

Report
TRAINING OF TRAINERS (ToT)
ON THE
TOOLBOX IN NATURAL RESOURCES MANAGEMENT
AND IN
PAYMENT FOR ENVIRONMENTAL SERVICES
IN VIETNAM – TUL-VIETNAM

Hanoi (31/3-1/4)
Bac Kan (4/4-8/4 and 23/4-27/4)
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For benefits over 10 years - grow trees
For benefits over 100 years - grow people
Ho Chi Minh

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Background

The World Agroforestry Centre in Vietnam (ICRAF Vietnam) and the project “Pro-Poor Partnerships for AgroForestry Development (**3 PAD**) in **Bac Kan** Province” are delighted to invite you to participate in the Training of Trainers (ToT) on “**Toolbox in Natural Resources Management and in Payment for Environmental Services in Vietnam – TUL-Vietnam**”.

This TUL-Vietnam ToT is a part of TUL-SEA project, which is funded by the Federal Ministry of Economic Cooperation and Development (BMZ) and Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), and coordinated by ICRAF. The project started in 2007 with project activities in six Southeast Asian countries (including Vietnam and China).

The first TULSEA training in Vietnam was organized during one week, November, 22-27, 2008, in Nui Coc, Thai Nguyen province for 20 participants from provinces, research organizations, and universities. As a result, six partners have started testing the tools in three different agro-ecological zones of Vietnam, including the northern uplands (Bac Kan, Thai Nguyen), northern midlands (Hoa Binh), and central coastal region (Thua Thien Hue). These results have been incorporated into SEA TULSEA book in English and TUL-Vietnam book in Vietnamese. Both books will be published in 2011.

On request from IFAD-PES project in Bac Kan and in order to bring some selected TULSEA tools to the real life of rural development program in Vietnam, the second TULSEA workshop named TUL-Vietnam was organized in March-April 2011. The focus of this ToT was to introduce four key tools for developing PES/RES mechanisms:

Participatory Analysis Of Poverty, Livelihoods And Environment Dynamics (PaPOLD) at community level. PaPOLD helps identify target groups and payment mechanisms that are fair and sustainable.

Participatory Landscape Analysis (PALA) at landscape, community and household levels. PaLA helps to identify the basis for decision making in land use and land-use changes. This knowledge is vital for designing PES.

Reverse Auction For Payment Of Environmental Services (RA): RA is a new tool, which has been being tested in Africa and Southeast Asia, and is planned to be applied for PES negotiation in Bac Kan in 2011.

Rapid Carbon Stock Appraisal (RaCSA): RaCSA is a tool to identify carbon Environmental Services, and gives communities the opportunity to participate in reporting and monitoring contracts in payment for Carbon ES.

The training was separated into two parts, a two-day theoretical in-house training in Hanoi (March 31 and April 1, 2011) and two weeks practical field-based training using the PALA and RaCSA tools in Bac Kan (April 2011). The training included over 20 enthusiastic participants who will continue to train IFAD-PES project in Bac Kan province.

Expected learning outcomes

- Understand objectives and implementation steps of four tools and initial results obtained by ICRAF when applying these tools in Vietnam and Bac Kan. Thereby, they can participate in planning for piloting PES at their area.
- Be able to participate in survey and training other local staff to use PaLA and RaCSA at the community level.
- Participate in evaluating appropriateness of new methods and gain knowledge in Reverse Auction (RA) for developing PES mechanism in their area.

Introduction to the workshop

Mr. Giap Van Hoang, Director of the 3PAD project welcomed all participants and lecturers to the training. After the participants had introduced themselves Mr Giap outlined the reasons why The World Agroforestry Centre in Vietnam (ICRAF Vietnam) and the 3PAD project organized the Training of Trainers (ToT). He also mentioned the objectives, contents, expected outputs and agenda of training as an overview for all participants.

Dr. Minh Ha Hoang, Representative ICRAF Vietnam stressed that we are here to learn from each other and exchange experiences with each other. She gave a brief overview of the training materials, which are provided in Vietnamese and English, so that all participants will have a good chance to test the draft TUL-Viet book in Vietnamese during the whole training and so that the material has a chance to reach out. Participants who are not familiar with PES were encouraged to review the first section of the book on concepts in PES and TULSEA.

Payments for Environmental Services (PES)

The first lecture introduced basic concepts related to Environmental Services and Payments for Environmental Services (PES) and participatory methods. Minh Ha talked about the definition of PES, the different types of ecosystem services and why is there a need to protect ecosystem services, and mechanisms to pay or reward those who provide the services.

While we are used to put a value on products from forests, it is very new in the Vietnamese context to put a value on the services that forests provide. Main environmental services include watershed protection, carbon sequestration, landscape beauty (for ecotourism) and biodiversity. She said that improving productivity of agriculture and forests can reduce the overuse of forest, so management is important for protecting ecosystem services (see Lecture notes Part 1, Concepts and abbreviations).

Participatory Rural Appraisal (PRA)

The second part of the lecture covered how to decide who to interview, identification of sampling, a toolbox in PRA, wealth ranking and quality of questions asked during a PRA study as well as evaluation of the quality of PRA.

Designing participatory research requires attention to the sampling criteria. PRA-tools that helps with sampling are: transects walks and village maps, wealth-ranking, social mapping and VENN-diagrams.

Minh Ha mentioned the differences between structured or semi-structured questionnaires, closed and open-ended questions. She stressed that when interviewing it is important to listen to the answers, we can do this with probing questions: what, why, who, when, how (see Lecture notes Part 2, Lecture Note 1).

Table 1. Summary of the PRA lecture for Trainer of Trainers

Steps	Objective
Designing a participatory research	Set-up agenda, clear objectives of the study and develop work plan for the PRA/RRA activities.
Deciding who to interview	Sampling should be representative of different sectors (i.e. spatial, social, gender, age, education and experience) to be able to get the confidence of a larger section of the community.
Identifying the different types of sampling	Conduct purposive sampling (e.g. wealth ranking, social mapping, transect and village map).
Identifying sampling size	Generate enough sampling size, about 20-30% of the total population (see sectors above).
Identifying tool to be used	Identify what tool is best suited for the specific objective (i.e. diagrams, ranking, livelihood and stakeholder analysis, semi-structured interviews, focus-group meetings, secondary data gathering)
Identifying type of questions to be asked	“The answers you get depend on the questions you ask”. Structured vs semi-structured interviews. Open-ended questions vs closed questions. Use probing questions like what, where, who, how, why.
Evaluating the quality of PRA	Triangulation of information with different sources.

Part 1: In-house training

1.1 Participatory Analysis Of Poverty, Livelihoods And Environment Dynamics (PaPOLD)

The lecture on Participatory Analysis of Poverty, Livelihood and Environmental Dynamics (PAPOLD) – Inputs for designing PES in Ba Be National Park, Bac Kan Province included: why PAPOLD is relevant for PES, applications of the Sustainable Livelihood’s Framework with PAPOLD, how to use the PRA tools for obtaining qualitative data, stepwise description of the exercise, including findings and implications for design of PES. Ms de Groot gave personal reflections on the method. More details are provided in the Lecture Note 2 and hand outs.

The question and answers section covered three issues. One participant wanted to know how the outputs would be used after the PAPOLD exercise is completed. Kira said that PAPOLD is part of the whole assessment for the PES mechanism. Minh Ha also added that the PES is intended to provide a means on how to determine the amount that has to be paid to the community or individual who owns the ecosystem service(s). Based on Decree 99, the national government has to allocate a certain amount to pay for these ecosystem services but there has to be a way on how this will be accessed by the owners of the services.

