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**RETA 5866: Fourth Agriculture and Natural  
Resources Research at CGIAR Centers:  
Developing Sustainable Forage Technologies for  
Resource-Poor Upland Farmers in Asia**



**Forages for Smallholders Project**

**Six-Monthly Report, 1 July - 31 December 2001**

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Cover photo: In Tuyen Quang province, Vietnam, *Panicum maximum* has become an important fish forage (photo R. Roothaert).



## **Summary of Activities**

At the end of 2001, the achievements of the Forages for Smallholders Project (FSP) were evaluated and compared with the targets set at the beginning of the year. Most targets were exceeded with a big margin, some by more than 200 %. More than 1500 new farmers planted forages in 2001, almost double the number the previous year. The total number of farmers who have planted forages in S.E. Asia, in association with this and the earlier project, is now around 4000. More than 1.5 million cuttings and splits were produced and distributed as planting material to new farmers. In some countries farmer groups are the main producers of planting material, in other countries it is done by individual farmers. The amount of seed produced in all countries was more than 7 tonnes. A total of 77 training events and field days were organised for farmers; and 20 training courses for technicians, officers and researchers.

An economist was hired to carry out a socio-economic study in three villages in East Kalimantan Province, Indonesia, with our partners from Dinas Peternakan. The objectives were to assess the impacts of the new forage technologies on livestock productivity, labour, and income. Factors considered were gender, poverty levels and market opportunities. Communities were involved in the assessment using participatory methods, and methods for improving self-monitoring impacts were identified. The study was concluded with appropriate training sessions for the communities who participated. Additionally, formal questionnaires were used to assess economic productivity. About 85 farmers participated in the study. Livestock systems varied from stall feeding improved goats, grazing under coconuts on improved pasture by Bali cattle, to grazing and stall feeding improved forages to Ongole cattle. The average availability of improved forage area was 0.4 ha per farm. Ruminant productivity in the study area increased an average 62 % in terms of cash income from sales of livestock and manure. In addition to increased animal productivity, on average, 20 % labour input was saved in the new forage systems in terms of days worked per year. The saving of labour amounts to an extra 31 % increased income from the livestock system, when time is valued in money. The adoption of forages resulted in an average 19 % increase in gross margin of the livestock systems, and a 78 % increase in household income per days spent working in the livestock systems.

A journalist was hired to appraise and write up the results of the FSP in Mindanao, Philippines, and in Tuyen Quang, Vietnam. After travelling to the sites and interviewing farmers, field workers, and government officials, he wrote three articles for the popular press. In Cagayan de Oro he highlighted the synergy of the FSP and the Government dairy programme, which has resulted in increased and more regular farmers' income. In Malitbog, the environmental benefits of forages were analysed and farmers perception of the participatory methods evaluated. In Vietnam, unconventional ways of utilising forages have improved productivity of fish, pigs, chickens and ducks. Growth rates of pigs increased from 330 g/day without forages, to 450g/day with improved forages. At the same sites, grass carp fed on improved forages achieved 25 % higher weight compared to systems not using improved forages over a 6 months feeding cycle.

A course was developed on monitoring and evaluation, based on experiences in Vietnam and the Philippines. The modules address the need for both participatory

methods, involving farmers focus groups, and regular surveys. Analysis of data is carried out at the local level. The FSP produced a publication methods publication, 'How to monitor and evaluate impacts of participatory research projects', which is a guideline containing concepts and methods for monitoring and evaluation by development workers. The booklet 'Developing forage technologies with smallholder farmers' was completed in 6 languages (English, Chinese, Indonesian, Thai, Lao and Vietnamese) and distributed to field staff in 6 countries.

Three project staff from the Philippines and one from Vietnam attended a 3 week course on participatory research and development, organised by CIP-UPWARD and CIAT. Action plans were developed. One field officer from Vietnam, one from Indonesia and one from Thailand attended an intensive 6 week English language course in Laos.



## **1. Project background.**

The project “RETA 5866: Fourth Agriculture and Natural Resources Research at CGIAR Centers: Developing Sustainable Forage Technologies for Resource - Poor Upland Farmers in Asia”, in short called the “Forages for Smallholders Project” (FSP), started in January 2000. It is funded by the Asian Development Bank for a period of three years. The goal of the project is: “to improve the livelihood of upland farmers by enhancing available feed sources to increase livestock production and strategic use of grasses and legumes to conserve soil and to enhance nutrient management (ADB<sup>1</sup>, 1999). The participating countries are China, Indonesia, Lao PDR, Philippines, Thailand and Vietnam.

### ***Objectives and outputs***

The objectives of the project are to:

- Develop sustainable forage technologies for resource-poor farmers in upland farming systems in Asia.
- Strengthen the capacity of National Agricultural Research Systems in the Bank's Developing Member Countries to develop and deliver these technologies to farmers.

The project has five outputs:

1. Productive and sustainable forage technologies for upland farming systems developed and tested by farmers.
2. Forage technologies extended to other farmers using participatory approaches for scaling-up from farm level to the community and provincial levels.
3. Effective local seed and planting material multiplication systems established and operational.
4. Capability in DMCs for developing and disseminating forage technologies using farmer participatory approaches (FPA) strengthened.
5. Network for sharing information among NARSs and in the region continued based on the Southeast Asia Feed Resources Research and Development (SEAFRAD) and electronic communications.

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<sup>1</sup> Asian Development Bank 1999. Proposed Technical Assistance for the Fourth Agriculture and Natural Resources Research at CGIAR Centres. Manila, Philippines.

The FSP is co-ordinated by the Centro Internacional de Agricultura Tropical (CIAT), which is part of the Consultative Group on International Agricultural Research (CGIAR). The implementing agencies in the participating countries are:

China	Tropical Pasture Research Centre (CATAS), Hainan
Indonesia	Dinas Peternakan, Samarinda and Directorate General of Livestock Services (DGLS), Jakarta
Lao PDR	National Agriculture and Forestry Research Institute, NAFRI, Vientiane
Philippines	Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD), Los Baños, Visayas State College of Agriculture (ViSCA) and Department of Agriculture, Region 10
Thailand	Department of Livestock Development, Ministry of Agriculture and Cooperatives, Bangkok
Vietnam	National Institute of Animal Husbandry (NIAH), Ministry of Agriculture and Rural Development(MARD), Hanoi

The project operates in 12 focus sites (table 1), which had been originally developed in an earlier project funded by AusAID.

**Table 1.** Focus sites in the FSP and dominant farming systems

Country	Province	Focus district/ municipality	Dominant farming system
Indonesia	East Kalimantan	Makroman, Samarinda	Rain fed lowland, intensive sedentary upland.
		Sepaku II, Pasir	Extensive sedentary upland, grasslands.
Lao PDR	Luang Phabang	Xieng Ngeun	Extensive sedentary upland, short rotation slash and burn.
	Xieng Khouang	Pek	Short rotation slash and burn, intensive sedentary upland (rice), grasslands
	Savannakhet	Savannakhet	Grasslands
Philippines	Misamis Oriental	Cagayan de Oro	Extensive sedentary upland
	Bukidnon	Malitbog	Extensive sedentary upland.
	Cebu and Leyte	Cebu City, Tabango	Intensive and extensive sedentary upland
Vietnam	Daklak	M'Drak	Extensive sedentary upland, grasslands.
	Tuyen Quang	Tu Quan, Phu Lam, Duc Ninh	Intensive sedentary upland.
Thailand	Nakornratchasima	Sung Nuen	Extensive sedentary upland.
China	Hainan	Baisha, Danzhou and Ledong	Extensive sedentary upland.

