

## 7. 終了時評価用アンケート様式

### Questionnaire Sheet for Evaluation of Research Project for Higher Utilization of Forestry and Agricultural Plant Materials in Thailand.

2001/ March

#### General

This questionnaire sheet is prepared to collect basic information for evaluation of HUFA project. The evaluation shall be conducted with JPCM (JICA Project Cycle Management) Method which evaluates the project objectively in order to draw some meaningful recommendations for the following phase and precious lessons for other similar projects. It is NOT intended for this evaluation to find out \_who is good, and who is bad\_, i.e. scapegoats. The name of sheet shall be covered to third party. Thus, the person who fills this sheet is advised to write whatever she/he thinks it reflects the truth.

Please write your name and institution/position

Name:

Position:

Date: / /

#### Methods

The questionnaires sheet shall consists of several questions which have several answers for your selection.

Please

1. Read carefully each question.
2. Choose your answer by putting a circle on the item you choose.
3. Write reasons with simple sentences.
4. Try to answer all questions at your knowledge.
5. If you choose the answer of \_I don t know\_, please write the reason, such as \_ I am not in the proper position to answer\_, \_No information\_, \_I don t understand the question\_ , and so on.
6. After finishing, please keep this by your own and submit to the JICA Evaluation Study Team that will arrive at Bangkok on 7<sup>th</sup> of March, 2001.

Please start by going to the next page.

1. About Inputs from Japanese Side

<p>1.1 Do you think that the timing, period of the dispatch of <b>Japanese experts</b> and their expertise was appropriate?</p> <p>1. Appropriate                      2. Fair                      3. Not Appropriate                      4. I don t know</p> <p>Reason :</p>
<p>1.2 Do you think that the timing, amount and curriculum of <b>training in Japan</b> were appropriate?</p> <p>1. Appropriate                      2. Fair                      3. Not Appropriate                      4. I don t know</p> <p>Reason :</p>
<p>1.3 Do you think that the timing, amount and quality of the <b>machinery and equipment</b> provided by the Japanese side were appropriate?</p> <p>1. Appropriate                      2. Fair                      3. Not Appropriate                      4. I don t know</p> <p>Reason :</p>
<p>1.4 Do you think that the timing, amount and subjects of Japanese <b>assistance for local cost</b> were appropriate?</p> <p>1. Appropriate                      2. Fair                      3. Not Appropriate                      4. I don t know</p> <p>Reason :</p>

2. About Inputs from Thai Side

2.1 Do you think that **the land, buildings and facilities** provided from Thai side were appropriate?

1. Appropriate

2. Fair

3. Not Appropriate

4. I don t know

Reason :

2.2 Do you think that the timing of **assignment of C/P** and its quality were appropriate?

1. Appropriate

2. Fair

3. Not Appropriate

4. I don t know

Reason :

2.3 Do you think that the timing, amount and quality of the **machinery, equipment, vehicles, instruments, tools, and other materials** provided by Thai side were appropriate?

1. Appropriate

2. Fair

3. Not Appropriate

4. I don t know

Reason :

2.4 Do you think that the timing, amount and contents of **administrative and experimental expenses** from Thai side were appropriate?

1. Appropriate

2. Fair

3. Not Appropriate

4. I don t know

Reason :

### 3. About Outputs Accomplishment

There are four (4) outputs expected to be accomplished by this project. The outputs are described as follows. Do you think these 4 outputs are accomplished so far?

