpkin	4	
Green peas	4	
Rape leaves	4	
Black gram	3	
Corn	2	
Don't know	1	
No restrictions	13	

FINDINGS IV (Child Data)

A) Anthropometric measurement:

Z scores classification on children's nutritional status: The study uses Z score analysis to look at the nutritional status of the children in the area. Z score cut-offs are often coined as a "reliable" technique for understanding nutritional status. It has the statistical property of being normally distributed, thus allowing a meaningful average and standard deviation for a population to be calculated (EPI Info, 1994).

Z scores (cut-offs)

Severe : proportion greater than -3.0 standard deviation
Moderate : proportion in-between -2.0 to -3.0 standard deviation
Moderate &Severe : proportion greater than -2.0 standard deviation

In order to make the results more meaningful and accurate, cut-off points are measured according to age groups. This method is used because analysis without reference to age will give results based on a constant standard for all age combined, therefore, disregarding the rapid physical development of children.

The analysis for this section is divided into three categories which are weight/age (wasting and stunting), weight/height (wasting), height/age (stunting).

A.1) The case of Wasting & Stunting :

Around 35 percent of all children aged between 48 to 60 months were found to be suffering from severe cases of wasting and stunting (Table 6.1). The moderate cases of wasting and stunting were mostly concentrated around children aged between 24 to 60 months. When cases of moderate and severe forms of wasting and stunting were combined, analysis showed that children in higher age groups seemed to be more vulnerable, with more than 70 percent of children aged around 48 to 60 months being affected.

Table 6.1 Children's Weight/Age status (Wasting & Stunting), by Age Groups

Age Groups (Months)	Number of Children	Underweight for Wasting & Stunting					
		Severe		Moderate		Moderate & Severe	
		N	%	N	%	N	%
0-5	29	0	0.0	6	20.7	6	20.7
6-11	52	2	3.8	12	23.1	14	26.9
12-23	61	13	21.3	22	36.1	35	57.4
24-35	50	5	10.0	22	44.0	27	54.0
36-47	52	5	9.6	23	44.2	28	53.8
48-60	37	13	35.1	14	37.8	27	73.0
Total 0-11	81	2	2.5	18	22.2	20	24.7
Total 12-60	200	36	18.0	81	40.5	117	58.5

note: percentages are calculated out of the total number of children in respective age groups.

A.2) The case of Wasting:

The case of wasting (acute malnutrition) ranged from normal to relatively high among the children in the study group. Children aged between 6 to 11 months (13.5 percent) and children aged between 12 to 23 months (21.3 percent) had higher amount of wasting cases (Table 6.2).

Tables 6.2 Children's Weight/Height status (Wasting), by Age Groups

Age Groups (Months)	Number of Children	Underweight for Wasting					
		Severe		Moderate		Moderate & Severe	
		N	%	N	%	N	%
0-5	29	0	0.0	1	3.4	1	3.4
6-11	52	4	7.7	3	5.8	7	13.5
12-23	61	4	6.6	9	14.8	13	21.3
24-35	50	1	2.0	1	2.0	2	4.0
36-47	52	1	1.9	3	5.8	4	7.7
48-60	37	0	0.0	3	8.1	3	8.1
Total 10-11	81	4	4.9	4	4.9	8	9.9
Total 12-60	200	6	3.0	16	8.0	22	11.0

A.3) The case of stunting:

Analysis of stunting (chronic malnutrition) showed that cases were as expected (more than 64 percent) among children ranging from 12 to 60 months (see Table 6.3). However, age break-down shows that 70 percent of children aged 12 to 23 months were suffering from moderate to severe stunting. Proportion of children aged under one year also had significant amount of severe stunting cases (20.7 percent among children aged 0 to 5 months and 19.2 percent among children aged 6 to 11 months).

Tables 6.3 Children's Height/Age status (Stunting), by Age Groups

Age Groups (Months)	Number of Children	Underweight for length or height Stunting					
		Severe		Moderate		Moderate & Severe	
		N	%	N	%	N	%
0-5	29	6	20.7	7	24.1	13	44.8
6-11	52	10	19.2	10	19.2	20	38.5
12-23	61	26	42.6	17	27.9	43	70.5
24-35	50	17	34.0	10	20.0	27	54.0
36-47	52	19	36.5	13	25.0	32	61.5
48-60	37	13	35.1	14	37.8	27	73.0
Total 0-11	81	16	19.8	17	21.0	33	40.7
Total 12-60	200	75	37.5	54	27.0	129	64.5

B) Comparisons with Regional Figures:

The National Planning Commission Secretariat in its publication of 'Nepal Multiple Indicator Surveillance' (1997), gives valuable survey information on malnutrition at the regional and national levels. It would be worthwhile to tally our findings with the national and regional results to gain perspective on where we stand.

The prevalence of acute malnutrition (among children aged 6-36 months) in the DTP target VDCs was relatively similar to the figures of the hills and of the mid-western regions (Table 6.4). The proportion of chronic malnutrition in the DTP target VDCs was slightly lesser than the proportion of the mid-western region. Although the prevalence of chronic malnutrition in the DTP target VDCs look slightly lesser than that of the mid-western region, the figure still surpasses the 50 percent mark. The findings of all three regions are strikingly similar; half of all children aged 6 to 36 months in these areas are suffering from chronic malnutrition.

Table 6.4 Percent Figures of Malnutrition Among Children Aged 6-36 Months

Forms of Malnutrition	Areas		
	Hills Region	Mid-Western Region	DTP target VDCs
Chronic (stunting)	56	61	55.5
Acute (wasting)	10	12	12.8

note: national and regional figures are taken out of Nepal Multiple Indicator Surveillance, 4th Cycle.

C) Cases of Oedema in Children:

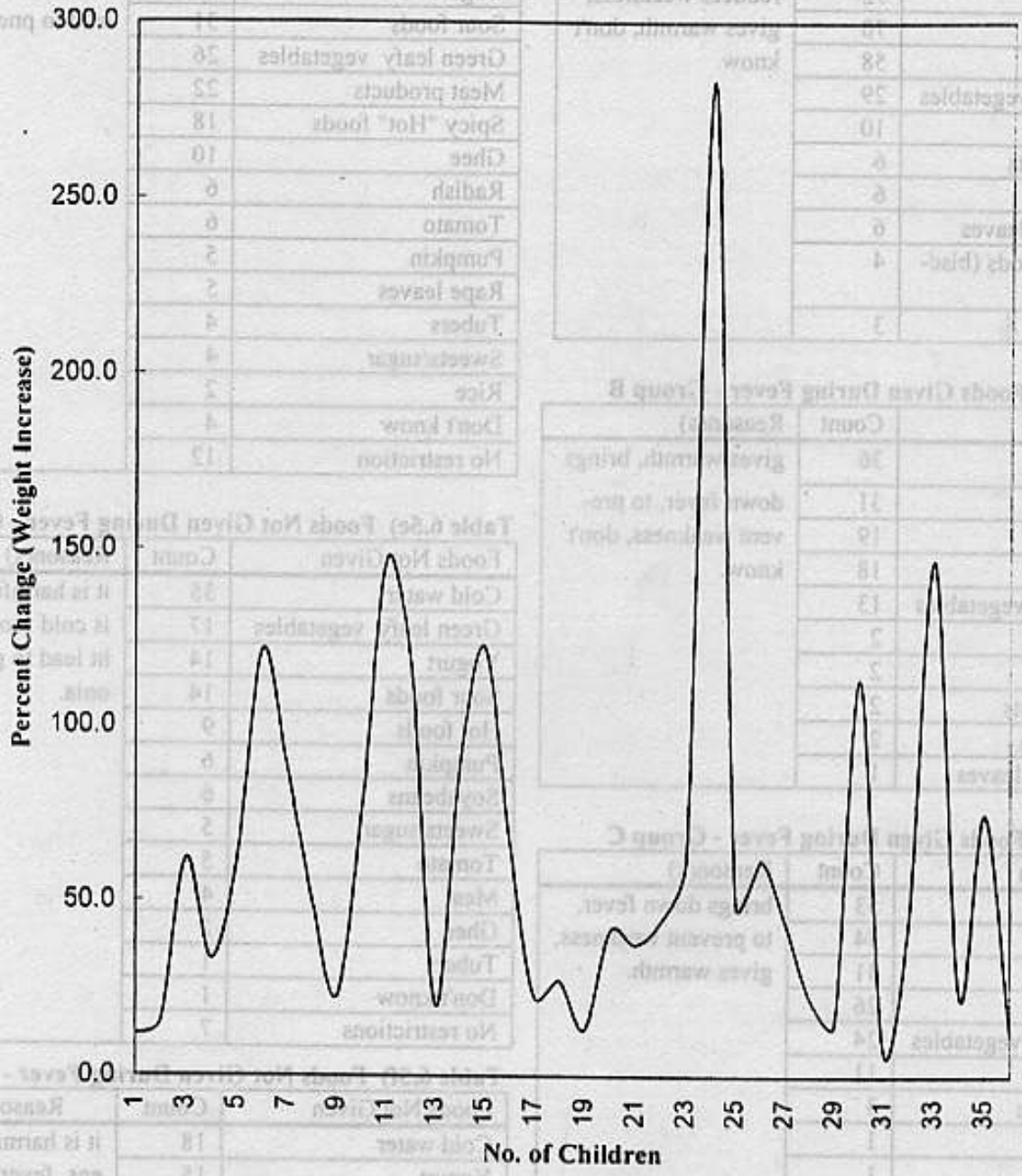
Apart from the analysis of various forms of malnutrition, the survey also looked at one particular form of PEM, cases of oedema (swelling-associated with kwashirkor) among children. Analysis shows that of the all children observed, none had oedema.

D) Follow-up of Malnourished Children:

The DTP conducted follow-up visits on children suffering from malnutrition in the target area. The visits mainly focused on: recording the weight of children; investigating children's illness; and teaching the parents the importance of nutrition, health, sanitation and Sarbottam Pitho.

An extensive chart for these 42 malnourished children was prepared from the follow-up visits, showing the difference in children's weight between the first to the last follow-up visits. Analysis of percent change of weight among children suffering from malnutrition show that all children gained weight during the period of follow-up visits (See Figure 6.1, data also attached in Appendix 1.2). Two children suffering from malnutrition (who were followed-up) died during the period. Five children were not repeatedly followed-up (i.e. more than 1 visit); the number of follow-up visits for all four years combined were 163.

Figure 6.1 Weight Increase (percent change) of Malnourished Children Followed-up in Four Years



E) Reported Feeding Behavior for Children:

This section analyzes feeding behavior for children (age 5 years and under) in reference to various forms of sickness. Like the food beliefs of mothers, this section will be analyzed through use of three groups, which are: group A (Brahmins. Chettris. Thakuris); group B (occupational castes); group C (Magars and Gurungs).

