THE RECORD OF DISCUSSIONS BETWEEN THE JAPANESE IMPLEMENTATION SURVEY TEAM AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE REPUBLIC OF INDONESIA ON THE JAPANESE TECHNICAL COOPERATION FOR THE SERICULTURAL DEVELOPMENT PROJECT IN INDONESIA

The Japanese Implementation Survey Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as JICA) and headed by Dr. Masatoshi Kobayashi , visited the Republic of Indonesia from January 12, 1983 to January 21, 1983 for the purpose of working out the details of the technical cooperation programme concerning the Sericultural Development Project in Indonesia, which has been carried out on the basis of the Agreement between the Government of Japan and the Government of the Republic of Indonesia concerning Technical Cooperation in the field of sericulture, signed at Jakarta on February 28, 1978.

During its stay in the Republic of Indonesia, the Team exchanged views and had a series of discussions with the Indonesian authorities concerned in respect of the desirable measures to be taken by both Governments for the successful implementation of the above-mentioned Project.

As a result of the discussions, the Team and the Indonesian authorities concerned, considering that the continuous cooperation is necessary in order to attain the anticipated purpose of the Project, agreed to recommend to

their respective Governments the matters referred to in the document attached hereto.

Jakarta, January 19, 1983

Dr. Masatoshi Kobayashi
Leader, The Japanese
Implementation Survey Team
Japan International Co-
operation Agency

Ir. Apandi Mangoendikoro
Director, Directorate of
Reforestration and
Rehabilitation, Directorate-
General of Forestry,
Department of Agriculture

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN BOTH GOVERNMENTS

1. The Government of Japan and the Government of the Republic of Indonesia will cooperate with each other in implementing the Sericultural Development Project (hereinafter referred to as "the Project") for the purpose of developing the sericultural techniques, so as to contribute to the agricultural development in South Sulawesi Province.

2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

II. DISPATCH OF JAPANESE EXPERTS

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to provide at its own expense services of the Japanese experts as listed in Annex II through the normal procedures under the Colombo Plan Technical Cooperation Scheme.

2. The Japanese experts referred to in 1 above and their families will be granted in the Republic of Indonesia the privileges, exemptions and benefits no less favourable than those accorded to experts of third countries working in the Republic of Indonesia under the Colombo Plan Technical Cooperation Scheme.

III. PROVISION OF MACHINERY AND EQUIPMENT

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to provide at its own expense such machinery, equipment and other materials necessary for the implementation of the Project as listed in Annex III, through the normal procedures under the Colombo Plan Technical Cooperation Scheme.

2. The articles referred to in 1 above will become the property of the Government of the Republic of Indonesia upon being delivered c.i.f. to the Indonesian authorities concerned at the ports and/or airports of disembarkation, and will be utilized exclusively for the implementation of the Project in consultation with the Japanese experts referred to in Annex II.

IV. TRAINING OF INDONESIAN PERSONNEL IN JAPAN

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to receive at its own expense the Indonesian personnel connected with the Project for technical training in Japan through the normal procedures under the Colombo Plan Technical Cooperation Scheme.

provide at its own expense:

(1) Land, buildings and facilities as listed in Annex V;

(2) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than those provided through JICA under III above;

(3) Transportation facilities and travel allowance for the Japanese experts for the official travel within the Republic of Indonesia;

(4) Suitably furnished accommodations for the Japanese experts and their families.

2. In accordance with the laws and regulations in force in the Republic of Indonesia, the Government of the Republic of Indonesia will take necessary measures to meet:

(1) Expenses necessary for the transportation within the Republic of Indonesia of the articles referred to in III above as well as for the installation, operation and maintenance thereof;

(2) Customs duties, internal taxes and any other charges, imposed in the Republic of Indonesia on the articles referred to in III above;

(3) All running expenses necessary for the implementation of the Project.

2. The Government of the Republic of Indonesia will take necessary measures to ensure that the knowledge and experience acquired by the Indonesian personnel from technical training in Japan will be utilized effectively for the implementation of the Project.

V. SERVICES OF INDONESIAN COUNTERPART PERSONNEL AND ADMINISTRATIVE PERSONNEL

1. In accordance with the laws and regulations in force in the Republic of Indonesia, the Government of the Republic of Indonesia will take necessary measures to secure at its own expense necessary services of Indonesian counterpart personnel and administrative personnel as listed in Annex IV.

2. As to the Indonesian counterpart personnel, the Government of the Republic of Indonesia will endeavor to allocate necessary number of suitably qualified personnel corresponding to each Japanese expert as specified in Annex II, to fulfill the effective and successful transfer of technology under the Project.

VI. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE REPUBLIC OF INDONESIA

1. In accordance with the laws and regulations in force in the Republic of Indonesia, the Government of the Republic of Indonesia will take necessary measures to

VII. ADMINISTRATION OF THE PROJECT

1. Director of the Directorate of Reforestration and Rehabilitation, Directorate-General of Forestry, Department of Agriculture will be responsible for the administration and implementation of the Project and the Japanese experts will provide necessary technical guidance and advice for the implementation of the Project.