3.1 For output No.1 **\_The Technologies on biological processes of the agroforestry system are improved and developed.\_**, I think this output is

1. Accomplished (100%)      2. Almost accomplished (80%)      3. Fairly accomplished (60%)  
4. Not so much accomplished (30%)      5. Unaccomplished at all.      6. I don t know

Reason :

3.2 For output No.2 **\_A sustainable agroforestry system is formulated and recommended.\_**, I think this output is

1. Accomplished (100%)      2. Almost accomplished (80%)      3. Fairly accomplished (60%)  
4. Not so much accomplished (30%)      5. Unaccomplished at all.      6. I don t know

Reason :

3.3 For output No.3 **\_Practical and Clean Pulping technology for small scale pulp mill is developed for higher utilization of forestry and agricultural plant materials.\_**, I think this output is

1. Accomplished(100%)      2. Almost accomplished.(80%)      3. Fairly accomplished. (60%)  
4. Not so much accomplished.(30%)      5. Unaccomplished at all.      6. I don t know

Reason :

3.4 For output No.4 **\_Utilization and environmental management technology for pulping wastes and plant material residues are developed.\_**, I think this output is

1. Accomplished(100%)      2. Almost accomplished.(80%)      3. Fairly accomplished. (60%)  
4. Not so much accomplished.(30%)      5. Unaccomplished at all.      6. I don t know

Reason :

#### 4. About Project Purpose Accomplishment

This project aims to develop a new model of agroforestry system, and the model is expected to be mastered by the counterparts (The Thai researchers).

4.1 About the project purpose : **A new model of agroforestry system with higher utilization of forestry and agricultural plant materials is developed for sustainable rural development**, I think this purpose is ,

1. Accomplished (100%)      2. Almost accomplished (80%)      3. Fairly accomplished (60%)  
4. Not so much accomplished (30%)      5. Unaccomplished at all.      6. I don t know

Reason :

4.2 Do you think the concept and contents of the new model of agroforestry system are understood by the Thai side counterparts (Thai researchers)?

1. Yes, completely (100%)      2. Satisfactory (80%)      3. Fairly (60%)  
4. Not so much (30%)      5. Unsuccessful      6. I don t know

Reason :

#### 5. About Impact of the Project

5.1 After the end of this project, the new model is expected to be extended to rural communities in Thailand. Do you think the new model will be introduced into rural communities in Thailand?

1. Yes, surely.      2. Yes, but not easily.      3. No, it is difficult.  
4. Impossible.      5. I don t know

Reason:

5.2 Have you noticed any change (or impact) caused by the project? If there are changes in the university, communities, or etc., please, describe them after categorizing them in positive and negative.	
<b>Positive Impact (Positive Change)</b>	<b>Negative Impact (Negative Change)</b>
1. No, there is no positive impact 2. Yes, there are positive impacts such as  contents:	1. No, there is no negative impact 2. Yes, there are negative impacts such as  contents:

6. About Relevance of the Project

<p>6.1 Compared with <b>the National Policy of the Thai government</b>, is this project still meaningful and worthwhile to do?</p> <p>1. Yes, very much      2. To some extent      3. Not much      4. I don t know</p> <p>Reason :</p>
<p>6.2 Compared with <b>the needs of the staff of Kasetsart University</b>, is this project still meaningful and worthwhile to do?</p> <p>1. Yes, very much      2. To some extent      3. Not much      4. I don t know</p> <p>Reason :</p>
<p>6.3 Compared with <b>the need of rural communities in Thailand</b>, is this project still meaningful and worthwhile to do?</p> <p>1. Yes, very much      2. To some extent      3. Not much      4. I don t know</p> <p>Reason :</p>

7. About Sustainability of the Project

Please imagine the situation after the end of this project.

<p>7.1 Do you think that the staff of Kasetsart University has acquired <b>enough level of skills and knowledge</b> to sustain the effect of this project by their own?</p> <p>1. Yes, very much      2. To some extent      3. Not much      4. I don t know</p> <p>Reason :</p>
<p>7.2 Do you think that Kasetsart University has <b>enough number of staff</b> to sustain the effect of this project by their own?</p> <p>1. Yes, very much      2. To some extent      3. Not much      4. I don t know</p> <p>Reason :</p>
<p>7.3 Do you think that Kasetsart University has <b>enough financial backup</b> to sustain the effect of this project by their own?</p> <p>1. Yes, very much      2. To some extent      3. Not much      4. I don t know</p> <p>Reason :</p>
<p>7.4 Except for the above issues, in order to guarantee the sustainability of this project effect, what sort of matters do you think is important? Please write down any important condition (up to 3) which should be satisfied to sustain the project effect.</p> <p>1.</p> <p>2.</p> <p>3.</p>

