REPORT 3

Strategies for improved fodder production in the dry season in the mid-hills of Nepal, using participatory research techniques.
Project code: R6994 A0721

Second joint field work to cross-check bimonthly survey findings, discuss species performance with farmers and follow-up activities and reporting with local NGOs
2nd November to 12th November 1998.
VS 5142

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ACKNOWLEDGEMENTS
Funding for this project is provided by the DFID Renewable Natural Resources Research Strategy through the Livestock Production Programme.

LIST OF ABBREVIATIONS

BE	British Embassy
CBO	Community Based Organisation
DFID	Department for International Development
FORESC	Forest Research and Survey Centre
FUG	Forest User Group
HARP	Hillside Agricultural Research Programme
HMGN	His Majesty's Government of Nepal
LAC	Lumle Agricultural Centre
LPP	Livestock Production Programme
NACRMP	Nepal-Australian Community Resource Management Project
NAF	Nepal Agroforestry Foundation
NRI	Natural Resources Institute
NRMP	Natural Resources Management Project
NUKCFP	Nepal-UK Community Forestry Project
PAC	Pakhribas Agricultural Centre
RNRRS	Renewable Natural Resources Research Strategy
SEADD	South East Asia Development Division
VDC	Village Development Committee
WN	World Neighbours

GLOSSARY OF NEPALI TERMS

Nepali	Definition
Bari	Rainfed land, that receives no additional water.
Bhari	One back-load of material
Gharbari	Land close to the household
Kharbari	Rainfed land unsuited to crop growing that is used to grow thatching grass.
Khet	Land that is bunded and receives some additional water during the dry season. Supports two, or three crops per year
Khoriya	Land under shifting, or non-permanent cultivation (status of some kharbari land)
Kusauro	legume residues
Mana	0.5 litres
Nal	millet straw
Pakho bari	Sloping, rainfed land
Ropani	0.05 (one twentieth) of a hectare

Summary
This report covers the second joint field work in Nepal for the project "Strategies for the improved production of fodder during the dry season, using participatory research techniques". The project is funded by the Department for International Development (DFID), Renewable Natural Resources Research Strategy (RNRRS) through the Livestock Production Program (LPP).

The purpose of the visit was to conduct the second joint field visits with collaborators from NRI, NAF and FORESC. The objectives of these field visits were to cross-check bimonthly survey findings, discuss species performance with farmers and follow-up activities and reporting with local NGOs.

The joint field work was successfully conducted and cross-checking of bimonthly data collected, completed. Some discussion of species performance was conducted, though this was limited due to time constraints in some villages. Discussions were held with local NGOs and a number of action points agreed (see below).

Excellent progress has been made by both NAF and FORESC in carrying-out the bimonthly surveys and entering this data into the agreed excel formats. The two organisations have instituted systems for cross-checking the data and this has been completed for data up to and including survey 4 which was conducted in September. The research team developed macros during the visit to graphically express data for the different types of fodder collected and farmers' estimates of fodder deficits (see graphs in appendix 2). These graphs were taken to the field and checked as far as possible with farmers. Particularly unusual patterns were investigated and in most cases explanations readily supplied by farmers. A few instances of incomplete understanding of terms used by the researchers were uncovered and these areas were clarified during the visits.

A new research co-ordinator, Bishwa Nath Regmi has been appointed by NAF. The previously assigned co-ordinator, Ramji Neupane, was unable to successfully combine co-ordination of the research project with conducting the research component of a PhD registered with Los Banos University in the Philippines.

Objectives of visit:
1. Review the draft literature review and agree final format for publication

2. Discuss the findings from the one-off survey data and bimonthly survey. Agree the format for analysis, how this will be conducted and who will be responsible.

3. Review entry of survey data into excel format

4. Clarify individual financial points with collaborators and ensure both collaborators have and understand required format.

5. Visit the field sites to discuss activities with farmers' groups and NGOs, and follow-up on points from one-off and bimonthly surveys.

6. Discussions with World Neighbours Regional Representative (Tom Arens)

Strategies for improved fodder production during the dry season using participatory research techniques.

Background

The research project is funded, from September 1997 for 3 years, under the Livestock Production Programme of the Renewable Natural Resources Research strategy of the Department for International Development. The project aims to develop improved strategies for the use and production of fodder resources in the mid-hills of Nepal, in close collaboration with farm households with different livestock and resource holdings. Research findings will map fodder use within household farming systems and indicate relative importance of off- and on-farm resources in terms of quantity of fodder, nutritional composition and seasonal availability in supporting livestock production.

The project will also consider the impacts of community forestry initiatives on the immediate and longer-term availability of on- and off-farm fodder resources. In particular it will look at impact on management practices on private agricultural land, specifically livestock management. This will contribute to the development of integrated management strategies for the improved use and production of fodder resources for improved livestock and overall farm productivity.

Institutional set-up

The project involves collaboration between NRI and two Nepali institutions. Within Nepal, the project is being conducted in collaboration with the Forest Research and Survey Centre, (FORESC) and the Nepal Agroforestry Foundation (NAF), a local NGO. NAF's involvement with forest users' groups (FUGs) is largely in support of the Nepal-Australian Resource Management Project, (NARMP). NARMP was fully informed of intended project activities during the first visit and expressed interest and support for such activities in their project areas (Kavre and Sindupalchok Districts).

Methodology of approach

The research is being conducted along side the standard agroforestry extension activities of NAF. These are implemented with the support of local NGO/ CBOs, which are able to provide more regular and locally specific support to the farmers' group activities and development. The external support for extension activities is designed to be phased-out after three years, and the agroforestry and savings group to be self-sufficient after this time. Support for the development of further groups in the area, if requested, is provided by encouraging members of the original group to act as trainers.

Progress with visit objectives

1. Review the draft literature review and agree final format for publication

Comments were made by both collaborating institutions on the literature review and a format for publication agreed. NRI to synthesise comments and publish by end of February 1999. (Delayed due to delay in extra funding release)

2. Discuss the findings from the one-off survey data and bimonthly survey. Agree the format for analysis, how this will be conducted and who will be responsible.

Discussions and cross checking of the one-off survey conducted during the field work indicated that while data collected in some research sites appeared accurate, in others questions had not been fully understood, or information not held by those interviewed. It was

decided to conduct the survey again, using collaborating NGOs as the interviewers. Survey will be translated and NGOs briefed on the activity at the 31st December meeting.

Initial findings from the bimonthly survey on fodder type use and perceived deficits from the first four surveys was cross-checked with farmers at the five research sites. Reasons for unusual recordings were explored and, in general, triangulation found the data to be reliable. A notable exception was in the reporting of deficits by several farmers at Ange. It was found that the way of expressing the question by some field workers had been different from others. This has now been standardised. The initial summary of findings from bimonthly surveys 2 and 4 produced by FORESC was considered useful by all. A standardised format has been agreed for both NAF and FORESC to follow in summarising results from each survey.

3. Review entry of survey data into excel format

Methods for cross-checking data entry, entering blank values and entering ranked data were discussed and systems to follow agreed. The current cross checking conducted by NAF and FORESC was found to be very thorough and did not require revision.

4. Clarify financial reporting

Reporting by FORESC in the last quarter followed the suggested format and was both clear and accurate. Reporting by NAF was clear up until the third quarter. The recent loss of their accountant (suicide) has understandably caused delays in accounting. These will be sorted out within the next month.

5. Visit to field sites to discuss activities with farmers' groups and NGOs, and follow-up on points from one-off and bimonthly surveys.

All five research sites were visited and questions raised by findings from the first four surveys discussed with the facilitating NGO, individual farmers and the farmers' group, as relevant. Follow-up by NGOs in the previous year had not been very thorough. Despite two briefing meetings held in Kathmandu, NGO field workers were unclear about the exact nature of support required and the need to report activities within the village. Contributing to this problem was the attendance at the Kathmandu meetings by executive, rather than field staff, and greater focus being given by NAF to written contracts, rather than explaining the objectives of the project. A more detailed briefing, specifically for field staff, will be given on the 31st December, and the representatives assisted in constructing yearly work plans outlining specific activities to be undertaken and their timing.

6. Meeting with Tom Arens, World Neighbours Regional Representative

Although World Neighbours no longer provides funds for Nepal Agroforestry Federation activities, they are still active in reproductive health and primary health care projects in the areas in which the project works. They are the main funders of two of the NGOs with which the project works. Liaison is maintained to ensure that work schedules and funding streams do not interfere with, or undermine others' programmes.

Meeting with Steve Hunt, Team Leader NARMP

The focus of the NARMP has shifted somewhat over the last 6 months from facilitation of community development, to improving natural resource management. A reduced emphasis on the grant-aid programme and greater emphasis on the provision of seed grants accompany this shift to kick-start self-supporting income-generation projects. The project has further focussed activities to 9 sites, which now do not include the areas in Kavre and Sindupalchok

where this research project is active. Requests from FUGs outside of these 9 focus sites may still be considered so long as they follow the prescribed format (copy with NAF). Increased activity by Maoist terrorist groups in the area is becoming of increasing concern.

7. Defining the work programme of the project for the next year and setting corresponding budgets for planned activities.

Activities to be undertaken in the next year were discussed and agreed with collaborators. Together we drew up an activities schedule with approximate timings (see appendix 3). A further meeting between NAF and FORESC in the first week of December will set dates and finalise co-ordination of activities.

