

Cooperation in Agroforestry between Ministry of Forestry of Indonesia and International Center for Research in Agroforestry

*Fahmuddin Agus, Taulana Sukandi,
Christine Wulandari and Apul Sianturi*

Southeast Asia



World Agroforestry Centre
TRANSFORMING LIVES AND LANDSCAPES

Cooperation in Agroforestry between Ministry of Forestry of Indonesia and International Center for Research in Agroforestry

Fahmuddin Agus, Taulana Sukandi,
Christine Wulandari, Apul Sianturi

Working Paper nr 77



World Agroforestry Centre
TRANSFORMING LIVES AND LANDSCAPES

Correct citation:

Fahmuddin Agus, Taulana Sukandi, Christine Wulandari, Apul Sianturi. 2008. Cooperation in Agroforestry between Ministry of Forestry of Indonesia and International Center for Research in Agroforestry. Bogor, Indonesia. World Agroforestry Centre. 63p.

Titles in the Working Paper Series aim to disseminate interim results on agroforestry research and practices and stimulate feedback from the scientific community. Other publication series from the World Agroforestry Centre include: Agroforestry Perspectives, Technical Manuals and Occasional Papers.

Published by the World Agroforestry Centre
ICRAF Southeast Asia Regional Office
Jl. CIFOR, Situ Gede, Sindang Barang, Bogor 16680
PO Box 161, Bogor 16001, Indonesia

Tel: 62 251 8625415, fax: 62 251 8625416
Email: icraf-indonesia@cgiar.org
ICRAF Southeast Asia website: <http://www.worldagroforestry.org/sea>

© World Agroforestry Centre 2008
Working Paper nr 77

The views expressed in this publication are those of the author(s) and not necessarily those of the World Agroforestry Centre.
Articles appearing in this publication may be quoted or reproduced without charge, provided the source is acknowledged.
All images remain the sole property of their source and may not be used for any purpose without written permission of the source.

About the authors

Fahmuddin Agus

Researcher on soil conservation and management at the Indonesian Soil Research Institute, Jln. Juanda 98, Bogor 16123, Indonesia.

Contact: fahmuddin_agus@yahoo.com

Taulana Sukandi

Research and Development Centre for Forest and Nature Conservation, Jln. Gunung Batu no 5 Bogor, Indonesia.

Contact: taulana_sukandi@yahoo.com

Christine Wulandari

Lecturer and researcher on Forest Resources Management and Social Forestry, Dept of Forestry, Faculty of Agriculture Lampung University, Jl. S. Brojonegoro 1, Bandar Lampung 35145 Indonesia.

Contact: chs_wulandari@yahoo.co.uk

Apul Sianturi

Centre for Socio-Economic Research of Forestry, Jln. Gunung Batu no 5 Bogor, Indonesia.

Contact: sdaturara@yahoo.com

Abstract

Mutual benefits between a host country and an international organization can be enhanced if both parties are mutually abreast about each other mandates, rights and responsibilities and targets and achievements. This monitoring was aimed at (i) enlightening the status, mandate and strategic research priorities of the World Agroforestry Centre (ICRAF) Southeast Asia Regional Research Programme and those of the Forestry Research and Development Agency of the Republic of Indonesia (FORDA) and (ii) revealing ICRAF's achievement of the targeted collaborative outputs as stipulated in the Memorandum of Understanding (MoU) between the two parties ratified on 5 October 2006. This monitoring was conducted through field observation of selected ICRAF research and development activities, literature search of strategic plans, and consultative meeting with key officials and researchers of the two organizations. Existing differences and similarities in the visions and mission of the two organizations form the basis for complementarity in research and development agendas.

The monitoring exercise concluded that ICRAF is on target in its action research on community forest (*Hutan Kemasyarakatan, HKM*) in Sumberjaya, nursery support and tree planting techniques, economic and environmental analyses of agroforestry, payment for environmental services, analysis of coastal area protection as well as in developing networks in agroforestry education. There are opportunities of further exploration of new collaborative research, especially on hydrological impacts of the National Movement of Forest and Land Rehabilitation (GERHAN) and on climate change mitigation and adaptation. Finally, communication needs improvement. ICRAF has developed and disseminated guidelines on tree crop propagation and rapid techniques for carbon stock, biodiversity, tree marketing, hydrology and land tenure appraisal. However the collaboration has not been successful in increasing the proportion of FORDA researchers who pursue their PhD studies abroad. Commitment and determination of the candidates and strong supports from FORDA and ICRAF are crucial for achieving such a competitive target. Other cooperation targets such as replicating live examples of the HKM success story will require more direct involvement of FORDA, and other related directorate generals.

Keywords

Action research, tree crop propagation, payment for environmental services, capacity building, communication.

Acknowledgements

The monitoring team expresses their appreciation to FORDA and ICRAF officials and scientists for their valuable time and information.

Contents

Summary and Recommendations.....	1
Introduction.....	5
Status, Mandate and Strategic Research Priorities of Icraft and Forda	7
Main Findings of the Monitoring.....	10
Action Research of Negotiation Support System and Hutan Kemasyarakatan in Sumberjaya, West Lampung District	10
Supports for the National Reforestation and Land Rehabilitation Program (GERHAN or GNRHL)	12
Clean Development Mechanism	13
Payment for Environmental Services	14
Capacity Building.....	14
Communication and Coordination	16
Research Collaboration Schemes	17
Conclusions	26
Annex 1.....	27
Field Trip in Jambi and Singkarak	27
Excerpts of Phase II RUPES Planning Meeting.....	27
Points of Interest in Muara Bungo and Singkarak.....	28
Annex 2.....	31
Minutes of One Day Seminar in Commemoration of 15 th Anniversary of ICRAF in Southeast Asia.....	31
Annex 3.....	34
Meeting with Dr. Meine van Noordwijk.....	34
Annex 4.....	35
Minutes of Meeting with Mr. Wahyudi Wardoyo, the DG of FORDA	35
Annex 5.....	37
Minutes of Meeting with Dr. Anwar the Director of Research and Development Centre for Forest and Nature Conservation (RDCFNC).....	37
Annex 6.....	39
Minutes of Meeting with Mr. Iman Santoso, the Director of the Centre for Socio-Economic Research of Forestry	39
Annex 7.....	40
Minutes of Meeting with Dr. Tri Wahyudyati, SH, LLM (on behalf of Dr. Nur Masripatin, FORDA Secretary)	40

Annex 8	41
Minutes of Meeting with Ms. Leimona Beria, a researcher on Payment for Environmental Service at ICRAF	41
Annex 9	42
Minutes of Meeting with Dr. Niken Sakuntaladewi, Liaison of FORDA-ICRAF.....	42
Annex 10	43
Minutes of Meeting with Mr. James Roshetko, ICRAF/Winrock scientist on tree domestication	43
Annex 11	44
Minutes of Meeting with Dr. Suyanto of ICRAF, Researcher on the Socio-Economics....	44
Annex 12	46
Minutes of Meeting with Dr. Jess Fernandez, the coordinator of Southeast Asia Network for Agroforestry Education	46
Annex 13	48
Minutes of Meeting with Dr. Laxman Joshi, ICRAF Scientist on Indigenous Knowledge	48
Annex 14	49
Minutes of 5 September Presentation of The Monitoring Report.....	49
Annex 15	51
Schedule of Monitoring (FA).....	51
Annex 16	53
List of ICRAF’s Recent Publications (Classified based on possible Relevance to MoF Programs) [These publications and most others of ICRAF SEA are downloadable from http://www.worldagroforestrycentre.org/sea]	53

Summary and Recommendations

“Agroforestry addresses the problems of poverty and local community’s limited access to land and thus it can bridge the conflicts between the community living in the forest margin and the government. The Ministry of Forestry (MoF) is willing to revise the current tenure-related policies in such a way that the people’s access to land/forest be improved. The International Centre for Research in Agroforestry (ICRAF’s) role in research and technology development on this aspect will remain important” (Minister’s Address for the One Day Seminar in commemoration of ICRAF 15th Anniversary, 26 August. 2008).

“Cooperation must be based on mutual respects, mutual trusts, and mutual benefits between the cooperating parties (Director General of Forestry Research and Development Agency (FORDA), 27 August 2008).

These quotes emphasize the relevance of ICRAF research in Indonesia and the conditions for successful cooperation between the Ministry of Forestry (MoF) and ICRAF. The Cooperation in Agroforestry between MoF and ICRAF was formalized on 5 October 2006. The aspects, progresses and the ways forward are highlighted in this summary.

The MoF controls illegal logging through two ends: demand control by restructuring forest industries and supply control by law enforcement and ‘social fencing’. The negotiation support system (NSS) and community forest (Hutan Kemasyarakatan, HKM) in Sumberjaya, West Lampung, as facilitated by ICRAF and partners, exemplified how the community depending on forest resources can make commitment to restore the functions of degraded protection forest and safeguard the remaining forest of Bukit Rigis. Probational five year tenure right was granted to the community and the semi permanent tenure of 35 years will be granted if they can consistently materialize the commitment. Mutual trusts between the key stakeholders and local and central government supports are the key to the successful agreement. Opportunities are wide open for replicating the Sumberjaya success to other areas. We recommend Kabupaten Manggarai, East Nusa Tenggara (NTT) for similar conflict resolution as that in Sumberjaya and/or Kali Konto Watershed in East Java for enhancing land rehabilitation within Hutan Tanaman (Plantation Forest). The inputs from FORDA and RLPS will be required if these replication tasks are of FORDA’s priority.

The National reforestation and land rehabilitation program (GERHAN or GNRHL) is a transition of the so called Regreening and Reforestation (R&R) launched in 1976 by the Presidential Decree No.8/1976. Under the MoU, ICRAF supports the capacity building on plant propagation/nursery technologies and guidelines of mycorrhizal use for dipterocarp. It appears that all targeted deliverables will be accomplished by the end of this MoU period in 2010. The book on fruit tree propagation and management has been published and the work is

underway on the use of local tree species in agroforestry. Several papers were written in co-authorship between ICRAF and FORDA. However, so far GERHAN have some flaws in the field, including inappropriate technology, lack of coordination, non-participatory nature of planning and poorly supervised implementation. For optimizing technology implementation, we recommend that RLPS and FORDA, with ICRAF's support commission a team for Developing models of appropriate land use systems for optimum environmental and livelihood benefits. In addition, monitoring of GERHAN by independent bodies needs improvement.

In support for Revitalization of Agriculture, Forestry and Fisheries (RPPK), ICRAF has published the technical information for extensive smallholder tree crop production, including tree-tree interaction models for mixed systems. ICRAF has also evaluated the effectiveness of multiple extension approaches for enhanced farmer learning and technology transfer in Batang Toru, north Sumatra. After rigorously trained, champions among farmers are proven capable of disseminating new technologies. This could be adopted as a model in the future extension approach. Farmer forest school is another possible scheme in multiple extension approach that should be considered for future collaboration.

The works under the payment for environmental services has marked significant progress as actualized in the HKM in Lampung, watershed management in Singkarak, and hydro electric power plant for biodiversity conservation in Muara Bungo, Jambi. Voluminous publications and research briefs have been produced. Collaboration under the project Rewarding the Upland Poor for Environmental Services (RUPES) has been excellent with directorate generals of RLPS and Forest and Nature Conservation (PHKA, Pelestarian Hutan dan Konservasi Alam). Collaboration with FORDA on this subject can be enhanced engagement by assignment of FORDA staff as a focal point.

In support of the community's need to reconstruct the green infrastructure in the aftermath of Dec. 2004 tsunami with trees farmers want, ICRAF in collaboration with the Indonesian Soil Research Institute is developing land suitability map of West Aceh District and guidelines for land suitability evaluation. Meanwhile partnership with Hohenheim University, Germany for modeling of tree crop spatial distribution for effective coastal protection is underway.

Significant progress in support for Clean Development Mechanism (CDM) has been made and the tool for Rapid Carbon Stock Appraisal (RaCSA) has been published and disseminated through trainings, distribution of booklet and upload in ICRAF Website. However, the problem arise when it come to the difference between national versus international (donor) definition of forest; being the jurisdiction versus the tree cover performance. As CDM potentially addresses multiple-pronged objectives - livelihood and poverty alleviation, carbon sequestration and watershed conservation – adjustment of forest definition to the vegetation

rather than institution-based one, may increase opportunity of upland farmers for receiving the carbon credit fund.

The guidelines for Rapid Biodiversity Appraisal has been published and disseminated through various training and meeting channels to support the biodiversity conservation beyond the protected areas. The guidelines need critical review and adaptation by FORDA for national level use.

Significant progress has been made in the Indonesian Network for Agroforestry Education (INAFE) as well as the Southeast Asia Network for Agroforestry Education (SEANAFE). Inputs from FORDA are welcome for enrichment of the teaching materials.

The facilitation of ten Indonesian scientists as PhD candidates is approaching the target in terms of the total number (7 students) of Indonesians students accepted at various universities. However, most of them are ICRAF national staff and only one is an active FORDA staff member. To increase the proportion of successful FORDA staff, joint efforts will be needed from the candidates, FORDA and ICRAF. The candidates should proactively improve their English and general knowledge. FORDA could perhaps provide opportunities and funds for English courses, attendance of international seminar and trainings. ICRAF could improve the writing skills, increase the awareness with the global issues and connection to appropriate universities and donor. The determination and persistence of the candidate are the utmost important foundation for winning the ever more competitive PhD scholarship.

Opportunities are open for various areas of new competitive proposal development. In general, besides meeting the institutional mandates these proposals should also address the global issues to match with the funders' objectives. The topics that may meet these criteria include assessment of carbon budget from peat forest fire, sustainable management of peatland and analyses of hydrological, economic and social impacts of GERHAN.

Three formats of collaborative research between FORDA and ICRAF could be developed: (i) FORDA's funding with possible engagement of ICRAF scientists (subject to the relevance to ICRAF's research priorities), (ii) co-funding by maintenance of researchers' allowance/per diem by FORDA of the appointed staff, (iii) partnership which is started with problem identification, concept note and proposal write-ups and implementation, and (iv) (competitive) recruitment of FORDA staff by ICRAF. In each of these formats, agreement on the rights and responsibility of FORDA, ICRAF and the assigned staff need to be documented.

Communication and coordination can be optimized by broadening the scope of the bimonthly meeting to include FORDA's researchers presentation, rather than a one way ICRAF's presentation. For programs considered strategic by both organizations assignment of focal points from each party will be necessary. Distribution of research results through printed and

electronic media and adaptation and uptake of well documented results should be intensified. Notification to FORDA and vice versa of training, seminar, opportunities of collaborative research etc. need improvement for possible cost sharing and greater staff exchange. Written notice to FORDA is required for ICRAF collaboration with other agencies or department. Approval by FORDA is required for using FORDA's logo by ICRAF for policy-related publications such as Press Release and Policy briefs.

Introduction

The Government of Indonesia welcomes the presence of the International Centre for Research in Agroforestry (ICRAF) Southeast Asia Regional Research Programmes since 1993. The Ministry of Forestry was appointed as the host Ministry and the Forestry Research and Development Agency (FORDA) became the focal point of its presence.

Since its presence in Indonesia 15 years ago, ICRAF has collaborated with various institutions from the national to the district and sub-district levels, government and non-government institutions. The Ministry of Forestry is one of the most important partners because of several common research objectives. ICRAF and FORDA are expected to complement each other in research for development efforts and thus cooperation in agroforestry between the two organizations was formalized in a Memorandum of Understanding signed on 15 October 2006.

On 15 April 2008 a meeting between FORDA and ICRAF in Jakarta recommended a formal monitoring and evaluation of the progress of the cooperation. The aim of the monitoring was to look back and reflect on ICRAF activities in the past 15 years, and take up the lessons for planning the way forward.

The specific objectives of the monitoring were to (i) provide strategic advices for strengthening FORDA and ICRAF collaboration and (ii) giving directions to ICRAF's programme, particularly in Indonesia.

Activities to be monitored are those of the last 15 years with the emphasis on the last 5 years, especially the ones related to FORDA-ICRAF MOU:

- Evaluation ICRAF's programme and achievements, with reference to the MoU between MoF and ICRAF signed on 15 October 2006, Five Year Plan of Operation, Annual Plan of Operation, any other reports or minutes of meetings between MoF and ICRAF). The lessons learnt will be used for inputs in developing and/or renewing ICRAF programme planning in Indonesia, including research priorities in accordance with Indonesia's forestry development policies
- Give recommendations for ICRAF Programme (Plan of Operation) under the context of FORDA-ICRAF MOU and to Indonesia's research and capacity building needs in general;
- Determine areas for improvement in FORDA-ICRAF collaboration
- Conduct pre-programme evaluation/consultation meetings with FORDA and ICRAF as deemed necessary

- Conduct programme monitoring to present the report to FORDA - ICRAF
- Submit a report on the outputs and outcomes of the programme monitoring workshop and present the same to FORDA and ICRAF at least 3 weeks after.

The monitoring was conducted through: a field trip to Jambi (rubber agroforestry and RUPES) and Singkarak (RUPES and community CDM plan), attendance of a few meetings in Muara Bungo, Jambi (Planning Meeting of RUPES Phase II and training of TUL SEA for the Rapid Biodiversity Appraisal, RABA) and Rapid Marketing Appraisal (RMA), attendance of one day seminar in Bogor in conjunction with ICRAF 15 year Anniversary, consultation meeting with FORDA and ICRAF officials, and internet and literature study of ICRAF and FORDA.

Status, Mandate and Strategic Research

Priorities of Icraft and Forda

ICRAF is an autonomous (independent), not for profit International Organization which belongs to the Consultative Group of International Agricultural Research (CGIAR). Its regional research programme is based in Bogor based on a Memorandum of Understanding between the Government of Indonesia and ICRAF signed on 20th January 1995. On the other hand, FORDA is a not for profit, national government research organization. Besides some degree of independence, FORDA research agenda abide the national rules, regulations and policies. As such, FORDA research is likely supporting the current policies. The presence of ICRAF, to some extent, complements FORDA's research by generating agroforestry technologies as well as analyzing regulatory and policy barriers in livelihood and ecosystem management.

The beneficiaries, partners, funding sources and research focus of FORDA and CIFOR is presented in Table 1. While FORDA's beneficiaries are mainly the national government and scientific communities and to some extent the local communities, ICRAF serves mainly the international and to a lesser extent the national and local government and communities. ICRAF also works in partnership with international research centers and universities in addition to the national agricultural research and extension services (NARES), which include forestry research organizations as well as non government organizations.

The majority of FORDA's funding is from the core budget of the MoF, while ICRAF funding is mostly originated from competitive research grants. Thus in each of ICRAF activities and partnership, the quality of outputs influences the credibility of ICRAF among the funding organizations. Since the funding sources are mostly international organizations, ICRAF research direction then must address the global issues and their relevance to the national and local agendas.

Table 1. Beneficiaries, main partners, funding sources and research focus of FORDA and ICRAF.