*Thank you very much for your assistance.*

*ARIGATOU GOZAIMASHITA. (thank you very much in Japanese)*

## 8. アンケート集計結果

以下は、アンケート調査の結果である。アンケートは、プロジェクト関係者約40名に配布され、その内21部が回収された。回答者のリストにみられるように、関係者のプロジェクトにおける立場が様々であるため、より多様な意見が反映できたと考えられる。反対に、回答者のプロジェクトの理解度も様々であることから、この回答結果がプロジェクトの正しい評価にはつながらない。このアンケート結果は、評価の材料の一部であり、この回答結果がすなわちプロジェクト評価でないことは、注意されたい。

### 回答者リスト

1	Yoshinari Kobayashi	Japanese Expert
2	Vichai Haruethaithanasan	Project Manager
3	Vittaya Punsuvon	Researcher
4	Warunee Thanapase	Secretary
5	Prisnar Siriacha	Project Coordinator
6	Suchada Ujjin	Researcher
7	Makoto Tajima	Japanese Expert
8	Hideshi Maruta	Japanese Expert
9	Yupa Mongkolsook	Deputy Director
10	Klanarong Sriroth	Deputy Director
11	Tongchai Kampee	Associate Professor
12	Wikhan Anapanurak	Researcher
13	Tongchai Srinopphakun	Associate Professor
14	Asstirof Penjit Sprinophakun	Associate Professor
15	Phuntip Poonpairoj	Researcher
16	Nusara Sinbuathong	Researcher
17	Jongruk Chanchareonsook	Associate Professor
18	Supamord Panichsakpatana	Project Leader of waste m
19	Sakak Phansiri	Researcher
20	Rommanee Charoensub	Researcher
21	Siripoon Vihokto	Researcher

### 回答結果

質 問		回 答 数			
1.1	Do you think that the timing, period of the dispatch of Japanese experts and their expertise was appropriate?	Appropriate	Fair	Not Appropriate	I don't know
		12	7	1	2
1.2	Do you think that the timing, amount and curriculum of training in Japan were appropriate?	Appropriate	Fair	Not Appropriate	I don't know
		11	7	2	2
1.3	Do you think that the timing, amount and quality of the machinery and equipment provided by the Japanese side were appropriate?	Appropriate	Fair	Not Appropriate	I don't know
		12	6	2	2
1.4	Do you think that the timing, amount and subjects of Japanese assistance for local cost were appropriate?	Appropriate	Fair	Not Appropriate	I don't know
		10	3	2	7
2.1	Do you think that the land, buildings and facilities provided from Thai side were appropriate?	Appropriate	Fair	Not Appropriate	I don't know
		17	3	0	2
2.2	Do you think that the timing of assignment of C/P and its quality were appropriate?	Appropriate	Fair	Not Appropriate	I don't know
		12	2	2	6
2.3	Do you think that the timing, amount and quality of the machinery, equipment, vehicles, instruments, tools, and other materials provided by Thai side were appropriate?	Appropriate	Fair	Not Appropriate	I don't know
		14	3	1	4