Table 2. Summary of the PaPOLD lecture for Trainer of Trainers

Steps	Objective
Village timeline	To identify key markers that provoked changes in natural resource use and economic development
Poverty ranking	To understand local perspectives in wealth and indicators for poverty
Poverty parameters	
Stages of progress	To understand livelihood options and strategies for poverty reduction
Individual HH progress over time	To identify interrelations between villager's use of environmental resources and the involvement in tourism
Venn Diagrams	To assess organizational and institutional conditions of villagers to become involved in PES schemes; To understand local perceptions of institutions and organizations
Ranking of current and future livelihood activities	To identify the importance of existing livelihood activities and people's plans for future activities

The next question was whether a Willingness-To-Pay survey had been conducted in the research. Kira responded that she originally had intended to do it but given the limited time and resources she was not able to conduct it anymore. It was suggested as a good opportunity for collaboration with 3PAD's volunteer who is helping the project on ecotourism.

Lastly, one participant said that Kira had done a lot of work in the communes but could she demonstrate any results or conclusions or suggestions to improve the livelihood and reduce poverty of the people. Here Minh Ha said that ICRAF is just providing the tools for this training. In June there will be another training workshop where all stakeholders will aim to jointly identify solutions to the problems on-hand. She pointed out that ICRAF merely provides the tools and it's still up to the participants and their respective organizations to apply these tools make recommendations and implement these programs.

1.2 Participatory Landscape Analysis (PaLA)

Next the PaLA concept was introduced, including defining the landscape or system boundary, when to use PaLA, survey research processes and scale. PAPOLD and PaLA are useful in designing PES/RES mechanism. The lecture gave examples from the landscape level in Ba Be District and the household level in Dinh Bien Province. (See Lecture Notes 3)

Table 3. Summary of the PaLA lecture for Trainer of Trainers

Steps	Objective
Identifying ecological and administrative domains with clear boundaries (indoor and observation activities).	To identify boundaries for PaLA research
Sampling of stakeholders to be interviewed	To identify a list of selected stakeholders representative in terms of several criteria such as spatial location of their fields and wealth, and/or gender, and/or social, and/or ages, and/or experience, and/or education
Formulation of the survey interdisciplinary group, planning and designing checklist and matching PRA tools (indoor and observation activities).	The team to agree on concepts and steps of PaLA
Making village sketch/model (fieldwork activities)	To identify the land use patterns and focus points in the landscape. Village sketches/ models shows local names of

	different areas, distribution of land use plots, and main features such as rivers, streams, mountains, roads, etc.
Transect walk (fieldwork activities)	To get an understanding of the soil-plant-water interactions along a landscape. To identify representative transects and sketches of the areas, locations of transects entered on map.
Timeline (fieldwork activities)	To identify timeline for the village or each land use type along transects and/or the fields situated in the representative areas of the study catchment or village, in order to study land use changes over time.
Feedback meeting (in-door activities)	To report findings to the farmers/ stakeholders and obtain their feedbacks.
Data analysis (in-door activities)	To ensure that all findings are compared and cross-checked using matrixes in order to get landscape patterns and issues.

1.3 Reverse Auction For Payment Of Environmental Services (RA)

This lecture brought up auctions as a practical potential solution to pay for environmental services. Mr Rohit explained that farmers, who wish to be enrolled in a PES project, offer bids in terms of how much money they are willing to accept in return for implementing the recommended land use in order to supply a certain level of an environmental service. Competition among bidders ensure that these bids represent farmers' best estimates of their true opportunity costs while selection of the lowest cost providers helps to set both a price for the PES activity as well as to distribute the PES contracts in a transparent and objective way.

Reverse auctions were contrasted with conventional auctions. In conventional auctions, bidders give the maximum amount of money they are willing to pay to buy an object on sale. Therefore the winner is decided on how high a particular bid is. In reverse auctions, the role of buyers and sellers is reversed; the sellers (or the farmers), i.e. those who provide environmental service who state the minimum price they are willing to accept from the buyer. In this case the winners are selected on the basis of how low their bids are. To give a practical example, Rohit was bidding for the mobile phones of the participants with a limited fund.

Rohit's case study from Tanzania showed that there was a high compliance rate among the participating resource owners. There was also high satisfaction among farmers because of the adequate payment level to cover incurred costs and the transparent selection process. He concluded that it is feasible to run auctions in developing countries and that auctions can be used to allocate PES contracts, estimate PES payments and simulate alternate targeting of contracts.

One question concerned the duration and monitoring of contracts i.e. how long are each contract, how long do we keep paying and how sure are we that the participants will not slide back to unsustainable resource extraction practices after the payment has stopped. The answer was for the Tanzania case study, it's a 3-year contract and monitoring was done 2 years after the contract ended. The arrangement has to be specified in the contract including monitoring and evaluation schemes and this varies between projects.

One participant wanted to know whether there is a disincentive for households which did not follow the contract stipulations and if the payment schemes were upfront, at the middle or after the project? Rohit said he could not afford to be strict in the stipulations of the contract hence he paid upfront and cannot do anything about non-performing households. It would have been ideal if payments were disbursed over time within the contract period so that there was room for providing disincentives for those who were not able to comply with the requirements of the contract.

1.4 Rapid Carbon Stock Appraisal (RaCSA)

Mr Chung started by asking all participants to guess the carbon stock in a grassland and an acacia forest (shown on a picture). Then he introduced RACSA, as a tool to quantify carbon stock scientifically and has potential to assist communities to be involved in reporting and monitoring PES contracts. It was stressed that RaCSA is a cost effective and time-bound (within six months) appraisal that:

- provides reliable data on C stocks in a defined landscape, its historical changes and the impact of ongoing land use change on projected emissions, with or without specific interventions to increase or retain C stocks;
- identifies the primary issues in the local tradeoffs between C stocks and livelihoods and the opportunities to achieve more sustainable development pathways
- enhances shared understanding between stakeholders as step towards FPIC in contracts to increase or retain C stocks.

Table 4. Summary of the RACSA lecture for Trainer of Trainers

Steps	Objective
Initial appraisal of landscape	To generate maps of each land use type, vegetation cover, land use systems in each period, land management and land use planning by the government.
Planning	To develop a unified system for categorizing land use and land cover thereby selecting land use type for research and assessing C-sequestration.
Determine number of plots, design a system for random plots	To calculate number of plots needed according to a multi-layer statistical standard
Field survey	To calculate C-stock for 6 different carbon sinks (i.e. wooden trees above ground; shrubs, fresh vegetation; necrosis; litter, branches, dead trees; roots underground; forest soil)
Analyze on the ground data, interpret images and analyse changes	To extrapolate C-stock for the landscape
Upscaling	To develop scenarios on land use changes and C sequestration at plot and landscape levels

The inventory and monitoring of carbon stocks and sequestration can be done under both current and potential future land uses and with different management approaches. The main output is to have carbon estimates for various land use change scenarios. These scenarios take into account different measures that are expected to improve local livelihood and alleviate rural poverty.

One participant asked about the main differences between estimating carbon stock at the household and landscape levels. Mr Chung said that at the household level the main

information source is local knowledge based on focus group discussions together with direct carbon measurements. At the landscape level we also use more technical methods, such as remote sensing and GIS to calculate the C-stock. In this case local people participate in measurements to ground-truth and interpret the remote sensing data with other experts, such as ecologists, botanists, foresters, GIS/RS experts, statisticians and modellers.