	FORDA	ICRAF
Beneficiaries	International community national and local governments, national scientific communities local communities	international community national and local governments: MoF, MoA, MEnviron., PEMDA local communities
Partnership	International scientific organizations NARES, NGOs	International scientific organizations NARES, NGOs
Funding	Core (>90%); very secure Competitive budget (\pm 10%)	Core (<10%): Mostly from overhead Competitive budget (>80%)
Research direction	National and local concerns	Global , national and local agendas

There are some similarities and differences in the visions and missions of the two organizations. While FORDA emphasizes its prominent roles in forest sustainability and welfare of people live in the forest, ICRAF emphasizes the use of more trees in the rural landscapes to improve food security, nutrition, income, health, shelter, energy resources and environmental sustainability of rural people. ICRAF works are on rural landscape while FORDA concentrates on the forest (Table 2). Both organizations conduct research for developing science and technology and both are concerned with people’s welfare. ICRAF and FORDA research results are aimed to provide policy inputs as well as alternative technologies for farmers (Table 3).

Table 2. The visions of FORDA and ICRAF

FORDA	ICRAF
To be a prominent institution of forest science and technology for the realization (<i>‘development’</i>) of forest sustainability for the improvement of people welfare	Rural transformation in the developing world where smallholder households <i>strategically</i> increase their use of trees in agricultural landscapes to improve their food security, nutrition, income, health, shelter, energy resources and environmental sustainability

Table 3. The missions of FORDA and ICRAF

FORDA	ICRAF
<ol style="list-style-type: none"> 1. Improving the mastery in science and technology of forestry 2. Increasing the utilization of information and technology of forestry, as the result of research and development, for the formulation of policy and the implementation of technology of forestry 3. Improving institutional matter, planning and evaluation system, and infrastructure of research and development 	To generate science-based knowledge about the diverse roles trees play in agricultural landscapes and to use its research to advance policies and practices to benefit the poor and the environment

ICRAF objectives for Indonesia as part of the Southeast Asia program are:

1. To develop a more systematic understanding of ***the role of trees*** in ***land use mosaics*** in ***Southeast Asia***, and ***articulate the implications of this knowledge for the sustainable management of natural resources*** in upland watersheds
2. To redress policy imbalances by providing ***policy options*** that will reduce poverty and conserve natural resources, and facilitate the use of such options in policymaking processes
3. To facilitate effective and transparent mechanisms for ***rewarding upland poor farmers*** for the ***environmental services*** they provide through their land use practices
4. To ***develop the capacity*** of research and development partners to address the most urgent natural resource management problems in the uplands through agroforestry
5. To provide methods, tools, and analyses that lead to ***institutional innovations*** for successful participatory management of natural resource
6. To identify and refine key ***agroforestry technical innovations*** that lead to more profitable and sustainable use of upland landscapes
7. To facilitate the ***impact of agroforestry innovations*** on the land via the decisions of the millions of practical agroforesters, through strong linkages with development projects that employ recent research outputs.

Main Findings of the Monitoring

Action Research of Negotiation Support System and Hutan Kemasyarakatan in Sumberjaya, West Lampung District

Illegal logging is one of the main problems in forest conservation. The players include 'oknum' (the persons with well respected government or military power who cut the forest illegally), concession companies who cut forest beyond the concession areas and the local people. The two former players usually have bigger impacts since they clear the forest in large scale.

The action research on the negotiation support system and Community Forest (Hutan Kemasyarakatan, HKM) although not designed for social fencing of illegal logging, can be linked for such purpose since in the HKM the community make commitment to restore the forest function and protect the remaining forest against illegal logging. They are entitled for the semi permanent tenure right if they can consistently meet the commitment.

The action research of HKM in sumberjaya was started with a negotiation support systems (NSS) for finding the common ground between stakeholders, negotiating on the land management and reward systems, adapting land management technology and testing and communicating the results of alternative land management systems as schematically presented in Figure 1.

The eviction of farming community who farmed on the protection forest areas and uprooting of their productive coffee trees by the local government in mid 1995, during which a score of people were killed was the beginning of serious conflict between the community and the local government. The land was seeded with Calliandra which undoubtedly sprouted very fast and gave well protection on land, but could not offer income to the farmers. The change of the order government brought new hopes for those evicted people and they returned to the coffee protection forest areas in late 1990 because of unsatisfactory livelihood the evacuation area. They rehabilitated their coffee farms by grafting of active stumps. However, the fear of being chased away again remains among the farmers. The understanding among the local government officials that the protection forest areas must be covered by forest vegetation is a potential source of repeated conflict escalation.

Negotiation Support System for Sustainable Land use

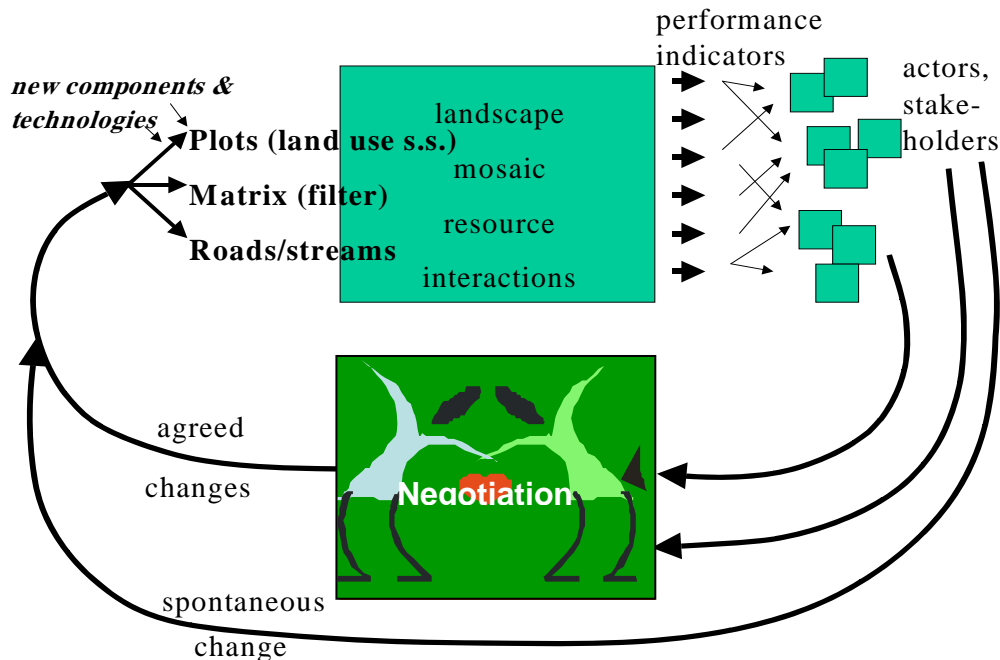


Figure 1. Schematic diagram of the negotiation support system.

ICRAF with partners initiated the NSS scheme in late 1990 by campaigning to the government officials, the Hydroelectric Company (PLTA) and the local farmers about soil conservation, forest roles and livelihood. The Ministerial Decree No. 31/ 2001 on Community Forest formed a good basis for the negotiation. This legal basis was followed by other decrees such as Permen (Minister 's regulation) No.P37/2007. The legality of semi permanent tenure right was cross checked and officials from the Planology Agency (BAPLAN), Directorate General for Land Rehabilitation and Social Forestry (RLPS) and the Legal Bureau (Biro Hukum) of the Ministry of Forestry were involved in facilitating the HKM with the front role of the Aceh Barat Frestry Service.

Based on the regulations, the district head is entitled to issue the probation (<5 year) land use permit. This kind of permit has been issued to about 7000 HH with a total land area of 13,000 ha. This permit was granted after the group proposals containing land conservation strategies, criteria and indicators and the monitoring systems which were the integral parts of the proposals, were accepted.

Following the probation period, the Minister of Forestry issued the letter of "Penetapan Areal Pencadangan Hutan Kemasyarakatan" (Community Forest Allocation). This letter is a

prerequisite of the 35 year semi permanent land use right. The Minister so far has issued this letter for 40,000 ha areas in Sumberjaya.

The HKm agreement in which the community who have been farming for decades on the protection forest receive the semi permanent tenure right for the forest functions (environmental services) they restore is an ideal form of agreement. Research conducted by Puslittanak, FORDA (Dr. Ngaloken Gintings) and University of Brawijaya, revealed that in the erosion prone areas of Sumberjaya, coffee trees along with conservation measures, including the multistrata coffee systems can restore some of the forest function and at the same time provide satisfactory livelihood for the people. Enforcement of rigid rules by replanting the area with timber trees may restore part of carbon stock and reduce erosion, but does not solve the livelihood problem.

Should this program be a research priority of FORDA, opportunities are wide open for replicating the Sumberjaya success to other areas. We recommend Kabupaten Manggarai, East Nusa Tenggara (NTT) for similar conflict resolution as that in Sumberjaya. Kali Konto Watershed in East Java is another possibility with the problem of land rehabilitation within Hutan Tanaman (Plantation Forest). This replication, especially outside of ICRAF existing research areas, will require inputs from FORDA and RLPS.

Supports for the National Reforestation and Land Rehabilitation Program (GERHAN or GNRHL)

GERHAN or GNRHL is an acronym of Gerakan Nasional Rehabilitasi Hutan dan Lahan (National Action/Movement of the Rehabilitation of Forest and Land). The objective of GERHAN is to accelerate the effort in the rehabilitation of forest and land on the priority watersheds for the purpose of controlling flood, landslide, coastal area degradation, and drought in an integrated action with the participation of all related stakeholders through the mobilization of resources. GERHAN has been conducted since 2003, but under the former name of Regreening and Reforestation (R&R) it has been started since 1976 by the Presidential Decree No.8/1976.

The implementation of GERHAN in the year 2007 was conducted by three approaches: subsidy, incentive, and the model-based. Under the subsidy pattern all components in the implementation (planning, seedlings, planting, and maintenance) are funded with the government budget. This pattern is applicable in the state forest areas for (conservation, protection, and production forests) which are categorized as a critical land. Outside state forest areas this pattern is implemented for maintenance of public services such as protection of water catchment areas surrounding dam and lake, well, riverbank, and rehabilitation of forest and land in undeveloped region. Incentive pattern is implemented outside state forest areas. All components in the implementation are funded with government budget, except for

planting cost component which is only partly funded by government. The Model-based pattern is based on the model development suitable for either state forest or outside state forest areas.

ICRAF supports GERHAN through capacity building in tree nursery, analysis of tree certification and analysis of constraints in tree planting and is on track for the deliverables. A few papers are jointly written between ICRAF and FORDA scientists.

Santoso (1992)¹ discussed three consistent weaknesses in R&R: poor quality and inappropriate technology selection, uncoordinated and non-participatory planning, and unaccountable and poorly supervised implementation”. These observations are still valid under today’s GERHAN and thus we recommend:

- Development of appropriate (from the environment and livelihood perspectives) models of land use systems for GERHAN by RLPS and FORDA with ICRAF supports
- Intensified monitoring of GERHAN by independent bodies
- Development of research proposal on Hydrological analysis of GERHAN impact (collaboration between ICRAF, Universities, and FORDA, depending on mutual interests).
- Adaptation and reference to existing ICRAF research results on Nursery systems, TUL-SEA, etc. for adaptation and implementation.

Clean Development Mechanism

Besides developing methods for carbon stock assessment, developing a test site for voluntary market CDM is crucial. A test site has been proposed by the community such as that in the catchment of Singkarak Lake on areas experiencing recurrent burning. However, the problem arise when it come to the difference of national versus international (donor) definition of forest; whether forest is defined based on the status imposed by the government or based on the tree cover. As CDM potentially addresses multiple-pronged objectives including livelihood and poverty alleviation; and carbon sequestration as well as watershed conservation, the success of CDM will be very important for the local community as well as the government. Therefore we suggest an addendum of the Law (UU) No. 41/99 on forest definition for bigger chance of CDM proposal.

¹ Santoso, H. 1992. Evaluation of INPRES Reforestation & Regreening. Min. of Forestry and Bogor Institute of Agriculture, Jakarta.

As the Kyoto Protocol is approaching an end in 2012, greater attention has been given to Reducing Emissions from Deforestation and Degradation (2012), a likely most important mechanism post Kyoto Protocol is related to land use land use change and forestry (LULUCF). ICRAF with partners (including BAPLAN) has developed a proposal on REDD preparedness and it has been accepted for funding by EU. There is opportunity of FORDA's involvement in this research.

Another subject that is relevant for a joint research of ICRAF and FORDA is the accounting of peat forest fire CO₂ emission. This research direction will be important both for developing strategies of low emissions peat soil management as well as verifying the recent allegation (Hooijer et al., 2006) of 1.4 Gt annual CO₂ emission from Indonesian peat forest fires.

Payment for Environmental Services

ICRAF's PES program is called RUPES (Rewarding Upland Poor for Environmental Services They Provide). RUPES is an environmental services program of ICRAF aims to enhance the livelihood and reduce poverty of the upland poor while promoting environmental conservation at local and global levels. This program aims to build a live example of best practices for successful environmental transfer agreements adapted to Asian context.

There have been many activities on PES undertaken by ICRAF in collaboration with PHKA and with RLPS in the form of HKM. Success examples have been demonstrated in HKM in Lampung and in hydroelectric mill in Jambi.

The HKM case in Lampung has been explained in the former section of this report. In Muara Bungo, Jambi the services being rewarded are the community's maintenance of biodiversity in the rubber agroforestry system. This practice at the same time believed to regulate water flow from the catchment to the river that enables power generation using the water mill.

ICRAF shouldered about half of the costs of the watermill, the dynamo and the channel reservoir for rotating the mill. ICRAF also provides knowledge on improved rubber propagation system. The community is freed from dependence to diesel for running generators because of this micro hydro project.

Mutual trusts, tangible benefits that both farmers and the government can expect, and government supports and facilitation are the key to RUPES success.

Capacity Building

ICRAF is on track for development of communication network and dissemination to support agroforestry education under the Southeast Asia Network for Agroforestry Education (SEANAFE) in coordination with Indonesian Network for Agroforestry Education (INAFE).

However in the facilitation of ten Indonesian scientists as PhD candidates, with preference for current FORDA staff, the results is still unsatisfactory. From about 7 PhD candidates that has successfully been accepted at universities abroad, only one or two so far from FORDA. Inputs have been provided for their proposal development, but no follow-up from the candidates because, most of them are tied-up by routine workload. On the other hand one FORDA staff reportedly never receive further input from ICRAF after submission of revised abstract.

It should be noted that research or teaching assistantship from abroad are very competitive. Proficiency in English is the basic prerequisite. We suggest that the candidate have a good level of English mastery on their own and/or with supports from FORDA (such as through English course). ICRAF can contribute in further improvement of the language skill, especially in writing skill.

Excellent basic (BS and MS) knowledge is another prerequisite that the candidate should have had. The knowledge can be improved during the post BS and MS periods through literature studies, scientific discussions and so forth. Furthermore, to be eligible for an international scholarship, the candidate must keep themselves abreast with globally discussed issues such as the global warming, carbon budget, REDD and so forth. ICRAF and FORDA can have major roles in this aspect besides the candidates proactive readings. Some improvement on writing skill can be assisted by ICRAF although much is dependent on the candidates' willingness. Last, ICRAF can channel the qualified candidates to the proper professors/university. This explains that PhD candidacy is not a short and instant process. Some candidates can pursue this quicker than the others, but much dependent on the candidates internal determination and persistence

For catching up this targeted output there are a few ways that the candidates, FORDA and ICRAF can do hand in hand:

- S2 student attachment, such that the candidates become familiar with internationally 'salable' research problem and improved his or her English. In many cases, however, the candidates wasted the golden opportunity by always speaking in Indonesian language to the foreign scientists.
- Co-authorship in scientific paper write-up will be very helpful. This requires that the candidate have good research design and data collection to be publishable. In some cases, however, the research design and data collection area not good enough to be published in the local, let alone in International publication.
- Participation in workshop (e.g. there will be a 2 week WriteShop in Bandung on policy subject and thus those candidates with policy research are advised to participate).

- Collaborative research; the scheme and the subject will be discussed in a latter section.
- Participation in international seminar. For example, ICRAF will be sponsoring a few qualified national participants for the 2nd World Agroforestry Congress to be held on 23-28 Aug 2009 in Nairobi, Kenya. The abstract submission is due on 15 October 2008 and good research results can be proposed for joint abstract and paper write up with ICRAF scientists. The call for abstract has been distributed by ICRAF to FORDA on 5 September.
- One-on-one mentorship.

Communication and Coordination

Since the MoU was signed in October 2006, there has only one intensive discussion on 15 April 2008 on ICRAF's achievements of the targeted outputs. Bimonthly presentation of ICRAF research results, have been receiving a low to fair interests among FORDA's researchers. Reboan (Wednesday meeting) designed mainly as a communication forum between government official (echelons I, II and III) in which partners have a chance to inform their main research findings, especially those research with policy implications. This forum is very strategic because of the attendance of high level officials.

The appointment of Dr. Niken Sakuntaladewi as a liaison officer between FORDA and ICRAF has improved the communication significantly although improvements in communication are still needed in the following aspects:

- Notification to FORDA of annual ICRAF research plan. This is used as part of database of FORDA
- Notification to FORDA of training etc. for possible cost sharing and greater FORDA participating opportunity
- For improving two-way communication the scope of bimonthly seminar should be broadened to also include presentation of FORDA research results. English presentations are preferred, especially by those under the candidacy for scholarship.
- Assignment of focal point for programs considered strategic for both organizations (e.g. PES)
- Proactive uptake by each institutions of research results.
- More effective distribution of FORDA's research results. For instance, all of ICRAF publication are available on the website <http://www.worldagroforestrycentre.org/sea>

and they are public domain that could be downloaded by anyone. More effective FORDA's dissemination will also improve its visibility.

- Systematic notification of MoF/FORDA logo utilization by ICRAF for sensitive publications such as Press Release, Policy brief etc.

Research Collaboration Schemes

We propose four possible formats of collaborative research between FORDA and ICRAF:

- (i) FORDA's funding with possible engagement of ICRAF scientists (subject to the relevance of the subject matter to ICRAF's research priorities). In general, this scheme is suggested for FORDA's strategic program in which ICRAF outsourcing of ICRAF expertise is necessary.
- (ii) Co-funding research for which FORDA assign researcher(s) and maintain their allowance and per diem. This may be applicable for selected research agenda under the MoU which is strategically important nationally, but not supported by external research grant.
- (iii) Partnership which is started with problem identification, concept note and then proposal write-ups and implementation (Figure 2). FORDA's entry is preferably started from the problem identification to rise the sense of ownership. Each organization receives the share as agreed during the proposal development and manage the funds according to each institutional rules. One institute must take the lead. In this case each organization bear the expenses for researchers involved using the grant funds. Since the fund is receive several months after proposals approval and some proposals may not get grant, FORDA is expected to maintain the staff honorarium, travel allowance etc.
- (iv) Recruitment. This scheme is applicable for ICRAF projects for which external man power is needed. The applicant from FORDA will compete with individuals with various skills.