2.4	Do you think that the timing, amount and contents of administrative and experimental expenses from Thai side were appropriate?	Appropriate	Fair	Not Appropriate	I don't know		
		10	6	0	6		
3.1	For output No.1 "The Technologies on biological processes of the agroforestry system are improved and developed.", I think this output is accomplished	Completely	Mostly	Fairly	Not much	Not at all	I don't know
		1	10	4	0	0	7
3.2	For output No.2 "A sustainable agroforestry system is formulated and recommended.", I think this output is accomplished	Completely	Mostly	Fairly	Not much	Not at all	I don't know
		1	5	4	0	0	12
3.3	For output No.3 "Practical and Clean Pulping technology for small scale pulp mill is developed for higher utilization of forestry and agricultural plant materials.", I think this output is accomplished	Completely	Mostly	Fairly	Not much	Not at all	I don't know
		0	10	6	0	0	6
3.4	For output No.4 "Utilization and environmental management technology for pulping wastes and plant material residues are developed.", I think this output is accomplished	Completely	Mostly	Fairly	Not much	Not at all	I don't know
		0	8	5	1	0	8
4.1	About the project purpose : "A new model of agroforestry system with higher utilization of forestry and agricultural plant materials is developed for sustainable rural development", I think this purpose is accomplished	Completely	Mostly	Fairly	Not much	Not at all	I don't know
		1	6	5	0	0	10
4.2	Do you think the concept and contents of the new model of agroforestry system are understood and mastered by the Thai side counterparts (Thai researchers)?	Completely	Mostly	Fairly	Not much	Not at all	I don't know
		3	8	2	0	0	9
5.1	After the end of this project, the new model is expected to be extended to rural communities in Thailand. Do you think the new model will be introduced into rural communities in Thailand?	Yes, surely	Yes, but not easily	No, it is difficult	Impossible	I don't know	
		6	12	1	0	3	
5.2	Have you noticed any change (or impact) caused by the project? If there are changes in the university, communities, or etc., please, describe them after categorizing them in positive and negative.	Positive Impact	Negative Impact				
		26	0				
6.1	Compared with the National Policy of the Thai government, is this project still meaningful and worthwhile to do?	Yes, very much	To some extent	Not much	I don't know		
		20	1	0	1		
6.2	Compared with the needs of the staff of Kasetsart University, is this project still meaningful and worthwhile to do?	Yes, very much	To some extent	Not much	I don't know		
		17	3	1	1		
6.3	Compared with the need of rural communities in Thailand, is this project still meaningful and worthwhile to do?	Yes, very much	To some extent	Not much	I don't know		
		18	3	0	1		
7.1	Do you think that the staff of Kasetsart University has acquired enough level of skills and knowledge to sustain the effect of this project by their own?	Yes, very much	To some extent	Not much	I don't know		
		14	8	0	0		
7.2	Do you think that Kasetsart University has enough number of staff to sustain the effect of this project by their own?	Yes, very much	To some extent	Not much	I don't know		
		10	9	1	2		
7.3	Do you think that Kasetsart University has enough financial backup to sustain the effect of this project by their own?	Yes, very much	To some extent	Not much	I don't know		
		4	12	5	1		

## I. Published Papers

### General

◆ Proceedings: Edited by KAPI and JICA, "Production and Utilization of Paper Mulberry", Held on March 10, 1999 at Conference Room, Golden Jubilee Bldg., Kasetsart University., pp.115 (March 1999)

◆ KAPI and JICA: "Record of Round Table discussion: Saa Plantation Experiments in Thailand", (held on December 22, 1999) , pp. 43 ( September 1999) in English

◆ KAPI, " Saa for Small and Medium Scale Enterprises",

◆ Mr. M. Tajima (ed.), "Report on the Laos Technical Exchange Trip," May, 2000 partly in Japanese and in English with many pictures

◆ Mr. M. Tajima (ed.), "Report on the Myanmar Technical Exchange Trip," May, 2000

### P1-1

◆ Yasushi Yamashita, Shinya Takeda and Songkram Thammincha, "Development of Pulp Industry in Thailand and Its Raw Material Base", Journal of Forest Economics , 45(1), 63-68(1999) in Japanese.