Action points agreed with collaborators

1. Complete species list from literature review with Latin names and send via e-mail to NRI by 15th December***. S M Amatya***

2. Incorporate comments and additional information from NAF, FORESC and NRI into literature review and produce final version by end of February 1999. ***L Kiff*** (Delayed by delay in release of additional funding)

3. Add species survival data to August trek report containing seedling production and plantation records and e-mail to NRI by 15th December. ***R Chhetri and B Vickers***

4. Send electronic copies of updated household lists, updated fodder use and deficit charts to NRI by 15th December. ***B Vickers***

5. Report on fieldwork conducted during the 5th survey, agreed activities and budgets for the next year to be produced by 31st December. ***Liz Kiff*** (delayed by late arrival of information from Nepal)

6. Leaflet outlining activities of the project to be produced. Specifically this will explain the purpose of the project, selection of research sites and process of working with representative households from different resource base groups within each research site. Subsequent extension to households within the whole village should also be stressed. ***S M Amatya to produce draft by 15th December and send to NAF and NRI (translation please) for discussion. Comments back to FORESC by 30th January. Aim to produce leaflet in February 1999.***

7. NAF to clarify TOR for NGOs and have this included in the next year's contracts. NAF field staff to clearly explain TOR to the field staff of participating NGOs. NGO TOR to include outreach to other village households to encourage wider implementation of private nurseries and encouragement of private fodder cultivation. ***R Chhetri***

8. Social Service Group, Mahankal to be given a contract as the support NGO for research work in Tawari. ***R Chhetri***

9. One-off survey to be translated into Nepali and collaborating NGOs requested to conduct this survey in their village. ***R Kharel*** translation and form production (by end November), ***R Chhetri*** to explain to NGOs purpose of survey and go through questions

with them to ensure understanding (during January field trip). Ask for completed forms to be ready by Phalgun field trip for collection.

10. Findings on farmers' perceptions from the first one-off survey to be translated into English. ***B. N Regmi*** to translate (information with R Chhetri).

11. Discussions to be held by NAF with NGOs at Gajuri Chhap and Gauthale over ways to encourage greater involvement of women household members in the project. In these locations, female group members were not identified from the selected households as in other villages. An opportunity is offered by the NGOs' and male group members' own identification of difficulty in attending meetings due to their outside marketing activities. Women are more frequently within the village and able to meet and talk with field workers. Produce a short report on progress by the end of January. ***R Chhetri and B Vickers***

12. Short report on activities so far undertaken in the 6 sites originally designated extension sites. Identify what programme can be realistically undertaken by NAF in these areas given the staff and resources availability, and draw up a suitable plan, with budget for interventions over the next 2 years. ***B N Regmi***

13. Summary reports to be produced for each survey period (following the broad outline of the report by A Giri), with amended percentage calculations as described in "Outline for survey summary reports". Surveys 1,3,5,7 ***FORESC***; Surveys 2,4,6,8 ***NAF.***

14. Continue the good work on data entry and checking from the surveys, following guidelines discussed with Carey. ***B Vickers, R Kharel, A Giri.***

15. Further analysis of data. ***B Vickers, R Kharel, C Hendy, L Kiff***

16. Follow-up at Chunkubesi what other livelihood sources selected farmers have. This will be used as background information, but not alter their ranking according to land and livestock numbers. ***R Kharel*** to devise additional question(s), discuss with field staff and collect information during Phalgun field trip.

APPENDIX 1 FINDINGS FROM THE FIELD TRIPS

During the field trips some short-fall in communication between the research team and collaborating NGOs was found. The following action points pertain largely to clarifying the role of local collaborating NGOs and improving future communications.

Additional action points from field notes:

1. Discussions to be held by NAF with NGOs at Gajuri Chhap and Gauthale over ways to encourage greater involvement of women household members in the project. In these locations, due to communication problems, female group members were not identified from the selected households as in other villages. An opportunity is offered by the NGO's and male group members' own identification of difficulty in attending meetings due to outside marketing activities. Women are more frequently within the village and able to meet and talk with field workers.
2. Tikka Ale to introduce Chittra kumari Magar, a farmer leader and trainer for DBS (not a World Neighbours employee) to the Gauthale group as their field support worker. She is a member of a successful, older, farmer's group and lives just 20 minutes away. Part of the payment to DBS of RS 1,000 per month will be used to provide a part-time salary for Chittra. TOR for Chittra's inputs to be drafted at the forthcoming NGO meeting at NAF in Kathmandu and finalised with Chittra by Raju.
3. Chittra will encourage the involvement of women from the selected households and develop a womens group (as according to the initial plan of the project and how it has been implemented in other areas).
4. NAF to attend the next group meeting on the 1st of December and draw-up with B B Karki a clear list of NGO activities and reporting requirements for the next year. Training to group members by the farmer leader, NGO representative and NAF staff will also be given at that time.
5. Major sources of income, for instance shop ownership, in some of the households in Chunkhubesi to be explored further, as to their effect on ability to purchase animal feeds.
6. Follow-up visits to Chunkhubesi to explore whether tensions between members from different Tols can be resolved by better communications, or whether a separate group is required in Naya Gaun.
7. Opportunities for increasing fodder availability through increased production, or improved management of off-farm resources to be explored in Chunkubesi.
8. NAF to undertake a formal agreement with SSS in Tawari as the local NGO. Mr M B Tamang to act in facilitatory role with farmer's group.
9. Positive identification of the insect found in caterpillar form in the flowers and pods of the sunhemp, *Crotalaria* juncea to be attempted during NRI's next visit. *(*This is likely to be the sunnhemp moth*, Utetheisa pulchella,* which can become a serious pest of the crop in India.)

General Note:

Expectations within farmers' groups have been raised by the TOT training, by the introduction of the idea of using improved breeds of goats, and income generation through fruit and vegetable production. Initially it was agreed that extension activities would follow NAF's usual pattern of focusing on reducing fodder deficit for the first year and then introducing wider aspects of agroforestry in the second. Due to some confusion of the content of agroforestry TOT training brought about by staff changes, the wider training was given a year earlier than planned. It has to be made clear to the groups that fodder

cultivation will be the focus of the project for the next year with development of household farm plans and assistance with planting arrangements.

GAJURI CHHAP

Discussions with partner NGO (evening 2nd November)
Majhitar Samudyik Bikash Kendra (MSBK) partner NGO Majhitar Farmers' development Centre. Discussions were held with the NGO chairman, Suddhasan Pandit and the secretary, Chopnidha Nepal who has been responsible for support to Gajuri Chhap since January 1998. This NGO is also the implementing agency for Soil Conservation Project (HMGN) in Gajuri Chhap. The SCP has initiated a savings group, funds from which may be used for agricultural activities (revolving fund) as well as for community development initiatives. Mrs Pramina Shrestha, the field worker for SCP, described present activities as focusing on drinking water provision and the savings groups. The NGO is involved with working with seven other farmers' groups in the area, under another programme managed by NAF (Ford Foundation funding). They are also involved with Dannida Tree Seed Project and plan to plant a Kiorala seed orchard (2 hectare) within their local Community Forest Area. Dannida is assisting with funding for fencing and a watcher. The seed product will be shared, 25% for the Forest User Group, 75% for the Project.

Role of the NGO
The NGO sees their role as to facilitate discussions within the farmers' group as to their needs with regard to livestock fodder and to relay this information back to NAF. The farmers are interested to expand the activities of their group from improving fodder resources to address animal health issues, introduce improved breeds of goats, cultivate vegetables, and diversify into coffee, tea and fruit production.
Despite the NGO having a formal contract with NAF, there was lack of clarity over the frequency of visits required to the group and reporting procedures. The NGO welcomed the suggestion for clear terms of reference for their inputs for the next year.
Action point: NAF to clarify TOR with NGOs and include this in the next years contracts. NAF staff to clearly explain TOR and discuss with participating NGOs during forthcoming NGO meeting in Kathmandu. Agreed TOR to be clearly documented and distributed both to participating NGO boards and field workers.

Farmer group composition:
The farmer's group consists of 9 men and one woman, all are household heads. There have been two changes since the original selection of households; the group selected Ammar Bdr Magar to replace Ganesh Bdr. Magar (B) from group 6, when the latter withdrew due to lack of time and Lila Bdr Magar to replace Lila Bdr Dhargi who doesn't live in the village. These two changes have led to no representation within the group now of the most resource poor households, group 6.
Cross-checking information on land holdings and animal numbers obtained in the one-off survey conducted in May with farmers' original groupings, several changes in group membership were found. Discussions with the NGO and farmers revealed that both groups thought that the more detailed information collected by survey was more precise than the general groupings made initially. Apparent changes in group membership between January and May 1998 were explained as being due to both changes in the number of large livestock

held by farmers, but mainly to the presence, or absence of milking animals. When the original household selections were made in January 1998 farmers placed considerable emphasis on who had productive milk animals at that time and who did not, in terms of defining resource base. The fact that most milk animals were productive by the time of the one-off survey in May doesn't mean membership of groups requires changing. Rather, it indicates that group 2 (1 member) is a sub-group of group 1A, and group 3 (1 member) a sub group of 4B, whose milking animals were productive at different times. Groups 4A and 4B are redefined as having milking animals. See table 1 for redefinition of household groupings. Only one real change in group membership was revealed by the cross-check, Hari Bahadur Magar was found to hold a small amount of khet land. As an additional interested farmer, this does not affect representation of groups. The move of Dhana Bdr. Magar from 1B to 1A as a result of an increase in large livestock numbers is the sort of mobility between groups inevitable over time.