Next, one participant wanted to know if there is a need for a third party evaluator if we are to sell C-stock in the carbon market, especially if there are certain international standards that need to be followed before we can sell carbon. Mr Chung replied that initially, we calculate the C-stock and then involve a third party evaluator to get the certificate before we can sell it in the carbon market.

At the end of the lecture all participants were asked again to guess the carbon stock in the same examples as in the beginning and the closest estimates won a prize.

1.5 Practical sessions

Both afternoons were devoted for practical exercises into three groups (Na Ri, Ba Be & Pac Nam). The exercises included adapting the PaLA questionnaire, detailed planning of the fieldwork in the three teams and trying the VENN-diagram, which was finished in field.

1.5.1 Adapting the PaLA Questionnaire

On the first day Elisabeth presented the questionnaire and then the groups were asked to make it more appropriate for the specific purpose of identifying ES and designing PES-mechanisms in the local contexts. The facilitators put together the revisions and reported back the following day. For example, the participants thought that forest activities should be added to the livelihood questions, and landscape beauty for ecotourism activities was considered to be a potential ES in the Ba Be region but less likely in the other districts. The new questionnaire had added income and expense sources from forestry activities, eco-tourism, and ownership status of forest land. The questions were numbered and translated to minimise the language barriers.

On the second day the section started with a mock interview between one facilitator and a participant to illustrate how to introduce oneself and the reason for the interview, and how the questionnaire can be used as semi-structured dialogue rather than a strict sorted list.

1.5.2 Planning PaLA

The planning was split between the first and second day. The planning involved very detailed break-down of activities, including specific tasks, who is responsible, timing, need for preparations, expected output. The need for planning was well justified. It turned out that local holidays risked affecting the whole fieldwork, and the plans could be adjusted in time to avoid losing too much valuable time with farmers. Moreover, rainfall could risk making the roads inaccessible to one village, and so a plan B was developed.

1.5.3 VENN diagram

The Venn Diagram was brought up in Minh Ha's lecture as an important tool in identifying the institutional arrangements. To illustrate this to the participants, the exercise was to determine who is responsible in the management of the different ecosystem services and how relevant they are in implementing PES projects. First the group members identified important institutions for PES implementation at their respective district levels and then the group decided how important it was or how effective it was (size of the circle). In the tables 5a-c

small, medium, medium grand and large refer to the importance of the listed organizations while the numbers 1-5 refer to the efficiency of the organizations with 1 being the most efficient and 5 being the least efficient. The group leaders also took notes of the discussions.

Table 5a Venn diagram of institutions for PES implementation in Na Ri district

Small (importance)	Medium	Medium grand	Large
4.Forest ranger	1.Village leader	2.DARD at district	4.PPC
5.Farmer Union	2.DONRE at district level	3.DARD at province level	4.DPC
5.DPI	4.DONRE at province level	2.Land survey officer	2.CPC

In Na Ri the most important stakeholders were the PPC, DPD and CPC however the most efficient ones were considered to be the village leader and DONRE at district level and land survey officer.

Table 5b. Venn diagram of institutions for PES implementation in Ba Be district

Small	Medium	Large
4.DONRE	1.Community forest management board	3.DARD
	1.CPC	5.PPC
	2.Forest ranger	
	4. DPC	
	2.3PAD	

In Ba Be the most important stakeholders are DARD and PPC however the most efficient ones are the community forest management board and the CPC.

Table 5c. Venn diagram of institutions for PES implementation in Pac Nam district.

Small	Medium	Large
1.Community	5.Forest rangers	3.DONRE
2.CPC	4.DARD	5.DPC
5.Development organizations (3PAD)		

In Pac Nam the most important stakeholders were DONRE and DPC but the most efficient stakeholders were the community and CPC.

Part 2: In-field training of PaLA

The fieldsites for the training was

- Khuoi Tuon village, Nghiem Loan commune, Pac Nam district with Cong as group leader,
- To Dooc village, Lang San commune, Na Ri district with Tin as group leader,

- Leo Keo village, Quang Khe commune, Ba Be district with Thanh as group leader.

These villages are the pilot sites for ICRAF-3PAD activities so the household PaLAs would therefore provide valuable information on the landscapes surrounding the selected villages and linkages between villagers and landscape.

2.1 Objectives

The overall objective of the household survey was firstly to train the participants in using the PaLA tools. Furthermore the survey aimed at collecting data on socio-economic data from the three villages in order to assess potential PES mechanisms.

2.2 Fieldwork

2.2.1 Meetings with commune and village leader/Selection of households

First, meetings were held with commune staff in order to introduce the study and objectives and to ask commune staff about general conditions of the selected villages.

Second, meetings were as well held with the village leaders. This was done in order to present the study and its purpose and to select representative households of the village in terms of poverty and land use. In theory, the approach would be to draw a village map, ask the village leader to list all the households in the village, and then group them in different poverty groups. In this case, the village map and list of preselected households representing different land uses and poverty groups, was already developed prior to the meetings with the village leader thanks to previously PaLA and PAPOLD results. The households were selected in order to represent the three poverty groups within each village and different land uses (obtained from transect walks and village maps during PaLA) within the village. The three teams aimed at selecting two households being poor, average and non poor, both male and female headed households. The categories for the poverty groups differed from village to village as the criteria for the different poverty groups were determined by the villagers themselves.

2.2.2 PALA at the household level

The three teams used the modified questionnaire to interview households. Six households were interviewed in Leo Keo and Khuoi Tuon villages, while 7 households were interviewed in To Dooc village. One interview took in general half a day including a transect walk in one of the household's fields which the group considered having potential value for PES. After the interviews the participants tabulated the notes into an Excel sheet (Figure 1a).

The next step was primary analyses of the data in a new format (Figure 1b). The participants extracted some data from interviewed households and grouped them to wealth or land use, transformed quantitative information, such as share of income from forestry or agriculture. A summary of secondary data and previous household surveys was used to see how representative the selected households were.

A	B	C	D	E	F	G	H	I	J
1	Hoạt động sản xuất nông lâm nghiệp								
2	Mã Phiếu điều tra hộ gia đình	Code	Questions	HH1	HH2	HH3	HH4	HH5	HH6
3	Huyện: Pac Nam		District	Pac Nam	Pac Nam	Pac Nam	Pac Nam	Pac Nam	Pac Nam
4	Xã: Nghiên Loan		Commune	Nghiên Loan	Nghiên Loan	Nghiên Loan	Nghiên Loan	Nghiên Loan	Nghiên Loan
5	Thôn: Khau Tuân		Village	Khau Tuân	Khau Tuân	Khau Tuân	Khau Tuân	Khau Tuân	Khau Tuân
6	Tên hộ người phỏng vấn:		Name of Farmer	Bản Văn Đạt B	Bản Văn Phạm	Bản Văn Lai	Bản Văn Thái	Bản Văn Hìn	Bản Văn Chân
7	Giới tính (Nam/nữ)		Sex: M/F	Nam	Nam	Nam	Nam	Nam	Nam
8	Tuổi		Age	30	26	30	32	45	25
9	Nhóm dân tộc		Ethnic group	Dao	Dao	Dao	Dao	Dao	Dao
10	1 Đặc điểm cơ bản của hộ gia đình			1 Household characteristics					
11	1.1	1.1	How many people are living in your household?	7	4	6	4	6	3
12	1.2	1.2	What is your main activity? (tick one or several of the following by adding 1)						
13	- Nông nghiệp		- Agriculture	1	1	1	1	1	1
14	- Lâm nghiệp		- Forestry						
15	- Bán buôn		- Trade						
16	- Lao động có trả lương		- Salary/Wage labour						
17	- Lương hưu		- Retirement Pension						
18	- Chăn nuôi		- Livestock						
19	- Khác (Xin nêu cụ thể)		- Other (please specify)						
20	1.3	1.3	If agriculture and forestry is your main activity, what crop(s) and tree(s) give you most money? (mention the three most important ones)	Cây Ngô	Cây Ngô	Cây Ngô	Cây Ngô	Cây Ngô	Cây Ngô
21	Quan trọng nhất		Number 1	Ngô	Ngô	Ngô	ngô	Nông nghiệp	Nông nghiệp
22	Quan trọng thứ hai		Number 2						
23	Quan trọng thứ ba		Number 3						Bán buôn
24	2 Hoạt động sản xuất nông lâm nghiệp			2. Agriculture and forestry activities					
25	2.1	2.1	Do you have agriculture and forestry land? Yes = 1, No = 0	1	1	1	1	1	1