◆ Poonpilai Suwanarit, "Effect of Vesicular-Arbuscular Mycorrhizal Fungi on Growth of *Hibiscus sabdariffa* var. *altissima* and Infestation of Root-knot Nematode *Meloidogyne incognita*," (1997) in Thai.

### P1-2

◆ Chaiskran Hirunpruk (Project Head), "Social Characteristics of the Traditional Community Technology of Po-saa Papermaking", (1996) in Thai.

◆ Songkram Thamminca, "Historical Background of Paper Production and Utilization in Thailand," (1996) in Thai.

### P2-1

◆ W. Anapanurak and S. Pitsuthpichet, "Chemical Pulp Production from Rice Straw by Alkaline Soaking and Cooking with Added Alkaline and Oxygen", 10<sup>th</sup> ISWPC Proceedings, was held at Pacifico Yokohama, Japan, June 7-10, 1999, pp.4 (1999)

◆ T. Tawonpanich, P. Srinophakun and T. Srinophakun, "New Era of Cleaner Production in Mulberry Paper Industry", Proceeding of the 2<sup>nd</sup> Asia-Pacific Cleaner Production Roundtable & Trade Expo, April 21-24, 1999, Brisbane, Australia (1999).

- ◆ V.Punsuvon and Y.Kobayashi, "Steam Explosion Pulping Paper Mulberry Bast", 10<sup>th</sup> ISWPC Proceedings, was held at Pacifico Yokohama, Japan, June 7-10, 1999, pp.4 (1999)
- ◆ Wikhan Anapanurak, "Chemical Pulp Production from Rice Straw by Alkaline Soaking and Cooking with Added Alkaline and Oxygen", (1997) in Thai.
- ◆ Wikhan Anapanurak, "Chemical Pulp Production from Bagasse by Alkaline Soaking and Cooking with Added Alkaline and Oxygen," (1998) in Thai.
- ◆ Malee Srisodsuk, "Application of Microorganism for Biopulping," (1998) in Thai.
- ◆ Lerluck Chitradon, "Screening and Study on Lignocellulolytic Enzymes from Fungi and Mushroom for Biopulping," (1999) in Thai.

## P2-2

- ◆ Hiromitsu Wada, Bussarin Khongeri, Nusara Sinbuathong and Yoshinari Kobayashi, "Waste Water Treatment Technology for Small Scale Pulp and Paper Mills in Thailand (Report No.1) : Analysis of the Present Situation of Machine and Hand Made Paper Mills from Paper Mulberry", Kami Pa Kikyo Shi (Japan Tappi), 53 G (10), 1363-1370 (1999).
- ◆ Hiromitsu Wada, Bussarin Khongseri, Nusara Sinbuathong, Yoshinari Kobayashi, "Waste Water Treatment Technology for Small Scale Pulp and Paper Mills in Thailand (Part 2), Preliminary Treatment Test for Waste Water from Pulp and Paper Mills from Paper Mulberry (*Broussonetia papyrifera*) in Thailand," Kami Pa Gikyo Shi, 54(3), 389-395 (2000) in Japanese.

## II. Workshops and Seminars/Symposiums

### 1. Workshop

#### P1-1

- ◆ Workshop of tissue culture
 

Mrs. Yupa of KAPI will hold 4 times workshop for training tissue culture in KAPI efficiently using several equipment supplied by JICA as follows. Each workshop will have 25 participants. April 20-21, April 27-28, May 14-15 and May 18-19, 1998. From 1<sup>st</sup> to 3<sup>rd</sup> one are open to the public and the last one is held for members of Agriculture and Scientific Association.

  - ◆ Workshop on operation of root length measurement was held on July 3, 1998 at 3<sup>rd</sup> floor laboratory in Faculty of Forestry with 7 attendants.
  - ◆ The "Tissue Culture" Workshop was held on December 9, 1999 with 5 participants from HUFA members by Dr. Taniguchi, short term expert, Mrs. Yupa and Dr. Salak.