E.1) During Fever: Mothers in all three groups reported giving similar foods to their children suffering from fever. These foods were: cereals, legumes, milk, and hot water. Foods that tasted sour or hot were not given. Also, yogurt and cold water were not given. See Tables 6.5 a,b,c,d,e,f, for more detailed information.

Table 6.5a) Foods Given During Fever - Group A

Foods Given	Count	Reason(s)
Cereals	93	brings down fever, reduces weakness, gives warmth, don't know.
Legumes	72	
Hot water	70	
Milk	58	
Green leafy vegetables	29	
Omum seeds	10	
Meat products	6	
Horse gram	6	
Dried green leaves	6	
Processed foods (biscuits, etc.)	4	
Fruits	3	

Table 6.5b) Foods Given During Fever - Group B

Foods Given	Count	Reason(s)
Cereals	36	gives warmth, brings down fever, to prevent weakness, don't know.
Legumes	31	
Hot water	19	
Milk	18	
Green leafy vegetables	13	
Horse gram	2	
Fruits	2	
Meat products	2	
Omum seeds	2	
Dried green leaves	1	

Table 6.5c) Foods Given During Fever - Group C

Foods Given	Count	Reason(s)
Cereals	53	brings down fever, to prevent weakness, gives warmth.
Milk	34	
Legumes	31	
Hot water	26	
Green leafy vegetables	24	
Horse gram	11	
Omum seeds	3	
Rape leaves	1	
Pumpkin	1	
Meat products	1	
Dried green leaves	1	
Fruits	1	
Processed foods	1	

Table 6.5d) Foods Not Given During Fever - Group A

Foods Not Given	Count	Reason(s)
Cold water	50	it is harmful, worsens fever, might lead to pneumonia
Yogurt	33	
Sour foods	31	
Green leafy vegetables	26	
Meat products	22	
Spicy "Hot" foods	18	
Ghee	10	
Radish	6	
Tomato	6	
Pumpkin	5	
Rape leaves	5	
Tubers	4	
Sweets/sugar	4	
Rice	2	
Don't know	4	
No restriction	12	

Table 6.5e) Foods Not Given During Fever - Group B

Foods Not Given	Count	Reason(s)
Cold water	35	it is harmful, it is cold food, might lead to pneumonia.
Green leafy vegetables	17	
Yogurt	14	
Sour foods	14	
Hot foods	9	
Pumpkin	6	
Soyabeans	6	
Sweets/sugar	5	
Tomato	5	
Meat	4	
Ghee	2	
Tubers	1	
Don't know	1	
No restrictions	7	

Table 6.5f) Foods Not Given During Fever - Group C

Foods Not Given	Count	Reason(s)
Cold water	18	it is harmful, worsens, fever, might lead to pneumonia.
Yogurt	15	
Sour foods	11	
Meat	10	
Green leafy vegetables	9	
Tubers	5	
Pumpkin	5	
Hot foods	4	
Soyabeans	4	
Lentil	4	
Radish	3	
Sweet/sugar	3	
Alcohol	3	
Rape leaves	2	
Tomato	2	
Rice	2	
Ghee	1	
Don't know	3	
No restrictions	8	

E.2) During Diarrhea: The majority of mothers in all three groups mentioned giving legumes, cereals and "bhat ko maad" (cooked rice water) to their children during diarrhea. "Jeevan Jal" (packaged oral rehydration solution) was mentioned by mothers in all groups as their main medicine for diarrhea. Meat products were not given to children in all three groups during diarrhea. Stale foods were also ignored. More detailed information of Tables 6.6 a,b,c,d,e,f.

Table 6.6a) Foods Given During Diarrhea - Group A

Foods Given	Count	Reason(s)
Jeevan Jal	85	to survive, to gain strength, make up for the loss from diarrhea, to cure diarrhea, don't know.
Legumes	84	
Cereals	69	
"Bhat ko Maad"	30	
Greenleafy vegetables	29	
Hot water	28	
Salt-sugar-water (ORS)	27	
Milk products	20	
Fruit juice	6	
Sour foods	1	
Meat products	1	
Sweets	1	

Table 6.6b) Foods Given During Diarrhea - Group B

Foods Given	Count	Reason(s)
Jeevan Jal	25	to gain strength, to make up for the loss of diarrh-, eoa to to diarrh-, eoa, don't know.
Legumes	22	
Cereals	15	
"Bhat ko Maad"	14	
Salt-sugar-water (ORS)	7	
Milk	6	
Green leafy vegetables	2	
Hot water	2	
Fruits	1	

Table 6.6c) Foods Given During Diarrhea - Group C

Foods Given	Count	Reason(s)
Legumes	43	to gain strength, to stop diarrhea, don't know.
Cereals	40	
Jeevan Jal	38	
"Bhat ko Maad"	38	
Green leafy vegetables	22	
Salt-sugar-water (ORS)	18	
Milk products	15	
Hot water	10	
Meat products	2	
Fruits	1	

Table 6.6d) Foods Not Given During Diarrhea - Group A

Foods Not Given	Count	Reason(s)
Meat products	32	it is harmful, can't digest, don't know.
Legumes	26	
Hot/sour foods	18	
Stale foods	18	
Milk products	16	
Ground nuts	10	
Fats/oil	9	
Green leafy vegetables	8	
Tubers	8	
Eggs	8	
Black gram/Lentils	3	
Tomatoes	2	
No restrictions	27	

Table 6.6e) Foods Not Given During Diarrhea - Group B

Foods Not Given	Count	Reason(s)
Meat products	10	it is harmful, can't digest,don't know.
Stale foods	8	
Tomatoes	6	
Eggs	5	
Green leafy vegetables	3	
Legumes	3	
Milk products	2	
Tubers	1	
Fats/oil	1	
Corn (maize)	1	
No restrictions	3	

Table 6.6f) Foods Not Given During Diarrhea - Group C

Foods Not Given	Count	Reason(s)
Meat products	15	it is harmful, can't digest,don't know.
Legumes	9	
Eggs	8	
Milk products	5	
Stale foods	4	
Fats/oil	4	
Hot/sour foods	4	
Green leafy vegetables	2	
Tubers	2	
Tomatoes	1	
Corn (maize)	1	
Ground nuts	1	
No restrictions	21	

E.3) During Measles: Many respondents in all of the groups said they would give horse gram and milk products to children with measles. Responses were also high on the use of local or traditional liquid foods such as crab soup and soup made of "bhur/dhimira/dumri" (different names for a small insect that lives in soil and mostly eats ants; also known as the ant-eater). Meat, green leafy vegetables, yogurt, and stale foods were ignored in all three groups. Foods that tasted hot (spicy) or sour were also ignored. More detailed information is given in Tables 6.7 a,b,c,d,e,f.

Table 6.7a) Foods Given During Measles - Group A

Foods Given	Count	Reason(s)
Horse gram	81	it helps, recovers faster, don't know.
Milk	72	
Cereals	46	
Legumes	31	
Crab soup	31	
"bhur/dimira" soup	27	
Meat products	6	
Vegetables	6	
*"bhat ko maad"	3	
Hot/sour foods	1	

*loosely translated as cooked rice water.

Table 6.7b) Foods Given During Measles - Group B

Foods Given	Count	Reason(s)
Horse gram	18	it helps, recovers faster, don't know.
Milk products	13	
Crab soup	9	
"bhur/dimira" soup	8	
Cereals	8	
Legumes	5	
Omum seeds	2	

Table 6.7c) Foods Given During Measles - Group C

Foods Given	Count	Reason(s)
Cereals	26	it helps, recovers faster, don't know.
Crab soup	24	
Milk products	23	
Horse gram	20	
"bhur/dimira" soup	19	
Legumes	15	
Omum seeds	15	
Meat products	9	
Vegetables	8	
Sour/hot foods	4	
Black gram	3	
"Bhat ko Maad"	3	

Table 6.7d) Foods Not Given During Measles - Group A

Foods Not Given	Count	Reason(s)
Meat	46	it is harmful, it makes body hot, measles will worsen, makes body cold, don't know.
Hot/sour foods	25	
Yogurt	25	
Stale foods	24	
Tomatoes	17	
Green leafy vegetables	15	
Stinging nettles	14	
Lentils/Black gram	10	
Fats/oil	7	
Legumes	7	
Pumpkin	4	
Fruits	3	
Soyabeans	3	
Rape leaves	3	
Cucumber	1	
Honey	1	
No restrictions	4	

Table 6.7e) Foods Not Given During Measles - Group B

Foods Not Given	Count	Reason(s)
Green leafy vegetables	8	it is harmful, body will get cold, measles, will worsen, don't know.
Stale foods	8	
Meat products	7	
Yogurt	7	
Hot/Sour foods	4	
Lentil/black gram	4	
Green peas	4	
Oil/fats	2	
Legumes	1	
Tomatoes	1	

Table 6.7f) Foods Not Given During Measles - Group C

Foods Not Given	Count	Reason(s)
Green leafy vegetables	18	it is harmful, body will get cold, measles, will worsen, don't know.
Hot/sour foods	12	
Yogurt	10	
Pumpkin	8	
Stale foods	7	
Green leaves	7	
Meat products	7	
Lentils/black gram	3	
Oil/fats	3	
Green beans	2	
Legumes	2	
Stinging nettles	2	
Fruit	1	
Tomatoes	1	
No restrictions	2	

E.4) During PEM: Meat, legumes, milk products, cereals, and green leafy vegetables seemed to be the priority foods for mothers in all three groups as foods to be given to children during measles. Mothers especially in groups A and C reported giving Lito (or Sarbottam Pitho) to children suffering from PEM. Stale foods, dried/boiled leaves and "sinki" (dried fermented radish leaves) were ignored by mothers during this period. See Tables 6.8 a,b,c,d,e,f. for more information.