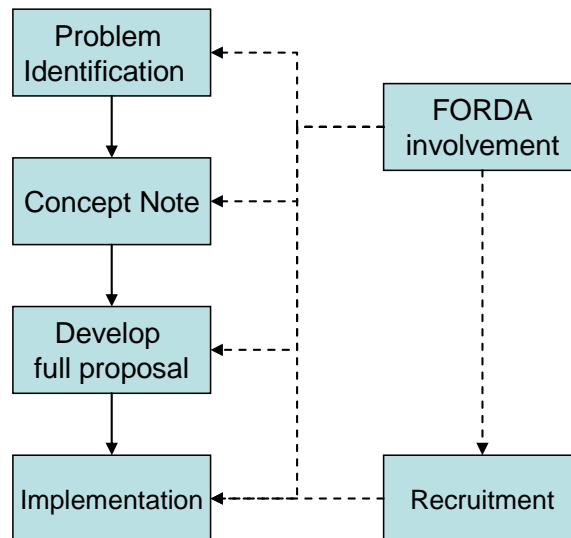


Figure 2. Schematic diagram of simplified steps of proposal development and possible entries of FORDA's involvement.

Table 4 lists the areas of cooperation between ICRAF and FORDA based on the Plan of Operation of 2006-2010, the targeted outputs/deliverables, progress and recommendation for follow up.

Table 4. Match of forest-related priorities of the Government of Indonesia and ICRAF focus and deliverables (from Table 3 Plan of Operation 2006-2010 ICRAF SEA and MoF; signed on 19 Oct 2006), progress and recommendations.

Gol and MoF priorities	Current activities of MoF/FORDA	Agreed focus of ICRAF Indonesia in 2006 – 2010	Target outputs/ deliverables	Progress, comments from ICRAF	Remarks/Recommendation
<i>Governance issues</i>					
1. Stop illegal logging	Demand control by restructuring forest industries. Supply control by legal enforcement and social fencing	1a. Evaluate experience with HKM in W. Lampung and across Java 1b. Economic incentives for local forest conservation under ‘social forestry’/HKM 1c. Community empowerment in combating illegal logging through HKM	1a. Design a similar pilot project on HKM in other area 1b. Live examples analyzed for replication 1c. Policy and economic analysis of multiple forms of ‘social forestry’	1a. Not accomplished yet. 1b. Linked to 1.a 1c. ICRAF is working on Kali Konto case on new yield sharing agreement, based on lessons learned from Sumberjaya	1.a&b. Possible sites of replicaion are Manggarai, NTT (with land use conflict problem between the community and the government) and Kali Konto for watershed management in hutan tanaman area. Joint efforts will be needed from ICRAF and FORDA. 1.c. Present the (interim) results in one of the bimonthly seminar
<i>Trees, Farms and Markets</i>					
2. National reforestation and land rehabilitation program (GERHAN or GNRHL)	RHL – coordinates program implementation at Kabupaten level FORDA – supportive	2a. Nursery support for ‘Trees Farmers Want’ and improved GERHAN implementation 2b. Spatial analysis of ‘ten’ factors	2a. Practical certification schemes for quality control 2b. Improved diagnostics and	2a. Techniques for production of quality planting materials are available and ready to be used as an input in practical certification scheme. ICRAF has ideas on the certification, but not compiled yet into recommendations. 2b. The analysis of bottleneck of farmer tree planting have been accomplished	2.a. Follow up with the write up and discussion at one of the bimonthly meeting 2b. Develop models of appropriate land use systems from the environment and livelihood

Gol and MoF priorities	Current activities of MoF/FORDA	Agreed focus of ICRAF Indonesia in 2006 – 2010	Target outputs/deliverables	Progress, comments from ICRAF	Remarks/Recommendation
	research on implementation issues, including implementation of charcoal and wood vinegar to increase food crop and forest tree productivity; getting mycorhiza inoculation techniques tested and implemented	constraining farmers tree planting (agroforestation) 2c. Capacity building and institutional strengthening for “tree farmers” (nursery and tree growing) 2d. Support to FORDA mycorhiza study for Dipterocarp enrichment planting of rubber agroforests	targeting of GERHAN activities 2c. Pilot capacity building in at least 5 provinces 2d. Guidelines for mycorhiza inoculation for Dipterocarp trees in agroforests	(in co-authorship with Bu Murniati, Meine’s student from FORDA). This topic is a continuing process under Jim’s research 2c. Accomplished. Tree nursery training has been conducted in Nusa Tenggara, Central and West Java, North Sumatra, Jambi, Lampung, Kalbar, Aceh, and Sumbar, and this will continue elsewhere. 2d. The guidelines (Petunjuk Teknis) is already available.	perspectives. Form a team of RLPS+FORDA with ICRAF supports for this task.
3. Revitalisation of agriculture, forestry and fisheries	Focus on NTFP markets... Gaharu, Rotan, Bambu, Damar Enhancing rural incomes through agricultural diversification and value addition linking poor	3a. Improved options for smallholder agroforestry from economic + environmental perspectives 3b. Analysis of multiple (agro)forest development options in areas suffering from food	3a. Technical information for extensive smallholder tree crop production, including tree-tree interaction models for mixed systems (~ LRPI, FORDA) and tradeoff analysis (see items 6-9) 3b. Evaluation of	3a. Accomplished. The technical information is available as a reference for FORDA and other users 3b. ICRAF has done some work on this in Batang Toru. Training of Farmers have also been done in Kalimantan with strong support from Dinas and in West Aceh and Nias. These championfarmers effectively disseminate AF technologies after	3a. 3b. Farmer forest school is a possible scheme for further development to be considered by both ICRAF and FORDA

Gol and MoF priorities	Current activities of MoF/FORDA	Agreed focus of ICRAF Indonesia in 2006 – 2010	Target outputs/deliverables	Progress, comments from ICRAF	Remarks/Recommendation
	to markets Technology development on wood drying, preserving, processing and waste utilization	insufficiency and poverty, such as NTT and NTB 3c. Household economic analysis of options for value-adding to various forest products	effectiveness of multiple extension approaches for achieving enhanced farmer learning and technology transfer 3c. Live examples of technology transfer of forest-product processing technology	rigorously trained. 3c. This is a stronger research scheme of FORDA as reflected under column 2 of this row.	3c. -
4. Malnutrition (esp. eastern Indonesia)	Site-level analysis of roles of income & public health care in forest margin malnutrition. Databases on nutritional quality of tree fruits and lesser-known crops available	4a. (<i>new topic</i>) Analysis of the role of landscape level fruit tree diversity in nutrition & health; analysis of available databases 4b. Identify combinations of trees and food crops that provide medium-to-long term incomes to	4a. Technical extension material on fruit tree planting and fruit tree management under forest cover for income generation and local nutritional diversity 4b. Policy analysis recommendations on use of local tree species in smallholder agroforestry in	4a. The 'green book' on fruit tree propagation and management has been published. 4b. The work has been done on petai, jengkol, dadap, pinang, bread fruits under rubber forest.	

Gol and MoF priorities	Current activities of MoF/FORDA	Agreed focus of ICRAF Indonesia in 2006 – 2010	Target outputs/deliverables	Progress, comments from ICRAF	Remarks/Recommendation
		<p>communities while providing food during early development stages</p> <p>4c. Develop pilot project on smallholder agroforestation in NTT/NTB (see also 3b)</p>	<p>relation to measures to control illegal logging</p> <p>4c Live experience with community-based development, increasing local welfare</p>	<p>4c. This was done for NFT, timber and some fruit trees during 1998-2002. Support on soil conservation was provided to FOOD Security Agency (MoA) under PIDRA Project in early 2000. Lower work intensity in NTB/NTT in general due to limited number of ICRAF staff and budget</p>	<p>4c. Many NGOs have also conducted agroforestry related works in NTB/NTT. FORDA is suggested to refer to their reports to analyse gaps for follow-up.</p>
5. Save energy – Biofuel	Some work on Jatropa	5. (<i>new topic</i>) Analysis of biofuel options from perspective of total energy balance, nutrient recycling and value-chain??	5. Framework for integrated analysis and enhanced international linkage of Indonesian scientific expertise on the topic	ICRAF can connect interested FORDA staff with ICRAF's experts elsewhere on this subject	FORDA can also link this work with the analysis to be conducted by AARD next year.
<i>Landscape level environmental services</i>					
6. Flood & landslide control and reward mechanisms for watershed functions	Gerhan prioritization of 'degraded watersheds'	6a. Rethinking critical watershed functions based on quantifiable indicators;	6a. Thresholds identified for quantitative functions in agriculture-agroforestry-forest continuum	6a. No specific direction so far to this subject.	6a. Form a team of FORDA, ICRAF and others to develop research proposal for funding on hydrological impacts of GERHAN.

Gol and MoF priorities	Current activities of MoF/FORDA	Agreed focus of ICRAF Indonesia in 2006 – 2010	Target outputs/deliverables	Progress, comments from ICRAF	Remarks/Recommendation
		<p>6b. Rapid Hydrological Appraisal methodology;</p> <p>6c. Support for RUPES National Committee and its policy analysis of legal options for regulating and facilitating ES rewards</p>	<p>6b. Indicators for local monitoring of watershed functions; >5 RHA studies</p> <p>6c. Policy analysis of legal options for regulating and facilitating ES rewards</p>	<p>6b. Accomplished. Indicators are included in RHA (TUL-SEA). Trainings have been conducted in Singkarak (West Sumatra), Kapuas Hulu (West Kalimantan) and Belu (East Nusa Tenggara). Potential next places: Kalikonto (East Java) and Cidanau (West Java)</p> <p>6c. RUPES is analyzing the additionality part of community intervention. There are conditionality for PES. E.g. protected area can not get CDM money since they are already protected.</p>	<p>6b. Increase MoF (especially FORDA, <i>Pengelolaan Jasa Lingkungan dan Wisata Alam</i> PJLWA, PHKA, BAPLAN) staff involvement in RHA to enable adaptation and application elsewhere in Indonesia</p> <p>6c. National RUPES Committee to bring up the legal barrier (on forest definition) of CDM implementation.</p>
7. Coastal protection forest – post-Tsunami	Participation in Aceh reconstruction and rehabilitation efforts	<p>7a. Support for nurseries for ‘Trees farmers want’ in Aceh/ Nias;</p> <p>7b. Analysis of coastal protection function requirements</p>	<p>7a. Opportunities for farmer-based tree rehabilitation of coastal zone identified</p> <p>7b. C&I for coastal protection</p>	<p>7a. On track. The project NOEL and ReGrIn are complementing with each other in nursery supports</p> <p>7b. Juan, one of PhD student from Hohenheim University (partner institution) have worked on C&I</p>	There is opportunity for FORDA staff involvement to be stationed in Meulaboh and be familiarized with the scope of ReGrIn and NOEL works.
8. Clean Development Mechanism (CDM)	Active participation in cross-ministerial processes for CDM,	8a. Carbon stock appraisal (RaCSA) methodology;	8a. > 3 RaCSA studies with dynamic ‘baseline’	8a. A guideline has been published on this subject. Training, capacity building in RaCSA, have been convened in Malang, Sidrap, West Lampung, West Sumatra, West Aceh, Jambi and in preparation for	8a. Need to improve FORDA’s involvement, e.g. through involvement in the newly approved proposal on stakeholders’ preparedness for REDD. -

Gol and MoF priorities	Current activities of MoF/FORDA	Agreed focus of ICRAF Indonesia in 2006 – 2010	Target outputs/deliverables	Progress, comments from ICRAF	Remarks/Recommendation
	including the Designated National Authority (DNA), and international negotiations	8b. CDM development support in analysis of additionality and leakage in various land use change scenarios 8c. Facilitate small-scale CDM in forestry sector	8b. Spatial prioritization of main opportunities for CDM as mechanism for poverty reduction 8c. Improved capacity of farmers/small holders in A/R CDM implementation especially in project monitoring.	Gorontalo. 8.b. Using ADB funding, ICRAF developed data set for land cover in 1994 in connection with fire risk. 8.c. The Ministry proposed sites within kawasan hutan, but it's not eligible for CDM if it's declared as 'forest area'. If we declare an area as forest then the buyer assume that it is forest already and thus, not eligible. Areas without tree cover in 1990 should be eligible for CDM as long as it's not considered as forest areas.	8.c. If CDM is an option, there is a need for addendum of UU 41/99 on forest definition. Woody vegetation based definition of forest as of 1990 as applicable for CDM need to be considered. Degraded land outside forest may be considered as well as it is related to GERHAN.
9. Effective biodiversity conservation beyond protected areas	Active participation in cross-ministerial processes for conservation in and outside of protected areas and in international negotiations	9a. Rapid agrobiodiversity appraisal: RABA; analysis of agroforest role in landscape connectivity for effective conservation 9b. Joint FORDA-CIFOR-ICRAF biodiversity	9a. >5 RABA studies 9b. New frameworks for analyzing	9a. ICRAF is on track on this in Jambi and Batang Toru and is planning for another one in Singkarak. Two FORDA staff attended the RABA and RMA training in Muara Bungo, Jambi. 9b. The study started with the analysis of landscape mosaic. In Jambi the analysis was done on production	The former RABA+RMA trainees are suggested to support the implementation of joint FORDA-CIFOR-ICRAF biodiversity analysis

Gol and MoF priorities	Current activities of MoF/FORDA	Agreed focus of ICRAF Indonesia in 2006 – 2010	Target outputs/deliverables	Progress, comments from ICRAF	Remarks/Recommendation
		analysis of (agro)forest-landscape mosaics	landscape-level biodiversity impacts of land use change	forest conversion to HTI (ex. HPH to HTI).	
Strengthening Institutions					
10. Capacity building	Internal human capital building in MoF and support for decentralized forest management capacity	10a. INAFE as part of SEANAFE 10b. Individual postgraduate research support 10c. Training of trainers on new topics 10d. Provide research support and facilitate international university access for PhD programs	10a. Developed communication network and dissemination of specific topics to support agroforestry education 10b. More Indonesian expertise in agroforestry 10c. Teaching materials for new topics 10d. Ten Indonesian scientists as PhD candidates, with preference for current FORDA staff and within the research priorities identified in the Plan of Operation	10.a. On track 10.b.c.d. There was a workshop for writing skill of the 10 candidates organized by ICRAF. Inputs have been provided for proposal improvement, but there have been little follow-up from the candidates, because of heavy workload. Under Jim, Pak Agus (from INSP) and Pak Ika Riansyah (has started his study in Malaysia). So far only one from FORDA has been studying in Europe under this framework, but there are other Indonesian scientists, under ICRAF's facilitation, who have been awarded research assistantship.	10a. - 10.b.c.d. A joint efforts by the candidates, FORDA and ICRAF are needed to increase the ratio of success of FORDA staff for the PhD program. There are several ways needed in pursuing this objective: <ul style="list-style-type: none"> • Intensive English course • S2 student attachment • Participation in 2 week WriteShop in Bandung on policy subject. • Participation in the 2nd World Agroforestry Congress 23-28 Aug 2009, Nairobi (making use of FORDA research data and co-authorship with ICRAF. • A few day retreat of proposal write-shop, followed by one on one mentorship by ICRAF Long and iterative process that requires determination and persistence of the candidates

Conclusions

- ICRAF has accomplished/or is on track on the majority of targeted deliverables as outlined in the MoU between FORDA and ICRAF and the 2006-2010 Plan of Operation. A few live examples of research results in Jambi, Singkarak and Sumberjaya demonstrate the success in facilitation of stakeholders and extracting lessons learned for community-based agroforestry implementation.
- As outlined in the Plan of Operation of ICRAF-MoF 2006-2010, from the collaboration it is expected that ICRAF's research programmes complement research and development programmes of FORDA. In order to meet this expectation, the uptake mechanisms of the research results must be intensified. The bimonthly meeting is an ideal forum to exchange and improve uptake of the research results. We suggest that ICRAF and FORDA scientists take turn in presenting their research results, rather than a one way ICRAF presentation, in the bimonthly meeting.
- Voluminous publications in the forms of peer reviewed journal articles, technical guidelines (such as TUL-SEA), lecture notes, booklets, leaflets and videos have been published and available at ICRAF/CIFOR library as well as downloadable from <http://www.wordagroforestrycentre.org/sea>.
- Opportunities are open for collaboratively developing research proposals on CO₂ emissions and balance from peat forest fire, hydrological and livelihood analyses of GERHAN impacts, etc. Knowledge on CO₂ emissions is essential for developing eco-friendly management options of peatland.
- There are three possible formats of collaborative research between FORDA and ICRAF: FORDA's funding, co-funding from both institutions, partnership, and recruitment by ICRAF of FORDA's staff. Written arrangements of researchers appointment at ICRAF is needed in such a way that each of the assigned staff, ICRAF and FORDA knows each one rights and responsibilities.
- Communication and coordination need improvement. Care must be taken on national level policy statements and logo utilization
- Substantial improvements are needed in facilitation of 10 PhD candidates. The probability of success of FORDA staff is pretty much dependent on the intrinsic self reliance, determination and persistence. FORDA could improve the chance by providing opportunities/sponsoring the candidates to English courses and international meetings. ICRAF can improve the writing skill, exposure to the international research topics and connection to the proper universities abroad once the candidates meet the qualification.

Annex 1

Field Trip in Jambi and Singkarak

The discussion with some key person of ICRAF (pak Meine, Beria Leimona, pak Laxman Joshi, Ratna Akiefnawati, and Jasnari) were started and conducted en-route from Jambi to Muara Bungo, from Muara Bungo to Singkarak and during field trip 21 -24 August 2008. The monitoring team also attended a Meeting on Phase II RUPES Plan in Jambi on August 23, 2008 and TUL-SEA training. A few research sites were visited in Muara Bungo and Singkarak.

Excerpts of Phase II RUPES Planning Meeting

a. Opening address of the head of Forestry and Plantation Service (Kepala DISHUTBUN) of Muara Bungo

The rate of deforestation is accelerating due to economic development pressure. Remaining natural forest in Kab Bungo, for example is only 30-35%. If the trend continues it will cause negative impacts on the environment. He realized that there is still very limited understanding on the green house effects etc, and thus he was thankful to ICRAF for the research and development support.

The government has developed the rationalization of forest boundaries and campaigned through mass media and sign boards. Production forests are especially under threats and the government gives understanding to the people that they should share the responsibility to restore the forest (function) by planting of selected timber trees.

He requested all stakeholders to stay committed to facilitate the people to maintain the forests such that it can provide the environmental services and at the same time livelihood to the people. He stated that the local government can not just work for the economic improvement and neglecting the environmental aspects. However, DISHUTBUN has very limited facilities for guarding the existing forest. Limited manpower and facilities. He added that the central government can not just ask the local government to watch the forest without providing the facilities. The local government are thankful to ICRAF for providing knowledge and facilitation.