A	B	C	D	E	F	G	H	
HOUSEHOLD DESCRIPTION/ To Dooc village, Lang San Commune, Na Ri Dist.								
2	Chỉ số	Indicators	HH1: upland maize	HH2: paddy rice	production forest	HH4: upland maize	HH5: plantation forest	HH6: plantation forest
3	Phân 1: Tổng hợp từ phiếu khảo sát hộ gia đình		Tran Van Luc	Tran Van Quan	Tran Van Ly	Hoang Thi Nhu	Luc Van Than	Tran van Nam
4	Chỉ số xã hội	Social Indicators:						
5	Tổng số nhân khẩu (người)	Total people in household	4	5	7	3	6	6
6	Nhân khẩu trong độ tuổi lao động (người)	People in labor age	2	2	3	2	5	2
7	Tuổi đời trung bình (tuổi)	Age of interviewee	27	39	65	23	50	28
8	Dân tộc	Ethnic group	Nùng	Nùng	Nùng	Nùng	Nùng	Nùng
9	Chỉ số kinh tế	Economic Indicators:						
10	Các nguồn thu nhập	Income sources:			crops maize, animal husbandary	2 crops rice, 2 crops maize,	Paddy rice, maize, casava, maize	maize, paddy rice
11	Tổng thu nhập (tr đồng/năm)	Total income (m. VND/year)	18.16	22.58	23.70	7.21	25.10	62.10
12	Tổng chi phí (tr đồng/năm)	Total expense (m. VND/year)	16.79	30.20	34.22	26.01	16.38	21.71
13	% thu nhập từ canh tác trên đất nông nghiệp (% tổng thu nhập)	% income from cultivation on agriculture land	70,70	44,20	66,20	51,46	98,01	13,37
14	Năng suất cây lương thực chính (nếu có) (tạ/ha)	Yield of main crops (100kg/ha)					3000	1500
15	Lúa nương	Paddy rice	6000	3500				
16	Lúa ruộng	Upland rice						
17	Ngô nương	Paddy maize					2000	
18	Ngô ruộng	Upland maize	3500	2625			4000	2000
19	% thu nhập từ các hoạt động canh tác trên đất lâm nghiệp (mương rẫy)	% income from cultivation on forestry land	NA	NA	10,5		4,22	0
20	% thu nhập dựa vào hoạt động lâm nghiệp (hỗ trợ khoán bảo vệ rừng, vườn ươm cây lâm nghiệp, thanh toán trồng rừng...)	% income from forestry based activities (fee for forest protection, producing seedlings...)	NA	NA			0	0
21	% thu nhập từ du lịch sinh thái	% income from eco-tourism activities	NA	NA			0	0
22	Tổng diện tích đất nông nghiệp của hộ (m ²)	Total agriculture land area	11000m ²	4000m ²	4000	1200	4700m ²	3000m ²
23	Số mảnh đất nông nghiệp (mảnh)	Number of agr. Land plots	4	2	4	3	3	6 plots
24	Tình trạng sổ hồng (sổ đỏ...)	Ownership status of agr. Land	yes	yes	3 plots with red book and 1 plot still on the desk/applying	did not separate from parent's red book	700m ² with red book ; 4000m ² without red book	red book

Figure 1. Examples of the data tables for a) the raw data and b) the first stage of analysed data

2.3 Findings

One the final day the three groups used their analysed results and discussed how PES mechanism could be introduced to their respective villages. The groups then presented in plenary by highlighting socio-economic characteristics that may be relevant for implementing PES and their suggestions.

2.3.1 Potential PES mechanisms in To Dooc village, Na Ri district

The group first presented the current land uses in the village followed by difficulties in agricultural production: weather, seedling variety, lack of financial issues for investments.

They found that some households have a very low income and high expenses, they are in debt and need to pay back their loans next year. The environmental services of interest to Na Ri district were carbon, erosion control, watershed and landscape beauty but at village level, it was found that only carbon, erosion control and watershed were of importance to To Dooc.

Table 6a Potentials for introducing PES to To Dooc village with average incomes (VND) for agriculture, forestry and ecotourism activities.

Current land use	Grassland	Upland maize	Poor forest
Solution (PES)	Elephant grass with fence	Agroforestry (Maize + fruit tree or forestry)	Forest enrichment thru forest plantation
Income	Average income/7HHs: 25.78 mill. Average income from agriculture: 39.82 mill. Average income from forestry: 0.51 mill. Eco tourism: 0 mill.		

During the presentation it was discussed that many of the households interviewed in the village are in debt and their first priority would be food security. Later they would be willing to be involved in PES. A solution might be to not involve households with low incomes or encourage such households to join forces with other poor households.

2.3.2 Potential PES mechanisms in Leo Keo village, Ba Be district

The Leo Keo-group found that income is mainly from agriculture, and secondly from forestry management (incentives from government). One problem is that farmers do not have any direct ownership of the forest land but it is under the national park. There are conflicts relating to forest planting and especially small plants. It was claimed by the interviewees that poor households will take plants from nurseries belonging to non poor households and bring the seedlings to their house. Lastly, they said that the low income households had identified that lack of water resources hinders agricultural production and that there are too few areas to cultivate. The group found that both paddy land and upland areas were very limited and food (maize) a priority. It was perceived that Leo Keo was probably the poorest of the three villages and certainly had smaller areas per household.

Table 6b. Potentials for introducing PES to Leo Keo village with average incomes (VND) for agriculture, forestry and ecotourism activities

Current land use	Agriculture land – Paddy field	Agriculture land-upland field	Forestry land owned by household	Forest land owned by Babe national park (households contract to protect)
Solution for PES	Improve productivity of crops through application of advanced farming techniques Improve irrigation	Diversify income by development of AF systems with crops and animal livestock activities	Forest plantation with support from 147 governmental program	Forest protection by households Non-timber forest products.

	system		Development of AF system with forestry species for additional income	Forest enrichment, forest plantation
Income	Average income/6HHs: 17.31 mill. Average income from agriculture: 8.37 mill. Ave from forestry: 2.06 mill. Income from eco tourism: 0 mill.			

2.3.3 Potential PES mechanisms in Khuoi Tuon village, Pac Nam district

The group identified advantages and disadvantages for introducing PES in the village and concluded that the focus should be on carbon sequestration because people wanted to plant forest and seeds from the local trees could be used. They found that maize is dominating agricultural activity in area but almost nobody has land certificate. There were limited forestry activities and small plots, mostly with Mangletia, Acacia and Pine plantings. Acacia did not seem suitable in the area. Pine was growing slow and the farmers did not wish to grow it. Peach production was widespread in the village. Lack of land was seen as one reason for poverty in this village.

