Directorate General of Forest Utilization Ministry of forestry Republic of Indonesia

The Project

for

Facilitating Development of Wood Industry in Small Diameter Log Processing In

Indonesia

Final Report

June 2014

Japan International cooperation Agency (JICA) Japan Overseas forestry consultants Association (JOFCA)

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The Project for Facilitating Development of Wood Industry in Small Diameter Log Processing in Indonesia

Final Report

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Abbreviation and Acronyms

BPPHP	Bina Pengelolaan dan Pemasaran Hasil Hutan Provinsi								
BUK	Bina Usaha Kehutanan								
FAKO	Faktur Angkutan Kayu Olahan								
FAO	ood and Agriculture Orrganization								
FRA	Global Forest Resources Assessment								
Gerhan									
GMWT	Girimukti wanatirta								
GPS	Global Positioning System								
ITTO	Internatonal Tropical Timber Organization								
IUIPHHK	Izin Usaha Pemanfaatan Hasil Hutan Kayu								
Kab	Kabpaten								
Kec	Kecamatan								
KWML	Wana Manunggal Lestari Coopreative								
MFP	Multi-Steakholder Forestry Programme								
SVLK	Standar Vekifikasi Legalitas Kayu								
YKWS	Yayasan Konservasi Way Seputih								





Location of project sites

1. Background of the project

Indonesia is the largest island nation in the world, comprising more than 17,000 islands. The main islands include Kalimantan (Borneo), Sumatra, New Guinea (Irian Jaya), Sulawesi, and Java. New Guinea, which borders with Papua New Guinea, and Kalimantan, which shares a national border with Malaysia, are the world's second and third largest islands, respectively. Sumatra is the sixth largest. Indonesia boasts the largest area of tropical forest in Asia. Accounting for about 10% of the world's tropical forest, the country ranks the third, following Brazil and the Republic of Congo. Indonesia has an area of some 190 million ha, about five times larger than the area of Japan. Its total forest area stands at around 115 million ha, according to the Global Forest Resources Assessment 2010 (FRA 2010) by the UN Food and Agriculture Organization (FAO). This represents a significant decline from the estimated area of some 162 million ha in 1950. It is estimated that Indonesia lost a total of 9.35 million ha over a period of five years between 2000 and 2005 alone, or an average of 1.87 million ha a year. This represents the largest decline in Asia, or the second largest in the world following Brazil. The deforestation is attributed to forest exploitation--especially timber production--that was accelerated in the early 1970s. Indonesia has exported tropical forest products such as timber, plywood, pulp, and paper to Japan and other countries. The period between 1980s and 1990s saw a marked degradation of forest. A growth of the plywood, and pulp and paper industries resulted in the extensive practice of so-called "illegal logging"--including logging in unauthorized land and timber trespass by those without a logging concession--in addition to legal logging as a means of procuring raw materials. Many tropical forests have also been cleared for the development of large-scale plantations for oil palms, the raw material for palm oil; Indonesia is the second largest producer of the product in the world. The deforestation was accelerated by a rash of large forest fires resulting from burning for practicing shifting cultivation or managing oil palm plantations on logged land. For example, disastrous fires that broke out in Sumatra, Kalimantan and other islands between 1997 and 1998 are said to have destroyed about 810,000 ha of forest land, according to government estimates. Others estimate higher.

The Indonesia government did not stand idly by. In 2003, it launched a national reforestation campaign to rehabilitate denuded forests and land. Formally known as GN-RHL/GERHAN or National Movement in Forest and Land Rehabilitation, this campaign is designed to involve and encourage the general public at large and provide opportunities for citizens and communities to rehabilitate denuded forests on their own. In addition, the Ministry of Forestry of Indonesia is moving ahead with five priority policies it has formulated: (1) combating illegal logging and illegal timber trade; (2) revitalizing the forestry sector, especially the forest industry; (3) rehabilitating and conserving forest resources (GERHAN falls under this category); (4) economically empowering people in and around forest areas; and (5) promoting and strengthening sustainable forest management. These policies provide more opportunities for local communities to participate in community forestry or social forestry; expectations are high for forestry to provide a valuable source of income for communities in poverty areas. In reality, however, local people are unlikely to profit from forestry; in many cases, they are unable to understand the value of sustainable forest management and do not find it attractive for them. For one thing, most felled trees are usually delivered from logging companies with a logging concession directly to large processing plants for forest products. Local communities do not have a stake in sawmills, for another. For yet another, it will take too much time for trees planted in the above-mentioned reforestation campaign to grow in the eyes of many local people.

These circumstances have promoted the Ministry of Forestry of Indonesia to ask Japan for this technical cooperation, formally known as the Project for Facilitating Development of Wood Industry in Small Diameter Log Processing (here in after "the project"). Its purpose is to introduce a system and establish a model for small-diameter log processing, which is expected to provide more opportunities for communities to generate income. The Japan International Cooperation Agency (JICA), based on the preparatory study it conducted in February 2008, consulted with the Ministry of Forestry of Indonesia on such matters as the project's basic plan, components, and implementation structure. Both sides then signed and exchanged the Minutes of Meeting (M/M) that specified the two-year cooperation period: from August 2008 to July 2010. The Economic Partnership Agreement (EPA) between Japan and Indonesia, signed in 2007, listed this particular project among others as ODA projects it endorsed. The cooperation period terminated, however, without being able to start substantial activity due in large part to the difficulty recurring Japanese experts. The two sides met again to discuss extending the cooperation period. In November 2011, they reached an agreement, signing and exchanging a revised M/M that specified a new cooperation period of 18 months starting the dispatch of Japanese experts to Indonesia.

2. Purpose of the project

The project is designed to help improve the livelihood of local communities by making good use of small-diameter logs with a view to achieving the goal of contributing to the local economy and reducing deforestation and forest degradation. Specifically, the project includes researching, studying, and recommending business models for the kinds of wood processing that are highly beneficial to local communities with the main focus on small-diameter logs, as well as providing relevant information to local communities and companies. The following table 2.1 shows the objectives, expected outputs and other information of the project for which this operation is designed.

	Table 2.1 Outline of the project
【Project name】	Official name: The Project for Facilitating Development of Wood Industry in Small Diameter Logs Processing in Indonesia We call the project: "JICA SDL processing promotion project in Lampung"
【Overall goal】	Small Diameter Logs Processing contributes development of local economic situation, and reducing impact of illegal logging from natural forest.
[Project objective]	Model of local community based Small Diameter Logs Processing is established through the SVLK promotion. Provincial government starts establishment of policy and regulation for SVLK promotion to individual farmers and farmers group.
【Duration of the project】	From September of 2012 to June of 2014
【Project staff】	 [Japanese side] Hajime NAGANAWA, Expert of Wood processing and wood marketing Takaki TOYODA Expert of Forest management [Indonesian side] Gristam Medy Putra, Dinas Kehutantan di Lampung Yolanda Anestatica, Dinas Kehutanan di Lampung
【Local facilitator】	 • Muhammad SIDIK, Yayasan Konsuluvasi Way Sabuti • Bainah Sari Wicaksono, University of Lampung • Rini Pahlawanti, NGO WATALA
【Target farmers groups】	 Girimukuti Wanatirta, Lampung Tengah Makumur, Lampung Timur

The following outlines the model for the activity cycle concerning the supply of resources from manmade forests in the region and the use of those resources, which will be brought about via the implementation of project activities.

Fig. 2.1 Activities relation model that is the target of the project

3. Project Outcomes

Fig.3.1 Process of the project implementation

Figure 3.1 shows the project implementation process. The project commenced in October 2012 and the following activities have been conducted to date.

- (i) Analysis of the current status of forests, forestry, and the wood products industry in Lampung Province
- (ii) Decision on activities concerning small-diameter log processing
- (iii) Selection of two project activity sites
- (iv) Study tour
- (v) Training for the purpose of technology transfer
- (vi) Workshop for promotion of SVLK
- (vii) Activity for SVLK license application in 2 project sites
- (viii) Activities of marketing approach
- (iv) Implementation of counterpart training visit to Japan
- (x) Final workshop

For (i), the analysis of the current status of forests, forestry, and the wood products industry in Lampung Province, the task of gathering information was outsourced to another body. The outsourced task was carried out between February and May 2013, and a report was then prepared and submitted to the project team.

Regarding (ii), the decision on activities concerning small-diameter log processing, discussions were held with the Directorate General of Forestry Business Development at the Ministry of Forestry of Indonesia, BP2HP, which is the local agency of the Directorate General of Forestry Business Development in Lampung Province, and the Lampung Province Forestry Bureau. As a result of these discussions, it was agreed that the main focus of activities as part of this project should be efforts to promote the widespread use of the Timber Legality Assurance System (SVLK), an initiative put in place by the Government of Indonesia, in order to develop a mechanism that will enable local citizens to maintain small-scale timber processing as a sustainable business.

With regard to (iii), the selection of two project activity sites, the Directorate General of Forestry Business Development at the Ministry of Forestry made two requests: that two project sites be established, and that one of these should be GMWT, which has already obtained an SVLK license for conducting forestry management, so that the project could provide support for GMWT's efforts to obtain an SVLK license for its timber processing (CoC) activities. Accordingly, the GMWT farmers' cooperative, which is active in central Lampung, was selected as one of the project sites; following discussion with the Lampung Province Forestry Bureau and BP2HP, the MAKMUR farmers' cooperative, which is active in eastern Lampung, was selected as the other project site. During the process of selecting these two cooperatives, the Japanese experts and staff from the C/P, the Lampung Province Forestry Bureau, visited the areas concerned in January and February 2013 to interview representatives of the cooperatives for the purpose of a survey and to inspect the sites concerned before making their final decision.

Regarding (iv), the study tour took place over four days, on June 5-8, 2013, with participants viewing community forests in Gunung Kidul in Yogyakarta Special Region and on the outskirts of Yogyakarta City, as well as small-scale timber processing facilities, a distribution system targeting sole traders and small timber processing companies, and Gadjah Mada University. Further details are provided in "5. Activity Schedule".

With regard to (v), the training for the purpose of technology transfer took the form of a two-week course starting in mid-June 2013 for members of GMWT and MAKMUR, the two farmers' cooperatives at the project sites. This course covered five areas: (1) sapling cultivation; (2) planting; (3) cultivation; (4) felling; and (5) timber processing. The training for the purpose of technology transfer was carried out by Hajime Naganawa, one of the experts involved in the project. Further details are provided in "5. Activity Schedule".

Regarding (vi), the workshop aimed at educating people about SVLK and ensuring its widespread use was held over two days, on September 1 and 2, 2013, in the Arinas Hotel in Bandar Lampung, the capital of Lampung Province. Participants in this workshop included the Directorate General of Forestry Business Development at the Ministry of Forestry, the Lampung Province Forestry Bureau, BP2HP, and Sucofindo, one of the SVLK accreditation bodies. Further details are provided in "5. Activity Schedule".

Regarding (vii), the activities aimed at obtaining an SVLK license at both project sites, both project sites had expressed a desire to engage in such activities when the workshop aimed at educating people about SVLK and ensuring its widespread use described in (vi) above was held, so it was decided that the project team would provide support for such activities. These activities began in September 2013 and one of the project sites, MAKMUR in East Lampung Regency, obtained an SVLK license for forest management in March 2014, while the other project site, Girimukti Wanatirta (GMWT) in Central Lampung Regency, obtained an SVLK license for timber processing in May 2014. Further details are provided in "5. Activity Schedule".

With regard to (viii), activities involving a marketing approach, such as holding exhibitions and participating in trade fairs, the project team explored how to bring to market the wood products that both of the farmers' cooperatives that were supported by the project had begun to produce. They held an exhibition to sell products at the University of Lampung and at the Lampung Province Forestry Bureau, and had both cooperatives participate in IndoGreen, a forestry expo attracting companies from across the country. Further details are provided in "5. Activity Schedule".

Regarding (ix), holding a training course in Japan for counterpart organizations, a 12-day course was held from April 15 to 26, 2014 for representatives of the Ministry of Forestry of Indonesia and Lampung Province Forestry Bureau who are involved in the project. Further details are provided in "5. Activity Schedule".

Regarding (x), the final workshop was held over two days, on May 20 and 21, 2014, in the Arinas Hotel in Bandar Lampung, the capital of Lampung Province. As was the case at the SVLK Education and Dissemination Workshop, participants in this workshop included the Directorate General of Forestry Business Development at the Ministry of Forestry, the Lampung Province Forestry Bureau, BP2HP, and Sucofindo, one of the SVLK accreditation bodies. In addition, representatives of the two farmers' cooperatives gave presentations explaining the project activities, along with local coordinators involved in supporting those activities. Moreover, 16 farmers' cooperatives in Lampung Province that are planning to obtain SVLK licenses in future also attended. Further details are provided in "5. Activity Schedule".

Above 10 activities are related with expected output by the project activities as follows.

1) Trends in the industry and market in the model areas will be analyzed

 \Rightarrow (i) Analysis of the current status of forests, forestry, and the wood products industry in

Lampung Province

- (iv) Study tour
- (viii) Activities involving a marketing approach, such as holding exhibitions and participating in trade fairs

2) A strategy for small-diameter log processing and its marketing will be formulated

- \Rightarrow (i) Analysis of the current status of forests, forestry, and the wood products industry in Lampung Province
 - (v) Training for the purpose of technology transfer
 - (vii) Activities aimed at obtaining an SVLK license at both project sites
 - (viii) Activities involving a marketing approach, such as holding exhibitions and participating in trade fairs

3) Public sector ability to implement the strategy will be improved

- \Rightarrow (ii) Decision on activities concerning small-diameter log processing
 - (iii) Selection of two project activity sites
 - (iv) Study tour
 - (v) Training for the purpose of technology transfer
 - (vi) Workshop aimed at educating people about SVLK and ensuring its widespread use
 - (vii) Activities aimed at obtaining an SVLK license at both project sites
 - (viii) Activities involving a marketing approach, such as holding exhibitions and participating in trade fairs
 - (ix) Holding a training course in Japan for counterpart organizations
 - (x) Final workshop

4) Organizations that can run the small-diameter log processing industry will be created

- \Rightarrow (iv) Study tour
 - (v) Training for the purpose of technology transfer
 - (vii) Activities aimed at obtaining an SVLK license at both project sites

5) A model for the small-diameter log processing industry will be built

- \Rightarrow (iv) Study tour
 - (v) Training for the purpose of technology transfer
 - (vii) Activities aimed at obtaining an SVLK license at both project sites
 - (x) Final workshop

The respective anticipated outcomes of the project are guaranteed by each of the activities indicated by the arrow below each outcome.

4. Background to the Change in Scope of work

4-1 Change of Project Site

When discussions with the Directorate General of Forestry Business Development at the Ministry of Forestry of Indonesia concerning the inception report took place in October 2012, a request was made that the sites selected as the focus of activities in this project targeting timber processors and small-diameter log producers should be (i) a site that had already been certified under the system for ensuring the legality of trade in timber that is being promoted by the Ministry of Forestry of Indonesia; and (ii) a site aiming to acquire certification under this system in the future. The Japanese experts had initially envisaged that project activities would focus on a single site, so additional input was required in order to facilitate implementation at

two sites.

However, it was decided that conducting project activities focused on both a site that had already been certified under the system for ensuring the legality of trade in timber that is being promoted by the Ministry of Forestry of Indonesia and a site that is seeking to acquire such certification in future would directly lead to the promotion of small-diameter log processing using the certified timber, so the inclusion of this initiative in the project was judged to be of great necessity. In addition, it was determined that this initiative would serve as a model for new partnerships between the certification system and the small-diameter log processing sector and would be highly effective in promoting the widespread adoption of such certifications.

As a result, both the site that had already been certified under the system for ensuring the legality of trade in timber that is being promoted by the Ministry of Forestry of Indonesia and the site that was seeking to acquire such certification in future were selected to be the focus of project activities, and the contract amendment (first amendment) necessary to change the scope was made in December 2012.