## 2. Achievements against targets in 2001

During the Annual Regional Programme Meeting, held in Samarinda, Indonesia, January 2001, participating countries began developing workplans for 2001, for each focus site within the country. These workplans were completed during February and March and were published in the proceedings of the workshop. Many of the workplans had stated target numbers related to dissemination, forage multiplication and training activities. In Tables 2, 3 and 4, both targets and achievements are summarised for each country. The percentage value in the last row is based on the achievements against target numbers set at the beginning of the year. In all cases where targets were set, our partners provided achievement numbers. However, the data is not complete. In some instances target numbers were not set by some countries even though achievements were reported.

**Table 2.** Summary of achievements in dissemination in 2001

Country	Target/ achiev- ed	No. of PDs conduct ed	No. of farmers partic. in PDs	No. of groups (old and new)	No. of cross visits orga- nised	No. of farmers partic. in cross visits	No. of new farmers planting forages
Vietnam	T	10	300	12	10	300	250
	A	19	380	92	19	330	664
Indonesia	T	15	320	15	15	50	240
	A	16	396	16	12	83	272
Thailand	T	2	ns <sup>1</sup>	2	ns	ns	ns
	A	3	30	4	100	54	143
China	T	6	ns	10	ns	ns	90
	A	5	90	10	11	93	73
Philippines	T	ns	ns	ns	ns	ns	ns
	A	46	797	57	40	734	320
Lao PDR	T	15	300	ns	6	ns	ns
	A	24	480	na <sup>2</sup>	5	36	65
Total target		137	920	39	31	350	580
Total achieved		151	2173	179	187	1330	1537
Achievement against set targets		105	1376	122	36	449	1009
% achieved		77	150	312	116	128	174

<sup>1</sup> ns Targets not set    <sup>2</sup> na not available

The achievements for dissemination activities in 2001 were excellent with most targets being exceeded. A total of 1537 new farmers planted forages, many more than



originally planned, and double the number the 821 farmers who planted forages in 2000. Together with the 1700 farmers who planted during the previous phase of the FSP (1995 – 1999), the total number of farmers planting forages associated with the project are now approx. 4000. Many of the new farmers in 2001 participated in cross visits to the focus sites. Cross visits, in their various forms, prove to be an effective way of dissemination.

**Table 3.** Summary of achievements in forage multiplication systems in 2001

Country	Target/achieved	New groups producing planting materials or seeds	New individual farmers producing planting materials or seeds	New farmers producing seeds	Total no. farmers producing seeds	No. of splits produced	Total no. of on-farm nurseries for legume seedlings
Vietnam	T	10	0	ns	15	160,000	0
	A	8	0	na	13	352,000	0
Indonesia	T	7	4	ns	15	1,000,000	2
	A	14	6	na	29	1,100,000	5
Thailand	T	ns	0	ns	ns	ns	ns
	A	2	0	na	66	na	3
China	T	ns	0	ns	ns	10,000	ns
	A	3	0	na	16	25,000	21
Philippines	T	18	12	2	4	0	20
	A	17	37	2	4	30,000	10
Lao PDR	T	10	0	0	0	ns	0
	A	10	0	0	0	na	0
Total target		45	16	2	43	1,170,000	22
Total achieved		54	43	2	128	1,507,000	39
Achievement against set targets		49	43	2	46	1,477,000	15
% achieved		109	269	100	107	126	68

<sup>1</sup> ns Targets not set    <sup>2</sup> na not available

Vegetative planting materials and seeds were produced both by farmer groups and individual farmers. Seed production is usually an individual farmer activity. Although a total of 128 farmers were producing seeds, these were mostly farmers who had been producing seeds for more than one year. Seed production is a specialised skill, which takes some time to master and to become economically viable. The amounts of forage seeds produced in 2001 in Vietnam, Thailand, China and Lao were 52, 500, 5,380 and 1,500 kg, respectively. A large part of the seed in Lao PDR was produced at the

Livestock Research Centre. One and half million cuttings and splits were produced, providing an average of 100 pieces of planting material to every new farmer.

**Table 4.** Summary of capacity building and other activities in 2001.

Country	Target/achieved	No. of farmer training courses or field days conducted	No. of farmers participated in training courses or field days	No of technicians' training courses	No. of technicians attended training course	No of farmers carrying out experiments	No. of Seafrad articles contributed
Vietnam	T	10	300	1	20	20	0
	A	19	390	1	17	20	1
Indonesia	T	8	140	5	30	10	2
	A	12	166	9	56	15	2
Thailand	T	3	70	1	20	ns	2
	A	2	65	1	20	13	2
China	T	ns	100	1	7	30	2
	A	6	175	2	15	30	0
Philippines	T	23	502	2	14	5	5
	A	28	1083	2	38	5	2
Lao PDR	T	10	100	5	28	ns	2
	A	10	100	5	94	na	2
Total target		54	1212	15	119	65	13
Total achieved		77	1979	20	240	83	9
Achievement against set targets		71	1979	20	240	70	9
% achieved		131	163	133	202	108	69

<sup>1</sup> ns Targets not set <sup>2</sup> na not available

A total of 1979 farmers participated in training courses, cross visits, and field days in 2001. Although this number is large, it does include farmers participating in more than one training event. In Appendix 2, details are presented of all the training events organised by FSP. Topics included forage agronomy, animal nutrition, participatory research methods, English language, goat production, duck raising, fodder tree nurseries, use of fodder trees, soil and water conservation, grassland productivity, and seed production. Project members also participated in training events organised by other institutions. These details are presented in Appendix 3.

A total of 83 farmers carried out experiments that were either contractual, consultative, or collaborative in nature (Table 4). In these experiments, scientists are clearly involved

in the decision making process of the design and implementation of the research. A much larger number of experiments were conducted that were collegial in nature or even without any structured communication with scientists. Because of this autonomous nature, numbers of these experiments could not easily be captured. It is a sign of maturity where the initiative and ownership in evaluation activity is taken over by the farmers from the facilitators.



*Romulo Carales, chairman of the Pagalungan cooperative, standing in a plot of Arachis pintoi. His milking shed is in the background.*



### 3. Publications

#### **Books**

Bosma, R.H., Roothaert, R.L. and Ibrahim 2002. Economic and social benefits of new forage technologies in East Kalimantan, Indonesia. CIAT Working Document, Centro Internacional de Agricultura Tropical, Cali, Colombia.

Cramb, R., Purcell, T. 2001 How to Monitor and Evaluate Impacts of Participatory Research Projects: A Case Study of the Forages for Smallholders Project. *CIAT Working Document No. 185*; Centro Internacional de Agricultura Tropical: Cali, pp 55.

Horne, P.M. and Stür, W.W. 1999. Developing forage technologies with smallholder farmers – how to select the best varieties to offer farmers in Southeast Asia. ACIAR Monograph No. 62, Australia, 80 pp.  
Published in English, Chinese, Indonesian, Thai, Lao and Vietnamese.

#### **Progress reports**

R. Roothaert, C. Phaikaew, J. Samson, P. Kerridge, E. Magboo, L.H. Binh, P. Phengsavanh, Y. Kexian, Ibrahim, T.T. Khanh, P. Asis, W. Nacalaban, J. Saguinhon, G. Nakamanee 2001. RETA 5866: Fourth Agriculture and Natural Resources Research at CGIAR Centers: Developing Sustainable Forage Technologies for Resource-Poor Upland Farmers in Asia. Forages for Smallholders Project, Six-monthly report, 1 January – 30 June 2001, 37 pp.