Table 6c. Potentials for introducing PES to Khuoi Tuon village with average incomes (VND) for agriculture, forestry and ecotourism activities

Current land use	Rice	Upland Maize and fruit trees (peach), at lower slope of hill side	Upland maize: food security and PES on higher slope of hill side	Forest and PES at near the top of hill
Solution (PES)	Increase productivity	Plant more fruit trees, and mix with maize	Identify the area with maize which cannot be abandoned (importance for HHS) The left over area can be planted with forest or trees can be introduced	Plant more forest and protect the available forest
Income	Average income/6HHs: 30.97 mill. Average income from agriculture: 18.70 mill. Average income from forestry: 0.09 mill. Eco tourism: 0 mill.			

It was discussed that in the upland area where the majority of maize is being produced it would also be possible to convert some areas to forest as the area in Khuoi Tuon is very large (in comparison to Ba Be for example). One option could be to estimate how much land each household would want to keep for growing maize, and then intercrop the remaining parts with forest.

The group discussed that Khuoi Tuon depends on maize as main source of food, and by replacing the maize it will directly have some affects on food security. In order to find appropriate PES mechanisms, it was considered useful to assess the connection between land use and poverty. PES should be introduced stepwise.

To summarise, Elisabeth pointed when tabulating the data it is important to use the same unit for the same question and to use legends for signs and abbreviations so that the data can be compared. Then she highlighted some aspects of the analysed results. Although the village characteristics were quite different, there were some regards some general observations: the interviewed households on average earned more from agriculture than forestry¹ and the areas for agriculture and forestry/upland were very small². Since none of the three villages were involved in ecotourism hence carbon and water would be the primary environmental services. The participants' suggestions (Table 6 a-c) also showed that the PES-landscapes may look different in the communes. When assessing PES mechanisms, the participants agreed that the following questions were found to be of importance:

- What kind of land use is there in the village?
- How to best use the land for PES?
- How will the change of land use affect the household's income, food access and cultivation?
- How should payments to the farmers be organised?

The workshop finished with short closing remarks from Elisabeth and Giap who then handed over certificates before photo session and dinner.

2.4 Suggestions for further revisions of the PaLA questionnaire

The participants thought the data relating to income was hard to assess, and difficult for farmers to estimate and discuss. Information on crop yield was lacking in questionnaire, therefore difficult to assess in analysis table.

There was some concern that some of the Vietnamese words used in the questionnaire should be revised in order to make it easier to understand the interviewer and interviewee, especially for the field plot level, where questions were asked on field history and land use. This was especially true for paddy fields. It was argued that it should be termed as one plot as they are all connected. In general more revision in the Vietnamese version of the questionnaire was needed. Furthermore it was suggested that the questionnaire should stress on what specific trees bring the most important incomes.

2.5 Evaluation and comments on the training

25 participants gave in their comments and filled out the evaluation for the in house training. See Appendix 4. According to this result, most of participants were satisfied with the training course (92%). Additional comments:

- Time arrangement: more time needed, longer lunch time, not work too late...
- More group discussion
- Expected deeper understanding in the field practices
- More information should be provided to participants in advance

¹ Between 47 and 63% of their incomes from agricultural activities and only 1 to 13 % from forest activities.

² Average agriculture land ranged from 0.2ha/HH in Leo Keo to 1.8ha/HH in Khuoi Tuon, average forestry/upland ranged from 0.4ha/HH in Leo Keo to 3.2ha/HH in To Dooc.

18 participants evaluated the ToT in field training. In general participants think that the training was good to very good. Additional comments:

- PES is very new in Vietnam and Bac Kan also, so there should be more training courses for people from province level to grassroots level as well as 3PAD staff
- Everyone should be more enthusiastic for discussion, data analysis and field work
- Time spend on activities (don't work too late)
- Practice more careful
- More discussion
- More group discussion
- Should not do fieldwork during the festival
- We should arrange the questionnaire in a more logical way
- More time to discuss and strategize the questionnaire. It is important to consider the overall target outcome not to be tied or limited by the questionnaire/issues on the questionnaire
- No suggestions because we've tried our best although it's not perfect

As seen in the comments above, several comments highlight the need for more discussion at the different steps of the household survey. From the facilitators point of view, it was noticed that more reflection on the steps, the results and the general approach and use of the tools was needed and will be considered in the next training.

Concluding remarks

The in-field PaLA training provided useful data for further analysis and further investigation in introducing PES mechanism at the village level. It was not possible to precisely estimate the incomes from different land uses, but this would be possible considering that modifying the questionnaires would always be an option, according to the specific target.

The participants were involved in all steps involved in the survey and touched upon fieldwork planning, interview techniques, tabulating data and analysis of data. However, the evaluation showed that more discussion was needed. Future trainings should then involve more discussion between each step and allow time for it.

Overall, poverty was seen as a main challenge for the necessary land use conversions associated with PES.

Part III: RaCSA

The field training of the RACSA tool for carbon measurements ran from Monday 25th to Thursday 28th of April, 2011. Nine participant (15 participants including facilitators) from 3PAD and ICRAF participated in the training.

The RaCSA training focussed on measuring the C stock in different land uses. The following five land uses were identified in To Dooc village, Lang San commune, Na Ri district, Bac Kan province:

- Poor secondary forest (IIIA, IIIA1 according to the Vietnamese forest classification)
- Medium forest (IIIB)
- Maize mixed Acacia spp and Meliaceae spp. (Xuan in Vietnamese)
- Elephant grass
- Open grazing land shrubs mixed with regeneration forest (IA, IB, IC)

Carbon stock in Medium forest was also measured in Na Chieng village in Quang Phong commune.

3.1 Carrying out the RACSA-steps

Selecting households

Six households with six different land uses were selected in To Dooc village. A village map from previous PaLA exercises was used to identify the different land uses, and together with the village leader identify representative households for each different land use. The village map was developed during an earlier PaLA study. (In the case there was no pre-existing village map, the exercise would have started with this activity). The households were selected one day prior to the RaCSA field measurements to save time.

RaCSA measurements in selected land uses

The participants were divided into two groups for sampling and measuring the C stock above and below ground in the six land uses. The following methodology was followed for each land use plot.

- Set up plots (200 m²)³. For each sample plot:
 - Record name, height and diameter of trees with a diameter at breast height (dbh) larger than 5 cm.
 - Sample fresh and dry matter from three small plots (0.5 x 0.5 m) and fresh vegetation from 10 sub plots (0.5 x 0.5 m).
 - Take 3-5 soil samples at 0-5, 5-10, 10-15, 15-20 and 20-30 cm soil depth.

³ RaCSA can have different plot sizes, 200,500 or 2000 m², depending on the tree diameter and the forest type.

The land owners joined the teams to the field plots and participated in the work. This gave the participant the opportunity to enquire about the past, current and potential future land uses.

Rich forest - Kim Hy natural conservation area

All participants visited Kim Hy natural conservation area in order to find sample plots of rich forest. The team members had the opportunity to ask about the main forest types of the conservation area, potential risks to the area and management strategies. Most of the forest is located on rocky terrain, which made it difficult to take soil samples as part of the RaCSA method. Therefore two plots were identified in Quang Phong commune.