4-2 Addition of Activities Concerning SVLK License Applications and Incidental Activities

In terms of the specific support provided to the farmers' cooperatives at the two project sites in relation to the acquisition of an SVLK license guaranteeing the transparency of the timber processing industry in Indonesia, the original plan under this project was to take into account the progress of the various prior activities by the farmers' cooperatives with a view to obtaining SVLK license, and then to reconsider the pros and cons of supporting those activities during the project term.

As described in "5. Activity Schedule," this project sought to support additional activities by the two farmers' cooperatives (GMWT and MAKMUR) with a view to their obtaining SVLK license, because the two cooperatives had acquired the requisite skills and management ability required for SVLK as a result of ongoing support provided to the two cooperatives by this project for their existing activities aimed at obtaining SVLK license, via such initiatives as a study tour during the first half of the project term, as well as training for the purpose of technology transfer and a workshop aimed at educating people about SVLK and ensuring its widespread use. In addition, both groups demonstrated a strong desire to obtain SVLK license and requested support from the project team in order to enable them to achieve this goal. Moreover, the Directorate General of Forestry Business Development at the Ministry of Forestry of Indonesia, which was a counterpart in this project, requested that the project team conduct activities to support the two cooperatives in their efforts to obtain SVLK license.

Furthermore, it was decided that the acquisition of SVLK licenses by the two farmers' cooperatives under this project would make it possible to clarify the activity process to date and the costs involved in those activities, thereby promoting understanding of SVLK among other farmers' cooperatives in Lampung Province and serving as a good model for other similar initiatives to follow.

Accordingly, the matter was discussed with JICA Headquarters and the JICA Indonesia Office and a decision was taken to amend the contract (second amendment; due to be made in November 2013) to change the scope. The specific additional activities to be conducted are as follows: (i) technical support for GMWT in obtaining an SVLK license for timber processing (CoC certification) and for MAKMUR in obtaining an SVLK license for forest management; (ii) covering the cost of SVLK inspection and registration; (iii) providing GMWT that process timber with small-scale timber processing machinery; and (iv) providing safety guidance concerning the operation of timber processing machinery.

5. Activity Schedule

Table 5.1 shows schedule of project activity. Detail of project activities are mentioned after 5-1.

	Duration	tion Plan/		lan/ 2012 2013															201/	4				
fork Items		Result	9	10	11	12	1	ź	3	4	5	6	7	8	9	10	11	12	1	ź	3	4	5	Ť
lhro	ugh the all period																							1
[1]	Improvement for the scoop of the project	Plan	-																					1
		Result	-																				- ·	
rep	aration work in Japan	Dies	п																			-		t
[2]	Collection and analysis of relevant information	Popula			-	-														-		-	-	+
		Diam																					-	+
[3]	Investigation of basic plan, contents, implementation method for the project	Rogult																						┼
		Plan		-																		-	-	+
[4]	Preparation for inception report	Pagul+																						t
ire	t phase of field work			-				-														-		+
		Plan		8																			_	t
[5]	Examplation for inception report	Regult			-	-	-									-				-		-		t
	Information anthonian for format formation and	Plan		-																				+
[6]	wood industry of project area and ather area in Indonesia	Result		62222																				t
		Plan																						t
7]	Information gathering for law and regulation of forest, forestry and wood industry	Regult		6555																				t
		Plan		-				1																$^{+}$
[8]	[] establishment for relation model beween small wood log processing and local residents							3																t
		Plan									_	-												t
[9]	Investigation for sustainability of relation model	Result																						t
		Plan																						t
10]	Complling of existing examples of wood industries in Lampung province	Result																			1			t
	Support activity for small wood log processing -	Plan																						t
11]	Selection of project site for relation model between industry and local residents-	Result																						t
	Support activity for small wood log processing-	Plan																						t
12]	Conducting small workshop for wood industry and local residents-	Result																						t
	Support activity for small wood log processing -	Plan																						t
13]	Structuring of wood industry group and local residents group-	Result																						t
	Support activity for small wood log processing -	Plan																						t
14]	Instruction of forestry management for local residents-	Result																						t
	Support activity for small wood log processing -	Plan																						t
15]	Procurement of small wood processing equipment for local wood industry-	Result																						t
	Support activity for small wood log processing -	Plan																						t
18]	Technical transfer of small wood log processing for local wood industry-	Result																						t
		Plan	B																					t
	7] Technical support and relationship with public sector through the project implementation																							-d-1

Table 5.1 shows schedule of project activity

Duration	Plan/	an/ 2012									2013											2014			
Work Items		9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6		
First phase of domestic work in Japan																									
fiel Result compilation of first phase of project	Plan										٥														
activity, Supplemental information gathering	Result																								
Invetigation for relation model between small [10] wood industry and local residents, Interview to	Plan																								
Japanese export for establishment of relation model	Result																								
Investigation for supporting activity of wood	Plan																								
supporting activity of wood processing	Result														0										
[0]] D	Plan																								
(21) Freparing progress report	Result														\bigtriangleup										
Second phase of field work																									
Support activity for small wood log processing -	Plan																								
residents- (Continuation)	Result																								
(Support activity for small wood log processing	Plan																								
for local wood industry- (Continuation)	Result																								
[24] Investigation for introducing raveling system	Plan																								
	Result																								
[25] Activity for SVLK Licence	Plan																								
	Result																								
Investigation for procedure of cooperativve [28] registration for local residents	Plan																								
group(production of wood material) and small wood industry group	Result																								
[27] Instlatoin of wood processing machine and	Plan																								
instruction of operation	Result																								
Establishment of relation model between local [28] regidents group and small wood industry in	Plan																								
project site	Result																								
[28] Conductiong workshop	Plan																								
	Result																								
After returning to organize report																									
[30] Preparation of final report	Plan																				Δ				
	Result																						Δ		
Legend:Prior work period Field work		Donest	tic wo	rk			△-△	Expla	nation	n such	as re	ports				Other	work								

5-1 The Three Subcontracted Tasks

Three surveys were required as part of this project, in order to investigate the current status of forests, forestry, and the forest product industry in Lampung Province, the status of legislation concerning forests, forestry, and the forest product industry in the province, and suitable examples of timber use and the timber processing industry. These three surveys were subcontracted locally, as outlined below.

1. Survey for basic information on forest and forestry

Purpose: To conduct a basic survey and gather information, including basic information, such as the status of forests and forestry in Lampung Province, forms of forest ownership, and the status of timber use and the timber processing industry, as well as information concerning wasteland that could be converted to forest.

Subcontractor: Department of Forestry, Lampung University

Subcontracted survey period: February - May 2013

Output: Report detailing the results of a survey of 140 individual farmers

involved in afforestation in Lampung Province, 62 farmers' cooperatives, 31 business establishments involved in various forms of timber processing, and all of the local forestry offices in Lampung Province (12 offices).

- 2. Survey for laws and regulations regarding forest, forestry and wood industry in Lampung Province
 - Purpose: To conduct a survey of Indonesian government legislation concerning afforestation, felling, and sale of timber by local citizens, and concerning the timber processing industry, as well as any relevant regulations enacted by the government of Lampung Province.

Subcontractor: Mr. Djoko Supomo (individual, former Directorate General of Forests staff member at the Ministry of Forestry of Indonesia)

Subcontracted survey period: March - November 2013

- Output: (1) Report describing the results of efforts to gather information concerning legislation governing forests, forestry, and the timber industry
 - (2) Preparation of a manual for small-scale community-level farmers' cooperatives to obtain standards and license under the system for ensuring the legality of trade in timber (SVLK) in Indonesia
 - (3) Preparation of a manual for small-scale timber processing businesses to obtain standards and license under the system for ensuring the legality of trade in timber (SVLK) in Indonesia
- 3. Survey of collection of good examples regarding small scale wood industry using small scale diameter log in Lampung and other provinces
 - Purpose: To gather details of existing examples of collaboration between local citizens and the timber processing industry, and consider models that could assist in improving the welfare of local citizens. Moreover, to conduct a survey of examples in other provinces such as on Java island, if necessary.

Subcontractor: Department of Forestry, Lampung University and NGO WATALA Subcontracted survey period: August - November 2013

Output: Collection of suitable examples of the use of small-diameter logs in the small-scale timber processing industry in Lampung Province and Central Java

5-2 Study Tour

(1) Objectives

The two project sites were determined, following discussions with the Ministry of Forestry's Directorate General of Forestry Business Development, BP2HP, and the Lampung Province Forestry Bureau in February 2013, and the farmers' cooperatives to be supported by this project were selected (GMWT and MAKMUR).

The project team firstly planned a study tour, with the goal of giving representatives of the cooperatives an opportunity to view examples of best practice in small-scale, community-based forest management and timber processing. The objectives of the study tour were as follows.

- To gain information about good examples of small-scale timber industry via the study tour.
- To provide participants with an understanding of the abilities required for the development of small-scale timber industry for local citizens.
- To study the potential of local citizens to be involved in small-scale timber industry via the examples viewed during the study tour.
- To study small-scale timber industry marketing methodologies via the examples viewed during the study tour.

(2) Location and date

- Places visited during the study tour: Gunung Kidul and the outskirts of Yogyakarta (mechanisms for the distribution of wood products, and Gadjah Mada University)
- June 5-8, 2013 (4 days)

The detailed schedule for the study tour is shown below.

	1ai	Sie 5.2 Schedule of study tour
Day/Date	Time	Activities
Wed, 5 th June 2013		Arrived in Yogyakarta
		(go to Wanagama)
Thu, 6 th June 2013	08.00 - 09.00	Go to Playen Sub district
	09.00 - 12.00	Discuss
		- Certification of community timber
		- The management of KWML (Wana Manunggal Lestari
		Cooperative)
		- Wood industry
	12.30 - 13.00	Breaking time (lunch, etc)
	13.00 - 15.00	Field visit
		- SAWMILL industry
		- KUBE Asik industry
Fri, 7 th June 2013	08.00 - 09.00	Go to Semanu Sub district
	09.00 - 11.30	Visit and discuss with HKm (Community Forest)
		- The scheme of timber State Forest
		- The planning of logging
		- The carbon of HKm
	11.30 - 12.30	Breaking time (Friday pray, lunch, etc)
	12.30 - 16.00	Visit some small scale wood industry (near Yogyakarta)
Sat, 8 th June 2013	08.00 - 08.30	Go to Gajah Mada University (Lecture from Dr. Awang)*
	08.30 - 12.00	
	12.00	Go to Adisucipto airport (back to Jakarta)

Table 5.2 Schedule of study tour

(3) Participants

The participants in the study tour are shown below.

Name	Affiliation
Pak. Syueb	Girimukti Wanatirta (GMWT)
Pak. Ade Ma'mur	GMWT
Pak. Pramono	GMWT
Pak. Sunarto	MAKMUR
Pak. Abudurahman	MAKMUR
Pak. Syaiful Anuwar	MAKMUR
Pak. Muhammad SIDIK	Yayasan Konservasi Way Seputih
Ibu. Bainah Sari Dewi Wicaksono	University of Lampung
Ibu. Rini Pahlawanti	NGO WATALA
Pak. Grisman Medy Putra	Lampung Province Forestry Bureau
Ibu. Yolanda Anestatica	Lampung Province Forestry Bureau
Pak. Edy Sutrisno	JICA Indonesia Office
Yuki Arai	JICA Indonesia Office
Hajime Naganawa	Project Expert
Takaki Toyoda	Project Expert

- (4) Content of the study tour
- (i) Viewing of activities at KWML (Wana Manunggal Lestari Cooperative)

During the study tour, participants firstly viewed the activities of KWML, a farmers' cooperative in Playen subdistrict. KWML's leader Pak. Exwan explained the history of KWML, its current activities, the tasks that it carried out in order to obtain SVLK license, and the goals that KWML is aiming to achieve in the future. Next, there was a discussion with participants in the study tour and they discussed specific approaches to obtaining an SVLK license.

After a briefing at the KWML office, participants went to the small-scale saw mill and timber processing plant run by KWML, where they saw logs being sawed and timber being processed.

(ii) Viewing of the system for use of the state-owned forest (HKM) by farmers on the outskirts of Gunung Kidul

Next, project participants went to view the system for the use of the state-owned forest (HKM) by farmers in Paliyan subdistrict, on the outskirts of Gunung Kidul. This is where the Sedyo Lestari Cooperative plans the use of the state-owned forest under the HKM system. After a briefing on the cooperative's activities at the Sedyo Lestari office, representatives of the cooperative answered questions from participants in the study tour, concerning its activities. Following this, participants viewed the small-scale timber processing plant that uses the timber

produced under the HKM system and the forest managed under that system.

(iii) Viewing of the wood product distribution system in the city of Yogyakarta

The members of the study tour group then moved from Gunung Kidul to the city of Yogyakarta, where they went to see a wood product distribution system in the city. This distribution system has been set up by a group called Yayasan Apikri, which has formed a network with individuals and small businesses producing craft products; the group has set up a system that uses the internet to showcase the items manufactured by these individuals and businesses, and sell the products to buyers across the globe. Among the craft products that it offers are many items made of wood. This group was originally set up to provide financial support for citizens affected by the eruption of the volcano Mount Merapi, on the outskirts of Yogyakarta, so if people do not have the skills to produce craft products, the group arranges technology transfer for the manufacture of the craft product in question and have them manufacture the item so that the farmers' cooperatives from the project sites would also be able to receive technical support in the manufacture of wood products. As a result, study tour participants asked the Yayasan Apikri representative many enthusiastic questions.

(iv) Lecture at Gadjah Mada University

For the final part of the study tour, participants visited Gadjah Mada University in the city of Yogyakarta, to attend a lecture by Dr. San Afri Awang of the university's social forestry department. Professor Awang introduced the community forestry initiative being conducted at Gadjah Mada University's Wanagama Forest and surrounding area in Gunung Kidul, and went on to talk about community forest activities in Lampung Province and the potential to use the small-diameter logs produced from the forests there to develop small-scale community-based timber processing industry. After the lecture, there was an open-ended discussion in which the study tour participants readily asked questions and offered remarks concerning the potential for the use of small-diameter logs, among other matters.

(5) Presentation of the outcomes of the study tour

Following the end of the study tour, a workshop was held for each of the cooperatives from the project sites - GMWT and MAKMUR - to allow participants to give presentations about the outcomes of the study tour.

The workshop for members of GMWT took place between 10:30 and 15:00 on July 13, 2013, while the workshop for members of MAKMUR took place the following day, between 10:00 and 15:00. The workshops were held at the offices of GMWT and MAKMUR.

The primary purpose of the workshops was to present the outcomes of the study tour and inform local farmers about them. The presenter at the GMWT workshop was Mr. Pramono, while the presenter at the MAKMUR workshop was Mr. Sunarto, both of whom had participated in the study tour.

At GMWT, 3 people who had participated in the study tour and 20 other members of GMWT took part in the workshop. At MAKMUR, 3 people who had participated in the study tour and 20 local farmers took part in the workshop.

Having himself participated in the study tour, Mr. Naganawa, one of the experts on the project team, attended the workshops at GMWT and MAKMUR to provide indirect guidance.

After the workshop presentations, lively discussions took place at both GMWT and MAKMUR. The general gist of the principal questions asked by farmers at the GMWT workshop was as follows. One of the questions concerned shifting cultivation. This question appears to have been

inspired by the desire to increase productivity via mixed planting with agricultural crops in order to generate a short-term income, as it takes time before trees can be harvested. The second concerned the sawing of wood. It was motivated by the desire to add extra value before selling the timber, as forestry production alone generates only a limited income, in the form of income from raw timber. The third concerned woodworking. This participant also expressed a desire to add further value before selling the timber.

Mr. Widodo from Lampung Province BP2HP took part in the MAKMUR workshop and was present from start to finish. At the MAKMUR workshop as well, local farmers did not hesitate to ask questions. The first of the principal questions concerned shifting cultivation. The second concerned sawing systems. The third related to the establishment of a union.