◆ The workshop on the demonstration and operating method of “atomic absorption” was held on June 13, 2000 with 5 attendants at the Department of Silviculture, Faculty of Forestry (3<sup>rd</sup> floor).

◆ The workshop entitled “Plantation and Utilization of Paper Mulberry” was held at Seeharaj Hotel in Uttaradit on August 27– 30, 2000. About 90 persons attended at this workshop. The workshop included a survey trip to IFO plantation site in Wanchin, Phrae province and a hand paper-maker in Song village, Phrae province.

## **P2-1**

◆ The explanation of the explosion system was made by the invited technician, Mr. Takao Ohno, an engineer from Nitto Koatsu Co., Ltd. on February 25, 1998 with 25 attendants.

◆ The operation method of the pulping unit was explained by Mr. Masatoshi Tamayama, the co-ordinator and a mechanical engineer on March 11, 1998 with 15 attendants.

◆ The operation method of the HPLC was also explained by Dr. Lerluck Chitradon, Associate Professor of Department of Microbiology, with help of Parawinsor Co. Ltd., an dealing agency of Shimadzu Co., Ltd. in Thailand, on March 17–20, 1998 with 30 (lecture) and 15 (experiment) attendants.

◆ Workshop on operation method on pulp and paper equipment supplied by Kumagai Riki Co., Ltd. were held by Mr. Kumagai, managing director, and Mr. Shirai, engineer with help of Mr. Yamazaki, Kawasho Co., Ltd. from July 13 to 17 1998 at KAPI room 719 and Faculty of Forestry, Dept. of Forest Product with 12 attendants.

◆ From October 12 to 16 1998 a workshop was held on operation of GC-Mass Spectrometer by the local agency with 29 attendance.

◆ Workshop entitled “The separation and Demonstration of GC Mass Spectrophotometer” was held on October 12–16, 1998 at room No. 719, KAPI with 29 attendants.

◆ The installation and operation of pulp and paper equipment, total 12 items, all of which were manufactured by Kumagai Riki Mfg Co., Ltd., were demonstrated by Mr. Kumagai and his staff from April 21 to 22 , 1999 with around 10 attendants.

◆ Workshop on The demonstration and operation method of UV-Visible Spectrophotometer was held on June 18, 1999 with 7 attendants.

◆ The workshop on pulp and paper equipment manufactured by Kumagai Riki Co, Ltd. was held by the staff dispatched from the company from July 24–25, 2000 in the Pulping House and KAPI 6<sup>th</sup> floor.

## **P2-2**

◆ Operation and demonstration of ozone generator and water checker & sampler were held on June 2, 1998 with 5 attendants.

◆ The operation of BOD measurement equipment manufactured by Yanaco Co., Ltd., was lectured with demonstration by an engineer dispatched by the companies with around 10 attendants from May 10 to 12, 1999.

## **2. Seminars**

### **General**

◆ On July 28, 1997 Study Tour to Shikoku was reported by five persons participated in trip. Assoc. Prof. Dr. Nikhom Leamsak and other 4 members covered whole visiting places, Ino Paper Museum, two hand-made paper mills in Kochi and Ehime, two high performance paper mills( Miki Specialty Paper Co.,Ltd. And Nippon Kokodoshi Kogyo Co.,Ltd.) ,of which technology and equipment were precisely analyzed.

◆ The seminar on reports from trainees trained in Japan and survey trips were held on February 17, 1998.

Ms. Romanee Charoensub: "Biotechnology for Improvement of Plant Materials"  
(Training Report)

Mr. Wikhan Anapanurak : "Atmospheric Acetic Acid Pulping"

Dr. Shinya Takeda: "Hand Papermaking and Production of Paper Mulberry in Burma and Laos"

Mr. Yasushi Yamashita: "The Structure of Pulp & Paper Market and Industry in Thailand"

Dr. Yoshinari Kobayashi: "Comparative Study on Hand Papermaking in Thailand and Japan"

◆ The seminar on research and survey results of Japanese experts was held on March 24, 1998.