Table 1 Redefinition of household groupings in Gajurichhap

HH number (number HH in group)	**Household name**	**Adult livestock numbers in May (milking)**	**Land holding in ropani (khet)**	**Initial household classification**	**Revised classification**
1 (1)	Buddhi Bdr. Koirala	C 2 (2) CY 2 G 3	15.5 (0.5)	3. Low bari, khet, milking animals	3.Low bari, khet, milking animals
2 (2)	Sumitra Magar	B 1 (1) G 12	18 (0)	5. Low bari, no khet, milking animals	5.
3 (4)	Top Bdr. Magar	O 1 C 1 (1) G 4	14 (2)	4B Low bari, khet, no milking animals, less than five large livestock	4B Low bari, khet, periodically milking animals, less than five large livestock
4	Hari Bdr. Magar	O 1 C 1 B 1 BI 1 BY 1 G 5 GY 4	10 (2)	5. Interested farmer	4B
5 (6)	Man Bdr. Koirala		20 (1)	4A Low bari, khet, no milking animals, 5 or more large livestock	4A Low bari, khet, periodically milking animals, 5 or more large livestock
6 (6)	Lila Bdr Magar*	O 3 C 3 CI 1 B 1 BI 1 G 2 GY 1	24 (4)	1B (new member)	1A
7 (1)	Ek Bdr. Magar	O 2 C 2 B 3 G 6	24 (4)	2. High bari, khet, no milking animals	1A high bari, khet, milking animals, five or more large

					livestock
8 (6)	Ganesh Bdr. Magar		30 (10)	1A	1A
9	Ammar Bdr. Magar*		48.5 (12.5)	New member	1A
10 (6)	Dhana Bdr. Magar	O 3 C 2 CI 1 B 4 BY 1 G 1 GY 1	49 (14)	1B High bari, khet, milking animals, less than five large livestock	1A high bari, khet, milking animals, five or more large livestock

* New group members

Table 2 Summary of redefined household rankings in Gajuri Chhap

HH Name (also group member)	**Livestock nos. (milking)**	**Total landholding in ropani (khet)**	**HH number**	**HH classification**
Buddhi bdr Koirala	8 (2)	15.5 (0.5)	**1**	3
Sumitra Magar	14 (1)	18 (0)	**2**	5
Top bdr Magar	9 (1)	14 (2)	**3**	4B
Hari bdr Magar	14 (2)	10 (2)	**4**	4B
Man bdr Koirala	14 (3)	20 (1)	**5**	4A
Lila bdr Magar	12 (4)	24 (4)	**6**	1B
Ek bdr Magar	13 (5)	24 (4)	**7**	1A
Ganesh bdr Magar	15 (9)	30 (10)	**8**	1A
Ammar bdr Magar *	14 (5)	48.5 (12.5)	**9**	1A
Dhana bdr Magar	13 (5)	49 (14)	**10**	1A

The farmers' group has not been able to find a representative from group 6 farmers, those with low bari, no khet and only periodically milking animals that is able, time wise, to join the group..

There appears to have been some lack of communication between the project and the NGO over importance of the selected households as representatives of resource groups, which then led to new members from unrepresentative households being chosen. Also, after selection of the cross-section of households, female members of these households were not encouraged to form a group, as originally planned and implemented in other villages.

Action points: Discussions to be held by NAF with NGO over ways to encourage greater involvement of women household members in the project. An opportunity is offered by the NGO's and male members' own identification of difficulty in attending meetings due to their outside marketing activities. Women are more frequently within the village and able to meet and talk with field workers.

Leaflet outlining activities of the project to be produced. Specifically this will explain the purpose of the project, selection of research sites and process of working with representative households from different resource base groups within each research site. Subsequent extension to households within the whole village should also be stressed. FORESC to produce draft by 17th November for discussion.

NGO TOR to include outreach to other village households to encourage wider implementation of private nurseries and encouragement of private fodder cultivation.

Activities:

After the exposure visits farmers requested training in the propagation of preferred fodder species. They were very motivated after seeing successful intensification of fodder cultivation during the visit and were particularly interested in the cultivation of Kimbu (Morus alba) because of it's easy propagation, and Ipil Ipil (Luecaena diversifolia) which could provide supports for vegetables and construction poles, as well as fodder. The NGO liaised with NAF and a local one-day training was given for the group. Training was given in approximately 10 species, selected as those that are known to grow successfully locally.

Table 3 Species and number of seeds/ cuttings propagated by farmers in 1998 (NAF trek report 21-28th Aug)

HH	Name	Total (PBF)	Ger %	Ipil		Kimbu*		Gajuma		Tanki		Badaha	
				P	S	P	S	P	S	P	S	P	S
1.	Budhi b.Koirala	300	60	300	200	100	1	0	0	0	0	0	0
2.	Sumitra Magar	400	100	400	300	100	30	0	0	0	0	0	0
3.	Top bdr Magar	460	100	400	100	200	100	0	0	60	60	0	0
4.	Hari bdr Magar	380	80	360	300	180	10	0	0	0	0	0	0
5.	Man b. Koirala	360	70	360	200	275	10	0	0	0	0	0	0
6.	Lila bdr Magar	421	90	421	400	200	200	0	0	0	0	0	0
7.	Ek bdr Mager	470	100	400	30	300	200	20	10	50	50	0	0
8.	Ganesh bMager	350	80	300	250	300	250	0	0	50	50	0	0
9.	Ammar bMager	350	70	350	250	300	150	0	0	0	0	0	0
10	Dhana b Magar	300	90	200	200	0	0	50	0	50	50	0	0
		3791		3491	2230	1955	951	70	10	210	210		

*Kimbu cuttings not included in total (PBF)

Table 4. Seedlings and cuttings actually planted (NAF trek report 21-28th Aug)

HH	Name	Total	Sur %	Ipil		Kimbu		Gajuma		Tanki		Badaha		N.B.21(s)
				P.	S	P.	S.	P.	S.	P.	S.	P.	S.	
1.	Budhi b.Koirala	201	75	200	150	1	1	0	0	0	0	0	0	100 (0)
2.	Sumitra Magar	330	24	300	50	30	30	0	0	0	0	0	0	100(40)
3.	Top bdr Magar	467	81	300	250	100	60	1	1	60	60	6	6	100(15)
4.	Hari bdr Magar	310	68	300	200	10	10	0	0	0	0	0	0	100 (50)
5.	Man b. Koirala	228	56	200	100	28	28	0	0	0	0	0	0	100(20)
6.	Lila bdr Magar	600	67	400	300	200	100	0	0	0	0	0	0	100(50)
7.	Ek bdr Mager	615	59	350	200	200	100	10	5	50	50	5	5	100(60)
8.	Ganesh bMager	550	55	250	150	250	100	0	0	50	50	0	0	100(7)
9.	Ammar bMager	400	50	400	200	0	0	0	0	0	0	0	0	200(100)
10	Dhana b Magar	212	47	200	100	0	0	12	0	0	0	0	0	100(60)
		5083		2750	2700	811	811	12	12	110	110	0	0	1100(402)

Table 5 Seeds and seedling requirements for 1999

HH	Kimbu	Badhaha	Ipil	Nimaro	Timila	Gauzuma	Champ	Koirala	Sissoo	NB21	Grass seed* Kg
1	0	15	500	10	10	5	100	200	500	100	1
2	100	100	400	100	10	100	5	0	50	100	1
3	50	15	100	10	20	10	5	5	50	100	1
4	5	25	100	10	10	10	10	10	100	50	1
5	0	40	50	40	5	20	10	5	50	100	1

6	0	50	50	30	5	20	5	5	0	50	1
7	200	100	400	50	5	10	10	5	100	100	1
8	0	100	0	50	20	25	200	25	200	0	1
9	0	100	200	10	10	25	100	10	50	0	1
10	0	15	100	5	10	25	50	0	100	50	1
Total	**355**	**560**	**1900**	**315**	**105**	**250**	**495**	**265**	**1200**	**650**	**10**

*Grass seed includes molasses and stylo

Summary of discussions farmers' group and individual members at Gajuri Chhap 3rd November

Nine of the ten group members were present for discussions as well as three additional village members.

At a group level, general trends in livestock keeping were identified as an increase in goats and buffaloes, but a decrease in cows and oxen. Stall feeding of buffaloes was thought a safer arrangement than the grazing of cows, as several cows had met with accidents, or been killed by predators. All livestock, except buffalo, are grazed for part of each day.

The group mentioned nine tree species that they were particularly interested in, Kimbu, Ipil Ipil, Badahar, Nimaro, Guazuma, and Koiralo, all primarily for fodder. Farmers were also interested in Chhap, and a local variety Sun Chhap, for construction timber/furniture and also for fodder, and Sissoo for timber. They were not interested in Molasses grass, as this requires irrigation for production in the winter months, which is not available. There are sufficient grasses in the area in summer. There is also plenty of Tanki (fodder tree) growing locally.

The group identified late planting of seedlings as a contributing factor last year to poor survival. This was due to the nursery training being rather late. The project took note of the species and numbers required by each household and said that they would supply in good time this year.

Nine of the ten group members are also members of the FUG committee (which has a total of 11 members). Findings from the project with regard to off-farm fodder use and grazing can therefore be readily fed-back to the village FUG. Only a small, 2 ha, area has been handed over officially to 33 users so far. They have protected this area for 10 years and have been a registered FUG for 3 years. Other areas of forest that are use, are also used by surrounding villages and agreements have yet to be reached on how to use/share these resources under formal FUG terms. The group was willing to consider agroforestry activities and improving fodder management within the forest areas. The savings groups already in existence through the FUG and SCP mean that they do not need a further savings group.

Individual farmers understanding of fodder deficit was similar, as that which could be consumed by the animal if available. The speed with which the animal eats and size of stomach are indications of how full an animal is. Deficits are understood to affect immediate production of milk and manure as well as future production in terms of calving in the next year. Deficits in fodder were ascribed to labour shortages, rather than fodder shortages. Though in each case farm supplies had been exhausted and hence fodder had to be collected from more distant community resources.

GAUTHALE

Present activities within the farming sector
At the time of this visit farmers were harvesting rice from khet land and ploughing on bari land in preparation for a winter crop of wheat.