[6] Management of equipment

The first, concerning shifting cultivation, focused on producing timber while earning an income in the short term, like the question at GMWT. The second appears to have been motivated by the desire that the farmers themselves should saw the wood. Moreover, as was the case at GMWT, the third was a request to conduct sales activities based on increasing value added through the manufacture of products such as tables. Ms. Dewi from the University of Lampung answered each of the questions.

During the training for the purpose of technology transfer, the project team provided both farmers' cooperatives with a great deal of forestry-related equipment and timber processing materials and equipment. In order to ensure that farmers in both GMWT and MAKMUR cooperate systematically and implement projects as a community in the future, it will be imperative to maintain a ledger in which use of the equipment is recorded and ensure that the person in charge takes responsibility for managing the materials and equipment that has been provided to each cooperative. Accordingly, each cooperative received instructions to prepare a ledger for recording details of the loan of materials and equipment, and to make shelves on which to store tools and equipment to keep them tidy and store the equipment on them; in addition, the specific ways of doing so were determined by each cooperative.

5-3 Training for the Purpose of Technology Transfer

This project carried out training for the purpose of technology transfer in the following manner by dividing the project period from May 2013 to June 2014 into three phases.

The goal of the training for the purpose of technology transfer was to aim to smoothly promote procedures for obtaining SVLK certification by having farmers' cooperatives acquire knowledge and skills related to forest management and wood processing.

During the first phase, training for the purpose of technology transfer was carried out in GMWT for five days from June 17 to 21, 2013, and in MAKMUR for five days from June 24 to 28, 2013, respectively. The technology transfer themes for the first phase included technology transfers in the four areas of: (1) Nurseries and raising seedlings; (2) afforestation and tending;

(3) logging, removal, and safety management; and (4) wood processing.

During the second phase, training for the purpose of technology transfer was carried out in GMWT for two days from December 14 to 15, 2013, and in MAKMUR from December 20 to 21, 2013, respectively. The technology transfer themes for the second phase included technology transfers in the four areas of: (1) Forest inventory method basics, (2) basics for site measurements and forest area calculations via GPS, (3) basics for recording information in forest inventory field notebooks and stand records, and (4) wood processing from wood joining through the use of joint cutters.

During the third phase, training for the purpose of technology transfer was carried out in MAKMUR for five days from March 22 to 26, 2014, and in GMWT for four days from March 28 to 31, 2014, respectively. The technology transfer themes for the third phase included technology transfers in the six areas of: (1) Applying forest inventory methods, (2) applying site measurements and forest area measurements via GPS, (3) applying the recording of forest inventory results in stand records, (4) methods for preventing forest fires, (5) lumber drying methods, and (6) woodworking and processing.

(1) Carrying Out the First Phase of the Technology Transfer

After the March 2013 study tour finished, Specialist Naganawa moved to Lampung Province and carried out the first phase of the technology transfers on four themes for farmers' cooperatives in the two local project sites of GMWT and MAKMUR. The four themes of the technology transfers were: (1) Nurseries and raising seedlings; (2) afforestation and tending; (3) logging, removal, and safety management; and (4) wood processing. To put this another way, the goal through the four technology transfers in the first phase was to determine the implementation capabilities of the farmers' cooperatives in the two sites of GMWT and MAKMUR pertaining to wood processing and ascertain the possibility of introducing wood processing machinery through this later on. What is more, based on the results of the workshops with the farmers' cooperatives and the study tour, it examined what sorts of processed wood products could be produced and whether there was a demand for them.

The training for the purpose of technology transfer in GMWT was carried out over five days from June 17 to 21, 2013 from 9:00 AM to 4:00 PM every day in a place called Payung Batu for 20 farmers. In MAKMUR it was carried out over five days from June 24 to 28 from 9:00 AM to 4:00 PM every day in a place called Bunger for 20 farmers.

The contents of the technology transfers were explained in a lecture format through the use of PowerPoint materials in the morning of the first day. Moreover, the contents taught through the lectures were then applied through a method of training onsite starting in the afternoons.

The schedule for the training for the purpose of technology transfer for GMWT is listed below.

	T !	1718		19	20	21	
	Time	(Mon)	(Tue)	(Wed)	(Thu)	Fri	
	9:00-12:00	①Lecture of Nursery ②lecture of Planting & Tending	②Practice of Planting & Tending	③Practice of logging	④Lecture of Wood crafting	④Practice of Wood crafting	
	12:00-13:00			Lunch Break			
	13:00-16:00	③Lecture of logging ①Practice of Nursery	②Practice of Planting & Tending	③Practice of logging	④Practice of Wood crafting	④Practice of Wood crafting	
	Dotoil contian	of to obvio al trav	ofor				
Detail ocation of technical transfer:							
(cture of Nursery		fina at Dayung F			
4		batu					
		of Wood oroffing					
	(4) Lecture	or wood craiting					
	(1)Pra	ctice of Nursery	Г				
2)Practice of Planting & Tending - Payung Ma'mur							
	③Practice of logging						
	④Practice of Wood crafting \rightarrow GMWT office at Payung Batu						

 Table 5.4 schedule for 1st technical transfer training for GMWT

The schedule for the training for the purpose of technology transfer for MAKMUR is listed below.

	Time	24	25	26	27	28
	Time	(Mon)	(Tue)	(Wed)	(Thu)	Fri
	9:00-12:00	①Lecture of Nursery	②Lecture of Planting & Tending	③Lecture of logging	④Lecture of Wood crafting	④Practice of Wood crafting
	12:00-13:00			Lunch Break		
	13:00-16:00	①Practice of Nursery	②Practice of Planting & Tending	③Practice of logging	④Practice of Wood crafting	④Practice of Wood crafting
	Detail ocation of	of technical tran	sfer			
		ture of Nurserv				
Ć	Lecture of Pla					
	3Le	ecture of logging		,		
(4)Lecture of Wood crafting						
	①Prac	ctice of Nursery	ר ר			
2	Practice of Pla	nting & Tending	🗕 🗕 Way Bung	gur (near Makum	ur office)	
③Practice of logging						
④Practice of Wood crafting \rightarrow Makumur office at Way Bungur						

 Table 5.5 schedule for 1st technical transfer training for Makmur

The materials used in the lectures are listed in Attached Materials [1]. Below the items for each of the themes will be explained.

- [1] Nurseries and raising seedlings
- (1) Lectures

Preparations must begin from the stage of raising seedlings in order to produce wood with high added value for wood processing. In other words, it was explained that quality lumber cannot be harvested when you grow forests from low quality seeds, and so this must be grown from carefully chosen, quality seed trees. It was explained that it is therefore essential to produce quality seed trees through cutting and grafting, and that saplings capable of soundly passing down their genes must be grown.

Lectures were given on issues such as: (1) Learning about the original habitats for Acacia Mangum trees and other basic knowledge, combined with the harvesting of seeds from seed trees, installing nurseries, sowing seeds, and managing saplings; (2) cutting techniques; and (3) grafting techniques.

(2) Training

Training was carried out as a carry-over from the lectures. The training began with methods for installing nurseries, with training also conducted on cutting techniques and grafting techniques. The major points of each of the techniques are listed below.

-Cutting techniques

- ① Soft shoots are not suitable for cuttage, and so hardened shoots that will round out their structure by newly growing must be used.
- ⁽²⁾ When creating cuttage, start by cutting the branches to a length of about 10 to 15cm, and if leaves are attached you must either remove some of the leaves or prune about half off the leaves in order to minimize drying.
- ③ The cut ends of the branches are to be cut off with a sharp edged tool.
- ④ Make guide holes in the soil with chopsticks or the like that are about the size of the branch diameter and then plant the tree.
- ⁽⁵⁾ When planting these, you must pack down the surrounding area with your hand until it is hard so that they will not come out even if pulled.
- 6 Give them plenty of water once you have finished planting them.
- \bigcirc Choose clean soil with good drainage and no nutrients for the soil for the cuttage.
- 8 In terms of management for the installation location or container, choose locations with as little dryness as possible that are out of the sunlight.
- Diligently provide them with plenty of water in the morning and evening until they take root.
- ① Cover the nurseries with lots of hoods and coverings to prevent direct sunlight from hitting them.

Afterwards, in order to raise the saplings:

- (1) Gradually begin exposing them to light and wind while keeping an eye on the extent to which they have taken root (determine this based on the state of their leaves and stalks).
- (2) Once their sprouts and roots have developed give them a diluted form of liquid fertilizer. Start by sprinkling this about sparsely.
- (3) Once they have reached the proper size they are to be planted in the wild.

-Grafting techniques

There are a number of different grafting techniques, but the most common method is called cleft grafting. This is a method whereby incisions are made into a rootstock and graft twig, which are then both bound together and wrapped with tape or the like to hold them. This time around the grafting was performed through this method.

The process for grafting is enumerated below.

(1) First prepare the rootstock. When it comes to the trees to be used as rootstocks, for rootstocks grown

from cutting it is common to select trees that had been grown for about one year, while for trees grown from scattering seeds it is common to select two to three year old plant.

- (2) With a good cutting knife, cut the rootstock at a point that is 30cm from its base.
- (3) Make incisions of 3 to 4cm downwards from about the middle of the cut end.
- (4) The position where the incisions are to be made should be cut with a light feel at a point that is slightly removed from the center.
- (5) Next prepare the graft that is going to be grafted.
- (6) For the graft, select a branch that is as sturdy as possible, and avoid branches that have damage to them or that have insects in them.

(7) At first make a cut at a spot about 15cm up the graft. Afterwards, a spot about 10cm up that is a good location will be used for the graft.

(8) Cut about two or three sprouts as if they were one, and shear them down so that the length of the incision is a little bit longer than the length of the incision on the rootstock.

- (9) Stick the graft and the rootstock together.
- (10) Next insert the graft into the incision in the rootstock (the insertion length should be

from between 2 to 3cm).

- (11) When doing this, make sure that the cross-sections of each of the branches overlap exactly, and be sure that the bark sections on both pieces line up precisely without any joining seam (the cambium layer sections must be partially fastened to one another). In other words, so long as the bark sections are perfectly attached so that you cannot tell which cross-section is from which side, then you should not have any problems.
- (12) While holding it down with your hands to ensure there is no misalignment once the pieces are perfectly aligned, firmly wrap them up by winding grafting tape around them. Grafting tape is a vinyl tape that has properties that allow it to extend a small degree when it is pulled on strongly. After winding and wrapping it all the way to the bottom, tie it off.
- (13) After wrapping it with the tape, place a vinyl bag cover over top of the saplings to cover them. Remove the vinyl bag once shoots have sprouted out of the saplings after about one month.
- (14) This completes the grafting.
- [2] Afforestation and tending
- (1) Lectures

In the lectures, it was explained that since forest production requires an extended period of time adequate advance surveys (surveys of natural conditions and surveys of social conditions) must be performed prior to afforestation, on top of which it is also important to keep project records. In addition, it was also explained that since forest improvements require a large budget, it is essential to efficiently carry out work by considering how said work should be done in accordance with the natural conditions so as to be economical. Explanations were also given of how to conscientiously carry out afforestation and tend the trees according to procedures to ensure that the afforested trees would not die out and also so that the trees that are planted will reliably grow into good timber.

The lecture items on afforestation and tending are listed below.

- ① Starting with afforestation and tending to and protecting trees to cooperation over logging and removal and wood processing
- ② Introduction of bad case examples of afforestation in Japan
- ③ Necessity of surveys on natural conditions for afforestation
- ④ Necessity of surveys on social conditions for afforestation
- (5) Necessity of long-term afforestation plans, plans for tending, and protection plans
- 6 Philosophy and necessity of normal forests
- ⑦ The creation and necessity of signboards for afforested land
- 8 Creation and necessity of stand records
- 9 Safe work methods
- ① Specific methods for afforestation (planting by acreage, planting by strips, across the board planting)
- Specific methods for tending (shearing by acreage, shearing by strips, total shearing)

- ① Thinning methods
- I Forest protection measures (wildfires, insect damage)

(2) Training

It is necessary to first begin with site preparation work when carrying out the afforestation of saplings on mountains. For the training, training was carried out on shearing by acreage, shearing by strips, and total shearing. In the training explanations were provided over how this must be carried out while thinking of a wide range of considerations, such as which method to adopt from the standpoint of cutting costs, and not only reducing costs but also the damage from mice.

Moreover, it was explained that the undergrowth must be cut away after afforestation has been carried out to prevent the planted trees from dying out and to prevent the saplings from being covered with weeds later on. Even when the need to do this has gone away, such tasks must be carried out as appropriate to prevent vines from winding themselves around tree trunks.

Moreover, once several years have passed since the saplings are planted they will grow to be about 8m and branches will begin growing out of them. In order to produce quality wood the task of pruning to cut these branches away at their crotch is to be carried out. So for this reason training on pruning was also provided.

Trees for which the tasks of afforestation, weeding, pruning, cleaning cutting and tending have been carried out will continue to grow straight even as they compete against one another. But as they grow favorably the interior of the forest will come to be crowded and tangled. If they are left alone as they are once they have become crowded and tangled then the forest will grow weedy and gangly, and the trees will become vulnerable to insect damage. Therefore, culling work called thinning is carried out in order to improve the environment within forests and ensure that the trees grow in a healthy manner. The idea is to intervene so that the remaining trees grow in a healthy manner, instead of reducing the number of trees that were planted.

Thinning is carried out with the use of saws and chainsaws. Undertaking this thinning improves the biodiversity by means of letting sunlight penetrate to the ground and allowing a variety of grasses and trees to newly spring up, thereby enabling the insects and birds that feed on these to inhabit the forests. What is more, it also allows the roots within the ground to firmly extend out to produce strong forests.

[3] Logging, removal, and safety management

(1) Lectures

Once trees have reached their cutting age they are to be logged and removed. Forest inventories on the trees that have been planted in GMWT and MAKMUR to date have been left up to lumber producers and the like. For this reason it was explained that in the future the farmers would have to carry out their own forest inventories.

Moreover, since logging and cross cutting work both involve risk, explanations were provided on safety measures for the specific approaches when it comes to logging, cross cutting, and removing the timber.

Fig. 5.1 Basic information about logging

(2) Training

For the training, five trees to fell were selected in both GMWT and MAKMUR, and logging and removal work was carried out on these. Since logging is the most dangerous task within forestry work, explanations were given ahead of time on precautions for the work, and the training was performed while explanations were given of the logging procedures. It was explained that in order to work safely safety helmets must be worn, and that workers must write their own name and blood type on their safety helmets to make it

possible to handle emergency situations. It was also explained how before doing the felling the direction for this must be decided upon and safety checks to ensure that no one is in this direction must be carried out. It was also explained that the branches must be removed from the logged trees and they are to be cut to the appropriate length in accordance with how they will be used before being taken out of the woods, while the branches and so forth can be used as firewood or to create small woodworking pieces. As for the method by which they were removed, since there was

[4] Wood processing

(1) Lectures

Since this was the first time that wood was used to manufacture desks and other furniture in both GMWT and MAKMUR, the manufacturing was performed by showing them sample blueprints.

The lecture items on wood processing are listed below.

- ① Wood processing techniques
- 2 The structure of wood
- ③ Transporting wood from the mountains to the sawmill
- ④ Safety work for sawing
- 5 Cutting wood to order
- 6 Sawing preparation
- ⑦ Naturally drying wood
- 8 Polishing wood
- 9 Forest certification

(2) Training

Of the four themes, for wood processing the expert actually brought a sample of the chair that was slated to be manufactured from Japan, so the assembly work for the chairs was carried out by using the same parts as in this chair. For this training, materials that had already been sawed were used to manufacture desks and chairs. But for the future it was proposed that they attempt to practice ways of securing the materials for the chairs to be manufactured by actually selecting appropriate timber to cut down from the afforested land of the farmers' cooperatives, felling them, taking them to the sawmill, and having them sawed. The progress of this series of

wood processing tasks was overseen by Specialist Naganawa to ascertain whether the farmers' cooperatives had the potential to carry out even more advanced work. Based on the results of this he was to examine the possibility of introducing larger scale wood processing machinery that would be needed for subsequent steps.