R. Roothaert, P. Kerridge, J. Samson, E. Magboo, L.H. Binh, C. Phaikaew, P. Phengsavanh, Y. Kexian, Ibrahim, T.T. Khanh, P. Asis, W. Nacalaban, J. Saguinhon, G. Nakamanee and A. Schermesser 2000. RETA 5866: Fourth Agriculture and Natural Resources Research at CGIAR Centers: Developing Sustainable Forage Technologies for Resource-Poor Upland Farmers in Asia. Forages for Smallholders Project, Six-monthly report, 1 July – 31 December 2000, 31 pp.

Developing Sustainable Forage Technologies for Resource-Poor Upland farmers in Asia, Six-Monthly Report, 1 January – 31 July 2000, Forages for Smallholders Project, 15 pp.

#### **Papers**

Ralph Roothaert, Peter Horne and Werner Stür. 2001. Integrating forage technologies on smallholder farms in the upland tropics. Paper presented at the International Workshop "Forage Demand and Adoption by Smallholder Livestock Keepers", June 18-20, Addis Ababa, Ethiopia.

Ralph L. Roothaert and Jindra Samson. 2001. Management of forage crops for smallholders in S.E. Asia and its possible implications on the quality of farm land. Paper presented at the Asian Agriculture Congress, 24 – 27 April 2001, Manila, Philippines.

J. Samson and R. Roothaert 2001. The Challenge of Adoption: Scaling-up of Participatory Research in Forage Technologies. Poster presented at the 6<sup>th</sup> National Grassland Congress, Legaspi, Philippines. *Awarded with Best Poster Award.*

### ***Proceedings***

R.L. Roothaert and J.N. Samson, Eds. 2001. Proceedings of the Annual Regional Programme Meeting of the Forages for Smallholders Project, 'Scaling-up of participatory forage technology development', Samarinda, East Kalimantan, Indonesia, 15 – 19 January 2001, CIAT, Los Baños.

Horne, P. M., Stur, W.W., Hacker, J. and Kerridge, P.C. (Eds) 2000. Working with farmers: the key to adoption of forage technologies. Australian Centre for International Agricultural Research: Canberra, pp 325

Roothaert, R.L. 2000. Proceedings of the Inception Meeting of CIAT/ADB Project "Development of Sustainable Technologies for Resource-Poor Upland Farmers in Asia", 17-18 February 2000, Los Baños, Philippines. CIAT, Los Baños, Philippines.

### ***News articles***

Robert Hill. Farming success story in Northern Vietnam. To be published in Affinities, ADB Review, Far Eastern Agriculture, or local newspapers.

Robert Hill. Scientists find success in collaboration with farmers. To be published in Affinities, ADB Review, Far Eastern Agriculture, or local newspapers.

Robert Hill. Forage project sparks brave new venture. To be published in Affinities, ADB Review, Far Eastern Agriculture, or local newspapers.

Ralph Roothaert 2000. Forages for Smallholders in Asia: CIAT Project begins new Phase. UPWARD Fieldnotes Vol. 9(2) p. 9.

### ***Newsletters***

SEAFRAD News, Issue 11, July 2001.

SEAFRAD News, Issue 10, May 2000.

### ***Others publications***

Forages for Smallholders Project, 2001. Internet web pages: [www.ciat-asia.org/02-FSP/fsp.htm](http://www.ciat-asia.org/02-FSP/fsp.htm).

Two radio interviews with project staff were recorded and broadcast in East Kalimantan, Indonesia, reaching farmers in all rural areas, 2000.

#### **4. International travel of project staff**

<b>Dates (2001)</b>	<b>Traveller</b>	<b>Countries visited</b>	<b>Purpose</b>
11 – 21 Jan	All FSP national coordinators and selected field workers	Indonesia	FSP Annual Programme Meeting
18 – 26 Feb	R. Roothaert, F. Gabunada	China	Technician's training
4 – 14 March	R. Roothaert	Lao PDR	Field study
1 – 9 April	R. Roothaert, F. Gabunada	Thailand	Field study and facilitation
15 – 25 June	R. Roothaert, Ibrahim, C. Phaikaew	Ethiopia	ILRI workshop
27 – 28 June	P. Kerridge, Bounthong	Philippines	Research priority setting meeting
3 – 7 July	Ibrahim, C. Phaikaew	Indonesia	FAO workshop, Manado, Sulawesi
7 – 15 July	R. Roothaert	Indonesia	Preparation of study
16 – 26 Sep	R. Roothaert, J. Samson	Vietnam	Course on monitoring and evaluation
21 Nov – 16 Dec	R. Roothaert	Colombia	CIAT Annual meeting

#### **5. Human resources**

##### ***FSP co-ordinators and counterparts***

Dr. Ralph Roothaert, Regional Coordinator FSP, Los Baños, Philippines.

Dr. Peter Kerridge, Coordinator CIAT – Asia, Vientiane, Lao PDR

Mr. Eduardo Magboo, FSP Coordinator Philippines, Los Baños.

Mr. Viengsavanh Phimpachanhvongsod, FSP Coordinator, Laos PDR, Vientiane

Mrs. Chaisang Phaikaew, FSP Coordinator Thailand, Bangkok.

Mr. Le Hoa Binh, FSP Coordinator Vietnam, Hanoi.

Ir. Ibrahim, FSP Coordinator Indonesia, Samarinda.

Assoc. Prof. Yi Kexian, FSP Coordinator China, Hainan.

Mr. Truong Tan Khanh, Daklak, Vietnam.

Mr. Willie Nacalaban, Malitbog, Philippines.



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Mrs. Ganda Nakamanee, Pakchong, Thailand.  
Mr. Francisco Gabunada, Leyte, Philippines.  
Mrs. Elsie Gabonada, Impasugong, Philippines.  
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Mrs. Vu Hai Yen, Tuyen Quang, Vietnam.  
Mr. Leonardo Moneva, Cebu, Philippines.

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## 6. Appendices

### Appendix 1. Training courses and number of people trained.

Country and Province	Name of training course conducted by FSP	Location	Date started	Length (days)	No. of field workers and officers	No. of researchers	No. of farmers	Course organiser (person)
<i>China</i>								
Hainan	Developing forage technologies with farmers	Danzhou	19-Feb-01	7	13	13	13	Yi Kexian
	Forage growing and animal production for smallholder farmers	Wentou	18-Sep-01	2	4	4	100	Yi Kexian
<i>Indonesia</i>								
East Kalimantan	Development of forage technology	Samarinda	05-Jun-01	10	27			Ibrahim
	Forage Agronomy	Sepaku	12-Jul-01	3			15	FSP
	Agriculture English Training	Vientiane	01-Aug-01	8	1			IRRI Laos
	Animal Nutrition	Makroman	09-Aug-01	3			15	FSP
	Measure body weight of cattle	Makroman, Sepaku, Samboja	October-Novem 2001	5	10		75	FSP and consultant
<i>Lao PDR</i>								
Xiengkhuang	Participatory diagnosis	Xiengkhuang	29-Jan-01	5	29			FSP/ FLSP

