Understanding UMN's Nutrition Work & Achievements in the Areas Covered by Six VDCs of Dailekh District 1997-2000

District Training Program Evaluation Report
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For: Nutrition Program, United Mission to Nepal

ACRONYMS

AHW	: Auxiliary Health Worker
ANM	: Auxiliary Nurse Midwife
BMI	: Body Mass Index
CDO	: Chief District Officer
DHO	: District Health Officer
DPHO	: District Public Health Office
DTP	: District Training Program
EPI	: Expanded Program of Immunization
FCHV	: Female Community Health Volunteer
GM(U)	: Growth Monitoring (Unit)
HMG	: His Majesty's Government
HP	: Health Post
HW	: Health Worker
INGO	: International Non-Governmental Organization
MCHW	: Maternal and Child Health Worker
MUAC	: Mid Upper Arm Circumference
NGO	: Non-Governmental Organization
ORS	: Oral Rehydration Solution
PEM	: Protein Energy Malnutrition
SHP	: Sub-Health Post
VDC	: Village Development Committee
VHW	: Village Health Worker
UMN	: United Mission to Nepal
WHO	: World Health Organization

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EXECUTIVE SUMMARY

Introduction

The Dailekh District Training Program (DTP) was started in July 1997 with the aim of improving the nutritional status of children, pregnant women and breast-feeding mothers. The DTP involved a combination of training and other nutrition activities, and was run in the 6 village development committees (VDCs) of Dailekh district for a period of three years.

Purpose

The purpose of the study is to evaluate the impact of United Mission to Nepal (UMN) Nutrition Program activities in 6 VDCs of Dailekh district. This study tries to carefully analyze the results and impact of efforts made by the program in fulfilling its objectives. It is hoped that the study will provide useful lessons for similar endeavors in the future.

Methods

The study takes a look at the UMN's District Training Program in three parts through:

- Analysis of a survey conducted among mothers with children aged 5 years old and under.
- Analysis of interviews conducted with concerned health personnel.
- Analysis of the DTP annual reports written by the DTP in charge.

The survey, which included 215 mothers based on cluster sampling technique, gathered information on the nutritional status of mothers, their children, and their households. Findings from the survey were analyzed and were also compared with the findings of the base line survey, which was conducted in 1997, at the start of the DTP program in Dailekh. Sampling techniques for both the surveys, along with the questionnaire format (as used when comparing the two studies) were identical.

Qualitative interviews were conducted with personnel concerned with the DTP. The first interview session was with a total of 15 health officers and development organization officers of Dailekh district. Secondly, an interview was conducted with the DTP in charge. 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 DTP in several aspects. These observations are detailed in Chapters 9 and 10; important findings are briefly mentioned here.

Indicators Showing Positive Impact:

- The rate of nourished children in all age groups slightly increased. Also, the rate of nourished 'weaning-age' children doubled in three years time.
- Long term or chronic malnutrition decreased slightly in the target VDCs.

- Follow-up visits showed 6 children progressed from severe to moderate malnutrition, thus, avoiding fatal incidents.
- Figures have just about doubled for mothers with good nutrition and the rate of mothers with poor nutritional status has decreased by half. Likewise, the Body Mass Index (BMI) of mothers shows that nearly two-thirds of all mothers had normal nutritional status.
- Green leafy vegetables were given to the majority of mothers during pregnancy.
- 'Dalbhat', meat, fish, soup of omum seeds and foods prepared in oil/ghee were given to the majority of mothers after childbirth.
- All children aged 0 to 5 months in the sample were breast fed to date (note: there were only 19 children aged 0 to 5 months in sample).
- All children aged 0 to 5 months in the sample were given colostrum; mothers have understood the importance of feeding colostrum to their newborns.
- Mothers of all caste/ethnic groups practiced good breast feeding as no 'wasting' cases were found among children aged 0 to 5 months old.
- Many mothers gave liquid-foods and oral-rehydration-solution (ORS) to children suffering from diarrhea.
- The tradition of not giving water to sick children has largely decreased.
- Seeking treatment at the hospital and health posts was preferred more than with traditional healers.
- The majority of mothers said that they will treat malnourished child at home. The baseline study showed that nearly half of all mothers didn't know whom to consult if their child suffered from malnutrition.
- Almost all mothers said that their children were immunized with some form of vaccination.
- Regular growth monitoring was held for all three years in the target VDCs.
- The dissemination of information on nutrition, especially on utilizing locally available foods to combat malnutrition and relevant illness was remarkable.

Indicators Showing No Improvement

- Children belonging to the occupational castes were more susceptible to malnutrition than any other caste or ethnic groups in the target VDCs. Results showed that 25 percent of the occupational castes children suffered from wasting or acute malnutrition. Likewise, 75 percent of the children from the same caste group suffered from stunting or chronic malnutrition.
- Nearly 70 percent of children aged 25 to 60 months suffered from stunting.
- The nutritional status of children in the DTP target VDCs wasn't any better than those residing in other Mid-Western districts of Nepal.

- The number of children attending growth-monitoring activities decreased as the years progressed.
- The weaning practices of mothers belonging to the occupational caste groups were considerably worse than other caste/ethnic groups.
- Two thirds of mothers reported that they did not have antenatal check-up.
- Nearly 30 percent of mothers admitted to smoking during pregnancy.
- About 20 percent of mothers said they had nobody attending them during delivery.
- Around 19 percent of mothers had still birth incident in the program area.
- The level of iodine is significantly less in household salt than what it was three years ago.
- Although there were positive changes in opinions regarding consumption of iodized packet salt, Dailekh district saw less and less availability of packet salt in the market.
- The status of food shortage (at the time of evaluation survey) was as severe as it was during the time of baseline survey.
- Around 80 percent of households didn't have a toilet.
- Less than 4 percent of households boiled drinking water.
- Half of all households didn't cover their water vessels.

The study tries to take a broad 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 target VDCs.

A. The Survey

A nutritional survey was conducted from the 15th to 21st of Jestha 2057 in the 6 VDCs of Dailekh 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.

Orientation and Pilot study: The survey was preceded by a half-day survey orientation program, which focused on providing research guidelines to the survey team. The survey skills of the team were later refined during a pilot study held in the latter half of the orientation day. This study was conducted in a village located below the district hospital.

Sampling Technique: As recommended by the UMN Health Services Department, and also aligning with the sampling technique of Dailekh's 'base-line' study, cluster sampling technique was used for this survey. This technique follows the sampling model of the WHO immunization program (Sinha, p.9, 1997).

Selection of Clusters: A total of 30 clusters (wards) were randomly selected from the existing 54 wards of all six VDCs (Table 2.1). The clusters came out to be as follows:

Table 2.1 Wards by VDC in Sample

Name of VDC	Wards Selected	Total
Belaspur	5,6,7	3
Bindyabasini	1,2,3,5,6,7,8	7
Belpata	1,2,3,7,8,9	6
Lakhuri	1,4,6,8	4
Kalbhairab	1,4,5,6,9	5
Gamaudi	1,2,3,5,9	5
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 household, the nearest household with such requirement as selected. The minimum number of households required for the sample was 210 (30 clusters multiplied by 7 households).

The survey team: The team was divided into three small groups, each containing a maternal & child health worker (MCHW), assistant-health worker (AHW), and a group supervisor. The DTP in-charge and the survey supervisor were engaged in visiting all 6 VDCs, partially observing and advising the survey groups. The MCHW and AHW (both hired from the district health office-DHO) were engaged in asking and recording

information whereas the group supervisor monitored and helped the health workers (especially during anthropometric measurements).

The Survey Equipment: A questionnaire prepared by the UMN Nutrition Program was used as the principal survey tool (copy attached in Appendix 1.1). In addition, each group was supplied with the 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 placed in a holder (attached to the scale) with the help of the mother or the householder. Children who cried or did not want to be weighed on salter scales were weighed on UNIscales, which were used to measure the weight of mothers. The UNIscale (UNICEF Electronic Scale 890 seca), run by solar power, was placed on flat ground for the mothers to stand on it. Their weight (in kg.) was displayed on the reading meter. Mothers were encouraged to take off extra clothing (i.e. shawls) for accurate reading. Body mass index (BMI) of mothers was calculated by dividing weight in k.g. by height^2 in meter

A measuring tape was used to measure the height of mothers and children. Subjects stood on flat ground against a straight wooden stick, which had a measuring tape glued to it. For infants, height was measured with a scale-plotted board. The infants were laid on the scale with their legs straight and head touching the zero mark. Height was recorded to the nearest division on the scale.

Mid-upper arm circumference (MUAC) of mothers and children were measured with an insertion 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 in months.

B. The Interviews

Two sets of qualitative interviews were conducted with personnel concerned with the DTP. The first set of interviews was conducted by the survey supervisor, which focused on understanding the thoughts of Dailekh's key health personnel on DTP's work and achievements. Secondly, the consultant interviewed the DTP in-charge to understand his thoughts on DTP's work in the subject area.

C. Components of Evaluation Process

The evaluation of Dailekh's DTP program will be done in two steps. First, data available from the evaluation survey and interviews (conducted at the time of the survey) will be compared with data derived from the baseline study conducted in July 1997 (Sinha). An identical sampling technique (30 clusters of wards from 6 VDCs) was used for both base line and evaluation studies making it methodologically acceptable to directly compare results from both the studies (note: the measuring tools for both studies were also alike). It is hoped that the comparison of the two studies will give us an unbiased result on issues concerning the work of DTP in the region.

With this information along with the annual reports and the newer findings of the evaluation study, the consultant will try to compare DTP's efforts to it's objectives, to understand whether the objectives set by the program at the beginning of its tenure were fulfilled or not.

Chapter 3. FINDINGS I (Region's Introduction)

A. District's Introduction

Dailekh district lies in Bheri zone in the Mid-Western development region of Nepal. With Kalikot district in the North, Surkhet and Acham districts in the South, Jajarkot and Surkhet districts in the East, and Acham district in the West, Dailekh covers an area of 1,502 sq.km. (National Research Associates [NRA], 1998). The district lies between an elevation of 544 meters to 4,186 meters, and accommodates subtropical, mild-temperate and cool-temperate climates (NRA, 1998).

According to the 1998 population projection, Dailekh had an estimated population of 2,03,679. The number of projected households in the district was 1,01,973 for 1998 (NRA, 1998). The literacy level of Dailekh was projected to be 34.1 percent for the same year. The major crop production of the district is paddy, maize, millet, wheat and barley. Dailekh suffered a food deficit of 19,962 metric tons for the year 1995/1996 (NRA, 1998).

Dailekh Bazaar is the head-quarters of the district, which is 30 miles north of Birendra Nagar (Surkhet), the center of the Mid-Western region. Politically, Dailekh is divided into 56 village development committees (VDCs) and one metropolis, which include the territory of the former VDC of Belaspur.

Dailekh district still lacks basic infrastructure. Although a motor able dirt road links Birendra Nagar to Dailekh Bazaar, passenger buses are only able to travel up to Chupra (1 km south of Dailekh Bazaar. However, trucks and tractors travel from Surkhet to Dailkeh Bazaar with food supplies and other necessities. The whole road is closed during monsoon season. Electricity and telephone facilities are only centered on Dailekh Bazaar.

According to the health figures of 1997, the district has one government hospital, one primary health center, 8 health posts, 2 Ayurvedic centers, and 50 sub health posts (NRA, 1998). However, there are also several pharmacies operated by auxiliary health workers in the district center. Below are some useful figures on Dailekh district and the 6 target VDCs (Table 3.1& Table 3.2) . Figures are based on NRA's district profile, 1998.

Table 3.1 Relative Indicators of Development for Dailekh District, 1997

No.	Indicators	Rank	Figure	Remark
1	Overall Composite Index of Development	10	-	Worst
2	Poverty and Deprivation Index	3	-	Worst
3	Socioeconomic Infrastructure Development Index	4	-	Worst
4	Percentage of Landless and Marginal Farm Households	*73*	*73.50*	Worst
5	Per Capita Food Production	*65*	-	Worst
6	Infant Mortality	*69*	-	Worst
7	Health Institution	*30*	-	Intermediate
8	Health and Development Index	*2*	-	Worst

Note: Rank=among 75 districts, Remarks are divided in Best, Intermediate and Worst categories.

Table 3.2 Projected Households and Total Population by VDCs, 1998

VDCs	No. of households	Population
Belpata	345	1,950
Bindyabasini	467	2,668
Gamaudi	617	3,204
Kalbhairab	775	4,116
Lakhuri	623	3,515
Total	2,827	15,453

Note: Figures for Belaspur were not obtainable since the VDC changed to a metropolis in 1997.

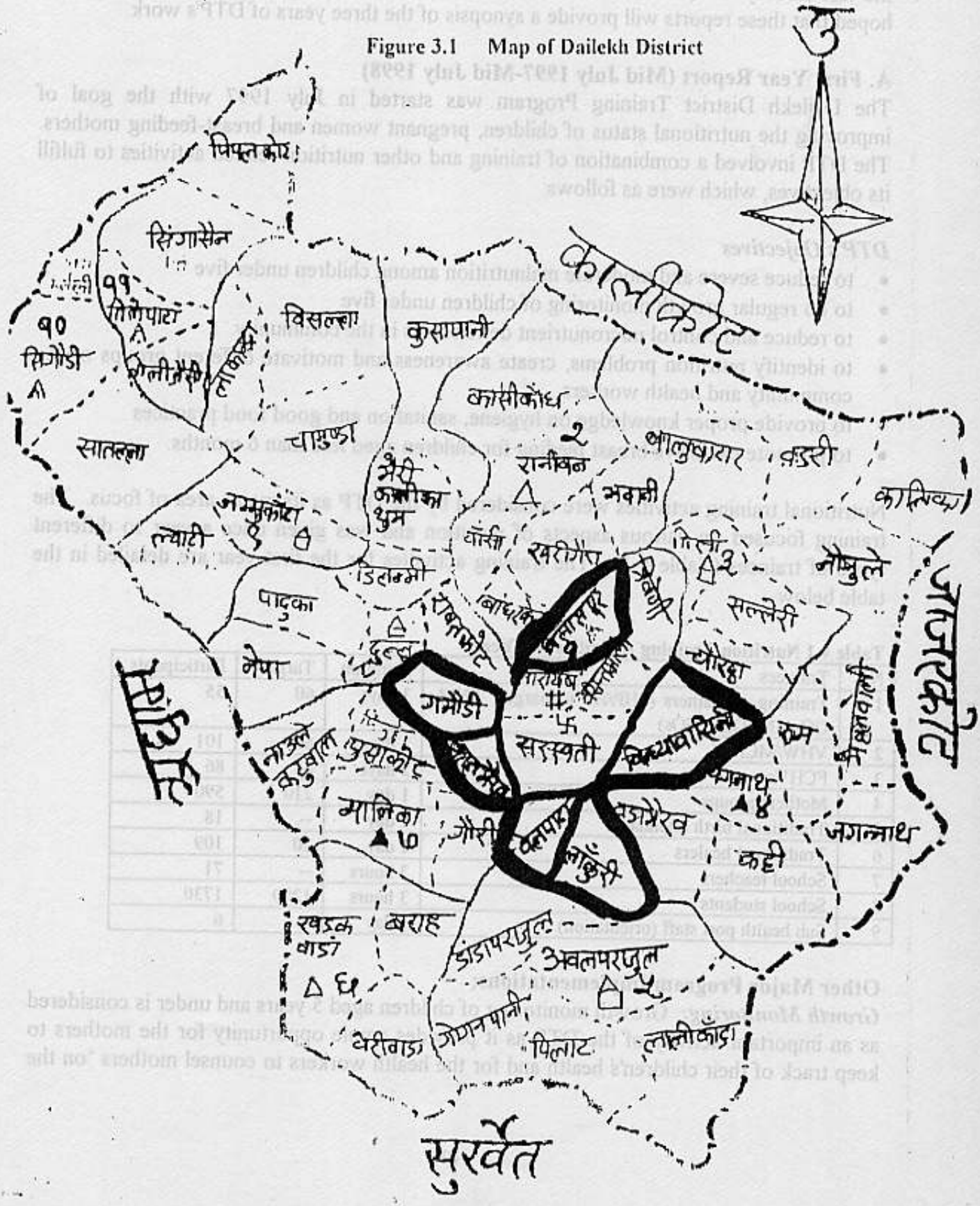
B. Brief Discussion of each VDCs

The VDCs included in this study were Belaspur, Belpata, Bindyabasini, Gamaudi, Kalbhairab, and Lakhuri (Figure). Belaspur is closely located to the district's headquarters; one of its wards in within the bazaar area. With the declaration of Dailekh bazaar as a metropolis, Belaspur is politically included within the metropolitan boundaries. *Note: The declaration of metropolis took place after the initiation of DTP project in Dailekh, which also has Belaspur as one of its target VDCs. Although Belaspur is no longer a VDC, this study will regard its territory as 'Belaspur VDC' to align with the Baseline studies of 1997.*

Belpata VDC is located about 8 km. South of Dailekh Bazaar. The district headquarters is the closest Bazaar for Belpata VDC. Bindyabasini VDC is located 8 km. South-East of

Dailekh Bazaar (which is also its closest Bazaar). Gamaudi VDC is located about 6 km. West of Dailekh Bazaar. The district headquarters is also its closest bazaar. Kalbhairab is located about 8 km. Southwest of the district headquarters. Dungaeshwor and Chupra are its closest bazaars, which are located about 8 km. South of Kalbhairab. Lakhuri VDC is located about 11 lm. Southeast of the district headquarters, which also serves as its closest bazaar.