The reward provision he said has been very rightly designed because there are so many attraction around against forest protection. Kepala Dinas hoped that other institutions will also support the government in forest protection and landscape quality improvement, for example, by jungle forest management.

b. Session I on the Prioritized Program of Forestry and Plantation Service (Dishutbun) in Jambi

The representative from Muara Bungo Distrcit, Pak Ishak, started the session with the signs that he feels of warming temperature in the last 20 years. He related this signs to deforestation. Despite the shrinking in forest area, he did not observe the improvement of the wealth of the majority.

He mentioned that 284.000 ha land is potential for plantation, especially for oil palm. The question he raised is how many % of the surrounding community will gain benefits from such development and for how long. What will the landless gain from the plantation, what will be their livelihood? Perhaps the proportion of the nucleus should not be any larger than 20%,

otherwise with time the local people will have no possession on the land after a cycle of oil palm of say, 30 years.

Program Priorities of Muara Bungo include GERHAN, utilization of forest resources, protection and conservation of forest resources, increasing agricultural and plantation productivity, improving the implementation of agricultural technologies, improved marketing system, and improvement of farmers' welfare.

Pak Haribowo from Merangin District mentioned the rejection of the Jati Ngaol community of HTI and this indicates that WARSI (the local NGO) still exists. He also invited ICRAF to start activities in Merangin. He also mentioned that he has received several publications of ICRAF and is thankful on that.

Forty four percent of Kabupaten Merangin is within the forest area. The highest pressure is faced by the government is the request for permit (ijin lokasi) of oil palm plantation using the forest that falls under 'other use areas' (APL). There is an urgent need for the solid documentation of forest borders, land cover map, demographic maps and socioeconomic analyses. He wanted to resume the collaboration with WARSI on that. He highlighted the book "Belajar dari Bungo" (learning from Muara Bungo). He called for the assistance of LSM and ICRAF, although he can not guarantee the success since it depends on the new government's policy.

The current system separates between safeguarding the forest and the concession. The holders of the concession do not feel responsible to the loss of trees in the forest.

The discussions of this sessions brought up how fast the HTI development is and HPH tends to transform into HTI. The speaker also mentioned that the areas under HTI is much hotter than that under community forestry, smallholder rubber etc.

c. Session II on the Programs in Bungo

Ms. Ratna Akiefnawati and Laxman Joshi of ICRAF presented ICRAF and partners program in Muara Bungo include rubber based agroforestry demonstration plot in Rantau Pandan and Sepungur, rubber agroforestry (RAS) technology dissemination, awareness of biodiversity and environmental services, institutional strengthening, formation of farmer group on rubber nursery, micro hydro electric power generation, participatory mapping, payment for environmental services and technology selection.

Mr. Iman Budisetiawan from Forum Diskusi Multi Pihak highlighted the importance of Multi-stakeholder Discussion (Negotiation) Forum. This forum also advocates higher government interest for conservation and this has resulted in the increase of the district budget for conservation.

Mr. Rahmat Hidayat presented the Conservation and Livelihood Program a joint program of RUPES, CBFM, ICDPACM, and CAPRI. He stated that forest management engaging the local community are more successful than the single handed management. There should be a public hearing for every decision at Kabupaten level

The presentation of Dr. Meine van Noordwijk depicted the rapid reduction of forest cover in Jambi and suggested the broader promotion of programs that can restore the forest functions and the protection of existing forest.

Points of Interest in Muara Bungo and Singkarak

The discussion was started en-route from Jambi to Muara Bungo, from Muara Bungo to Singkarak and in Bogor on 1 Sept 2008. The discussion en-route from Jambi to Muara Bungo covered the Bukit Sari Forest Protection and Oil Palm Plantation in Batanghari. The discussion continued with background and progress of research in Rantau Pandan on rubber-based agroforestry system; and RUPES Project in Lubuk Beringin Village on the

Environmental Services of the Jungle Rubber and Payment Mechanism in the form of supports and facilitation for microhydro electric power generation using water mill. A line to line check of expected output of ICRAF in relation to the MOU with FORDA was also conducted. The visit in Singkarak catchment highlighted RUPES approach and attempt for CDM.

a. Bukit Sari Forest Protection Batanghari

With the rapid development of agriculture the Bukit Forest Protection area in Batanghari is one example of remaining natural forest in the peneplain of Jambi Province. The reality of population pressure and, in consequence, pressure to expand agricultural areas has resulted in agricultural land encroachment, some of which has crossed the border of official forest demarcation. Enclaving this relatively small forest area for biodiversity conservation and ecotourism is perhaps the right way to go. Albeit at a lower environmental service than the natural forest, landscape restoration through agroforestry intervention is the answer.

b. Oil Palm Plantation

Oil palm plantation is rapidly expanding as driven by the skyrocketing demands for bio-diesel from industrial Annex 1 countries. Conversion of primary, or even secondary forests to oil palm plantation undoubtedly a cause of deforestation. However, along the road from Jambi city to Muara Bungo and from Muara Bungo to Solok, rubber plantation, which mostly of multistrata architecture still dominates.

c. Rubber Agroforestry in Rantau Pandan

This research is mainly directed to inter-planting (sisipan) of clonal rubber in the existing jungle forest. In general, clonal rubber is sensitive to weed. Thus, one of the research topic was to look at the effects of weeding intensity. Further test was for inter-planting of clonal rubber in the existing rubber system. It was found that the clonal rubber survived when used as tanaman sisipan. The cloned rubber has a relatively higher yield. In addition, the species in the sisipan -- stink bean, gaharu, candle nut -- become the income safety net when rubber can not be tapped during the rainy days.

d. RUPES-Microhydro Program in Lubuk Beringin

Prior to the RUPES project, the villagers depended on diesel power generator for their electricity. There are two microhydro units that have been established in Lubuk Beringin. For 6 hr runs from 18:00 to 24:00 they need 12 liter of diesel. The water mill project (PLTKA) is the reward provided to the villagers has freed them from the diesel use. The service valued from the villagers is the maintenance of biodiversity under rubber agroforest. The bio-diverse rubber in a way also regulates stream flow much better than the monoculture one and in turn keep the water mill running. ICRAF, through RUPES project, and local partners assists the villagers financially to construct the dam, procure the dynamo and other supplies. In addition the villagers were also benefited from the clone provided by ICRAF and provision of knowledge of rubber planting, tapping and management.

We discussed various aspects of the water mill and RUPES with the village head and a few farmers. They was explained that in the past the farmers planted rubber from seedlings (biji sapan), now they are more interested in the clone rubber. There is a weekly gotong royong (mutual help) to intercrop existing rubber with the clone, engaging 83 HH of 337 people. Along with ICRAF activity, WARSI, the local NGO facilitates the women's cooperatives.

Currently there is a common understanding among the villagers that if the trees are removed the water flow for running the water mill (PLTKA) will be affected. They also believe in multiple species as an income safety net during the rainy days in which rubbers tapping can not be done. Those other trees they have include durian, locus bean, stink bean, bread fruit, mahogany, and several dipterocarps.

e. RUPES in Paninggahan Village, Singkarak

ICRAF initiated its activities in Singkarak in 2004 and since then the activities has received positive reaction from the local community, the hydroelectric power plant (PLTA), the government, as well as international organizations.

JIFRO (Japan International Forestry Promotion and Cooperation Centre) established its project in Singkarak because of initial work by RUPES that was used as a basis for follow up. JIFRO's project is about the so called 'friendship forest'; a kind of 'kebun lindung' in which various tree planting has been conducted.

Under RUPES, the community also proposed a rehabilitation of 1050 ha smallholder coffee (locally known as 'kopi ulu') plantation. ICRAF invited coffee specialist from the Centre of Coffee and Cacao Research in Jember to check the possibility of rehabilitating the local coffee. The coffee expert concluded that the area is one of a few areas with pure robusta coffee. By clonal technique the coffee can be rehabilitated.

There are also various options of the area development, including lake tourism. However, one of the biggest problem is the lake cleanliness. Thus the community requested the government and the community along Lembang river (which crosses Solok City) to clean the river. ICRAF also facilitated the establishment of Badan Pengelola Lingkungan Hidup in a few Nagari.

Wali Nagari thanked ICRAF for the program of 2700 ha critical land rehabilitation, of which 900 ha has been managed by the community using resources from different projects. He was also planning to collaborate with Dinas Kehutanan for HKM development. He wished that the program can be continued in such that there won't be no more critical land.

Wali Nagari also mentioned that PLN Singkarak supports the rehabilitation of 10 ha/yr with RUPES support in monitoring. Pak Apul Sianturi, the monitoring member from FORDA mentioned that the area of government rehabilitation project are subject to recurrent burnings because of no interaction with and thus no social control from the community.

Pak Wali Nagari explained that Hutan Bukit Gunung Sari has been denuded for decades and the community suggested that each HH manage 10 ha. Agreement with the government is that 30% should be planted to timber trees while the rest could be consisted of various fruits and plantation species. The CDM target area in the steep slope catchment is 350 ha and it's being proposed for funding to the Dutch Government. However, the community needs to settle this community forest (lahan kaum) tenure issue. This proposed area could be considered as a test area for bottom up GERHAN in which the involvement of Bala Pengelolaan Daerah Aliran Sungai (BP DAS) will be ideal.

In the Lebaran of 2008, the homecoming perantau (migrated Minang people) will be requested to plant 2008 trees while the local PLTA will contribute the planting of 500 trees.

Annex 2

Minutes of One Day Seminar in Commemoration of 15th Anniversary of ICRAF in Southeast Asia

The seminar was attended by around 150 participants consisting of representatives from MoF, MoA, ICRAF, CIFOR, Bogor Agricultural University, Brawijaya University, and Lampung University, many NGOs and donor institution (FORD Foundation). This seminar was also attended by Dr. Dennis Garrity, the DG of ICRAF. Comments and questions were conveyed through specially set short message service (SMS) system, making the discussion very efficient.

The Minister of Forestry's address that was read by the DG of FORDA, underlined the importance of agroforestry in bridging the conflicts between the community living in the forest margin and the government since agroforestry can address the problems of poverty and limited access to land among the local community. The Ministry of Forestry is willing to revise the current tenure related policies in such a way that the people's access to land/forest be improved. Policy improvement in Java for instance will be aimed at improving the local community's role from mere observers to main actors. He added that the community should have ownership to forest resources. ICRAF's role in the facilitation will remain important. The greater role of ICRAF is also expected in explaining to the international community the actual conditions of Indonesian forests.

Dr. Suyanto of ICRAF Indonesia presented HKM/RUPES program in Sumberjaya, Lampung. The Way Besay Catchment of Sumber Jaya used to be a hot spot of conflicts between forestry authorities and farmers because coffee farming on protection forest was considered illegal, whilst the farming community has been depending on the land for decades for coffee production. These conflicts have now been largely resolved and about 70% of the forest margin is covered by agreements between coffee farmers and the local government. The farmer groups commit to restore the forest function by implementing conservation measures such as through multistrata coffee system, construction of sediment traps and grass strip on the coffee garden. ICRAF also experiments with an auction system to reward farmers for controlling sediment load of the river. The local PLTA (hydro electric power company) has become interested in the program because of measurable improvement.

Recovery of livelihoods along the West Coast of Aceh after the Tsunami with trees farmers want were ignored initially, because all the public attention was on mangroves, the much promoted green belt tree. However, before tsunami a significant proportion of income was derived from tree crops and it now emerges again as a vibrant part of the local economy", says Dr. Laxman Joshi, a senior ethno-ecologist at ICRAF Indonesia. "Our success at developing viable community-based Nurseries of Excellence has gained attention, as shown by requests for assistance from farmers, local NGOs, international development organizations, and government agencies", says Jim Roshetko, Trees and Market Unit leader of WINROCK/ICRAF SEA.

Dr. Jianchu Xu from ICRAF China mentioned that China instituted a logging ban ten years ago, after heavy flooding of its major rivers. Since then the country has increased its import of wood and exported its environmental problems of unsustainable forest use. China started a large program of reforestation and conversion of steep crop lands to tree farms. Instead of the rigid monoculture versions of the early years, current programs allow farmers to plant the trees they want. This seems more effective in protecting the catchment.

Thailand's development experience is very similar to that of Indonesia. Over the years we see a back-and-forth on the degree of decentralization and control over local resources", says Dr. David Thomas, the coordinator of the Thailand program of ICRAF. "There is a shift away from perceptions that only forests without people can provide the regulated flow of water Bangkok depends on. The Change is toward more evidence-based negotiations. Royal Projects support transformation of highland landscapes through marketing of diverse fruit and vegetable products, while local watershed networks play increasing roles in land management negotiations".

Vietnam is, like Indonesia, still seeking a new balance between central and local government decisions in natural resource management. The government now allows for local initiative and started experiments with rewards for environmental services. Our agroforestry research programs are actively supporting two key Ministries, including Ministry of Natural Resources and Environment (MONRE) and the Ministry of Agriculture and Rural Development (MARD), local government, university and NGO partners in merging our efforts for more participatory, pro-poor and environmentally-sound NRM, says Dr. Minh Ha Hoang, leading the efforts of ICRAF in Vietnam.

Much of the Philippines has the same population pressure as Java. Local governments start to think about the type and place of trees that can protect coastal zone from typhoons, expecting that their frequency and intensity will increase with climate change", says Dr. Rodel Lasco, ICRAF Country Coordinator in the Philippines.

Dr. Meine van Noordwijk, referring to UN FAO 'State of the World's Forests' report mentioned two universal trends almost universally observed in the tropics: the number of trees in forests is declining, and the number of trees on farms is increasing". New research by the World Agroforestry Center (ICRAF) shows that Indonesia is rapidly approaching a critical turning point. Actual tree cover per unit land 'outside the forest' is essentially equal to that inside the 'official' forest, at 40-60% depending on the province. This may be seen as a success of farmer tree planting. It happens as a response to increasing demand for forest products and decreasing supply from natural forest. It interacts with economic opportunities for rural and urban livelihoods, and rules that separate forest from agriculture, with actual trees falling through the cracks. The trees that come back to the landscape, however, planted and managed by farmers and plantations will only partially compensate for the loss of natural forest.

Dr. Dennis Garrity presented six global research priorities (GRP) of ICRAF; all bear the landscape-livelihood relationship. Those are multifunctional landscape, land restoration, climate change, on-farm productivity, tree and tree product marketing and germplasm improvement.

Dr. Wahyudi Wardoyo, the DG of FORDA, in his response to Dr. Garrity's presentation stated that all six GRPs are relevant for Indonesia and land rehabilitation, multifunctional landscape, and climate change are the most prioritized ones. Dr. Wardoyo also asked Dr. Lasco about factors influencing the success of ICRAF Philippines in influencing the top level administration.

D. Irsal Las, the Director of Indonesian Centre of Agricultural Land Resources Research and Development (ICALLRD), representing the DG of Indonesian Agency for Agricultural Research and Development (IAARD) mentioned the intercept between ICRAF and IAARD agenda, especially on landscape management, carbon stock assessment as contributed by different tree based (plantation) systems and management of and carbon losses from peatland; signifying wider areas of collaboration that ICRAF- SEA and IAARD can build up.

Mr. Rahmat from WARSI (an NGO) pointed out that collaboration between ICRAF and WARSI has brought the research more down-to-earth and beneficial to communities and environment, as well as helpful to the local government's sustainable development program.

Dr. Heri Purnomo, a CIFOR scientist, thought that research on climate change issues should be the main mandate of CIFOR and questioned the comparative advantage of ICRAF research on the same subject. In another occasion with Dr. van Noordwijk we learned that ICRAF is working on landscape management in which tree planting is one of the main intervention and CIFOR does not work on this subject. When it comes to landscape management by using trees, it's not cost effective when carbon accounting is done with in isolation. Furthermore, ICRAF, CIFOR, IITA and national research centres in SEA, the Amazon and the Congo basin, under the Alternative to Slash and Burn (ASB) consortium, have worked together on developing methods of carbon stock and emissions assessment. The protocols have been widely published, adapted to practical guidelines and used by CG Centres, other international and national research organizations.

The Dean of the Faculty of Forestry- IPB, Dr. Hendrayanto, calls for a broader partnership of ICRAF collaboration. He also calls for elaboration of the slogans such as 'more trees less forest' as it could be mistakenly interpreted by public.

Dr. Ujjwal Pradhan of Ford Foundation raised the challenge of relating landscape research to poverty issues and the importance of mapping of the key stakeholders and leadership in meeting the challenges.

The final discussion of this session emphasized the importance of good coordination between all institutions and departments relevant to agroforestry program. That common understanding of concept, integrated implementation and agroforestry program evaluation need strengthening.

Annex 3

Meeting with Dr. Meine van Noordwijk

Dr. van Noordwijk explained various aspects of rubber agroforestry, RUPES, Singkarak lake and catchment problems, and CDM plan in Singkarak. We, the monitoring team, also asked him to address most points of deliverables as outlined in the Plan of Operation 2006-2010 of ICRAF and MoF. Most of his responses, incorporated with those of other ICRAF scientists, are shown in column 5 of Table 3.

On the rubber agroforestry he mentioned that in the past it was believed that clonal rubber is too sensitive to competition and that thus a monoculture system is ideal. From the research done in Jambi and W. Kalimantan area it was found that clonal rubber survived some degree of intercropping (sisipan) of other trees. Return to labor is not very different between the jungle rubber and the monoculture rubber, although the return to land is higher under the latter.

On the collaboration, he mentioned that it's very much dependent on complementarity with partners. The collaboration with BAPLAN, for example, was developed because of the common interests; working on existing BAPLAN land inventory data and making use of the data from BAPLAN monitoring plots. Thus ICRAF can not limit the collaboration just with one institution. New collaborative research could be developed with FORDA and other organization based on similar bases. For instance, critical hydrological analysis of GERHAN could be conducted in collaboration with FORDA.

In the past ICRAF has been successful with bu Murniati and bu Hesti and now we are expecting also the success with bu Niken engagement. With bu Niken at ICRAF Dr. van Noordwijk believe that there is no serious problem with communication.

Late information to FORDA of new proposal development and new partner engagement is pretty much caused by the short time availability between the call and the time for proposal development. However ICRAF can provide FORDA the matrix of annual plans.

Between now and 2010 the main priority will be hydrology and carbon stock as related to land use changes, with biodiversity covered jointly with CIFOR. These topics have local and global relevance.

Related to possibility of FORDA staff recruitment as ICRAF researcher, as raised by pak Apul, he mentioned that it is possible. ICRAF has been and will always be informing FORDA for all vacancy announcement. That also determined by the agreement with the donor as well as the qualification of the person. In general the steps of proposal development is as shown in Figure 2. There are a few options of FORDA's possible entry.

On the capacity building it was mentioned that there are opportunities for FORDA's researchers, one of which is the 2nd World Congress of Agroforestry.

Annex 4

Minutes of Meeting with Mr. Wahyudi Wardoyo, the DG of FORDA

Pak Wahyudi expressed his appreciation of good research outputs produced by ICRAF. Research activities in ICRAF is moving fast, but there has been limited involvement of FORDA's researchers and this needs intensification. The transfer of technology and know-how from ICRAF to FORDA is important. For the coming years the research program should be blended together by ICRAF and FORDA in order to meet the research needs in forest management such as GERHAN, FEWS (food, energy, and water), good governance, and climate change. So far FORDA is not that intensive yet in tracing the MOU targets.