Table 6.8a) Foods Given During PEM - Group A

Foods Given	Count	Reason(s)
Legumes	75	to regain strength, nutritious, don't know.
Milk products	63	
Meat products	62	
Cereals	46	
Green leafy vegetables	44	
Fruits	22	
Eggs	20	
Ghee	16	
Lito (Cereals+legumes)	16	
Lito (Cereals)	10	
Honey	10	
Soyabeans	8	
Processed foods	5	

Table 6.8b) Foods Given During PEM - Group B

Foods Given	Count	Reason(s)
Meat products	18	to regain strength, it is nutritious, don't know.
Milk products	14	
Legumes	13	
Cereals	9	
Green leafy vegetables	8	
Eggs	6	
Ghee	5	
Fruits	4	
Lito (Cereals)	4	
Lito (Cereals +legumes)	2	
Honey	2	
Processed foods	2	

Table 6.8c) Foods Given During PEM - Group C

Foods Given	Count	Reason(s)
Meat products	36	to regain strength, it is nutritious, don't know.
Legumes	35	
Milk products	32	
Cereals	29	
Green leafy vegetables	25	
Lito(Cereals+Legumes)	21	
Eggs	13	
Ghee	8	
Honey	7	
Fruits	7	
Processed foods	6	
Lito (Cereals)	4	
"Sinki"	1	

Table 6.8d) Foods Not Given During PEM - Group A

Foods Not Given	Count	Reason(s)
Stale foods	6	it is harmful, does not help, can't di-, gest, makes body cold, don't know.
Stinging nettles	4	
Soyabeans	3	
Dried/boiled leaves	3	
Tubers	3	
Soup of green peas	2	
Rape leaves	1	
Green leafy vegetables	1	
Pumpkin	1	
Legumes	1	
Meat products	1	
"Sinki"	1	
Sour/hot foods	1	
Ground nuts	1	
No restrictions	71	

Table 6.8e) Foods Not Given During PEM - Group B

Foods Not Given	Count	Reason(s)
Dried/boiled leaves	5	no advantages,ca-nt swallow, it is c-, old, don't know.
Stale foods	1	
"Sinki"	1	
Meat	1	
No restrictions	13	

Table 6.8f) Foods Not Given During - Group C

Foods Not Given	Count	Reason(s)
Dried /boiled leaves	7	no advantages, it is hot for the body, cannot digest
"Sinki"	2	
Meat	2	
Fruits	1	
Egg	1	
Green beans	1	
Yogurt	1	
Legumes	1	
No restrictions	37	

F) Foods Given During Child Weaning Period:

A majority of mothers surveyed said they gave rice and legumes/dal during child weaning period (see Table 6.9). About 53 percent of mothers also reported giving Roti (flat bread) made of wheat and corn to their children. Nearly 45 percent said they gave green leafy vegetables and nearly 10 percent of mothers said they had have given Sarbottam Pitho (locally called Lito) to their children.

Table 6.9 Foods Given During Child Weaning Period

Types of Food	Count	Percent
Rice	188	76.1
Legumes/Dal	154	62.3
Roti: Wheat/Corn	130	52.6
Green leafy vegetable	104	42.1
Milk products	89	36.0
Lito: Cereals/Legumes	24	9.7
Meat soup	23	9.3
Ghee	12	4.9
Honey	8	3.2
Processed foods (horlicks)	6	2.4
Lito (Cereals only)	5	2.0
Fruits	5	2.0
Jaulo	2	0.8
Tubers (potatoes)	2	0.8
Egg	1	0.4
Total	247	*****

note: total percent adds up to more than 100 due to multiple responses.

G) Foods Mothers Would Like to Give to Their Children:

A majority of mothers (81.6 percent) said they would like to give milk products to their children, followed by meat products (66 percent). Nearly a quarter of all mothers said they would like to give Sarbottam Pitho (or Lito) to their children. About 15 percent of mothers wanted to give Processed foods (i.e. Cerelac, Horlicks, instant noodles, and biscuits) to their children (see Table 6.10).

Table 6.10 Foods mother would like to give to their children

Foods	Count	Percent
Milk products	173	81.6
Meat products	140	66.0
Legumes	113	53.3
Cereals	85	40.1
Eggs	62	29.2
Green leafy vegetables	61	28.8
Honey and Ghee	61	28.8
Lito (Cereals + Legumes)	52	24.5
Fruits	50	23.6
Processed foods (cerelac, noodles)	30	14.2
Lito (Cereals only)	14	6.6
Total	212	***

*** note: total percent adds up to more than 100 due to multiple responses.

FINDINGS V (Food Security Data)

A) Status of Food Shortage: This section tries to assess the food situation of the 5 VDCs concerned.

A.1) Household food shortage: Analysis of household food shortage shows that an overwhelming 68 percent of all households reported having food shortage problems (Table 7.1). Only around 32 percent said they have no food shortages in their households.

Table 7.1 Status on Food Shortage of Households

Status	Count	Percent
Shortage	144	67.9
No shortage	68	32.1
Total households	212	100.0

A.2) Food Shortage by Months: Looking at the months that seemed to be the most difficult for food security, analysis shows that more than half of households surveyed regarded Shrawan as the hardest season (57.1 percent), followed by Asar (37.3 percent), Falgun (31.1 percent) and Chaitra (32.5 percent) (Table 7.1).

Table 7.2 Food Shortage by Months

Months	Count	Percent
Baisakh	26	12.3
Jestha	19	9.0
Asar	79	37.3
Shrawan	121	57.1
Bhadra	62	29.2
Asoj	27	12.7
Kartik	12	5.7
Mangsir	11	5.2
Push	28	13.2
Magh	42	19.8
Falgun	66	31.1
Chaitra	69	32.5
Total Households	212	***

*** total percent adds to more than 100 due to multiple responses.

B) Understanding the Impact of Food Security on Children's Nutritional Status: An attempt is made here to understand the prevalence of malnutrition from a socio-economic perspective. If households are not able to provide enough food to their children during the first 5 vital years of their growth and development, the situation is difficult to improve, despite efforts made by nutrition education programs for better health and nutrition. Thus, this section in its simplest form, tries to analyze whether the issue of food security is an important issue that might be acting as a key player behind the nutritional status of children in the program area.

The tables below show the comparative results between children of households who reported having or not having food shortage in their households. Z scores for Wasting

& Stunting, Stunting and Wasting are compared to see if there are any significant nutritional differences between these two groups.

In the case of 'wasting & stunting', analysis show that 68 percent of all children affected (moderate to severe) came from households that indicated food shortage problems (Table 7.3). This rate is double the rate of (affected) children whose households didn't cite food shortage problems (only 32 percent of children under such households had moderate to severe wasting & stunting problems).

Table 7.3 Children's Weight/Age status (Wasting & Stunting), by Food Security

Nutritional Status	Households with 'Food Shortage'		Households with no 'Food Shortage'		Total Children
	Count	Percent	Count	Percent	
Severe	20	15.6	9	7.0	29
Moderate	67	52.3	32	25.0	99
Severe& Moderate	87	68.0	41	32.0	128

note: percentages are calculated out of total severe & moderate children.

The differences also stood out as significant in the case of 'stunting'. The rate of children (under no food shortage households) affected by moderate to severe stunting was only 31.1 percent compared to 68.9 percent of affected children who came from households that cited food shortage problems (Table 7.4).

Table 7.4 Children's Height/Age status (Stunting), by Food Security

Nutritional Status	Households with 'Food Shortage'		Households with no 'Food Shortage'		Total Children
	Count	Percent	Count	Percent	
Severe	69	42.9	21	13.0	90
Moderate	42	26.1	29	18.0	71
Severe& Moderate	111	68.9	50	31.1	161

note: percentages are calculated out of total severe & moderate children.

The case of wasting also show differences between children of the two different households. The proportion of children from households having food shortages affected by moderate to severe forms of wasting was around 57 percent, whereas, the proportion of children from households having no food shortages affected by such forms of malnutrition was around 43 percent (Table 7.5). Although this result is somewhat less significant than results in the other two categories, the differences between these two groups of children, which stood out to be more than 10 percent, is still notable.

Table 7.5 Children's Weight/Height status (Wasting), by Food Security

Nutritional Status	Households with 'Food Shortage'		Households with no 'Food Shortage'		Total Children
	Count	Percent	Count	Percent	
Severe	6	20.0	4	13.3	10
Moderate	11	36.7	9	30.0	20
Severe& Moderate	17	56.7	13	43.3	30

note: percentages are calculated out of total severe & moderate children.

C) Status of Kitchen Gardens:

An overwhelming proportion (83.5 percent) of families reported having a kitchen. The types of food grown in the kitchen garden are listed below.

Table 7.6 Status of Kitchen Garden in Households

Status	Count	Percent
Yes	177	83.5
No	35	16.5
Total	212	100.0

Types of foods grown in Kitchen Gardens:

- Green Leaves: "rayo", onion, rape, colocosia, fenugreek.
- Fruits: tomato, cucumber.
- Pulses: soya bean, horse bean.
- Tubers/tubers: potato, yam.
- Vegetables: cauliflower, radish, pumpkin, egg-plant, green beans, cow pea, cabbage, green peas, bitter gourd, garlic, bottle gourd, squash, green pepper, snake gourd, lady finger, ridge gourd, ash gourd, carrot.

FINDINGS VI (Interview Data)

A) Interview of Health Personnel (compiled by Miriam Krantz):

Mariam Krantz (UMN's Nutrition Consultant) conducted evaluation interviews from 9th to 11th of December (1998) with key health personnel in Salyan District. These interviews bring out wide areas of issues and feed back that are helpful for the Nutrition Program to know. Major highlights of these interviews are included in this section.

Interviewees: Acting district health officer (ADHO); Health education technician. District health officer (DHO); Head nurse (District hospital); Staff (Women's development office); ANM (Health post); Program officer (Red Cross); District coordinator (WOREC); and Female VDC Member.

A.1) On "differences and benefits since DTP started work":

1) Health workers have learned in detail the importance of nutrition-practical nutrition not just theory.
2) Knowledge about nutrition has greatly increased.
3) The concept has developed that regular growth monitoring is important.
4) Growth monitoring is now being done at health posts.
5) Mothers have learned that colostrum is good and necessary, that attention needs to be given to good weaning practices, birth spacing, and immunizations for mother and children.
6) Mothers now understand and say when a child is ill; they know the signs of PEM and of a healthy child. Before, families didn't know how to feed and care for children
7) The value of green leafy vegetables (GLV) was not appreciated earlier, now they are even given to small children.
8) Pulses and GLV are now accepted foods for pregnant and lactating mothers.
9) Mothers understand now that local foods are more nutritious than commercial foods such as biscuits and noodles. Health workers have learned now to accurately make and teach Sarbottam Pitho (earlier, WHO had taught that many different pulses were needed; this made it impossible for families to make Sarbottam Pitho).
10) Families now make and use Sarbottam Pitho in many areas of the district.
11) Malnutrition is not seen much anymore in Kalanga area.
12) Cereal-based ORS (oral rehydration solution) was not known before.
13) Since DTP came there is much wider outreach into communities.
14) Villagers have learned so much from the DTP that they now teach us, the health workers.
15) Mothers have learned - that's the main key.

A.2) Positive and negative aspects of the DTP:

Positive

1) Growth monitoring (GM) system has improved as compared with pre-DTP. (Health post in-charges say that before there was no growth monitoring program).
2) Local people have gained an understanding of the value of GM.
3) DTP in all of its activities has done good work. Nutritional status has improved. Malnutrition is less.
4) DTP has made it possible for us to work together and to involve local people.
5) Field work is actually being done, including demonstrations.
6) When we need teaching materials, we are supplied.
7) PEM children are referred to hospital when necessary and DTP staff actually come and visit the children there. That's very good.
8) When the first DTP in-charge left, the program was carried out very well by the assistant until the new in-charge arrived. The program didn't stop!
9) People out in the villages get help they didn't have before.
10) People bring their children to us now; they don't hide their sick children as they did before.
11) Now people appreciate the value of their good local foods, e.g., foods for Sarbottam Pitho, GLV, fruits.
12) DTP has been very good for remote areas; it has given opportunity for communities to learn.