[5] Results of the technical training

As has been described thus far, the training for the purpose of technology transfer was carried out for GMWT and MAKMUR over two weeks starting from mid-June 2013 on four themes (nurseries and saplings, afforestation and tending, logging and transportation, and wood processing).

At the end of the training, evaluations related to the training were made for the training participants. A look at the evaluation results for the 20 people who took part in the training from GMWT reveals that many of them are full of ambition, saying things like "I understood the comprehensive training for the purpose of technology transfer" and "I would like to use this in my job in the future," and the results suggest an enthusiasm to want to proactively get involved more in the future.

What is more, a look at the evaluation results for the 20 people who took part in the training from MAKMUR reveals that many of the participants surpassed GMWT in their comprehension of the training for the purpose of technology transfer results, with many of them showing an ambition to proactively get involved in not only forestry work, but also woodworking and processing.

Evaluation results concerning the training for the purpose of technology transfer obtained from the participants from GMWT.

Table 5.6 Result of evaluation of 1st technical transfer training for GMWTResult of Training questionnaire(1)

Five evaluation points	5	4	3	2	1		
	Very good	Good	Average	Bad	Very bad		
Contents Evaluation 1 Contents of training	point	:	Reason of eva	luation			
1.Use level	4.7	 The training give some benefit for their (local farmer) daily activity/very useful Giving new knowledge to the local farmer 					
2.Lecture	4.1	Give some be	nefit for the pa	articipant			
3.Material	3.7	Need addition	al equipment.				
4.Textbook	4.1	Text book can	be a guidance	e for the parts	cipants		
5.Time	3.9	-Always on ti -5 days trainin	me ng are not enor	ugh to know	more about the lec	sture and practice.	
6.Place	3.5	The place of t	raining is far	from the part	ticipant's house		

Result of Training questionnaire(2)

	High	Somewhat	Not
1.Were the course contents beneficial/useful to your current job?	50%	50%	0%
2.Were the course contents clear and understandable?	28%	61%	11%

Evaluation results concerning the training for the purpose of technology transfer obtained from the participants from MAKMUR

Table 5.7Result of evaluation of 1st technical transfer training for MakmurResult of Training questionnaire(1)

Five evaluation points	5	4	3	2	1		
	Very good	Good	Average	Bad	Very bad		
Contents Evaluation Contents of training	point		Reason of eva	luation			
1.Use level	5.0	-Very useful for farmer group -Giving some information about nursery, planting & tending, logging and also wood crafting					
2.Lecture	4.7	Can be applie	d by farmer.				
3.Material	4.5	Need addition	al equipment				
4.Textbook	4.0	-Can be under -The explanat	rstood because ion more deta	it has been il is better	translated.		
5.Time	4.1	-On time and -5 days are to	discipline. o short time fo	or the training	7		
6.Place	3.8	The place of t	raining doesn'	t fulfill the s	tandard.		

Result of Training questionnaire(2)

	High	Somewhat	Not
1.Were the course contents beneficial/useful to your current job?	85%	15%	0%
2.Were the course contents clear and understandable?	40%	60%	0%
(2) The Second Phase of the Technology Transfer

The second phase of the training for the purpose of technology transfer was carried out in GMWT from December 14 to 15, 2013 for 20 people and in MAKMUR from December 20 to 21, 2013 for 31 people. The technology transfer items included: (1) Forest inventory basics, (2) basics for site measurements and area calculations through the use of GPS, (3) basics for recording the contents of forest inventories in field notebooks, and (4) woodworking for joining techniques through the use of joint cutters.

The schedule for the training for the purpose of technology transfer for MAKMUR is listed below.

Time	<u>_12_</u> (Thu)	<u>13</u>
9:00-12:00	 Forest survey technic (including tree measurement) How to use GPS (Measurement for boundary) Forest inventory Book 	④Joint wood production technic
12:00-13:00	Lunch	Break
13:00-16:00	Field practice above subjects	④Practice of Joint wood production technic

 Table 5.8
 Schedule for 2nd technical transfer training for Makmur

The schedule for the training for the purpose of technology transfer for GMWT is listed below.

		8		
Time	16	17		
Time	(Mon)	(Tue)		
	① Forest survey technic			
	(including tree measurement)			
9:00-12:00	② How to use GPS (Measurement	Joint wood production technic		
	for boundary)			
	③ Forest inventory Book			
12:00-13:00	Lunch	Break		
13:00-16:00	Field practice above subjects	②Practice of Joint wood production technic		

Table 5.9 Schedule for 2nd technical transfer training for GMWT

In the morning of the first day lectures were provided on: (1) Forest inventory basics, (2) basics for site measurements and area calculations via GPS, and (3) basics for how to make records in forest inventory field notebooks. For the forest inventories in (1), explanations were provided on

striving to take measurements of the diameter at breast height of 1.3m above the ground on the mountain side and a way of looking at tree height, as well as how to record this in the forest inventory field notebooks in (3) and how to calculate their respective timber volumes. For the GPS in (2), explanations were given of site measurements and forest area calculations from among the various features that GPS has. For (4) woodworking techniques through the use of joint cutters were described.

[1] Forest inventory basics

Forest inventories were carried out, with this marking the first time that these were carried out in a systematic manner in GMWT and MAKMUR. In implementing the forest inventories, measurements of the diameter at breast height were taken using the diameter tape measures that were provided.



Measurements of tree height were taken using the Vertex IV, which can easily take such measurements. The decision has been made to measure tree height using the digital clinometers to be provided through this project in the future, but for the time being the Vertex IV was used because otherwise the procurement of raw materials would not have been done on time. In measuring tree height it is necessary to be able to see the treetops, but when it was impossible to

see the treetops from within the forest then there were differences in the tree height measurements between each person. Thirty trees were sampled. As for the initial survey results, calculations of the timber volumes were carried out and ultimately it was hoped that these would be recorded in the stand records. But this time the training ended with just doing the surveys, and so it was decided that since they did not get this far it would be done once again in the third phase.



[2] Basics of using GPS

Training was provided concerning site measurements and forest area measurements using GPS, as well as their significance and how to perform them. But in the end the feeling was that they did not fully understand this, and so it was decided that sound instruction would be provided in the third phase of the technology transfer.

In addition, an attempt was made to calculate area via GPS in order to measure forest area.

[3] Making records in forest inventory field notebooks

Training was provided on recording information in stand records following the forest inventories. Since such training was completely new to the people in both GMWT and MAKMUR it did not go all that well.

The contents of the survey results were recorded in the forest inventory field notebooks for measurements taken on 30 trees. Since this was the first such attempt it did not seem to go all that well, so the training concluded with the decision being made to not go any farther than this in the technical



training for the second phase, but to enable the trainees to soundly master this in the third phase.

[4] Wood processing

(1) Lectures

The project theme concerning technology transfers for woodwork consisted of processing techniques for small diameter trees. Therefore,





it was decided that the focus would be placed on how small diameter trees can be processed to create large products such as desks and chairs. In terms of wood joining techniques, joining techniques through the use of a joint cutter were incorporated this time around. Through the use of a joint cutter anyone can produce joined wood.

(2) Training

Joining trees with a joint cutter is characterized by the fact that it can be easily done by anyone, even amateurs. Joining boards sawed from small diameter trees horizontally allows you to make wide boards, while joining them vertically allows you to produce thick boards. Joined wood known as biscuits are used for joining wood. First holes are made in the board using a joint cutter, then an aqueous bonding agent is applied to the biscuits and these are inserted into the open holes. Applying the aqueous bonding agent to the biscuits causes





them to expand and fall out. After the board has been joined it will not harden right away, and so it must be pressed between binders for about two to three hours.

The raw materials that biscuits are made from consist of beech trees, which are characterized by the fact that they expand when they take on moisture. By utilizing this property via applying an aqueous bonding agent and then inserting them into wood, afterwards the biscuit will swell to about 1.3 times its size and will therefore fall out easily. In order to graft trees with a joint

cutter, you must first neatly arrange the unprocessed timber horizontally. By joining together these small diameter trees you can produce wide boards, as well as thick boards. The items to be prepared for this include a joint cutter, an aqueous woodworking bonding agent, and biscuits.

As far as ways of joining wood with a joint cutter are concerned, in addition to simply joining trees vertically and horizontally there are a number of other methods such as the corner joint. The work carried out this time around proceeded from the task of first arranging boards from small diameter trees. In arranging them, the boards must be arranged perpendicularly by using calipers or the like. The width for making the holes and inserting the biscuits into the boards can be chosen at random, but making a lot of holes will make them stronger and more resilient. Biscuits can also be



purchased over the Internet. They cost about 10 yen per biscuit, and there are three types that vary in terms of the width of their sizes.

[5] Results of the technical training

Training was carried out in GMWT for two days from December 14 to 15, 2013, and it was carried out in MAKMUR for two days from December 16 to 17. As for the themes of the training in both places, the training for the purpose of technology transfer was carried out on forest inventory basics, basics in using GPS, basics for recording information in stand records, and creating woodworks through joining wood with the use of a joint cutter.

At the end of the training, evaluations related to the training were made for the training participants. A look at the evaluation results for the 20 people who took part in the training from GMWT reveals that many of them are full of ambition, saying things like "I understood the comprehensive training for the purpose of technology transfer" and "I would like to use this in my job in the future," and the results suggest an enthusiasm to want to proactively get involved more in the future.

What is more, a look at the evaluation results for the 31 people who took part in the training from MAKMUR reveals that many of the participants surpassed GMWT in their comprehension of the training for the purpose of technology transfer results, with many of them showing an ambition to proactively get involved in not only forestry work, but also woodworking and processing.

Evaluation results concerning the training for the purpose of technology transfer obtained from the participants from MAKMUR

Table 5.10 Result of evaluation of 2nd technical transfer training for Makmur

Result of Training Questionnaire(1)

Five evaluation points		5	4	3	2	1
	Ve	ery good	Good	Average	Bad	Very bad
Contents Evaluation p Contents of training	ooint]	Reason of eva	luation	
1.Use level	4.6	Understan	dable and g	giving new kn	owledge	
2.Lecture especially.	4.6	Very usef They kno	ùl for for co w how to n	omunity comm neasure tree h	nonly and th ight using ba	ier own self ntix and area width
using GPS.						
3.Material	4.2	Detail and	1 understand	lable		
4.Textbook	4.0	Good and	l giing new	knowledge		
5.Time	4.1	Need mo	re time, too	shortDiscip	line	
6.Place	3.9	Good and	needed fasi	lities are avail	able	

Result of Training questionnaire(2)

	High	Somewhat	Not
1.Were the course contents beneficial/useful to your current job?	55%	45%	0%
2.Were the course contents clear and understandable?	15%	85%	0 %

Evaluation results concerning the training for the purpose of technology transfer obtained from the participants from GMWT

Contents	Evaluation point	Reason of evaluation	
Contents of training	4.5	Giving new information and knowledge they didn't know before.	
Usage level	4.1	 Now they can use waste product (wood) to become useful products. They know how to measure the height and diameter of trees, make boundary of their lands. 	
Material	4.0	Acceptable and understandable	
Textbook	4.0	Detail, clear and understandable	
Time	3.6	Need more time, too short.Discipline and on time.	
Place	3.8	Strategic to the observation place and comfortable.	

Table 5.11 Result of evaluation of 2nd technical transfer training for GMWT

Result of Training questionnaire(2)

	High	Somewhat	Not
1.Were the course contents beneficial/useful to your current job?	85%	15%	0%
2.Were the course contents clear and underst and able?	40%	60%	0%

(3) The Third Phase of the Technology Transfer

The third phase of the technology transfer was carried out from March 22 to 26, 2014 in MAKMUR for 40 people. Moreover, the training for the purpose of technology transfer was also carried out in GMWT from March 28 to 31, 2014 for 20 people. The technology transfer themes included technology transfers in the six areas of: (1) Applying forest inventories, (2) applying site measurements and area calculations made through the use of GPS, (3) applying the recording of forest inventory contents in stand records, (4) forest fire prevention, (5) natural drying, and (6) woodworking and processing. Natural drying was only discussed in the lectures.

The schedule for the technology transfer for MAKMUR is listed below.

Table 5.12 Schedule for 3rd technical transfer training for Makmur

Time	22	23	24	25	26
	(Sat)	(Sun)	(Mon)	(Tue)	(Wed)
	(1) Lecture of	Practice of	Practice of	Forest Fire	Wood Crafting
9:30-12:00	Forest	Forest Fire	Forest Fire	Practice	
	Survey	Materials	Materials		
	(2) Lecture of	(Making of	(Forest fire		

	Forest Fire	Bamboo	Board)		
	Protection	Flapper)			
	(3) Wood dry				
12:00-13:00			Lunch B	reak	
13:00-15:30	Practice of	Practice of	Practice of	Wood Crafting	Wood Crafting
	Forest Survey	Forest Fire	Forest Fire		
	-	Materials	Materials(
		(Making of Iron	Forest fire		
		net Flapper)	Board)		

The schedule for the technology transfer for GMWT is listed below.

Т	able 5.13 Sched	ule for 3rd tech	nical transfer	training for GN	AWT
)	28	29	30	31	

				8	
Time	28	29	30	31	
	(Fri)	(Sat)	(Sun)	(Mon)	
	(1) Lecture of	Practice of	Practice of	Wood Crafting	
9:30-12:00	Forest	Forest Fire	Forest Fire	(Sign board	
	Survey	Materials	Activity	for the	
	(2) Lecture of	(Making of		factory)	
	Forest Fire	Bamboo			
	Protection	Flapper)			
	(3) Lecture of				
	Wood Dry				
	(4) Lecture for				
	Safety				
	activity in				
	factory				
12:00-13:00			Lunch	n Break	
13:00-15:30	(1) Practice of	Practice of	Practice of	Wood crafting	
	Forest Survey	Forest Fire	Forest Fire	(Sign board	
	(2) Practice of	Materials	Activity	for the	
	Safety activity	(Making of		factory)	
	in factory	Iron net		-	
		Flapper)			

(1) Lectures

In the morning of the first days in both GMWT and MAKMUR, comprehensive lectures were held on technology transfers for: (1) Applying forest inventories, (2) applying site measurements and area calculations made through the use of GPS, (3) applying the recording of forest inventory contents in stand records, (4) forest fire prevention, (5) natural drying, and (6) wood processing. Since this was the last of the training in the third phase, the lectures were given with the focus narrowed down to soundly carrying out the technology transfer. At the time of the second phase the focus was narrowed down to performing forest inventories,



calculating timber volumes based on the forest inventory field notebooks, and soundly organizing the results of this in the stand records in particular, but this did not go all that well. Therefore, explanations were provided in order to get the trainees to soundly remember the contents through this round of training. When an attempt was made to explain drying by having the leaves wither away after the tree has been logged as a method for natural drying, it was explained that this would be difficult because the sample would be stolen.

(2) Training

With regard to the forest inventory training for (1), the fundamental aspects of this were emphaized at the time of the second phase for both GMWT and MAKMUR. This time in the third phase instruction was provided by selecting 30 trees to measure their diameter at breast height and tree heights and then record this in the forest inventory field notebooks so that the trainees would soundly internalize these forest inventory techniques.

Diameter tape measures were used for the measurements of the diameter at breast height. In addition, for the measurements of tree height digital clinometers were used, which are tools that were provided through this project to be used in the future. This was the first time that the trainees had used digital clinometers, which allow you to easily measure tree height by measuring a distance and using this as a reference point. In the training an attempt was made to make everyone capable of using them, but due to time restrictions with the training and the fact that there was only one instrument the



training only went so far as allowing everyone to use it.

As for the use of GPS in (2), during the second phase training was performed in how to use GPS, but the trainees were largely unable to comprehend this. Therefore, this time in the third phase the training was carried out so as to get them to acquire the bare minimum techniques to enable them to accurately calculate area and make site measurements using GPS.