Country and Province	Name of training course conducted by FSP	Location	Date started	Length (days)	No. of field workers and officers	No. of researchers	No. of farmers	Course organiser (person)
Luangphabang	Participatory extension	Luangphabang	09-Apr-01	4	29			FSP/ FLSP
Vientiane	Agronomy	Namsuang	08-May-01	6	35			FSP/ FLSP
<i>Philippines</i>								
Misamis Oriental	Basic Forage Agronomy	Mambuaya	28-Mar-01	1			41	FSP-CDO
	Basic Forage Agronomy	Baikingon	02-Apr-01	1			10	"
	Fodder Tree Nursery Management	Dansolihon, Lumbia, San Simon	18-Jun-01	1			10	"
	Basic Forage Agronomy	Tumpagon	26-Jun-01	1			18	"
	"	F. S. Catanico	03-Jul-01	1			20	"
	"	Tagpangi	13-Jul-01	1			48	"
	Goat Raising	Dansolihon	16-Aug-01	1			28	"
	Basic Forage Agronomy	F. S. Catanico	20-Aug-01	1			31	"
	Egg Incubation	San Simon	18-Sep-01	1			40	"
	Animal Health and Nutrition	Bayanga	24-Oct-01	1			42	"
	Basic Forage Agronomy	Dansolihon	12-Nov-01	1			24	"
	Duck Raising	Taglimao	19-Nov-01	1			56	"
	Importance and Utilization of Fodder Trees and Shurbs	San Simon	04-Dec-01	1			33	"

Country and Province	Name of training course conducted by FSP	Location	Date started	Length (days)	No. of field workers and officers	No. of researchers	No. of farmers	Course organiser (person)
	Importance and Utilization of Fodder Trees and Shurbs	Lumbia	20-Dec-01	1			11	"
	Importance and Utilization of Fodder Trees and Shurbs	Dansolihon	Dec, 2001	1			31	FSP-CDO
Bukidnon	PM & E	CDO	02-Aug-01	2	5			FSP/Coordinator
	Cross visit from Laob/Mabuhay/Mindaga t/Bagyangon/Huya-buya	ICRAF-Claveria	29-Nov-01	1	1		22	FSP/MAO
	Forage Agronomy Training	San Migara	11-Dec-01	2	4		63	FSP/MAO
	Farmer Integration	San Migara	18-Dec-01	1			80	FSP/ICRAF
	Forage Agronomy Training	Omagling	19-Dec-01	2	4		40	FSP/MAO
	Cross visit from Purok 2	ICRAF-Claveria	April, 2001	1	2		44	FSP/MAO
	Cross visit from Patong	ICRAF-Claveria	August, 2001	1	1		40	FSP/MAO
	Cross visit from Sabangaan/Tagmaray/ San Migara	ICRAF-Claveria	August, 2001	1	1		34	FSP/MAO
	Cross visit from Villa Naraeth	ICRAF-Claveria	August, 2001	1	1		40	FSP/MAO
	Cross-visit	Batangas	August, 2001	5	4		8	FSP/Coordinator
	Cross visit from Tubod/Paitao	ICRAF-Claveria	July 2001	1	1		54	FSP/MAO



Country and Province	Name of training course conducted by FSP	Location	Date started	Length (days)	No. of field workers and officers	No. of researchers	No. of farmers	Course organiser (person)
	Cross visit from Siloo	ICRAF-Claveria	June, 2001	2	1		87	FSP/MAO
	Cross visit from Patpat	ICRAF-Claveria	March 2001	1	1		55	FSP/MAO
	Forage Agronomy Training	Sta. Ines	March, 2001	2	3		30	FSP/MAO
	Participatory Dev't. & Gender Analysis	CDO	March, 2001	2	4			FSP/Coordinator
<i>Thailand</i>								
Nakornratchasima	Forage establishment, mgt & utilization	Nakornratchasima	28-Mar-01	1			28	PANRC
	Recording data & familiarization with participatory tools	Pakchong	02-Apr-01	7		9		PANRC
	Forage establishment, mgt & utilization	Sung Nuen	21-Apr-01	1			10	PANRC
	Forage establishment and management for seed production	Khonburi District	19-Jun-01	1			30	Amnat
	Forage establishment and management for seed production	Buayai District	01-Jul-01	1			35	Ganda
	Site visit to Pakchong Animal Nutrition Center & Pakchong dairy farmers	Pakchong	27-Aug-01	1			40	PANRC

Country and Province	Name of training course conducted by FSP	Location	Date started	Length (days)	No. of field workers and officers	No. of researchers	No. of farmers	Course organiser (person)
<i>Vietnam</i>								
Daklak	Forage agronomy management	M'Drak, Ea Kar, CuJut, Buon don, and Buon Ma Thuot	01-May-01	30			384	FSP & DARD
	Forage participatory research & development	Tay Nguyen Univ.	01-May-01	30	33			DARD, TN Univ, SAM Project
	Farmers training on seed production	Tay Nguyen Univ.	01-Sep-01	1			10	Khanh
Tuyen Quang	Workshop and training in the field on M&E	Tuyen Quang	18-Sep-01	5	5	5	5	R. Roothaert
Daklak	Developing forage technologies with farmers	Buon Me Thuat	April, 12	7	10	4		Khanh, An, Dung
	Seed production technology	Cu Roa 1 (village No 1, 2, 3)	August 01	1			30	Mr. Thieu + Ms. Tuyet
		Cu Roa 2 (village No 4, 6)		1			30	Mr. Thieu + Ms. Tuyet
		Cu Ni		1			30	Mr. Ha + Mr. Thai
	English training course	Lao	July	42	1			IRRI
	Group monitoring for head of farmer group	CuJut	July	1			6	Khanh + Dung
		M'Drak		1			8	"

Country and Province	Name of training course conducted by FSP	Location	Date started	Length (days)	No. of field workers and officers	No. of researchers	No. of farmers	Course organiser (person)
		Ea Kar		1			10	"
		Buon Don		1			6	"
	Forage establishment and use	Cu Mta	May – June 01	1			30	Mr.Thieu + Ms. Tuyet
		Eatrang		1			10	"
		Eatrang		1			10	"
		Ea Lai		1			20	"
		Ea Mlay		1			20	"
		Cu Prao		1			20	"
		Ea Mut		1			10	Mr. Ha + Mr.Thai
		Ea Pal		1			10	"
		Ea Knuop		1			20	"
		Ea Tyl		1			30	"
		Chu Giang		1			20	Mr. Ha + Mr.Thai
		Ea Wek		1			20	Mr. Duong
		Ea Hoa		1			20	Mr. Duong
		Tam Thang		1			20	Mr.Thu + Ms. Oanh
		Cu jut		1			10	Mr.Thu + Ms. Oanh
		Nam dong		1			10	Mr.Thu + Ms. Oanh
		Ea Kao		1			20	Khanh

**Appendix 2. FSP partners trained by other organisations in 2001.**

Country	Name of training course conducted by FSP	Location	Date started	Length (days)	No. of field workers and officers	No. of researchers	No. of farmers trained	Course organiser (person)
China								
Hainan	New forage varieties and production	Changpo	16-Oct-01	1	6		200	Danzhou city government and CATAS
Philippines								
Bukidnon	Beef congress	Bukidnon	27-Mar-01	1	1			
Bukidnon	International training on Participatory Approach to research and development	Los Baños	24-Sep-01	21	1			CIP/UPWARD
Misamis Oriental	Training on Forage & Pasture Development	Northern Mindanao State Inst. Of Science & Tech.	08-Oct-01	5	65			Department of Agriculture
Bukidnon	Cross-visit to forage research and goat house	San Migara	Dec. 2001	1	8	1	1	ICRAF
Bukidnon	Participatory community research training and data gathering	ICRAF-Claveria	July 2001	4	1			ICRAF
Bukidnon	Cross-visit to forage	San Migara	June 2001	1		25	1	DA-RFU-10