Prof. Dr. Hayashi: "Pulping and Related Technology for Non wood Materials"

Dr. Kobayashi: "12<sup>th</sup> IAPMA Congress Participation and CSIRO Visit"

Dr. Shinya Takeda: "Hand Papermaking and Production of Paper Mulberry in Thailand, Burma and Laos"

◆ Mrs. Warunee gave a report on PCM/PDM of which she received in Tokyo on June 4, 1998 at KAPI conference room with 16 attendants.

◆ KU-JICA Seminar, "Production and Utilization of Paper Mulberry," March 10, 1999, Conference Room at 2 Fl., Golden Jubilee Building, KU, Held by KAPI and JICA, With 150 attendants (private sectors 31 persons, government organization 112 persons, Japanese experts 5 persons, JICA representative 2 persons). Total 16 projects (oral presentation 7

subjects, 4 subjects concerning the production of paper mulberry and 3 subjects utilization of paper mulberry including key note presentation by Dr. Ampol Senanarong, Privy Counselor and Chairman of KU; Poster presentation was 9 subjects Proceeding (pp.114) was published.

◆ Ms. Warunee Thanapase, KAPI, gave a lecture on “Introduction to PCM Method” at RFD, on May 18, 1999 by the request of JICA Headquarter for staff from RFD, especially members of the project implementation team of the Project entitled “Reforestation and Extension Project in the Northeast of Thailand Phase II” (20 persons).

◆ The Trainees’ reports were presented on July 14, 1999 at the Conference Room in KAPI. The reporters were Ms. Nusara Sinbuathong, Ms. Maliwan Tanasombat, Ms. Phuntip PoonPairoj and Ms. Wanna Nimlaor with 20 attendants.

◆ Seminar entitled “Po-saa as Small and Medium Enterprise Cycle” had been held on October 1, 1999 at Conference Room Sutum Arekul, Kasetsart University under auspices of KU in cooperation with Department of Industrial Promotion, Ministry of Industry. The proceedings were published in Thai and the record will soon be publicized in English. The number of attendants were about 150.

◆ The Domestic Seminar “Po-saa on SME Cycle” was held on October 1<sup>st</sup>, 1999 at Conference Room, Sutham Arekul, Bangkhen Campus, Kasetsart University.

◆ The seminar on “Report of Technical Exchange Trip to Myanmar” was held on April 7<sup>th</sup>, 2000 at KAPI conference room with 30 attendants. Speakers were Dr. Kobayashi, Mr. Tajima and Dr. Bunvong.

◆ The seminar on trainees’ reports (by Mrs. Suchada Ujjin and Ms. Ratchanok Sangpenchan) was held on July 26, 2000 at 8<sup>th</sup> floor, KAPI’s old building with 25 attendants.

#### **P1-1**

◆ HUFA Round Table Discussion Forum “Paper Mulberry Cultivation in Thailand” was held at Conference Room, KAPI, on December 22, 1998.

◆ After his strenuous survey trip for analysis of soil, Professor Dr. Katsutoshi Sakurai made his report on the analysis results of soil samples in the plantation sites on October 5, 1999 in KAPI Conference Room with 20 attendants.

◆ On October 5, 1999, Professor Dr. Sakurai, Kochi University, who was invited as short term expert, made his report on “Analysis of Soils in the Po-saa Plantation Sites” at KAPI conference room with 20 attendants.

◆ On December 22, 1999 Professor Dr. Takeshi Taniguchi, Emeritus Professor of Nagoya University, who was invited as short term expert, had a lecture entitled “Development of

Plant Regeneration System for Somatic Hybrid Cells of Paper Mulberry and Others” at KAPI with 29 attendants.