Sumber Jaya activity is not known well to FORDA, therefore ICRAF should give broader opportunity for FORDA's engagement. He emphasized the importance of extracting the lessons learned from every projects. For the Sumberjaya project, for instance, it's important to know what are the conditions for success, what kinds of intervention that stimulate the success and what could be the potential problem that may cause the failure or un-sustainability in the implementation. The true success is if we can develop the system that can run by itself. About 10 years is needed to test whether the system really works. How if the Bupati change, will the program sustain? In Sumberjaya the success was achieved because all stakeholders have united.

Collaboration must meet three mutuality; mutual respects, mutual trusts and mutual benefits. Collaboration must also be in line with the laws and regulations. If there are ideas for reform, it must pass the tests of legality.

GERHAN is still one of the main priorities under MoF. That includes rehabilitation and conservation of forests. GERHAN is rolling now as indicated by increasing interest in planting trees among the society. We admit that the system within GERHAN needs to be fixed. The planting materials now do not always meet the standard quality, the institutional problems still exist, especially at Kabupaten level and these need improvement. The monitoring of GERHAN also needs intensification.

Climate change, especially the adaptation and mitigation, are of FORDA's priority. In this respect, forest could be considered as the sink, but it could also be the source of green house gases. At the global scale mitigation is done through AR CDM as well as REDD. AR CDM is so complicated and only China so far gets benefit. REDD will potentially reduce poverty of the local communities. Not all of forest land could fall into REDD program. It's the country's sovereignty to determine.

On peat soil management, Pak Wahyudi mentioned that ideally peat forests stay as or restored as peat forests. HTI and oil palm are not sustainable on peat land, but it's almost impossible to reforest once they are converted. The smoke and haze as well as floods are problems associated with peat forest clearing, to mention a few. There are complicated issues related to the legal aspects of peat uses.

On the policy interventions, Pak Wahyudi stated that it should be done through FORDA and FORDA may channel those within and beyond MoF depending on the scope. Pak Wahyudi also expects that research institution stays within their research and development borders and not to cross to the advocacy area like NGOs. The entry of ICRAF research should be through FORDA. Currently ICRAF activities are quite intensive with the local government, but rather limited with FORDA.

Land use optimization is ICRAF's strength, and this aspects is also very important for us, including in densely populated areas such as Java. Action research involving FORDA and ICRAF is needed on this.

Pak Apul mentioned that one of the problems in collaboration is the wide gap in remuneration. ICRAF's (financial) support is needed for those FORDA's employee(s) attached to ICRAF to make them settled at ICRAF. Under FORDA system, according to pak Wahyudi, after 6 month of secondment their remuneration at FORDA is suspended and we assumed that the partner take over. Sometimes the lack of communication disfavors the seconded employees and this could be seen as lack of commitment on the other end.

There is a pressing need for increased capacity of FORDA in order that it be at par with international research organizations. FORDA expects that the facilitation of PhD candidates be continued and intensified until scholarships are granted. Until now the level of success is relatively low. There was a similar facilitation by Tropenbos in the form of sandwich program and this could be a model. FORDA only has 29 PhDs currently and about half of them are close to retirement. Pak Wahyudi also admits the limited recruitment of young scientists and this limits the number of qualified candidates for PhD programs.

As part of communication, he expects ICRAF to acknowledge new research agenda and provide annual reports to FORDA. "Bu Niken is playing the bridging role, but she can not directly act on behalf of FORDA". For instance, in using FORDA's logo for things like press release, the approval should come from the DG. Research findings should be communicated to FORDA prior to field implementation.

Annex 5

Minutes of Meeting with Dr. Anwar the Director of Research and Development Centre for Forest and Nature Conservation (RDCFNC)

RDCFNC is one of the four centers under FORDA. Pak Anwar's as the director of the RDCFNC involves in the collaboration of FORDA and ICRAF mostly in administrative matters such as facilitating exit permit, renewal visa and other expatriate's legal documents.

Regarding HKM program, he stated that this is one of the important topics to be studied, but the programs of ICRAF and FORDA on this topic have not been coordinated well which resulted in lack of synergism. Good coordination will necessary for the current and future collaborative works. FORDA as a research agency involves mostly in research activities and RLPS (Directorate General of Land Rehabilitation and Social Forestry) as an executing agency involve in implementation. The involvement of a FORDA researcher in an ICRAF program/project should be from the planning phase.

When he was asked whether the remaining next two year collaboration (2009-2010) needs to be reprioritized he said he thinks so. He stated that the topics should be based on the five priorities of the Ministry of Forestry (MoF) and the three main issues mentioned by the president of the Republic of Indonesia (food, energy, and water scarcity). The five priorities of the MoF are combating of illegal logging; control of forest fire; restructuring of forestry sector; rehabilitation and conservation of forest resources; and decentralization of forestry sector. There are an interim priority as it may change in 2009 along with the change in the cabinet.

He further stated that 'good governance' is still a prominent issue to be studied. GERHAN is also an important topic to be studied. The impact of the GERHAN will be on environmental services, livelihood, and carbon fixing. The important thing for the next two years of the collaboration is that it should be reviewed and adjusted to the recent condition.

FORDA organized the workshop on the road map of the forestry research in Indonesia last month (August 2008) in Bali. The road map could be one of the references for the program formulation of the collaboration both for the next two years of the 2006-2010 MOU and for the following MOU. Unfortunately the road map is not yet available since it's still in the finishing process done by a team. The former road map consisted of nine issues and now reduced to five.

Pak Anwar touched on ICRAF programs which are mostly shift to carbon issues. It's understood he said since ICRAF is dependent on the donor institution for funding its operation. ICRAF programs have to be matched with the current donor needs which are mostly on carbon emissions, climate change and carbon fixing. The donors' need for the information and technologies on carbon is exemplified by the Governments of Australia and Germany funding to the Government of Indonesia (GoI) on this subject.

Pak Fahmuddin informed that peat land has a great potential to be studied related to carbon issues since, based on the widely referred Wetland International 2006 publication, most of the emissions from Indonesia is contributed by the peat forest fire.

Regarding the preparation of the candidates for studying abroad, Pak Anwar informed that some courses are being designed and some others are in progress, including English course

and Proposal Writing Workshop. So far, there are four candidates for S2 (Master) degree, but still no candidates for S3 (PhD) degree.

ICRAF publication has been received and available at a special shelf of the center's library. But TUL-SEA is not widely known yet at the center. A joint and coordinated seminar, involving ICRAF, FORDA and other institutions can give better impacts. This media can also be used as a filter of research results before formulation to policy inputs.

On communication, he said that FORDA should be notified in written one year ahead of time about the research sites and scope of ICRAF research for possible interaction between the two institutions. The evaluation of MoU progress need to be repeated annually.

Annex 6

Minutes of Meeting with Mr. Iman Santoso, the Director of the Centre for Socio-Economic Research of Forestry

Pak Iman appreciates the action research of ICRAF in Indonesia because of knowledge transfer on certain subjects, like PES, the subject that the center has not been studying in a great detail. Several tools ICRAF has been producing are important for field implemented. We should critically study those and adjust where necessary.

He said that we should learn from the success of Sumber Jaya action research so that we can replicate it in other places. The research has rightly involved the local government as the implementing agency. The strength of action research is the iterative process of understanding and solving the problems. The methodology is very interesting. Participatory forest management has been developed and the proposals for land management and land titles is valid, and Pak Iman has been supporting the program since he was at BAPLAN, and will continue to do so. Besides with FORDA, collaboration with other directorate generals is important. ICRAF may not be aware and knowledgeable of the political matters, and thus it needs partners' supports for such. In general he is satisfied with the action research.

On the communication he said that the government must be more open, and must approach ICRAF, rather than just the other way around. Sometimes the lack of communications resulted in individual misinterpretation of what the other party is doing/thinking. Communication should also be intensified on research findings.

On engaging FORDA's researcher in the joint research agenda, he said that one of the obstacles is the wide gap in the unit costs. The difference may be a factor for poor performance of FORDA's researchers. In the future, the arrangement of the assigned staff must be communicated more transparently between both institutions. He understands that it's very competitive for ICRAF to win a proposal, but strategy for narrowing the gap must be figured out.

He sensed the central role of Pak Meine as a guru in such a way that knowledge transfer is very good at ICRAF. Another observation is that at ICRAF there are higher proportion of Indonesian scientists relative to that at CIFOR.

Close relationship between ICRAF and FORDA researchers has to be build up. This could be materialized in the form of joint research program. An example for this is the on- going collaboration between CIFOR, FORDA, and ICRAF on teak forest in Gunung Kidul. The analysis is on value change of mahogany and teak. This is probably a model of the collaborative research that could be established in the future.

On GERHAN he mentioned that in Aceh, for example, we need more than 5 million seedlings, but the province could only produced no more than 500,000, the rests were coming from Medan. The research should be used for educating the farmers to established good nurseries. Combination of trees and food crops was not respected in the beginning, but as the trusts of the farmers are build up then the activity worked well, especially for the combination of timber trees with durian, mangga, and rambutan.

Annex 7

Minutes of Meeting with Dr. Tri Wahyudyati, SH, LLM (on behalf of Dr. Nur Masripatin, FORDA Secretary)

The first comment of the ICRAF-FORDA collaboration from Ibu Tri was about courses (capacity building) organized by ICRAF for FORDA's staff. Courses were conducted, but after proposal write up there was no systematic follow-up processes on who and how the proposals are reviewed, how the searching of universities are conducted and how are other processes be conducted until the candidates are accepted at a university abroad. Some trainees, on the other hand, had no opportunity to follow their exercise up after finishing the writing course because they were already busy with their routine works, nor had they opportunity to discuss their proposals further with the mentor because they are based in other cities. Therefore, bu Tri suggested that the trainees who mostly come from FORDA institutes at catchment or provincial levels should stay in Bogor for a certain period, not only during the course, in order that they can concentrate on proposal improvement and be able to see the mentors more intensively.

Further comment is about the regulation for an assigned person from FORDA at ICRAF and vice versa. A clear agreement is needed in order that such a person knows exactly his/her rights and duty/obligation. The agreement should mention the status (contractual employee, consultant, counterpart, or project management staff), period and coverage and sources of compensation (per diem, honorarium, etc.). Based on the government regulation, someone who is involved in projects outside the government projects for more than six months, his/her salary will be suspended.

Ibu Tri informed that there are many production forests (especially logged over area) which are neglected, as well as research station forests (KHDTK, forest area with special purpose) belong to FORDA. These KHDTK could be utilized for collaborative research. on (i) conflict resolution as many KHDTKs have conflicts with the surrounding people, (ii) community development program, etc.

Bu Tri felt that there has been limited communication between FORDA and ICRAF and suggested improvement through joint seminar, exhibition, and direct communication.

Annex 8

Minutes of Meeting with Ms. Leimona Beria, a researcher on Payment for Environmental Service at ICRAF

According to Bu Lei three rapid hydrological appraisal (RHA) studies have been conducted in Singkarak, Kapuas Hulu and Belu, and will also be added in Kali Konto and Cidanau. These studies so far have not involved the FORDA researchers.

Regarding the policy development, several collaborations have been made with MoF, especially Directorate of PjLWA – PHKA and the Indonesian PES Network. When RUPES was implemented in Lampung Barat, where one of the incentives was HKm tenure Certificate, the collaboration was made with the Directorate General of RLPS then.

In addressing the deliverable “the formulation of the thresholds for quantitative functions in agriculture-agroforestry-forest continuum” (point 6.a in Table 4) she thought this could be done under hydrological studies but no activities has been done on this subject so far.

On REDD issue, she mentioned that RUPES/ICRAF was part of IFCA, but lately ICRAF has not been invited to participate in the formulation of Draft of Ministerial Decree (Rapermenhut) on REDD. Actually it is possible to develop REDD policy collaboratively under RUPES II, particularly at the national level.

Bu Lei said that there is no obligation for each ICRAF staff for disseminating their works or research results to FORDA exclusively. Perhaps the assignment of FORDA’s focal point for PES Program will be an advantage such that help. As such all PES programs and publications can be directly informed to the focal point. In addition, ICRAF’s senior staff should be given responsibility to communicate research collaboration to FORDA. The communication will be more effective if the focal point is a senior staff, or else those involved in collaborative research consist of senior and junior staff.

Annex 9

Minutes of Meeting with Dr. Niken Sakuntaladewi, Liaison of FORDA-ICRAF

As an international institution representing Southeast Asia (SEA) Region, the vision and the mission of ICRAF – SEA has to cover the interests of countries in SEA, and Indonesia is just one of them. FORDA is a research institution in forestry, therefore, its research topics has to be in all aspects of forestry. Ibu Niken suggested both ICRAF and FORDA have to understand each other's vision and mission in order not to have too high expectation from the collaboration.

FORDA has 42 research station forests (KHDTKs) located throughout Indonesia with the area varies from tens to thousands of hectares. These stations are available for collaborative research.

Some of the FORDA's candidates for the study abroad as well as FORDA's officials misinterpreted the term "facilitation" in the Plan of Operation (point 10.d, Table 4) as if ICRAF will also provide funds needed for the study in addition to capacity building. The truth is that ICRAF only facilitates the process of entering the universities such as assisting the candidates in developing proposal, searching for the relevant universities and departments, connecting the candidate to the university, and seeking for the possible donor. ICRAF is not responsible for the funding. Therefore, the term should be clarified in order not to have higher expectations.

The duties of Ibu Niken as a liaison officer include (a) improving ICRAF and FORDA's communication, (b) reviewing the MOU, (c) monitoring of program implementation and other relevant activities and (d) assisting in the formulation of policy inputs to the MoF.

According to Ibu Niken, even though MoU has already been signed in October 2006 but meeting on program achievement was just conducted on April 15, 2008. Both ICRAF and FORDA have to understand each others' vision and mission for having mutual understanding. Limitation of vision understanding, besides too high expectations, also have impacts to some PhD candidates in developing their draft proposals. They do not have good knowledge on ICRAF research coverage, as if agroforestry research is only about combination of forest and agriculture management.

So far communication scheme that has been developed include bimonthly research result presentation by ICRAF and Rabuan. There are no regular meeting yet for management and follow up or updating of collaboration program achievement.

Annex 10

Minutes of Meeting with Mr. James Roshetko, ICRAF/Winrock scientist on tree domestication

Jim explained various close links his program has with FORDA. In the beginning of his program in 1997, FORDA staff assisted in tree germplasm identification and tree marketing research. We often wrote joint papers for conference starting in 1998. We also wrote proposals and concept notes for EU, ITTO and USAI Washington DC. Although none of those were successful, but it was a good attempt in collaboration. For the next collaboration, there are good opportunities for funding from ITTO and EU. But concept note and joint proposal development for ACIAR funding has been successful for teak project in Gunung Kidul. ICRAF also collaborated with IFSP, Balai Perbenihan Tanaman Hutan and the Directorate of Forest Tree Nursery (Direktorat Perbenihan).

Collaboration with bu Murniati on problems associated with tree planting has been satisfactory. The paper will be published this month. So has the write up of working paper for HKm with bu Niken. Three papers in co-authorship with FORDA on fruit tree management is also being developed for a symposium. Answering a question about FORDA's staff involvement in paper writing, Jim said that it is in the order of 10-25%. In the beginning there were lots of interaction with pak Gintings. Recently more interaction with BPTH. Collaboration in general has been improving with FORDA under Mr. Roshetko's program. There is an annual presentation/review of his program. Another nice thing in the collaboration is the presence of bu Niken.

In January 2008 ICRAF and FORDA researchers were hosting researchers from Australia and Philippines to learn about the success stories of Indonesia's community based nursery..

Interaction and guidance to a few FORDA researchers was also touched upon. Among FORDA staff under Jim's guidance are pak Agus (who has got support from Malaysia) and pak Ika from Bogor and pak Fauzi Anis from Yogya.

In addressing point 2.a about planting material certification, Mr. Roshetko mentioned that there was a workshop on this in Bandung in 2005, but no follow up yet as far as planting material certification. ICRAF has ideas on that, but has not been published yet.

Mr. Roshetko addressed a few items in Table 4 related to his works. In general his research is on target. The works in Aceh on Nursery of Excellence (NOEL) started with the communities who had no experience on nursery. Aceh government did not want to change the rules on certification, but certification is not needed for own use and limited non government uses.

Annex 11

Minutes of Meeting with Dr. Suyanto of ICRAF, Researcher on the Socio-Economics

Pak Suyanto highlighted the activities in West Lampung that was started with Damar AF system in Krui, followed by research under the framework of negotiation support system (NSS) and then HKM/RUPES in Sumberjaya, Lampung.

The problem in Sumberjaya was started by the low access to land among the then migrant farmers that has relied on the protection forest area in Sumberjaya Lampung for decades. The two-pronged technologies -- income generation and natural resource management -- are needed in the negotiation support system (NSS) scheme in Sumberjaya, a site representing land management conflict in forest margin, due to forceful eviction of farmers and uprooting of their well-developed coffee by the forestry service in mid 1990s because farmers use of protection forest zone was considered illegal. The agreement that was iteratively developed within NSS scheme, is that the communities who have farmed on land within the government jurisdiction can receive a semi-permanent (25-35 years) land title as long as they as farmer groups commit to restore some of the forgone forest cover and functions.

A Ministerial Decree No. 31 issued in February 2001 on Community Forest in which farmers are given the semi permanent land title to utilize the forest land provided that they can propose and implement judicious land management systems for restoring the forest function. This decree place an excellent basis for the negotiation to operate.

In 2004 RUPES scaled up and continued the NSS efforts. Besides outputs in biophysical aspects the negotiation has successfully developed trusts between stakeholders. Until recently, 7000 HH holding around 13,000 ha land has received the temporary (5 year) tenure from the head of the district (Bupati).

One of the side impact is that the forest extentionist from Sumberjaya received presidential awards on 17 August this year, for whom ICRAF contributed in capacity building such as participatory mapping, use of geographic positioning system (GPS), negotiation and so forth. He has successfully facilitated 18 farmer groups.

ICRAF has also empowered the local government through several RUPES meetings. Initially there was doubt among the stakeholders in Lampung on the legal aspect of temporary land use permit. Later-on a resource person from Biro Hukum, of MoF was invited and he did not see any legal problem of such permit. He explained that for the 5 year probation period, the Bupati can issue the permit directly, but for the semi permanent, 35 year land use permit, the district head must receive a letter of "Areal Pencadangan Hutan Kemasyarakatan" (Community Forestry Allocation) by the Minister of Forestry. Currently the 35 year permit from the Minister has been issued for about 40,000 land in West Lampung. Based on this, the district head will issue the semi permanent land use permit to farmer's group.