Negative:

1) Training days are too few; should be increased to 5-7 continuous days annually and should include every aspect of nutrition in detail.
2) Expert manpower was lacking; need experienced people to do training.
3) Case studies are not done (for mother and child - what has changed in attitude and practice?)
4) Better coordination is needed. No meetings for coordination now
5) DTP was not able to make use of relationships with other organizations to the extent which could have been possible.
6) Nothing negative really, but at the hospital, we have nothing to give to PEM children.
7) There is no budget. We are in the jungle; there is nothing for patients to buy and they fear to walk away from the hospital. It would help to have a small supply of Sarbottam Pitho available.
8) Nothing negative (comments of two people).
9) The DTP should add another year. Three or four years is too short a period to make the necessary impact (comments of two people).

A.3) Suggestions for Future Programs:

1) Do good case studies- to show behavioral changes. These could be shared at training programs for teaching and encouragement.
2) More attention needs to be given to school health and nutrition programs.
3) Integrated approach, e.g. in the school program would like to see a de-worming program along with the nutrition program.
4) DTP would be better if it was integrated with EPI (expanded program of immunization)
5) VDC leaders, social workers, teachers, FCHVs, mother's groups should have nutrition orientation. This could be arranged through DHO.
6) The DTP should cover all the VDCs.
7) Closer/close coordination with the DHO health education technician would be good.
8) Arrangements for the rehabilitation of PEM children should be made - at district center or community based.
9) Good follow-up of malnourished children should be given attention.
10) Coordinate directly with the DHO but make own plan for manpower use, daily program, own network, own goals, own strategy (keeping in mind the DHO goals).
11) Refresher courses to be given twice yearly with handouts, new information that we can use.
12) Maintain good relationships with government staff.
13) Three years is too short. Make it five years next time.
14) Program would be able to do more in the community if not connected with the government. Need freedom to work as an NGO.
15) Choose local staff, perhaps with the exception of the in-charge.
16) Both males and females in the village should know and understand the purposes of the program.
17) Encourage good participation in growth monitoring.
18) Do as now. It takes time to work in communities. Be with the people and do lots of practical things-demonstrations-so people can see what is possible in their situations, e.g. Sarbottam Pitho.
19) Do follow-up! It is very important to learn what did work and what did not so as to make corrections in the future.

A.4) What will continue when DTP leaves Salyan District?

Health ministry guidelines for nutrition will be carried out - though PHC outreach clinics to do growth monitoring. Health posts will continue monthly monitoring using the growth cards. VHWs will do monthly follow-up of malnourished children (improving on what was done before the DTP). Formal nutrition training would likely be discontinued or be different from the present situation. But informal training every six months would continue - for in-charges and also for FCHVs. Nutrition will continue to be an important element of the FP program in the community based delivery system. Comments indicated that staff in organizations will continue to utilize whatever they learned, for they know and have seen the practical benefits for

their own families and communities. "Visual aids from DTP have been very effective; when they wear out we can use local foods and materials as visual aids instead. We need to learn to be independent".

B) Interviews of Health Workers:

During the end of the third year of DTP's work in Salyan (around Jestha 2055), a nutrition feedback/evaluative session was conducted with the district health workers after the conclusion of their training program. A questionnaire reflecting on various issues of DTP's work were handed out to these workers present in the session (copy Attached in Appendix 1.3). Also included in the questionnaire was a small 'nutrition quiz' (based on information disseminated during training programs), this section was put in to assess how much the participants have learned from these training programs.

All together, 106 health workers of various ranks filled in the questionnaire (see Appendix 1.4 for details on their background). Key issues reflected in the survey are discussed below.

A majority of health workers surveyed had participated in more than one training program. Around 35 percent of the participants had attended training for just one time (see Table 8.1).

Table 8.1 Number of Training Participated

No. of Training	Count	Percent
One	38	35.8
Two	65	61.3
Three	4	3.8
Total	106	100.9

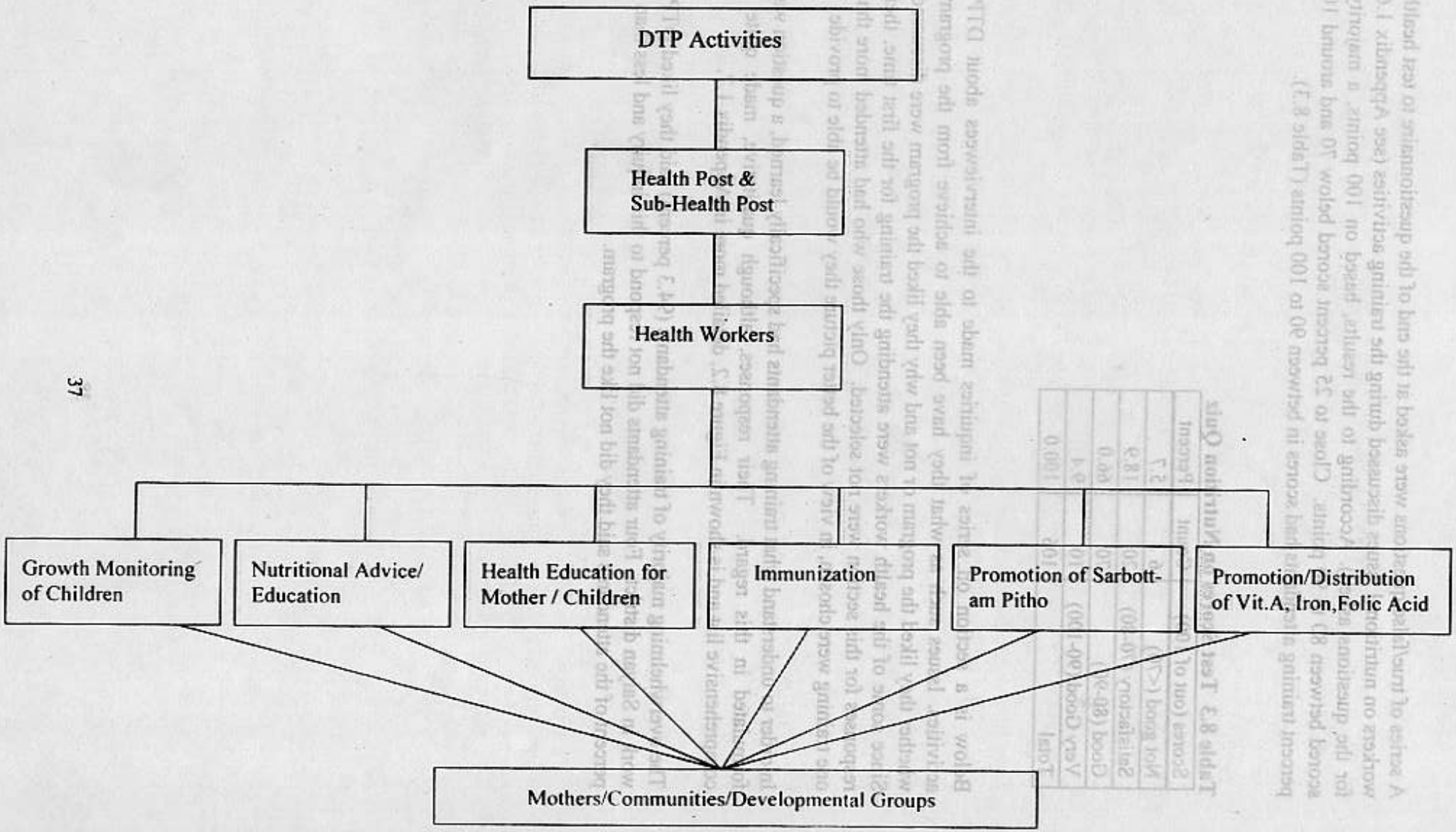
When asked about the type or groups of people the health workers generally serve, about 45 percent of them referred to mothers as their primary clients, followed by the rest of the community (Table 8.2). Their services were also directed to development groups and schools.

Table 8.2 Types of People and Groups Served

Types of People/Groups	Count	Percent
Mothers	35	44.3
The community	19	24.1
Mothers and Development groups	9	11.4
Community and Mothers	5	6.3
Community and Development groups	3	3.8
Students	2	2.5
Development groups	2	2.5
Students and Development groups	2	2.5
Patients	1	1.3
District health workers & development groups and Students	1	1.3
Total	79	100.0

The survey also included inquiries on what specific work the training attendants do in their respective work areas. A little more than 70 percent of the trainees said that they monitor children's weight in DTP's growth monitoring program. Providing nutritional advice and education was also their main responsibility. Around 30 percent of the trainees also reported giving information on how to prepare Sarbottam Pitho. A detailed list of their work is in Appendix 1.5 and figure 8.1 shows an overall view of the health workers' role in DTP.

Figure 8.1 The Role of Health Workers in DTP



A series of true/false questions were asked at the end of the questionnaire to test health workers on nutritional issues discussed during the training activities (see Appendix 1.6 for the questions asked). According to the results, based on 100 points, a majority scored between 80 to 90 points. Close to 25 percent scored below 70 and around 10 percent training attendants had scores in between 90 to 100 points (Table 8.3).

Table 8.3 Test Scores on Nutrition Quiz

Scores (out of 100)	Count	Percent
Not good (<70)	6	5.7
Satisfactory (70-80)	20	18.9
Good (80-90)	70	66.0
Very Good (90-100)	10	9.4
Total	106	100.0

Below is a section on series of inquiries made to the interviewees about DTPs activities. Issues such as what they have been able to achieve from the program, whether they liked the program or not and why they liked the program were discussed. Since some of the health workers were attending the training for the first time, their responses for this section were not selected. Only those who had attended more than one training were chosen, in view of the better picture they would be able to provide.

In order to understand what training attendants had specifically learned, a question was formulated in this regard. Their responses, although qualitative, made quite a comprehensive list and is shown in Figure 8.2, detailed more in Appendix 1.7.

The overwhelming majority of training attendants (94.3 percent) said they liked DTP's work in Salyan district. Four attendants did not respond to this inquiry and less than 2 percent of the attendants said they did not like the program.