2. For the effective and smooth implementation of the Project, a Joint Committee with the function and composition as referred to in Annex VI will be established in order to enhance close consultation between Japanese experts and the officials concerned of the Government of the Republic of Indonesia.

VIII. CLAIMS AGAINST JAPANESE EXPERTS

The Government of the Republic of Indonesia undertakes to bear claims, if any arises, against the Japanese experts engaged in the Project resulting from, occuring in the course of, or otherwise connected with the discharge of their official functions in the Republic of Indonesia except for those arising from the willful misconduct or gross negligence of the Japanese experts.

IX. MUTUAL CONSULTATION

There will be mutual consultation between the two Governments on any major issues arising from, or in connection with this Attached Document.

X. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be two (2) years from February 28, 1983.

ANNEX I

MASTER PLAN

The Project will be implemented in a sericultural development centre (hereinafter referred to as "the Centre"), a sub-centre (hereinafter referred to as "the Sub-centre") and the Pilot Units.

(1) The following activities will be conducted in the Centre in Gowa Regency, South Sulawesi Province:

(a) Management of mulberry field;

(b) Trial experiments to develop techniques for moriculture and for the control of pests and diseases of mulberry;

(c) Trial experiments to develop techniques for silkworm rearing;

(d) Production of silkworm eggs and its distribution to the Sub-centre;

(e) Training of Indonesian technical staffs;

(f) Formulation of a programme for demonstration of sericultural techniques to be developed in the Centre at the Pilot Units.

(2) The following activities will be conducted in the Sub-centre:

(a) Verifying experiments of the sericultural techniques developed in the Centre;

(b) Multiplication of silkworm eggs and mulberry scions, and its distribution to farmers;

(c) Training of technical staffs and farmers;

(d) Guidance for the demonstration of sericultural techniques at the Pilot Units.

(3) Sericultural techniques developed at the Centre and the Sub-centre will be demonstrated in the Pilot Units (two units in Soppeng Regency, and one unit each in Wajo, Sidrap, and Enrekang Regencies).

ANNEX II

JAPANESE EXPERTS

(1) Experts (long-term assignment)

Moriculture

Egg production

Silkworm rearing

Control of pests and diseases

(2) Liaison-officer

Note: 1. The Team Leader will be assigned from the above-mentioned experts.

2. Additional experts on short-term assignment may also be dispatched, as necessity arises.

ANNEX III

LIST OF THE ARTICLES

(1) Equipment, machinery, instruments, tools and their spare parts for rearing silkworm and producing silkworm eggs

(2) Equipment, machinery, instruments, tools and their spare parts for laboratory works

(3) Agricultural machinery, implements and their spare parts for mulberry field

(4) Other necessary equipment and materials.

ANNEX IV

LIST OF INDONESIAN STAFF

(1) Project Manager

(2) Field and number of Indonesian counterpart experts and technical staffs

	the Centre		the Sub-centre	
	counterpart experts	technical staffs	counterpart experts	technical staffs
Moriculture	4	6	1	5
Production of silkworm eggs	4	6	3	10
Silkworm rearing	3	6	1	2
Control of pests and diseases	3	2	-	-
Total	14	20	5	17

(3) Clerical and service employee

(4) Labourers

ANNEX V

LIST OF LAND, BUILDINGS AND FACILITIES

(1) Land and buildings for the Centre

- (a) Land for buildings and facilities
- (b) Mulberry field
- (c) Main building
- (d) Cocoon testing room
- (e) Rearing room for development of rearing methods
- (f) Artificial hatching room
- (g) Rearing rooms for egg production
- (h) Research room (including refrigerator for male moth)
- (i) Pathological rearing room
- (k) Pebrine inspection room
- (l) Management house of mulberry field
- (m) Shed for compost
- (n) Store-house for agricultural machinery and equipment
- (o) Chemicals storage
- (p) Garage
- (q) Living quarters
- (r) Other necessary land buildings and facilities

(2) Land and buildings for the Sub-centre

- (a) Land for buildings and facilities
- (b) Mulberry field
- (c) Rearing room for young silkworm
- (d) Rearing room for grown wilkworm

(e) Research room for grown silkworm

(f) Rearing room for egg production

(g) Research room for egg production

(h) Pebrine inspection room

(i) Silkworm egg refrigerator

(j) Rearing room for development of rearing methods

(k) Artificial hatching room

(l) Chemical storage

(m) Other necessary land, buildings and facilities

ANNEX VI

THE JOINT COMMITTEE

1. Functions

The Joint Committee composed of those members as listed in 2 below will meet once a year and whenever necessity arises and work:

1) To review the overall progress of the Tentative Schedule of Implementation in line with the Master Plan of the Project

2) To review those measures taken by the Government of Japan:

(1) Assignment of Japanese experts

(2) Training of Indonesian counterparts in Japan

3) To review those measures taken by the Government of the Republic of Indonesia:

(1) Allocation of necessary budget

(2) Allocation of necessary Indonesian counterparts

(3) Utilization of machinery and equipment provided by the Government of Japan

4) To formulate the Annual Working Plan of the Project

2. Composition

1) Chairman:

Director of the Directorate of Reforestation and Rehabilitation, Directorate-General of Forestry, Department of Agriculture

2) Indonesian side:

(a) Project Manager

(b) Representative of the Forest Research Institute, Agricultural Research and Development Agency, Department of Agriculture

(c) Representative of the Directorate of Forestry Production, Department of Agriculture

(d) Secretary of the Directorate-General of Forestry Department of Agriculture

(e) Representative of the Directorate of Forestry Planning, Department of Agriculture

(f) Representative of the Bureau of Planning, Department of Agriculture

(g) Representative of the South Sulawesi Provincial Government

3) Japanese side:

(a) Team Leader

(b) Experts to be appointed by the Leader

(c) Liaison-officer

(d) Representative of JICA

Note: Officials of the Embassy of Japan and the Consulate-General of Japan in Ujung Pandang may attend the meeting of the Joint-Committee as observers.