The certification issuance is based on the proposal from the farmers group. ICRAF and NGO at the site facilitated the proposal development, which include the criteria and indicators for success. These agreed criteria and indicators will be used for monitoring and evaluation. The BUPATI permit will be revoked should the farmer groups fail to meet the negotiated C&I.

The monitoring is conducted by Dinas Kehutanan. Since last year the Way Besay Hydro Electric company has also participated in Land Conservation Contest and various interviews.

The social and institutional conditions has gradually changed in Sumberjaya from 1998 during which time farmers were afraid to see the outsiders to harmonious relationship today. With the current conducive environment ICRAF will phase out its presence gradually in Sumberjaya.

Similar work was started in Kali Konto in 2007 in collaboration with Perum Perhutani. The watershed has two extreme conditions; the one with a relatively successful planting (>90% tree cover) and the other side with a low tree cover. In contrast with the initial hypothesis, the survey revealed that the relatively wealthy farmers with income level about twice of the poorer group are less successful in tree planting. Those wealthier group plants vegetable and thus with less conservation. Various socio economic aspects as well as negotiation will be continued in Kali Konto.

So far there has not been any representative from FORDA, but there was supports from RLPS and Biro Hukum. This action research may be of FORDA's interest in kali Konto.

ICRAF's role was to mediate the conflicting parties. Several research results and guidelines have been contributing significantly to the negotiation, including research conducted by Pak Ginting in 1990s and ASB research in 2000-2004.

Dr. Suyanto concluded that the key to the Sumberjaya success was the mutual trusts that has been built among the stakeholders, especially between the farmer groups and Dinas Kehutanan. The supports of the central government representatives (RLPS, Biro Hukum and FORDA), in reinterpreting the national level regulation is also vital. Building of trusts is the next challenge in Kali Konto and similar conflicting sites such as Kabupaten Manggarai in NTT. The extension to the latter site is subject to FORDA's interest.

Annex 12

Minutes of Meeting with Dr. Jess Fernandez, the coordinator of Southeast Asia Network for Agroforestry Education

Jess is also involved a lot in capacity building, facilitating the candidates to pursue PhD program. He mentioned that capacity building is not the monopoly of one unit, rather it's a shared responsibility of several units in ICRAF. SEANAFE works closely with University, but Jess also coordinates trainings, seminars and so forth.

On the capacity building, he said that FORDA's researches who participated should have worked hard individually on his/her field before and particularly after participating in the formal capacity building process. For these reasons FORDA has to give the priority list of researchers that can be involved.

In preparation of 10 PhD candidates, ICRAF facilitation includes training for improving the writing skills in connection with ICRAF/SEANAFE on-going programs, assisting the candidates in developing their research proposal such that they align with the current issues, and finding and channeling them to most relevant universities and departments as well as with the good professor after they meet the qualification. ICRAF SEA and representative from ICRAF Head Quarters mentored them and provided advise for their proposal revisions. However, most did not have any follow up, because (they said) they were tight up with other works. Their English capacity in general is lacking. Letter writing was also given, but only 2-3 followed up. Internet search was also taught, but no progress after a series of that mentorship. Opportunities for FORDA's researchers in the seminar and workshop will be continually provided as this is in line with capacity building.

On of the main question is whether the candidates are really eager or not since they have to work hard to succeed. From Jess observation there are 2-3 of them who seemed eager. The time has elapsed since the first round of facilitation. The topics they proposed in earlier training may not be relevant anymore today, so there may be a need to figure out the new ones.

Bu Nur mentioned that she would like to find out the problems and come up with suggestions. Jess mentioned that ICRAF can have another try with another workshop followed by a one on one mentorship. ICRAF is waiting for FORDA's decision whether to maintain the same candidates or propose new candidates. Bu Tri, on the other hand said that FORDA has developed training need assessment and ICRAF is waiting for the document.

There was a capacity building on making use of research results to policy paper. FORDA allocated one slot for Mr. Yongki Indrajaya. With his background on watershed hydrology he may not be most appropriate for the policy paper development. Bu Erna may be the more appropriate candidate for this but ICRAF can only tell FORDA the qualifications, and it's FORDA to decide.

The next writeshop, which supposed to be in Bangkok, now will be moved to Bandung. If that's the case, then there will be opportunities for more FORDA staff to attend, but the candidates will get advantage if they have some background on policy. The training will be for two weeks on policy subject and policy implications. It is designed for developing skill for writing policy inputs. This kind of policy input should be based on at least one good research report, that the candidate should have had ahead of time.

For 2008-2010 ICRAF will see other opportunities for FORDA staff, but the training need assessment report from FORDA will be a good guideline for ICRAF such that ICRAF can be purposive on what subject to address and who should participate.

Jess added that in almost all proposal development ICRAF made allotment for PhD research. This is a good entry for FORDA. The cost for one PhD is roughly \$30,000, and that must be sourced from universities and donors.

Pak Apul added that one of the benefits of the collaboration with international organizations is to have direct effect on capacity building. The involvement of FORDA researcher in each research activity is like on the job training which increase the ability of researcher in planning and conducting research activities, especially if the researchers involved since the beginning of proposal development from the objective, generic design, concept note, project proposal, research activity and writing report.

Annex 13

Minutes of Meeting with Dr. Laxman Joshi, ICRAF Scientist on Indigenous Knowledge

Dr. Joshi is the coordinator of CFC project in Jambi on rubber agroforestry and in Aceh on reconstruction of green infrastructure (tree based coastal protection zone). He is also central on TUL SEA.

He explained that clonal rubber is one of the important intervention under rubber agroforestry since, under the monoculture system, the yield difference could be 3:1 between the clonal and seedling propagated one. Once farmers plant clonal rubber they tend to increase the inputs which in turn increase the yield. Clonal rubber prefers monoculture system because they are developed for monoculture. ICRAF suggested (to the plant breeders) to develop the clones that survive competition.

Under mixed system the clone rubber produces 60-70% latex. The production of clonal rubber is around 1000-1500 kg/ha/yr while under smallholder rubber system it's around 600 kg/ha/yr. Clones produce much faster and this is another benefit for farmers. All and all, even with a bit less latex, but there are other benefits from clonal rubber agroforestry.

For smallholders, rubber agroforestry is still a lot more attractive because of low input. Other trees offer income during the rainy days, etc. For oil palm, on the other hand, about 50% of inputs are allocated just for fertilizers.

Dr. Joshi also addressed several points in Tabel 4 including points 1.a, 3.a, 3b, 4a, 4b, and 7a. His analysis included economic incentives for local forest conservation (point 1.a), although it was not directly linked to combating illegal logging. On the production of technical information for extensive smallholder tree crop production, including tree-tree interaction models for mixed systems (point 3.a), he mentioned that the work has been accomplished and the technical information is available as a reference for FORDA and other users. On the multiple extension approach (point 4.b) ICRAF has done some works in Batang Toru. Training of Farmers have also been done in Kalimantan, West Aceh and Nias, with strong supports from Dinas. The champion farmers effectively disseminate AF technologies after rigorously trained. In West Kalimantan ICRAF also provides support for NGOs. In Sintang there are a few influential farmers assisting the dissemination. For the coastal line protection (points 7a and b) the work is in progress in collaboration with the Indonesian Soil Research Institute and Hohenheim University.

So far there is no direct link yet with FORDA on technology testing. ICRAF would like to connect with FORDA in Aceh, if there is enough interest. Improvement of the technology uptake could be done by selecting together the most useful products to FORDA and discussing how those products could be translated into action. Pak Apul suggested a collaboration comparison of AF system vs forest in terms of hydrology. Dr. Joshi mentioned that the analyses on this have been done in Sumberjaya and elsewhere, but the analysis of economic potential may be important thing to add.

Annex 14

Minutes of 5 September Presentation of The Monitoring Report

The meeting was lead by Mr. Wahjudi Wardojo the DG of FORDA. Pak Fahmuddin Agus presented the report of the monitoring team. Pak Wahyudi appreciated the complete, clear and constructive report made by the team.

Pak Anwar, the director of RDCFNC commented that most of ICRAF work in Indonesia coincides with FORDA's program, and thus there should be larger (perhaps 80-90%) intercept of ICRAF-FORDA's research, rather than just about 30% as presented by the team. This comment was then clarified by Pak Wahyudi that the 30% intercept is about right. Pak Anwar also requested that FORDA should know research agenda of ICRAF well in advance such that it's easier for FORDA to assign the counterpart researcher if deem necessary. Research results should be verified and adapted before inclusion for inputs of policy changes and the building capacity is needed for the researchers for developing policy briefs based on research findings

Pak Maman Mansyur, the Director of Forest Product research Centre pointed out that ICRAF has not put enough agenda of research on forest product, and mentioned about possibility of research in latex (dragon blood), and the use of the biochar and charcoal as soil amendments.

Pak Iman Santoso, the Director of Research Center for Socio Economic and Policy on Forestry, mentioned that there are many research product which has been produced by ICRAF and are useful for FORDA as reference for doing other research and for adaptation and implementation. He added that action research should be notified to policy makers, preferably by September each year for synergism and possible cost sharing with FORDA. The action research is very ideal because of it's dynamic. ICRAF has the advantage on that because of flexibility in managing funds while FORDA has limitation on that because of the (rigid) budget system. Pak Iman is very much concern about writing skill for developing policy input papers, in which ICRAF assistance will be very valuable.

Pak Harry Santoso, the Director of Plantation Forest Research Centre pointed out that the team has done a good monitoring but the evaluation part is lacking. The evaluation should include impacts. For the Sumberjaya research he asked about the kinds of social capital. In response to the team's presentation he admitted that one of the weaknesses of GERHAN program is the continuity of the program, especially the KPH is not yet formed in the field to maintain the plantation. He suggested that ICRAF collaboration is extended to more remote universities in Kalimantan and other areas outside Java because they are not exposed to international collaboration.

Pak Nugroho Sulisty Priyono from the Plantation Forest Research Centre pointed out that FORDA also produced similar products and best if results could also be picked up by ICRAF.

Pak Meine van Noordwijk of ICRAF, appreciated the comments from FORDA and the complete presentation by the team. In response to the comments he mentioned that there are lots of cooperation that have been made with others institutes/organizations, government and non government in addition to those with FORDA. He added that research should have some distance with policy maker to maintain independence, but close enough for the policy makers to catch the ideas. Close interaction with pak Iman's centre will be ideal.

Bu Nur Masripatin, the Secretary of FORDA, mentioned that part of the 120 million ha forest area will be transformed to other uses in the coming years. The tools, including RABA and RHA and RaCSA could be applied to give an estimate of forest area that could maintain

biodiversity and provide secure environment, as well as boost the development of the nation. On the peat carbon assessment she said that we are not against the assessment of carbon emission from peat land, we are just afraid of the currently published data as they can affect the economy. Most of the production forest is peatland especially in Sumatera, Kalimantan and Papua. We have peat land in some KHDTK that could be used for research, but the direction is on the sustainable use of peat land/forest.

Pak Wahjudi mentioned that MoF designated FORDA as the host institution for ICRAF SE Asia and to monitor the implementation of MoU. Therefore any activities with other organizations must be reported to FORDA. The success of Sumber Jaya, a small sub-district, is a good one, but that can not be used as model for the whole country before verification of main factors determine the success and use them as a lessons learnt. ICRAF should also be careful with a sensitive information published to the public. Those kinds of information, especially those using FORDA's logo have to receive approval from FORDA. FORDA is still asking ICRAF to fulfill the 10 PhD as the required by the MoU.

Annex 15

Schedule of Monitoring (FA)

Date, time	Activity
11 Aug	Planning meeting, Christine, F.Agus, Lei. Meine
19 Aug. 09:00-10:30	Finding the common ground and team consolidation (at Balittanah Jln. Juanda 98 Bogor). (Apul and Fahmuddin) <ul style="list-style-type: none"> • Agreeing on time schedule • Report format • Task distribution
20Aug. 09:00-10:30	Finding the common ground and team consolidation (at Balittanah Jln. Juanda 98 Bogor). (Taulana and Fahmuddin)
21–24 Aug.	Field Trip to Jambi and Singkarak
21 Aug, Thu	
10.15-11.25	Departing Jakarta for Jambi (Batavia)
12.00	Lunch in Jambi city
13.00	Ground Travel from Jambi to Muara Bungo (6 hours drive) with stops at (1) Bukit Sari Forest Protection in Batanghari and (2) Oil Palm Plantation in Batanghari
19.00	Arriving in Muara Bungo, check in and dinner at “Semagi” hotel
22 Aug, Fri	
07.30	Departing for Rantau Pandan
	Field Visit to:
08.30-09.00	1. Rantau Pandan (open forest protection to rubber field, rubber agroforestry-1 hour drive from Muara Bungo)
09.30-12.00	2. Lubuk Beringin (jungle rubber, micro-hydro- half an hour drive from Rantau Pandan)
12.00	Departing back to Muara Bungo (2 hours drive) to “Swarna bumi” Hotel. Lunch box at Buat river
14.30-17.00	Attendance of the closing of TUL-SEA (RHA and RMA) Training at Swarna Bumi Hotel
19.00-21.00	Dinner at Pondok Bambu Restaurant
23 Aug, Sat	
08.00-08.30	Registration: Opportunities for RUPES-2 in Jambi at HUTBUN Bungo
08.30–08.45	Opening statement from Committee and Local Government
08.45-09.15	Meeting introduction: <ul style="list-style-type: none"> ➤ Overview of Rubber Agroforestry ➤ Overview of RUPES-1 ➤ Overview of ACM/ Government ➤ Introduction of Bungo Book ➤ Overview of Landscape Mosaic Project
09.15–09.45	What will Jambi look like in 20 years?
09.45-10.00	Preparing for group discussion

10.00–10.15	Coffee Break
10.15–11.00	Discussion Group: ➤ Is the development and conservation option interesting? ➤ How to approach it
11.00–11.45	Plenary and Conclusion
11.45–12.00	Closing
12.00–13.00	Lunch
13.00-18.00	Departing Muara Bungo to Singkarak lake in West Sumatra (6 hours drive)
24 Aug, Sun	
07.00	Field visit in Paninggahan
11.00	Leaving Singkarak for Padang (3 hours drive)
16.40	Departing Padang for Jakarta (Mandala Airline)
	Arriving Jakarta, picked up by ICRAF
26 Aug.	One-day workshop (on ICRAF's works/achievements) – to coincide with ICRAF 15 th year anniversary.
27 Aug; 07:00-08:00	Team (Fahmuddin, Christine, Apul, Taulana) consultation and discussion with Dr. Wahyudi Wardoyo, DG of FORDA
28 Aug 08:00-09:30	Team (Fahmuddin, Christine, Apul, Taulana) consultation and discussion with Dr. Anwar, Director of FNRDC
29 Aug 13:30-15:00	Team (Fahmuddin, Christine, Apul, Taulana) consultation and discussion with Dr. Iman Santoso, the Director of Socio Economic Research Centre
1 Sep whole day	Team consultation and discussion with ICRAF scientists: Dr. Meine van Noordwijk with Fahmuddin, Christine, Apul, Taulana Dr. Suyanto with Fahmuddin and Apul Dr. Laxman Joshi with Fahmuddin and Apul Mr. Jim Roshetko with Fahmuddin and Apul Dr. Niken Sakuntaladewi with Cristine and Taulana Ms. Leimona Beria with Cristine and Taulana Mr. Jess Fernandez with Fahmuddin and Apul
2 Sept 11:00-12:15	Team (Fahmuddin and Tauana) consultation with Dr. Tri representing Dr. Nur Masripatin, the Secretary of FORDA
5 Sept 2008	Team Presentation for FORDA and ICRAF at FORDA Gunung Batu

Annex 16

List of ICRAF's Recent Publications
(Classified based on possible Relevance to MoF Programs)
[These publications and most others of ICRAF SEA are
downloadable from <http://www.worldagroforestrycentre.org/sea>]

Hutan Kemasyarakatan (HKM)

van Noordwijk, M, Suyanto S, Budidarsono S, Sakuntaladewi N, Roshetko JM, Lestari TH, Galudra G and Fay CC. 2007. Is Hutan Tanaman Rakyat a new paradigm in community based tree planting in Indonesia? ICRAF Working Paper no 45. Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office. 30 p.

Tree germ plasm

Roshetko, J.M., Mulawarman and A. Dianarto. 2008. Tree Seed Procurement-Diffusion Pathways in Wonogiri and Ponorogo, Java.

Roshetko, J.M., Subekti Rahayu, Wiyono, Nugroho H. Prastowo. 2008. Evaluating indigenous practices for Petai (*Parkia speciosa* L.) seed germination: the effect of seed shelling and seed cutting on germination, growth and survival.

Purnomosidhi P, Suparman, Roshetko JM and Mulawarman . 2007. Perbanyak dan budidaya tanaman buah-buahan: Pedoman lapang edisi kedua. Bogor, Indonesia. World Agroforestry Centre-ICRAF, SEA Regional Office and Winrock International. 51 p.

Tree Domestication and Livelihood enhancement

Fonsah E, Roshetko JM, Budidarsono S, Tukan J, Nugraha E and Gerhard Manurung G. 2008. Fruits and Vegetable Industry in Indonesia: Production and Limited Access to Market. Bogor, Indonesia.

Manurung, G.E., J.M. Roshetko, Suseno Budidarsono, and Iwan Kurniawan. 2008. Dudukuhan Tree Farming Systems in West Java: How to Mobilize Self-Strengthening of Community-Based Forest Management?

Martini, E., J. Tarigan, J.M Roshetko, G. Manurung, I. Kurniawan, J. Tukan, S. Budidarsono, M. Abdo, and M. van Noordwijk. 2008. Capacity Building Activities to Strengthen Agroforestry for Economic Development and Conservation. Working Paper. Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.

Roshetko, J.M. D.J. Snelder, R.D. Lasco, and M.van Noordwijk. 2008. Future Challenge: A Paradigm Shift in the Forestry Sector.

van Noordwijk, M., J.M. Roshetko, Murniati, M. Delos Angeles, Suyanto, C. Fay, and T. P. Tomich. 2008. Farmer Tree Planting Barriers to Sustainable Forest Management.

Roshetko JM, Nugraha E, Tukan J, Gerhard Manurung G, Fay CC and van Noordwijk M. 2007. Agroforestry for Livelihood Enhancement and Enterprise Development. In: Integrated rural development in East Nusa Tenggara, Indonesia. Canberra, Australia. Australian Center for International Agricultural Research.