Country	Name of training course conducted by FSP	Location	Date started	Length (days)	No. of field workers and officers	No. of researchers	No. of farmers trained	Course organiser (person)
	research							
Bukidnon	Forage Agronomy Training	CDO	June 2001	3		25	1	DA-RFU-10
Bukidnon	LGU official cross-visit	ICRAF-Claveria	Sept 2001	1		14	1	ICRAF/FSP
Bukidnon and Laguna	International training course on participatory research and development	Philippines	22 September 2001	21		3		UPWARD
Thailand								
Chachoensao	Soil and Water Conservation	Chachoensao Province	13-Dec-01	2	22		24	Wilawan (Integrated Cassava based Cropping)
Vietnam								
Daklak	Training on botanal method	Beef industrial Centre	01-May-01			1		DBI
Daklak	English training course	Beef industrial Centre	02-May-01			1		DBI
Daklak	Evaluate natural grassland by BOTANAL	Australia	15-May-01	4		1		Col. Meddison
Daklak	International training course on participatory research and development	Philippines	September 2001	21		1		UPWARD



**Appendix 3. Organisations that FSP has collaborated with in 2001.**

Country	Name of organisation	Type of organisation	Place, Province	Activities in common with FSP
China	Farmer Centered Research Network, China(FCRNC)	NGO	China Agricultural University, Beijing	Exchanging and sharing the experiences in Farmer's Participatory Research inside and outside China
Indonesia	BPLP Training Center	Training Center	Samarinda, East Kalimantan	Training for Field Worker
I	Deliveri	Livestock Project	TanahGrogot, Pasir District	Training for Field Worker in PRA
Philippines	DASVM-ViSCA	College - department	Leyte, Eastern Visayas	forage plots for instructional purposes (college students in agriculture)
	Department of Agriculture	Research Institute	Cagayan de Oro City	Forage Agronomy Training course and livestock projects
	Department of Trade and Industry	Research Institute	Cagayan de Oro City	Livelihood project for the farmer collaborators
	Department of Agrarian Reforms	Research Institute	Cagayan de Oro City	Livelihood project for the farmer collaborators
	ICRAF	Research Institute	Claveria, Misamis Or.	Soil and Water Conservation Project
	ICRAF-Visayas	research institute	Leyte, Eastern Visayas	promotion of soil and water conservation practices (contour hedgerows)
	National Dairy Authority	Research Institute	Cagayan de Oro City	Dairy Cattle project for FSP farmer collaborators
	Natural Resources	Research Institute	Cagayan de Oro City	Soil and Water Conservation Project
	PCC at ViSCA	government agency - agriculture	Leyte, Eastern Visayas	dissemination of forage planting materials to carabao raisers
	Philippine Carabao Center	Research Institute	Musuan, Bukidnon	Dairy Buffalo Project for FSP farmer collaborators
	Philippine Coconut Authority	Research Institute	Misamis Oriental	Coconut-livestock integration

Country	Name of organisation	Type of organisation	Place, Province	Activities in common with FSP
	Provincial Governmnet of Bukidnon	Research Institute	Malaybalay, Bukidnon	Farmers Field Day
Thailand	DLD	Ministry	Samarinda Indonesia	Attendance of two Thai participants in the FSP regional workshop at Samarinda,Indonesia in January 2001
	DLD	Ministry	ILRI Ethiopia	Attendance of a Thai coordinator in the Forage Adaptation workshop at ILRI, Ethiopia in June 2001
	DLD	Ministry	Bangkok	Editorship of 1 issue of SEAFRAD Newsletter Issue 11 July 2001
Vietnam	Buon Don DARD	Government	Buon Don	Developing worker
	Cu Jut DARD	Extension	Cu Jut	Developing worker
	Cu Jut extension office	Extension	Cu Jut	Developing worker
	Daklak DARD	Government	Buon Ma Thuot	supervisor
	Daklak extension office	Extension	Buon Ma Thuot	supervisor
	Ea Kar extension office	Extension	Eakar	Developing worker
	Exention worker in 19 communes	Extension	Buon don, Cujut, M'Drak, Ea kar	Field worker
	M'Drak extension office	Extension	M'Drak	Developing worker
	NIAH	Research	Ha Noi	Coodinator
	Taynguyen university	University	Buon Ma Thuot	Manager

#### **Appendix 4. Trip report East Kalimantan, Indonesia, 8 – 14 July 2001**

Ralph Roothaert

##### **Purpose of travel:**

- ♦ To discuss with Dinas Peternakan and farmers the proposal of an economic study on small scale cattle and goat fattening.
- ♦ To review old and new activities of FSP in the fields.
- ♦ To assist the national coordinator of FSP in planning monitoring and evaluation.

##### **Key people met:**

Ir. Ibrahim, National Coordinator FSP, Samarinda.

Ir. Munief Muchsinin, Head Dinas Peternakan, Samarinda

Ir. H. Husaini, Head of livestock, Pasir District

Drs. Yusran, Head of Development of Planning Division, Pasir District.

##### **Summary**

During the visit my opinion was reconfirmed that expansion of forage production by smallholder farmers in East Kalimantan is unstoppable. A new success story is the cattle production on *Brachiaria humidicola* under coconuts in Samboja. Several new key farmers were identified with successful small scale cattle fattening and rearing enterprises, who would be excellent examples to other farmers. An economic study about livestock activities is planned and will complement our reports that we have so far. Dinas Peternakan and farmers welcomed the proposal. Many young extension workers have been trained in forage technologies and participatory research approaches, and they are effective and innovative in the field. Reporting participatory research results, however, still remains a problem. Field workers and the National coordinator need more direction on how and what to report. The CIAT office is intending to send someone to assist. The trip yielded several ideas for new research: testing forage species for fire resistance in *Imperata cylindrica* fields; testing by farmers of *Brachiaria decumbens* in *Imperata* fields for grazing; and seed production of *Brachiaria humidicola* in Nusa Tenggara.

##### **Itinerary**

Su 8 July	Travel to Balikpapan
Mo 9	Karanjuran and Samboja
Tu 10	Samarinda meeting with Dinas Peternakan, Makroman, Loa Kulu
We 11	Samarinda planning FSP, travel to Sepaku
Th 12	Sepaku
Fr 13	Tanah Grogot
Sa 14	Travel to Manila

## Economic study

A meeting was organised with the senior officers of Dinas Peternakan at Samarinda. On the agenda were the progress of FSP in East Kalimantan and the proposal for an economic study of cattle and goat fattening. It was agreed that FSP was on the right track. Several suggestions were made for the economic study:

- ◆ One or two staff of Dinas should be involved in the study to facilitate learning from the consultant.
- ◆ There is existing economic information about livestock production in East Kalimantan which should be reviewed before the start of the study (e.g. GTZ, 1986). **Follow-up: Ibrahim**
- ◆ Non-ruminant livestock should get some attention in the study.
- ◆ The team would like to know whether farmers with more than one cow or bull have higher economic returns per animal than farmers who only fatten one animal.

The proposed study was also discussed with two farmer groups in Makroman, and two farmer groups in Sepaku. Farmers in all groups stressed that we should not ignore breeding, as all farmers are currently involved in breeding as well as fattening. Fattening is more profitable, but it is difficult to obtain young or lean cattle for fattening. Farmers breed their own fattening stock. I suggest that part of the study should assess which animals improved forages are fed to (**Follow-up: consultant**). We decided to drop Loa Kulu from the sites for the study, because framers had only 1 or 2 years experience with forages. In stead Samboja would be included. The proposed studies site are now:

Site	Predominant livestock system
Makroman	Stall fed goats, tethered cattle (Onghole and Bali) in farm land. Cut & carry additional feed.
Sepaku	Grazing cattle (Onghole) in <i>Imperata</i> fields, cattle fattening. Cut & carry additional feed.
Samboja	Bali cattle grazing under coconuts.