Figure 3.1 Map of Dailekh District



Annual Reports

The UMN Nutrition Program details its achievements of DTP through (the work of) annual reports. 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 three years (note: the views written below belong to the report writer). It is hoped that these reports will provide a synopsis of the three years of DTP's work.

A. First Year Report (Mid July 1997-Mid July 1998)

The Dailekh District Training Program was started in July 1997 with the goal of improving the nutritional status of children, pregnant women and breast-feeding mothers. The DTP involved a combination of training and other nutrition-related activities to fulfill its objectives, which were as follows:

DTP's Objectives

- to reduce severe and moderate malnutrition among children under five
- to do regular growth monitoring of children under five
- to reduce and control micronutrient deficiencies in the community
- to identify nutrition problems, create awareness and motivate different groups of the community and health workers
- to provide proper knowledge on hygiene, sanitation and good food practices
- to promote exclusive breast feeding for children aged less than 6 months.

Nutritional training activities were considered by the DTP as its major area of focus. The training focused on various aspects of nutrition and was given once a year to different types of trainees (Table 4.1). The training activities for the first year are detailed in the table below.

Table 4.1 Nutrition Training Activities (1st Year)

No.	Trainees	Duration	Target	Participants
1	Training of trainers (SHP/HP incharges, ANM, GOs, INGOs, NGOs)	3 days	60	55
2	VHW/MCHW	3 days	60	101
3	FCHVs	2 days	63	86
4	Mothers groups	1 day	210	590
5	Traditional birth attendants	1 day	--	18
6	Traditional healers	1 day	20	109
7	School teachers	3 hours	--	71
8	School students	3 hours	1200	1730
9	Sub health post staff (orientation)	1 day	--	6

Other Major Program Implementations:

Growth Monitoring: Growth monitoring of children aged 5 years and under is considered as an important activity of the DTP as it provides ample opportunity for the mothers to keep track of their children's health and for the health workers to counsel mothers 'on the

spot' on their child's health. Although the District Health Office (DHO) implemented growth monitoring of children prior to DTP's arrival in the region, the DTP provided much needed technical help and supervision on all aspects of growth monitoring in the 6 VDCs.

Growth monitoring included weight-for-age and mid-upper arm circumference measurement, 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 of whether the children visited were healthy or not healthy (Sinha, p. 11, 1999). Records on growth monitoring are detailed below (Table 4.2).

Table 4.2 Growth Monitoring Report for the First Year

Weight for Age	Count	Percent
1. Total no. of children	2,770	100
a. no. of new children	1,990 (target:1500)	72
b. no. of old children	780	28
2. Road to health	2,135	77
3. Not road to health	624	23
MUAC measurement	Count	Percent
4. Total no. of children	351	100
5. Nourished	241	69
6. Probably Malnourished	70	20
7. Malnourished	40	11

Micronutrient Assessment: The program identified iron and vitamin A deficiencies prevalent among children and mothers in Dailekh district. During the year 1997-98, 128 pregnant and lactating mothers were assessed for these deficiencies and supplements were provided. In cases of suspected deficiencies, nutrition education was provided emphasizing the importance of consuming locally available vitamin A and iron rich foods. Deworming tablets were also distributed under medical supervision in some cases.

Promotion of Exclusive Breastfeeding: Exclusive breastfeeding of under six month old infants was recorded during GMUs, trainings or gatherings. Records show that only 49 percent those asked were said to have exclusively breast fed their children.

Follow-up of Trainees: Follow-up visits with trainees were conducted after training programs. The visits mainly focused on discussions, clarification of information and feedback from the trainees. A total of 157 visits were carried out for the first year.

Follow-up of Malnourished Children: Severely malnourished children were followed up with home visits during which major emphasis has been given on encouraging the mothers to feed the child frequently and properly with 'sarbottam pitho' and other locally available foods. Most children showed gradual weight gain, but some did not satisfactorily gain weight satisfactorily due to medical and socio-economic factors. Severely malnourished children were sent for a full medical check-up by district health staff.

Informal Gathering and Meetings: Informal gatherings and interaction programs were held to understand the opinions and beliefs on nutrition existing at the community level. Similarly, these gatherings were also used as platforms to introduce DTP to the community. Meetings and focus group sessions were also held with various members of

the community as well as representatives of various organizations concerning the health and nutrition of the community.

Other Activities: The DTP in its first year was also involved in a 'baby show' held by the DHO on children's day. The program was also involved in the distribution of polio drops and vitamin A capsules on National Immunization Day.

B. Second Year Report (Mid July 1998-Mid July 1999)

Training activities for the second year are detailed below (Table 4.3).

Table 4.3 Nutrition Training Activities (2nd Year)

Groups	Count	Target
Health post staff and GO/INGO/NGO staff	61	50
VHW/MCHW	80	84
FCHVs	68	63
Mothers' groups	676	
Traditional birth attendants	45	690
Traditional healers	94	120
School teachers	74	60
VDC members*	108	30
Shopkeepers training*	22	17

*the two groups were added in the second year in response to community interest.

Other Major Program Activities:

Growth Monitoring: Growth monitoring remained as one of the key activities of the DTP and was running in the six target VDCs as well as in the district center. Records for the second year of growth monitoring are detailed in Table 4.4.

Table 4.4 Growth Monitoring Report for the Second Year

Weight for Age	Count	Percent
1. Total no. of children	2,467	100
a. no. of new children	1,310	53
b. no. of old children	1,166	47
2. Road to health	2,095	85
3. Not road to health	381	15
MUAC measurement	Count	Percent
4. Total no. of children	346	100
5. Nourished	157	46
6. Probably Malnourished	125	36
7. Malnourished	64	18

Micronutrient Assessment: Assessment for suspected micronutrient deficiencies were conducted at the time of gatherings, trainings, and GMUs. A total of 143 aged five years and under were suspected for vitamin A and iron deficiencies. The majority of them were referred to health staff for supplementation.

Promotion of Exclusive Breastfeeding: Like the first year, records were also kept on the breastfeeding patterns of mothers attending DTP activities. The second year showed 73 percent of mothers exclusively breastfeeding their children. Also, the nutritional benefits

of exclusive breast-feeding as well as of colostrum feeding were promoted among mothers.

Follow-up of Malnourished Children: Malnourished children were followed-up as during the first year. Guardians were motivated to take an increased interest in their babies and encouraged to feed frequently with locally available weaning foods (especially 'Sarbottam Pitho').

Follow-up of Trainees: Trainees were followed up for the second year. A total of 326 health staff and community workers were visited; community groups also received follow-u p visits after training.

Meetings: Several formal and informal meetings were organized at district and VDC level. Relationships were built with different agencies including DHO, local clubs, GOs, NGOs and INGOs. Two important commitments were made by the DHO during a formal meeting: 1) for DHO supervisors to supervise nutrition-related activities in VDCs outside the DTP target area and 2) for combined counseling services to be provided during the GMU at the district center.

Other Activities: The DTP was also involved in activities such as a 'baby show', National Immunization Day, vitamin A program, and testing salt samples in target VDCs.

C. Third Year Report (Mid July 1999-Mid July 2000)

Training activities for the third year were are listed below (Table 4.5).

Table 4.5 Nutrition Training Activities (3rd Year)

Groups	Days	Target	Participants
District center			
TOT (HP/SHP incharges)	3	50	53
VHW/MCHW	3	85	88
VDC-level			
VDC members	1	108	115
FCHVs	2	63	62
Mothers group	1	639	671
Traditional birth attendants	1	54	45
Traditional healers	1	108	80
School teachers	1	60	92
School students	1	-	200
Total		1167	1406

Other Major Program Activities:

Growth Monitoring: Regular growth monitoring was carried out as the previous years. Participatory growth monitoring (having mothers conduct a GMU themselves at a location close to their homes) was started in Belaspur VDC. The GMU tools, registers, posters and teaching materials were left with the group to continue this after the handover process. The growth monitoring records for the third year are detailed in Table 4.5.

Table 4.6 Growth Monitoring Report for the Third Year

Weight for Age	Count	Percent
1. Total no. of children	1,487	100
a. no. of new children	634	43
b. no. of old children	853	57
2. Road to health	1,317	89
3. Not road to health	170	11
MUAC measurement	Count	Percent
1. Total no. of children	205	100
2. Nourished	98	47.7
3. Possibly Malnourished	77	37.6
4. Malnourished	30	14.6

Promotion of Exclusive Breastfeeding: Records were kept on breastfeeding patterns of mothers visiting for growth monitoring of their children. Around 81 percent of mothers (total 422) were said to have breastfed their children exclusively.

Micronutrient Assessment: Assessment for suspected micronutrient deficiencies and their referrals were also carried out for the third year.

Follow-up of Malnourished Children: A total (number) of 25 severely malnourished cases were followed-up for the third year. All the cases were satisfactorily gaining weight, and height. At the time of handover, the follow-up cases of each VDC were submitted to the concerned HP/SHP in charge.

Follow-up of Trainers: As in the previous years, follow-up of different trained groups as conducted. Most of them were found to have implemented their skills and knowledge in their personal life as well as at the community level.

Meetings: Several formal and informal meetings were organized at the center and district level during the third year. Various organizations were consulted and meetings were held to build good relationships.

Baby Show: Baby shows were carried out in all six target VDCs.

Other Activities: The DTP program was also involved in distribution of polio drops and vitamin A on National Immunization Day.

Hand-over process: At the end of the annual TOT (June 11th-13th, 2000), a formal handover of the DTP to DHO, Dailekh was carried out.

Socio-Economic Information

This section details the socio-economic characteristics of mothers and their households (taken from results of evaluation survey) in the study area (highlighted in Tables 5.1 and 5.2).

Mothers' caste/ethnicity: The caste groups predominant in the area were the Brahmins and Chettris (38.1 percent) followed by the occupational castes with 21.0 percent. Gurungs and Magars, combined, also accounted to more than 20 percent of the area's ethnic make-up.

Mothers' age: A majority of mothers surveyed were in aged between 20 to 29 years. Around 29 percent of mothers were aged between 20 to 24 and 32.6 percent were aged between 25 to 29 years.

Household members: Close to 40 percent of households (members sharing a same kitchen) surveyed consisted of six to seven members followed by nearly 30 percent of households with four to five members. Figures were also high for households with more than eight members (around 26 percent).

Mothers' education: A majority of mothers (close to 60 percent) surveyed were illiterate. A little more than 35 percent of mothers were literate. Only one percent of mothers had S.L.C. and college degrees.

Mothers' occupation: A majority of mothers (96.3 percent) identified themselves with agriculture as their major occupation

Households' income source: Agriculture was the major source of income for households in the study. Other sources of income were minimal. Nearly 30 percent of respondents cited labor work as additional source of income for their households. About 28 percent of households also had members engaged in 'service' (jobs in government or private organization).

Labor migration: Around 30 percent of households had members leaving Dailekh district for work. Nearly half of those who left were gone for 10 months to even a full year.

Land holdings: A majority of households (38.6 percent) in sample had 8 to 16 pathi of land followed by 11.6 percent of farmers who have 16.6 to 25.0 pathi land.

Livestock holdings: A majority of households had 4 to 8 livestock followed by 24.5 percent of households with 9 to 14 livestock. A majority of households kept cows and oxen, followed by water buffaloes. A detail list of livestock is shown in the table.

Table 5.1 Socio-Economic Characteristics of Mothers in Sample

Caste/Ethnic Identity of Households		
Caste/Ethnicity	Count	Percent
Brahmin	26	12.1
Chettri	82	38.1
Magar	36	16.7
Gurung	11	5.1
Thakuri	15	7.0
Occupational	45	21.0
Total	215	100.0

Age of Mothers in Years		
Age	Count	Percent
17-19	10	4.7
20-24	62	28.8
25-29	70	32.6
30-34	35	16.3
35-39	23	10.7
40-45	13	6.0
46-51	2	0.9
Total	215	100.0

Household Size		
Household size	Count	Percent
Three or less	14	6.5
Four to five	63	29.3
Six to seven	81	37.7
Eight to nine	36	16.7
More than nine	21	9.8
Total	215	100.0

Occupation of Mothers		
Caste/Ethnicity	Count	Percent
Agriculture	207	96.3
Teacher	-	
Shopkeeper	4	1.9
Not mentioned	4	1.9
Total	215	100.1

Education Level of Mothers		
Education level	Count	Percent
Non-literate	120	55.8
Literate*	78	36.3
Classes 1-4	3	1.4
Classes 5-8	6	2.8
Classes 9-10	6	2.8
S.L.C.	1	0.5
College +	1	0.5
Total	215	100.0

*those attending literacy classes were also considered literate.

Table 5.2 Additional Socio-Economic Information

Major Income of Household		
Sources	Count	Percent
Agriculture	194	90.2
Army	1	0.5
Shop	2	0.9
Service	4	1.9
Agriculture and other	9	4.2
Labor	3	1.4
Don't know/not recorded	2	0.9
Total	215	100.0

Additional Income		
Sources	Count	Percent
Labor	38	29.2
Service	36	27.7
Agriculture	22	16.9
Shop	10	7.7
Pension	6	4.6
Army	6	4.6
Agriculture +other	5	3.8
Teacher	3	2.3
Livestock	3	2.3
Vegetable farming	1	0.8
Total	130	100.0

Householders Working Outside Dailekh?		
Response	Count	Percent
Yes	57	27.4
No	151	72.6
Total	208	100.0

How many months in a Year?		
Months	Count	Percent
1 month	2	3.5
2 - 3 month	6	10.5
4 - 6 month	12	21.1
7 - 9 month	6	10.5
10 - 12 month	27	47.4
Don't know/not recorded	4	7.0
Total	57	100.0

Land in Pathi		
Pathi	Count	Percent
1.0-3.0	7	3.3
3.4-7.0	31	14.4
8.0-16.0	83	38.6
16.6-25.0	59	27.4
26.0-37.0	25	11.6
40.0-60.0	8	3.7
Don't know/not recorded	2	0.9
Total	215	99.9

note: 1pathi of seed is needed for 1 ropani

Types of Livestock kept by Households		
Livestock	Count	Percent
Cow/Ox	193	40.1
Water buffalo	153	31.8
Chicken	116	24.1
Goat	100	20.8
Pig	13	2.7
House	4	0.8
Sheep	2	0.4
Total	481	***

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

Livestock kept by Households		
No. of livestock	Count	Percent
1 to 3	38	17.9
4 to 8	82	38.7
9 to14	52	24.5
15 to 20	17	8.0
21 to 25	12	5.7
26 to 37	11	5.2
Total	212	100.0

A. Mothers' Nutritional Status

The nutritional status of mothers in sample as measured by their mid-upper arm circumference **(MUAC)** showed almost half 'at risk' of malnutrition and half having 'good' nutritional status (Table 6.1). Around 16 percent of mothers had 'poor' nutritional status.

Table 6.1 Nutritional Status of Mothers (MUAC measurement)

Total mothers	Poor (<211 mm.)		At Risk (211-235 mm.)		Good (>235 mm.)	
	Count	Percent	Count	Percent	Count	Percent
	34	15.8	90	41.9	91	42.3

The 'body mass index' **(BMI)** of mothers in sample was calculated in this study. Results show that a majority of mothers (71.6 percent) had a 'normal' nutritional status (Table 6.2). A little more than a quarter of the mothers were 'mild to moderately' malnourished. Only 2.3 percent of the mothers were categorized as 'severely malnourished' according to their BMI.

Table 6.2 Mothers' Body Mass Index (BMI)

Total mothers	Severely Malnourished (<16.0)		Moderately Malnourished (16.0-16.9)		Mildly Malnourished (17.0-18.49)		Normal (>18.5)	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
215	5	2.3	14	6.5	44	20.5	154	71.6

note: nutritional status were based on WHO's classification of malnutrition (1999).

B. Pregnancy Information

This section details various pregnancy information of mothers in sample (Tables 6.3).

Pregnancy rate: Around 35 percent of mothers in the sample had two to three pregnancies to date. A quarter of mothers had four to five pregnancies. Around 10 percent of mothers had more than eight pregnancies to date.