Environmental Services (carbon or conservation) related activities

- Roshetko, JM and R Lasco. 2008. What Smallholder Agroforestry Systems are Appropriate for Carbon Storage? *Overstory E-journal*, April 2008.
- Tarigan J, Martini E, Roshetko JM and Kurniawan I. 2007. A Documentation Strategy to Develop the Potential of NTFPs as a Source of Livelihood Diversification for Local Communities in the Batang Toru Orangutan Conservation Program. Bogor, Indonesia.
- Roshetko, J.M., R.D. Lasco and M.D. Delos Angeles. 2007. Smallholder Agroforestry Systems for Carbon Storage. *Mitigation and Adaptation Strategies for Global Change* 12:219-242.
- Roshetko, JM, E. Martini, J. Tarigan, G. Manurung, S. Budidarsono, K. Wijaya, J.C Tukan, I. Kurniawan, G. Galudra, Dudy Kurnia Nugroho, A. Ekadinata, S. Dewi, D. Harja, B. Lusiana, M. van Noordwijk and J. Purba. 2007. Agroforestry on the Interface of Orangutan Conservation and Sustainable Livelihoods in Batang Toru (North Sumatra). Working Paper No. 56. Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office. 26 p.

Rubber Agroforestry and Indigenous Knowledge

- Ekadinata A. 2007. Dinamikautupan lahan Bungo – Jambi. Book Chapter. ICRAF Indonesia, Buku Bungo
- Damsir, 2007. nPotensi Pengembangan mekanisme imbal jasa lingkungan di Lubuk Beringin. Book Chapter. ICRAF Indonesia, Buku Bungo.
- Martini E. 2007. Keanekaragaman Hayati : Jasa Lingkungan wanatani karet. Book Chapter. ICRAF Indonesia, Buku Bungo
- Penot E, Geissler C. 2004. Deforestation, agricultural concession policies and potential conflicts in Sanggau district, West Kalimantan province, Indonesia. Book chapter. CIRAD French In “ Beyond tropical deforestation” , Ed D. Babin, UNESCO/CIRAD. November 2004. p 333-354
- Hesti, van Noordwijk M, Saida Rasnovi dan Joshi L. 2007. Pengkayaan jenis wanatani karet dengan meranti, Book Chapter, ICRAF Indonesia. Buku Bungo.
- Joshi L, Manurung G, Akiefnawati R, Susilawati, dan Poncowati E. 2007. Sistem sisipan: pengetahuan lokal dalam wanatani karet, Book Chapter, ICRAF Indonesia, Buku Bungo
- Akiefnawati R, Wibawa G, Joshi L, dan van Noordwijk M. 2007. Meningkatkan Produktifitas Karet Rakyat melalui Sistem Wanatani Berbasis Karet, Book Chapter. ICRAF Indonesia, Buku Bungo
- Anwar C, Harris U, Rosyid J, and Azwar R. 2005. Marketing of Rubber-Based Agroforest Products in Indonesia: A Survey Report at Four Provinces. Conference Paper. IRubRI. English, Hatyai meeting 2005
- Harja D, Vincent G, Purnomosidhi P, Rahayu S, Joshi L. 2005. Impact of rubber tree planting pattern on *Imperata cylindrica* dynamics - Exploring weed control through shading using SEXI-FS, a forest stand simulator. Conference Paper. ICRAF. International Workshop on Smallholder Agroforestry Options on Degraded Soils, Batu, East Java, Indonesia. August 2005.
- Harja D, Vincent G and Joshi L. 2007. SEXI-FS - a tree growth simulation model to explore mixed stand designs and their production potential. Conference Paper. ICRAF Laos SSLWM workshop.
- Mulyoutami E, Ilahang, Wulandari D, Joshi L, Wibawa G, Penot E. 2005. From degraded *Imperata* grassland to productive rubber agroforests in West Kalimantan. Conference

- Paper, ICRAF, Paper presented on International Workshop on Smallholder Agroforestry Options in Degraded Soils in Batu - Malang, East Java, 18-21 August 2005.
- Wibawa G, Joshi L, van Noordwijk M, Penot E. 2005. Rubber Agroforestry System (RAS) Technologies: opportunities for optimising smallholder rubber systems. Conference Paper, ICRAF. Hat Yai Meeting.
- Wibawa G. 2005. Rubber Based Agroforestry Research in Indonesia. Conference Paper. ICRAF.
- Wibawa G, Joshi L, van Noordwijk M, Penot E. 2006. Rubber based Agroforestry Systems (RAS) as Alternatives for Rubber Monoculture System. Conference Paper. ICRAF English IRRDB Annual Meetings and International Natural Rubber Conference 2006, 13 - 17 November, Ho Chi Minh City, Vietnam.
- Wibawa G. Rubber-based Agroforestry System promising option for improving smallholder rubber productivity and profitability. Conference Paper. ICRAF. IRCE Bali June 2007-abstract ready.

TUL SEA

- Hoang, MH. 2008. Participatory Landscape Analysis (PaLA). TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- Hoang, MH and Pham TT. 2008. Participatory Analysis Of Poverty, Livelihoods And Environment Dynamics (PAPOLD). TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- vanNoordwijk, M. 2008. Rapid Appraisal Of Drivers Of Land Use Change (DriLUC). TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- Budidarsono, S., I. Kurniawan, and JM Roshetko. 2008. Rapid Market Appraisal (RMA): Understanding Market Opportunity for Market-Oriented Smallholder Agroforestry Systems. TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- vanNoordwijk, M and R. Mulia. 2008. Tree architecture and scaling rules: Functional Branch Analysis (FBA), above and belowground. TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- Khasanah, N., and M. vanNoordwijk. 2008. Water Nutrient and Light Capture in Agroforestry Systems (WaNuLCAS). TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- Asmara, DH and G. Vincent. 2008. Tree - Tree Interaction Model: the Spatially Explicit Individual-based Forest Simulator (SEXI-FS). TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- vanNoordwijk, M. 2008. Rapid Hydrological Appraisal (RHA): An Integrated Approach to Assess Watershed Functions and Management Options. TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- vanNoordwijk, M and K. Hairiah. 2008. Rapid Landslide Mitigation Appraisal (RaLMA): A tool for appreciating the role of trees in slope stabilization. TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- vanNoordwijk, M. 2008. Rapid Carbon Stock Appraisal (RaCSA): a rapid but integrated way to assess landscape carbon stocks. TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- vanNoordwijk, M. 2008. Rapid Oxygen Supply Analysis (ROSA). TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.

- Joshi, L. and E. Martini. 2008. Rapid Agro-Biodiversity Appraisal (RABA) in the context of Environmental Services Rewards. TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- Nurhariyanto, P. Nugroho, Jihad, L. Joshi, and E. Martini. 2008. Quick Biodiversity Survey (QBS) Guideline: For Rapid Agro-Biodiversity Appraisal (RABA). TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- Khasanah, N., and M. vanNoordwijk. 2008. GENeric Model of RIVER Flow (GEN-RIVER). TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- Suyamto, DA and R. Mulia. 2008. Forest, Agroforest, Low-value Landscape or Wasteland (FALLOW) Model: A simple tool to help you illuminating future options on development strategies to transform your rural agroforested landscapes into places worth living in and worth fighting for. TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- Galudra, G., G. Pasya, and M. Sirait. 2008. Rapid Land Tenure Assessment (RaTA): A Tool for Identifying the Nature of Land Tenure Conflicts. TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- vanNoordwijk, M, E. Martini, and Suyanto. 2008. Barrier analysis for tree enhancement: WNoTree. TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- vanNoordwijk, M. 2008. Fair & Efficient Redd Value Chains Allocation (FERVA). TULSEA-Flyer, Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.

DVDs and Leaflets

- World Agroforestry Centre-ICRAF, SEA Regional Office. 2008. RAS 1: Improved Rubber Agroforestry System. [DVD]. Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office. (7 minutes)
- World Agroforestry Centre-ICRAF, SEA Regional Office. 2008. Rubber technology and technical guideline. [DVD]. Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office. (68 minutes)
- Facilitating development of agroforestry systems. Alternatives to Slash and Burn Phase III. [DVD]. 2004. Bogor, Indonesia World Agroforestry Centre - ICRAF, SEA Regional Office. (22 minutes)
- New knowledge to improve negotiation. [VCD and DVD]. 2004. Bogor, Indonesia World Agroforestry Centre - ICRAF, SEA Regional Office. (21 minutes)
- Agroforestry in Southeast Asia. [DVD]. 2005. Bogor, Indonesia World Agroforestry Centre - ICRAF, SEA Regional Office. (17 minutes)
- Agroforestri di Asia Tenggara. [DVD]. 2005. Bogor, Indonesia World Agroforestry Centre - ICRAF, SEA Regional Office. (18 minutes)
- Langford K and van Noordwijk M. 2007. Trees and sustainable livelihoods: Avoiding deforestation in Indonesia without economic loss. [DVD]. Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office. (11 minutes)
- Let nature take its course : conservation farming with natural vegetative strips. [CD]. Bogor, Indonesia International Centre for Research in Agroforestry, SEA Regional Research Programme. ()
- Learning to reach the future. [VCD]. 2004. Bogor, Indonesia World Agroforestry Centre - ICRAF, SEA Regional Office. (25 minutes)

- Landcare in the Phillipines. [VCD]. 2004. Laguna, Philippines. World Agroforestry Centre - ICRAF, SEA Regional Office. ()
- Pengetahuan baru pendukung negosiasi. [VCD and DVD]. 2004. Bogor, Indonesia World Agroforestry Centre - ICRAF, SEA Regional Office. (21 minutes)
- Agroforestry in Southeast Asia. [VCD]. 2005. Bogor, Indonesia World Agroforestry Centre - ICRAF, SEA Regional Office. (18 minutes)
- Agroforestri di Asia Tenggara. [VCD and DVD]. 2005. Bogor, Indonesia World Agroforestry Centre - ICRAF, SEA Regional Office. (18 minutes)
- New knowledge to improve negotiation. [VCD]. 2004. Bogor, Indonesia World Agroforestry Centre - ICRAF, SEA Regional Office. (21 minutes)
- Hutan karet: Sebuah praktek pertanian berkelanjutan: Traditional rubber agroforests: a sustainable practice. [VCD]. 2005. Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office. (23 minutes)
- ICRAF agroforestry models and database. [CD-ROM]. 2004. Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
<http://www.worldagroforestry.org/sea/Products/index.asp>
- CD of materials collected from several RUPES inception meetings and workshops. [CD-ROM]. 2004. Bogor, Indonesia : RUPES, IFAD, World Agroforestry Centre - ICRAF, SEA Regional Office.
- Training Workshop 'Teaching advances in agroforestry research and development' - Chiang Mai, Thailand, September 17-25, 2003. [CD-ROM].Chiang Mai, Thailand. : RUPES, World Agroforestry Centre - ICRAF, SEA Regional Office, IFAD, The Southeast Asian Network for Agroforestry Education (SEANAFE), IIED, SII Netherlands.
- Proceedings regional workshop on indigenous strategies for intensification of shifting cultivation in Asia-Pacific: June 23-27, 1997. [CD-ROM].Bogor, Indonesia : ff, International Centre for Research in Agroforestry, SEA Regional Research Programme, CGIAR, CIIFAD, ACIAR, IDRC.
- Kompilasi abstrak agroforestri di Indonesia. [CD-ROM]. 2004. Bogor, Indonesia : Institut Pertanian Bogor, The Southeast Asian Network for Agroforestry Education (SEANAFE), World Agroforestry Centre - ICRAF, SEA Regional Office, The Indonesian Network for Agroforestry Education (INAFE).
- van Noordwijk M, Williams S and Verbist B. 2004. Towards integrated natural resource management in forest margins of the humid tropics: Local action and global concerns. [CD-ROM].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Ten years of research on rubber based agroforestry systems in Indonesia (1994-2004). 2005. [CD-ROM].Montpellier, French. : CIRAD.
- Forum on smallholder timber production, Monday, 16 Februari 2004. [CD-ROM]. 2005. Los Banos, Laguna, Philippines. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- PES: Sustainable financing for conservation and development. Proceedings from the National-Workshop on Payments for Environmental Services: Direct for biodiversity conservation and poverty alleviation, Manila, March 1-2, 2005. [CD-ROM]. 2005. Manila, Philippines. : WWF, World Agroforestry Centre- ICRAF SEA Regional Office, REECS, UP-CIDS, UPLB-ENFOR, CARE.
- World Agroforestry Centre-ICRAF, SEA Regional Office. 2006. AgroForesTree Database Version 2.0. [CD-ROM].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- World Agroforestry Centre (ICRAF). 2006. Pana - a mission not impossible: success story in rubber garden establishment. [CD-ROM].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.

- ICRAF Video Team. 2007. Rewards for care. [CD-ROM].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Teknologi dan petunjuk teknis tanaman karet. [CD-ROM]. 2007. Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- World Agroforestry Centre-ICRAF, SEA Regional Office. 2007. KMPH - Mitra Wana Lestari Sejahtera Penerima CBFM Award. [CD-ROM].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- World Agroforestry Centre-ICRAF, SEA Regional Office. 2007. Hutan Kemasyarakatan Lampung Barat. [CD-ROM].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- World Agroforestry Centre-ICRAF, SEA Regional Office. 2007. RAS 1 - Sistem Wanatani Ekstensif. [CD-ROM]: World Agroforestry Centre - ICRAF, SEA Regional Office.
- World Agroforestry Centre-ICRAF, SEA Regional Office. 2007. Resilience, rights and resources: two years of recovery in coastal zone Aceh. [CD-ROM]. Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- Ariesta H, Widodo S and Riadini P. 2004. Aplikasi basis data dan metadatabase di World Agroforestry Centre (ICRAF). [Software]. Bogor, Indonesia : Institut Pertanian Bogor.
- Joshi L. 2001. Seri wanatani karet no 1: kegiatan ICRAF dalam penelitian dan pengembangan Wanatani di Jambi. [Leaflet]. Bogor, Indonesia : International Centre for Research in Agroforestry, SEA Regional Research Programme.
- Wibawa G and Hendratno S. 2001. Seri wanatani karet No. 2 : faktor apa yang mempengaruhi petani dalam pengambilan keputusan atas pengelolaan sistem usaha taninya di Jambi?. [Leaflet].Bogor, Indonesia: International Centre for Research in Agroforestry, SEA Regional Research Programme.
- Joshi L and Wibawa G. 2001. Seri wanatani karet no 3: pengetahuan lokal mengenai sisipan dan okulasi langsung. [Leaflet].Bogor, Indonesia : International Centre for Research in Agroforestry, SEA Regional Research Programme.
- Akiefnawati R. 2001. Seri wanatani karet no 4: pemupukan P dan N serta tingkat penyilangan pada germplasma terpilih dari wanatani karet rakyat di Jambi. [Leaflet].Bogor, Indonesia : International Centre for Research in Agroforestry, SEA Regional Research Programme.
- Boutin D. 2001. Seri wanatani karet no 5: berbagai klon karet pilihan untuk sistem wanatani. [Leaflet].Bogor, Indonesia : International Centre for Research in Agroforestry, SEA Regional Research Programme.
- Boutin D. 2001. Seri wanatani karet no 6: meningkatkan produktivitas karet melalui sistem wanatani dan penggunaan klon karet unggul. [Leaflet].Bogor, Indonesia : International Centre for Research in Agroforestry, SEA Regional Research Programme.
- Boutin D. 2001. Seri wanatani karet no 7: sistem wanatani karet dengan berbagai macam tanaman semusim dan pohon lainnya. [Leaflet].Bogor, Indonesia : International Centre for Research in Agroforestry, SEA Regional Research Programme.
- Gerhard Manurung G and Vincent G. 2001. Seri wanatani karet no 8: uji tanam beberapa klon karet di bawah naungan kebun karet. [Leaflet].Bogor, Indonesia : International Centre for Research in Agroforestry, SEA Regional Research Programme.
- Harja D and Vincent G. 2001. Seri wanatani karet no 9: Spatially Explicit Individual-based (SEI). [Leaflet].Bogor, Indonesia : International Centre for Research in Agroforestry, SEA Regional Research Programme.
- Azhima F and Vincent G. 2001. Seri wanatani karet no 10: apa peran wanatani karet dalam konservasi hidupan liar di dataran rendah Sumatera?. [Leaflet].Bogor, Indonesia : International Centre for Research in Agroforestry, SEA Regional Research Programme.

- Azhima F and Vincent G. 2001. Seri wanatani karet no 11: pengendalian babi hutan, hama utama pada kebun karet di Jambi. [Leaflet].Bogor, Indonesia : International Centre for Research in Agroforestry, SEA Regional Research Programme.
- Joshi L and Wibawa G. 2001. Seri wanatani karet no 12: okulasi langsung dengan entres klon pada tanaman anakan karet di lapangan. [Leaflet].Bogor, Indonesia : International Centre for Research in Agroforestry, SEA Regional Research Programme.
- Joshi L. 2001. Seri wanatani karet no 13: partisipasi petani dalam penyebar-luasan karet klon melalui "Kelompok Wanatani Mandiri", pengalaman dari Jambi. [Leaflet].Bogor, Indonesia : International Centre for Research in Agroforestry, SEA Regional Research Programme.
- van Noordwijk M and Ketterings QM. 2001. Seri wanatani karet no 14: tebas-bakar dan manfaat pembakarannya. [Leaflet].Bogor, Indonesia : International Centre for Research in Agroforestry, SEA Regional Research Programme.
- RUPES: developing mechanism for Rewarding The Upland Poor in Asia for environmental services they provide. [Leaflet]. 2003. Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Agus F and Rahayu S. 2004. Mimba (*Azadirachta indica*) dan manfaatnya. [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Ruijter J and Rahayu S. 2004. Cendana (*Santalum album*). [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Agus F and Ruijter J. 2004. Perhitungan kebutuhan pupuk. [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Ruijter J and Agus F. 2004. Pengenalan tanah. [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Agus F and Ruijter J. 2004. Percobaan teknik pertanian oleh dan untuk petani (PoP). [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Agus F and Ruijter J. 2004. Intensifikasi sistem Bera. [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Ruijter J and Agus F. 2004. Sistem agroforestri. [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Ruijter J and Agus F. 2004. MULSA: cara mudah untuk konservasi tanah. [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Ruijter J and Agus F. 2004. Pengelolaan Daerah Aliran Sungai (DAS). [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Agus F and Ruijter J. 2004. Panen dan konservasi air. [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Tumpangsari tanaman pagar dengan tanaman semusim. [Leaflet]. 2000. Bogor, Indonesia: International Centre for Research in Agroforestry, SEA Regional Research Programme, Brawijaya University, University of London.
- van Noordwijk M and Cadisch G. 2000. The tree root safety-net in agroforestry. [Leaflet].Bogor, Indonesia : International Centre for Research in Agroforestry, SEA Regional Research Programme.
- Rahayu S, Smets K, Lindgren M and Azhima F. 2005. Hama repong damar dan pengendaliannya. [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Kebun karet campur tradisional. [Leaflet]. 2005. Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Penyadapan tanaman karet: Sistem wanatani karet. [Leaflet]. 2005. Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.