TENTATIVE SCHEDULE OF IMPLEMENTATION AND TECHNICAL COOPERATION PROGRAMME OF THE SERICULTURAL DEVELOPMENT PROJECT IN INDONESIA

The Japanese Implementation Survey Team and the Directorate-General of Forestry, Department of Agriculture, have jointly formulated the Tentative Schedule of Implementation (hereinafter referred to as the "Schedule") of the Project as annexed hereto. The Schedule has been formulated in connection with Attached Document I. 2 of the Record of Discussions signed between the Japanese Implementation Survey Team and the Directorate-General of Forestry, Department of Agriculture, on the Sericultural Development Project.

The Schedule will be implemented on the conditions that necessary budgets will be allocated for the implementation of the Project by both sides, and that it is subject to change within the framework of the Record of Discussions when necessity arises in the course of the implementation of the Project.

Jakarta, January 19, 1983

Dr. Masatoshi Kobayashi
Team Leader, Japanese Implementation Survey Team, Japan International Co-operation Agency

Ir. Apandi Mangoendikoro
Director, Directorate of Reforestration and Rehabilitation, Directorate-General of Forestry, Department of Agriculture, the Government of the Republic of Indonesia

TENTATIVE SCHEDULE OF IMPLEMENTATION AND
TECHNICAL COOPERATION PROGRAMME

Theme	First Year (1983/1984)	Second Year (1984/1985)	Remarks
I. ACTIVITIES OF THE PROJECT			
1. (SERICULTURAL CENTER)			
(a) Management of Mulberry field	←	→	
(b) Trial experiments to develop techniques for moriculture and for the control of pests and diseases of mulberry.			
1). Promotion of soil fertility and techniques for the maintenance of mulberry field.	←	→	
2). Control method of mulberry pests and diseases.	←	→	
3). Training and harvesting method of mulberry for young and grown silkworm.	←	→	
(c) Trial experiments to develop techniques for silkworm rearing.			
1). Comperison of silkworm races.	←	→	
2). Preservation and treatment techniques of silkworm eggs.	←		
3). Silkworm mounting techniques and improvement of cocoon quality.	←	→	

Theme	First Year (1983/1984)	Second Year (1984/1985)	Remarks
(d) Production of silkworm eggs and its distribution to the Sub-center.			
1). Silkworm egg production.	←	→	
2). Scheme for silkworm egg production.	←	→	
(e) Training of Indonesian technical staffs.			
1). Training of counterpart.	←	→	
(f) Formulation of programme for the demonstration of sericultural techniques to be developed in the Centre at the Pilot Units.	←	→	
2. (SERICULTURAL SUB-CENTER)			
(a) Verifying experiments of sericultural techniques developed in the Center.			
1). Control method of mulberry pests and diseases.	←	→	
(b) Multiplication of silkworm eggs and mulberry scions, and its distribution to farmers.			
1). Silkworm egg production.	←	→	
2). Scion production and distribution.	←		
(c) Training of technical staffs and farmers.			
1). Guidance of counterparts for training of technical staffs and sericultural farmers at the Sub-center.	←	→	

Theme	First Year (1983/1984)	Second Year (1984/1985)	Remarks
(d) Guidance for the demonstration of sericultural techniques at the Pilot Units.			
1). Guidance activities for the demonstration of sericultural techniques.	←	→	
2) Survey on the actual condition of sericultural farmers.	←	→	
3). Technical assessment of sericultural farmer.	←	→	
II. JAPANESE COOPERATION			
1. Long-term experts			
1). Moriculture	←	→	
2). Egg production	←	→	
3). Silkworm rearing	←	→	
4). Control of pests and diseases	←	→	
5). Liaison officer	←	→	
2. Short-term experts			
3. Technical training of Indonesian counterparts in Japan.	←	→	
4. Provision of equipment and materials.	←	→	

Theme	First Year (1983/1984)	Second Year (1984/1985)	Remarks
III. INDONESIAN CONTRIBUTION			
1. Counterpart personnel	———	———→	
2. Office facilities	———	———→	
3. Running cost	←———	———→	

Note : 1. This schedule is subject to the condition that the necessary budget will be aquired for implementation of the Project.

2. This scope of Technical Cooperation is subject to change within the Scope of Provisions given in the Record of Discussions.

3. Number and duration of Indonesian counterparts to be trained in Japan will be agreed upon during the operation of the Project.

TABLE OF PROJECT ACHIEVEMENT

(Up to 20, Nov. 1984)

* Completed before R/D (Feb. 1983)
** Achieved by Indonesian Export.