Age during first pregnancy: A majority of mothers (29.3 percent) said they were aged between 20 to 22 years during their first pregnancy. However, figures were also significant for mothers aged 19 or lesser.

Antenatal checkup: Only a quarter of all mothers said they had an antenatal checkup.

Poor Pregnancy behaviors: Nearly 30 percent of mothers admitted to smoking during pregnancy. This figure was slightly less than for mothers consuming alcohol during pregnancy, which was 17.9 percent.

Attendants during delivery: More than half of all mothers reported having 'relatives' present during delivery. Nearly 20 percent of mothers said they had no body attending them during delivery.

Still-birth incidents: Close to 20 percent of mothers in the sample reported they had a still birth incident. A majority of them have had it once.

Table 6.3 Pregnancy Information of Mothers in Sample

Past Pregnancy Information		
No. of pregnancies	Count	Percent
One	39	18.1
Two to three	76	35.3
Four to five	55	25.6
Six to seven	23	10.7
Eight to nine	18	8.4
More than nine	4	1.9
Total	215	100.0

Smoking During Pregnancy		
Response	Count	Percent
Smoked	60	28.3
Did not smoke	152	71.7
Total	212	100.0

Drinking During Pregnancy		
Response	Count	Percent
[illegible] drink	38	17.9
No Did not drink	174	82.1
Total	212	100.0

Mothers Age During First Pregnancy		
Age	Count	Percent
15 years	8	3.7
16 years	26	12.1
17 years	35	16.3
18 years	41	19.1
19 years	27	12.6
20 -22 years	63	29.3
23-25 years	11	5.1
26-28 years	3	1.4
29-30 years	1	0.5
Total	215	100.1

Still Birth Occurrences		
No. of Stillbirth	Count	Percent
Once	14	6.5
Twice	5	2.3
Thrice	1	0.5
Total	20	18.6
*total percent calculated from total no. of mothers		

Antenatal Checkup		
Response	Count	Percent
Yes	54	25.1
No	161	74.9
Total	215	100.0

Type of Attendants During Delivery		
Persons	Count	Percent
Relatives	118	54.9
No one	40	18.6
Neighbor + others	21	9.8
Neighbors	4	3.7
FCHV + others	6	2.8
Trained Traditional birth attendants (TTBA)	5	2.3
Hospital	5	2.3
Relatives + others	4	1.9
Female Community health volunteers (FCHV)	3	1.4
Untrained Traditional birth attendants (UNTBA)	2	0.9
UNTBA + others	2	0.9
MCHV + others	1	0.5
Maternal child health workers (MCHW)	0	0.0
Total	215	100.0

C. Reported Feeding Behavior

This section analyzes food beliefs of mothers during pregnancy, after child-birth and during illnesses. The responses are categorized in ways similar to the food belief responses presented in Salyan's evaluation and Dailekh's survey report; the results are categorized according to the ethnic and economic background of mothers (Sinha, 1997 and 1999). The categories are: group A (Brahmins, Chettris, and Thakuris); group B (Magars and Gurungs); and group C (the Occupational castes).

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 foods by the respondents.

Food Beliefs During Pregnancy:

Food beliefs according to the three ethnic groups are detailed in Table 6.4. 'Dalbhat', 'roti', and green leafy vegetables were reported as food generally given during pregnancy for the majority of mothers in all three groups.

A majority of mothers in all three groups did not restrict any particular food during their pregnancy period. Of those who restricted, alcohol, cigarettes, and ashgourd topped the list for group A; hot, bitter and sour foods and green leafy vegetables for group B; and hot and sour foods for group C.

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 (Table 6.5). 'Dalbhat', fish and meat, soup of omum seeds, and (foods made in) oil and ghee were given to mothers in all groups. Group A avoided hot/sour foods, green leafy vegetables, lentils and milk products. A majority of mothers not drinking milk products responded so in reference to the milk of livestock that had not participated in 'pujas' (like 'nuwaran'), saying that the gods would become angry if milk from such livestock were consumed. Group C also ignored hot/sour foods, oily foods, lentils and green leafy vegetables.

Food Beliefs When Suffering from Fever:

'Dalbhat', milk and 'roti' were eaten by the majority of mothers of all three groups when suffering from fever (Table 6.6). Mothers in group A avoided sour, bitter and hot foods, curd and butter-milk during this illness. Although a majority of mothers in group B had no food restrictions, many said they avoided oily foods during fever. Mothers of group C restricted hot, sour and oily foods.

Food Belief When Suffering From Diarrhea:

A majority of mothers in all three groups mentioned taking 'dalbhat', pulses, and 'jeevan jal' (ORS) during diarrhea (Table 6.7). Apart from foods cooked in ghee and oil, a majority of mothers in all three groups showed no restrictions to foods to be eaten when suffering from diarrhea.

Table 6.4 Foods Eaten During Pregnancy - Group A

Foods Given	Count	Reason(s)
Dalbhat	104	gives strength; don't know; to become well; to fulfill appe tite; for mother and child; gives vitamin; for child's health
Roti (wheat, barley)	58	
Fish/meat	48	
Green leafy vegetable	44	
Vegetables	43	
Fruits	36	
Milk products	35	
Beans	14	
Potato	12	
Maize Roti	10	
Eggs	8	
Barley Roti	8	
Papaya	6	
Orange	6	
Colocasia	4	
Apple	3	
Mango	3	
Everything	3	
Gundruk	3	
Honey	2	
Coconut	2	

Table 6.4 Foods Eaten During Pregnancy - Group B

Foods Given	Count	Reason(s)
Meat and Fish	43	gives strength; vitamin for child increases appetite for mother's health
Dalbhat	34	
Soup of Omum seeds	30	
Oil/Ghee	18	
Green leafy vegetables	17	
Vegetables	9	
Milk products	8	
Fruits	7	
'Roti'	7	
Pulses	5	
Eggs	3	
Nutmeg	2	

Table 6.4 Foods Eaten During Pregnancy - Group C

Foods Given	Count	Reason(s)
Dalbhat	35	don't know; to fulfill appetite; to become healthy; good for mother and child; gives vitamin
'Roti'	31	
Green leafy vegetable	15	
Vegetables	11	
Milk products	11	
Fruits	8	
Hot/sour foods	5	
Chowchow	3	
Maize 'dhido'	2	
Eggs	2	
Gundruk	2	
Lentil	2	
Peas	2	

Table 6.4 Foods Not Eaten During Pregnancy- Group A

Foods Not Given	Count	Reasons
No restrictions	110	harmful; harmful for child
Cigarette	8	
Alcohol	5	
Ashgourd	5	
Horsegram	4	

Table 6.4 Foods Not Eaten During Pregnancy- Group B

Foods Not Given	Count	Reasons
No restrictions	33	harmful for child
Hot/bitter/sour foods	5	
Green leafy vegetables		
Lentil	3	
Tomato	2	
Garlic	2	

Table 6.4 Foods Not Eaten During Pregnancy- Group C

Foods Not Given	Count	Reasons
No restrictions	41	harmful for child
Hot/sour foods	2	

Table 6.5 Foods Eaten After Child Birth - Group A

Foods Given	Count	Reason(s)
Fish/meat	98	gives strength to mother and child; increases breast milk help to reduce pain and aches; gives vitamin; to survive; its the tradition
Dalbhat	86	
Soup of omum seeds	73	
Ghee/oil	51	
Green leafy vegetable	36	
Milk products	35	
Vegetables	34	
Roti	23	
Pulses	12	
Fruits	12	
Musyoura	7	
Cumin and spices	7	
Potato	6	
Honey	5	
Cowpea	5	
Chowchow	4	
Nutmeg	4	
Beans	3	
Peas	2	

Table 6.5 Foods Eaten After Child Birth- Group B

Foods Given	Count	Reason(s)
Dalbhat	41	increases blood level gives strength; increases breast milk good for mother and child; gives vitamin
Green leafy vegetables	26	
Roti	24	
Fish and meat	22	
Vegetables	14	
Pulses	13	
Fruits	13	
Milk products	7	
Bitter foods	2	

Table 6.5 Foods Eaten After Child Birth - Group C

Foods Given	Count	Reason(s)
Meat and fish	38	gives vitamin; gives strength increases breast milk good for mother and child
Dalbhat	37	
Soup of omum seed	22	
Oil/ghee	14	
'Roti'	9	
Milk products	8	
Green leafy vegetable	7	
Vegetables	6	
Salt water	4	
Chowchow	3	
Fruits	3	
Pulses	3	
Colcocasia	2	

Table 6.5 Foods Not Eaten After Child Birth- Group A

Foods Not Given	Count	Reasons
No restrictions	58	harmful to the child its cold food; don't know; mother will become obese; cannot digest; fear for diarrhea,
Hot/sour foods	16	
Green leafy vegetables	15	
Lentil	14	
Milk products	9*	
Potato	9	
Roti	5	
No lentil for 10 days	3	
Smoked/fried maize	2	
Colocasia	2	
Buffalo's colostrum**	2	
Peas	2	

Table 6.5 Foods Not Eaten After Child Birth- Group B

Foods Not Given	Count	Reasons
No restrictions	42	not good;
Alcohol	2	

Table 6.5 Foods Not Eaten After Child Birth- Group C

Foods Not Given	Count	Reasons
No restrictions	18	stomach pain; its harmful
Hot/sour foods	15	
Oily foods	8	
Lentil	7	
Green leafy vegetable	7	
Curd and butter milk	3	
Potato	2	

Table 6.4 Foods Eaten During Pregnancy - Group A

Foods Given	Count	Reason(s)
Dalbhat	104	gives strength; don't know; to become well; to fulfill appe tite; for mother and child; gives vitamin; for child's health
Roti (wheat, barley)	58	
Fish/meat	48	
Green leafy vegetable	44	
Vegetables	43	
Fruits	36	
Milk products	35	
Beans	14	
Potato	12	
Maize Roti	10	
Eggs	8	
Barley Roti	8	
Papaya	6	
Orange	6	
Colocasia	4	
Apple	3	
Mango	3	
Everything	3	
Gundruk	3	
Honey	2	
Coconut	2	

Table 6.4 Foods Eaten During Pregnancy - Group B

Foods Given	Count	Reason(s)
Meat and Fish	43	gives strength; vitamin for child increases appetite for mother's health
Dalbhat	34	
Soup of Omum seeds	30	
Oil/Ghee	18	
Green leafy vegetables	17	
Vegetables	9	
Milk products	8	
Fruits	7	
'Roti'	7	
Pulses	5	
Eggs	3	
Nutmeg	2	

Table 6.4 Foods Eaten During Pregnancy - Group C

Foods Given	Count	Reason(s)
Dalbhat	35	don't know; to fulfill appetite; to become healthy; good for mother and child; gives vitamin
'Roti'	31	
Green leafy vegetable	15	
Vegetables	11	
Milk products	11	
Fruits	8	
Hot/sour foods	5	
Chowchow	3	
Maize 'dhido'	2	
Eggs	2	
Gundruk	2	
Lentil	2	
Peas	2	

Table 6.4 Foods Not Eaten During Pregnancy- Group A

Foods Not Given	Count	Reasons
No restrictions	110	harmful; harmful for child
Cigarette	8	
Alcohol	5	
Ashgourd	5	
Horsegram	4	

Table 6.4 Foods Not Eaten During Pregnancy- Group B

Foods Not Given	Count	Reasons
No restrictions	33	harmful for child
Hot/bitter/sour foods	5	
Green leafy vegetables		
Lentil	3	
Tomato	2	
Garlic	2	

Table 6.4 Foods Not Eaten During Pregnancy- Group C

Foods Not Given	Count	Reasons
No restrictions	41	harmful for child
Hot/sour foods	2	

Table 6.5 Foods Eaten After Child Birth - Group A

Foods Given	Count	Reason(s)
Fish/meat	98	gives strength to mother and child; increases breast milk help to reduce pain and aches; gives vitamin; to survive; its the tradition
Dalbhat	86	
Soup of omum seeds	73	
Ghee/oil	51	
Green leafy vegetable	36	
Milk products	35	
Vegetables	34	
Roti	23	
Pulses	12	
Fruits	12	
Masyouru	7	
Cumin and spices	7	
Potato	6	
Honey	5	
Cowpea	5	
Chowchow	4	
Nutmeg	4	
Beans	3	
Peas	2	

Table 6.5 Foods Eaten After Child Birth- Group B

Foods Given	Count	Reason(s)
Dalbhat	41	increases blood level gives strength; increases breast milk good for mother and child; gives vitamin
Green leafy vegetables	26	
Roti	24	
Fish and meat	22	
Vegetables	14	
Pulses	13	
Fruits	13	
Milk products	7	
Bitter foods	2	

Table 6.5 Foods Eaten After Child Birth - Group C

Foods Given	Count	Reason(s)
Meat and fish	38	gives vitamin; gives strength increases breast milk good for mother and child
Dalbhat	37	
Soup of omum seed	22	
Oil/ghee	14	
'Roti'	9	
Milk products	8	
Green leafy vegetable	7	
Vegetables	6	
Salt water	4	
Chowchow	3	
Fruits	3	
Pulses	3	
Colcocasia	2	

Table 6.5 Foods Not Eaten After Child Birth- Group A

Foods Not Given	Count	Reasons
No restrictions	58	harmful to the child its cold food; don't know; mother will become obese; cannot digest; fear for diarrhea,
Hot/sour foods	16	
Green leafy vegetables	15	
Lentil	14	
Milk products	9*	
Potato	9	
Roti	5	
No lentil for 10 days	3	
Smoked/fried maize	2	
Colocasia	2	
Buffalo's colostrum**	2	
Peas	2	

Table 6.5 Foods Not Eaten After Child Birth- Group B

Foods Not Given	Count	Reasons
No restrictions	42	not good;
Alcohol	2	

Table 6.5 Foods Not Eaten After Child Birth- Group C

Foods Not Given	Count	Reasons
No restrictions	18	stomach pain; its harmful
Hot/sour foods	15	
Oily foods	8	
Lentil	7	
Green leafy vegetable	7	
Curd and butter milk	3	
Potato	2	

Table 6.6 Food Eaten During Fever - Group A

Foods Given	Count	Reason(s)
Dalbhat	87	gets well; gives strength; gives heat
Vegetables	40	
Roti	39	
Milk products	39	
Green leafy vegetable	18	
Hot water	14	
Pulses	14	
Everything	10	
Fruits	10	
Liquids	7	
Fish/meat	6	
'Timor'	5	
Barley 'dhaedo' with Timor	5	
Banana	2	

Table 6.6 Food Eaten During Fever - Group B

Foods Given	Count	Reason(s)
Dalbhat	38	gives strength
Vegetable	16	
Roti	14	
Milk products	10	
Pulses	8	
Green leafy vegetable	7	
Fish and meat	7	
'Jaulo'	4	
Soup of omum seed	3	
Ghee/oil	2	
Water	2	

Table 6.6 Food Eaten During Fever - Group C

Foods Given	Count	Reason(s)
Dalbhat	36	lowers fever
'Roti'	22	gives strength
Milk products	9	to save life
Vegetables	8	to get well soon
Pulses	6	
'Timor'	6	
Hot water	5	
'Fado'	5	
Salty food	4	
'Bhat ko mad'	3	
Green leafy vegetable	2	

Table 6.6 Food Not Eaten During Fever - Group A

Foods Not Given	Count	Reasons
Sour/bitter/hot foods	57	worsens fever
Curd & butter milk	37	
No restrictions	20	
Oil/ghee	19	
Cow's milk	7	
Milk	3	
Mango	3	
Cold water	2	
Green leafy vegetable		

Table 6.6 Food Not Eaten During Fever - Group B

Foods Not Given	Count	Reasons
No restrictions	20	worsens fever; not good
Oily foods	17	
Milk products	6	
Hot/salty foods	5	
Alcohol	5	
Mango	3	
Tomato	3	
Goat meat	2	
Cow milk	2	
Banana	2	

Table 6.6 Food Not Eaten During Fever - Group C

Foods Not Given	Count	Reasons
Hot/bitter/sour foods	18	worsens fever
Oily foods	17	
No restrictions	14	
Curd/butter milk	6	
Meat	5	
Sugar/'gud'	2	
Rape leaves	2	
Cold water	2	
Cow milk	2	

Table 6.7 Food Eaten During Diarrhea - Group A

Foods Given	Count	Reason(s)
Dalbhat	51	to get well; gives strength; fulfills water demand
Pulses	49	
Jeevan Jal	44	
Curd	26	
Liquids	26	
'Roti'	23	
Vegetables	17	
Green leafy vegetables	11	
'Nun-chini-pani'	9	
'Bhat ko maad	8	
Milk products	5	
Liquid of onion	4	
Everything	2	

Table 6.7 Food Eaten During Diarrhea - Group B

Foods Given	Count	Reason(s)
Dalbhat	29	for cure; stops diarrhea; gives strength; stops stomach pain
Pulses	26	
Jevanjal	18	
'Roti'	9	
Green leafy vegetable	8	
Vegetable	8	
Curd	5	
'Nun-chini-pani'	3	
'Bhat ko maad'	3	
'Gahu ko fado'	2	

Table 6.7 Food Eaten During Diarrhea - Group C

Foods Given	Count	Reason(s)
Dalbhat	18	don't know to save life; to stop diarrhea; to get well soon
'Roti'	16	
Jeevan jal	15	
Pulses	12	
Green leafy vegetable	6	
Milk products	5	
Liquids	4	
'Choulani'	2	

Table 6.7 Food Not Eaten During Diarrhea - Group A

Foods Not Given	Count	Reasons
No restrictions	57	stomach irritation; worsens diarrhea
Oil/ghee	14	
Meat	10	
Hot/sour foods	10	
Potato	9	
Pulses	8	
Fried pulses	6	
'Roti'	5	
Lentil	4	
Peas	2	

Table 6.7 Food Not Eaten During Diarrhea - Group B

Foods Not Given	Count	Reasons
No restrictions	22	worsens diarrhea promotes stomach pain
Ghee/oil	6	
Meat and fish	5	
Wheat roti	2	
Hot/sour foods	2	

Table 6.7 Food Not Eaten During Diarrhea - Group C

Foods Not Given	Count	Reasons
No restrictions	26	stomach pain, worsens diarrhea harmful
Oily foods	6	
Hot/sour/bitter foods	5	
Peas	2	
Lentil	2	
Meat and fish	2	

Children's Information

A majority of mothers (41.4 percent) had two to three children in their households followed by mothers who only had one child (Table 7.1). A majority of households had 1 to 3 children.