3.2 Analysing the results

The following data and analysis took place during the training:

1. Synthesize data from village focus group discussions
2. Calculate C stock under current land use
3. Calculate C stock changes with land use change at plot level

The changes in the C stock from current status to a potential future land use, such as e.g. Mo plantation, were calculated in order to assess gains or losses of C associated with land use types. The results of the fieldwork are shown in Table 7.

Table 7. Biomass and Carbon stocks accumulation for different types of land use

No	Types of land use	Biomass (ton/ha)		C stock (ton C/ha)		Notes
		Above ground	Under ground	Above ground	Under ground	
1	Upland Maize		289.4	1.5	133.1	To Dooc village
2	Agroforestry / maize mixed with xoan	-	234.9	-	108.0	As above
3	Scrubs mixed with wood tree/ open grazing land	23.3	234.9	10.7	108.0	As above
4	Planting Elephant grass land	131.8	189.1	60.6	87.0	As above
5	Natural poor production forests (IIA, IIA1) 1	192.2	261.7	88.4	120.4	To Dooc village
6	Natural poor production forests (IIA1, IIA) 2	92.6	314.2	42.6	144.5	As above
7	Natural medium forests 2 (IIIA, IIIB)	283.9	213.2	130.6	98.1	Quang Phong commune
8	Natural medium forest 2 (IIIA, IIIB)	321.0	169.7	147.7	78.0	As above

3.3 Participants' reflections on using the tool and results generated with the tool

The participants identified the strengths, weaknesses with applying the RaCSA method in the field. This was done as a brainstorm exercise where each participant was given three coloured cards where they wrote ideas on strengths, weaknesses and practicalities.

Strengths

- RaCSA is a new and effective method
- The teacher is active during the RaCSA training
- RaCSA is time effective and can assess the C stock by land use type

Weaknesses

- Requires very hard work and is not suitable for women, especially taking the soil samples. The solution to this is making the farmers participate in the work and working with the soil samples.
- RaCSA is quite a complex procedure with many steps.
- Time is too short for practicing RaCSA
- Too few land use types were selected for sampling. The facilitators stated that this was because the selection of sampling sites was based on real life situations, where only a few different land uses exist.

Practical perspectives of using the method in the field

- Easy to apply in the field
- Better equipment is needed, especially sharper and more professional tools
- Takes a lot of time, if medium-rich forest is measured

3.4 Evaluation

Overall the majority of the nine participants were content with the training including the time spent for the different activities, the facilitation, content and logistics. Please refer Appendix 4 for details of the evaluation.

The comments were predominantly about having more time during the different steps of RaCSA. In particular, participants wanted more time

- ✓ for planning the activities and responsibilities
- ✓ for further practicing the methods, analyzing the data and discussing the results
- ✓ for practicing RaCSA for every land use type
- ✓ for land use type analyses in order to do the sampling more effectively. Furthermore such an approach is more convenient for the health as it means less work per person.

4. Synthesis and conclusions of the ToT training

This training offered an opportunity to learn for both the trainers and the participants, the future trainers of trainers. Although some participants had used participatory methods before, this was an opportunity to test participatory methods in a novel setting.

The three evaluations, all requesting more time for the different components, illustrate the participants' eagerness to learn more and in-depth. The recommendations will certainly be of great help both for the organisers and the participants when they carry out training in the future.

For the work with PES, the fieldwork showed instant practical applications. In particular, the institutional analyses revealed that People's Committees were seen as the most important institution for implementing PES whereas the roles for DARD and DONRE varied between the groups. The discussions following the PaLA and PaPOLD fieldwork also indicated that addressing food security may be one main challenge with designing a pro-poor PES-models.

APPENDIX

Appendix 1. Programmes

- **Section 1. In-door training**

Venue: Quang Ba Trade Union Hotel, 98 To Ngoc Van – Tay Ho - Ha Noi

Chairs: Mr. Giap (3PAD), Minh Ha (ICRAF)

Protocol writing: Mr Tin (ICRAF)

Translators: Ms Quyen and Mr Hoan (ICRAF)

Date	Activities	Resource Persons
30th of March Thursday	Arrival of Participants to Hanoi	Secretariat
31st of March. Introduction of TULSEA, IFAD-PES project, PaLA and PAPOLD		
8.00 – 8.30	Registration and delivery of the training materials	Secretariat
8.30 – 9.00	Opening: Welcome address and introduction of participants	Mr. Hoang Van Giap Simultaneous translator: Ms. Quyen
9.00 – 9.30	Introduction to agenda and PRA	Dr. Hoang Minh Ha
9.30-10.00	Introduction to PaPOLD method 1) Tools 2) Objectives 3) Outcomes	Ms Kira Groot Simultaneous translator: Ms. Quyen
10.00 – 10.15	Break	
10.15 – 11.30	Role play	Everyone Translation: Ms. Quyen
11.30 – 13.30	Lunch and a short relax after lunch	
13.30 – 15.00	PALA method at landscape level and household levels (interface between landscape and household livelihoods in Ba Be district and household level in Dien Bien province)	Dr. Hoang Minh Ha Translator into English: Ms. Quyen and Hoan
15.00 – 15.15	Break	
15.15 – 17.00	Questionnaire design with group work to adapt the	1) Everyone. Translation: Ms. Quyen 2) 3 groups facilitated by

Date	Activities	Resource Persons
	questionnaire.	Ba Be: Hoa/Elisabeth/Loan Na Ri: Bac/Tin/Rohit Pac Nam: Thanh/Cong/Marc
17.00-17.35	Planning for PaLA at household level in three districts.	3 groups facilitated by Ba Be: Hoa/Elisabeth/Loan Na Ri: Bac/Tin/Rohit Pac Nam: Thanh/Cong/Marc
17.35-17.45	Summarising the day.	Dr. Elisabeth Simelton. Translation Ms. Quyen
18.30	Welcome dinner and cultural exchange event at the hotel	
1st of April. Introduction to Reverse Auction (RA) and RACSA methods		
8.00 – 8.30	Feedback on fieldwork plans and questionnaire.	Dr. Elisabeth Simelton Translator: Ms Quyen and Hoan
8.30 – 9.15	Role-play on Reverse Auction (RA)	Dr. Rohit Jindal, ICRAF Translator into Vietnamese: Ms Quyen and Hoan
9.15 - 9.45	Reverse Auction (RA) method in Payments for Environmental Services	Dr. Rohit Jindal, ICRAF Translator into Vietnamese: Ms Quyen and Hoan
9.45-10.15	Reflection on case study/questions and answers	Everyone. Translation by Ms. Quyen.
10.15 – 10.30	Break	
10.30 – 11.30	RaCSA	Mr Do Hoang Chung Translator: Quyen/Hoan
11.30 – 12.00	Questions and answers	Everyone. Translation by Ms. Quyen.
12.00 -13.30	Lunch	
13.30 – 15.00	Practical preparations for the fieldwork activities for PALA at household level and RaCSA field work	3 groups with facilitators/translators: PaLA household economy: Minh Ha, Elis/Hoa, Bac/Rohit RaCSA: Chung, Hoan and Marc

Date	Activities	Resource Persons
15.00 – 15.15	Break	
15.15 – 16.00	Presentation of fieldwork plans	PaLA fieldwork: Elisabeth Simelton/Cong RACSA fieldwork: Hoan/Quyen
16.00 – 16.15	Signing ceremony for PES technical assistance contract between ICRAF and 3PAD project	Dr Hoang Minh Ha and Mr Hoang Van Giap
16.15 – 16.30	Closing the first part of ToT	Mr Hoang Van Giap Translator: Ms Quyen