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
SERICULTURE CENTER				
(a) Construction and management of mulberry field				
(a-1) Establishment and management of mulberry field	(1) * Establishment of mulberry field.	1. 33.6 ha of mulberry field is established in Bili-bili, Pakatto and Tanah Bellange field	Ended	
	(2) Renewal into recommendable varieties	1. 73 a of M. alba, 32 a of M. cathayana and 12 a of M. multicaulis are renewed in Bili-bili field.	Mulberry fields should be renewed according to plan.	Provide the budget
	(3) Survey on the working hours for field management	1. Weeding work is occupied 75.5% in total working hours.	Ended	
		2. Efficient prosection between rearing period and mulberry field management system is constituted.		
	(4) Practical use for agricultural machinery	1. Weading, planting and pest control are practiced in fields of Pakatto, Tanah-Bellange and Malino.	Maintenance of agricultural machinery	By short term expert from Japan.
(b) Trial experiments to develope techniques for moriculture and for control of pests and disease of mulberry				
(b-1) Investigation on the economical character of mulberry race	(1) * Comparative study on the mulberry varieties in high level application of fertilizer	1. Good harvest varieties are M. cathayana and M. multicaulis in 500 kg/ha of N application per a year.	Ended	
	(2) * Selection of adaptable mulberry varieties to low level application of fertilizer	1. M. Alba and M. cathayana are selected as recommendable varieties.	Ended	
	(3) * Renewal of varieties and intensive production of their action	1. Inlay grafting has as much as 98% setting and scions are grown rapidly. These result shows inlay grafting is enough for scion production.	Ended	
	(4) * Scion production method	1. Setting ratio of scions collected after 5-6 month from shoot cut, shows more than 95%.	Ended	

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
	(5) Root initiation ability test for local varieties	1. M. multicaulis shows good result and is selected as recommendable variety.	Ended	
	(6) Second varietical selection	1. Yield of BNK No. 3 (local x Japanese) is 60% higher than yield of M. alba.	Selection should be continued in Sub-Center.	By Indonesian Expert
	(7) ** Selection of adaptable varieties to tropical high-land	1. M. cathayana is selected from native varieties. 2. "Hayate sakari" and "Minami sakari" are selected from Japanese varieties. 3. Setting ratio of grafting use roots is 92%.	Selection should be continued in Malino.	By Indonesian Expert
(b-2) Promotion of soil fertility and techniques for the maintenance of mulberry field	(1) * Soil survey and their analysis in mulberry field	1. Survey and analysis method is guided. 2. Soil profiles are analyzed.	Ended	
	(2) * Effect on single element application for nitrogen fertilizer	1. In the mulberry field for grown silkworm, N. 100kg/ha is couraged. 2. In the field for young silkworm, N. 200kg/ha is recommended.	Ended	
	(3) * Relation between mulberry harvest and timing of nitrogen supply	1. Yield of leave was increased when nitrogen is supplied after harvesting mulberry which is 3 time every year.	Ended	
	(4) Sensonal variation of nitrogen existence in the mulbery field	1. Nitrogen, applied in field of volcanic ash soil, is continuously traced their variations in the soil.	Analysis of nitrogen distribution in the field.	Constant electric supply
	(5) Effect on 3 elements application	1. In the pot and field experiment, 3 elements (N.P.K.) application shows good result and effect of N is remarkable among the 3 elements.	Experments at Sub-Center and station are not yet achieved.	By Indonesian Expert
	(6) Application for organic materials to mulberry field	1. When rice strows and paddy chaffs were mulched, growth of mulberry trees and yield of leaves are remarkable. 2. Green manure is also resulted good effect and "orok-orok" is adaptable for green manure crop.	Ended	
(b-3) Control method of mulberry pests and diseases	(1) * Present situation of insect pests	1. 4 main pests (white scale, mealy bug, pyralid and longicorn) are identified and their life cycles are fairly observed. 2. Existance of natural enemies is confirmed.	Ended	

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
	(2) * Present situation of mulberry disease	1. Some important diseases (powdery mildew, red rust plaster, bacterial blight etc.) are identified.	Ended	
		2. Present siutation is analysed.		
	(3) Pest and disease control	1. * Combination control between chemical and culture is effective against mealy bug and pyralid.	Study on the integrated control	Constitution of integrated control method and ecological study
		2. * Proper insecticides are selected and their safety standard is shown.		
		3. Proper fungicide, Benlate is selected for control of powdery mildew.		
		4. * Cutting back is effective for control of longicorn.		
		5. Machine oil emulsifier made by used oil is developed and effective for control of white scale.		
(b-4) Training and harvesting method of mulberry for young silkworm and grown silkworm	(1) * Timing of harvesting after plantation	1. Harvesting is possible after 9 months from plantation.	Ended	
	(2) * Relation between height of plant and yield of lieves	1. Medium-cut training (50-60cm) has good yield.	Ended	
	(3) * Renewal of mulberry tree by kabusage cutting	1. From 2nd year after "kabusage" cutting, yield is increased.	Ended	
	(4) * Relation between harvesting frequency and yield	1. Harvesting of 4 month interval i.e. 3 time harvest in a year, is established.	Ended	
	(5) * Comparative study on tools for shoot cut and harvesting	1. Compare hatchet with purning shears, purning shears are excellent.	Ended	
	(6) Training of mulberry for young silkworm	1. Cutting back is prepared 30-40 days before starting "Hakitate" (beginning of rearing)	Ended	
		2. In trial of intermediate cutting (length of shoot is 90cm). M. alba has good results.		
	(7) * Training of mulberry for grown silkworm	1. Cutting back to 5cm from top of stamp is prepared 70-80 days before starting "Makitate".	Ended	