For the recording of the forest inventory contents in stand records in (4), for the future it will be important for the entire village to grasp the contents of the forest inventories. Looking at the results of the questionnaire survey performed after the training was carried out shows that this seemed to be the most difficult subject of all those in this round of training. Data from the results obtained through the forest inventories was recorded in the stand records. The trainees

struggled with calculations such as calculating the timber volume and average values. Through this it was explained to them that the sorts of trees found within the forests were to be recorded. For example, with the timber volume data was to be collected on how many trees there are, as well as their minimum and maximum diameters at breast height, as well as the average value for this. In addition, if information on the minimum, maximum, and average values for both tree height as well as timber volume, among other indicators, could be organized as data, then data from the various farmers could be tallied



because the way its forests are arranged they are intermixed with farmland. Since there are no basic maps or other types of maps, to determine the location of the forests and calculate their area using GPS would make it possible to measure their location by determining their latitude and longitude. For the area calculations, it was also explained how it would be possible to calculate their area by measuring the circumpherence around the forests



together and if it was in the possession of the village leader then they could ascertain what sorts of trees there were and how many of each there were in the village as a whole. It was then explained that if a buyer were to come, for example, then the village would be able to negotiate with them. There was a question asking if it would not be difficult to determine how much forest area there is in MAKMUR,



using GPS.

Forest fire prevention is (5). When it comes to forest fire prevention, if a large fire were to break out it would be almost impossible to extinguish it. In other words, it was explained that it would be necessary to get fires under control in the early stages when they first break out. It was also explained how they needed to form teams to engage in firefighting activities for the prevention of forest fires. When it comes to preparing the equipment for firefighting activities, (1) this must be done through the use of local materials. In preparing the equipment they ust also (2) think about ideas for forest fire prevention on their own. For the installation of instructional signboards for preventing forest fires as well, it was explained to them that (3) they would have to erect signboards and the like on their own for dangerous places. The training described how these three things formed the base of such activities. Therefore, from the perspective of using local materials training was provided on preparing bamboo fire flappers through the use of bamboo. Furthermore, in the interest of using small diameter trees, they prepared fire flapper poles with wire netting by using the pointed tips of these small diameter trees. Signboards on fire prevention to get the trainees to think on their own were also created, and forest fire prevention drills were carried out by using these. In addition, they each offered their own ideas in thinking up and creating the forest fire prevention signboards. The expert did not provide any specific instructions regarding the creation of the forest fire prevention signboards, he just explained that he wanted the trainees to think about and make these on their own. Later on, firefighting drills were carried out with the use of the bamboo fire flappers and fire





poles they had previously made by dividing the people up into teams and actually lighting dead trees on fire.











Figure 5.2 Process of forest fire prevention

As for the technology transfer for wood processing in (6), up to this point woodworks had been

created on two occassions. This third phase of the training was the last of the training. In the first phase they made desks and chairs, and since this was the first time they had done this the specialist brought designs from Japan, and the furniture was built based on these. In the second phase of the training the focus was placed on training for wood joining in the interest of processing small diameter trees. Since the third phase was the last of the training, it focused in on creating woodwork that could be sold in the future. The trainees created woodworks from ideas they came up with freely on their own. As an example, in GMWT a



farmer with the skills to do so made a motorcycle. They also made signboards and the like by



using the wood joining skills they had previously acquired. As for small items, things like pencil holders were also made.

[5] Results of the technical training

Training was carried out in MAKMUR for five days from March 22 to 26, 2014, and it was carried out in GMWT for four days from March

28 to 31. As for the themes of the training, comprehensive lectures were held on technology transfers for: (1) Applying forest inventories, (2) applying site measurements and area calculations made through the use of GPS, (3) applying the recording of forest inventory contents in stand records, (4) forest fire prevention, (5) natural drying, and (6) wood processing.

A look at the evaluation results for the 40 people who took part in the training from MAKMUR reveals that many of the participants surpassed GMWT in their comprehension of the training for the purpose of technology transfer results, with many of them showing an ambition to proactively get involved in not only forestry work, but also woodworking and processing.

A look at the evaluation results for the 20 people who took part in the training from GMWT reveals that many of them are full of ambition, saying things like "I understood the comprehensive training for the purpose of technology transfer" and "I would like to use this in my job in the future," and the results suggest an enthusiasm to want to proactively get involved more in the future.

Evaluation results concerning the training for the purpose of technology transfer obtained from the participants from MAKMUR

Table 5.14 Result of evaluation of 3rd technical transfer training for MakmurResult of Training questionnaire(1)

Five evaluation points	5	4	3	2	1	
	Very good	Good	Average	Bad	Very bad	
Contents Evaluation Contents of training	point	1	Reason of eva	luation		
1.Use level	4.6	- The training - Giving new	give some be knowledge to	nefit for their the local farr	r (local farmer) da mer	ily activity/very useful
2.Lecture	4.6	Give some be	nefit for the p	articipant		
3.Material	4.2	Need addition	al equipment.			
4.Textbook	4.0	Text book can	be a guidance	e for the part	icipants	
5.Time	4.1	-Always on tir -5 days trainin	me 1g are not eno	ugh to know	more about the lea	cture and practice.
6.Place	3.9	The place of t	raining is far	from the par	ticipant's house	

Result of Training questionnaire(2)

	High	Somewhat	Not
1.Were the course contents beneficial/useful to your current job?	78%	221%	0%
2.Were the course contents clear and understandable?	35%	65.%	0.%

Evaluation results concerning the training for the purpose of technology transfer obtained from the participants from GMWT

Table 5.15 Result of evaluation of 3rd technical transfer training for GMWTResult of Training questionnaire(1)

Five evaluation points	5	4	3	2	1				
	Very good	Good	Average	Bad	Very bad				
Contents Evaluation Contents of training	point		Reason of eva	aluation					
1.Use level	4.5	- The training - Giving new	The training give some benefit for their (local farmer) daily activity/very useful - Giving new knowledge to the local farmer						
2.Lecture	4.1	Give some be	enefit for the p	articipant					
3.Material	4.0	Need addition	nal equipment.						
4.Textbook	4.0	Text book car	n be a guidance	e for the part	icipants				
5.Time	3.8	-Always on ti -5 days trainin	ime ng are not eno	ugh to know	more about the lea	cture and practice.			
6.Place	3.8	The place of	training is far	from the par	ticipant's house				

Result of Training questionnaire(2)

	High	Somewhat	Not
1.Were the course contents beneficial/useful to your current job?	851%	15%	0%
2.Were the course contents clear and understandable?	40%	60%	0%

(4) Summary of the training activities for the purpose of technology transfer

This undertaking was designed to improve the livelihoods of the local residents in the surrounding areas by effectively using small diameter trees and other types of afforested land in the aim of contributing to the local economy and reducing deforestation and forest degradation, which are the aims of the project. Specifically, it surveyed, examined, and proposed business models for wood processing that would be highly beneficial to the local people and that are focused primarily on small diameter trees, while also providing information to local residents and local business operators. This project provided training for the purpose of technology transfer to two assisted farmers' cooperatives, GMWT and MAKMUR. As for the goal of performing the training, this was to aim to smoothly promote procedures for obtaining SVLK certification by having farmers' cooperatives acquire knowledge and skills related to forest management and wood processing. The schedule for the training for the purpose of technology transfer below was divided up into three phases.

First phase: June 17 to 28, 2013 Second phase: December 14 to 21, 2013 Third phase: March 23 to 31, 2014

Training for the purpose of technology transfer was provided for the following ten items in the three-phase technology transfer. Summaries of the contents of these in terms of their aims are discussed below.

- Techniques for nurseries and raising seedlings (grafting and cutting) The techniques for nurseries and raising seedlings are designed to produce species and saplings from established, selected breeds for the future in order to produce quality trees. In order to do this, the farmers must learn grafting and cutting techniques and establish selected breeds.
- ② Afforestation techniques (site preparation, afforestation, pruning, thinning) It is best if the costs required for afforestation are kept down. Site preparation can be broadly broken down into three types: shearing by acreage, shearing by strips, total shearing, which each have their own features. Shearing by acreage is only done on afforested areas, and so it allows you to economize on costs. Likewise, shearing by strips also lets you cut costs to a certain degree. But if there are mice or other pests then they could potentially cause damage. While total shearing is costly, it is capable of avoiding this type of damage.
- ③ Forest inventory techniques Forest inventories let you determine what kinds of trees there are within a forest, as well as other information such as their diameter, tree height, and timber volume. Moreover, since the surveys are carried out periodically these make it possible to determine the extent by which the trees have grown.
- ④ GPS techniques

GPS is an indispensable tool for regions for which no maps exist. Using GPS allows you to determine the locations of forests and trees, area, and so on.

- (5) Techniques for stand records Recording the information obtained from forest inventories allows you to determine what sorts of work has already been carried out previously, as well as the extent of the accumulated reserves that currently exist.
- 6 Logging techniques

Trees that have been planted and grown are logged through the use of chainsaws or the like, but logging is the most dangerous task within forestry

work. For this reason, it is essential that safe logging be carried out.

 \bigcirc Forest fire prevention techniques

Forest fires can wipe everything away instantaneously, so for this reason planted trees must be protected from fires. The methods for this must make use of bamboo and trees, which are both local resources, while it is also important to use the wisdom of the local people to protect the forests.

- (8) Sawing techniques Sawing must be carried out safely. Furthermore, when carrying out sawing the wood can be used effectively by performing a variety of different conversion techniques.
- 9 Natural drying techniques

Drying is critical to ensure that no warping occurs in the sawed wood. Allowing the wood to properly dry via natural drying makes it possible to produce quality woodwork.

10 Wood processing techniques

It is essential to produce products that can be sold, and so various different ideas must be considered in order to do this. Furthermore, when processing small diameter trees large boards can be produced by means of wood joining techniques.

The thinking is that the farmers of GMWT and MAKMUR acquired knowledge and techniques that they learned through the training for the purpose of technology transfer through the activities thereof.

They understood that woodwork products that have been forest certified must be produced from species and saplings with the proper background in order to be processed and sold. Yet while the woodwork produced from this cannot necessarily be sold for a high price, carrying out proper management and administration of forest certified forests makes it possible to maintain outstanding forests with consideration given to biodiversity.

For the production and sale of woodwork products it is important that the farmers produce the products for which they received technical instruction, but that they also work to sell new products originally on their own and carry on with this into the future.

5-4 Follow-up Activities Concerning Training for the Purpose of Technology Transfer

After the June 2013 training for the purpose of technology transfer, the Japanese experts were to be absent from the project sites, so during their absence (July to late August 2013), local coordinators carried out a number of follow-up activities focused on the matters covered during training.

The follow-up activities focused on the following:

- (i) Management of the equipment provided
- (ii) Manufacture of wood products using the equipment
- (iii) Cultivation of trees planted during training
- (iv) Sapling cultivation
- (i) Management of the equipment provided

As stated in "[6] Management of equipment" in "5-3 Training for the Purpose of Technology Transfer," the project team provided both farmers' cooperatives with forestry equipment and timber processing materials and equipment during the training for the purpose of technology transfer. In order to manage this equipment, each cooperative decided to prepare a ledger for recording details of the loan of materials and equipment, to make shelves on which to store tools and equipment to keep them tidy, and to store the equipment on



them. These activities were continued in the follow-up activities.

Using skills learned during the training for the purpose of technology transfer, members of GMWT made wooden storage racks, while members of MAKMUR made wooden storage shelves, to enable them to store their equipment tidily. Comparing the two storage methods, whereas GMWT's storage racks were such that the equipment was piled up in a disorderly heap, MAKMUR's storage shelves enabled the materials and equipment the cooperative had been given to be lined up neatly.



MAKMUR's storage shelves were judged to be more functional in terms of storing equipment, because it is important for the equipment to be lined up neatly so that people can see at a glance how many items of equipment are stored there.

On the other hand, the equipment given by the project team to the two farmers' cooperatives was used for timber processing during the follow-up activities and each cooperative prepared a ledger for recording details of the loan of materials and equipment. It was confirmed that both cooperatives were using the ledgers to record the loan of materials and equipment.

(ii) Manufacture of wood products using the equipment

At the training for the purpose of technology transfer, Mr. Naganawa instructed participants in the manufacture of chairs and tables; during the follow-up activities, participants tried their hand at making items other than these. In addition, both farmers' cooperatives each tried making their own equipment storage shelves of the kind referred to in "(i) Management of the equipment provided" above. They also made the following wooden products.

Wooden products manufactured by GMWT

- Bookstands
- Tableware such as chopsticks and rice paddles
- Large cabinets for use as bookshelves and china cabinets
- Decorative panels for beds and chairs
- Wooden products manufactured by MAKMUR
- Tables (a different type from those produced with guidance during training for the purpose of technology transfer)
- Large cabinets for use as shelves and china cabinets
- Loungers
- Door plates
- Keyrings and other accessories

In late August, the Japanese experts carried out an on-site inspection of the follow-up activities by both farmers' cooperatives and ascertained that members of both cooperatives were making good use of the skills acquired during the training for the purpose of technology transfer and had developed these further, enabling them to embark on the manufacture of a variety of wood products. Accordingly, the experts concluded that the activities conducted via this project had succeeded in building timber processing capacity among both cooperatives.

Wooden products manufactured by GMWT







Cabinet for use as bookshelves and china cabinets





Wooden products manufactured by MAKMUR



Cabinet for use as bookshelves and china cabinets



Table (a different type from those producedwith guidance during training)













(iii) Cultivation of trees planted during training

One of the follow-up activities focused on the tasks required to cultivate the trees planted during the training for the purpose of technology transfer. More specifically, this involved patrols to check that there was nothing that could hinder the growth of the trees that had been planted, and cutting down vegetation around the trees. As a result of such follow-up activities, not one of the trees planted has died to date and they were all growing healthily.



(iv) Nursery activity

Both of the farmers' cooperatives had already received instruction in ordinary sapling cultivation activities, thanks to support provided by the government of Lampung Province, so the training for the purpose of technology transfer focused on providing farmers with the skills required for propagating trees from cuttings and grafting onto parent stock. The follow-up activities focused on cultivating the saplings from the cuttings taken and grafts carried out during the training for the purpose of technology transfer.

In the case of the grafted saplings, each grafted sapling that had been planted in the nursery bed had been covered with a bag to prevent dehydration, but because the bags had been blown about by the wind, the grafts had moved and the graft surfaces had not bonded well, so some of the grafts had withered. At MAKMUR, reflecting on this failure, members of the cooperative tried grafted sapling cultivation again using a different approach, covering the whole of the nursery bed instead of covering the individual saplings with bags.

In the case of the cuttings, although they had been watered, they were being cultivated in the midst of the dry season, so the nursery bed was severely dehydrated and the cuttings did not take root; none of the cuttings taken by either group took root and all of the cuttings withered and died. One of the reasons why the cuttings did not take root is thought to be the fact that no root hormones or other rooting promoters were used on the cuttings involved in the technology transfer.

As a separate initiative from these activities, the MAKMUR cooperative tried grafting individual coffee and jackfruit trees and succeeded in creating grafted saplings. It was concluded that this initiative also demonstrated to participants the usefulness of grafted saplings.





- Summary of follow-up activities

The follow-up activities were conducted between July and late August 2013, with local coordinators providing guidance in the following four areas: (i) management of the equipment provided; (ii) manufacture of wood products using the equipment; (iii) cultivation of trees

planted during training; and (iv) sapling cultivation.

The survey of the status of activities conducted in August 2013 by the Japanese experts demonstrated that, other than in relation to (iv) sapling cultivation, the members of the cooperatives had mastered the skills that they had learned during the training for the purpose of technology transfer without any problems. In particular, in the case of the manufacture of wooden products, not only were the cooperatives manufacturing the products regarding which technical guidance had been provided, but they had also started making new products at their own initiative; furthermore, the quality of the products that they manufactured was high and they demonstrated a palpable enthusiasm about their activities. Moreover, although the sapling cultivation ran into difficulties because it coincided with the dry season, the members of the MAKMUR cooperative can be praised for the fact that they used their ingenuity and tried again at their own initiative.