#### P2-1

◆ On July 4, 1997 Ms. Manee Tantirungkij reported her experience received in Kyushu University and Forest & Forest Product Research Institute on in vitro bio-bleaching by IZU-154 and *Phanerochaete sordida* YK624 in substituting to more popular *P. chrysosporium*.

◆ Prof. Dr. Kokki Sakai, Department of Agriculture, Kyushu University, visited in KAPI from June 22 to 25 and during his stay he gave invited lecture on “Organosov Pulping” on June 24.

◆ On January 27 and February 10, 1998 Dr. Kondo gave lectures entitled “Biotechnology in Pulp & Paper Industry” with around 20 and 25 attendants, respectively.

◆ On June 24, 1998 Prof. Dr. Kokki Sakai gave a lecture entitled “Organosov Puling” at KAPI conference room with 50 attendants.

◆ On July 3, 1998 Dr. Shashank Bharati, Technical Development Manager, Asia-Pacific, of Betz Bearbon, gave a lecture “Technical Development in Pulping and Paper Process and Water Closure System in Pulping and Paper Process” at KAPI conference room with 30 attendants.

◆ Professor Dr. Kazuo Izaki, Tohoku Kogyo University, Emeritus Professor of Tohoku University, gave a lecture entitled “New Enzymes from Microorganisms, Protopectinase” on August 25, 1998 in the morning at KAPI conference room with 15 attendance.

◆ Professor Dr. K. Izaki gave another lecture entitled “Lignolytic Fungi and Purification & Characterization of the Enzymes from Selected Strains” on September 4, 1998, one e day before his leave with 35 attendance. This was his progress report of his research with Dr. Lerluck Chitradon during his stay as a short term expert.

◆ Yoshinari Kobayashi, “Papermaking in the Philippines”, In Faculty of Engineering, on November 11, 1998 with 30 attendants.

◆ Seminar on “Coordination between Private Sectors and Government for Development of Pulp and Paper Industry” was held by KAPI-KU (Paper and Wood Composite Research Unit), MTEC, and Pulp and Paper Industry Association of Thailand at Golden Jibilee Building on November 25, 1998 with 200 participants.

◆ Yoshinari Kobayashi, “Paper Culture in Thailand” in Japanese at Banrak Kindergarten, at Meeting of Group Understanding Thai Culture on December 4, 1998 with 20 attendants.

◆ Yoshinari Kobayashi, "Paper Culture in Thailand" in Japanese at Banrak Kindergarten, at Meeting of Group Understanding Thai Culture on December 4, 1998 with 20 attendants.

◆ "Explosion Pulping," held by Pulp Paper & Wood Composite Research Unit, KAPI, by Dr. Vittaya Punsuvon, April 28, 1999, at Conference Room, KAPI with 30 attendants.

◆ On August 4, 1999 the reports were made on ISWPC in Yokohama by Dr. Yoshinari Kobayashi, Dr. Vittaya Punsuvon, Dr. Prisanar Siriacha and Mr. Wikhan Anapanurak in KAPI Conference Room with 20 attendants.

◆ The seminar on "An Analysis and Treatment of Wastewater of Papermaking Mills" by Dr. Hiromutsu Wada, Nihon Wacon Co., Ltd., who was short term expert, was held on March 6, 2000 at KAPI conference.

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◆ Hiromutsu Wada, "Japanese Wastewater Treatment Technology", In Faculty of Engineering, on November 18, 1998 with 30 attendants.

◆ Seminar on "The Proposal of New Biological Treatment Methods" by Dr. Y.Kobayashi and "The Analytical Result of Wastewater from Small Paper Mills" by Dr. H. Wada was held on December 3, 1998 at Conference Room at KAPI.

◆ Seminar on "Future Strategic Consideration on Wastewater Treatment Technology" by Dr. Y.Kobayashi and "An Analysis of Effluent from Papermaking Process" by Dr. H. Wada was held on December 23, 1998 at Conference Room at KAPI.