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
	(8) Planting space	1. 1.0 x 0.5m and 1.0 x 1.0m are best planting spaces for field management by man's power and 2.0 x 0.5m is test for mechanical management.	Ended	
		2. Dense planting (44.000 plants/ha) is shown maximum yield in the second year.	Experiment at mature aged mulberry field	By Indonesian Expert
	(9) Timing of cutting and development of mulberry shoot	1. Expansion of shoot is active in 30-60 days after cutting.	Ended	
		2. Leaves in lower part is stated to fall from 50-60 days after cutting.		
		3. Harvesting is suitable at 80 days after cutting.		
	(10) Relation between tools of cutting back and yield	1. Sickles can use for cutting back when low-cut training was practiced.	Ended	
	(11) Study on harvesting method adapted with six time rearing in a year	1. Preparation of 2 mulberry fields and harvesting is alternately six times in a year.	Practical experiment	By Indonesian Expert
		2. Interval of harvesting is 80 days in each field.		
		3. Rest period of harvesting is created during dry season.		
	(12) Prediction of mulberry yield	1. Yield per a plant, can estimate according to relation between numbers of soot and length of attaching of leaf.		
(b-5) ** Methods of mulberry training and harvesting in tropical high land	(1) ** Temperature and soil temperature in Malino field	1. Mean maximum and minimum teperature are 19°C and 13°C and in the soil are 22°C and 9°C.		
		2. During 3 months, length of M. nigra expands 40cm.		
	(2) ** Mulberry training for young and grown silkworm in Malino field	1. Training of green shoot cut, practiced 50-60 days before "Hakitate" is resulted for young silkworm.	Data are not enough for practice.	To be continued by Indonesian Expert.
		2. Cutting back, practiced 100 days before "Hakitate" is resulted for grown silkworm.		
	(3) ** Promotion method for cutting in Malino field	1. In low temperated area, poly-film-mulch is effective for growth of shoot for cutting.		

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
(c) Trial experiments to develope techniques for silkworm rearing and for control of pests and disease of silkworm				
(c-1) Preservation and treatment techniques of silkworm eggs	(1) * Common acid-treatment method	1. Artificial hatching method for edggs during 10 to 30 days after laying. 2. Warmed or non-warmed acid-treatment method is developed to practical use.		
	(2) * Acid-treatment after chilling	1. Artificial hatching method for eggs during 40 to 120 days after laying. 2. Acid treatment method after keeping 5°C or 2.5°C is developed to practical use.	Accurate practice of the recommended method.	1. Constant supply of electric. 2. Maintenance of refrigeration system is essential.
	(3) Preservation method of artificial hibernated eggs	1. Artificial hatching method for eggs during 4 to 9 months after laying. 2. Combination method under preservation for 25°C, 5°C and 2.5°C is indicated.		
	(4) Methods of preservation and treatment for loose eggs	1. Acid-treatment method for loose eggs and timing for loosening of artificially hibernated eggs are determined.		
	(5) Effects on silkworm egg transportation	1. Vehicles transport for regenerated loose eggs is not effected on hatching.	Ended	
(c-2) Comparison of silkworm races	(1) * Breeding method for original strain	1. 8 varieties of Japanese strain (BN), 7 varieties of Chinese strain are breeded and their F_1 eggs are able to delivered.	Maintenance of capability of original strain.	By Indonesian Expert
	(2) * Selection of hybrid	1. 6 combinations by single cross and 2 combinations by double cross are selected.	Selection should be continued.	By Indonesian Expert
	(3) * Test cross	1. 25 combinations by single cross and 38 combinations by double cross are tested and selected above cmbinations.	Test cross should be continued.	By Indonesian Expert
	(4) Maintenance method of the capability of original strain	1. Passage method original strain, individual selection method of baches and seed cocoons and mating method between baches are examined.	To be mastered passage method.	By short term expert from Japan
	(5) ** Breeding of healthiness variety	1. Selection of healthiness variety from commercial race x Indian polyvoltine race is started.	To have a good result.	Indonesian Expert is trained by short term expert from Japan.