Initiatives such as those outlined above in relation to the follow-up activities demonstrated that the training for the purpose of technology transfer succeeded in achieving forest management and timber processing technology transfer to both the GMWT and the MAKMUR farmers' cooperatives, building capacity among both groups in these areas. Accordingly, as it was judged that there was sufficient capability among both farmers' cooperatives to conduct the activities required to obtain SVLK licenses, which is the next step in the project, it was decided that the project should provide support in future for GMWT's activities aimed at gaining an SVLK license for timber processing and MAKMUR's activities aimed at gaining an SVLK license for forest management.

5-5 SVLK Promotion Workshop

It was concluded that, as a result of the technical support provided to GMWT and MAKMUR to date in this project, via the study tour, training for the purpose of technology transfer, and follow-up activities, capacity among both farmers' cooperatives had increased sufficiently to allow them to work on gaining SVLK licenses. Accordingly, in the latter half of the project, support was provided for activities focused on obtaining those licenses.

It was decided that the first support activity of this nature should be an educational workshop to promote understanding of SVLK among the members of the farmers' cooperatives, so that they would develop an accurate understanding of what SVLK actually is. It was decided that participants should include the Directorate General of Forestry Business Development at the Ministry of Forestry, which promotes the SVLK system, and representatives of Scofindo, which is one of the inspection bodies for SVLK. The details of the SVLK Education and Dissemination Workshop are as follows.

Date:	September 1-2, 2013 Aringe Hetel, Bondon Lommung, Lommung, Province							
venue:	Armas Hotel, Bandar Lampung, Lampung Province							
Lecturers:	Pak Dwi (Director-General, Directorate General of Forestry Business							
	Development, Ministry of Forestry)							
	Pak Teguh Widodo (Director-General, BP2HP Lampung Province Office)							
	Pak Syaiful (Director-General, Lampung Province Forestry Bureau)							
	Pak Yuki (Scofindo)							
Participants:	About 70 people in total, including GMWT members, MAKMUR members,							
_	staff from the Lampung Province Forestry Bureau (including those posted in							
	each regency), and forestry promotion staff from the government of Lampung							
	Province							

The schedule for the SVLK Education and Dissemination Workshop was as follows.

Table 5.16 Program of SVLK promotion workshop

(Day 1)

Hari Pertama : Minggu / 1 September 2013					
14.00 - 18.00	Check in dan Registrasi Peserta				
18.00 - 19.30	Makan Malam				
19.30 - 20.30	Pembukaan (Kepala Dinas Kehutanan Provinsi Lampung :				
	Ir. Syaiful Bachri, MM.)				
20.30 - 21.00	Penjelasan tentang Kegiatan JICA (Senior Director JOFCA :				
	Takiaki Toyoda, Ph.D.)				

(Day 2)

Hari Kedua : Se	enin / 2 September 2013
08.30 - 10.00	Materi I : Kebijakan SVLK (Direktur Pengolahan dan Pemasaran Hasil
	Hutan : Dr. Ir. Dwi Sudharto, M.Si.)
10.00 - 10.15	Coffe break
10.15 - 11.45	Materi II : Pedoman Pelaksanaan SVLK di Provinsi Lampung (Kepala
	Balai Pemantauan dan Pemanfaatan Hutan Produksi Wil. VI :
	Ir. Teguh Widodo, M.Si.)
11.45 - 13.00	Ishoma
13.00 - 14.30	Materi III : Pedoman Penilaian Kinerja dalam rangka Sertifikasi Legalitas
	Kayu (Sucofindo)
14.30 - 14.45	Coffe break
14.45 - 15.30	Diskusi dengan Sucofindo
15.30 - 16.00	Penutupan







A total of almost 50 people from the GMWT and MAKMUR farmers' cooperatives participated in the SVLK Education and Dissemination Workshop. All of the participants listened intently to the lecture and actively participated in the question and answer session with the lecturer. In addition, staff from the Lampung Province Forestry Bureau and Lampung Province government staff involved in initiatives to promote forestry activities also took part, in order to gain a deeper understanding of the SVLK system. Accordingly, it achieved this project's goal of improving the ability of officials in the public sector to engage in strategic implementation of project activities.

5-6 Activity for SVLK license application in 2 project sites

As it mentioned at chapter 3. "Result of project", the project supported activity for SVLK

license application for farmers groups which are Girimukti Wanatirta (GMWT) in Lampung Tengah, Makmur in Lampung Timor. GMWT intended to get the SVLK license for wood industry and Makmur intended to get the SVLK license for forest management. The activity of SVLK license application for 2 farmers groups from September of 2013 until license approved, is mentioned as follows.

(1) Activity for SVLK license application by GMWT

• October 2013

- ✓ Because it is aimed at the acquisition of SVLK such license in wood processing, GMWT must obtain approval from the county office for the wood processing factory installed (IUIPHHK). They started the application from this month.
- ✓ Procedures for environmental assessment in accordance with the factory installation procedures and procedures for the operation of factory, also procedure of tax payment was finished.
- ✓ One of the member of the farmers group had training about FACO which is management system for stock of material, he received license for manager. If farmers group doesn't have this license, they cannot manage for handling of material, also they cannot buy materials.
- ✓ Also another member of the group had training about SKAU which is management system for stock and transportation of products. He received license for manager about it.
- ✓ The farmers group started the selection of wood processing machine to be introduced into wood processing factory.

• November 2013

- ✓ Regarding approving of IUIPHHK, it is still under processing at district office.
- Regarding purchase for wood processing machine introducing wood factory, member of GMWT investigated price of the machine in agency of machinery.
- ✓ GMWT had a discussion about wood products which is made by the farmers group, they considered suitable products to market.
- ✓ In order to increase the added value of wood processing products produced in GMWT, GMWT was decided to give the brand name of the group in its own wood processing products. The name of the brand "UKIR".
- ✓ GMWT conducted forest inventory in member of cooperative. For getting SVLK license of wood industry, wood processing factory should use approved material by SVLK. As GMWT already got license of forest management, member of the group can provide wood material to the factory which is approaching to approve of SVLK. GMWT should grasp capacity of supply volume of wood from forest plantation which managed by member of GMWT. They investigated forest inventory to plantation of member's property.





✓ Member of GMWT could understand that it is very time consuming work for them to activity of SVLK license application for wood industry comparing with activity of license application for forest management. They took much more time for document preparation for application.

- December 3013
 - ✓ Introducing wood processing machine for wood processing factory was determined. They introduce 1 bandsaw, price of the machine is Rp 45 million. It is installed among 29-31 December 2013. From January, they start trial operation for wood processing in the factory.
 - ✓ As schedule for installing of wood processing machine was determined, they start construction of building for wood processing factory.



- ✓ On 18-19 December, second technical transfer training was conducted by Japanese expert who is Mr. Hajime NAGANAWA. 27 members of GMWT attended the training. (refer 5-3)
- January 2014
 - ✓ Wood processing machine was installed, and trial operation has begun. However member of GMWT does not familiar with operation of the machine, operator from outside came and instructed for the operation.
 - ✓ Member of GMWT trained wood processing using the machine.
 - ✓ Sucofindo which is audit organization, informed to GMWT about amount of audit and surveillance fee, it is Rp 64.46 million.



- February 2014
 - ✓ Trial operation was continued, 113 pcs of beams were produced. However performance of productivity was not enough level, it was around 40%. They should consider how to increase productivity for wood processing.
- March 2014
 - ✓ GMWT continue trial operation, they can produce wood products by operating their

wood processing factory. They start to preparation of application for SVLK to audit organization. Audit activity conducts on 20-23 April.

- ✓ Member of GMWT proceeded to produce wood crafts using wasted wood materials. It is good products for approaching to the market.
- ✓ GMWT promotes their wood products positively. They can get order for the products from consumer of Bandar Lampung gradually.

• April 2014

- ✓ GMWT member prepares to attend INDOGREEN festival in Jakarta on 5-14 April.
- ✓ One member of GMWT attends INDOGREEN festival in Jakarta from 11 until 14 of April.
- ✓ On 20−23 April 2014, audit activity for SVLK license was conducted by Sucofindo. Result of audit, 6 items of check item need modification among 58 items of check items. Sucofindo requires modification within 14 days, GMWT modified it.
- May 2014
 - ✓ Result of audit activity by Sucofindo, GMWT received SVLK license for wood industry finally.



- (2) Activity for SVLK license application by Makmur
 - September 2013
 - ✓ Makmur is voluntary corporation at that time, they should become registered corporation for applying to SVLK license. Makmur starts preparation applying registered corporation.
 - ✓ Makmur aims to get SVLK license of forest management, they start preparation documents for application of SVLK, especially regarding documents of tree plantation which belong the member.
 - ✓ All member of Makmur received explanation about activity of SVLK application from core member of Makmur, they agree to join for activity of SVLK license.
 - ✓ Activities necessary to SVLK license application, the person in charge of each activity was determined.



• October 2013

- ✓ On September, the body of legal entity is already in Makmur. There is Koperasi Serba Usaha (KSU) SPKP Makmur, Lampung Timur.
- ✓ Makmur member start forest inventory at tree plantation which is member's property for SVLK application.
- ✓ Administration/the supporting document is still in progress.
- ✓ Community Mapping is still in progress. Land area mapping for Makmur groups (33 member) is around 73 hectares. Regarding their discussion, in Lampung Timur there is can be mapping the land area/forest owner for one village in Desa Totopojo (around 200an hectares). There is efficiency, because wide/vast land area or a little land area, they will be need the same budget on certification processing.
- ✓ Time schedule for field activities above is already determined by member of Makmur.
- ✓ The farmer group need the facilitator in their daily activities to assist, plant measure-mapping-to prepared the letter/administration, etc.
- November 2013
 - ✓ Document of legal entity Cooperation Makmur is already. There is: Akta Pendirian Koperasi Produksi "SPKP MAKMUR" Akte Number: 23, date 14 October 2013. Notaries: Yohanes Wisnu Suryo Nugroho, SH. Notaries in Lampung Timur Regency.
 - ✓ List and identification the document is already, on going process, and will prepare. The document will be two bundle of book, is: book 1 (approval letter to Sucofindo, foreword, audit profile, etc.) book 2 is supporting document (legal entity document/cooperation, board of cooperation, list of members, land map area, wood inventory, chain of wood supply, etc).
 - ✓ The Inventory, trees measure and land mapping is still in progress. Inventory and land mapping area for makmur group (33 household/73 hectares) and more width for the area/in one village (totoprojo). The other communities in Totoprojo village was interested to join the activities.
 - ✓ Until 25 November, the results of inventory (trees measure and land mapping) there is around 70% have finished. The data gave to Ibu Dewi to entry data/map digitation.
 - ✓ The village boundary has finished (tracking/mapping land area). Teamwork have been continued (in the land area inside) to inventory per household in their land area forest right. The distance of land area between each other mark with a little river, jatropha trees, etc.
 - ✓ In Totoprojo village communities, December is the "calendar" and season to plant padi (rice). So they will be finish the inventory activities (trees measure and land maping) at end of Nobember.
- December 2013



- ✓ Facilitation RP and BSD: Regular meeting board of Makmur to coordination (completely document to SVLK application). Matching and finishing the completely documents (SPPT-ID-SKT-Map-Inventory sheet) etc.
- Explanation from Bapak Yuki/Sucofindo about process to SVLK. For the forest management unit (FMU) like Koperasi Makmur, the complementary document that need and urgent is: the legal entity (Koperasi), Boards of legal entity, SKT (Surat Keterangan Tanah) is the legally title of forest owner, sketch map per households, ID, Standard Operational Procedure (SOP) for plantation and utilization of forest products (timber) and the other document.
- Coordination with bapak Rahman. 1) Until 19 December fix data is 147 SKT, 147 persons-households, 147 SPPT, already finish. SKT budget verification need is: 1 sheet recapitulation total budget (attachment with one nota for one person, sign and stamping from Totoprojo village office). 2) Training 20-21 December is ready (place, forest location, equipment, etc.).
- ✓ Training for two days (20-21 December 2013) in Toto Projo Village Office. participants attended 33 persons/member Makmur Group. Other participants is Bapak Teguh/BP2HP Lampung Province, Rini, Dewi, Ayu Niara/Forestry Office Lampung Province, Sunarto/Forestry Office Lampung Timur. (refer 5 − 3)

• January 2014

- ✓ SVLK: Compiling the Document for SVLK, Submission and Application for SVLK from Makmur to Sucofindo, Pre-audit.
- Plan and Implementation for Audit Certification from Sucofino to Koperasi Makmur.
- ✓ Member of Makmur made the woodcraft, the raw material used for handicraft is root tree, bamboo, waste timber, etc. The product of handicraft is:
 - •Flower, material used is Root tree "kayu kuningan"
 - •Long poniard, material used is waste timber
 - •pot, leafs, material used is bamboo.
- ✓ The data recapitulation Koperasi Makmur for SVLK (139 member, 30,72 hectares area) was review and correction from sucofindo and there is still need completely and matching for supporting documents. (Letter of Commitment, AD-ART, Surat Keterangan SKAU)₀

• February 2014

- ✓ Negotiation and coordination by email, for SVLK budget (audit and surveillance) from Sucofindo to Koperasi SPKP Makmur. There is MOU for audit and surveillance Koperasi SPKP Makmur for two years (2016).
- Publication for audit SVLK SPKP Makmur (Forestry Department and Toto Projo Village Office)



✓ Discussion and document review by Sucofindo. Schedule and agenda 25-28

February (opening meeting, document verification and observation/field survey, closing meeting). From 140 members, respondent sampling are 12 members.

- ✓ Some data (SKT, SPPT, recapitulation, Map) are re-correction and will completely by Makmur (time period for correction is 10 days after closing meeting deadline: 27 February 09 March 2014).
- March 2014
 - ✓ Member of Makmur responded matter of modification until 9 March.
 - ✓ By email, Sucofindo sent draft for certificate SVLK for Makmur. After agreed from Makmur the certificate of SVLK send to Makmur. Member of Makmur received it from Sucofindo.

5-7 Activities of marketing approach

(1) Exhibition and sales in Lampung University and Forestry Department in Lanpung

To create marketing channel for produced wood crafting by local farmers group is one of important project activity. If producer does not approach good marketing channel, they cannot get any benefit from the products. Our project also is considering marketing approach for wood crafting which is made by local farmers group. With the cooperation of the Unila, the project has held a workshop on the theme "How can we approach market channel for wood products which is produced by local farmers in remote area?". And the project got variety opinions for marketing approach from students. "Have the exhibition", "launch a blog" various opinions came out from the students. The project took one idea from the student, we immediately conducted small scale trade exhibition in Unila and Dinas Kehutanan following student's idea. The wood crafting made by local farmers was interested in many customers through the trade exhibition. The project wants to continue such activities of marketing approach.



Mini Workshop and exhibition and sales in Lampung University and Lampung forestry office

(2) Attending Indo Green Forestry Expo 2014

IndoGreen Forestry Exposition 2014 was held at the convention hall of Arena Pekan Raya Jakarta from 11th until 14th April 2014. IndoGreen Forestry Exposition is started from 2009, it is One of the largest exhibitions in Indonesia. Over 100 more private company and the group regarding forestry and wood industry join this exhibition, and about 10,000 people or more have come to the exhibition every year.

This time, JICA project supported to participate three members from GMWT and Makmur to the INDOGREEN festival. They borrowed exhibition corner for displaying their wood products for 4 days. In the INDOGREEN festival, there is over 100 exhibition booth, the 3 members observed other exhibition display positively among this 4 days. According to 3 members, they had joined first time such large scale exhibition event, they were overwhelmed by the scale of exhibiton. However, they could have confidence by participating to the exhibition for their wood product and sales which are making by themselves. The 3 members could obtained confidence that their wood products can tolerated well in the market through the participation in INDOGREEN.