- **Section 2. Practising PaLA at household level (4-8 April) in three districts of Ba Be, Pak Nam and Na Ri, Bac Kan province**
Coordinator: Elisabeth Simelton (ICRAF) and Mr Luong Chí Công (3PAD)

Date	Activities	Resource Persons
3 rd of April	ICRAF staff arrival to 3PAD at 3 districts	PaLA at HH level to 3 districts: Hoa/Elisabeth/Loan; and Bac/Tin/Rohit; and Thanh/Marc
4 th April	a.m: Meeting with the district survey team: agenda for survey agreed p.m: Meeting communal and village leaders: 6 households per village representative for 3 wealth groups will be selected for PaLA	3 teams in three districts: Ba Be: 3PAD staff with Hoa/Elisabeth/Thanh Na Ri: 3PAD staff with Bac/Tin/Rohit Pac Nam: 3PAD staff with Cong/Marc/Loan
5 th April	One day for survey (two households per day per surveyor) and one day for summing up in each team	3 PaLA teams of three districts: Ba Be: 3PAD staff with Hoa/Elisabeth/Thanh Na Ri: 3PAD staff with Bac/Tin/Rohit Pac Nam: 3PAD staff with Cong/Marc/Loan
6 th April	Return back to Bac Kan Summing up of findings from all three	Elisabeth/Hoa and 3 teams

Date	Activities	Resource Persons
	teams in Bac Kan Tabulate data in the analysis form	
7 th April am	am: Group discussion and sharing	Elisabeth/Hoa/Cong and 3 teams
	pm: Review fieldwork findings at 3 PAD office in Bac Kan	Chaired by Mr Giap (3PAD) and Dr. Elisabeth (ICRAF)
13.30 – 15.30	Presentation of the fieldwork activities of three team as well as the findings of PaLA	Representatives from 3 teams Dr. Elisabeth Simelton
15.30 - 16.00	Discussion and brief on the findings	Dr. Elisabeth Simelton
16.00 - 16.30	RaCSA field work planning	By all participants
16.30 – 17.00	Evaluation of the practicing the method	By all participants
17.00 – 17.30	Certification delivery and Closing	Dr. Elisabeth Simelton and Mr Hoang Van Giap Translator: Mr Cong
17.30 – 19.30	Farewell dinner	
8 th April	Departure for Hanoi and home	

- **Section 3 Practising RACSA during (25 to 28 April)**

Coordinator: Do Hoang Chung (ICRAF) and Mr Lương Chí Công (3PAD)

Time: From 24 to 29 April, 2011 (5 days).

Two groups, each group practice RaCSA in landscape/4-type of land uses in one village

Date	Activities	Expected Outputs
25 April	<p>Morning</p> <ol style="list-style-type: none"> 1. Group meeting: Overview of the agenda, Logistic/equipments and preparation 2. Division of participants into two groups: task assignment for each group during the field 3. Meeting with Lang Sang Commune People's Committee/ Land survey officer, Agroforestry officer and forest rangers <p>Afternoon</p> <ol style="list-style-type: none"> 4. Village household group meeting/discussion in To Dooc village (both groups) <ul style="list-style-type: none"> - Define the timeline/chart of land use changes/land use types in communes - Prepare diagram/maps of current land uses in communes 5. Visit Kim Hy National Park 	<ul style="list-style-type: none"> - Timeline chart/diagram of land use changes/land use systems/types. - Diagram of current land uses in villages (area for each specific type of land uses). - The trend of land use planning/changes.
26 April	Initial landscape appraisal Carbon stock measurement	- C-stock categories

Date	Activities	Expected Outputs
	2 groups measure five plots with different land use types in To Dooc village (each plot is 200 m ²)	are measured for each type of land uses (Wooden trees, shrubs, litters/dead tree, forest soil).
27 April	2 groups measure C stock in medium forest in Quang Phong commune	- History of land use changes mapped out
28 April	<p>In-door calculation/formulation and findings presentation</p> <p>Morning The two groups enter collected data and calculate the C-stock for each type of land use</p> <p>Afternoon Group presentation on results of C stock measurement. Questions, conclusion and feedback by consultants including discussion on participants reflections on RaCSA Evaluation Closing comments by Mr. Giap (3PAD) and Mr Cong (3PAD)</p>	<p>- Results and findings of landscape appraisal.</p> <p>- Results of C-stock measurement by land use type</p>

Appendix 2. List of participants

No	Name of participants	Position/Organization	Cellphone/email contacts
PAD PMU			
1	Hoàng Văn Giáp	Director of 3PAD PMU	091 560 1587 hvgiap.bk@gmail.com
2	Nông Thị Thanh Hảo	LUP & FLA Officer, 3PAD PMU	097 901 4114 thanhhaohn23@gmail.com
3	Đặng Anh Tuấn	M&E Officer, 3PAD PMU	danganhtuan1984@gmail.com
4	Nancy P. Ibuna	Community Development Fund (CDF) volunteer, 3PAD PMU	012 279 1862 npibuna@gmail.com
5	Amanda Esons	Innovative Environmental Opportunities volunteer, 3PAD PMU	021 6560 8428 graceesons@gmail.com
6	Lương Chí Công	Cán bộ QHQLLN, Trưởng Hợp phần 3	091 266 4499 conglc@gmail.com
Bac Kan DARD			
7	Lê Xuân Diệu	Forest Protection and Management Division, Bac Kan Forest Protection Department	0988 658 165 dieukl@gmail.com
8	Dương Thị Anh	Technical Officer, Bac Kan Forestry Development Department	098 423 3912 duonganhcclnbk@gmail.com
9	Phạm Ngọc Kiên	Vice-head of Planning and Finance Division, Bac Kan DARD	098 317 3006 pnkienln@gmail.com
Bac Kan Agricultural Extension Department			
10	Nguyễn Mỹ Hải	Technical Officer, Bac Kan Agricultural Extension Dept.	091 291 2311 haikhuyennongbk@yahoo.com.vn
11	Nguyễn Thị Liễu	Technical Officer, Bac Kan Agricultural Extension Dept.	097 752 8547 nguyenlieuknbk@gmail.com
Pak Nam disitric			
12	Bùi Văn Vũ	3PAD District Management Unit	016 9798 6675
13	Nông Quốc Toàn	District Forest Protection Station	012 3576 2833
14	Lý Thị Hồng Chinh	District Agricultural Extension Station	098 811 7242
Ba Be district			
15	Đàm Thị Thu	3PAD District Management Unit	097 217 0165 thu3pad@gmail.com

No	Name of participants	Position/Organization	Cellphone/email contacts
16	Nguyễn Minh Đức	3PAD District Management Unit	
17	Ma Văn Tiệu	District Forest Protection Station	016 6599 4409
18	Hoàng Thị Thảo	District Agricultural Extension Station	097 508 1977 hoangthaoknbb@gmail.com
Na Ri district			
19	Hoàng Văn Giang	3PAD District Management Unit	097 554 5485
20	Dương Viết Phan	3PAD District Management Unit	097 502 5125
21	Ngôi Quang Nam	District Forest Protection Station	016 8556 4648
22	Nông Thế Quy	District Agricultural Extension Station	091 519 8222
ICRAF			
23	Hoàng Minh Hà	Country Representative	m.h.hoang@cgiar.org
24	Elisabeth Simelton	Deputy CR	simelton@hotmail.com
25	Rohit Jindal	REDD consultant	hi2rohit@hotmail.com
26	Nguyễn Thị Hòa	Research Officer	hoa_uem@yahoo.com.vn
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38	Kira de Groot	MSc students	kira.degroot@gmail.com

Appendix 3. Field work – questionnaire

Province: District: Commune: Village:

Name of Farmer: Sex: M/ F Age: Ethnic group:

1. Household characteristics

1.1 How many people are living in your household? And how many people are able to work?

1.2 What is your main activity?

- Agriculture
- Forestry
- Trade
- Salary/Wage labour
- Retirement Pension
- Livestock
- Other (please specify)

1.3 If agriculture and forestry is your main activity, what crop(s) and tree(s) give you most money? Mention the three most important ones.