Table 7.1 Children's Information

Total Children		
No. of children	Count	Percent
One	52	24.1
Two to three	89	41.4
Four to five	48	22.3
Six to seven	23	10.7
Eight to nine	3	1.4
Total (households)	215	99.9

Total Male Children		
No. of males	Count	Percent
One	98	54.1
Two to three	68	37.6
Four to six	14	7.7
More than six	1	0.6
Total (households)	181	100.0

Total Female Children		
No. of females	Count	Percent
One	74	44.8
Two to three	72	43.6
Four to six	18	10.9
More than six	1	0.6
Total (households)	165	99.9

Information on children's nutritional status is divided according to their age groups for this study. In order to make the results more meaningful and accurate, analysis is conducted according to age group. This method is used because analysis without reference to age will give results based on a constant standard for all ages combined, therefore disregarding the rapid physical development of children (Sinha, 1999).

A. Children Aged 0 to 5 Months Old

The sample for this survey was only able to accommodate 19 children aged 0 to 5 months.

All children aged 0 to 5 months surveyed were ***breastfed*** till date. Also, all children aged 0 to 5 months surveyed were said to have been given ***colostrum***.

The initiation period of breastfeeding varied among mothers. Around 32 percent of mothers said they started breastfeeding their children one hour after birth (Table 7.2). Around 21 percent of them said they started breastfeeding after two to three hours.

Table 7.2 Information on Children Aged 0-5 Months

Sex & Count of children		
Sex	Count	Percent
Male	8	42.1
Female	11	57.9
Total	19	100.0

Breast feeding initiation after birth		
Time (after birth)	Count	Percent
½ hour	3	15.8
1 hour	6	31.6
2 hours	2	10.5
3 hours	2	10.5
24 hours	1	5.3
48 hours	1	5.3
72 hours	3	15.8
120 hours	1	5.3
Total	19	100.0

B. Children Aged 6 to 24 Months Old:

A total of 117 children aged 6 to 24 months were covered in this survey. Information pertaining to this age group are furnished below (Table 7.3)

Almost all mothers reported that they were continually ***breastfeeding*** their children. A majority of these children (76 percent) were said to have been given ***solid foods*** at the age of 5 to 6 months.

A majority of mother gave solid foods to their children 3 ***times a day***. However, a significant percentage of mothers also said they fed their children 2 to four times a day. This perhaps depended on the availability of food in the household.

Table 7.3 Information on Children Aged 6-24 Months

Sex of children aged 6 to 24 months		
Sex	Count	Percent
Male	63	53.8
Female	54	46.2
Total	117	100.0

Length of Breast feeding		
Length in months	Count	Percent
12 months	1	0.9
18 months	2	1.7
Continuing	114	97.4
Total	117	100.0

Age Solids Food Given		
Age in months	Count	Percent
Less than 5 months	8	7.0
5 to 6 months	87	76.3
7 to 9 months	13	11.4
10 to 12 months	4	3.5
Haven't started	2	1.8
Total	114	100.0

Times Solid Food Given (in 24 hrs.)		
Times	Count	Percent
1 time	2	1.8
2 times	13	11.5
1-2 times	1	0.9
3 times	35	31.0
2-3 times	19	16.8
3-4 times	15	13.3
4 times	19	16.8
4-5 times	5	4.4
5 times or more	4	3.5
Total	113	100.0

C. Children aged 25 to 60 Months

A majority of children surveyed fell in the age category of 25 to 30 month olds. Information collected for this group is detailed below (Table 7.4).

Table 7.4 Sex & Age Distribution of Children Aged 25 to 60 months

Sex	Count	Percent
Male	75	56.4
Female	58	43.6
Total	133	100.0

Age in months	Count	Percent
25 to 30 months	38	28.6
31 to 35 months	27	20.3
36 to 40 months	14	10.5
41 to 45 months	11	8.3
46 to 50 months	17	12.8
51 to 55 months	12	9.0
56 to 60 months	14	10.5
Total	133	100.0

D. Anthropometric Measurement

Z-score classification of 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. Cut-offs based on growth reference curves developed by the National Center for Health Statistics and is recommended by WHO for international use.(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

Results show that there was a little more than 60 percent stunted (chronically malnourished) children in the area, of which nearly half were severe (Table 7.5). Results also show that nearly 70 percent of children aged 25 to 60 months were stunted. The rates of total wasted cases (acute malnutrition) were around 12 percent in the region. Close to 60 percent of all children were regarded as 'wasted and stunted', with close to 20 percent regarded as severe.

Table 7.5 Z Score Classification on Children's Nutritional Status

Age	Wasted				Stunted				Wasted & Stunted			
	Moderate		Severe		Moderate		Severe		Moderate		Severe	
	#	%	#	%	#	%	#	%	#	%	#	%
0-5 months (n=19)	0	0.0	0	0.0	6	31.6	3	15.8	3	15.8	1	5.3
6-24 months (n=117)	18	15.4	10	8.5	72	61.5	35	29.9	70	59.8	32	27.8
25-60 months (n=133)	14	10.5	2	1.5	91	68.4	41	30.8	88	66.6	20	15.0
Total (269)	32	11.9	12	4.5	169	62.8	79	29.4	161	59.9	53	19.7

Note: percentages are calculated out of respective 'n' for each age group.

MUAC Classification of Children's Nutritional Status: MUAC results show a more positive picture of the nutritional status of children compared to the Z score results. Almost 65 percent of children included in the MUAC test were nourished, and slightly more than 10 percent children were malnourished (Table 7.6). The rates of malnourished and 'probably' malnourished children were higher in younger age groups.

Table 7.6 MUAC Classification on Children's Nutritional Status

Age Groups of Children (in months)	Malnourished		Probably Malnourished		Nourished	
	Count	%	Count	%	Count	%
12-23	18	22.0	23	28.0	41	50.0
24-35	6	9.2	19	29.2	40	61.5
36-47	0	0.0	7	21.9	25	78.1
48-60	0	0.0	8	22.2	28	77.8
Total (215)	24	11.2	57	26.5	134	62.3

Note: percentages are calculated out of respective age groups.

E. Mother's Perception of their Children's Nutritional Status

A simple inquiry was included in the survey to understand mothers' perception on whether their child looked malnourished to them. Close to 40 percent of mothers felt that their children looked malnourished (Table 7.7). It should be noted that according to the MUAC results a little more than 60 percent of children are nourished.

Table 7.7 Do Mothers Feel their Children are Malnourished?

Response of Mothers	Count	Percent
Yes	47	40.2
No	70	59.8
Total	117	100.0

F. Immunization

Information on immunization was collected during the survey. Almost all mothers reported that their children were immunized with some form of vaccination (Table 7.8). When asked if mothers had an immunization card to detail the immunization received, only around 45 percent of them had it (Table 7.9).

Table 7.8 Are your children immunized?

Response	Count	Percent
Yes	203	94.0
No	13	6.0
Total	216	100.0

Table 7.9 Holder of an Immunization Card?

Response	Count	Percent
Yes	97	44.5
No	121	55.5
Total	218	100.0

Descriptive information on immunization received by children in the sample is as follows:

Types of Immunization:

- BCG: 204 children immunized; Measles: 164 children immunized
- DPT1: 197 children immunized; DPT3: 181 children immunized
- DPT2: 189 children immunized

G. Treatment Sought for Child-Related Illness

Diarrhea: Nearly half of all mothers said they would take their children to the health post for treating diarrhea. The second choice was clinic or private pharmacies cum health centers (26.6 percent) followed by hospital (14.8 percent). Referrals usually made to 'dhami/jhakri' were found uncharacteristically low in this survey (Table 7.10).

Measles: Nearly 27 percent of mothers said they would take their children to the health post to treat measles, followed by 21.8 percent whose choice was to treat the children at home (Table 7.10).

Fever: Similarly more than 40 percent of mothers said they would take their children to health posts followed by 29.6 percent whose choice was the clinic (Table 7.10).

Malnutrition: A majority of mothers (nearly 40 percent) said they would treat malnourished children at home. Interestingly, close to 12 percent said they would refer to 'dhami/jhakri' to treat malnutrition (referrals to 'dhami/jhakri' are relatively few for other diseases) (Table 7.10).

'Other' diseases: For diseases other than those listed above, a majority of mothers preferred clinic as their major choice for seeking treatment (Table 7.10).

Table 7.10 Treatment Sought for Illnesses

Treatment for Diarrhea		
Sought at	Count	Percent
Own house	26	8.8
Health post	138	46.5
Hospital	44	14.8
Clinic	79	26.6
Dhami	8	2.7
Don't know	2	0.7
Total	297	100.1

Treatment for Measles		
Sought at	Count	Percent
Own house	17	21.8
Health post	21	26.9
Hospital	16	20.5
Clinic	9	11.5
Dhami	2	2.6
Don't know	13	16.7
Total	78	100.0

Treatment for Fever		
Sought at	Count	Percent
Own house	26	9.7
Health post	112	41.9
Hospital	34	12.7
Clinic	79	29.6
Dhami	6	2.2
Don't know	6	2.2
No treatment sought	4	1.5
Total	267	99.8

Treatment for Malnutrition		
Sought at	Count	Percent
Own house	64	37.6
Health post	31	18.2
Hospital	20	11.8
Clinic	25	14.7
Dhami	20	11.8
Don't know	9	5.3
No treatment sought	1	0.6
Total	170	100.0

Treatment for "Other" Diseases		
Sought at	Count	Percent
Own house	1	14.3
Health post	2	28.6
Hospital	1	14.3
Clinic	3	42.9
Total	7	100.1

note: total respondents differ according to different illness due to no responses.

H. Reported Feeding Behavior for Children

This section analyzes feeding behavior for children (aged 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 (Brahmin, Chettris, Thakuris); group B (Magars, Gurungs); and group C (Occupational castes).

During Fever: Mothers in all three groups reported giving 'dalbhat', 'roti', milk products (also mother's milk), and pulses to children suffering from fever (Table 7.11). Mothers of all three groups generally avoided hot, sour and bitter foods, curd, buttermilk, and foods prepared in oil and ghee.

Table 7.11 Foods Given During Fever - Group A

Foods Given	Count	Reason(s)
Dalbhat	59	to get well
'Roti'	27	
Milk products	25	
Pulses	23	
Mother's milk	20	
Vegetable	15	
Hot water	8	
Green leafy vegetable	7	
Fruits	6	
Buffalo's milk	6	
'Jaulo/khichadi'	5	
'Bhat ko maad'	2	
Meat and fish	2	

Table 7.11 Foods Given During Fever - Group B

Foods Given	Count	Reason(s)
Dalbhat	26	gives strength
Vegetables	14	
Mother's milk	9	
Pulses	9	
Milk product	7	
'Bhat ko maad'	5	
Green leafy vegetable	3	
Fish and meat	3	
'Roti'	2	
Hot water	2	

Table 7.11 Foods Given During Fever - Group C

Foods Given	Count	Reason(s)
Dalbhat	13	don't know
'Roti'	10	to get well soon,
Pulses	7	gives strength
'Jaulo'	5	
Vegetable	5	
Milk products	4	
'Timor' & garile	3	
Mother's milk	3	
Hot water	2	
'Fado'	2	

Table 7.11 Foods Not Given During Fever - Group A

Foods Not Given	Count	Reasons
Hot/sour/bitter foods	37	worsens fever
No restrictions	32	
Curd & butter milk	25	
Oil/ghee	12	
Cow's milk	5	
Mungo-unripe	4	
Fish and meat	3	
Lentil	3	
Potato	2	

Table 7.11 Foods Not Given During Fever - Group B

Foods Not Given	Count	Reasons
No restrictions	23	worsens fever
Hot/sour/bitter foods	12	
Ghee/oil (foods)	10	
Tomato	4	
Curd	3	
Goat meat	2	
Cow milk	2	
Fish and meat	2	

Table 7.11 Foods Not Given During Fever - Group C

Foods Not Given	Count	Reasons
No restrictions	24	worsens fever
Hot/sour foods	15	
Curd and butter milk	5	
Ghee/oil	3	
Meat and fish	3	
Sweet foods	2	

During Diarrhea: Mothers in all three groups mentioned giving 'jeevan jal' (ORS) to children suffering from diarrhea in addition to 'dalbhat' and pulses (Table 7.12). Although many mothers did not restrict any food for their children, foods made in ghee or oil were avoided. A few mothers in group A mentioned not giving fried pulses to children suffering from diarrhea.

Table 7.12 Foods Given During Diarrhea - Group A

Foods Given	Count	Reason(s)
Jeevan Jal	46	gives vitamin; stops diarrhea; fulfills water demand
Pulses	42	
Rice	24	
Liquids (Dal,soup)	20	
Curd	17	
Green leafy vegetable	17	
Roti	12	
'Bhat ko maad/choulani'	8	
'Nun-chini-pani'	6	
Mother's milk	6	
Water	4	
Onion soup	3	
Meat	2	
Fruits	2	

Table 7.12 Foods Given During Diarrhea - Group B

Foods Given	Count	Reason(s)
Pulses	21	gives strength stops diarrhea so child survives
Dalbhat	16	
Jeevan Jal	14	
Mother's milk	5	
Liquids	5	
'Bhat ko maad'	4	
Vegetables	4	
Roti	3	
Green leafy vegetables	3	
Milk products	3	
'Gahu ko fado'	2	
Fish and meat	2	

Table 7.12 Foods Given During Diarrhea- Group C

Foods Given	Count	Reason(s)
Dalbhat	13	stops diarrhea to become well to give strength to fullfill water demand
Jeevan jal	10	
Pulses	9	
'Roti'	6	
Curd	5	
Vegetable	4	
Liquid	3	
Green leafy vegetable	3	
Water	3	
'Choulani/maad'	2	

Table 7.12 Foods Not Given During Diarrhea- Group A

Foods Not Given	Count	Reasons
No restrictions	55	worsens diarrhea
Fried pulses	17	
Oil/ghee	10	
Meat and fish	10	
Hot/bitter/sour foods	7	
Potato	3	
Milk	3	
Fruits-unripe	2	
'Roti'	2	

Table 7.12 Foods Not Given During Diarrhea - Group B

Foods Not Given	Count	Reasons
No restrictions	32	worsens diarrhea
Oily/ghee foods	4	
Lentil	4	
Meat	2	
Peas	2	
Hot/sour/bitter foods	2	

Table 7.12 Foods Not Given During Diarrhea - Group C

Foods Not Given	Count	Reasons
No restrictions	36	worsens diarrhea
Ghee/oil	3	
Lentil	3	
Meat	3	
Peas	2	
Hot/sour foods	2	

During Measles: Many mothers in all three groups didn't respond to the question about food given to children during measles, saying they had no prior experience of the disease (Table 7.13). Of those who did, 'dalbhat' and 'roti' were common among mothers of all three groups. Mothers in all three groups avoided hot and sour foods, fish and meat, and foods prepared in ghee and oil.