3 members of farmers group participate INDOGREEN festival in Jakarta

5-8 Implementation of counterpart training visit to Japan

From 15 to 26 of April, Project management group visited in Japan. Group members are DG of BUK Pak Bambang Hendroyono, Director of BUK Pak Dwi Sudharto, Staff of BUK Pak Hargyono, Ibu Aryani, Pak Teguh Widodo, BPPHP Lampung Pak Costantinus Hendro Widjanarko and Dinas Kehutanan di Lampung Pak Grisman Medy Putra, total 7 menbers. The management group visited at Tokyo, Kochi and Obihiro Hokkaido. DG pak Bambang and Director Pak Dwi are visit only Tokyo and Kochi, other members visited until Obihiro area. Table 5.2 shows schedule of C/P training in Japan.



C/P training in Japan

In Tokyo area, They visited Forestry Agency in Japan, Embassy of Indonesia, Tama Forest science garden in Takao, Wood and veneer panel museum in Kiba. In Tama Forest science garden in Takao, They enjoyed full cherry blossom in the garden. In Kochi, Ecoas Umajimura which is private company for small scale wood processing, introduced to them wood processing process in the factory and marketing activity of Antenna shop in Kochi City. After Kochi, remaining 5 persons shifted to Hokkaido Tokachi area. They stay in JICA Obihiro center. They visited Tokachi Wide Area Forestry Cooperative, East Tokachi National Forest Office, PT Sato Company, and Osaka Ringyo Company. In Tokachi Wide Area Forestry Cooperative, They got to experience the operation of high performance forestry machines. In the forest which manages by Tokachi National Forest Office, They enjoyed snow. This visit to Japan was tight schedule. However they blessed good weather during staying in japan. It was good experience for them to know forestry in Japan.

			_								
No) Date			Tim	e	Program	Person in charge	place of study	Place of accommodation	Name of Hotel (Tel. No.)	
1	2013-04-15	Tue				Leave from Jakarta					
			~	9:00	Arrive at Tokyo						
			13:30	~	14:00	Courtesy Visit to Forestry Agency	Mr. Hongo, Forestry Agency	Forestry Agency		Tokyo Green	
2	2 2013-04-15 Hed	013-04-15 Hed	4-15 Hed	14:15	~	15:00	Lecture for international cooperation of forestry in Japan	Mr.Kawado, Forestry Agency	Forestry Agency	Tokyo	Palace Hotel (03-5210-4600
			15:30	~	16:30	Courtesy visit to Embassy of Indonesia		Tokyo/meguro			
		17:30	~	18:30	briefing	JICA	TIC				
3	2014-04-17 Th	Thu	10:00	~	12:00	Tama forest science garden in Takao	Mr. Yoshimaru, Tama forest science garden	Tama Forest science Garden	Umaji	Community center Umai	
						Move to Kochi,(JL1491/Haneda16:55→ Kochi18:20)				(0887-44-2026	
			10:30	~	12:00	Observation for small scale wood crafting	Mr. Yamada, Ecoas Umaji	Ecoas Umaji, Umaji Village	ji, age on Kochi ochi	Comfort Hotel Kochi (088-883-1441	
4	2014-04-18	Fri	13:00	~	15:00	Observation for marketing approach by community based wood industry		Forest information center in Kochi city			
	5 2014-04-19 Sat					Move to Kochi,(JL1491/Haneda16:55→ Kochi18:20)				Teluce Orecor	
5		Sat	14:00	~	17:00	Observation of Wood and plywood museum in kiba and Antenna shop by Acoas Co,ltd	Mr.Okano, President of museum	Wood and plywood museum in kiba / Antenna shop Ecoas in Ginza	Τοκνο	Palace Hote (03-5210-460	
6	6 2014-04-20 Sun	Sun				Move to Kochi,(JL1491/Haneda16:55→ Kochi18:20)			Obihiro	JICA Obihir center(OBIC (0155-35-121	
Ť					Leave to Indonesia(Pak.Bambang and Pak.Dwi) From Narita to Indonesia			Leave to Indonesia	Jakarta		
_	7 2014-04-21 Mon		10:00	~	12:00	Lecture for rolement of forest cooperative/Subsidy and loan system for small scale forest owners	Mr. Etsuro Murakami,Adv isor of	Tokachi Wide Area Forestry Cooperative	01-11-1-1	OBIC	
'		Mon	13:00	~	16:00	Observation for Logging activity by high performance forestry machine	Area Forestry Cooperative	Private forest in Memuro Area	UDINITO	(0155-35-121	
	8 2014-04-22 Thu		10:00	~	12:00	Lecture for Forest planning system and Forest management system by forest register book	Mr. Yokoyama, East Tokachi National	Asshoro Town, East Tokachi National Forest Office			
8		8 2014-04-22	Thu	13:00	~	16:00	Observation for Management of National forest	Officer of East Tokachi National Forest Office	Akan Area managed by East Tokachi National Forest Office	Obihiro	(0155-35-121
9		23 Wed	10:00	~	12:00	Observation for Timber storage management system	Mr. Matsunaga,	Kamishihoro Area, Sato. Co LTD	Obibiro	OBIC	
3 2014-04-23 Hed	lieu	13:00	~	16:00	Observation for medium class sawmill	president of Sato Co LTD	Obihiro City, Sato. Co LTD	0011110	(0155-35-121		
10	0 2014-04-24 Thu	9:30	~	12:00	Lecture and observation for nursery activity	Mr. Kazuo, President of Osaka, Osaka Ringyo	Makubetsu Area, Osaka Ringyo	Obihiro	0BIC (0155-35-121		
	13:30	~	15:00	Evaluation Meeting	Mr. Kato, JICA Obihiro	JICA Obihiro					
11	2014-04-25	Fri				Move to Tokyo (JL1154/14:15-Haneda16:00)			Narita	Hotel Narita Excel Tokyu	
					Move to Hanada→Narita				(0476-33-010		
12	2014-04-26	Sat				Back to Jakarta			Leave to Indonesia	Jakarta	
				-							

Table 5.17 Schedule of C/P training in Japan

5-9 Final workshop

On 20-21 May 2014, final workshop of the project was held at Hotel Arinas in Bandar Lampung. Before starting the final workshop, award ceremony of SVLK license for 2 farmers group which are GMWT and Makmur, was carried out.

As presenter of license, Pak Bambang Hendriyono who is Director-General of the Directorate General of BUK, the Ministry of Forestry also joined from Jakarta.

In the celemony, SVLK license was passed from Sucofindo which is audit organization of SVLK to the project, from the project experts hand over the license to the MOF, finally Pak Bambang Hendriyono awarded the SVLK license to leader of 2 farmers group. GMWT could get SVLK license regarding wood industry, Makmur also could get SVLK license regarding forest management. GMWT got second license because they got first license for forest

management on 2009. Regarding duration of SVLK application activity, it takes over 1 year from starting until getting of license normally, however 2 farmers groups could get it only about 6 months. They had very big effort and contribution for getting the license. It is very honorable activity.



For the final workshop, Pak Bambang Hendriyono, DG of BUK, Pak Dwi, director of BUK, Pak Syaiful, Head of Dinas Kehutanan, Pak Hendro, BPPHP in Lampung, Mr. Arai, JICA representative, Dr. Ozawa, President of JOFCA, staff of each Dinas Kabpaten, Head of 16 farmers groups which will start SVLK application activity, were attended.

In the workshop, Pak Yuki who is staff of Sucofindo had a presentation about application process of SVLK. Pak Sidik who is Representative NGO YKWS and local coordinator of the project, Pak Pramono who is head of GMWT and Pak Abdurahman who is head of Makmur, had a presentation activity of SVLK application by the project. Pak Djoko Supomo who is forestry consultant, Dr. Dewi who is associate professor of Universitas lampung, Ibu Rini who is staff of NGO WATALA and local coordinator of the project had a presentation about book for result of sub-contract activities. After each presentation, many question and opinion was expressed from participants. All participants could get much information and knowledge about SVLK license from this time workshop.


Table 5.18 is attendants list for final workshop.

No.	Organization	No.of
		person
	Direktorat Bina Usana Kenutanan Dinas Kabutanan Dravinsi Lampung	3 orang
2.	Dinas kenutanan Provinsi Lampung	5 orang
3.	Balai Pemantauan Pemantaatan Hutan Produksi Wil. Vi	2 orang
4.	Dinas Kenutanan Kab. Lampung Selatan	lorang
5.	Dinas Pertanian, Peternakan, Perkebunan	l orang
	dan Kehutanan Kota Bandar Lampung	4
6.	Dinas Perkebunan dan Kenutanan	Torang
_	Kab. Lampung lengah	4
/.	Dinas Perkebunan dan Kehutanan Kab. Lampung Timur	Torang
8.	Dinas Perkebunan dan Kehutanan Kab. Lampung Utara	Torang
9.	Dinas Pertanian, Perkebunan dan Kehutanan	Torang
10	Kab. Tulang Bawang	4
10.	Dinas Kehutanan dan Perkebunan Kab. Mesuji	Torang
11.	Dinas Pertanian, Perkebunan dan Kehutanan	i orang
10	Kab. Tulang Bawang Barat	4
12.	Dinas Perkebunan dan Kehutanan Kab. Way Kanan	1 orang
13.	Dinas Kehutanan Kab. Lampung Barat	1 orang
14.	Dinas Pertanian, Perkebunan dan Kehutanan	1 orang
45	Kab. Pesisir Barat	4
15.	Dinas Kenutanan dan Perkebunan Kab. Tanggamus	lorang
16.	Dinas Pertanian dan Kenutanan Kab. Pringsewu	lorang
17.	Dinas Perkebunan dan Kenutanan Kab. Pesawaran	Torang
18.	Dinas Pertanian, Perikanan dan Kenutanan Kota Metro	Torang
19.	Kelompok Giviwi Lampung Tengan	20 orang
20.		30 orang
21.	Gapoktan Sumber Sejantera Lampung Timur	1 orang
22.	Gapoktan Sri Tanjung Lampung Timur	1 orang
23.	Kelompok Tani Rimba Raya Lampung Timur	1 orang
24.	Kelompok Kalaw wat Jolat Lampung Utara	1 orang
25.	Kelompok Tani Barat Bersatu Lampung Utara	1 orang
20.	Kelompok Tani Halapan Jaya Lampung Ulara	
27.	Kelompok Tani Kunang Lesian Lampung Ulara	
28.	Kelompok Tani Wono Pekulun Lampung Ulara	
29.	Kelompok Tani Alam Lestan Lampung Utara	
30.	Kelompok Tani Bukit Hijau Lampung Utara	
ວ່າ. ວ່າ	Kelompok Tani Alam nijau Lampung Utara Kelompok Tani Maju Mekmur Lampung Utara	1 orang
ວ∠. ວວ	Kelompok Tani Wana Lostari Tanggamus	1 orang
33. 21	Kelompok Tani Sao Pandar Lampung	1 orang
34. วธ	Kolompok Tani Sido Pahayu Pandar Lampung	1 orang
30. 26	Kolompok Tani Java Lostari Pandar Lampung	1 orang
30.	kelompok tahi Jaya Lestan bahuai Lampuny	ruany

Table 5.18attendants list for final workshop

Table 5.19 is program of final workshop.

			iusieeii iiogium oi	inter wornshop			
Time			program	organization	Name		
Selasa,	20 Me	ei 2014					
14.00 - 18.00			Check In dan Registrasi Peserta	-	-		
18.00	-	19.00	Ishoma	-	-		
19.00	-	20.30	Pembukaan	Dirjen BUK	-		
Rabu, 2	1 Mei	2014					
08.30	-	09.30	Kebijakan SVLK	Dwi Sudarto (Direktur BPPHH)	C. Hendro Wijanarko (Kepala BP2HP)		
09.45	-	10.45	Ekspose hasil proyek di GMWT Lampung Tengah	Ketua Koperasi GMWI	Panitia		
10.50	-	11.50	Ekspose hasil proyek di Makmur Lampung Timur	Ketua Koperasi Makmur	Panitia		
			lshon	na			
13.30	-	14.00	Validation activity for SVLK	SUCOFINDO	Panitia		
14.05	-	14.25	Pengenalan Pendampingan SVLK	Djoko Supomo (KAN)	Panitia		
14.30	-	14.50	Introducing book of good example of SWI (1)	DR. Bainah Sari Dewi (UNILA)	Panitia		
14.55	-	15.15	Introducing book of good example of SWI (2)	Rini Pahlawanti (WATALA)	Panitia		
15.30	-	16.30	Hutan Rakyat dan SVLK	Prof. San Afri Awang (Kepala Balitbanghut RI)	Ir. Guntur Hariyanto (Kabid PH Dishutprov. Lampung)		
16.30	-	16.50	Penutupan	Kepala BP2HP	Panitia		
Kamis.	22 Me	i 2014					
09.00 - 11.00		11.00	Penyelesaian administrasi peserta	-	-		
12.00	-		Check out	-	-		

Table 5.19Program of final workshop

6. Result of Experts Dispatching (name of the expert, scope of work and dispatch period)

The names of the experts dispatched as part of this project and the topics regarding which they provided guidance are as follows.

Name	Responsibility		Specific Duties				
Takaki Toyoda	Coordination &	[1]	Improving the scope of this project				
	Forestry	[2]	Gathering, organizing, and analyzing existing related				
	Management (1)	materials and information, etc.					
		[3]	Considering the basic policy on duties, as well as the				
			content thereof and methods used				
		[4]	Drafting the inception report				
		[5]	Providing a briefing on the inception report				
		[6]	Survey for basic information on forest and forestry				
		[7]	Survey for laws and regulations regarding forest,				
			forestry and wood industry in Lampung Province				

Table 6.1 Name and task of each expert.

Name	Responsibility		Specific Duties
		[8]	Survey and examination of examples of models for
			collaboration between local citizens and the timber
			processing industry
		[9]	Examining the sustainability of the models for
			collaboration
		[10]	Collating existing examples in Lampung Province
		[11]	Providing support for the small-diameter log
			processing industry
			- Selecting the sites for the model project for
			collaboration between local citizens and the
			timber processing industry -
		[12]	Providing support for the small-diameter log
			processing industry
			- Holding mini-workshops for local citizens and
		F101	timber processing businesses -
		[13]	Providing support for the small-diameter log
			processing industry
			- Organizing cooperatives of local citizens and
		F1 / J	Cooperatives of timber processing businesses -
		[14]	processing industry
			Providing guidance for local citizens in forestry
			management
		[15]	Providing support for the small-diameter log
		[15]	processing industry
			- Procuring small-diameter log processing
			equipment for timber processing businesses -
		[16]	Providing support for the small-diameter log
			processing industry
			- Providing technical guidance to timber processing
			businesses concerning small-diameter log
			processing -
		[17]	Engaging in collaboration with the public sector and
			providing technical support via the implementation of
			the project
		[18]	Summarizing the first round of work on the ground
			and gathering new information required as a result of this work
		[19]	Examining the models for collaboration between
			local citizens and the timber processing industry, and
			conducting an interview-based survey of domestic
			experts
		[20]	Examining the implementation of support for the
			small-diameter log processing industry, and
			conducting an interview-based survey of domestic
			experts
		[21]	Preparing a progress report, etc.
		[22]	Continuing support for the small-diameter log
			processing industry
	l		- Providing guidance for local citizens in forestry

Name	Responsibility		Specific Duties
			management -
		[23]	Continuing support for the small-diameter log
			processing industry
			- Providing technical guidance to timber processing
			businesses concerning small-diameter log
			processing -
		[24]	Considering the introduction of a forest certification
			scheme
		[25]	Considering matters concerning the registration of the
			cooperatives of local citizens and cooperatives of
		[0.6]	timber processing businesses as corporations
		[26]	Building models for collaboration between local
			citizens and the timber processing industry at the
		[27]	Project sites
		[27]	Preparing a report upon completion of duties
Haiima	Timber Distribution	[20]	Improving the scope of this project
Naganawa	& Processing (2)	[2]	Gathering organizing and analyzing existing related
i tugunu tu	(2)	[-]	materials and information, etc.
		[3]	Considering the basic policy on duties, as well as the
		r. 1	content thereof and methods used
		[4]	Drafting the inception report
		[5]	Providing a briefing on the inception report
		[8]	Survey and examination of examples of models for
			collaboration between local citizens and the timber
			processing industry
		[9]	Examining the sustainability of the models for
			collaboration
		[10]	Collating existing examples in Lampung Province
			Providing support for the small-diameter log
			Selecting the sites for the model project for
			- Selecting the sites for the model project for collaboration between local citizens and the
			timber processing industry -
		[12]	Providing support for the small-diameter log
		[1-]	processing industry
			- Holding mini-workshops for local citizens and
			timber processing businesses -
		[13]	Providing support for the small-diameter log
			processing industry
			- Organizing cooperatives of local citizens and
			cooperatives of timber processing businesses -
		[14]	Providing support for the small-diameter log
			processing industry
			- Providing guidance for local citizens in forestry
		[15]	management - Drouiding support for the small dispector las
		[13]	processing industry
			- Procuring small-diameter log processing
			equipment for timber processing businesses
			equipment for univer processing businesses -

Name	Responsibility		Specific Duties
		[16]	Providing support for the small-diameter log
			processing industry
			- Providing technical guidance to timber processing
			businesses concerning small-diameter log
			processing -
		[17]	Engaging in collaboration with the public sector and providing technical support via the implementation of the project
		[18]	Summarizing the first round of work on the ground
		[10]	and gathering new information required as a result of this work
		[19]	Examining the models for collaboration between
			local citizens and the timber processing industry, and conducting an interview-based survey of domestic experts
		[20]	Examining the implementation of support for the small-diameter log processing industry, and conducting an interview-based survey of domestic
			experts
		[21]	Preparing a progress report, etc.
		[22]	Continuing support for the small-diameter log
			processing industry
			 Providing guidance for local citizens in forestry management -
		[23]	Continuing support for the small-diameter log
			 Providing technical guidance to timber processing businesses concerning small-diameter log processing -
		[24]	Considering the introduction of a forest certification scheme
		[25]	Considering matters concerning the registration of the cooperatives of local citizens and cooperatives of
			timber processing businesses as corporations
		[26]	Building models for collaboration between local
			citizens and the timber processing industry at the
		[27]	Project sites Holding workshops
		[28]	Prenaring a report upon completion of duties
		[27] [28]	citizens and the timber processing industry at the project sites Holding workshops Preparing a report upon completion of duties

The dispatch periods of the experts participating in this project were as follows.