We measured girth circumference of Bali and Onghole cattle and weighed the cattle on a barely functioning mobile electronic weighing scale. With some efforts we were able to take 5 accurate weights. We compared the girth circumference, weights and the live weight prediction formulas for Vietnamese and Brahman cattle. The formulas for Brahman cattle gave the closest live weight prediction for Bali cattle, and the average of the two formulas gave the closest prediction for Onghole cattle. There is a need to review girth circumference and live weight correlation studies in Indonesia, to obtain the most accurate formulas for cattle breeds in our study (**Follow-up: Ibrahim, Dr. Sudarmadi and Ralph**).

## Field visits

Some of our discussions with farmers focussed on the economics of livestock activities. Some data were gathered as follows (US\$ = I.Rp. 11,000):

- ◆ A bag of chicken manure (20 kg) is sold at I.Rp. 4500 (US\$ 0.40)
- ◆ A farmer in Samboja with 30 Bali cattle was able to sell 10 cattle per year at an average price of I.Rp. 2.7 mil per head or 27 mil total (US\$ 2454). His 6 ha coconuts yielded I.Rp. 20 mil per year.
- ◆ A bag of local grass (20-30 kg) is sold at I.Rp. 5000 (US\$ 0.45).
- ◆ Planting materials of improved grass and legume species are sold at I.Rp. 10 per cutting at a farmer group at Sepaku (Stylo, Cavalcade and Wynn cassia are also propagated by cuttings!). Group members get free material.
- ◆ In Sepaku, a farmer fattened 2 cattle for 4 months and the net live weight gain of the cattle during that period resulted in a profit of I.Rp. 1.3 mil (US\$ 118).
- ◆ In Samboja, a farmer sold a one-year-old Bali heifer for I.Rp. 1.5 mil and a one-year-old bull for 1.7 mil.
- ◆ In Loa Kulu, a farmer sold a big bull for I.Rp. 2.5 mil (US\$ 227).
- ◆ Cattle are sold at any age between 0 and 3 years.

On Mr. Tajib's farm in Samboja, *Brachiaria humidicola* var. Yanero grew very well under coconuts and with intensive grazing. The grass was particularly appreciated for its low management attributes, and cattle even eat old leaves. We suggested to him to try some portions with *Arachis pinto* as it withstands grazing well, adds nitrogen to the system and improves animal productivity. There are about 100 farmers in Samboja grazing cattle under coconuts, and half of them grow *B. humidicola*. Ten percent have areas of *B. humidicola* covering more than 1 ha. Cut and carry of *B. humidicola* under coconuts is also very common. All grass is planted by vegetative cuttings. Artificial insemination is used for breeding cows.

In Loa Kulu, Mr. Sujono had planted 0.2 ha of *Paspalum atratum*, starting 6 months ago. He said the biggest benefit was that during the time consuming period of bird scaring in the paddy fields, it now takes a very short time to collect feed for his cattle. Other farmers in Loa Kulu found both *P. atratum* and *B. humidicola* the best species, as they grow fast, are palatable to livestock and even old leaves are liked.

Members of the Maju Serbaguna farmer group in Sepaku have improved their *Imperata* fields with *Paspalum atratum*, *B. humidicola* var. Tully and Stylo 184. They used herbicide before planting the improved species. The *Imperata* fields of the Lestari farmer group were visited after several hours trekking. They had started 4 months ago planting *B. humidicola* and *Paspalum atratum* cuttings in holes, without tilling the native grassland. They had covered about 2 ha of communally used land, within an area of 20 ha that they had fenced. The grass showed signs of heavy grazing but persisted. *B. humidicola* had formed stolons. The total percentage cover was still very low though, less than 1 %. Considering that it had not rained for one month, the establishment of the grass looked promising. Stylo 184 had been over sown but had disappeared after burning. Farmers believe that stylo will regenerate from seeds after the rains start again. Problems of farmers were discussed and we diagnosed that cows were suffering from milk fever. Farmers need to buy calcium supplements to mix with feed, and would need some help from outside to identify the product in the veterinary drug store (**Follow-up: Herianto**).



In a new sub-district, Seblenkong, discussions were held with the District Planning Officer, extension workers and farmers. The District Officer indicated the big potential of improved grassland under oil palm plantations although it was pointed out that grass would only grow well in young plantations allowing enough light transmission. Smallholder oil palm plantations are common throughout the area. A multiplication site of forages was visited in the sub-district, which did not look as attractive as the ones visited in Sepaku. The site was on private land, which did not belong to the farmer group who was responsible for its maintenance. The lesson learned was that if multiplication plots are established on farmers' land, it is maintained and run in a better way.

We visited a farmer group in Seblenkong, where King grass was commonly grown in strips along contours in farm land. Several new forage species had been introduced last year. *B. humidicola* was not listed, but I saw it growing scattered on a farm. When we discussed it with the farmers, we concluded that it had been accidentally introduced by cattle from Sepaku (half a day driving away) which had been redistributed. During the time the cattle were taken from Sepaku, it was dry season, and the grass had produced seed. The seeds were excreted upon arrival in Semblenkong.

### Reporting, and monitoring and evaluation

The FSP 6 monthly report submitted by East Kalimantan was reviewed. The report needs to be more specific in future. In stead of reporting whether an activity was carried out or not, the project needs a description of results. This would be greatly facilitated by monitoring and evaluation activities. Jindra Samson has been instrumental in helping with ME in the Philippines and we suggested that she would visit and help in Indonesia (**Follow-up: Jindra**). A beginning was made in the planning of ME activities. ME should start as soon as possible, if we want to use it as a tool to assess changes and development of impact.

Specific issues from the 6 monthly report that needs to be addressed are:

- ◆ Summary of findings of participatory diagnosis and planning that have been carried out this year (**Follow-up: Ibrahim**).
- ◆ Field days(**Follow-up: Ibrahim**):
  - Where?
  - Who conducted them?
  - Who participated?
  - Which groups were involved?
  - How were they involved?
  - Any other comments?
- ◆ Cross visits (farmer to farmer) (**Follow-up: Ibrahim**):
  - Where did the visitors come from?
  - Where did they visit, how many visitors?
  - How many hosts?
  - How many facilitators or other guests?
  - Any other comments?
- ◆ Sweet potatoes(**Follow-up: Ibrahim**):
  - Which varieties were tested?
  - What were farmers observations?

- How were the varieties used?
- Which varieties did farmers expand?
- Were there different benefits among the different potato varieties?
- Any other comments?

### Research issues

Several ideas for research arose during the visit:

- ◆ Testing for persistence after fire of forage varieties used for the improvement of *Imperata cylindrica* grasslands. Possible species for testing: *B. humidicola* (Yanero and Tully), stylo 184, *P. atratum*, *Brachiaria decumbens*, *Brachiaria brizantha*. (**Follow-up: Ibrahim, students**).
- ◆ Introduction of *B. decumbens* in *Imperata* grasslands. *B. decumbens* was not preferred by farmers during earlier trials, because of its hairiness which causes irritation during cut and carry. Now that farmers have started to improve *imperata* grasslands that are used for grazing, the species deserves to be reevaluated. It grows well on the acidic poor soils and probably competes better with *Imperata* than *P. atratum*. Farmers seemed to like the idea (**Follow-up: Herianto, Ibrahim, Lestari group**).
- ◆ Seed production of *B. humidicola* in Nusa tengara, where the climate is drier and therefore easier to harvest seeds. Maimuna could be hired for a consultancy to design and conduct trials (**Follow-up: Maimuna**).