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
(c-3) Rearing technique for young silkworm	(1) * A design of young silkworm rearing house model I	1. A model of rearing house, adapted in local conditions and be disinfected easily, is constructed and considered it's functions then improved one is constructed in 5 Pilot Units.	Ended	
	(2) * Development of locally adaptable standard technologies for silkworm rearing	1. Standard technology for young silkworm rearing in both of rainy and dry season are constituted. 2. Practice of above technology in Pilot Units is to have a good result.	Ended	
	(3) * Development of locally adaptable materials and tools for young silkworm rearing	1. Utilization of ani-ani for harvesting of mulberry leaves for young silkworms is recommended. 2. Iron made rearing stand and tray are locally produced and are introduced to Pilot Units.	Anti-errosive method of rearing stand and tray.	By Indonesian Expert
	(4) ** Relation between silkworm growth and damp-proof method in using local made damp-proof paper	1. Young silkworm rearing method using local made damp-proof paper with wet paper (such as news paper) is developed.	Ended	
	(5) ** Nutritive value of mulberry varieties	1. M. multicaulis and M. alba are better than M. nigra for young silkworm. 2. In comparison with amounts of cocoon crop, feed by M. alba is 10% higher than by M. nigra for silkworm rearing.	Nutritive value test of mulberry for grown silkworn.	By Indonesian Expert
	(6) * Disinfection of body surface with calcium hypochloride 60% powder	1. Disinfection method of body surface, using calcium hypochloride 60% powder is developed and it's economical dosage is practiced.	Ended	
	(7) * Survey on microclimate in rearing room and development of microclimatically adaptable rearing techniques for young and grown silkworm.	1. Temperature and humidity in a rearing room are measured and their results are refrected on standard technical table for young and grown silkworm.	Ended	
(c-4) Rearing technique for grown silkworm	(1) * Trial construction and it's improvement of rearing house for grown silkworm	1. Outdoor rearing house is constructed by local materials. 2. That rearing house has enough capacity for rearing within 2 boxes. 3. Improved one is reconstructed with considerations of protection against strom and of easy disinfection. 4. Improved rearing house is costed 280 thousands rupiahs and can rear 2 boxes.	Roden control	By Indonesian Expert

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
	(2) * Constitution of locally adaptable standard rearing technique	1. Rearing method under elevated floor is constituted. 2. Disinfection methods both of body surface and rearing room and tools are developed practically. 3. Standard rearing techniques for rainy season and for dry season are established.	Ended	
	(3) ** Development of method and materials for protection of wilting of mulberry for grown silkworm	1. So far wetted cotton cloth is recommended.	Collection and sellection of local materials.	By Indonesian Expert
	(4) ** Economically amount of feeding	1. Amount of feeding according to the present standard rearing table is enough.	Ended	
(c-5) Silkworm mounting technique and improvement of cocoon quality	(1) Improvement of mounting method	1. Collection of matured larva with "Jobarai" (shaking larva from shoot) and transfer method into bamboo made cocoon frame are developed. 2. Light weighted bamboo made cocoon frame is trially manufactured. 3. Reversal turning of cocoon fram is effective for mounting compair with custom. 4. Winding of vinyl strings around the cocoon frame is effective for cocooning.	Ended	
	(2) Examination of emergence of moth	1. Emergence is started from 13 days after mounting and it's peak is 14-15 days after mounting. 2. According to above timing of killing larva is estimated.	Ended	
** Cocoon quality test	(1) ** Development of inspection method for cocoon filament quality	1. Simple type cocoon drying machine is manufactured (capacity of cocoon drying is 45kg in one time and time of killing larva and cocoon drying is 1.5 hours. 2. Technique of cocoon cooking with pot is improved and it is possible to cook within 15 minutes and 13-15 l.of cocoon in a time. 3. Improved reeling machines of sitting system are manufactured and are introduced to reeling center (cocoon processing center). 4. Handbook for reeling of sitting system is submitted.	Inspection of cocoon filament quality in each area and each season.	By Indonesian Expert

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
		5. By using above techniques, farmers can produce and sell good quality of silk. 6. Method of cocoon quality test is trained by a short term expert.		
(c-6) Investigation on the ecology of silkworm disease.	(1) Monitoring of silkworm disease	1. * Situation of silkworm disease in South Sulawesi is surveyed. 2. * Pebrine is calmess. 3. * Main diseases are Aspergillusis, outbreaked in rainy season and N.P.V. outbreaked throughout a year and gradually increase. 4. * Damage of C.P.V. is not considerable and infections flachire is not found. 5. Monitoring and diagnosis are continued.	Monitoring is continued constantly.	1. By Indonesian Expert 2. Assignment of technical staffs to Sub-Center. 3. Provide the budget constantly.
(c-7) Control method of silkworm disease	(1) * Control method of silkworm disease	1. Draft of pebrine regulation is submitted. 2. Locally adaptable Aspergillus control method is constituted. 3. Disinfection method of farmer's level is constituted. 4. Guide book of silkworm disease and their control is published. 5. Mulching of rice strow and paddy caff in mulberry field is not involved in outbreak of Aspergillosis.	1. Introduction of group disinfection system. 2. Prevention against dead silkworm in cocoon and on cocooning frame. 3. Disinfection method without using chemicals.	1. Practical constitution of group disinfection method. 2. Causes and countermeasure of dead silkworm in cocoon and on cocooning frame. 3. Trial with sunshine, water, fire etc. 4. By Indonesian Expert
	(2) Secreaning of disinfectant for body surface	1. * Sodium hyposhlorate and bleaching powder are effective. 2. Wanneb and Dithane M-45 are selected among local products.	Ended	
(d) Production of silkworm eggs and distribution thereof to be Sub-center				
(d-1) Silkworm egg production	(1) * Production method of commercial eggs	1. Production methods of single cross and double cross are established.	Ended	