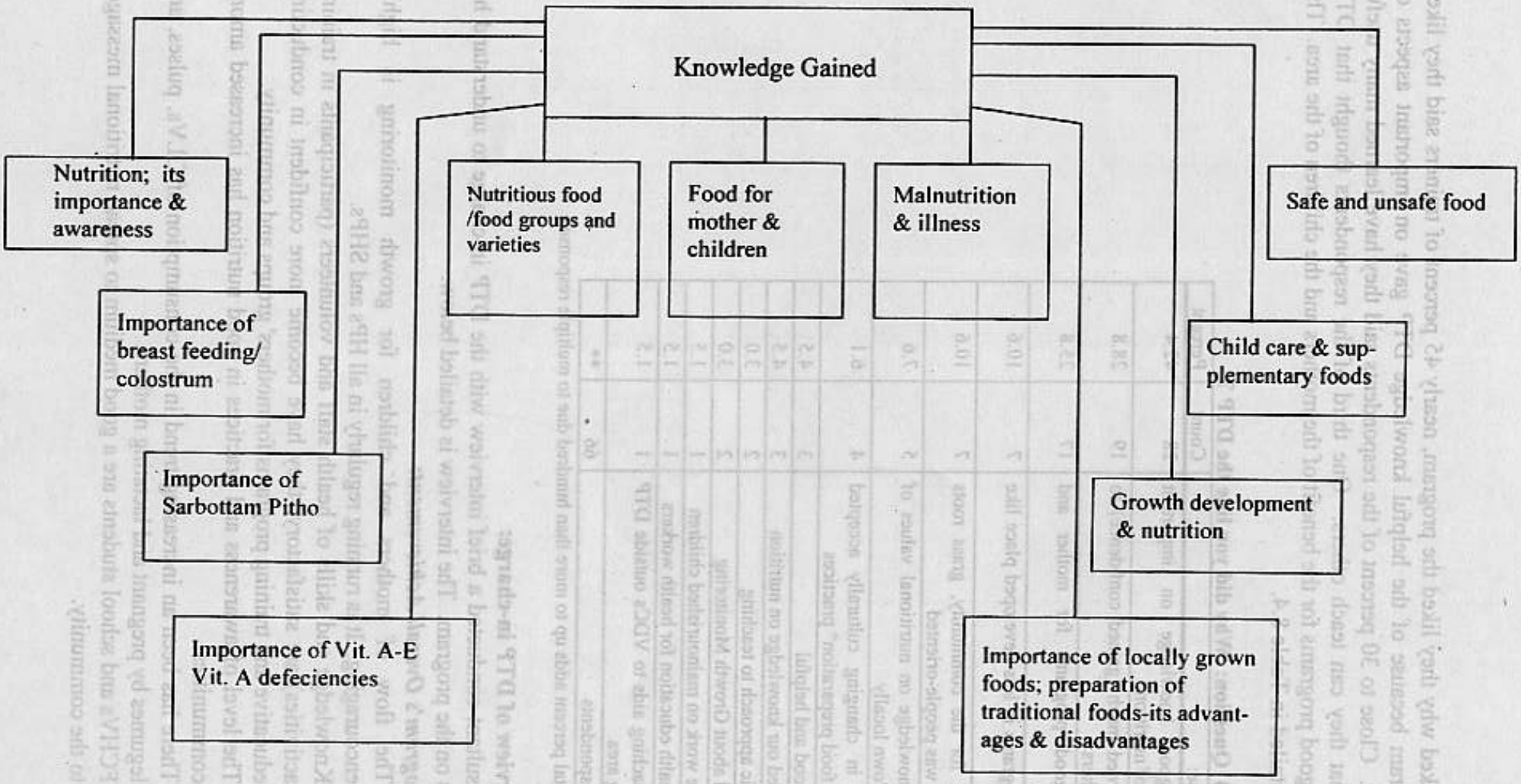


Figure 8.2 Knowledge Gained from DTP by Health Workers

When asked why they liked the program, nearly 45 percent of trainers said they liked the program because of the helpful knowledge DTP gave on important aspects of nutrition. Close to 30 percent of the respondents said they have learned many useful things that they can teach others. One third of the respondents thought that DTP brought good programs for the benefit of the mothers and the children of the area. The rest is detailed in Table 8.4.

Table 8.4 Question: Why did you like the DTP ?

Response:	Count	Percent
Gave good knowledge on important aspects of nutrition	28	42.4
We learned much (gained confidence) to teach others	19	28.8
Gave good programs for mother and children	17	25.8
Ran programs in less developed place like Salyan	7	10.6
Worked for the community, grass roots work, it was people-oriented	7	10.6
Gave knowledge on nutritional values of foods grown locally	5	7.6
Helped in changing culturally accepted "unsafe food preparation" practices	4	6.1
It was good and helpful	3	4.5
Refreshed our knowledge on nutrition	3	4.5
Scientific approach to teaching	2	3.0
Learned about Growth Monitoring	2	3.0
Did case work on malnourished children	1	1.5
Gave health education for health workers	1	1.5
Gave teaching aids to VDCs outside DTP working area	1	1.5
Total respondents	66	**

**note: total percent adds up to more than hundred due to multiple responses.

C) Interview of DTP in-charge:

The consultant conducted a brief interview with the DTP in-charge to understand his thoughts on the program. The interview is detailed below.

C.1) Program's Overall Achievement:

1) The flow of mothers and children for growth monitoring is highly encouraging. It is running regularly in all HPs and SHPs.
2) Knowledge and skills of health staff and volunteers (participants in training activities) are satisfactory; they have become more confident in conducting educative and training programs for mothers' groups and community.
3) The level of awareness and practices in good nutrition has increased among communities.
4) There has been an increasing trend in the consumption of GLVs, pulses, and legumes by pregnant and lactating mothers.
5) FCHVs and school students are a good medium to spread nutritional messages to the community.

6) Many people in the communities have started to consume iodized salt.
7) There has been no drastic change in the nutritional status of the program area; however, one can observe the rate of PEM decreasing. Follow-up and monitoring of malnourished children also shows that their nutritional status is improving.
8) The majority of mothers feed breast milk to their children aged up to two years. Children in the target area are exclusively breast fed up to six months. Colostrum is given to almost all children.
9) Most of the children in the target area have been given Vitamin A. The various Vitamin A deficiencies in children in the target area have successfully treated with Vitamin A supplements.
10) Pregnant mothers are taking iron and folate tablets from the HP/SHP, which has helped to lower the rate of anemia in the target area.
11) Mothers have become familiar with Sarbottam Pitho, and have started to feed Sarbottam Pitho to their children.
12) People have learned which foods are good for health and nutrition and have also learned to preserve nutrients during processing.
13) The use of Rehydration Therapy is increasing in the treatment of diarrhea.
14) Exhibitions and demonstrations have been successful in disseminating nutritional messages in a short period of time.
15) Regular follow-up of malnourished cases proved to be an effective way to improve the nutritional status of children.
16) Distribution of nutrition-related materials (i.e. handouts, posters) was effective in creating awareness on nutrition.
17) District health staff have felt the importance of work in nutrition.
18) The cooperation with the DHO has been helpful, their manpower has been mobilized for DTP's nutrition work.

C.2) Problem Areas and Suggestions:

1) The UMN nutrition program is focused in only 5 VDCs of Salyan district. The community leaders and the DHO have greatly requested that the program cover the whole district.
2) The district health staff are trained annually, however, they are not followed up or monitored regularly. Provisions should be made to monitor and follow up their work and progress.
3) The differences in the reporting system of the DHO and UMN nutrition program creates difficulties in accessing information. Efforts should be made in implementing similar communicative systems for both the parties.
4) Frequent transfers of trained health staff has disturbed the activities planned by the program.
5) The issue of food security was felt to be as important as nutrition education to solve the problem of malnutrition. Furthermore, socio-economic status has been an important factor in hindering the consumption of proper nutritious food by poor households.
6) There is no proper place to refer third degree malnourished children.

7) Regular follow up of malnourished children did not go smoothly due to insufficient number of staff in the office and the traveling distance between such households and the office.
8) It is important for the program to coordinate its programs with the agricultural services of Salyan district.

SUMMATIVE DISCUSSION

A) From the Survey:

On Mothers:

1) Although only 11.9 percent of mothers in the study area were found to have poor nutritional status, attention should also be given to the proportion of mothers (more than 50 percent) who were at risk of nutritional disorders. This rate is and could be more alarming, especially if the momentum of `the mothers at risk' shift towards `poor' nutritional status.
2) Research shows that an overwhelming number (94.6 percent) of children were given colostrum. This is indeed good progress, and also supports the statement of the health workers that more and more mothers have started giving colostrum to their babies. In addition, the record keeping on breast feeding by the DTP for the third year shows that 98 percent of mothers had exclusively breast fed their children.
3) Among different issues discussed with the district health workers, promotion of green leafy vegetables came out to be the most common response on food behavioral changes that DTP work has brought about in Salyan. Survey analysis also backs up the fact that most mothers are consuming green leafy vegetables during pregnancy. However, it also shown that some mothers are still not consuming green leafy vegetables, especially after child birth. It was also good to know that an overwhelming majority of mothers in all three ethnic groups were taking soup made of Omum after child birth.
4) It is encouraging that more than 80 percent of the households have their own kitchen gardens. Considering that kitchen gardens as a good source for many needed nutrients, this is very beneficial for the garden owners, presuming they have access to vegetable seeds to plant.

Results from the base line study (with a sample of 300 mothers) are presented below in table 9.1 to show the readers the differences between those results and the results from the current survey.

Table 9.1 Results from Baseline and Current Survey

	Prior Baseline Study Results		Current Survey Results	
Categories	Count	Percent	Count	Percent
Colostrum given	215	57.6	263	94.6
Own kitchen garden	195	65.0	177	83.5
Have food shortage	172	57.3	144	67.9
Total mothers in sample	300		212	

On Children:

1) Z-score analysis on children's nutritional status shows that malnutrition disorders were more prevalent in children aged between 12 to 23 months. More than 20 percent of these children were suffering from acute malnutrition and 71 percent of them were suffering from chronic malnutrition. Furthermore, it was also found that more than half of all children aged 6 to 36 months had chronic malnutrition in the target VDCs. This shows that the prevalence of malnutrition is still significant in the DTP's target VDCs.
2) Nearly 70 percent of all respondents said they did not have enough food to feed their households. This is indeed an alarming situation, however casual their responses on food shortage might have been. In addition, analysis also show that malnutrition was highest among children of households who suffered from food shortages. This situation clearly demands the program to seriously address the issue of food security in future programs and perhaps rethink their intervention strategies.
3) The follow-up of children suffering from malnutrition clearly shows that such efforts bear fruit. Almost all children in the follow-up study gained weight. However, it would have been better if the annual target of 72 children could have been followed up.
4) Many mothers reported using traditional medicines for children suffering from measles. Soups made with insects such as "bhur" or "dhimira" were given by mothers from all three ethnic groups. This raises a serious question as to the effectiveness of such medicines, especially when a measles epidemic has already hit one of the VDCs in the program area.
5) Green leafy vegetables were given the most during child weaning period, along with rice, dal, and roti. This is indeed a good sign.
6) It was interesting to see that processed city foods (i.e. Horlicks, Cerelac, biscuits, instant noodles) accounted for less than 15 percent of foods mothers would like to give to their children. This result runs parallel with the effort of the DTP to encourage villagers to use locally grown nutritious foods, rather than non-nutritious and expensive processed foods.
7) Nearly 25 percent of mothers said that they would prefer to give Sarbottam Pitho (locally known as Lito - made of cereal and legume) to their children. Consumption of Sarbottam Pitho was also mentioned by mothers as the food given to PEM children. Looking at the analysis, the consultant feels that the promotion of Sarbottam Pitho in the communities was not as vigorous as it could have been as the majority of mothers did not mention Sarbottam Pitho as a food they would give to their children.