Table 7.13 Foods Given During Measles- Group A

Foods Given	Count	Reasons
No restrictions/no experience/immunized	78	don't know;
Rice	17	gives vitamin;
Roti	11	gives heat; to
Milk	8	survive
Dal	6	
Vegetable	5	
Black gram	5	
Horse gram	5	
Hot water	4	
Green leafy vegetable	4	
Mother's milk	2	

Table 7.13 Foods Given During Measles - Group B

Foods Given	Count	Reason(s)
Don't know/no experience	41	don't know;
Bhatdal	5	to get well soon
Barley 'roti'	2	

Table 7.13 Foods Given During Measles - Group C

Foods Given	Count	Reason(s)
Don't know/no experience	34	don't know
Dalbhat	8	to get well soon
Blackgram	4	
Barley 'pitho'	3	
Hot water	2	

Table 7.13 Foods Not Given During Measles - Group A

Foods Given	Count	Reason(s)
No restrictions	97	worsens measles;
Hot/sour/bitter foods	13	its the tradition;
Meat and fish	11	don't know
Cold foods (curd&butter milk)	10	
Oil/ghee1	8	
Green leafy vegetable	3	
Milk products	3	
Cold water	3	
Salty foods	2	

Table 7.13 Foods Not Given During Measles - Group B

Foods Not Given	Count	Reasons
Don't know/no restrictions/immunized/no disease	41	harmful, can kill
Ghee/oil	4	
Bitter/sour foods	2	
Meat and fish	2	

Table 7.13 Foods Not Given During Measles - Group C

Foods Not Given	Count	Reasons
Don't know/no restrictions/immunized /no disease	35	don't know
Oil/ghee	4	harmful, worsens
Meat and fish	3	
Hot/sour foods	3	
Salt	2	

During Protein Energy Malnutrition (PEM): 'Dalbhat', milk products, 'roti', meat and fish, and green leafy vegetables were given to children in all three groups (Table 7.14). A majority of mothers in group B said they would feed their child with 'lito' or weaning porridge (including 'Sarbottam Pitho-super porridge). A majority of mothers had no food restrictions for children suffering from PEM.

Table 7.14 Foods Given During PEM- Group A

Foods Given	Count	Reason(s)
No experience/no response	45	becomes healthy;
Dalbhat	35	gives strength; don't know
Milk products	32	
Green leafy vegetable	28	
Roti	26	
Fish and meat	19	
Pulses	17	
Vegetables	15	
Lito	14	
Sarbottam pitho	10	
Ghee	10	
Eggs	8	
Fruits	7	
Vitamin (from pharmacies)	4	
Mother's milk	3	
Horlicks	2	

Table 7.14 Foods Given During PEM - Group B

Foods Given	Count	Reason(s)
Dalbhat	18	don't know, becomes healthy; to get well; child won't eat other food; gives strength
Milk products	12	
Lito	11	
Sarbottam pitho	11	
Meat and fish	8	
Eggs	7	
Green leafy vegetables	7	
Mother's milk	4	
Pulses	3	
Honey	3	
Fruits	2	

Table 7.14 Foods Given During PEM - Group C

Foods Given	Count	Reason(s)
Don't know/no experience	13	to become well
Milk products	11	gives strength, health
Dalbhat	7	
'Roti'	7	
Meat and fish	6	
Green leafy vegetables	4	
Eggs	4	
Lito	4	
Oil/ghee	3	
Fruits	2	

Table 7.14 Foods Not Given During PEM - Group A

Foods Not Given	Count	Reasons
No restrictions/no response/no experience	120	
Hot foods/chillies	5	

Table 7.14 Foods Not Given During PEM - Group B

Foods Not Given	Count	Reasons
No restrictions	42	---

Table 7.14 Foods Not Given During PEM - Group C

Foods Not Given	Count	Reasons
Nothing	22	worsens situation
No experience	17	
Hot/sour foods	4	
Oily foods	3	

I. Foods Mothers would like to give to their Children

Many mothers said they would like to give fruits, milk products, fish, and meat to their children (Table 7.15). More mothers said they would like to give horlicks and cerelac to their children compared to home made 'lito' (porridge).

Table 7.15 Foods mother would like to give to their children

Foods	Count
Fruits	57
Milk products	50
Fish and meat	31
Green leafy vegetable	26
Horlicks, Cerelac	25
Dal Bhat, Milk-Bhat, Roti	22
Lito (corn, wheat, soybean, rice)	16
Chowchow (noodles) & Biscuits	16
Nothing	11
Eggs	11
Beans	11
Biscuits, chocolate	10
Fruits and meat and fish	10
Oil, ghee	11
Bottled vitamin	8
Lentils & Black gram	5
Honey	4
Cauliflower	2
Sarbottam Pitho	1
Total households	215

note: percentages were not calculated due to the casual and open-ended nature of the inquiry.

J. Mortality Information

A total of 118 deaths were recorded in this survey of which 52.5 percent were males. The age of 1 to 5 months seemed vulnerable for both the sexes. Detailed mortality information by age and by disease is shown in Table 7.16. The highest level of mortality, as reported by the mothers, was caused by ARI and 'other' (not mentioned or causes outside of those asked during the survey) diseases (Table 7.17).

Table 7.16 Children's Mortality Information

Age (in months)	Sex			
	Male	Percent	Female	Percent
< 1 month	14	22.6	9	16.1
1-5 months	25	40.3	16	28.6
6-12 months	14	22.6	16	28.6
13-24 months	5	8.1	6	10.7
25-60 months	4	6.5	9	16.1
Total (118 deaths)	62	52.5	56	47.5

*total percent calculated out of 118 deaths.

Table 7.17 Children's Mortality Information by Disease

Age (in months)	Cause											
	Diarrhea		Malnutrition		ARI		Measles		Stillbirth		Others	
	#*	%	#	%	#	%	#	%	#	%	#	%
< 1 month	0	0.0	0	0.0	1	3.8	0	0.0	18	100.0	3	10.0
1-5 months	2	11.8	5	41.7	16	61.5	1	12.5	0	0.0	13	43.3
6-12 months	7	41.2	3	25.0	8	30.8	3	37.5	0	0.0	7	23.3
13-24 months	4	23.5	2	16.7	0	0.0	1	12.5	0	0.0	4	13.3
25-60 months	4	23.5	2	16.7	1	3.8	3	37.5	0	0.0	3	10.0
Total (n=118)	17	14.0	12	10.2	26	22.0	8	6.8	18	15.3	30	25.4

* #=count

K. Follow-up of Malnourished Children

The DTP conducted follow-up visits for all three years on children suffering from severe malnutrition. The visits focused on two things: 1) recording and understanding children's health and nutritional status; and 2) teaching parents the importance of nutrition and health.

The Following were the areas focused on when teaching parents: breast feeding; 'sarbottam pitho'; weaning foods; feeding sick children (importance, foods, techniques); oral-rehydration solution; personal hygiene; balanced diet; nutritious local foods; kitchen garden; vitamin-A rich foods; foods for anemia; iodized salt; maternal nutritional needs.

Responses of mothers on how or when their children started suffering from malnutrition included:

- due to diarrhea and pneumonia
- started becoming weaker after 8 months of birth
- weak when born
- don't know
- lack of food
- started becoming weaker after 12 months of birth
- the family is also malnourished
- due to witchcraft
- does not like eating dalbhat
- gave birth to twins; male child is doing well, but female child is malnourished

A total of 23 severely malnourished children were followed up during the three-year period (although moderately malnourished children were referred to health workers, a couple of such cases were also followed up by DTP- such cases were usually referred by people of the community, who requested the program to take care of children they thought were severely malnourished). Only one child died during the three-year follow-up period. Records of initial follow-up visits showed 1 mildly malnourished case, 8 moderately malnourished cases, and 12 severely malnourished cases. The final records showed 2 mildly malnourished cases, 11 moderately malnourished cases, and 6 severely

malnourished cases. Records shows that 6 children progressed from severe to moderately malnourished status during the three year follow-up. The information is detailed further in Table 7.18.

Table 7.18 Nutritional Status of Severely Malnourished Children during Follow-up

No.	Initial Age	Initial Wt.	%Initial Wt.*	Initial Status	Final Age	Final Wt.	%Final Wt.**	Diff. in % wt***	Final Status****
1	25	6.1	49.6	Severe	50	10.0	60.2	10.6	Severe
2	38	9.2	62.6	Moderate	54	10.5	60.7	-1.9	Severe
3	1	3	71.4	Moderate	23	10.8	89.3	17.8	Mild
4	49	10	60.6	--	68	12.4	--	--	---
5	18	6	53.6	Severe	37	7.9	54.1	0.5	Severe
6	41	12	78.9	Mild	45	12.5	78.6	-0.3	Mild
7	19	8	70.2	Moderate	38	9.8	66.7	-3.5	Moderate
8	27	7.5	59.1	Severe	52	12.0	70.6	11.5	Moderate
9	44	9	57.3	--	69	14.0	--	-57.3	--
10	10	6	65.2	Moderate	27	8.6	67.7	2.5	Moderate
11	6	5.5	73.3	Moderate	28	8.3	64.3	-9.0	Moderate
12	55	11	62.9	Moderate	69	15.0	--	--	--
13	9	5.2	58.4	Severe	25	8.4	68.3	9.9	Moderate
14	5	2.3	32.9	Severe	21	7.4	63.2	30.4	Moderate
15	26	9.2	73.6	Moderate	49	11.5	69.7	-3.9	Moderate
16	18	7.4	66.1	Moderate	41	9.9	65.1	-0.9	Moderate
17	58	10.5	58.7	--	82	14.5	--	---	--
18	40	8	53.0	Severe	57	8.4	47.5	-5.5	Severe
19	1	2	47.6	Severe	15	7.7	72.6	25.0	Moderate
20	31	8.1	60.0	Severe	45	9.9	62.3	2.3	Moderate
21	35	7.4	52.1	Severe	40	8.7	57.6	5.5	Severe
22	16	5.1	47.2	Severe	19	6.0	52.6	5.4	Severe
23	9	5.4	60.7	Severe	11	6.0	62.5	1.8	Moderate

* % initial wt. = percent weight during initial follow-up visit;
** % final wt. = percent weight during final follow-up visit;
*** diff. in % wt.= difference between initial and final percent weight;
**** nutritional status were based on Gomez's classification of percent reference weight (Adhikari; Krantz, p.66; 1997).

A. Status of Food Shortage

This section tries to assess the food situation of the concerned VDCs.

Household food shortage: A majority of mothers reported that they faced food shortages in their households (Table 8.1). Around 40 percent reported having no food shortages.

Table 8.1 Status of Food Shortage

Response	Count	Percent
Enough	82	39.5
Not Enough	133	60.5
Total	215	100.0

Food Shortage by Months: Chairta seems to be the severest of months in terms of food shortage in households. Srawan and Bhadra followed Chaitra as other severe months (Table 8.2).

Table 8.2 Food Shortage by Months

Months	Count	Percent
Baisakh	31	23.3
Jestha	33	24.8
Asadh	44	33.1
Srawan	78	58.6
Bhadra	59	44.4
Asoj	26	19.5
Karthik	12	9.0
Mangsir	5	3.8
Push	17	12.8
Magh	38	28.6
Falgun	55	41.4
Chaitra	83	62.4
Total households	133	***

*** total percent accounts to more than hundred due to multiple responses

Food procurement during shortage: During the time of food shortage, all households reported buying (Table 8.3). Very few households borrowed food during shortage whereas a majority of farmers bought food from shops in bazaars and villages.

Table 8.3 Ways of Food Procurement & Sources for Food Procurement During Shortage

Response	Count	Percent	Source	Count	Percent
Buy	133	100.0	Village people	12	9.0
Borrow	4	3.0	Bazaar/village shop	123	92.5
Total	133	***	Work employer	1	0.8
			Total	133	***

***total percent accounts to more than hundred due to multiple responses.

B. Status of Kitchen Gardens

Close to two thirds of households in the area said they had a kitchen garden (Table 8.4). Foods grown in the gardens are detailed below.

Table 8.4 Do you have a kitchen garden?

Response	Count	Percent
Yes	157	73.0
No	58	27.0
Total	215	100.0

Foods grown in Kitchen Gardens

- Fruits: *peach, tomato, cucumber, mango, papaya, banana, lemon, , orange, guava, jambu, pears, pomegranate,*
- Green leaves: *colocasia, ,onion, spinach, rape, amaranth, mustard, coriander, swiss-chard,*
- Pulses: *beans, cowpea, bengal gram,*
- Roots/Tubers: *potato, sweet potatoes, yam, carrot,*
- Other: *chilly, capsicum, sugar-cane,*
- Vegetables: *pumpkin, cauliflower, green peas, bitter gourd, eggplant, garlic, radish, and varieties of gourd (bottle gourd, "ghiraula", "pidalu", "chichindo", and chayote).*

C. Modern Farming Techniques

Almost 95 percent of households in the sample were not using any modern farming techniques (Table 8.5). Of those handful of farmers using modern techniques, nearly half of them were using improved seeds. A majority of households (54.4 percent) grew seeds by themselves (Table 8.6). An NGO was also supplying seeds to nearly 21 percent of the households in the target VDCs.

Table 8.5 Use of Modern Farming Techniques

Response	Count	Percent
Yes	13	6.4
No	191	93.6
Total	204	100.0

Table 8.6 Types of Modern Farming

Types	Count	Percent
Irrigation	3	23.1
Improved seeds	6	46.1
Fertilizers	1	7.7
"Dyang" (ridge)	3	23.1
Total Users	13	100.0

D. Status of Iodine Content in Salt

A majority of households surveyed had very low iodine content in their salt. Only around 20 percent of them had 15 PPM or more of iodine in their household salt (Table 8.7).

Table 8.7 Iodine level in Salt

Parts per million	Count	Percent
0 PPM	72	33.5
7 PPM	97	45.1
15 PPM	36	16.7
30 PPM and more	10	4.7
Total	215	100.0

Chapter 9. FINDINGS VI (Water & Sanitation)

This section tries to understand water and sanitation issues of the 6 target VDCs of the DTP (Table 9.1).

- **Water Source:** Around half the households included in the sample indicated a public tap as their source for water followed by 40 percent who used water springs (*'mul'*).
- **Time to fetch water:** It took 15 to 30 minutes to fetch water for the majority of mothers. Around 12 percent of all households had drinking water facilities within their premises.
- **Use of toilets:** Around 80 percent of households in the sample didn't have a toilet. Also, 85 percent of the children did not use toilets for defecation.
- **Washing hands:** A majority of children washed their hands before eating and after defecation. However, it is not known whether the children washed their hands their properly.
- **Boiling water:** Less than 4 percent of households in the sample boiled their drinking water.
- **Covering food vessels:** Around half of all households didn't cover their water vessels. Eighty five percent of households covered their cooked food.

Chapter 9.1 Water & Sanitation Information

Water Source for Households

Source	Count	Percent
Own tap	17	7.9
Public tap	112	52.1
"Mul"	84	39.1
River	2	0.9
Total	215	100.0

Time taken to fetch water (in minutes)

Time (in minutes)	Count	Percent
within 5 minutes	13	6.9
between 6-10 minutes	38	20.1
between 15 to 30 minutes	96	50.8
between 40 to 50 minutes	13	6.9
between 60 to 70 minutes	26	13.8
within 120 minutes	3	1.6
Total	189	100.1

Have a toilet?

Response	Count	Percent
Yes	37	17.2
No	178	82.8
Total	215	100.0

Do children use the toilet?

Response	Count	Percent
Yes	32	14.9
No	183	85.1
Total	215	100.0

.Do children wash hands before eating?

Eating	Count	Percent
Yes	164	76.3
No	51	23.7
Total	215	100.0

Do children wash hands after defecation?

Defecation	Count	Percent
Yes	182	84.7
No	33	15.3
Total	215	100.0

Boil water in your household?

Response	Count	Percent
Yes	8	3.7
No	207	96.3
Total	215	100.0

Water Vessels usually Covered in Household ?

Response	Count	Percent
Yes	101	47.2
No	113	52.8
Total	214	100.0

Is Cooked Food usually Covered in your House?

Response	Count	Percent
Yes	181	85.0
No	32	15.0
Total	213	100.0

A. Interview with the Health Personnel

The survey supervisor conducted evaluation interviews with key health personnel at the end of the evaluation survey. The interviews give a synopsis on the overall running of DTP as seen, observed, or participated, by various health and administrative personnel of Dailekh district.

Interviewees: 2 Ward Chairman; a Ward vice-chairman; ANM; Women's development worker; VDC vice chairman; Technician (Agro research station, NARC); Sub-health post incharge; Chairman (Nepal Paropkar Sangh); Ward chairman; VDC chairman; Village worker; Clinic in charge; District Health Officer; and Assistant Mayor (Dailekh municipality).