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
	(2) Commercial loose egg production	1. Commercial loose eggs are practically producted. 2. Number of eggs per box is corrected to 20,000.	Production should be continued.	By Indonesian Expert
	(3) ** Egg production and rearing for original strain in tropical highland	1. Method of rearing for original strain and mass production method by flat rearing are established.	Fullness of egg production facilities.	Provide the budget
(d-2) Pebrine inspection	(1) * Pebrine inspection system	1. Batch moth inspection for original strain and mass moth inspection for commercial eggs are established.	Inspection should be continued.	By Indonesian Expert
	(2) * Predictive pebrine inspection method	1. When cocoon is enforced to moth emergence by preservation under slightly high temperature infected moth is emerged earlier than normal one.	Ended	
	(3) * Mass pebrine inspection of mother moth	1. Precision of ditection is elevated by using mass-pebrine inspection apparatus.	Ended	
(d-3) Scheme for silkworm egg production and delivery	(1) Annual production plan	1. 10,270 boxes of eggs are producted according to estimation of amount of last years consumption.	Production should be continued according to working plan.	Amount of eggs for "Hakitate" should be decided earlier than present.
	(2) Egg production of original strain and distribution to the Sub-Center.	1. According to up to date record 1,930 boxes are distributed to Sub-Center.	Production should be continued.	By Indonesian Expert
(e) Training of Indonesian technical staffs	(1) Moriculture	1. Techniques of moriculture and field management are transferred to counterparts. 2. Abilities of planning for experiment collection data and drawing up a report are elevated. 3. Technical development ability and technical guidance ability to assistant counterparts and guidance technicians are trained. 4. * Textbook are published. 5. 5 persons are trained in Japan, 1 is waiting.	Ended	

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
	(2) Silkworm rearing	1. * Planning of experiments and arrangement of results can be performed by themselves. 2. Handbook of silkworm rearing is published. 3. 4 persons are trained in Japan. 4. Abilities of grasp and response of problems are elevated.	Ended	
	(3) Pest and disease control	1. * Foundamental techniques are transferred. 2. * Abilities of planning and arrangement of experments are elevated. 3. * Guide book of experiment and hand book are published. 4. 3 persons are trained in Japan and 1 is waiting.	Ended	
	(4) Silkworm egg production	1. Foundamental techniques are transferred and assistant counterparts are trained by counterparts. 2. Experiments are achieved and their results are prepared by counterparts themselves. 3. 7 persons are trained in Japan.	Ended	
	(5) Co-experiment among Sections	1. Study on nutritive value for silkworm rearing between mulberry varieties (moriculture and silkworm rearing) 2. Characters of silkworm varieties accoording to each egg production place (silkworm rearing and egg production). 3. Survey on mulberry characters (moriculture and pest and disease). 4. Prediction of amount of eggs using "makitate" from prediction of mulberry yield. (egg production and moriculture). 5. Disinfection method of rearing tools (pest and disease and silkworm rearing). 6. Detection of pathogens in the rearing room (pest and disease and egg production). 7. Diagnosis of silkworm disease (egg production and pest and disese).	Co-experiment should be continued.	By Indonesian Expert

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
(e-2) Training of technical staffs at sericultural center	(1) Moriculture	1. Practice of moriculture, technical guidance to workers and survey method of technical development work are trained.		
	(2) Silkworm rearing	1. * Practice of silkworm rearing are exercised by guidance from counterparts.		
		2. Technical ability of assistant counterparts are elevated.		
	(3) Pest and disease control	1. * Practical techniques are transferred.	Training should be continued.	By Indonesian Expert
		2. * Work schedule and technical guidance to workers are coming to possible.		
		3. Ability of assistance for technical development works is elevated.		
	(4) Silkworm egg production	1. Rearing for original strain, egg production and handling of pebrine inspection apparatus are trained.		
(f) Formulation of programme for the demonstration of sericulture techniques at farmers' group				
(f-1) Planning of demonstration in moriculture	(1) Mulberry harvesting method	1. Mulberry harvesting method adaptable to annual 6 time rearing is demonstrated.	Strengthening of demonstration	Cooperate with extension section
	(2) Rivision of hand book	1. * Standard technique for moriculture is completed.		
		2. Material Saving (Minimum) technique for moriculture is composed.	Practical trial	By Indonesian Expert
	(3) Audio-visual teaching materials	1. Audio-visual teaching materials for training and extension and its supplementary reader are completed.		To be used practically for extension and training
(f-2) Planning of demonstration in silkworm rearing	(1) * Planning of demonstration in young silkworm rearing	1. After a trial demonstration at Luppange Pilot Unit, young silkworm rearing technique is demonstrated to each Pilot Units.	Ended	
	(2) * Planning of demonstration in grown silkworm rearing	1. Grown silkworm rearing technique is demonstrated at demonstration farmers.	Demonstration should be continued.	By Indonesian Expert
	(3) * Planning of operation in young silkworm rearing house	1. Young silkworm rearing house is operating smoothly.	Ended	
		2. An earning rate of farmers profit is improved from 50% to 75%.		