2. Agriculture and forestry activities

2.1 Do you have agriculture and forestry land?

1. Yes 2.No

2.2 Do you have red certificate?

Agriculture land? 1.Yes 2.No

Forestry land? 1.Yes 2.No

2.3 What is the area of the land that you manage and use? (ha)

In which:

2.3.1 Agriculture land (ha).....

2.3.2 Forestry land (ha).....

Which forest type?

special use forest (contract for forest protection and restoration)..... (ha)

protection forest..... (ha)

production forest..... (ha)

In which, total area of:

Plantation forest..... (ha)

Natural forest..... (ha)

2.3.3 Other production land (ha):

2.4 What is the main factor affecting agriculture activities?

- Capital
- Seed and seedling
- Labour
- Technique
- Infrastructure
- soil fertility
- soil erosion
- water resources (access to water resources from streams, rainfall, irrigation systems)
- other.....

2.5 What is the main factor affecting forestry production activities?

- Capital
- Seed and seedling
- Labour
- Technique
- Infrastructure
- soil fertility
- soil erosion
- water resources (access to water resources from streams, rainfall, irrigation systems)
- other.....

2.6 How has this changed over the last 5 years?

- Agricultural activities:

.....
.....

- Forestry activities:

.....
.....

2.7 Do you know whom to contact for answers to solve problems with agricultural and forestry activities?

- Agricultural activities:

.....
.....

- Forestry activities:

.....
.....

3. Tree planting and Agroforestry activities

3.1 Do you have trees on your farm?

1.Yes 2.No

3.2.1 Have you planted the trees yourself?

1.Yes 2.No

3.2.2 If yes, which species?

3.2.3 Area (ha) (if possible specify for each species, if not just the whole area).....

.....

3.2.4 Where?

.....

3.2.5 What planting material did you use? (let the respondent talk and only use the ideas as a suggestion)

- Seeds: own farm, market, neighbours/fellow farmers, NGOs/research.....
- Seedlings: wildings, purchased, raised in own nursery.....
- Grafts: purchased, raised in own nursery.....

3.2.6 Have you ever raised your own nursery for trees?

1.Yes 2.No

3.2.7 If yes, which difficulties did you encounter?

.....

.....

3.3 Which challenges and difficulties do you have with management of trees on your farm?

.....

.....

3.4 Do you know whom to go to for answers to your questions related to propagation and management of trees on your farm?

.....

.....

3.5 Would you be willing to plant more trees? 1.Yes 2. No

If yes, please specify the following:

- Reasons?
- Which species?.....
- Where?

4. Marketing of tree products and eco-tourism

4.1 Do you sell tree products ? 1.Yes 2.No

4.2 If yes, which products?

4.3 If no, how do you use tree products from your household? (Can choose more than one option)?
(let respondent talk, use the following as ideas to suggest, Only for self-use, Feeding animal/livestock)

4.4 In which markets do you sell these tree products?.....

4.5 Who brings the products to the market?.....

4.6 Are tree products sold separately or with other food items?

.....

4.7 Do you participate in any eco-tourism activities?

1.Yes 2.No

4.8 If yes, which service(s)?

- Home stay
- Eco-tourism guide
- Boat
- Singing tour (traditional performance)
- Other

5. Agriculture and forestry extension

5.1 How do you learn about agriculture and forestry techniques?

- From family
- Other farmers
- Farmer groups
- Government extension worker
- NGOs/projects
- Media (TV, radio, newspapers)
- Others (please specify)

.....

.....

5.2 Which of the above sources are most important for your learning?

1st

2nd

3rd

6. Sources of income and expenses (household budget calendar)

Income

1. List all sources of income of the household (let respondent talk but you can probe if you think they have forgotten something)

- Cash crops, food crops(rice, maize, cassava, ...)
- Perennial tree
- Forestry activities (doing and selling seedlings, non-timber forest products...)
- Eco-tourism activities
- Trade
- Salary/Wage labour
- Retirement Pension
- Other

2. Ask to rank by order of importance.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

3. Indicate on the calendar the amounts received per source of income and per month

ITEM	Total	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC

Expenses

1. List all expenses made by the household (let respondent talk but you can probe if you think they have forgotten something)

- Food
- Other daily household expenses: soap, salt, ...
- clothes
- farm and forestry implements (tools) and inputs (fertiliser, pesticides, seeds and seedlings, ...)
- health
- School fees
- Transport
- Leisure (drinks, cigarettes, ...)
- Construction & repairs, house and kitchen equipment (TV, radio, bicycle, ...)
- Other

2. Ask to rank by order of importance.

1.
2.
3.
4.
5.
6.
7.
8.

Appendix 4. Evaluation

Table Appendix 4.1 Evaluation of in-door section

Parameters	Percentage (% , n= 25)			Total			
	Meet requirement	Not meet requirement	No answer				
<i>Training meeting your expectation</i>	92	4	4	100			
	Rate (1= worst, 5=best)						
	1	2	3	4	5	No answer	Total
<i>Training is useful and interesting</i>			8	56	36		100
<i>Cultural exchange event & logistics arrangement</i>				20	72	8	100

Table Appendix 4.2 Evaluation of Field work for PaLa & PaPOLD

Parameters	Percentage (% , n=18)					Total
	Very bad	Bad	Medium	Good	Very good	
<i>Preparation</i>			17	61	22	100
<i>Practice</i>			11	61	28	100
<i>Tabulate data</i>		6	22	61	11	100
<i>Analyse data</i>		6	33	44	17	100
<i>Presentation</i>			17	67	17	100
<i>Discuss results</i>			17	67	17	100
Facilitation						
<i>Group discussion (in field)</i>			17	56	28	100
<i>Group discussion (in Bac Kan)</i>		6	12	65	18	100
Content						
<i>I learned new things</i>			11	28	61	100
<i>Training is useful for my work</i>			18	24	59	100
Arrangements logistics						
<i>Travel</i>		11	17	17	56	100
<i>Accommodation</i>		17	6	28	50	100
<i>Food</i>	6	11	6	28	50	100

Table Appendix 4.3 Evaluation of RaCSA in field training

Parameters	Percentage (% , n=9)					Total
	Very bad	Bad	Medium	Good	Very good	
Time for						
<i>Preparation</i>		22	33	44		100
<i>Practice</i>	12,50		12,50	50	25	100
<i>Tabulate data</i>	11		22	44	22	100
<i>Analyse data</i>			22	56	22	100
<i>Present</i>		11		78	11	100
<i>Discussing results</i>	12,50		12,50	62,50	12,50	100
Facilitation						
<i>Group discussion (in field)</i>		11	33	22	33	100
<i>Group discussion (in Bac Kan)</i>		11	22	33	33	100
Content						
<i>I learned new things</i>	11		22	22	44	100
<i>Training is useful for my work</i>		12,50	12,50	37,50	37,50	100
Arrangements logistics						
<i>Travel</i>		33	11	33	22	100
<i>Accommodation</i>	11		11	33	56	100
<i>Food</i>	11		11	33	44	100