On differences & benefits since DTP started work:

- Only 2 children in the ward are weak these days.
- 2 malnourished children survived after they were given *lito*.
- Low malnutrition related deaths in the region.
- Fewer occurrences of diseases.
- Identification of diseases linked with malnutrition.
- Lower child mortality rate in the region.
- Increase in public awareness on nutrition and health.
- The tradition of not giving water to children suffering from diarrhea disappeared.
- Mothers gained knowledge on nutrition and disease.
- The habit of feeding *'lito'* to children has started.
- Gained more information on breast feeding.
- Understood the importance of GLVs.
- Stress on kitchen garden, GLVs and fruits.
- Mothers have started kitchen gardening.
- The stress on the importance of local food.
- Learned the importance of certain local food such as 'stinging nettles'.
- The use of local resources to deal with malnutrition.
- Discouraging chowchow, biscuits and other city foods
- Learned about the importance of preserving nutrients while cooking.
- Informed on the value of local foods-legumes.
- Learned a lot about Vitamin A.
- Knowledge on balanced food.
- More involvement in hygiene and sanitation.
- Increase in use of 'packet salt'.
- Increase of 'delivery cases' in hospital.
- Increase in antenatal visits.
- Training of traditional birth attendants.
- Trainings for *'Dhami Jhakri'* are helpful.
- FCHW can provide consultation on nutrition.

- Mothers are not shy of speaking about colostrum, and care for mothers.
- Mothers are active, can give speeches on nutrition.
- The DTP is for women.
- Training and knowledge for everybody.
- Taught about things, systematically and in detail, information down to the grass roots.
- Clearly showed the difference between malnourished and nourished children-and learned about foods.
- Increase in public awareness on nutrition.
- Good training programs.
- Supervision of activities concerning nutrition in the area.
- Regular attendance in Growth Monitoring.
- GMU, and attractive posters.
- Able to discard superstitious traditional beliefs.

Negative Aspects of DTP:

- The weaknesses are of the villagers themselves; financial status needs to be better for good nutritional status.
- There are no committees made for the long-term benefits of DTP.
- Centered only in the district capital, would be better if it was based in 'ilakas'.
- Did not include agriculture and animal health; only focused on health.
- No financial incentives for health workers working in nutrition.
- Has not reached all VDCs in the district.
- Short term of program; not running the program in ward no. 2. Coordination not to its level best, maybe due to DHO's policies.
- Lack of continuity. Needs to have a support program so its learning won't be forgotten.

Suggestions for Future Programs:

- DHO should continue with mothers' trainings.
- Training female to female is effective.
- Trainings for *'Dhami Jhakri'* and mothers in wards.
- More good training for mothers (its important to tell them time and again).
- Refresher training is important.
- Training stipend is important.
- It would be better if FCHV are the forerunners of the program.
- More women's representation is needed in the VDC level.
- Increase manpower, like local female motivator, so work can be easier.
- If MCHVs can open a committee in each ward, it can evaluate (nutrition) works better.
- Would be good if VDC pay the volunteers
- Supervision, suggestions are important time after time.
- Continual feedback and supervision is important.
- Have monthly group discussions.

- Be better if everybody gets to share their experiences.
- Nutrition work should reach the village through groups.
- Should take the program down to the grass roots level.
- Continuity should be given to this program.
- 3 years is not enough-if one year is extended continuity is given.
- May be VDC can give continuity.
- It would be good if program is continued with DHO.
- Would be better if an office could be set up so contacts could be set around 2 to 3 times a month.
- Proper management of monthly Growth Monitoring Activities.
- Provide *Sarbottam Pitho* to villages, especially to poor households-soybean are not readily available in villages.
- Provide seeds for 'off-season' vegetable for better nutritional status.
- Distribute drugs for parasite disease control.
- Rehabilitation of severely malnourished children would be excellent.

B. Interview with the 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.

Program's Overall Achievements:

- A special attempt was made to make the community as well as health staff aware of nutrition skills and knowledge to change the nutritional malpractice within this given short period of time frame (i.e., different nutrition related activities for different persons of the community).
- All the health post/sub-health post in charges, VHW, MCHW (health staff) and most of the teachers, students, VDC members, 'Dhami-Jhakris', FCHVs and mothers were involved in nutrition training. The VDC training for all these groups was organized at the same time, which had a collective impact on the community (i.e. the participants from different groups communicated the same message and also advised the neighboring households).
- At the time of training, more emphasis was given to the mothers by selecting 11 mothers from one ward and thus involving 33 or more mothers in the training at a time; a participatory approach was adopted to facilitate the training and demonstration activities.
- The trained 'dhami-jhakris' were encouraged and motivated to actively participate in the community to teach parents and to treat malnourished babies with locally available balanced diets (e.g. sarbottam pitho). *One of the trained Dhami in Gamaudi VDC was requested to see one malnourished child of a schoolteacher. After observing the child, the Dhami found that the child was suffering from severe malnutrition. He advised the child's parents to prepare 'Sarbottam pitho'. The Dhami spoke 'mantras' over the food and the child had to eat it for a few days. The result after few days was obvious; the child was on the road to recovery.*

- Training for VDC members was introduced to the program for the first time; it was realized that training VDC members yielded good results for the program (in the sense of community mobilization).
- Before starting the program, there was no regular GMU, but now they are held systematically and regular GMUs are being conducted in the district.
- In the middle of the third year, DTP in charge did an informal self-evaluation. The findings and opinions of the trainees revealed that community adopted some changes in knowledge and behavior, which were:
    - exclusive breast feeding up to 5 to 6 months;
    - feeding of colostrum ;
    - consumption of green leafy vegetables at the time of pregnancy; lactation and children (0-5 years);
    - increased use of locally available foods and of sarbottam pitho;
    - concept of food during illness.
- During follow-up visits of trainees, it was found that there was a change in opinion regarding the consumption of iodized packet salt in the community, but unfortunately there was no packet salt available in Dailekh.
- A good relationship was build up with the DHO/PHO; they were very co-operative and positive towards our program strategies and activities throughout our stay in Dailekh.
- All 'followed-up' malnourished children with the exception of one who died in the initial phase due to infection.
- The participatory GMU trial using Salter scales was successfully conducted in Belaspur VDC.
- Micronutrient deficiencies are reduced in the target area.

Problem Areas and Suggestion:

- To bring changes in food habits and behaviors of a community is a challenging job. The duration (3 years) of the program, in my (DTP in charge's) opinion was too short. It should be increased.
- Manpower should be increased; it would be better if staff are kept in all target VDCs.
- A special effort (e.g. micro level studies, focus group meetings, case studies) should be made to study the behavioral changes.
- A rehabilitation facility, if possible, should be established in VDCs by choosing a common home in the VDC and a trained personnel to rehabilitate children suffering from malnutrition or in the district center.
- The concerned authority should be lobbied for the proper distribution of sufficient amount of adequately iodized and packet salt.
- The level of commitment of health workers also had a significant impact on the work of DTP. It was not uncommon to find health workers absent from their work areas.
- Mothers involvement in training should be increased and the number of training days (4-5 days, per year) or frequency of training should be increased (3-4 days/twice a year).

- Nutrition should be further promoted among 'dhami/jhakris', VDC members, and schoolteachers to bring nutritional changes.
- Selection of new VDCs should be done according to where health staff are regular and devoted to their job.
- It would be better to integrate some other programs (e.g. agriculture) with the DTP as integrated approach gives better and more fruitful results in a short period of time.

Chapter 11. FINDINGS VII (Comparison of Baseline & Evaluation Results)

A. Comparing Results from Baseline and Evaluation studies

Before the DTP was lunched in the 6 target VDCs of Dailekh district, a baseline study (Sinha, 1997) was conducted to understand various issues related to the nutritional status of mothers and children (aged 5 years and under) living in the region. The results served as a guideline for Dailekh DTP program as it worked with the community for three years.

The evaluation study, which included most of the key indicators measured during the baseline study, tries to understand whether any significant changes took place in these indicators during the period of three years. The consultant feels that observing changes in these indicators will provide a commonsensical conclusion on the significance of DTP's tenure in the region.

However, let us first analyze the characteristics of the samples in both studies to see the degree of similarity or variation between the two samples.

Caste/Ethnic Identity of Households:

The caste and ethnic makeup of households included in the evaluation and baseline survey are almost identical (Table 11.1).

Table 11.1 Caste/Ethnic Identity of Households

	Evaluation		Baseline	
Caste/Ethnicity	Count	Percent	Count	Percent
Brahmin	26	12.1	26	12.2
Chettri	82	38.1	87	40.9
Magar	36	16.7	26	12.2
Gurung	11	5.1	7	3.3
Thakuri	15	7.0	16	7.5
Occupational	45	21.0	47	22.1
Total	215	100.0	213	100.0

Age of Mothers:

The majority of mothers in the evaluation survey were aged between 25 to 29 where as the majority of mothers in the baseline survey were aged between 20 to 24 years. However, the figures are relatively similar for age groups of both the surveys (Table 11.2).

Table 11.2 Age of Mothers in Years

Age	Evaluation Survey		Baseline Survey	
	Count	Percent	Count	Percent
17-19	10	4.7	14	6.6
20-24	62	28.8	66	31.0
25-29	70	32.6	49	23.0
30-34	35	16.3	42	19.7
35-39	23	10.7	26	12.2
40-45	13	6.0	16	7.5
46-51	2	0.9	0	0.0
Total	215	100.0	213	100.0

Past Pregnancy Information of Mothers:

Analysis of baseline and evaluation information on pregnancy showed that rate of pregnancy did not change in the region (Table 11.3).

Table 11.3 Past Pregnancy Information of Mothers

No. of pregnancies	Evaluation		Baseline	
	Count	Percent	Count	Percent
One	39	18.1	35	16.4
Two to three	76	35.3	90	42.2
Four to five	55	25.6	45	21.1
Six to seven	23	10.7	24	11.3
Eight to nine	18	8.4	15	7.0
More than nine	4	1.9	4	1.9
Total	215	100.0	213	99.9

Understanding that both baseline and evaluation studies had relatively similar 'types' of mothers in samples, let us now analyze the changes observed in the key indicators during the course of three years.

B. The Key Indicators

- ***B.1. Nutritional status of mothers:***

MUAC measurement: The current nutritional status of mothers (as revealed by MUAC measurements) shows good progress. Figures have almost doubled for mothers with good nutrition and the rate of mothers with poor nutritional status has decreased by half over the period of three years (Tables 11.4 and 11.5).

Table 11.4 Nutritional Status (MUAC measurement) of Mothers (Evaluation Survey)

Total mothers	Poor (<211 mm.)		At Risk (211-235 mm.)		Good (>235 mm.)	
	Count	Percent	Count	Percent	Count	Percent
215	34	15.8	90	41.9	91	42.3

Table 11.5 Nutritional Status (MUAC measurement) of Mothers (Baseline Survey)

Total mothers	Poor (<211 mm.)		At Risk (211-235 mm.)		Good (>235 mm.)	
	Count	Percent	Count	Percent	Count	Percent
213	69	32.4	102	47.9	42	19.7

B.2. Nutritional status of children:

The nutritional status of children (in sample) was analyzed in two ways, with MUAC measurements, and Z-score tests. Results of both tests are carefully analyzed and argued in this section.

MUAC measurement:

The comparison of MUAC results shows a fairly positive picture of the nutritional status of children in the region. Although the rate of nourished children have slightly increased in all age groups, a strong increase was noticed in the group of weaning age children (aged 12 to 24 months), who are generally more susceptible to malnutrition. Figures show that well nourished children aged 12 to 24 months have doubled in a period of three years (Tables 11.6 and 11.7).

Table 11.6 Nutritional Status (MUAC measurement) of Children (Evaluation Survey)

Age Groups of Children (in months)	Malnourished		Probably Malnourished		Nourished	
	Count	%	Count	%	Count	%
12-23	18	22.0	23	28.0	41	50.0
24-35	6	9.2	19	29.2	40	61.5
36-47	0	0.0	7	21.9	25	78.1
48-60	0	0.0	8	22.2	28	77.8
Total (215)	24	11.2	57	26.5	134	62.3

Note: percentages are calculated out of respective age groups.

Table 11.7 Nutritional Status (MUAC measurement) of Children (Baseline Survey)

Age Groups of Children (in months)	Malnourished		Probably Malnourished		Nourished	
	Count	%	Count	%	Count	%
12-23	27	37.0	28	38.4	18	25.0
24-35	5	12.2	12	29.3	24	58.5
36-47	6	9.4	10	15.6	48	75.0
48-60	0	0.0	12	22.2	42	77.8
Total (232)	38	16.4	62	26.7	132	56.9

Note: percentages are calculated out of respective age groups.

Z-Score Classification of Children's Nutritional Status:

The incident of 'wasting', according to the Z-score results, actually doubled in the region (Table 11.8), aligning with the regional (Mid-Western) figure, which is 12 percent (Table 11.9). Interestingly, the case of stunting went down by around 8 percent in the region, and is close to the regional figure of 61 percent.

Table 11.8 Z-Score Classification of Children's Nutritional Status

Surveys	Wasted				Stunted				Wasted & Stunted			
	Moderate		Severe		Moderate		Severe		Moderate		Severe	
	#	%	#	%	#	%	#	%	#	%	#	%
Evaluation	32	11.9	12	4.5	169	62.8	79	29.4	161	59.9	53	19.7
Baseline	15	5.0	1	0.3	202	70.4	108	37.6	151	50.5	38	12.7

* note: The 'n' of evaluation survey is 269 and the 'n' of baseline survey is 299. '#'=count.

Table 11.9 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	62.8
Acute (wasting)	10	12	11.9

The 'Wasting'-Investigation: Although figures for both wasting and stunting are very similar to the regional figures, a caution is raised over the increase of 'wasting' cases, which was only 5 percent during the start of the DTP program. 'Wasting' occurs due to acute food shortage and/or severe diseases (ACC/SCN, January, 2000). Although no major outbreaks of severe diseases were recorded (by the program) during the three-year period of DTP, food shortage was serious as 60 percent of households faced shortages during the time of the study. It is the interest of the consultant to understand how acute food shortages in the region might have contributed to the rise in 'wasting' cases.

Who are these mothers facing acute food shortages in their households, a precursor leading to the rise of 'wasting' cases in the region? Analysis shows that a stunning 90 percent of mothers from the occupational castes experienced acute food shortages in their households compared to around 50 percent mothers with Brahmin/Chettri/Thakuri or Magar/Gurung background (Table 11.10).

Table 11.10 Food Status by Ethnic Groups

Food status	Ethnic and Caste groups					
	Brahmin/Chettris/Thakuris		Magars/Gurungs		Occupational Castes	
	Count	Percent	Count	Percent	Count	Percent
Shortage	67	54.9	25	53.2	40	90.9
No shortage	55	45.1	22	46.8	4	9.1
Total	122	100.0	47	100.0	44	100.0

This grim result of food shortage among occupational castes allied with another dismal finding; cases of 'wasting' were more prevalent among children belonging to the occupational castes than any other caste or ethnic group in the region (Table 11.11). A quarter of all children belonging to the occupational castes were 'wasted', of which 14.6 percent were severe.

Table 11.11 Occurrence of 'Wasting' by Ethnic/Caste and Age Groups

Age Groups (months)	Occupational Castes (n=48)				Magars/Gurungs (n=57)				Brahmin/Chettri/Thakuri (n=164)			
	Moderate		Severe		Moderate		Severe		Moderate		Severe	
	#	%	#	%	#	%	#	%	#	%	#	%
0-5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
6-24	8	16.7	6	12.5	1	1.8	1	1.8	9	5.5	3	1.8
26-60	4	8.3	1	2.1	2	3.5	0	0.0	8	4.9	1	0.6
Total	12	25	7	14.6	3	5.3	1	1.8	17	10.4	4	2.4

Note: percentages calculated from respective 'n'.

Occupational Castes and the Rates of Stunting: The analysis of wasting showed that the occupational castes were more susceptible to acute malnutrition than any other caste or ethnic group in the region. How does this finding hold up in the case of stunting? The answer is dismal as analysis show that two thirds of all occupational castes children were moderately stunted, of which 30 percent were severe (Table 11.12).

The analysis further showed that almost all cases of severe stunting among occupational castes children were prevalent among the weaning-age group (this was also similar in the case of 'wasting'). It should be noted that the majority of severe stunting rates for other caste/ethnic groups are prevalent among children aged 25 to 60 months old. This raises the probability that weaning practices of mothers belonging to the occupational groups were considerably worse than other caste/ethnic groups. These findings give us a definite evidence: children belonging to the occupational castes were most susceptible to malnutrition in the target VDCs.