T								2012											2013							_	20	114			M.	'N
		Duties	Nane	Company Name	Rank	6	7	8	9	10	11	12	1	2	3	4	5	в	7	8	9	10	11	12	1	2	3	4	5	8	To Field	tal Domentic
	ž	Team leader/ Forestry management	Takaki TOYCDA	JOFCA	2				8/21	10/19 26			1/20 21	2/3			5/14 27	6/3		1/20 19	8/7		11/27	11/14 18		2/27	3/19 21		5/8-25 18		5.00	
	Field Wo	₩cod marketing/ Wood processing	Hajime NAGANAWA	JOFCA	2								1/20-2 10	9				8/4 30	7/3					2/4-54			3/18 28	4/12	5/8-23 16		3.50	/
	ĺ																														8.50	\square
	lork	Team leader/ Forestry management	Takaki TOYODA	JOFCA	2				2∕15-2 10	4												10/11- 10	±1							6/1-18 10		1.00
	Donestic V	Wood marketing/ Wood processing	Hajime NAGANAWA	JOFCA	2				[8/23 1				2/18-2	0 7(****	n 2/24)								11/21- 10							6/1-10 10	/	1.00
																																2.00
			Subnitti	ing of the report					\triangle													\bigtriangleup								\bigtriangleup		/
			(ATiming :	and type of repor	t)			(Inces	tion	eport)										(Prog	ress r	eport)						0	Finalro	(port)		
		Legend	Field	work tic work																												

Fig 6.1 Dispatch duration of each expert

7. Result of expense for the project budget

Table 7.1 shows Result of expense for the project budget.

T-1.1. 7 1	D	
Table /.1	Result of expense for the project budget	

Items of Expense	Amount(Rp)
Study tour for Jogjakarta	80,000,000
1st technical transfer training	100,000,000
2nd technical transfer training	40,000,000
3rd technical transfer training	90,000,000
Budget for SVLK application activity	490,000,000
Budget for activity of marketing approach	10,000,000
Workshop for SVLK promotion	140,000,000
Final workshop	50,000,000
3 sub-contract activities	400,000,000

8. Result of provided equipment and carrying equipment by project

			ea equipinent »J	p= 0]000	
Item	Specification	Number	Unit price	Total price (Rp)	Remarks
Sawmill	Band saw Engine Building	1	71,500,000	71,500,000	GMWT(1)
Chainsaw	EAST WEST EW55-CS	2	25,000	50,000	GMWT(1), Makumur(1)
Helmet	Plastic	40	2,000	80,000	GMWT(20), Makmur(20)
Scanner	Canon MP237	1	840,000	840,000	Dinas kehutanan
Printer	HP laser Jet P1102	1	780,000	780,000	Dinas kehutanan

Table 8.1 and 8.2 shows Result of provided equipment and carrying equipment by project.

Fable 8.1List of provided equilibrium	ipment by project
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Table 8.2List of carrying equipment by project

Name	Specification	Number	Unit price	Total price (Yen)	Remarks
Digital clinometer	Haglöf ECII Electronic Clino Made in Sweden	2	40,000	80,000	GMWT(1), Makmur(1)
GPS	GARMIN GPSMAP 62s	4	35,000	140,000	GMWT(2), Makmur(2)
Diameter tape	KDS F10-02DM	2	5,000	10,000	GMWT(1), Makmur(1)
Joint cutter	Makita joint cutter PJ7000 100V 50/60Hz	2	40,000	80,000	GMWT(1), Makmur(1)
Distance tape	NILLON 30m	2	11,350	22,700	GMWT(1) Makmur(1)

9. Collecting material list

Table 9.1 shows Collecting material list.

No.	Title	Author	Туре
1	高等学校用 林産加工 (High school use "Forestry processing")	文部省 (Ministry of Education)	Сору
2	Selamatkan Hutan 🛛 Tanam Pohon Untuk Masa Depan Bangsa	PT Kaltim Prima Coal	Books
3	The New Horizon's ndonesian Timber	MFP: Multistakeholder Forestry Programme	Books
4	MODUL UNTUK PENDAMPING SVLK di Hutan Rakyat, Hutan Desa dan HKM	MFP: Multistakeholder Forestry Programme	Books
5	PERATURAN SEKRETARIS JENDERAL KEMENTERIAN KEHUTANAN Nomor.: P.3 /II-KEU/2012	Sekretariat Direktorat Jenderal Bina Usaha Kehutanan	Books
6	STATISTIK KEHUTANAN INDONESIA (FORESTRY STATISTICS OF INDONESIA)	Kementerian Kehutanan (Ministry of Forestry)	Books
7	SVLK, Jalan Menuju REDD+	MFP: Multistakeholder Forestry Programme	Books
8	Directory: Indonesian manufacyurers of wood working products	ISWA:Indonesian Sawmill andWood Workingn Association	Books

Table 9.1Collecting material list

10. Methods Devised and Lessons Learned from Implementing the Project

The methods devised in the implementation of this project and the lessons learned from it are outlined below.

(1) Use of local coordinators

As this project term was short, lasting 1 year and 9 months (1 year and 6 months before the contract was amended), it was necessary to ensure that planning proceeded promptly and precisely. Moreover, although the project involved carrying out duties in the field, there was another constraint in that the experts could not be present for a long period of time and were only able to be at the project sites for a month at most. Due to such constraints, it was essential to make effective use of local coordinators in order to ensure that the activities proceeded smoothly. When launching the project, it was initially thought that it might be possible to hire high-caliber coordinators in Jakarta, the Indonesian capital, so the project team made various inquiries via the C/P and other relevant organizations, but was unable to find appropriate people,

so the team ended up hiring coordinators in Lampung Province, where the project sites were located. This ultimately turned out to be very useful in terms of ensuring the smooth running of the project. Of the three people asked to serve as local coordinators, one was an associate professor at the University of Lampung, which is a public university, while the other two were members of the staff of an NGO that was active locally; all of them had considerable experience of engaging in activities in Lampung Province and were very well-acquainted with the local situation. The communication between these coordinators and the Japanese experts was very smooth and they quickly developed an understanding of the project activities; when the Japanese experts were absent, they themselves went to each site and provided the farmers' cooperatives with intensive guidance. Moreover, they developed tremendously harmonious relationships with local administrative bodies, in the form of the Lampung Province Forestry Bureau, the East Lampung Regency Forestry Bureau, and the Central Lampung Regency Forestry Bureau, which was also highly effective in promoting the smooth running of the project. Even if coordinators from Jakarta had been hired for the project, it is unlikely that the activities could have proceeded any more smoothly than they did, no matter how outstanding the people employed might have been. It is doubtful that they would have worked so closely with the project sites in providing them with guidance. Accordingly, the lesson learned from this was that people well-acquainted with the local community should be hired as local coordinators.

(2) Conducting training for the purpose of technology transfer

Training for the purpose of technology transfer was carried out on three occasions over the project term. These training sessions covered a wide range of topics, including sapling cultivation, planting, tree cultivation, felling, timber processing, and forest protection (measures against fire). This project is aimed at supporting efforts to nurture an industry based on small-diameter log processing, so in a narrow sense, its focus is on technology transfer concerning the processing of small logs alone, but the decision to go as far as conducting technology transfer focused on forestry and the forest products industry as a whole was based on the idea that the appropriate management and development of the plantations producing the raw materials is vital to efforts to manufacture high-added-value timber products. If one wishes to produce timber with the right characteristics, one must of course cultivate good trees and good forests; in order to cultivate good forests, one must first pay attention to the saplings and even the seeds from which they are produced. At least, that is the approach adopted in the management and running of forests in Japan. On the other hand, this kind of approach to forest management has not spread very far at all in Indonesia, particularly in the case of small-scale privately-owned forests such as those owned by farmers. The reality is that farmers use saplings supplied to them and do not carry out any management whatsoever after planting. This makes it impossible to produce high-value timber. Wanting to ensure that the farmers' cooperatives became aware that appropriate forest management and maintenance is needed in order to continually produce timber with the right characteristics, the project team carried out these activities. If the cooperatives can produce timber with the right characteristics, they will be able to sell it for a higher price than has been possible hitherto, which will generate higher profits, part of which can be reinvested in forest management. This will produce a sustainable management cycle in the forestry industry and establish the model for integrated activities that is the goal of this project, as shown in Figure 2.1. This activity is also linked to the overall goal of this project, namely to enable the small-diameter log processing industry to contribute to the local economy, thereby reducing the pressure to conduct illegal felling in Indonesia's natural forests.

Due to time constraints, this project did not get as far as putting into practice all of the activities required for adequate forest management, but it would appear that the three training sessions for

the purpose of technology transfer did succeed in conveying to participants the importance of appropriate forest management.

(3) Collaboration with government-affiliated agencies in the counterpart country

The counterpart organization in this project was the Directorate General of Forestry Business Development at the Ministry of Forestry, while the Lampung Province Forestry Bureau jointly implemented activities at the actual project sites. As mentioned previously, the duration of the project was just one year and nine months, so it was essential to implement activities speedily. Accordingly, it was vital to ensure that both the project team and the organizations in the counterpart country shared the same goals and approach to implementation. The Directorate General of Forestry Business Development at the Ministry of Forestry and the Lampung Province Forestry Bureau both had a clear objective, namely the dissemination of Indonesia's SVLK timber accreditation system. Moreover, the project team understood that dissemination of SVLK would help to cultivate community-based small-diameter log processing industry, so activities aimed at the acquisition of SVLK licenses were incorporated into the project activities at the agreement of both sides. This ensured that adequate support from the Directorate General of Forestry Business Development at the Ministry of Forestry and the Lampung Province Forestry Bureau was available, with the result that the two farmers' cooperatives at the project sites succeeded in obtaining SVLK licenses. In addition, these activities appear to have promoted the development of a comparatively small-scale, community-based timber processing industry that makes effective use of small-diameter logs.

(4) Organizing a study tour

At the start of the project activities, a study tour was organized to enable representatives of the two cooperatives, among others, to learn from existing good examples. More specifically, the activities of farmers' cooperatives in Yogyakarta region that are already engaged in the kind of community-based timber processing that is the goal of this project served as a point of reference, as did the activities of the NGOs that support them. As well as representatives of the farmers' cooperatives at the project sites, local coordinators and staff from the Lampung Province Forestry Bureau also participated in the study tour. These representatives of governmental organizations were involved so that they could share the concrete vision for the subsequent project activities with other staff at their respective organizations. This study tour enabled participants to visit places where farmers' cooperatives had begun timber processing themselves. As a result, all of the participants were able to share the concrete vision for the project activities, allowing those activities to progress more smoothly. Moreover, after the study tour ended and the participants returned to Lampung Province, the representatives of the cooperatives who had participated gave presentations about the study tour to the other members of their respective cooperatives. This ensured that all members of each farmers' cooperative shared the vision for the goals of the project and the specific activities to be conducted in order to achieve these.

As such, it would appear that holding a study tour to view examples of success at the beginning of the project played a significant role in the subsequent development of this project.

11. Recommendations for Achieving the Overall Goal

The recommendations for achieving the overall goal that have emerged from the implementation of this project are as follows.

(1) Necessity of developing mechanisms that will make it easier for small-scale farmers to work on obtaining a license under the timber legality assurance system (SVLK)

This project sought to disseminate the timber legality assurance system (SVLK) as part of measures to promote community-based small-diameter log processing industry. SVLK is an initiative being promoted by the Government of Indonesia and there is already a considerable need to obtain a license, as timber that is not SVLK-certified cannot be exported and there are plans to make acquisition obligatory in due course. Consequently, farmers who own forests have a strong desire to obtain a license, but as things stand at present, considerable time and effort (of the kind put in during this project) are required to obtain a license, and the financial burden is also quite high. It is not something that can realistically be achieved within the scope of ordinary small-scale agriculture. As such, it is hard to envisage that SVLK will become prevalent naturally under the current situation. Some kind of support will be required in order to popularize SVLK. The Directorate General of Forestry Business Development at the Ministry of Forestry is reportedly considering dividing the SVLK system into two stages, with the existing system being applied to comparatively large-scale companies and a new system being built for small-scale timber processing companies and small-scale farmers' cooperatives, which will be relatively simple and impose a smaller financial burden. There is certainly a need for such a system to be created. However, technical and financial support of the kind that yielded results in this project are required in order to enable farmers to obtain licenses. In particular, not all small-scale farmers' cooperatives necessarily consist of people who have received a proper education and many of them are made up of people who are unaccustomed to the kind of elaborate tasks required for license acquisition. Finely-tuned support is required for cooperatives formed by such people. Groups such as NGOs and universities active in the area can probably provide such support. The specific support scheme is suggested by the activities conducted as part of this project. Nevertheless, it is recommended that the Indonesian government build a support system based on the outcomes of this project, in order to ensure the widespread use of the SVLK system.

(2) Support for activities that make effective use of Japan's ODA schemes

As stated above, both tangible and intangible support for activities aimed at SVLK license acquisition are required. For example, in the case of the timber processing license, it would be necessary to establish a processing plant and guidance in the running of the plant would be required. Support that could conceivably be provided to farmers' cooperatives includes advice about developing markets for their products and support activities for maintaining a livelihood until the initiative gets properly underway. It is recommended that Japan's ODA schemes be used for such activities. Small-scale timber processing plants could be established under the Grant Assistance for Grassroots Projects scheme administered by the local Embassy of Japan. Advice to farmers' cooperatives concerning approaches to marketing and activities for maintaining a livelihood could be carried out by dispatching volunteers via the JOCV scheme. If expanding these activities into other regions and using the SVLK system as a means of promoting regional development, technical cooperation projects would be one option that could be used as part of a support package. The Indonesian government is very keen for Japan to continue to contribute to the dissemination of SVLK via its international cooperation activities and it would appear that Japan could make a substantial contribution in this area.