Discussions with partner NGO
Dhusa Bikash Samaj (DBS) is the partner NGO. Tikka Ale president of the NGO and former NAF staff member has been particularly active in this area in the past. Contact was not possible at the time of the field trip, as no representative was present. Farmers reported no site visit by NGO workers for 7-8 months. However a member of the NGO, Mr Til Bdr. Magar who lives in the next-door village, had visited occasionally. The farmer leader, Mr Dhan Bdr Magar had been asked to report if the group had any problem. Discussions with the president, Tikka Ale were held in Kathmandu on the 15th November, after the field visit. Clarification was sought on a number of issues: the lack of activity of the NGO in support of the farmer's group, the existence of exotic fodder species already in the village and the existence of a community nursery that villagers described as having previously been supported by another NGO. Tikka Ale explained that the community nursery had been set-up previously in response to villagers' request to raise their own seedlings in a protected area. He had assisted in this process, under the auspicies of local NGO, Praja Bikash Sastha, which has since disbanded. The community nursery had been successful in producing Ipil and kimbhu (the source of one-year old seedlings in the village). The presence of some three year old Ipil seedlings in the village was explained as being brought in by Tikka from a nearby village, Adamara, when he was working there on a World Neighbours assisted project. Tikka's involvement in Gauthale was unofficial at that time, based on his own personal interest and the interest shown by some villagers in fodder cultivation. He maintained that some support had been given to farmers by the NGO and that further assistance had been offered if requested. He had been unable to follow-up on activities as he had previously, due to a new posting with World Neighbours to the Terai. He mentioned that this work had now finished and that he would be returning to the area soon. Again clarity is needed in what work Tikka is conducting with Dhusa Bikash Samaj and that with World Neighbours, not to use time allocated for the later, for the former. A lack of clarity in the project's expectations of the NGO was again uncovered. The briefing meeting held by NAF for all NGOs had focussed on the contractual relationship, rather than activities to be conducted and an explanation and discussion of activities and the TOR. Key pages in contract referring to TOR again missing.
It is regretted that the initial site selection visit did not mention these previous activities in the area (the project requested that areas be chosen with no previous major activities). Project activities have been introduced in addition to a community initiative to increase fodder cultivation. Farmers involved in project activities prefer the wider choice of species available, opportunity to choose which species to raise and the larger volume production possible outside of the limited community nursery area. Community nursery activities have continued, but have been limited and only a few species raised last year. We are concerned that those not involved in the project may be disadvantaged. To prevent this, the new field worker will be requested to support community nursery activities by encouraging farmer involvement, supplying propagation materials and encouraging efficient management. The community nursery may be more appropriate for some farmers than others, act as a training centre and the increase in private nurseries will reduce space pressure.

Action points:

Tikka Ale to introduce Chittra kumari Magar, a farmer leader and trainer for DBS (not a World Neighbours employee) to the Gauthale group as their field support worker. She is a member of a successful, older, farmer's group and lives just 20 minutes away. Part of the payment to DBS of RS 1,000 per month will be used to provide a part-time salary for Chittra. TOR for Chittra's inputs to be drafted at the forthcoming NGO meeting at NAF in Kathmandu and finalised with Chittra by Raju.
Chittra will encourage the involvement of women from the selected households and develop a women's group (as according to the initial plan of the project and how it has been implemented in other areas).
NAF to draw-up, discuss, agree and provide written record of TOR for NGOs supporting the work of the project. These will include details of what payments will be made to NGO field workers and leader farmers.

Farmer group composition:
The farmer's group consists exclusively of men, whereas the initial plan of the project, and how it has been implemented elsewhere, is to work with the fodder collectors and managers, the women. In all the research villages households were initially identified by the name of the household head (usually male), with female household members identified for group membership and training attendance. This stage did not occur in Gauthale, or Gajurichhap. Changes in NAF research co-ordinators and incomplete communication with supporting NGO's seem to be responsible. The group has already been formed and is active so radical changes are not possible at this stage. However it is hoped that the voice of fodder collectors and managers will be heard in the village, with the assignment of a female field staff and encouragement of women's group formation.

Table 6 Redefinition of household groupings in Gauthale

HH Name (also group member)	Livestock nos. (milking)	Total landholding in ropani (khet)	HH number	HH classification
Thulo Toya Magar	5 (0)	5 (0)	**1**	6
Krishna bdr Magar	12 (1)	11 (2)	**2**	5B*
Chabbi bdr Magar	20 (1)	11 (0)	**3**	4
Lok bdr Magar	5 (1)	19 (3)	**4**	3"
Kul bdr Magar	9 (4)	13 (1)	**5**	5A#
Bhim bdr Magar	9 (2)	17 (5)	**6**	2
Yam bdr Magar	11 (1)	20 (4)	**7**	3"
Lal bdr Magar	11 (2)	35 (0)	**8**	3"
Kum bdr Magar	15 (5)	33.5 (1.5)	**9**	1A~
Dhana bdr Magar	25 (7)	35 (15)	**10**	1

Notes:
HH name:
*Not on original household list
***** 5B = less than 4 large ruminants
" 3 = low khet (not no khet)

Livestock nos.:
Numbers as surveyed during May '98
5A = 4 or more large ruminants
~ 1A = low khet

Activities
The previous training of villagers in nursery propagation techniques through the community nursery initiative meant that only limited training was necessary. Farmers specifically asked for further information on nursery soil composition and seed preparation.

Table 7. Species and number of seeds/ cuttings propagated by farmers in 1998 (NAF trek report 21-28th Aug)

HH	Name	Total (PBF)	Ger %	Ipil		Bhat M.		Gajuma		Rai K.		Badahar		Remark
				P	S	P	S	P	S	P	S	P	S	
1.	Thulo Toya Magar	150	90	100	95	0	0	30	10	0	0	20	10	
2.	Krishna B. Magar	300	100	300	300	0	0	0	0	0	0	0	0	
3.	Chhabi B. Magar	350	100	350	300	0	0	0	0	0	0	0	0	
4.	Lok Bdr. Magar	500	90	500	400	0	0	0	0	0	0	0	0	
5.	Kul Bdr Magar	400	90	400	357	0	0	0	0	0	0	0	0	
6.	Bhim Bdr Magar	400	50	400	200	0	0	0	0	0	0	0	0	
7.	Yam bdr Magar	370	100	320	320	0	0	0	0	0	0	50	18	
8.	Lal bdr Magar	600	100	550	500	0	0	20	3	0	0	30	9	
9.	Khum bdr Magar	400	100	400	350	0	0	0	0	0	0	0	0	
10	Dhana bdr Magar	150	50	150	75	0	0	0	0	0	0	0	0	
		3620		3470	2897	0	0	50	13	0	0	100	37	

Table 8. Species and number of seeds/ cuttings planted by farmers in 1998 (NAF trek report 21-28th Aug)

HH	Name	Total	Sur %	Ipil		Bhat.		Gajuma		Raikh.		Badahar		N.B.21
				P.	S	P.	S.	P.	S.	P.	S.	P.	S.	
1.	Thulo Toya Magar	17	100	16	16	0	0	1	1	0	0	0	0	50
2.	Krishna B. Magar	200	75	200	150	0	0	0	0	0	0	0	0	40
3.	Chhabi B. Magar	60	50	60	30	0	0	0	0	0	0	0	0	50
4.	Lok Bdr. Magar	400	75	400	300	0	0	0	0	0	0	0	0	65
5.	Kul Bdr Magar	357	84	357	300	0	0	0	0	0	0	0	0	300
6.	Bhim Bdr Magar	150	67	150	100	0	0	0	0	0	0	0	0	60
7.	Yam bdr Magar	320	78	270	250	0	0	0	0	0	0	50	0	
8.	Lal bdr Magar	568	89	550	500	0	0	3	3	0	0	15	0	30
9.	Khum bdr Magar	300	84	300	250	0	0	0	0	0	0	0	0	50
10.	Dhana bdr Magar	35	100	35	35	0	0	0	0	0	0	0	0	
	Total:	2407		2338	1931	0	0	4	4	0	0	65	0	645

Table 9. Seeds and seedling requirements for 1999

HH	Name	Ipil	Badahar	Nimaro	Gauzuma	Kimbu	NB 21	Grass seed* Kg
1	Thulo Toya Magar	100	5	10	4	-	-	1 kg
2	Krishna B. Magar	300	20	20	-	-	-	1 kg
3	Chhabi B. Magar	300	-	-	5	-	50	1 kg
4	Lok Bdr. Magar	300	-	-	-	50	100	1 kg
5	Kul Bdr Magar	300	-	10	-	-	-	1 kg
6 #	Bhim Bdr Magar							1 kg
7	Yam bdr Magar	250	10	20	-	-	-	1 kg
8	Lal bdr Magar	1000	-	100	-	-	-	1 kg
9	Khum bdr Magar	500	20	20	15	-	-	1 kg
10	Dhana bdr Magar	300	200	50	50	-	-	1 kg
Total		3350	255	230	74	50	150	10 kg

* Grass seed includes sunhemp, stylo, molasses and dinanath

Household 6 undecided: waiting for advice from leader farmer

Discussion with farmer's group at Gauthale, 4th November

Villagers have tried to form a FUG, however they were not successful due to conflicts with other users from Ward 8. The village is still interested to form a group but say they "don't know how". On further discussion it emerges that they need help in addressing the conflicts involved. The surrounding forests have many users and at present there are no restrictions on

collection of fodder and fuel wood. Researchers observed that the path through the community forest that leads to the village's khet land and the river below is becoming severely degraded. The ruts in the ever widenning path look approximately 6 inches deeper than last year. The path is used daily by many households to take the majority of the livestock to drink at the river and graze on route.

Farmers said that support by the Dusa Bikash Samaj NGO for the Community Nursery initiative had been withdrawn since the involvement of our project in the area. The NGO had said that farmers could contact them if they wanted assistance, but that the NGO would not be visiting regularly as before. (Later discussions with Tikka Ale revealed this to be coincidental as coincided with his transfer to the Terai). Production from the community nursery last year was apparently not as good as previously due to this.

Farmers preferred the individual cultivation of seedlings as they could grow as many as they liked and more species were available. Grass seeds were not available through the community forestry nursery and they were not apparently asked for the number and type of seeds/ cuttings that they required. In the community nursery numbers were limited per household and they felt particularly constricted in the number of Ipil Ipil available, their most favoured species. Late arrival of seeds from this project last year limited their choice of species. All chose to grow Ipil Ipil only.

Preferred species:
Farmers are interested in Ipil Ipil for both fodder and fuel wood. Those with sufficient land are requesting large quantities, up to 1000. They say they have observed how earlier planted trees have performed and degree of attack by insects. No insect damage has been observed until now and so the farmers are convinced this is a very suitable species for their area. Greatest interest is being shown in the exotics as they are not available locally and produce fodder relatively soon after planting. Being able to lop Ipil, Kimbu and Flemengia several times a year is also an attraction. Farmers complained in low survival rate in the NB21 slips provided and suggested that this might have been due to the fact that they were old. Quality control in materials provided by the NGOs is required.

Individual farmers stressed visual condition of an animal's stomach as the main way they identified whether an animal was full, or not. Deficits are estimated from what the farmer knows the animal can eat during the rainy season, when there is plentiful fodder. Farmers work on rough estimates of what each type of livestock needs; an adult cow requires one bhari of fodder, an adult buffalo two bharis.