### Other issues

- ◆ Ralph needs a copy of the paper presented by Ibrahim in Manado (**Follow-up: Ibrahim**).
- ◆ Ibrahim needs more pH indicator kits and species (**Follow-up: Ralph and Jindra**).

### **Appendix 5. Financial and social benefits from introduction of new forages and induced technology changes in East Kalimantan, Indonesia<sup>2</sup>.**

In East Kalimantan Province of Indonesia, the 'Forages for Smallholders Project' started to introduce new forages in 1995. In October 2001, a participatory study was carried out in 3 sub-districts to quantify the social and economic benefits of the newly developed forage technologies. The study used resource diagrams, calendars, and farm household interviews with historical recalls to assess time spending, finances and herd productivity. Values of land of livestock were included as cost in the financial assessment. Unconventional benefits accounted for were manure applied on own fields, animal labour on own fields, and insurance value of livestock (Bosman et al, 1997).

The results of the study show that production systems in the sub-districts are different (table 1). Farmers in Samboja raise Bali cattle on pasture under coconut trees and have only small home gardens. In Makroman, all farmers raise goats and some farmers acquired cattle recently. Their variety of crops is much larger, but low-land rice cropping is limited due to soil acidification. In Sepaku, most farmers replaced goats with cattle, and some acquired buffaloes. Upland cropping is limited here due to wild pigs. In Samboja and Sepaku, production levels are relatively high and are combined with significant investments, especially in fencing of pastures to reduce labour input for herding and to protect the improved pasture. In Makroman livestock gains are used to reimburse loans and the level of investment is still low.

**Table 1. Characteristics of interviewed farm households in Samarinda Ilir, Samboja and Sepaku sub-districts, with different livestock systems.**

		Samarinda Ilir	Samboja	Sepaku
	unit	goats	Bali cattle	Ongole cattle
Mean farm household size	n	4.0	3.8	5.0
Farm area	ha	3.3	2.5	3.4
Mean area improved forage for cut and carry	ha	0.21	0.23	0.31
Percentage contour lines & cover crops *	%	33	0	50
Mean area of improved pasture **	ha	0	0.46	+
Mean number of cattle over 2 years	n	0.8	9.8	5.3
Mean number of goat over 2 years	n	9.6	0	0.5
Total income from main species of livestock ***	US\$/ month/ head	4.9	9.9	9.3
Cash income per head of livestock	US\$/ month/ head	0.8	4.4	1.1

\* Percentage of total cut and carry area

\*\* Including pasture under coconuts

\*\*\* Including value of manure applied on own land

+ Present at some farms but contribution not estimated

In Makroman and Sepaku there was a large difference between total- and cash income from livestock (table 1). This can be largely attributed to the manure applied on own crops, which was accounted for its market value, amounting to approximately 10 times

<sup>2</sup> Version for publication in SEAFRAD newsletter no. 12, 2002.

its estimated mineral value. Manure applied on food and cash crops contributed to about 40% of the total farm household income from livestock. This reflects the importance of manure for soil fertility maintenance. Farmers also derived cash income from sales of manure. They estimated that they applied less than 15% of all manure to forage crops. Cash income per head of cattle was much higher in Samboja than in Sepaku, which was due to differences of available forage per animal and difference of cattle breeds. In Samboja more forage was available, resulting in better condition of the animals, better growth and reproduction. In addition, the Bali breed is known to have better reproductive performance than the Ongole breed. Both better feed supply and sturdiness of the breed resulted in lower veterinary cost in Samboja.

Before the introduction of new forages, farmers already used King grass for cut and carry. New forages reduced time needed for fodder collection as well as for forage crop maintenance (table 2). Less time was needed for maintenance, as the new forages were more vigorous in suppressing weeds. Spare time was put to good use, either for feeding more animals or by engaging in more off-farm work. Farmers in Makroman doubled the number of goats they kept. Increases in cattle numbers were not so big. New forages increased off-take of animals due to shorter inter-parturition periods in all species and breeds. Twinning rate of goats increased at some farms. Better body condition of animals was also perceived as an improvement, resulting in better carcass quality and higher prices paid for cattle by butchers. Farm household income from livestock almost doubled since the introduction of new forages, due to time saved and higher off-take rates.

**Table 2. Comparison of farm household income (mean  $\pm$  s.d.) from cattle production under coconut in Samboja, for 16 early and 9 late adopters\* of new forages.**

	unit	early adopters	late adopters
Estimated days work	day/ year	222 $\pm$ 50	262 $\pm$ 87
Livestock + meat marketed	US\$/ year	909 $\pm$ 536	374 $\pm$ 223
Total household income from	US\$/ day	3.2 $\pm$ 2.8	0.9 $\pm$ 0.9

\* Characteristics of the two groups were similar.

Adoption of new forage species induced four technology changes: 1) reduction or disappearance of grazing on communal range land (Samboja); 2) prolonged grazing time at home plots (Sepaku); 3) pasture fencing in uplands and sawahs (Samboja and Sepaku) and 4) planting of forage on contour lines and as cover crop associated with food and cash crops, to enhance soil fertility and prevent erosion (Makroman and Sepaku). Grazing time was prolonged as animals grazed longer in the morning on improved homestead pasture; before they were without food until 10 a.m. Through improved fodder balance, the project provided better sources of rural income for livestock keepers, and contributed to an improved beef supply in East Kalimantan.

#### References:

Bosman HG, Moll HAJ and Udo HMJ, 1997. Measuring and interpreting the benefits of goat keeping in tropical farm systems. *Agricultural Systems*, 53 (1997) 349-372.

## **Appendix 6. Trip report Vietnam, 17 – 25 Sept. 2001**

Ralph Roothaert

### **Purpose of travel:**

- ◆ To lead a workshop on monitoring and evaluation of FSP in Vietnam.
- ◆ To develop a research protocol with staff of Thai Nguyen University for a study on utilisation of indigenous fodder in northern Vietnam.

### **Key people met:**

- ◆ Mr. Truong Tan Khanh, Tay Nguyen University, Daklak
- ◆ Mr. Le Hoa Binh, NIAH, Hanoi
- ◆ Mr. Nguyen Manh Dzung, NIAH, Hanoi
- ◆ Mrs. Vu Hai Yen, ARD, Tuyen Quang
- ◆ Dr. Nguyen The Dang, Vice-Director International Relations, Thai Nguyen University
- ◆ Mrs. Ta Thi Thu Thuy, Faculty of Animal Husbandry, Thai Nguyen University

### **Summary**

The workshop on monitoring and evaluation was successfully conducted, with a total number of 15 participants. People were trained in theory and practice, and ME workplans were produced. Party leaders and high government officials were in favour of FSP activities, although they were not fully aware about the structure of the ME workshop. I visited Thai Nguyen University, where we developed a protocol for a study on local forage species. Two University staff will implement the study, which will take place from January to April 2002.