- Pembangunan batang bawah dan penanganan benih: Sistem wanatani berbasis karet. [Leaflet]. 2005. Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Deskripsi klon PB 260, RRIC 100, BPM 1 dan RRIM 600: Sistem wanatani karet. [Leaflet]. 2005. Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Teknik okulasi karet: Sistem wanatani karet. [Leaflet]. 2005. Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Kuncoro SA, van Noordwijk M and Chandler F. 2004. Rapid Agrobiodiversity Assessment (RABA): A tool to capture the understanding and knowledge of stakeholders on the benefits of agrobiodiversity. [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Farida, Jeanes K, Kurniasari D, Widayati A, Eka Dinata A, Hadi DP, Joshi L, Suyanto DA and van Noordwijk M. 2005. Penilaian cepat hidrologis: Pendekatan terpadu dalam menilai fungsi Daerah Aliran Sungai (DAS). [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Gouyon A. 2004. Ekosertifikasi sebagai sebuah insentif untuk konservasi keragaman hayati dalam sistem wanatani karet rakyat. [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office, International Fund for Agricultural Development.
- Maria P Rosales R. 2004. Pasar jasa lingkungan pro-kaum miskin yang sedang berkembang di Filipina. [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office, International Fund for Agricultural Development.
- Gouyon A. 2004. Rewarding upland poor for environmental services: Imbalan bagi masyarakat miskin dataran tinggi terhadap jasa lingkungan. [Leaflet].Bogor, Indonesia : World Agroforestry Centre - ICRAF, SEA Regional Office, International Fund for Agricultural Development.
- Pailagao CP. 2005. Capacity building for the application of landcare towards enhanced democratic processes in natural resource management in Southern and Eastern Africa. [Leaflet].Philippines. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Verbist B. 2006. Peduli kualitas air sungai: Tinjauan hewan air. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Harto Widodo R and Suryadi I. 2006. Erosi dan longsor tebing: Siapa yang dirugikan?. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Pembangunan kebun bibit karet klonal. [Leaflet]. 2006. Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Wibawa G, Akiefnawati R and Joshi L. 2006. Sistem wanatani berbasis karet: Alternatif bagi karet dan hutan karet. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Suyanto S, et al. 2006. Conditional Land Tenure: A Pathway to Healthy Landscapes and Enhance Livelihoods. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Suyanto S, et al. 2006. Clean Rivers, Lighted Lights: Monetary Rewards for Reducing Sediment. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- RUPES. 2007. In Bungo (Sumatra) farmers look for global beneficiaries to purchase the mega biodiversity sustained by their jungle rubber. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- RUPES. 2007. The Ikalahan started to document carbon storage under their forest management systems in 1994 and provide global benefits at low transaction costs. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.

- RUPES. 2007. In Sumberjaya, the hydropower company and government officials learn that with proper incentives, upland people can deliver clean water for increased electrical output. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- RUPES. 2007. In Bakun, indigenous people use modern mechanisms for selling environmental services to preserve a traditional way of life without its poverty traps. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- RUPES. 2007. Linking rewards and governance to effects of land use on environmental services at the scale of the lake. [Leaflet].: World Agroforestry Centre - ICRAF, SEA Regional Office.
- RUPES. 2007. In Kulekhani, Nepal, a hydroelectricity scheme that used to rely on 'command and control' relations with the upland communities in their catchment now face more critical 'sellers'. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- van Noordwijk M, Budidarsono S, Joshi L and Nugraha E. 2006. The tsunami as test of resilience of coastal livelihoods in Aceh: Overview of an integrated natural resource management approach to rehabilitation. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Santoso A and Atikah T. 2006. Information about natural resource management in the post-tsunami coastal area of Aceh. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Joshi L, Nugraha E, Budidarsono S and van Noordwijk M. 2006. Livelihood and resilience in West Aceh. [Leaflet]. Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- Dewi S and Eka Dinata A. 2006. Village level analyses of poverty and land use/cover in West Aceh. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Joshi L, Prasad UK and Adhuri D. 2006. *Nypa fruticans* – useful but forgotten in mangrove reforestation programs?. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Prasetyo LH. 2006. Ducks as small-scale investment for women. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Subiksa I, Erfandi D and Agus F. 2006. The salt leached out and the soil fertility changes after tsunami. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Joshi L, Agus F and Subiksa I. 2006. Peat land along the coast of West Aceh. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Ritung S, W and Agus F. 2006. Land suitability for agricultural crops in West Aceh district. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Supriadi M, Joshi L and Wibawa G. 2006. Participatory tree crop development. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Wibawa G and Bertault JG. 2006. Supporting tree crops development on the East coast of Nanggroe Aceh Darussalam (NAD). [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Haris U. 2006. Market access for rubber and cocoa in the tsunami affected coastal zone in West Aceh. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.

- Adhuri D, Prasad UK and Dey M. 2006. Fisheries in the West Coast of Aceh – In search of a balance development. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Budidarsono S and Zainun I. 2006. Brackish-water aquaculture in Aceh: post tsunami rehabilitation and problems. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Prasad UK, Schwarz A, Adhuri D and Dey M. 2006. Rehabilitating mangroves in the West Coast of Aceh. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Indriatmoko Y, Adnan H, Komarudin H and Siagian Y. 2006. Tsunami, conflicts and forestry in Aceh: A brief review. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Suyanto S, et al. 2007. Hutan Kemasyarakatan (HKM): Menuju Bentang Alam yang Sehat dan Masyarakat Sejahtera. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Suyanto S, et al. 2007. Sungai Bersih, Listrik Menyala: Imbal Jasa untuk Pengurangan Sedimen. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Pasha R, Leimona B and Suyanto S, et al . 2007. Kontrak Konservasi Tanah dan Air: Skema Imbal Jasa Lingkungan melalui Lelang Konservasi. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- A partnership approach to rubber eco-certification: preserving biodiversity and marketing jungle rubber. [Leaflet]. 2007. Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Swallow BM and van Noordwijk M. 2007. Avoided Deforestation with Sustainable Benefits: A Simple Way to Reduce Carbon Emissions from Deforestation and Degradation. [Leaflet].Nairobi, Kenya. : World Agroforestry Centre - ICRAF.
- Swallow BM and van Noordwijk M. 2007. Deforestasi yang Terhindarkan dengan Manfaat yang Berkelanjutan: Sebuah Cara Sederhana untuk Mengurangi Emisi Karbon dari Deforestasi dan Degradasi. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- van Noordwijk M, Dewi S, Swallow BM, Purnomo H and Murdiyarso D. 2007. Avoided Deforestation with Sustainable Benefits (ADSB) in Indonesia-research brief Avoided. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- van Noordwijk M, Dewi S, Swallow BM, Purnomo H and Murdiyarso D. 2007. Avoided Deforestation with Sustainable Benefits (ADSB) in Indonesia-research brief Benefit. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- van Noordwijk M, Dewi S, Swallow BM, Purnomo H and Murdiyarso D. 2007. Avoided Deforestation with Sustainable Benefits (ADSB) in Indonesia-research brief Deforestation. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- van Noordwijk M, Dewi S, Swallow BM, Purnomo H and Murdiyarso D. 2007. Avoided Deforestation with Sustainable Benefits (ADSB) in Indonesia-research brief Sustainable. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Purnomosidhi P, Roshetko JM, Idris N, Setiawan A, Prahmono A, Zulfadhli T, Suriana M, Mahyudin , Kisworo AY and Hidayat HA. 2007. Pengembangan Pembibitan Unggul (NOEL-Nursery Of Excellence) di Aceh. [Leaflet]. Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- Leimona B and Lee E. 2008. Pro-Poor Payment for Environmental Services Some Considerations. [Leaflet]. Bogor, Indonesia.

- Villamor GB and Lasco RD. 2008. Biodiversity and Climate Change: Restoring the Connectivity for Globally Threatened Species requiring landscape level conservation. [Leaflet]. Laguna, Philippines. World Agroforestry Centre (ICRAF) and Conservation International.
- Catacutan D. 2008. In Lantapan, stakeholders believe that diplomatic confrontation of realities rather than avoidance ends with "win-win" solutions. [Leaflet]. Bukidnon, Philippines. World Agroforestry Centre - ICRAF.
- van Noordwijk M, Leimona B, Villamor GB and Galudra G. 2008. Dealing with myth-perceptions: how to reduce communication and perception gaps before Rewards for Environmental Services negotiations can start?. [Leaflet]. Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- Suyanto S, Leimona B, van Noordwijk M and Galudra G. 2008. Conditional Tenure as a Reward for Environmental Services. [Leaflet]. Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- Leimona B, van Noordwijk M, Villamor GB, Fauzi A, Upadhyaya S and Farida. 2008. Social Mobilization and Local Awareness of Rights and Opportunities for Environmental Services Market. [Leaflet]. Bogor, Indonesia. World Agroforestry Centre - ICRAF, SEA Regional Office.
- Leimona B, van Noordwijk M, Villamor GB and Galudra G. 2008. National Policy Dialogue on Environmental Services Supply through Regulation, Voluntary Agreements and Markets. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Swallow BM and van Noordwijk M. 2008. Restoring the Functions of Watersheds: Agroforestry Systems that are intermediate between natural forests and intensive foodcrop agriculture can restore most if not all watershed functions attributed to natural forests. [Leaflet].Nairobi, Kenya. : ASB Partnership for the Tropical Forest Margins.
- van Noordwijk M and Bruijnzeel S. 2008. Deforestation & the Multiple Functions of Tropical Watersheds: Are tropical forests indispensable for regulating rainfall and ensuring clean and reliable water supplies?. [Leaflet].Nairobi, Kenya. : ASB Partnership for the Tropical Forest Margins.
- Galudra G. 2008. Rapis Land Tenure Assessment (RaTA): A tool for identifying the nature of land tenure conflicts. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Nurhariyanto, Prasetyo PN, Jihad , Joshi L and Martini E. 2008. Quick biodiversity survey quick biodiversity survey (QBS) guideline: for rapid agro-biodiversity appraisal (RABA). [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Joshi L and Martini E. 2008. Rapid agro-biodiversity appraisal (RABA): in the context of Environmental Services Rewards. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.
- Budidarsono S and Kurniawan I. 2008. Rapid market appraisal (RMA): understanding market opportunity for market-oriented smallholder agroforestry systems. [Leaflet].Bogor, Indonesia. : World Agroforestry Centre - ICRAF, SEA Regional Office.

WORKING PAPERS IN THIS SERIES

2005

1. Agroforestry in the drylands of eastern Africa: a call to action
2. Biodiversity conservation through agroforestry: managing tree species diversity within a network of community-based, nongovernmental, governmental and research organizations in western Kenya.
3. Invasion of *prosopis juliflora* and local livelihoods: Case study from the Lake Baringo area of Kenya
4. Leadership for change in farmers organizations: Training report: Ridar Hotel, Kampala, 29th March to 2nd April 2005.
5. Domestication des espèces agroforestières au Sahel : situation actuelle et perspectives
6. Relevé des données de biodiversité ligneuse: Manuel du projet biodiversité des parcs agroforestiers au Sahel
7. Improved land management in the Lake Victoria Basin: TransVic Project's draft report.
8. Livelihood capital, strategies and outcomes in the Taita hills of Kenya
9. Les espèces ligneuses et leurs usages: Les préférences des paysans dans le Cercle de Ségou, au Mali
10. La biodiversité des espèces ligneuses: Diversité arborée et unités de gestion du terroir dans le Cercle de Ségou, au Mali

2006

11. Bird diversity and land use on the slopes of Mt. Kilimanjaro and the adjacent plains, Tanzania
12. Water, women and local social organization in the Western Kenya Highlands
13. Highlights of ongoing research of the World Agroforestry Centre in Indonesia
14. Prospects of adoption of tree-based systems in a rural landscape and its likely impacts on carbon stocks and farmers' welfare: The FALLOW Model Application in Muara Sungkai, Lampung, Sumatra, in a 'Clean Development Mechanism' context
15. Equipping integrated natural resource managers for healthy agroforestry landscapes.
16. Are they competing or compensating on farm? Status of indigenous and exotic tree species in a wide range of agro-ecological zones of Eastern and Central Kenya, surrounding Mt. Kenya.
17. Agro-biodiversity and CGIAR tree and forest science: approaches and examples from Sumatra.
18. Improving land management in eastern and southern Africa: A review of policies.
19. Farm and household economic study of Kecamatan Nanggung, Kabupaten Bogor, Indonesia: A socio-economic base line study of agroforestry innovations and livelihood enhancement.
20. Lessons from eastern Africa's unsustainable charcoal business.
21. Evolution of RELMA's approaches to land management: Lessons from two decades of research and development in eastern and southern Africa
22. Participatory watershed management: Lessons from RELMA's work with farmers in eastern Africa.
23. Strengthening farmers' organizations: The experience of RELMA and ULAMP.
24. Promoting rainwater harvesting in eastern and southern Africa.
25. The role of livestock in integrated land management.
26. Status of carbon sequestration projects in Africa: Potential benefits and challenges to scaling up.
27. Social and Environmental Trade-Offs in Tree Species Selection: A Methodology for Identifying Niche Incompatibilities in Agroforestry [*Appears as AHI Working Paper no. 9*]

28. Managing tradeoffs in agroforestry: From conflict to collaboration in natural resource management. [*Appears as AHI Working Paper no. 10*]
29. Essai d'analyse de la prise en compte des systemes agroforestiers pa les legislations forestieres au Sahel: Cas du Burkina Faso, du Mali, du Niger et du Senegal.
30. Etat de la recherche agroforestière au Rwanda etude bibliographique, période 1987-2003

2007

31. Science and technological innovations for improving soil fertility and management in Africa: A report for NEPAD's Science and Technology Forum.
32. Compensation and rewards for environmental services.
33. Latin American regional workshop report compensation.
34. Asia regional workshop on compensation ecosystem services.
35. Report of African regional workshop on compensation ecosystem services.
36. Exploring the inter-linkages among and between compensation and rewards for ecosystem services CRES and human well-being
37. Criteria and indicators for environmental service compensation and reward mechanisms: realistic, voluntary, conditional and pro-poor
38. The conditions for effective mechanisms of compensation and rewards for environmental services.
39. Organization and governance for fostering Pro-Poor Compensation for Environmental Services.
40. How important are different types of compensation and reward mechanisms shaping poverty and ecosystem services across Africa, Asia & Latin America over the Next two decades?
41. Risk mitigation in contract farming: The case of poultry, cotton, woodfuel and cereals in East Africa.
42. The RELMA savings and credit experiences: Sowing the seed of sustainability
43. Yatich J., Policy and institutional context for NRM in Kenya: Challenges and opportunities for Landcare.
44. Nina-Nina Adoung Nasional di So! Field test of rapid land tenure assessment (RATA) in the Batang Toru Watershed, North Sumatera.
45. Is Hutan Tanaman Rakyat a new paradigm in community based tree planting in Indonesia?
46. Socio-Economic aspects of brackish water aquaculture (*Tambak*) production in Nanggroe Aceh Darrusalam.
47. Farmer livelihoods in the humid forest and moist savannah zones of Cameroon.
48. Domestication, genre et vulnérabilité : Participation des femmes, des Jeunes et des catégories les plus pauvres à la domestication des arbres agroforestiers au Cameroun.
49. Land tenure and management in the districts around Mt Elgon: An assessment presented to the Mt Elgon ecosystem conservation programme.
50. The production and marketing of leaf meal from fodder shrubs in Tanga, Tanzania: A pro-poor enterprise for improving livestock productivity.
51. Buyers Perspective on Environmental Services (ES) and Commoditization as an approach to liberate ES markets in the Philippines.
52. Towards Towards community-driven conservation in southwest China: Reconciling state and local perceptions.
53. Biofuels in China: An Analysis of the Opportunities and Challenges of *Jatropha curcas* in Southwest China.
54. *Jatropha curcas* biodiesel production in Kenya: Economics and potential value chain development for smallholder farmers
55. Livelihoods and Forest Resources in Aceh and Nias for a Sustainable Forest Resource Management and Economic Progress.

56. Agroforestry on the interface of Orangutan Conservation and Sustainable Livelihoods in Batang Toru, North Sumatra.

2008

57. Assessing Hydrological Situation of Kapuas Hulu Basin, Kapuas Hulu Regency, West Kalimantan.
58. Assessing the Hydrological Situation of Talau Watershed, Belu Regency, East Nusa Tenggara.
59. Kajian Kondisi Hidrologis DAS Talau, Kabupaten Belu, Nusa Tenggara Timur.
60. Kajian Kondisi Hidrologis DAS Kapuas Hulu, Kabupaten Kapuas Hulu, Kalimantan Barat.
61. Lessons learned from community capacity building activities to support agroforest as sustainable economic alternatives in Batang Toru orang utan habitat conservation program (Martini, Endri et al.)
62. Mainstreaming Climate Change in the Philippines.
63. A Conjoint Analysis of Farmer Preferences for Community Forestry Contracts in the Sumber Jaya Watershed, Indonesia.
64. The Highlands: A shared water tower in a changing climate and changing Asia.
65. Eco-Certification: Can It Deliver Conservation and Development in the Tropics?
66. Designing ecological and biodiversity sampling strategies..
67. Towards mainstreaming climate change in grassland management policies and practices on the Tibetan Plateau - Andreas Wilkes
68. An Assessment of the Potential for Carbon Finance in Rangelands” by Timm Tennigkeit and Andreas Wilkes
69. Trade-offs Among Ecosystem Services in the Lake Victoria Basin.
70. Le business plan d’une petite entreprise rurale de production et de commercialisation des plants des arbres locaux. Cas de quatre pépinières rurales au Cameroun - R. Kana, H. Tabuna, A. Degrande et Z. Tchoundjeu..
71. Les unités de transformation des produits forestiers non ligneux alimentaires au Cameroun. Diagnostic technique et stratégie de développement Honoré Tabuna et Ingratia Kayitavu.
72. Les exportateurs camerounais de safou (*Dacryodes edulis*) sur le marché sous régional et international. Profil, fonctionnement et stratégies de développement.
73. Impact of the Southeast Asian Network for Agroforestry Education (SEANAPE) on agroforestry education capacity.
76. Study on economical viability of *Jatropha curcas* L. plantations in Northern Tanzania Assessing farmers’ prospects via cost-benefit analysis - Jan Nepomuk Wahl, Henning Baur, Aichi Kitali and Miyuki Iiyama.

Who we are

The World Agroforestry Centre is the international leader in the science and practice of integrating 'working trees' on small farms and in rural landscapes. We have invigorated the ancient practice of growing trees on farms, using innovative science for development to transform lives and landscapes.

Our vision

Our Vision is an 'Agroforestry Transformation' in the developing world resulting in a massive increase in the use of working trees on working landscapes by smallholder rural households that helps ensure security in food, nutrition, income, health, shelter and energy and a regenerated environment.

Our mission

Our mission is to advance the science and practice of agroforestry to help realize an 'Agroforestry Transformation' throughout the developing world.



A Future Harvest Centre supported by the CGIAR



United Nations Avenue, Gigiri - PO Box 30677 - 00100 Nairobi, Kenya
Tel: +254 20 7224000 or via USA +1 650 833 6645
Fax: +254 20 7224001 or via USA +1 650 833 6646
Southeast Asia Regional Programme - Sindang Barang, Bogor 16680
PO Box 161 Bogor 16001, Indonesia
Tel: +62 251 625 415 - Fax: +62 251 625 416
www.worldagroforestry.org