CHUNKHUBESI

Present activities within the farming sector
At the time of this visit farmers were busy harvesting rice from khet land and transplanting vegetable seedlings (particularly cauliflower) on bari land.

Discussions with partner NGO, Nepal Welfare for the Blind
NAF is linked with this NGO because of their original contact in this area, NAF member Sharmila Malli, who previously worked with them. Now Sharmila has moved to work full time with Helen Keller Foundation and no longer has time to follow-up with the village. Mr

Ram S Karki, a school teacher and secretary of NWFB, took over initially from Sharmila. However he is now busy and has passed the work to Buddha Bahadar Karki, a half-brother. This situation is far from ideal. As well as lacking the rapport Sharmila had with the all female group members, the present contact has no previous knowledge, or experience of agroforestry activities. However, the shortage of grass-roots NGOs in the area and good relations of NAF with NWFB makes the present arrangement the best possible at present.
At a meeting held with Mr Bel Prasad Shrestha, Chairman of NWFB and Mayor of Dhulikel Municipality and Mr Ram S Karki, the importance of regular visits to the area and feed-back to NAF on developments and progress was stressed. It was agreed that more visits would be made around the nursery preparation and sowing time in January to March and that NAF would be contacted immediately about any technical problems/ questions arising.
Action Point: NAF to attend the next group meeting on the 1st of December and draw-up with B B Karki a clear list of NGO activities and reporting requirements for the next year. Training to group members by the farmer leader, NGO representative and NAF staff will also be given at that time.

Role of the NGO
Due to the development of the NGO's involvement in the project, as outlined above, present members involved were somewhat unsure of their role. This will be clarified with the drawing-up of a clear programme of activities during the visit in December. The NGO had not been informed of our visit, despite two months notice and so the farmers were not prepared for a meeting. Individual household visits were conducted all day and finally a short meeting held at dusk at the village school, where five members attended.

Farmer group composition:
Most of the changes in household rankings indicated by the one-off survey are due to changes in livestock numbers, which are part of seasonal, cyclical changes. Three changes were due to differences in amount of land holding; two minor HH7 with 14 ropani (rather than less than 12) and HH 5 with 11.5 (rather than 12 or more), and one larger HH 10 with 19 ropani , (higher land holding).
The one-off survey also indicated other major sources of income present, for instance shop ownership, in some of the households ranked the poorest in terms of land and livestock resources. These will be explored further, during subsequent visits, as to their effect on resource availability.

Table 10. Redefinition of household groupings in Chunkhubesi

HH Name	Group member	Livestock nos. (milk)	Total landholding in ropani (khet)	HH number	HH classification
Govinda Parajuli	Krishna kum.	4 (0)	5 (0)	**1**	6
Subhadra Koirala	←	4 (1)	6 (0)	**2**	6
Raghubir Tamang	Chetra kum.	5 (1)	6 (0)	**3**	6
Kaili Tamang	←	5 (0)	8 (0)	**4**	6
Dhruba pd Parajuli	Sushmita	5 (2)	11.5 (3.5)	**5**	5
Sitaram Parajuli *	Sharada	6 (2)	12.5 (2.5)	**6**	1
Sukuman Thing	Laxmi	5 (0)	14 (6)	**7**	7
Bidur pd Ghimire	Parvati	10 (1)	14 (0)	**8**	2
Bir bdr Tamang	Chanda kum.	13 (0)	11 (4)	**9**	3
Bhakta bdr Magar	Manamaya	21 (2)	19 (7)	**10**	1

Notes:

HH name: **Livestock nos.:**

*Not on original household list Numbers as surveyed during May '98

Table 11. Species and number of seeds/ cuttings propagated by farmers in 1998

HH	Name	Total (PBF)	Ger %	Ipil		Bhat M.		Gajuma		Rai K.		Badahar	
				P	S	P	S	P	S	P	S	P	S
1.	Krishna K Parajuli	300	50	250	225	25	4	25	0	0	0	0	0
2.	Subadra Koirala	200	60	150	80	30	0	20	0	0	0	0	0
3.	Chhetra k.Tamang	350	70	300	100	30	0	20	0	0	0	0	0
4.	Kaili Tamang	200	25	100	50	80	50	20	2	0	0	0	0
5.	Sushmita Parajuli	300	50	250	75	35	15	15	1	0	0	0	0
6.	Sharadha Parajuli	300	20	260	250	20	0	20	0	0	0	0	0
7.	Laxmi Thing	350	70	300	100	30	0	20	0	0	0	0	0
8.	Parbati Gimire	320	50	270	150	25	0	25	0	0	0	0	0
9.	Chanda K. Tamang	380	80	330	250	30	8	20	2	0	0	0	0
10	Mana M. Magar	320	60	270	60	25	8	25	1	0	0	0	0
11	Suntali Pokharel	200	10	150	50	30	0	20	0	0	0	0	0
12	Huk K. Pulami	320	20	270	60	25	8	25	0	0	0	0	0
13	Menuka Aryal	360	60	290	250	35	0	35	0	0	0	0	0
14	Subadra Sapkota	390	60	270	250	100	60	20	8	0	0	0	0
	Total :	4290		3460	1950	520	153	310	14	0	0	0	0

Table 12. Species and number of seeds/ cuttings planted by farmers in 1998

HH	Name	Total	Sur %	Ipil		Bhat.		Gajuma		Raikh.		Badahar		Remark
				P.	S	P.	S.	P.	S.	P.	S.	P.	S.	
1.	Krishna K Parajuli	229	100	225	225	4	4	0	0	0	0	0	0	
2.	Subadra Koirala	80	100	80	80	0	0	0	0	0	0	0	0	
3.	Chhetra k.Tamang	100	100	100	100	0	0	0	0	0	0	0	0	
4.	Kaili Tamang	102	100	50	50	50	50	2	2	0	0	0	0	
5.	Sushmita Parajuli	77	100	75	75	1	1	1	1	0	0	0	0	
6.	Sharadha Parajuli	250	24	250	60	0	0	0	0	0	0	0	0	Death by landslide
7.	Laxmi Thing	100	15	100	15	0	0	0	0	0	0	0	0	
8.	Parbati Gimire	150	100	150	150	0	0	0	0	0	0	0	0	
9.	Chanda K. Tamang	260	100	250	250	8	8	2	2	0	0	0	0	
10	Mana M. Magar	69	80	60	40	8	8	1	1	0	0	0	0	
11	Suntali Pokharel	50	100	50	50	0	0	0	0	0	0	0	0	
12	Huk K. Pulami	68	100	60	60	8	8	0	0	0	0	0	0	
13	Menuka Aryal	250	100	250	250	0	0	0	0	0	0	0	0	
14	Subadra Sapkota	250	67	250	150	0	0	0	0	0	0	0	0	
	Total :	2035		1950	1655	79	79	6	6	0	0	0	0	

Table 13. Seeds and seedling requirements for 1999

HH no	Ipil	Kimbu	Gauzuma	Bhat	Badahar	Gogan	Champ	Tanki	NB 21
1	100	80	60	60	-	-	-	80	100
2	-	-	-	-	60	60	60	-	100
3	70	60	30	50	-	-	-	50	100
4	50	40	50	50	-	-	-	50	-
5	100	100	30	-	30	-	30	-	-
6	100	100	30	-	-	-	-	-	-
7	70	45	40	50	-	20	30	40	25
8	100	50	100	100	-	-	-	-	-
9	60	30	50	40	-	-	-	50	-
10	100	100	100	100	-	-	-	100	-
11	50	40	50	50	-	-	-	50	-
12	50	60	50	50	-	-	-	50	-
13	100	100	30	40	30	30	30	-	100
14	200	100	5	50	100	50	-	-	-
Total	**1150**	**905**	**625**	**640**	**220**	**160**	**150**	**470**	**425**

Molasses and stylo seed: ½ kg per household for all farmers

Discussion with farmer's group at Chunkubesi, 7th November

The meeting was very short due to the late hour and only five members managing to attend. The group has been meeting regularly on the 1st of the month. Last meeting they made a list of their seed and seedling requirements for the next year. This was with Mr B B Karki. They had had some problems with last years' seed in that they hadn't known to remove the coating on the guazuma seeds and they experienced low germination rates with the Molasses seeds. Low germination rates in the Molasses grass seed is a common problem experiences across villages and was fed back to the seed suppliers, NAFSCOL at Hingwepati.

The group reported no overall change in livestock numbers within the village, although some were sold both within and outside the village over the year. Preference for cows rather than buffalo was explained in terms of - a) their lower feed consumption (for production of the same amount of milk), b) ability to graze (while buffalo could not), c) that the manure from cows was twice as nutritious as that from buffalo, and d) that in the remoter areas, access was a problem for buffalo, but not for cows. This latter point does not appear to be of concern to the farmers in Tawari, however (a much more remote village), who prefer buffalo to cows. The religious significance of cows in Chunkhubesi to the predominantly Bhramin/ Chhetri community is an unmentioned, but likely to be an important, factor.

The greater proportion of grasses fed to goats in this village as compared to other villages (two to three times as much) is due to the lack of tree fodder. Farmers said that they would prefer to feed tree fodder, if this was available, as it is more nutritious for goats.

Questioned as to whether there was excess grasses in the monsoon season that could be stored for feed during the deficit period, farmers said that there was some excess, but that summer grasses do not store well (high moisture content and frequent rains prevent drying). Winter grasses do store well, however this is usually a period of deficit.

Members expressed interest in increasing on-farm sources of fodder in order to save time in fodder collection and allow other income-generating activities.

The savings activity of the group is going well, with each contributing Rs 5 per month. Loans are made 3% per month and so far all loans made have been repaid. One member described borrowing for a three-month period in order to buy a buffalo. All loans are for income generation activities.

The group has experienced some tensions between members living in different areas of the VDC. There are cultural differences as well as locational differences between the Tols, Naya Gaun, Naya Besi and Chankhu besi. Follow-up visits will explore whether these tensions can be resolved through better communications, or whether a separate group is required in Naya Gaun. Such a restructuring should not adversely effect research activities.