Table 11.12 Occurrence of 'Stunting' by Ethnic/Caste and Age Groups

Age Groups (months)	Occupational Castes (n=48)				Magars/Gurungs (n=57)				Brahmin/Chettri/Thakuri (n=164)			
	Moderate		Severe		Moderate		Severe		Moderate		Severe	
	#	%	#	%	#	%	#	%	#	%	#	%
0-5	0	0.0	0	0.0	0	0.0	0	0.0	6	3.7	3	1.8
6-24	20	41.7	11	22.9	14	24.6	4	7.0	38	23.2	20	12.2
26-60	16	33.3	3	6.3	22	38.6	7	12.3	53	32.3	31	18.9
Total	36	75.0	14	29.2	36	63.2	11	19.3	97	59.2	54	32.9

C. Mortality Information of Children

The mortality rate of children aged 0 to 5 years in the area has risen slightly in between the period of three years (Table 11.13). But, mortality was high among 1 to 5 month olds (accounting for 35 percent of all deaths). The figure for this particular age group was only around 17 percent in the baseline study.

Table 11.13 Mortality Information of Children by Age

Age (in months)	**Evaluation**		**Baseline**	
	Total	Percent	Total	Percent
< 1 month	23	19.5	26	31.7
1-5 months	41	34.7	14	17.1
6-12 months	30	25.4	27	32.9
13-24 months	11	9.3	11	13.4
25-60 months	13	11.0	4	4.9
Total	118	99.9	82	100.0

D. Seeking Consultation for Various Diseases

Figures show that consultation with traditional healers for various illnesses lessened during the 3 year period. Although an insignificant numbers sought only traditional healers in baseline results (Sinha. p.51, 1997), a significant number visited both traditional healers and modern treatment centers. This, however, does not seem to be the case in the current

findings; the trend of seeking treatment at the hospital and health posts was the preferred option. This tendency was found in cases of *diarrhea and measles* (although, the number of mothers treating diarrhea cases at home with ORS and water were also significant).

The trend of seeking consultation improved considerably for treating *malnutrition*. The baseline study showed that nearly half of all mothers didn't know whom to consult if their child suffered from malnutrition. However, current findings show that the majority of mothers (nearly 40 percent) are saying that they will treat their child's malnutrition at home.

E. Iodine Content of Salt

Iodine tests showed that the level of iodine in household salt found in the evaluation survey was less. Nearly as half as many households were using salt of '0' PPM compared to households recorded in the baseline survey (Table 11.14). The current study shows that only around 5 percent of households were using salt with 30 PPM and more iodine content compared to 32 percent of households in the baseline study.

Table 11.14 Iodine Content in Salt

	Evaluation		Baseline	
Parts per million	Count	Percent	Count	Percent
0 PPM	72	33.5	32	15.0
7 PPM	97	45.1	48	22.5
15 PPM	36	16.7	65	30.5
30 PPM and more	10	4.7	68	31.9
Total	215	100.0	213	100.0

F. Status of Kitchen Garden

Figures have slightly increased of those owning kitchen gardens over the period of the two studies (Table 11.15).

Table 11.15 Do you have a kitchen garden?

	Evaluation		Baseline	
Response	Count	Percent	Count	Percent
Yes	157	73.0	136	63.8
No	58	27.0	77	36.2
Total	215	100.0	213	100.0

G. Status of Food Shortage

As reported earlier, the status of food shortage recorded during baseline and evaluation survey shows almost no variation (Table 11.16). Figures of households suffering from food shortage remained around 60 percent, showing the ever-present threat of food insecurity in the region.

It should also be noted that both surveys were conducted around the same time, evaluation around May and baseline around April, thus limiting the possibility of other influence behind the result.

Table 11.16 Status of Food Shortage

Response	Evaluation		Baseline	
	Count	Percent	Count	Percent
Shortage	133	60.5	144	67.6
No shortage	82	39.5	69	32.4
Total	215	100.0	213	100.0

H. Food Beliefs

Although similar inquiries regarding food beliefs of mothers and children were included in both the surveys, changes in food beliefs could not be justified due to qualitative nature of responses recorded in both surveys (it is hoped that the interview section will shed some light in this issue).

Chapter 12. FINDINGS VIII (Evaluation of DTP's Work)

A. Assessment of DTP Objectives

This section tries to bring out an impartial assessment of the impact of DTP in the target VDCs. Key findings of the study (which are based on survey results, baseline comparisons, interviews and annual reports) are compared to the objectives DTP had set for its work in the target VDCs. The analysis for each objective is concluded with a remark by the consultant critiquing the effort the DTP put into fulfilling its objectives.

Objective 1. To reduce severe & moderate malnutrition among children under 5 years old

- The MUAC results show that the rate of nourished children in all age groups slightly increased. Also, the rate of nourished 'weaning-age' children doubled in three years.
- Figures for 'stunting' show a slight decrease of around 8 percent in the three-year period.
- Higher rates of 'wasting' were found among children of occupational castes whose households, as the study shows, more often faced acute food shortage.
- Similarly, 75 percent of children belonging to the occupational castes suffered from moderate stunting, of which 30 percent were severe.
- The nutritional status of children in the DTP target VDCs was not any better than those residing other Mid-Western districts of Nepal.
- Record shows that 6 children progressed from severe to moderately malnourished status during the three-year follow-up.
- The number of deaths during follow-up visits of 12 severely malnourished children was limited to only one, or 8.3 percent (note: the median case-fatality rate of severely malnourished child in hospital settings despite pathophysiological and other treatment interventions is around 20 to 26 percent [Ahmed, Ali, Ullah, Choudhury, Haque, Salam, Rabbani, Suskind, and Fuchs, p.1919, 1999]).

- . Data from interview section showed that two severely malnourished children survived after they were given 'lito'.

Conclusion: It can be said that long term or chronic malnutrition (as shown by stunting) has slightly decreased in the target VDCs. The MUAC result also supports this finding; the rate of nourished children in all age groups slightly increased. Also, the rate of nourished 'weaning-age' children doubled in three years time.

The nutritional status of children in the region was skewed with higher rates of acute and chronic malnutrition among children of occupational castes whose households were facing acute food shortage. In the end, comparisons with regional figures show that the nutritional status of children in the DTP target VDCs was not any better than those residing in other Mid-Western districts of Nepal.

Follow-up visits proved to be fruitful; 6 children progressed from severe to moderate malnutrition, thus, avoiding fatal incidents. Also, mortality (which one research shows is 20 to 26 percent despite medical interventions in hospital settings) was limited to only one, certainly a significant job by the DTP.

Objective 2. To do regular growth monitoring of children under 5

- Careful recording of growth-monitoring activities are detailed in annual reports for all three years. Reports state that regular growth monitoring was held for all three years.
- Growth-monitoring proved to be a significant activity for the DTP as it provided opportunities for the mothers to keep track of their children's health and for the health workers to counsel/advise mothers 'on the spot' according to the children's health status.
- The number of children attending growth-monitoring activities decreased as the years progressed. The figures were as follows: 1st Year-2, 770 children; 2nd Year-2, 467 children; 3rd Year 1, 487 children. The DTP in charge clarified that the decrease was due to the shortage of manpower and failure of health workers to deliver reports on time. Until the second year, MCHV and FCHV were using 4 to 5 immunization centers under each sub-health posts for growth monitoring activities. However, due to shortage of personnel, the health workers ceased growth-monitoring activities in immunization centers and were only continued in sub-health posts.
- A successful participatory GMU (involving the mothers themselves to weigh, measure, and record the findings) trial using the Salter scale was done in Belaspur VDC.
- The GMU tools, registers, posters and teaching materials were left with the health workers to continue after the handover process.

Conclusion: Regular growth monitoring of children was carried out for all three years in the region. It should be said that growth-monitoring activity is probably the best setting for mothers to learn about good nutritional practices; it is like a 'perfect' classroom for

health workers to give 'hands-on' lessons on good nutritional practices, and, possibly win back or change beliefs of mothers on various nutrition related issues.

It should be noted that the turnout of mothers for growth monitoring activity decreased as (1) centers holding growth monitoring were closed due to shortage of man power; and (2) the health workers were not able deliver reports on time to the DTP.

Objective 3. To reduce and control micronutrient deficiencies in the community

- The communities learned about the importance of vitamin –A.
- During the year 1997-98, 128 pregnant and lactating mothers were assessed for these deficiencies and supplements were provided (note: the annual reports do not provide figures for other years). In cases of suspected deficiencies, nutrition education was provided emphasizing the importance of consuming locally available vitamin A and iron rich foods
- De-worming tablets were also distributed under medical supervision to some severely deficient cases.
- A total of 143 aged five years and under were suspected for vitamin A and iron deficiencies during the second year. The majority were referred to health staff for supplementation.
- Assessment for suspected micronutrient deficiencies and their referrals were also carried out for the third year.
- Trainings were provided to traditional healers and mothers on anemia, goitre.
- Micronutrient deficiencies are reduced in the area, according to the DTP in-charge.

Conclusion: From the work DTP has put into addressing micronutrient issues, a strong probability exists that micronutrient deficiencies are reduced in the region.

Objective 4. To identify nutrition problems, create awareness and motivate different groups of the community and health workers

- The majority of mothers said they could treat malnourished children at home. Previously, half the mothers did not know what to do or whom to consult if their child was suffering from malnutrition.
- Various community groups learned about local resources for combating malnutrition.
- Households owning a kitchen garden have increased by 10 percent.
- Interview reports show increased public awareness on nutrition and health.
- The DTP identified diseases linked with malnutrition.
- Nutrition related training for traditional healers proved to be fruitful. A case story provided by the DTP in charge (in the interview section) show how a traditional healer improvised on his practices with 'sarbottam pitho' for treating children suffering from malnutrition.
- The DTP provided trainings to major players of the community (health post/sub health post in charges, VHW, MCHW, FCHVs, school teachers, students, VDC members, traditional healers, and mothers participated in various training activities). The trainings were limited to one per year for each group.

- Providing nutrition training to various groups meant that coherent and uniform messages on nutrition were flowing in the different strata of the community.

Conclusion: The DTP has done a fruitful job in identifying nutrition problems of the area. The dissemination of information on nutrition, especially on utilizing locally available foods to combat malnutrition and relevant illness, is remarkable.

However, the number of training for each group was limited to only one per year, amounting to 3 trainings in 3 years. The consultant strongly feels that the number of trainings should be increased, especially for 'mother groups' and other grass roots workers. Three training seems rather inadequate; substantial changes in beliefs and behaviors take lot of time and convincing.

Objective 5. To provide proper knowledge on hygiene, sanitation and good food practices

- The evaluation study shows that around 80 percent of households didn't have a toilet.
- The majority of children washed their hands before eating and after defecation.
- Less than 4 percent of households boiled drinking water.
- Half of all households didn't cover their water vessels.
- Green leafy vegetables were given to the majority of mothers during pregnancy.
- 'Dalbhat', meat, fish, soup of omum seeds and foods made in oil/ghee were given to the majority of mothers after childbirth (this response was more or less the same in baseline results also).
- The weaning practices of mothers belonging to the occupational groups were considerably worse than other caste/ethnic groups.
- Many mothers gave liquid-foods and oral-rehydration-solution (ORS) to children suffering from diarrhea.
- The tradition of not giving water to sick children disappeared.
- The habit of feeding 'lito' to children has started.
- Mothers have come to realize the importance of locally grown foods.

Conclusion: Issues on hygiene and sanitation are far from satisfactory. However, some progress can be noticed on food practices of the community during DTP's tenure, such as consumption of green leafy vegetables by mothers and giving liquid foods to children suffering from diarrhea. But most importantly, the DTP has provided an important platform for locally grown foods; the community has realized its nutritive significance.

Objective 6. To promote exclusive breastfeeding for children aged less than 6 months

- All children aged 0 to 5 months in sample were breastfed till (note: there were only 19 children aged 0 to 5 months in sample).
- All children aged 0 to 5 months in sample were given colostrum.

- The Z-score analysis on 'wasting' showed that all children aged 0 to 5 months in the sample were well nourished. This proves that mothers in all caste/ethnic groups practiced good breast feeding.
- Mothers gained more information on breastfeeding.
- Mothers are increasingly realizing the importance of exclusive breastfeeding for up to 5 to 6 months.
- Mothers have understood the importance of feeding colostrum to their newborns.

Conclusion: Although the survey shows that all children aged less than 5 months were exclusively breastfed, the consultant is little hesitant to say that such is the case for the entire population of 0 to 5 month olds in the region. A sample of 19 children is not representative of the larger population. However, other sources show that mothers in the area are increasingly realizing the importance of exclusive breastfeeding along with feeding colostrum to their children.

B. Other Findings

B.1. Nutritional & Health Status of Mothers:

- Figures have just about doubled for mothers with good nutrition and rate of mothers with poor nutritional status has decreased by half.
- The Body Mass Index (BMI) of mothers shows that an overwhelming percentage of mothers were probably well nourished in the region.
- Two thirds of mothers reported that they did not have antenatal check-up.
- Nearly 30 percent of mothers admitted to smoking during pregnancy.
- Nearly 20 percent of mothers said they had nobody attending them during delivery.
- Around 19 percent of mothers had still birth incident in the target VDCs.
- The DTP provided a good platform for mothers to become aware of their health and nutritional status (They are not shy of speaking about colostrum, and other care issues. They can give speeches on nutrition).

Conclusion: Various analysis show that the nutritional status of mothers has definitely improved during DTP's intervention in the area. However, much is left to be done about mothers' low turn out for antenatal check-ups, smoking cigarettes during pregnancy, lack of attendants during delivery and the significant rate of still-birth incidents in the region.

B.2. Health Information of Children

- Almost all mothers said that their children were immunized with some form of vaccination.
- Seeking treatment at the hospital and health posts was preferred more than with traditional healers.

Conclusion: The study shows that mothers are increasingly realizing the importance of modern health treatments.

B.3. Household information

- The level of iodine is significantly less in household salt than what it was three years ago.
- Although there were positive changes in opinions regarding consumption of iodized packet salt, Dailekh saw less and less availability of packet salt in the market.
- Almost 95 percent of households in sample were not using any modern farming techniques.
- The status of food shortage (at the time of evaluation survey) was as severe as it was during the time of baseline survey.

Conclusion: The low level of iodine in salt used by households in the area is very alarming. The DTP should request concerned persons to do something about re-supplying packet salt (iodized) in the region. Also, it is unfortunate that modern agriculture was not adopted in the region.

B.4. Mortality information

- The mortality rate of children aged 0 to 5 years in the area has risen a bit. However, the increase is not significant.

Conclusion: The mortality rate of children aged 0 to 5 years remained more or less as it was three years ago.

Chapter 12. CONCLUSION

A. Reflections of the Survey Supervisor

The survey was smoothly conducted within the period of 15th to 20th Jestha, 2057. All measurements were carried out using high standard due to the use of good instruments (especially weight measurements, which were done in Unicef's digital scale). Some confusion was raised in the questionnaire due to simple mistakes (such as typos, and wording of sentences). Some children who cried while placing them in Salter scales were weighed on Unicef's digital scale. Some mothers were a 'bit hesitant' in answering questions probably due to unknown persons in the survey team.

Problems Encountered:

- Conducting survey during monsoon season made things harder (especially in terms of walking around the VDCs).
- A lack of rapport was seen between mothers and members of the survey team who were unknown to community.
- The survey team was engaged full time from 7 am to 7 p.m. (due to time constraints).
- Measuring the height of younger children (who could not stand up) was challenging.

Observations of Target VDCs:

- Illiteracy and lack of health education and facilities are probably the main reason behind malnutrition in the area.
- There was low immunization coverage in certain places: Bindyabasini 1, Belaspur 5.
- There were 'good' kitchen gardens in Bindyabasini 5,6,7,8; Belaspur 6, Kalbhairab 5,9; and Belpata 2.
- Agricultural products (wheat, corn, beans, tomato) were completely destroyed in Bindyabasini 5,6 due to heavy rainfall and hail.
- Belaspur 6, Bindyabasini 7,8, and Chualaa village of Gamaudi looked clean.
- Belaspur 5, Bindyabasini 2, and Kalbhairab 1 looked dirty.
- Bhuka (4,5) of Kalbhairab, Chuala of Gamaudi were good in all respects.
- A lot of NGO and INGOs (IDE, ADB, NEWA, Helvetas, BBL, Sappros Nepal, IDP, Nepal Paropkar Sangh, Samaj Sudhar Society) were working in Dailekh district. The majority of such organizations were working in Kalbhairab among all 6 VDCs. Sapros were providing vegetable seeds in Kalbhairab, and Bindyabasini.
- The community of Lakuri 1 and 6 were suffering from diarrhea at the time of the survey. Mothers were providing water to their children during diarrhea.

B. On Adequacy and Effectiveness: Consultant's Suggestions for DTP

After evaluating the efforts of the DTP in fulfilling its objectives, the consultant proposes that the program review some vital issues brought up in the study, so as to produce better results in the future. These issues are discussed below in accordance to the framework of evaluation components presented by the WHO (1981).