B) "Common issues" from all interviews:

On Program's Achievement:

1) Health workers have learned in detail about the importance of nutrition:
   - Health workers have become more confident in conducting education and training programs for mothers' groups and communities.
   - Training programs have refreshed their knowledge on nutrition.

- They have learned to accurately make "Sarbottam Pitho", and to teach this to others.
- They have learned that growth monitoring is important, and are regularly carrying it out in their respective health posts and sub health posts.

2) Knowledge of nutrition has increased amongst mothers and the communities:
   - Mothers have learned that feeding colostrum is good and necessary.
   - Majority of mothers in the area have breast fed their children for up to 2 years; children are exclusively breast fed up to 6 months.
   - Mothers have learned which foods are healthy and nutritious. They have learned the nutritional value of foods grown locally. Mothers know what to feed and how to take care of ill children.
   - The value of GLV (green leafy vegetables) is appreciated now more than before; there has been an increasing trend in consumption of GLVs, pulses, and legumes by mothers during pregnancy and lactation.
   - Mothers give attention to good weaning practices and birth spacing.
   - Mothers have learned the importance of growth monitoring for their children.
   - Many people in the community have started to consume iodized salt.
3) The district training program (DTP) has a wide outreach in the community:
   - Exhibitions and demonstrations have been successful in disseminating nutritional messages, in a short period of time; field work is actually being done!
   - Distribution of nutrition related materials (handouts, posters) also proved to be effective.
   - The program is people oriented; it has worked in one of the least developed parts of Nepal.
   - Rural villagers have benefited a lot from the program.
4) Suggestions and Problem areas:
   - The DTP should cover all VDCs.
   - There is no proper health facility to refer third degree malnourished children in Salyan.
   - The DTP needs to provide good follow-up of malnourished children.
   - The district health staff are trained annually; however, they are not followed up or monitored regularly. Provisions should be made to monitor their work and progress.
   - Frequent transfers of trained health staff has disturbed the activities planned by the program.

- More coordination is needed between DHO and DTP in terms of planning and agreeing on common processes and methodology to run the program efficiently.
- DTP was not able to make use of relationships with other organizations to the extent which could have been possible.

C: Components of Evaluation Process:

Assessment of Adequacy: Analysis shows that the rate of chronic malnutrition is still significant in the target VDCs despite four years of DTP's intervention. Furthermore, analysis also shows that the prevalent rate of malnutrition was nearly double in households that had food shortages compared to those who did not (note: 68 percent of total households surveyed said they had food shortages). These findings strongly infer that food security could be the key factor behind the significant proportion of malnourished children in the target VDCs. Thus, no matter what program policies are introduced, efforts will be limited in their effectiveness, if food security issues are not addressed.

Although it may be difficult for the Nutrition Program to directly work in food security issues, a stronger emphasis on cooperation with other line agencies could be very fruitful. For example, the DTP in-charge recommends more co-ordination with the district agricultural services. Also, establishing relations with existing integrated development programs and agricultural experts of UMN could be beneficial.

The consultant feels that the DTP has put a lot of good effort to strengthen nutritional work in Salyan district. However, the program could do better by considering some changes in program formulation. First of all, it would be helpful if the program could carefully analyze ways to attain maximum returns from DTP trained health workers. The consultant, through the reports, has felt that health workers are given training and are primarily left to do their work in their health posts. Health workers could be perhaps utilized to do extensive community grass-roots work in nutrition (or any community work for that matter), which the DTP in-charge and his assistant could not do because of lack of manpower. Furthermore, since efforts are spent on training health workers, it is also important to do a thorough monitoring and follow-up of their work, either by DTP alone or in conjunction with the DHO.

Analyzing the study, the consultant also feels that the methods of reaching mothers and households was not clear. The study does not show how many mothers and their households were covered by the DTP in its four years work. The consultant also feels that communication methods between health workers and communities could be improved (the study found out that many mothers and households were unaware of Sarbottam Pitho). Furthermore, all concerned health personnel of Salyan district suggested that 3 to 4 years is not an adequate time for DTP to bring significant nutrition changes to the communities.

Assessment of Effectiveness: The effectiveness of a project relates to the attainment of objectives set by the program. Let us briefly analyze the effectiveness of the DTP by looking at whether their objectives were met or not.

Reduction in the level of protein energy malnutrition: Since this study does not make comparisons with the previous baseline survey in the area, the consultant feels hesitant to claim if at all PEM has increased or decreased in the target area. The study only shows that the proportion of malnourished children is still significant in the area.

However, the study shows that none of the children surveyed had oedema (symptom of kwashiorkor). Also, for those children suffering from malnutrition, some follow-up sessions were provided by the DTP staff. Reports of these sessions show that almost all malnourished children who were followed up gained weight.

Monitoring of nutritional status of under 5 year old children: The DTP regularly monitored the nutritional status of children in the target area for all four years. The health posts and sub-health posts in each target VDC monitored and recorded weight of children on a growth monitoring chart. However, growth monitoring was not recorded for all children of the 5 VDCs, but only those who attended the health/sub-health posts. Growth monitoring of children in the target area will continue (as part of district health workers' job) even after the DTP is terminated.

Training of health workers, NGO/INGO staff in nutrition: The DTP conducted extensive nutrition training programs in Salyan district for health workers, NGO and INGO staff. 603, 502, 1241, and 1029 people participated in training activities in each of the four years respectively, for a total of 3,375 trainees. A majority had positive remarks on the training programs and they felt that they actually gained more knowledge on different aspects of nutrition.

Promotion of nutrition messages to communities: The DTP, in its annual reports, details the various promotional activities on nutrition and its importance. Among those, demonstration programs and the use of posters and hand-outs had a larger acceptance by the health workers and the communities. Perhaps more effort could have been spent on promoting Sarbottam Pitho directly to the communities.

Improvement in child feeding practices: It is good to know that a majority of mothers in the target area breast feed their children up to 2 years and that most children in the target area are exclusively breast fed for 6 months. Research also shows that almost 95 percent of children were given colostrum by their mothers. Furthermore, children in the area were given green leafy vegetables along with legumes and rice during the weaning period. These results stand out from the rest and the DTP has done outstanding work in child feeding practices.

Reduction of micro nutrient deficiencies in children and their mothers: The annual reports detail training activities giving specific importance to the issue of micronutrient deficiencies. Training was provided in home gardening, consumption of GLVs and other vitamin A and iron-rich foods. Vitamin A supplements and iron tablets were provided to suspected deficiency cases. Cases of night-blindness, malnutrition and prolonged diarrhea were also treated with vitamin A supplements, as part of the government National Immunization Day program.

Overall, the UMN Nutrition Program has done well in extensively implementing its DTP objectives.

Assessment of Impact: Many key personnel of Salyan district feel that the DTP program has done an admirable job in strengthening the nutritional status of the 5 target VDCs; the communities have benefited from practical community-oriented nutrition programs and the health workers are also left with a firm understanding in nutrition. They now feel confident to run nutrition programs in the area without the DTP being there.

Although four years is a short period for the project to bring desired changes in the target VDCs (especially in reducing PEM cases), the DTP has done especially well in areas of: child feeding practices; food behavior of mothers during pregnancy and lactation stages; training of health workers; growth monitoring of children; and demonstrative education on nutrition in the communities. Efforts such as follow-up visits of malnourished children and the promotion of nutritious foods (e.g. Sarbottam Pitho) are also commendable. However, such efforts could have been more vigorous.

Overall, the DTP has certainly been aggressive with their activities in such a short period and with few staff in the area. However, the consultant feels compelled to say that the DTP might be leaving with a mixed situation at hand. The livelihood and the overall health situation of households is still marginal probably due to the lack of food security. Any serious shortage of food in households could turn around the picture. Therefore, to avoid the gloomy shadow of food insecurity on the program's impact, it is suggested that the program rethinks this issue in their future endeavors.

Evaluation of the Evaluation:

This study attempts to understand the work done by DTP in the 5 target VDCs of Salyan district. Some methodological restrictions have made this a slightly different type of an evaluative study. Only limited comparisons between the prior base line survey and the current survey was feasible due to differences in survey methodologies. Also, the consultant was hired only after the data collection phase, thus the knowledge was limited on field work. The consultant was also limited on first hand information of the target area that are normally noticed and collected during the time of a survey.

However, the consultant feels this study to be quite a comprehensive one. Apart from the survey information, much qualitative information was used to extensively understand the project. This information was carefully analyzed and investigated before its inclusion in the report. The information is presented in the best way possible for readers to comprehend DTP's work in the target areas of Salyan district.

The consultant would like to give his best wishes to the program and along with the personnel of Salyan's DHO, praise their effort in implementing DTP activities in much needed areas of Nepal, which are seldom visited by other INGOs.

REFERENCES

Aaker Jerry, Shumaker Jennifer, Looking Back and Looking Forward, A participatory approach to Evaluation, Heifer Project International, 1994.

Bhatta, Parmanand, Salyan District Nutrition Survey Report, UMN Nutrition Program, July 1995.

Katzer Jeffrey, Cook H. Kenneth, Crouch W. Wayne, Evaluating Information, A guide for users of social science research, Addison-Wesley Publishing Company, 1978.

Lartson Amonoo-R., Ebrahim G.J., Lovel H.J., Ranken J.P., District Health Care, Challenges for planning, organization and evaluation in developing countries, Macmillan Press, London, 1984.

National Planning Commission Secretariat (in collaboration with UNICEF - Nepal), Early Childhood Feeding, Nutrition and Development, Nepal Multiple Indicator Surveillance, Fourth Cycle, November, 1997.

National Research Associates, Nepal District Profile, 1999.

Sinha, Ashish, Understanding the Nutritional Status of the Areas Covered by Six VDCs of Dailekh District, Base-line survey report, July 1997, UMN Nutrition Program.

The division of surveillance & epidemiology, epidemiology program office, center for disease control and prevention, Epi Info, Version 6, USD Inc., April 1994.

UMN Nutrition Program, District Nutrition Training Program, Annual Report,1996.

UMN Nutrition Program, District Training Program, Annual Report,1997.

UMN Nutrition Program, District Training Program, Salyan, Mid July 1997-Mid July 1998-Annual Report.

World Health Organization (WHO), Evaluating Primary Health Care in South-East Asia, Proceedings of a regional seminar, Searo Technical Publications, No.4, 1984.

WHO, Health Program Evaluation, Guiding principles, WHO, Geneva, 1981.

APPENDIX

Appendix 1.1 The Survey Form

फाराम नं. .....

अन्तर्वार्ता लिने व्यक्ति .....

पोषण सर्भेक्षण

गा.वि.स. ..... वार्ड नं. ..... गाउँ .....