Opportunities for increasing fodder availability through production, or improved management of off-farm resources was not explored due to time constraints. This issue to be further explored at a later date.

Exploring findings so far from surveys, activities and the concept of fodder deficit with farmers at household level:

Sushmita Paraguli (HH5) Farmer leader

Sushmita looks at the animals stomach to see if it is full. If an animal has insufficient fodder it will low. In the rainy season she mixes rice straw with the richer grasses to prevent the animals getting diarrohear. One back load of grasses is enough for one cow and this she mixes with one Muttah (1/9 bhari) rice straw. Sumitra has a hybrid Jersey cow and this eats more than a local cow, hence her fodder requirements are greater than other members with similar livestock numbers. In survey 3 (July), when most farmers are just feeding green grasses which are in plentiful supply at this time, she also feeds maize crop thinnings and rice straw which give a complete diet. This she considers a better practice than the grass only diet fed by others.
In September (survey 4) some farmers feed tree fodders, others do not. Sumitra says that she does not feed tree fodders at this time because they tend to contain insects (like scorpions) that can be poisonous to animals. She feeds maize leaves, stripped up-to the cob sheath level. She doesn't use maize tops.

Sharada Parajuli (HH6)
Sharada planted several Ipil Ipil seedlings around her house this year, but the majority have been eaten by goats. She has identified a more protected area to plant next year. Her priority is to increase tree fodder production to feed to her goats. She considers her goats to be suffering from deficits to a greater extent than her cows.

Subhadra Koirala (HH2)
She plans to grow all new seedlings on bari land; Ipil as feed for her buffalo, to increase milk production; Budmase for goats (but she is unsure as new species); and Guazuma for buffalo and cows. Kimbu will also be grown particularly to feed to cows as good for milk production. She plans to cut the new fodder species between Mangsir and Phalgun (middle November until middle of March).

Chetra kumari Tamang (HH3)
Chetra has no khet land and so is entirely dependant on bought-in rice straw for fodder (Rs 4,000 bought so far this year). She has only two fodder trees at present on her private land and is very keen to increase the number. The two she has she transplanted from the forest and she doesn't have more because of lack of availability of seedlings. With the project activities she plans to plant lots more. Most of these will be on her lower bari land where she has more space. The village has controlled grazing on private land and so planting at a distance from the house should not be a problem. There was a high mortality among seedlings in her nursery last year and would like further advice this year.
She knows if an animal has had sufficient to eat from its stomach and the noise it makes. She knows how much the animal can eat from how much is consumed during the rainy season. Deficits she calculates as the difference between present intake and that during the rainy season.

TAWARI

Present activities within the farming sector
Just finishing the harvest of rice from khet land and starting of ploughing in preparation for planting wheat. Recently completed the sowing of winter wheat and mustard on bari land.

Discussions with partner NGO

The NGO originally identified for this area, Mahalaxmi Youth club Panute, has not been active in the area and no agreement has been signed with NAF. The local school teacher, Mr Man Bahadur Tamang, has expressed interest in working with the project and was included in the TOT training. He has since been active in disseminating information from the TOT, helping group members establish nurseries and in association with the leader farmer in giving training in vegetable propagation techniques and fruit grafting. He is a member of a locally registered NGO, Samag Sawar Samoa Mahankal VDC (Social Services Group). He has been associated before, via his father Jet Bahadar Tamang, with a large drinking water project. This will be the first project financed activity for the newly registered NGO.

Role of the NGO

Mr M B Tamang appears to have a good grasp of the facilitatory role required of the NGO and is active in both advising and motivating group members. The project will undertake a formal agreement with the SSS as the local NGO.

Farmer group compostion:

Findings from the one-off survey have not dramatically changed household rankings in Tawari. Some changes have occurred, however, due to changes in livestock numbers.

Table 14. Redefinition of household groupings in Tawari

HH Name	Group member	Livestock nos. (milk)	Total landholding in ropani (khet)	HH number	HH classification
Shanker Tamang	Kabita	6 (1)	7(0)	**1**	5
Man bdr Tamang *	Anita	5 (1)	10 (0)	**2**	3
Bal bdr Tamang *	Sunita	6 (1)	8 (2)	**3**	4*
Ratna bdr Bhujel	Rupadevi	6 (2)	9 (0)	**4**	5
Dil bdr Tamang	Chameli	8 (1)	12 (0)	**5**	2
Bil bdr Singtan	Samjhana	8 (2)	15 (0)	**6**	2
Krishna bdr Magar	Ranjana	14 (2)	14 (5)	**7**	1
Bhim bdr Magar	Laxmi	8 (1)	20 (10)	**8**	3
Top bdr Magar	Urmila	17 (2)	20 (5)	**9**	1
Jhatak Tumsing *	Rumila	7 (3)	35 (10)	**10**	2

Notes:

HH name:
*Not on original household list

Livestock nos.:
Numbers as surveyed during May '98

Table 15. Species and number of seeds/ cuttings propagated by farmers in 1998

HH	Name	Total (PBF)	Ger %	Ipil		Bhat M.		Gajuma		Rai K.		Badahar	
				P	S	P	S	P	S	P	S	P	S
1.	Kabita Tamang	480	70	210	180	200	150	10	5	60	0	0	0
2.	Anita Tamang	160	40	100	40	50	30	10	0	70	0	0	0
3.	Sunita Tamang	160	40	100	40	50	30	10	0	0	0	0	0
4.	Rupadevi Bhujel	200	80	100	90	70	55	30	5	0	0	0	0
5.	Chameli Tamang	160	50	100	40	50	30	10	0	0	0	0	0
6.	Samjhana Tamang	280	50	200	50	70	50	10	1	50	0	0	0
7.	Ranjana Magar	288	60	200	165	80	16	8	4	60	0	0	0
8.	Laxmi Magar	190	60	150	90	40	15	20	2	0	0	0	0
9.	Urmila Magar	300	60	250	150	40	15	10	2	0	0	0	0
10	Rumila Magar	60	50	40	30	20	10	0	0	0	0	0	0
	Total :	2278		1450	875	670	401	118	19	240	0	0	0

Table 16. Species and number of seeds/ cuttings planted by farmers in 1998

HH	Name	Total	Sur %	Ipil		Bhat.		Gajuma		Raikh.		Badahar		Remark N.B.21
				P.	S	P.	S.	P.	S.	P.	S.	P.	S.	
1.	Kabita Tamang	335	22	180	60	150	10	5	3	0	0	0	0	0
2.	Anita Tamang	70	43	40	20	30	10	0	0	0	0	0	0	0
3.	Sunita Tamang	70	79	40	35	30	20	0	0	0	0	0	0	0
4.	Rupadevi Bhujel	150	13	90	15	55	5	5	0	0	0	0	0	0
5.	Chameli Tamang	71	58	40	30	30	10	1	1	0	0	0	0	0
6.	Samjhana Tamang	41	46	25	8	15	10	1	1	0	0	0	0	0
7.	Ranjana Magar	186	23	165	29	16	10	5	5	0	0	0	0	0
8.	Laxmi Magar	107	23	90	20	15	5	2	0	0	0	0	0	0
9.	Urmila Magar	167	12	150	15	15	5	2	0	0	0	0	0	0
10.	Rumila Magar	40	38	30	10	10	5	0	0	0	0	0	0	0
	Total :	1237		850	242	366	90	21	10	0	0	0	0	0

Table 17. Seeds and seedling requirements for 1999

HH	Kimbu	Bhat	Ipil	Badahar	RaiKhu nyo	Nimaro	Gauzuma	NB21	Grass* kg
1	50	20	10	20	10	10	30	100	0.5
2	50	10	20	50	10	15	20	50	0.5
3	20	70	25	25	10	20	25	50	0.5
4	50	15	-	50	-	10	15	50	0.5
5	30	25	20	50	40	15	30	50	0.5
6	60	-	60	50	-	10	35	50	0.5
7	25	15	20	50	-	50	50	100	0.5
8	25	25	50	50	20	15	25	50	0.5
9	150	100	200	50	50	20	50	100	0.5
10	25	25	20	50	25	10	15	50	0.5
Total	**485**	**305**	**425**	**445**	**165**	**175**	**295**	**650**	**5.0kg**

* Grass for each household: velvet bean; sunhemp and molasses to cover total of 4 terraces (c. ½ kg for each household)

Discussion with farmer's group at Tawari, 9th November

After the TOT training a meeting was held and farmers requested training in nursery techniques for fodder species and vegetables, and instruction in fruit grafting techniques. Training was given by Mr M B Tamang and the leader farmer, Urmila Magar. Vegetable seeds aquired during the TOT training were distributed at this time. Following this training, two vegetable nurseries were set-up in the village. Group members have also discussed what seeds and seedlings they require for next year. They plan to establish nurseries in late February, when all danger of frost has past (this is somewhat later than at lower altitutes).

The group reported that in the previous year they had only had one day of nursery training and didn't know how to establish a nursery properly. Since the TOT training they have learnt more and think that they will be able to better establish nurseries this year. Farmers are interested in more grass species, as this is the type of fodder that they are particularly lacking. They are also particularly interested in learning how to cultivate and obtaining seedlings of the fruit trees nagpati (local pear), apple and orange.

There are two community forest areas, Tawari forest and Lamkhola forest. The cutting of grass and collection of bedding and leaf litter are the only operations allowed in both forests. Only a few livestock are still grazed along forest paths. One watcher is employed by the community to guard the forest. One member of the group, Samjhana (elected president) is also a member of the Forest Users Group Committee. The group says that there is no

opportunity to plant further fodder resources in the community forest areas as there is no barren land. The group expressed no interest in addressing the issue of better management of present off-farm fodder resources. They see greatest opportunity in developing on-farm resources. All appear to have sufficient land resources to do this.

Exploring initial findings from the surveys and the concept of fodder deficit with farmers at household level:

In general tree fodder is fed for longer into the monsoon season at this higher elevation site than at the other research sites, as grasses are not available here until later. All types of livestock were still being fed tree fodder at the time of survey 3 (July), whereas at other sites only goats were fed tree fodder at this time. Farmers within the village collect little crop thinnings as crops are not sown very densely.