On Adequacy

- Although the rate of chronic malnutrition decreased by a slightly, the rate of acute 'wasting' malnutrition increased in the DTP target VDCs. We have already seen that wasting is caused by acute food shortage, as such in the case of children of the occupational caste, whose houses were facing rampant food shortages. These findings clearly show us that strategies on reducing malnutrition are inadequate if food security, especially of marginalized caste and ethnic groups, is not properly 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 coordination with the district agricultural services. Also, establishing relations with existing integrated development programs and agricultural experts of UMN could be beneficial. Further, the evaluation survey supervisor suggested that illiteracy and lack of health services could be contributing to the poor nutrition status of the children. This assumption also points to the fact that malnutrition is not caused by a single factor- there are various inter-woven factors contributing to the situation. Thus, an 'integrated approach' towards combating malnutrition is probably the best way forward.
- The DTP has done a remarkable job in providing nutrition related trainings to various groups in the target community; among other things, the community has learned the significance of locally grown foods. However, efforts could yield even more results if the program prioritizes trainings according to groups that need it the most. In our case, the choice is obviously the mother groups; also perhaps the grass roots volunteer groups. As discussed earlier, 3 training sessions are not adequate to bring significant results; the program is advised to include more training sessions and activities for mothers.
- It would be fruitful if the program could find ways to attain maximum returns from DTP-trained health workers. There is a need for the program to be more creative in having the health workers cover some of DTP's work, which as the DTP in charge said was suffering from lack of manpower.

On Effectiveness

- Strategies for reducing malnutrition in the area can only be effective if the program gives special attention to the marginalized mothers and children of the community. The study shows that rates of acute and chronic malnutrition were highest among children of the occupational castes. The study also shows that weaning practices of mothers in such caste groups were below par compared to mothers of other

caste or ethnic groups. It is imperative that the program finds out who the 'poorest of the poor' are and devise its program according to their needs.

- The study shows that the DTP communicated with mothers mostly through training and growth monitoring activities. Communication during growth monitoring activities can be effective provided the health workers eagerly work with the mothers. However, information communicated during training sessions may not have a sustainable impact since they were held only once a year. Therefore, the program is advised to adopt a rather direct and a systematic method of communication among mothers in the community. For example, a DTP 'mothers group' could be formed in each ward or in groups of wards (also suggested by the DTP in charge). A set of facilitators could be selected from each group who could receive intense training on nutrition from the DTP. These facilitators (who could also be a FCHV since their prior background on health can be an advantage) could then go to their groups and hold regular activities on nutrition, supervised frequently by the DTP. A 'participatory' group of this kind could operate as a systematic and an effective mode of communication for the DTP. In this way the coverage of mothers will be larger, covering all wards of the VDCs. But most importantly, the mothers themselves will be trained and 'qualified', instead of health workers, the 'middle men' in the equation, who unfortunately are often at the risk of frequent transfers and low work-commitment. The DTP, in this way can produce a sustainable program, leaving behind a group of capable mothers who could carry on safeguarding the health of young children. (Note: it is good to know that the program is adopting similar communication methods in its newer programs).
- Growth monitoring activities were limited in the third year as the program faced shortage of manpower. The DTP in charge also cited that shortage of personnel limited outputs the program hoped to achieve. The consultant strongly feels that activities of the DTP could be more effective if the program first understands the type coverage it wants to have with its activities. Secondly, holding activities without proper regards to the type of attendants (e.g. the social status of the participants) is irrelevant. For example, if growth-monitoring activities are held exclusively within the upper-class communities, the chances are that marginalized mothers will not attend. Or, if activities are held in the Bazaar area, the chances are that only those mothers residing around the area will attend. Therefore, the program needs to clarify (not just in writings) which group it wants to prioritize and to what scale. If this is not properly accounted, the program can be vulnerable in producing biased results and partial program coverage. Also, the program may only be serving the needs of the reasonably well-off mothers compared to those disadvantaged mothers who need DTP the most.
- The hygiene and sanitation issues were far from satisfactory in the target VDCs. More effort than usual is necessary if the DTP wants to see changes in hygiene and sanitation of the community.
- Although the 'annual reports' provided some useful insight on the work of the DTP, the consultant feels that the reports could be more effective if they have a clear objective (i.e. which areas to focus, what to observe, and what to present). It

was seen that the DTP's annual reports had more leverage on 'events'. Reporting of this kind limits the readers on the insights of the program or a situation. It would be beneficial if the annual reports focused more on actions, knowledge and behavioral issues related to nutrition and DTP's work.

C. Evaluation of the Evaluation

This study tries to understand the work of the DTP in the 6 target VDCs of Dailekh district. The DTP's work was analyzed through the analysis of survey and interview data, which were derived from the mothers and health workers of the district. These data were compared with the results of Dailekh baseline study, which provided a clear picture of the achievements of the DTP.

There were several issues in this study that need to be acknowledged since they may have influenced the outcome of the study.

- The section on 'food beliefs' turned out to be repetitive and tedious for the mothers. The survey supervisor noted that mothers and even survey interviewers were losing interest, as inquiry on this section was too long and dull.
- Due to the unavailability of iodized salt, households resorted back to their traditional low iodized 'dhikaa' salt. Thus, findings on households using such salt do not necessarily mean that they were unaware of its disadvantages; it could also mean that iodized salt was simply not available.
- During the third year of the DTP's tenure, security issues in the communities were heightened as political activities increased in the area. The DTP in charge said this affected the regular flow of work during the third year.
- The consultant was not able to participate in the survey team that collected data for this study. Thus, it is obvious that the consultant was limited on first-hand information of the target area, which are normally noticed, collected or even investigated during the time of a survey.

Final Remarks

It is indeed praiseworthy that the UMN nutrition program is reaching out to remote districts like Dailekh where the health and overall well-being of the communities are in a miserable state. The effort made by the DTP in the 6 VDCs in such a short period of time and with few staff is commendable.

Although this study tries to evaluate the work of DTP in the region, the consultant thinks that concerned persons reading this report should not just be preoccupied with the 'technicalities' of the program. It is more important to focus on how the learning of three years is going to be sustained in the community, in the absence of the DTP. Were these learning significant for equipping the mothers to deal with any nutrition-related issues on their own? If so, that will be the biggest contribution of the program to the community as well as its biggest achievement.

According to the findings, the consultant thinks that activities such as growth monitoring, work on micronutrients, identification of nutrition problems, dissemination of information on major aspects of nutrition, utilization of locally available foods, and awareness on nutrition-related illnesses along with the improvement of mothers nutritional status are valuable contributions of the program to the community. Learning in these areas will definitely help the community to strive for better nutritional practices despite the absence of the DTP.

However, all of these achievements hang on a tight rope, especially for the households of the occupational castes, as the issue of food security can tilt the balance in any direction.

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APPENDIX

Appendix 1.1 The Survey Form

फाराम नं. .....

अन्तरवार्ता लिने व्यक्ति .....

पोषण सर्वेक्षण

गा.वि.स. ..... [ ] वार्ड नं. .....[ ] गाउँ .....[ ]

घरमुलीको नाम .....[ ] घरमुलीको पेशा ..... [ ]

घरमा रहने जम्मा सदश्यहरु ..... [ ] खेतबारी (बिगामा) ..... [ ]

घरको मुख्य आम्दानी.....[ ] थप आम्दानी .....[ ]

घरमुली दैलेख बाहिर काम गर्नु हुन्छ / हुदैन। [ ] गर्नुहुन्छ भने वर्षको कति महिना [ ]

आमाको नाम .....[ ] उमेर ..... [ ] पेशा ..... [ ] शिक्षा ..... [ ]

आयोडिनको मात्रा (ppm) ० ७ १५ ३० ५० [ ]

आमाको स्वास्थ्य र पोषण स्थिति

हालसम्म कति चोटी गर्भवती हुनुभयो? केटा ..... [ ] केटी ..... [ ] गर्भ तुहेको .... [ ]

बाँचेका बच्चाको संख्या: केटा ..... [ ] केटी ..... [ ]

आमाको पाखुराको नाप (MUAC mm) ..... [ ]

आमाको उचाई/तौल: तौल: ..... (के.जी.) [ ] उचाई: ..... (मि.) [ ] बि.एम.आई. .....[ ]

पहिलो गर्भवती हुँदाको उमेर: ..... (वर्ष) [ ]

तपाईले हालैको गर्भवती अवस्थामा धुम्रपान गर्नु भएको थियो / थिएन? [ ]

तपाई हालैको गर्भवती अवस्थामा रक्सी जाँड पिउनु भएको थियो / थिएन? [ ]

खोप

१. तपाईको बच्चाको खोप कार्ड छ / छैन। [ ]

२. खोप अहिलेसम्म बच्चालाई लगाउदै / लगाइसकेको छ? छ / छैन। [ ]

३. कार्ड देखाएको खण्डमा वा निश्चित भएमा कुन/कुन खोप लगाएको छ? (✓) चिन्ह लगाउनुहोस।

BCG / DPT1, 2, 3 / OPV1, 2, 3 / measles) [ ][ ]

तालिम प्राप्त सुडेनीद्वारा सूपरिवेक्षण

१. बच्चा जन्मिने बेला को/को कोठामा हुनुहुन्थ्यो? (उत्तरमा गोलो लगाउने)

तालिम प्राप्त सुडेनी / FCHV / MCHV / छिमेकी/आफन्त / अन्य /

तालिम प्राप्त नगरेका सुडेनी / अरु ..... [ ][ ]

२. तपाई गर्भवती हुँदा HP/SHP/HC मा जँचाउन जानुभयो / जानु भएन। [ ][ ]

खानाको अवस्था:

तपाईको परिवारलाई आफ्नै कमाई र खेतीबारीबाट वर्षभरि खान पुग्दछ? पुग्छ / पुग्दैन। [ ]
यदि पुग्दैन भने कुन कुन महिना पुग्दैन? (नपुग महिनामा (✓) लगाउने।) [ ]

महिना	बैशाख	जेष्ठ	असार	श्रावण	भाद्र	असोज
	कार्तिक	मंसिर	पौष	माघ	फागुण	चैत्र

यी महिनाहरुमा खाना कसरी पुऱ्याउनु हुन्छ?
किन्ने ..... [ ] के के खाना .....।..... [ ] कहाँबाट ..... [ ]
सापटी ..... [ ] के के खाना ..... [ ] कहाँबाट ..... [ ]

खानपान सम्बन्धी व्यवहार:

१. ०-५ महिना उमेरका बच्चाको आमाहरु:

बच्चाको क्रमाङ्क	लिङ्ग	उमेर	स्तनपान गराइएको/ नगराइएको	जन्मेको कतिपछि स्तनपान गराइएको	बिगौती/खोटी खुवाइएको/ नखुवाइएको	यदि नखुवाइएको भए, कहिलेसम्म वा कति नखुवाइएको		आमाको दूध बाहेक अरु कुरा बच्चालाई कहिले खुवाउनु भयो?
						कहिलेसम्म	कति	
१.								
२.								

२. ६-२४ महिना उमेरका बच्चाको आमाहरु:

बच्चाको क्रमाङ्क	लिङ्ग	उमेर	कति उमेर-सम्म स्तनपान गराइएको	थप खाना खुवाउन शुरु गरेको उमेर	एक वर्ष मुनिका बच्चा मात्र		एक वर्ष माथिका बच्चा मात्र		तपाईको बच्चा कुपोषित देखिन्छ?
					दिनमा कति पटक / के के खुवाउनु हुन्छ?		दिनमा कति पटक / के के खुवाउनु हुन्छ?		
३.									
४.									
५.									

३. पाइएको खण्डमा कुन खानेकुरा आफ्नो बच्चालाई खुवाउन चाहनु हुन्छ?

बच्चाको पोषण स्थिति (५ वर्ष मुनिका बच्चा)

बच्चाको नाम	उमेर (महिना)	लिङ्ग	उचाई (से.मी.)	तौल (के.जी.)	पाखुराको नाप
१.					
२.					
३.					
४.					
५.					

पानी / सरसफाइ र वातावरणीय स्थिति:

खानेपानी

१. तपाईको परिवारको लागि खानेपानीको मुख्य श्रोत कुन हो? [ ]
आफ्नै धारा ..... सार्वजनिक धारा ..... इनार/कुवा/मूल .....
पोखरी/खोला/नदी/ताल ..... अरु (विवरण दिनुहोस्) .....

२. पानी लिन जान / आउन कति समय लाग्छ? [ ]
घण्टा ..... मिनेट ..... आँगनमै (पानी) छ ..... थाहा छैन .....

चर्पीको प्रयोग

१. तपाईको परिवारको आफ्नै चर्पी छ? छ / छैन [ ]
२. बच्चाहरुले चर्पीको प्रयोग गर्छन् कि गर्दैनन्? गर्छन् / गर्दैनन् [ ]
३. बच्चाहरुले खाना खान अघि हात धुन्छन् कि धुदैनन्? धुन्छन् / धुदैनन् [ ]
४. बच्चाहरुले दिसा गरेपछि हात धुन्छन् कि धुदैनन्? धुन्छन् / धुदैनन [ ]

खानेकुराको सुरक्षा (सम्भव भएमा अवलोकन गर्नुहोस्)

१. तपाईको परिवारका सदश्यहरुले पानीको भाँडा प्रायजसो छोपेर राख्ने गर्छन् कि गर्दैनन्?
गर्छन्/ गर्दैनन [ ]
२. तपाईको परिवारका सदश्यहरुले पाकिसकेको खानेकुरा प्रायजसो छोपेर राख्ने गर्छन् कि गर्दैनन्?
गर्छन् / गर्दैनन् [ ]
३. तपाईको परिवारले खानेपानी उमाल्नु हुन्छ कि हुदैन? उमालिन्छ / उमालिदैन [ ]

बाल मृत्यु-दरको जानकारी

संख्या	उमेर	लिङ्ग	मृत्युको कारण (हरु)	संकेत (कोड)
१.			१. ..... [ ]	क= झाडा-पखाला
२.			२. ..... [ ]	ख= कुपोषण
३.			३. ..... [ ]	ग= ARI (निमोनिया)
४.			४. ..... [ ]	घ= दादुरा
५.			५. ..... [ ]	ङ= मरेको बच्चा जन्मेको
६.			६. ..... [ ]	च= अरु (विवरण दिनुहोस)

करेसाबारी तथा गाईबस्तु

तपाईको करेसाबारी छ? छ / छैन (अवलोकन गर्नुहोस्।) [ ]

यदि छ भने, करेसाबारीमा के के / कहिले उमार्नुहुन्छ? बै..... [ ] जे.....[ ] अ.....[ ]

श्रा.....[ ] भा ..... [ ] अ.....[ ] का.....[ ] मं.....[ ]

पौ.....[ ] मा..... [ ] फा.....[ ] चै.....[ ]

बिउहरु कहाँबाट ल्याउनु हुन्छ? ..... [ ]

तपाई आफ्नो बारीमा आधुनिक खेती प्रणाली (जस्तै: .....) प्रयोग गर्नुहुन्छ?

गरिन्छ / गरिदैन। गर्नुहुन्छ भने के के?..... [ ][ ]

जम्मा पाल्तु जनावर ..... [ ] [ ] (भेंडा ..... [ ] गाई/गोरु ..... [ ] बाख्रा .....[ ]

कुखुरा ..... [ ] घोडा ..... [ ])

रोगहरुको उपचार:

रोग	उपचारको निम्ति कहाँ लैजानुभयो?			कस्तो उपचार पाउनुभयो?
झाडापखाला				
दादुरा				
ज्वरो/रुघा/खोकी				
कुपोषण				
अन्य				

जिल्ला पोषण तालिम कार्यक्रममा भाग लिनु भएको हो?

हो	होइन

कस्तो कार्यक्रममा भाग लिएको हो? .....

खानेकुरा सम्बन्धी धारणा र चलनहरु:

आमाको फाराम:

गर्भावस्थामा

खान दिइने .....

कारण .....

खान नदिइने .....

कारण .....

सुत्केरी अवस्थामा

खान दिइने .....

कारण .....

खान नदिइने .....

कारण .....

ज्वरो आउँदा

खान दिइने .....

कारण .....

खान नदिइने .....

कारण .....

झाडापखाला लाग्दा

खान दिइने .....

कारण .....

खान नदिइने .....

कारण .....

बच्चाको फाराम:

ज्वरो आउँदा

खान दिइने .....

कारण .....

खान नदिइने .....

कारण .....

झाडापखाला लाग्दा

खान दिइने .....

कारण .....

खान नदिइने .....

कारण .....

दादुरा आउँदा

खान दिइने .....

कारण .....

खान नदिइने .....

कारण .....

कुपोषण भएमा

खान दिइने .....

कारण .....

खान नदिइने .....

कारण .....

APPENDIX 1.2

Interview Tool (Interview with the Health Workers)

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

Name....., Rank....., Institution.....,

Address.....,

1) What benefits have you felt since the DTP started its work in the area?
2) What type of problems or difficulties did you notice in the DTP's work?
3) What types of suggestion can you give to the DTP for its future endeavors?