घर मुलिको नाम .....

आमाको नाम ..... उमेर ..... पेशा ..... शिक्षा .....

आमाको स्वास्थ्य:

हालसम्म कतिचोटी गर्भवती हुनुभयो? .....

बाँचेका बच्चाको संख्या ..... केटा .....

केटी .....

आमाको पाखुराको नाप (MUAC (mm)मा} .....

१-५ वर्ष (१२-६० महिना) सम्मका बच्चाको पाखुराको नाप (MUAC)

क्र.सं.	नाम	उमेर	MUAC (mm)
१.			
२.			
३.			
४.			

खानाको अवस्था:

तपाईको परिवारलाई आफ्नै खेतवारीबाट उब्जेको अन्नले वर्षभरि खान पुग्दछ? पुग्छ [ ] पुग्दैन [ ]

यदि पुग्दैन भने कुन-कुन महिना पुग्दैन? (नपुग हुने महिनामा (✓)लगाउने)

बैशाख		भाद्र		पौष	
जेष्ठ		असोज		माघ	
आषाढ		कार्तिक		फागुण	
श्रावण		मंसीर		चैत्र	

तपाईको करेसाबारी छ? छ [ ] छैन [ ]

यदि करेसाबारी भएमा के-के तरकारीहरु पाइन्छ? .....

.....

.....

५ वर्ष (६० महिना) मुनिका बच्चाहरुको विवरण:

नाम	उमेर (महिना)	लिङ्ग	उचाई से.मी.	तौल के.जी	पाखुराको नाप MUAC (मि.मि.)	कुपोषणको लक्षण (√ लगाउनुस)		विगौति दूध दिइएको छ/छैन	जम्मा कति महिनासम्म आमाको दूध खुवाइएको	आमाको दूधको साथै पहिलो पल्ट अन्य थप खाना/झोल दिइएको उमेर (महिनामा)
						सुके-नास	सुन्नि-एको			
१.										
२.										
३.										
४.										
५.										

बच्चालाई के-के खानेकुराहरु दिइएको र कुन उमेरमा? ती खानेकुरा दिनको कति पटक सम्म दिइएको?

उमेर (महिनामा)	खानाको किसिम (पुरा विवरण)	दिनको कति पटक

यदि पाइएमा, आमाको विचारमा के-के खानेकुरा आफ्नो बच्चालाई दिंदा बेश होला जस्तो लाग्दछ?

.....

.....

.....

आमाको लागि

गर्भवती अवस्था

दिइने खानेकुराहरु .....

किन दिइन्छ .....

नदिइने खानेकुराहरु .....

किन दिइदैन .....

बच्चा जन्मेपछि

दिइने खानेकुराहरु .....

किन दिइन्छ .....

नदिइने खानेकुराहरु .....

किन दिइदैन .....

बच्चाको लागि

ज्वरो

दिइने खानेकुराहरु .....

किन दिइन्छ .....

नदिइने खानेकुराहरु .....

किन दिइदैन .....

झाडा-पखाला

दिइने खानेकुराहरु .....

किन दिइन्छ .....

नदिइने खानेकुराहरु .....

किन दिइदैन .....

दादुरा

दिइने खानेकुराहरु .....

किन दिइन्छ .....

नदिइने खानेकुराहरु .....

किन दिइदैन .....

कुपोषण

दिइने खानेकुराहरु .....

किन दिइन्छ .....

नदिइने खानेकुराहरु .....

किन दिइदैन .....

APPENDIX 1.2

Percent Change in Recorded Weight of (followed-up) Malnourished Children

Weight of Children with Malnutrition (in kilograms)			
No. of Visits	First Visit	Last Visit	Percent Change
1	9.4	10.5	11.7
2	5.2	6.0	15.4
3	5.0	8.1	62.0
4	4.7		
5	7.5	10.5	33.3
6	6.9		
7	5.9	9.5	61.0
8	9.3		
9	6.1	13.5	121.3
10	5.7	10.7	87.7
11	5.0	7.5	50.0
12	7.5	9.2	22.7
13	5.1	9.0	76.5
14	4.0	9.9	147.5
15	6.0	13.0	116.7
16	4.5	5.4	20.0
17	6.0	11.4	90.0
18	1.8	4.0	122.2
19	4.8	8.0	66.7
20	5.3	6.5	22.6
21	6.6	8.4	27.3
22	6.0	6.8	13.3
23	6.0	8.5	41.7
24	8.0	11.0	37.5
25	9.0	13.0	44.4
26	7.0	11.3	61.4
27	3.0	11.5	283.3
28	5.3	7.9	49.1
29	7.1	11.5	62.0
30	6.6	9.5	43.9
31	4.1	5.0	22.0
32	4.2		
33	8.0	9.2	15.0
34	8.0		
35	3.0	6.4	113.3
36			
37	5.5	5.9	7.3
38	9.0	13.0	44.4
39	5.5	13.6	147.3
40	6.9	8.5	23.2
41	8.0	14.0	75.0
42	4.7	5.3	12.8

note: calculated out of the follow-up chart provided by DTP in-charge. The chart is an exclusive list of visits made in all four years, combined.

APPENDIX 1.3

Interview Tool (Interview of Health Workers)

[questions were asked in Nepali and are translated here in English]

Name ....., Rank ....., Health Post/Sub-Health Post .....,
Address .....

1a) How many times have you received training on Nutrition? Times .....
1b) From where did you receive the training? Place....., Times .....

2) What were the most important things you learned from the training programs?

3a) Did you teach others the things you learned?
3b) Whom did you teach?, Where?, and to How many?

4) What kind of work do you do through Health Posts and Sub Health Posts?

5) What kind of services have you given on nutrition?

6a) Did you feel the DTP of UMN Nutrition program as worthwhile?
6b) Yes...../No....., If Yes, why.....?

7) DTP will be terminated the coming year, what do you think of this?

APPENDIX 1.4

Participants in the Feedback/Evaluative Session

Participants	Count	Percent
Assistant health workers (AHW)	33	31.1
Village health workers (VHW)	41	38.7
Maternal and Child health workers(MCHW)	21	19.8
Health assistants (HA)	3	2.8
Staff nurse	2	1.9
Senior assistant health workers (SAHW)	2	1.9
Community medical assistants (CMA)	1	0.9
Red Cross supervisor	1	0.9
Supervisor	1	0.9
Health teacher	1	0.9
Total	106	99.8

APPENDIX 1.5

Question: What kind of work do you do?

Types of work	Count	Percent
Monitor growth of children/ weight & height (GMU)	49	71.0
Give nutritional advice/ education	49	71.0
Give health education for mother and children	34	49.3
Immunization	21	30.4
Teach others about Sarbottam Pitho	19	27.5
Awareness and distribution of Vit.A, iron, and folic acid	18	26.1
Provide health check up for pregnant and lactating mothers	9	13.0
Give education on malnutrition and illness	8	11.6
Educate on Sanitation	7	10.1
Give education on Iodine	4	5.8
Keep nutrition register card	4	5.8
Discourage city foods; stress local foods	4	5.8
Weigh pregnant mothers	4	5.8
Family planning	3	4.3
Encourage mothers and children to come for regular check ups	3	4.3
Total	69	***

note: Total percent adds up to more than hundred due to multiple responses.

APPENDIX 1.6
The Nutrition Quiz

a) What are the benefits of giving colostrum to babies?

b) What and how much ingredients are used to prepare Sarbottam Pitho?

True or False Statements

c) Colostrum should be given to children as soon as they are born.

d) Breast milk should be given to children for only two years.

e) Supplementary foods should be given to children after they are 5 to 6 months old.

f) GLVs and fruits should only be given to children after they become 1 year old.

g) It is harmful to give GLVs to pregnant and lactating mothers.

h) Pregnant and lactating mothers should eat more legume, pulses, and GLVs.

i) Cabbage and potatoes have high amount of Vitamin A.

j) Children should be given legume, pulses, and GLVs, plus regular food they eat, when they are ill.

k) Not giving enough food to children will cause this illness: a) fever; b) eye related illness; c) indigestion.

l) If breast feeding is not enough, one should feed packaged milk to children.

m) Omum (Jwano) seeds are important for pregnant mothers.

n) One can investigate children's age through growth monitoring.

o) Regularly eaten foods are enough for pregnant mothers.

p) Foods should not be given to children suffering from diarrhea.

q) Diarrhea can only be treated in health posts, sub-health posts, and hospitals.

r) Foods found in the forest are good for health.

s) Eating iodized salt helps prevent goitre.

t) First degree malnutrition (runche) and thin children should be taken to: a) local faith healers; 2) not do anything; 3) hospital or health posts.

u) How do you cook GLVs?

u.1) cut GLVs, wash and cook for long time.

u.2) wash GLVs, cut and cook (until it is) with lid cover.