The grass, Molasses, is the most popular of the introduced species as it grows very well at Tawari, is highly nutritious and is liked by all livestock. Farmers are most interested in grass species, as this is the fodder type of which they have the greatest deficit.

Discussions drew-up the fact that the size of Bharis of fodder differs between seasons. As well as the differences between bharis of different types of fodder, tree, crop residue and grasses, these inturn differ between seasons. For example, during the rainy season (mid-June to mid-September) bharis of grasses are of a large size, upto 80 kg, but averaging 50-60 kg. At the start of the dry season (mid-September to mid-November) size reduces somewhat to 40-50 kg. During the dry season (mid-November to mid June) grass bharis are much smaller, on average 15-20 kg. The programme of bhari weighing will be continued and further quantification of this obtained.

Several farmers mentioned that the number of buffalo kept by villagers is on the increase and that the number of cows kept is decreasing. Buffalo are preferred because they give a greater amount of milk than cows and more manure. The increase in buffalo numbers is in order to produce more milk.

Kabita Tamang (HH1)

Kabita appears to cut Gogan and Timila much earlier in the season than other households. Kabitra says that is good to cut at this time, because the trees will regenerate and go on to produce more fodder later. She uses Timilo in February, earlier than other farmers, as she has no cut grasses left then.

We asked her to map her land and indicate where she planned to plant the fodder species. She has a total of approximately 7 ropani in four places. Some of these areas are very small. Sunhemp has done very well on her land (photo1) and she has planted a couple of small terrace edges on land that had poor fertility. She hopes that the sunhemp will help to rejuvinate the fertility of the land and stop erosion of soil from the terraces. The flowers and pods of the sunhemp were found to show damage by an insect, in caterpillar form, found in the pods. This is likely to be the sunnhemp moth*, Utetheisa pulchella,* which can become a serious pest of the crop in India. Positive identification will be attempted, although this is difficult when pupation occurs in the soil. Other fodder species planted had suffered high mortality rates and she reported slow growth, especially at higher locations.

Looking at the seedlings the Ipil did appear small and stunted, but the Flemengia looked healthy and of reasonable size, also the Guazuma. Flemengia leaves were not as severely attacked as those of plants at lower altitudes.

Chameli Tamang (HH 5)
Appears to be over estimate of fodder deficits (compared to what is fed in September (survey 4). This will be followed up during the 7th and 8th surveys in March and May 1999.

Urmila Magar, Leader farmer (HH 9)
Urmila is planning to manage all her new fodder for winter use.
She reports root damage to Ipil seedlings in the nursery and leaf damage by insects to the Flemengia.
She knows if an animal has had enough to eat by the size of its stomach. In the longer term underfeeding effects the health of animals and she knows how much is needed to maintain good health. At a household level she considers that there is a deficit if there is not enough fodder from their own land and she has to go to the forest.
Farm plan constructed just of her ghar bari land, that closest to the house. She plans to cut three old, unproductive Timila trees this year to make more room for the new fodder seedlings on the terraces. She plans planting Rai Khanu, Sunhemp and Molasses in the goth bari land. NB21 will be planted under the trees on the Ghar bari and following discussions, she will also plant molasses there too. Molasses is the most favoured species.

Laxmi Magar (HH8)
At the time of survey 3, July, she had no tree fodder left on farm. She would have liked to have fed tree fodder at this time, particularly Dhudilo. In September she had a little tree fodder available of Chuletro, Timila and Kabro, but she considers these of poor quality compared to the prefered species, Dhudilo.
She knows when an animal has had enough to eat by the fact that it will not eat more if it is offered.

Samjhana Singtan (HH6)
The much greater yield from Gogon per tree and per year than other farmers is due to her greater number of trees and the fact that they are much larger than others. She cuts each tree once only, the fodder from each lasts the livestock approximately 3 days.

Ranjana Magar (HH7)
Ranjana reports that seedlings of Ipil and Flemengia planted in partial shade, under tree canopies have survived, whereas those planted in the open have been effected by insect damage and have all died.

Rupadevi Bhujel (HH4)
In survey 3 she was not feeding tree fodder, as other households were, because she didn't have any. Ideally she would like to feed some tree fodder in this season, particularly Dhudilo. In survey 4 she was also not feeding tree fodder, but this was due to a lack of labour, rather than lack of tree fodder resources at this time. She is very busy in the wet season.

Rumila Tumsing (HH10)

Rumila used tree fodder at the time of survey 3 because she was very busy with other agricultural work and did not have enough time to cut grasses. It would not be her preferred feeding practice, as the quality of the tree fodder is not good at this time.

NAFSCOL Office, Hingwepati

The office of this private seed supply company (owned by NGO members and the seed suppliers) was visited. Mr Ram Chandra Shrestha, the manager showed the team on-going germination tests and the well stocked cabinets of seed. Seed requirements for the project were discussed, particularly the high demand for Molasses grass seed which is difficult to collect at a viable stage. Prices charged vary according to availability.

ANGE

Present activities within the farming sector
Harvest of rice just completed from khet land adjacent to the Bhote koshi and Khalte khola rivers, and the tiny terraces adjacent to subsidery streams. Millet on bari land in the process of being harvested. On-going vegetable production on land adjacent to the homesteads, mainly radish and cauliflower.

Discussions with partner NGO
The project is collaborating with the Indrawati Public Services Committee NGO, whose field activities at Ange are led by Mr Mohan Dhakal. The NGO is also involved in running a health clinic, family planning services, drinking water projects, irrigation canal construction, savings and credit initiatives and goat upgrading projects in the area. There are no drinking water, or goat upgrading activities as yet in Ange.

Man kumari Khadka, selected farmer leader attended the training of trainers course. There was no representation from the NGO because Mohan had already attended a previous course and other suitable staff were attending a training in India. In discussion with the farmer's group after the ToT, the following species were identified as specifically suited to the area: *Leucaena pallida*, because this was psyllid resistant and produced greater amounts of fodder than other species; Badahar, as this is fast growing and liked by all livestock; Koiralo, Kimbhu and the grass, NB21. Kutmero and Kanyo are already favoured trees in the area and are readily available.

Mohan had an idea of the general focus of the project, but said he would like to know more details. Lack of clarity about the NGO's role in the project was explained when it was discovered that the contract signed with NAF was missing the 2-3 pages outlining work activities and specific TOR for partner NGOs. Raju will follow-up on this with NAF and ensure that full details are both discussed and provided in writing (Nepali) during the next NGO group meeting planned for the end of December 1998.

There has been considerable discussion between IPSC and World Neighbours over the funding of this project's activities. Mohan's salary is paid in full by WN and they suggested that a percentage of this (10%) be paid for from this project to cover the time spent on activities other than those of WN. Funds were made available for this. IPSC, however see this projects' activities as additional to WN activities (though closely linked in a developmental sense) and wanted to keep income as additional to their basic salaries from WN. While regretting the tension that has been generated by this situation, it is an inevitable issue to be addressed as local institutions, initially funded by a single outside funder, expand and diversify their activities. WN are sympathetic to these developments and we are keeping them fully informed of project activities.

Role of the NGO
The extensive activities of the Indrawati Public Services Committee in the area together with the good personal relations of Mohan Dhakal with local farmers adds to farmers enthusiasm and commitment to the project. In discussions both before and after the field visits about constraints experienced, including survey data validity and limited understanding of some project activities by farmers, it was agreed that greater NGO involvement would help. NGO staff would be able to spend more time in explaining activities to group members and being

more familiar to villagers, are more likely to collect inclusive data on land and livestock holdings. A revised survey will be conducted by the NGO in the New Year.

Table 18. Farmer group composition, Ange:

HH Name	Group member	Livestock nos. (milk)	Total landholding in ropani (khet)	HH number	HH class
Bhim kum Khadka *	←	4 (1)	3 (2)	**1**	9
Dhana bdr Khadka	Santha kum.	5 (1)	8 (5)	**2**	5
Birbal Tamang	Rani	5 (1)	10 (4)	**3**	2
Ganesh bdr Khadka*	Phulthunga	3 (1)	14 (10)	**4**	3
Min bdr Khadka	Man kum.	7 (3)	13 (9)	**5**	2
Bim bdr Khadka	Dev kum.	11 (2)	10 (8)	**6**	1
Kami singh Lama	Shuku rani	3 (2)	18 (11	**7**	3
Tuk bdr Khadka	Lok kum.	2 (1)	18 (12)	**8**	3
Ot bdr Khadka	Savitri	11 (3)	22 (14)	**9**	1
Ram bdr Tamang	Ram maya	8 (1)	36 (13)	**10**	2

Notes:

HH name:
*Not on original household list

Livestock nos.:
Numbers as surveyed during May '98

Activities

1. All members constructed vegetable nurseries following a demonstration by Man kumari Khadka. Two of these were joint, involving 2 and 3 group members respectively. They were not successful with growing cauliflower seedlings, but had success with radish, onions and corrianda. They are trying again with cauliflower. Joint nursery of approximately 4m2, located near Dev kumari's house, was visited. Seedlings of raddish, onions, corrianda and a few cauliflower were present.
2. Tree seedling production training was held at Tipeni, organised by Mohan who has successfully raised Badahar seedlings for some years. Seedlings of Badahar were collected by the group and planting on-farm facilitated by Man kumari.
3. All farmers planted slips of NB21. Other species planted included;

Bhadmase and Flemengia ;- seedlings are doing well

Leuceana pallida:- generally considered to being doing not so well by farmers, but we saw healthy, 1 metere tall seedlings on Sabitri's farm.

Sunhemp:- doing well and liked by farmers

Molasses:- some slips had not taken, but doing well on some farms, e.g. Santha kumari.

Guazuma:- all seedlings had died

Rai khanyu:- high mortality

Gedulo:- high mortality

These last three species had suffered from ant damage in the nursery.

4. The group had decided at the time that they started to plant seedlings out that they would not allow grazing on their farm lands by other households. This move, to help protect the seedlings, had met with some opposition in the village. However, they reported successfully imposing a fine of Rs10 in some cases of infringement and an increase in local understanding that greater protection was required to allow development of greater fodder production on-farm.
5. The savings and credit activities were progressing successfully, with 10Rs collected from each member per month. At present there was Rs13,000 in the fund and 17 members. The

fact that new members had to enter with a lump sum equal to the amount already contributed by older members was becoming a bar to entry. It was suggested that perhaps development of a separate, second group was needed for savings and credit activities only.