### **Itinerary**

17 Sep	Travel to Hanoi
18 Sep	Travel to Tuyen Quang
18 – 22 Sep	Workshop monitoring and evaluation
24 Sep	Visit Thai Nguyen University
25 Sep	Travel to Manila

### **Monitoring and evaluation workshop**

Fifteen people participated in the workshop, including myself. Participants were researchers, field staff and farmer group leaders, from Tuyen Quang and Daklak provinces and Philippines. We started with reviewing the knowledge and experience of PME. Although several people were familiar with the term PME, very few had ever made the link to project impact assessment. The course therefore reviewed methods of impact assessment, use of indicators, and ways of involving stakeholders at different levels. Two days of practical sessions with farmers in the field provided participants with information to be analysed and reported during the next day. The course concluded with



the development of practical draft workplans for PME in Daklak and Tuyen Quang provinces. The workplans carefully linked the objectives and the time consumption of their implementation.

The government is planning to increase milk production in Vietnam and has a target of reducing milk imports from 90 to 75 %. Implementation is through upgrading cattle of small and large scale farmers with Holstein Friesian semen, and through wider use of improved forages. I discussed with Binh that caution needs to be observed, since most farmers don't have any experience with dairy cattle. Better feeding practices, housing, and management by farmers are essential for success. Investments in milk collection and storage services are needed, as well as for veterinary services.

### **Research on local feed resources**

A research protocol was developed with Mrs. Thuy and Mr. Do of Thai Nguyen University, on the use of local fodder trees and shrubs in Tuyen Quang Province. Mrs. Thuy has an MSc in Animal Nutrition, and Mr. Do has an MSc in Forestry. Both disciplines are essential in the implementation of the research project, hence the involvement of both staff. Mrs. Thuy will be responsible for the budget, which will be approximately US\$ 2000 for the whole study. Mrs. Thuy has a reasonable command of English, Mr. Do hasn't yet. A contract will be developed with Mrs. Thuy, specifying the breakdown of the grant into activities, and the expected outputs.

## **Appendix 7. Training course on Monitoring and Evaluation of the Forages for Smallholders Project**

Ralph Roothaert

### **Introduction**

The goal of the FSP is to improve the livelihood of upland farmers, by enhancing available feed sources to increase livestock production, and strategic use of grasses and legumes to conserve soil and to enhance nutrient management. Monitoring and evaluation exercises help us to judge whether the project is achieving its goal. The project uses a range of methods, allowing aspects of conventional and participatory ME, or crosses of the two.

In August 2000, an international workshop was organised by CIAT and the University of Queensland (Australia), to develop a practical guideline for undertaking ME in the FSP. During the workshop scientists of CIAT, UQ and countries in SE Asia reviewed theoretical concepts of ME and current practices. More insight was gained and practical recommendation were summarized in a comprehensive report of 65 pages (Cramb and Purcell, 2000). In the meanwhile, field workers in the Philippines and Vietnam had used a matrix that was developed during the workshop for implementing ME. Although in theory the matrix could be used for both participatory and conventional ME, in practice it was still used in a rather rigid and conventional way. A general complaints in both countries was that ME increased the workload of field workers to unacceptable levels. In the Philippines the teams felt there was no local capacity to analyse and report the data collected through ME exercises.

In 2001, two local ME workshops were organised in the Philippines and Vietnam, not only for scientists and managers, but more specifically for field workers and key farmers, involved in FSP. The aim of the workshops were to develop more practical methods of ME, to practice analysis of data, to practice reporting, and to develop ME workplans for the whole project cycle. A secondary objective was to be able to use a diversity of methods, allowing more scope for participatory ME.

### **Structure of ME workshop in Tuyen Quang, Vietnam**

There were 2 resource people and 13 participants from Vietnam, some of whom also acted as resource people at appropriate sessions, and some had to translate simultaneously from English into Vietnamese and vice versa. The language barrier in all countries where FSP works, except in the Philippines, is big. The structure of the course, with comments about improvements are presented in Table 1. The whole workshop lasted 8 parts of half a day (5 days).

### **Outputs**

The workshop in Vietnam generated several outputs:

- Understanding of concepts of participatory and conventional monitoring and evaluation.
- Reflection on current practices.

- Design of field questionnaires.
- Analysis of field information and data, and reports.
- ME workplans for Tuyen Quang and Daklak

### **Lessons learned**

- Everything that is said needs to be translated in Vietnamese or English, and everything that is written on white boards, cards, overhead sheet or in-focus needs to be translated as well (in either language). It is time consuming but absolutely essential.
- Non of the participants had attended the previous international workshop on ME. Concepts of PME and ME needed to be explained well.
- People were unfamiliar with most terminology. A small dictionary of key words evolved as the workshop went on. Some of the difficult key words are: Adaptation, Adoption, Bottom up, Capacity building, Conventional, Dissemination, Empowerment, Evaluation, Farmer, case studies, Focus group, Forage technology, Formal interviews, Impact, Indicator, Informal interviews, Monitoring, Multiplication systems, Networks, Participatory, Social capital, Survey, Tools, Top down.
- Analysis and reporting of information derived from open ended interviews or discussions seemed to be more difficult than that from formal questionnaires. Analysis and reporting of both types of information need to be practised.
- If participants have limited pre-knowledge about ME, as was the case in Tuyen Quang, more time is needed for analysing, reporting and planning sessions.
- Many participants had little knowledge and experience with participatory methods and wanted to learn more about participatory tools. Training sessions on some tools that are highly relevant for ME can be added to the programme.
- Pre-workshop information about knowledge, experience and designations of participants would help to focus the programme.
- A longer workshop is desirable, but organising availability of resource people and organisers in Vietnam over a longer duration is difficult.

### **Conclusions**

The modules which were developed provide a workable basis for a training course on ME. Concepts of PME are well documented in the report of Cramb and Purcell, which serves as a resource book for lecture like presentations in a training course, and for reference material. Understanding the concept is only one objective of the training; practical skills on planning, collecting information, analysing and reporting are other important objectives. More than 75 % of the time in a course needs to be spent on training of those skills.

**Appendix 8. Common and botanical names of forages mentioned in text**

<b>Botanical name</b>	<b>Common name</b>
<i>Andropogon gayanus</i>	Gamba
<i>Arachis pintoii</i> CIAT 22160	Arachis
<i>Brachiaria brizantha</i>	Brizantha
<i>Brachiaria decumbens</i> CIAT 606	Signal
<i>Brachiaria dictyoneura</i>	
<i>Brachiaria humidicola</i> var. Yanero	Yanero
<i>Brachiaria humidicola</i> var. Tully	Tully
<i>Brachiaria ruziziensis</i>	Ruzi
<i>Calliandra calothyrsus</i>	Calliandra
<i>Centrosema macrocarpum</i>	Centrosema
<i>Centrosema pubescens</i>	Ucayali
<i>Cratylia argentea</i>	Cratylia
<i>Desmanthus virgatus</i>	Desmanthus
<i>Desmodium rensonii</i>	Desmodium
<i>Flemingia macrophylla</i>	Flemingia
<i>Gliricidia sepium</i>	Gliricidia
<i>Gliricidia sepium</i> accession Retalhuleu	Retalhuleu
<i>Leucaena leucocephala</i> variety K 636	Leucaena K636
<i>Panicum maximum</i>	Guinea
<i>Panicum maximum</i> CIAT 6299	Tobiata
<i>Panicum maximum</i> T 58	Purple guinea
<i>Paspalum atratum</i> BRA 961	Paspalum
<i>Pennisetum purpureum</i>	Napier
<i>Setaria sphacelata</i> - Nandi	Nandi
<i>Setaria sphacelata</i> var. <i>splendida</i>	Splendida
<i>Stylosanthes guianensis</i> CIAT 184	Stylo
<i>Sesbania grandiflora</i>	Turi