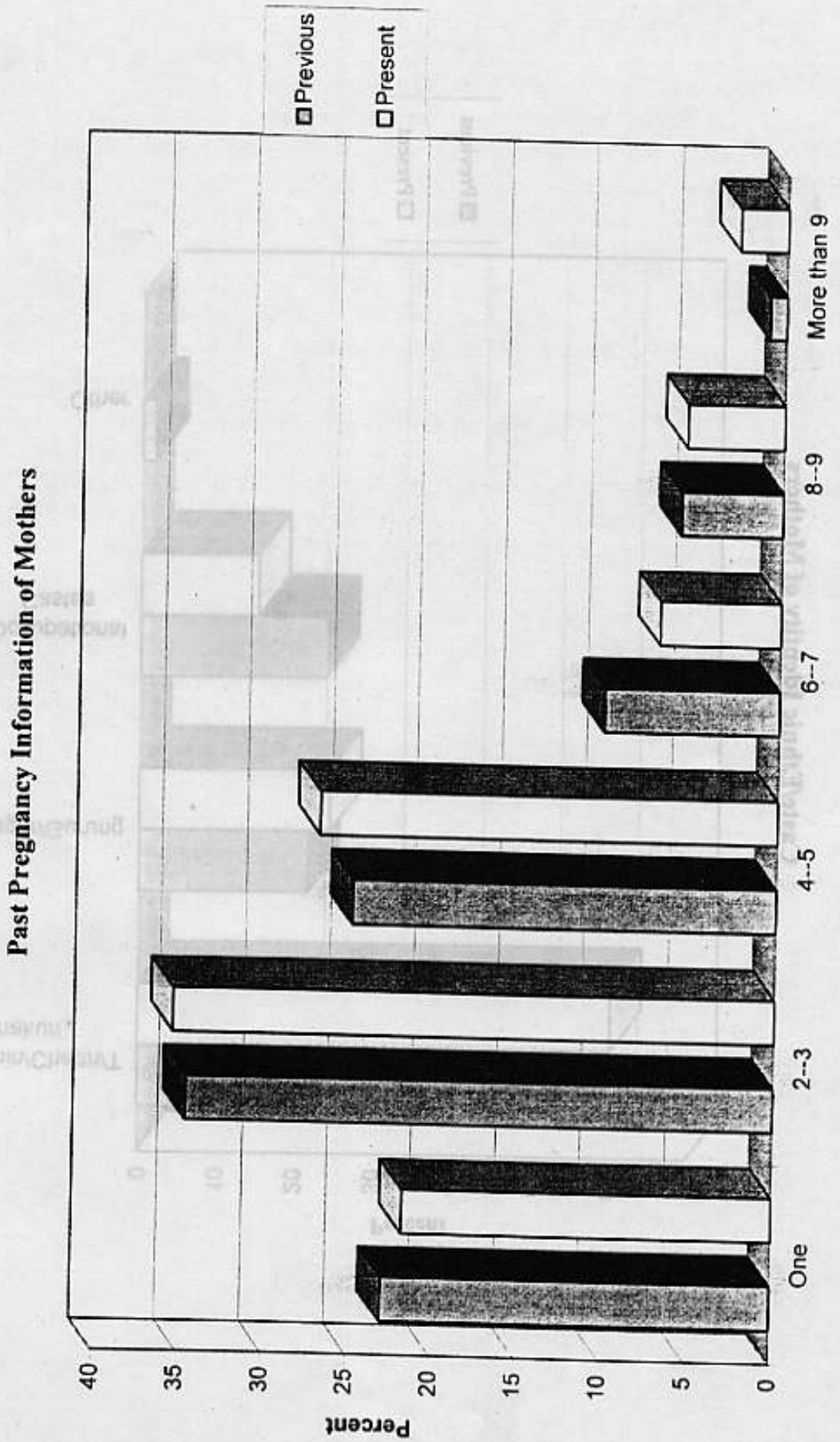
APPENDIX 1.7

Question: What did you learn from the DTP in Salyan?

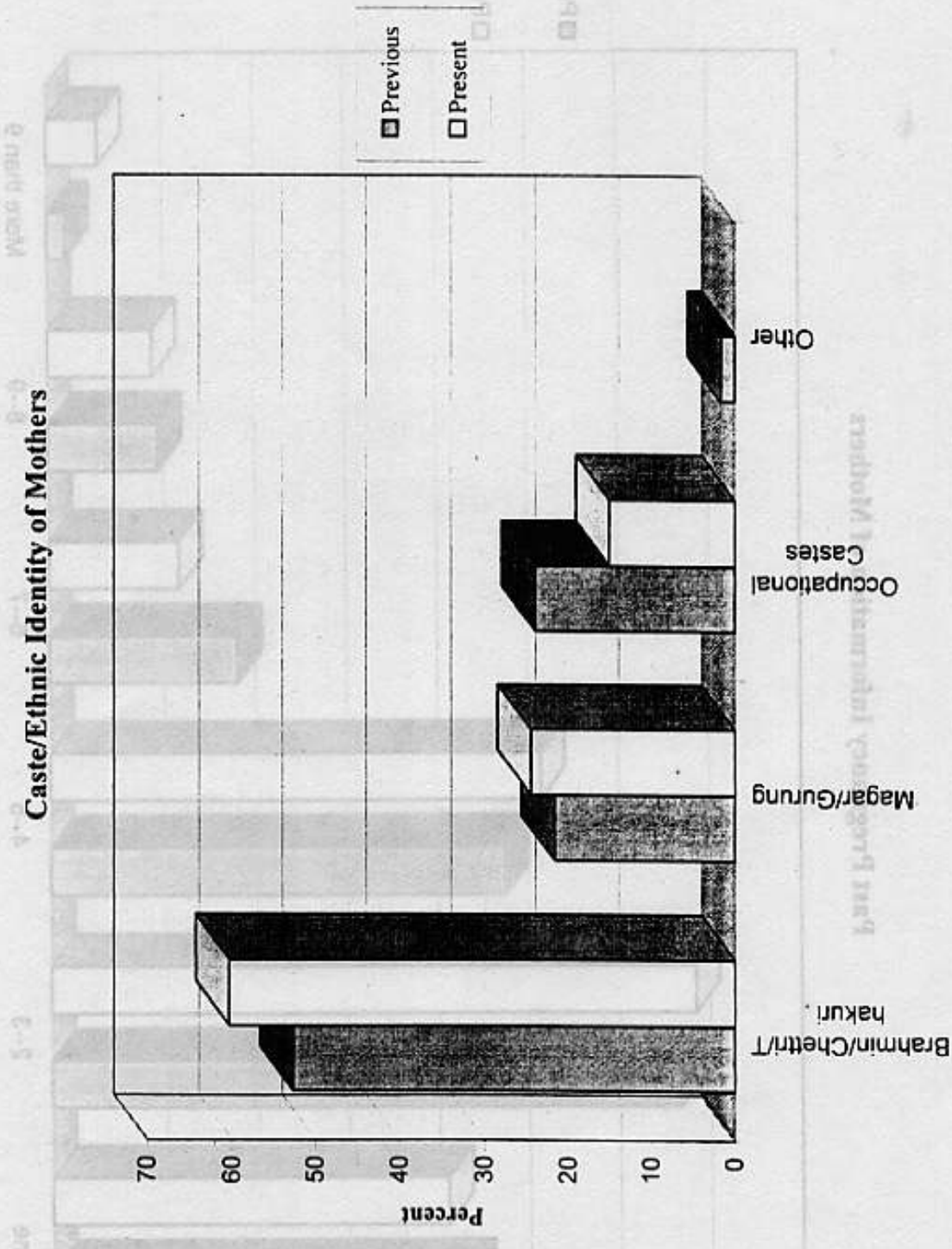
Learned about:	Count	Percent
Nutritious foods; food groups/varieties	53	76.8
Food for mother and children	41	59.4
Malnutrition and illness	35	50.7
Nutrition; its importance; awareness	34	49.3
Importance of breast-feeding/colostrum	31	44.9
Sarbottam Pitho; how to make it; and its importance	28	40.6
Vitamins (A-E), vitamin A deficiencies	25	36.2
Safe and unsafe foods	24	34.8
Child care and supplementary foods	21	30.4
Growth development and nutrition	20	29.0
Importance of locally grown foods, preperation of traditional foods- advantages/disadvantages	20	29.0
Carbohydrates, iron, protein, fats	17	24.6
Growth monitoring chart	16	23.2
Iodine and goiter	9	13.0
Sanitation and toiletry	9	13.0
Immunization	6	8.7
Teaching health education	5	7.2
Assessing who are healthy and who are not	3	4.3
Disadvantages of city foods	2	2.9
Family planning	1	1.4
Green leafy vegetables	1	1.4
Total Respondents	69	***

*note- total percent adds up to more than 100 due to multiple responses.

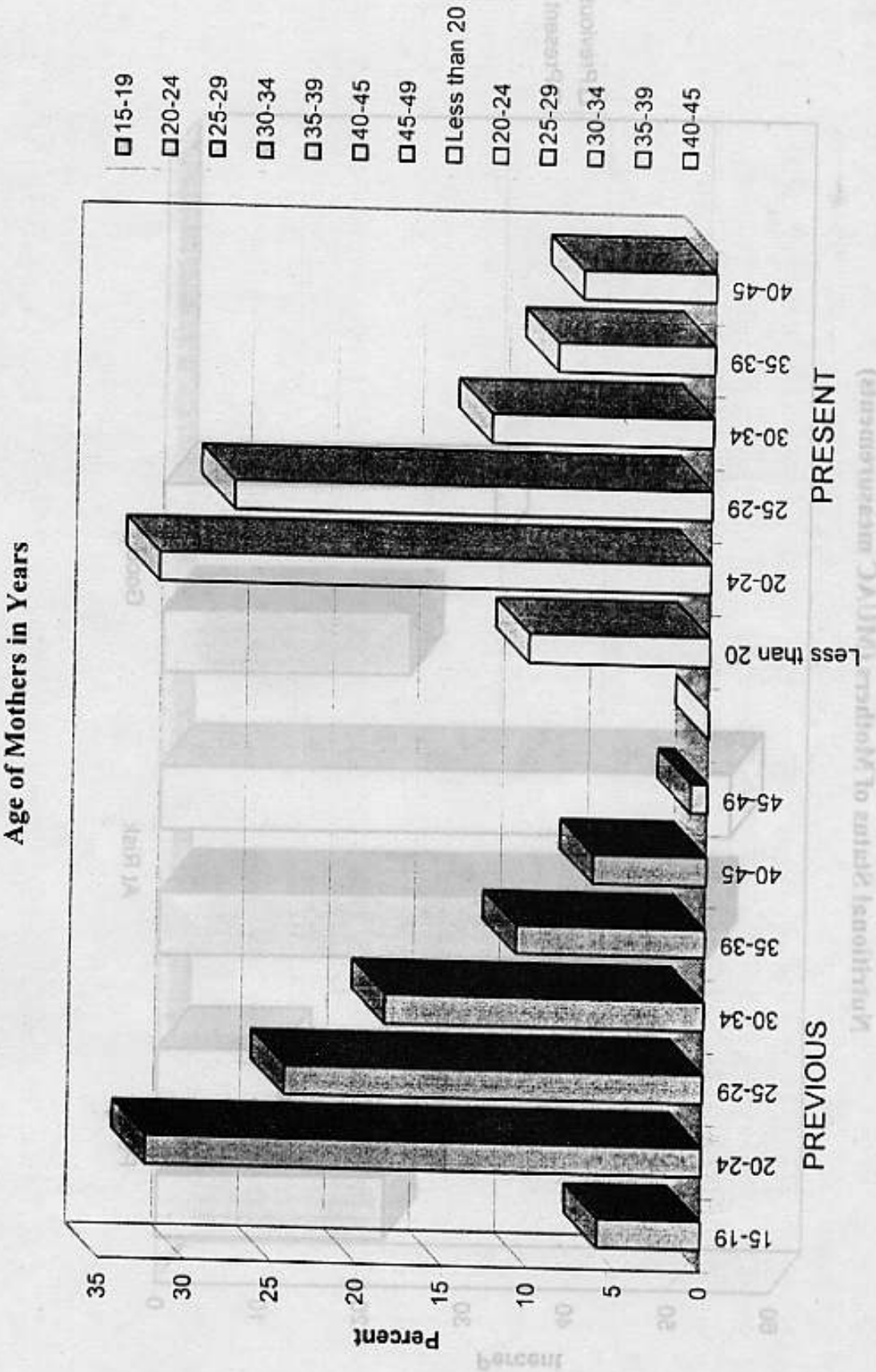
APPENDIX 1.8
BASELINE SURVEY FINDING I
(Previous = Baseline Survey, Present = Current Survey)



APPENDIX 1.9
BASELINE SURVEY FINDING II



APPENDIX 1.10
BASELINE SURVEY FINDING III



APPENDIX 1.11
BASELINE SURVEY FINDING IV