Table 19. Species and number of seeds/ cuttings propagated by farmers in 1998

HH	Name	Total (PBF)	Ger %	Ipil		Bhat M.		Gajuma		Rai K.		Badahar		NB 21
				P	S	P	S	P	S	P	S	P	S	
1.	Bhim K. Khadaka	200	50	100	60	50	35	25	3	25	5	0	0	0
2.	Santa K. Khadaka	100	100	60	40	30	20	10	4	0	0	0	0	0
3.	Rani Tamang	100	90	60	40	20	15	10	4	10	5	0	0	0
4.	Fulthunga Khadka	100	90	80	60	20	10	0	0	0	0	0	0	0
5.	Man K. Khadaka	100	80	60	40	20	20	10	1	10	4	0	0	0
6.	Dev K. Khadaka	100	100	80	60	10	4	10	5	0	0	0	0	0
7.	Suku Rani Lama	100	70	80	60	50	20	10	0	10	0	0	0	0
8.	Lok K. Khadaka	100	80	60	40	20	20	10	0	10	0	0	0	0
9.	Sabitri Khadka	100	90	60	40	20	10	10	3	10	7	0	0	0
10	Ram M. Tamang	100	90	80	60	10	10	10	4	0	0	0	0	0
	Total:	1,100		700	490	200	122	105	24	75	21	0	0	0

Table 20. Species and number of seeds/ cuttings planted by farmers in 1998

HH	Name	Total	Sur %	Ipil		Bhat.		Gajuma		Raikh.		Badahar		N.B.21
				P.	S	P.	S.	P.	S.	P.	S.	P.	S.	
1.	Bhim K. Khadaka	98	76	50	50	35	15	3	2	5	3	5	4	200
2.	Santa K. Khadaka	79	87	40	35	20	15	4	4	10	10	5	5	200
3.	Rani Tamang	69	29	40	6	15	4	4	0	5	5	5	5	20
4.	Fulthunga Khadka	75	80	60	50	10	5	0	0	0	0	5	5	200
5.	Man K. Khadaka	70	41	40	15	20	10	1	1	4	1	5	2	100
6.	Dev K. Khadaka	95	66	60	40	25	15	5	3	0	0	5	5	100
7.	Suku Rani Lama	65	57	50	25	10	8	0	0	0	0	5	4	200
8.	Lok K. Khadaka	67	76	40	25	20	20	0	0	2	2	5	4	200
9.	Sabitri Khadka	65	45	40	10	10	10	3	2	7	3	5	4	102
10.	Ram M. Tamang	79	67	60	40	10	10	4	1	0	0	5	2	40
	Total:	762		480	296	175	112	24	13	33	24	50	40	

Table 21. Seeds and seedling requirements for 1999

HH no	Badahar	Bhat	Ipil	Gauzuma	Kimbu	NB21	Sunhemp	Molasses
1	10	50	50	10	500	-	3 terraces	1 terrace
2	5	5	10	5	200	100	1 ter	1 ter
3	50	40	-	40	100	20	-	1 ter
4	15	30	50	50	100	200	1 ter	1 ter
5	50	-	100	20	200	100	-	3 ter
6	10	15	50	10	100	100	1 ter	2 ter
7	10	10	10	10	100	50	1 ter	1 ter
8	5	10	20	10	300	50	1 ter	1 ter
9	5	5	10	10	200	50	1 ter	1 ter
10	5	5	10	5	100	50	2 ter	1 ter
Total	**165**	**170**	**310**	**170**	**1900**	**720**	**1 ½ kg**	**1 ½ kg**

Also 25m² plot to be planted with Jai Ghaans for each household

Discussion with farmer's group at Ange, 4th November

Present:
Bim kum Khadka
Ram Maya Tamang
Shuku rani Lama
Lok kumari Khadka
Man kumari Khadka Farmer leader
Dev kumari Khadka

Savitri Khadka
Absent: (Due to group not being informed of exact date of visit)
Phulthunga Khadka
Rani Tamang
Santha kumari Khadka

Tej bahadur Karka, school teacher, was also present. He had helped in survey activities, explaining and interpreting questions for the group.
The VDC chairman was also present for the introductory part of the meeting.

Members raised the issue of stealing of seedlings that occurred last year. It was discussed how best to address this issue and decided that a limited amount of seeds should be offered to all interested households throughout the village, with advice from the farmer leader, or other group members, on cultivation practices. Seedlings would also be offered to other village members, but these would have to be paid for, a price of Rs5 per seedling was mentioned. Group members undertook to inform neighbours about this and to report back to Mohan, through Man khumari, the amount of seed and seedlings that were required. Several non-members dropped-in during the meeting. Kalpana Tamang was interested in becoming a member, but then said due to the smallness of her land-holding, 1 ropani bari and 2 ropani khet, that there was little opportunity to plant extra fodder. The question of potential for cultivation of additional fodder resources on community land was raised. Little enthusiasm, or interest was shown by the group in this. Ange has only one community forest in ward 7. It is used by some farmers only. The project will further investigate opportunities and constraints for increasing off-farm fodder sources.
All members requested an additional fodder species, jai grass (fodder oats), which has been successfully promoted by the extension services in some areas. This grows as a winter crop and hence requires some irrigation. They were also interested in growing kimbhu having seen the results from five members experimentations last year (material provided by Mohan).

Outcome from household visits

Dev khumari Khadka (HH6)
Growth and condition of Leuceana pallida seedlings good, one metre in height and no visible damage from insects. In contrast kimbhu seedlings showed heavy damage by leaf-eating insects, skeletal leaves only remaining in parts. Flemengia seedlings had only minimal damage on their leaves.

Santha kumari Khadka (HH 2)
All seedlings growing well, though only a few of each planted. Flemengia showing particularly good growth. Only farmer to be successful in growing Setaria grass.

Ram maya Tamang (HH10)
Poor survival of NB21 slips, only 40 out of 200 survived due to planting in overgrown areas. Identify need to plant in more open areas and to keep weed free initially.

Exploring the concept of fodder deficit with farmers at household level:
Rani Tamang (HH3)
She knows if an animal is full or not by the size of its stomach and approximately how much more it could eat. She went on to explain that the right hand side of the animal is its "water

stomach", left hand side its "feed stomach", the depth of which indicates how full it is. In survey 4 very low amount of feed reported, by the husband. The farmer clarified that no crop residue fed at that time as none left. Maize stover is used for bedding only at that time (unpalatable by that time).

Exploring unusual/ anomalous data with households:

Dev khumari Khadka (HH6)

Deficit reported in survey 3 is not in availability of fodder (she still has grasses on her bari land this time), but in availability of labour to cut and collect the grasses. This is the land preparation and planting time and all family labour is fully occupied to get the main crops in in time.

Savitri Khadka (HH9)

One of only two households (9 and 10) to report grazing. Both these households have larger amounts of cropping land and grazing on aftermaths/ before planting is significant for livestock feed intake.

Conducting pilot farm-mapping with two households to test the technique

We wanted farmers to map where they planned to plant additional fodder resources before raising the seedlings for a number of purposes. Firstly, in order to facilitate discussion between researchers, NGO staff, farmer leader and individual farmers over appropriate siting for different species and to check that appropriate numbers and species were cultivated in the nurseries to meet these objectives. Secondly, to enable the identification of contrasting aspects and soil-types between farms to site the on-farm trials. These will aim to serve as demonstrations of suggested planting patterns, spacings and species mixes and to measure survival, growth rates and performance of different species in different locations. Thirdly, to learn how farmer develop fodder resources on their farm, for example where they plant the different fodder species; which areas are planted first and how they plan to use the new resources. Fourthly, the mapping would serve as a base-line to measure how farmers ideas change and develop over time.

Households 9 and 10 were selected for the pilot as these had the largest land holdings and therefore potentially the most complex mapping to be conducted. We were not disappointed in the complexity of land holdings.

Savitri Khadka (HH9)

With the help of other household members, four parcels of khet and five parcels of bari land were identified. Savitri planned planting the majority of new tree seedlings on three ropani of gharbari and another three ropani of pallo bari (land close to the house). Molasses grass was to planted on another area of matillo bari (see map). The newly requested jai grass (fodder oats) was to be grown on the pagri khet, before the start of the monsoon in June. The Badahar seedlings and NB21 grass was to be grown on some lower, besi khet land.

Savitri said that she favoured the cultivation of grasses because these were easier to propagate, by just sowing at the start of the rains, and more production was possible from them (she has no land constraint). Of the trees she favoured Kimbu because this was the easiest to propagate, fast growing, and very productive.

Discussions in the household compound uncovered some concern from male members of this extended household on plans to plant all along the terraces on the pallo bari. They wanted planting of trees to be restricted to the edges of the land because of potential negative effects on the crop yield.

Ram maya Tamang (HH 10)
With the help of other household members, five parcels of land were identified, three khet and two bari. (The size of these differed from that gathered from questions in the first survey. Land holdings will be checked in a revised survey to be conducted by NGOs in the New Year.) A new irrigation canal is scheduled to be built through the household's gharbari land, and they plan to turn all the gharbari terraces below this into khet land. Erosion problems are expected to be associated with the new canal and some of the fodder grasses will be used to help stabilise the canal banks.

Kabita Tamang with her sister, a member of the women's fodder group in Tawari, Kavre District, Nepal. She's standing beside one of her new sunnhemp *(Crotalaria juncea*) hedges (six months old), grown for the multiple purposes of providing nutrient rich fodder for milking livestock, reducing soil erosion from the terrace, and helping improve soil productivity.

Meeting of the Women's fodder group in Ange, Langarche Village Development Committee, Sindhupalchowk District, Nepal. Representatives of the support Local NGO, Indrawati Public Service Committee (IPSC), collaborating National NGO, Nepal Agroforestry Foundation and collaborating staff of Forest Research and Survey Centre are also present.