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
	(4) Rivision of hand book	1. Material Saving (Minimum) technique for silkworm rearing is composed.	Practical trial	By Indonesian Expert
	(5) Audio-visual teaching materials	1. Audio-visual teaching materials for training and extension and its supplementary reader are completed.	Ended	To be used practically for extension and training
(f-3) Planning of demonstration in pest and disease control	(1) Planning of demonstration in pest and disease control	1. * Practical experiments and technical demonstrations are executed at farmer's rearing room. 2. * Practical training for farmers is executed.	Demonstration should be continued.	By Indonesian Expert
	(2) Audio-visual technical materials	1. Audio-visual teaching materials for training and extension and its supplementary reader are completed.	Ended	To be used practically for extension and training
SUB-CENTER (a) Verifying experiments of sericultural techniques developed in the Center				
(a-1) ** Investigation on the economical character of mulberry varieties at Soppeng	(1) * Survey on the luminous intensity of sunshine inside of coconut-mulberry mix planting field	1. 78 coconut trees are able to be planted in a ha. i.e. 1 tree per 16x8m or more.	Ended	
	(2) Survey on the characters of mulberry varieties	1. Mulberry leaves are started to fall from 50 days after shoot cut and differences between varieties are not significance.	Ended	
	(3) Application of paddy chaff to mulberry field	1. Application of 3 ton/ha to field of heavy clay soil has good yield.	Ended	
(a-2) Control method of mulberry pest and disease	(1) Main pest control	1. * Cutting back is effective for control of mealy bug. 2. * Combination with cutting back, downward cutting and insecticide is effective for control of pyralid. 3. Application of machine oil emulsion is effective for control of white scale. 4. Spray calendar for control of main pests are constituted.	Area adaptability of the spray calendar.	Observation of outbreak of pest and disease in each station and farmer's field byIndonesian Expert.

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
		5. * Combination with cutting back and Basudin 0.005% is effective for control both of pyralid and mealy bug at same time. 6. * Control of plaster and white scale is essential for prevention of longicorn's damage.		
	(2) Disease control	1. * Present situation of mulberry disease is surveyed. 2. Combination between chemical and cultural control is experimented. 3. Benlate is effective for control of powdery mildew.	Ended	
(a-3) Local adaptability test of silkworm varieties	(1) ** Diffusion of local adaptable double cross varieties	1. Locally adaptable varieties are selected by double cross and are extended.	Ended	
(a-4) Investigation into the ecology and control of silkworm diseases	(1) Monitoring of silkworm disease	1. Monitoring and diagnosis of silkworm diseases are continuing every month. 2. Aspergillosis and NPV are important diseases. NPV is gradually outbreaked and Aspergillosis is stabilized in middle level outbreak.	Monitoring should be continued constantly.	By Indonesian Expert and technical staffs
	(2) Distribution of pathogens.	1. * Aspergillus is distributed whole parts of rearing tools and rearing room. 2. * NPV is distributed throughout South Sulawesi.	Ended	
	(3) Locally adaptable disinfection method	1. * Disinfection system of rearing room, rearing tools and silkworm body surface is eastablished. 2. * Application of lime solution to rearing tools and facilities and rearing room is effective for disinfection. 3. * Sodium hypochlorite and bleaching powder are selected to disinfectants.	1. Practical trial for Maneb and Dithane M-45 2. Propagation of disinfectants 3. Diffusion to farmers about importance of disinfection	1. By Indonesian Expert 2. Establishment of supply system. 3. Depend on guidance technicians.

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
(b) Introduction and demonstration of improved sericultural techniques adaptable at farmers' level				
(b-1) Silkworm rearing techniques	(1) * Trial demonstration of silkworm rearing by using existing younr silkworm rearing room	1. In 1978, trial spots are surveyed. 2. In 1980, at Unit No. 3 in Soppeng, trial demonstrations of young silkworm rearing techniques using by existing young silkworm rearing house and of grown silkworm rearing techniques using by improved rearing room uder elevated floor of a farmer are achieved.	Ended	
(b-2) Pest and disease control techniques	(1) * Proof of disinfection effect of bleaching powder	1. Demonstration of disinfection method by using bleaching powder is performed in a farmers rearing room and its cocoon crops are significantly higher than non-disinfected farmers one.	Ended	
	(2) * Cooperative pest and disease control	1. Farmers expenses of control is economized by co-utilization of control apparatus. 2. Farmer's attention about control is elevated.	Ended	
(c) Multiplication of silkworm eggs and mulberry shoots for cutting, and distribution them to farmers				
(c-1) Silkworm egg production	(1) Mass production and distribution of commercial silkworm eggs	1. Total production is 36,937 boxes included 8,118 boxes of F_2 and among than 28,072 boxes are delivered to farmers.	Production should be continued.	By Indonesian Expert
(c-2) Pebrine inspection	(1) * Pebrine inspection system	1. Individual mother moth inspection method is established.	Ended	
	(2) * Predictive pebrine inspection method	1. When cocoon is enforced to moth emergence by preservation under slightly high temperature infected moth is emerged earlier than normal one.	Ended	
	(3) * Mass pebrine inspection of mother moth	1. Precision of ditection is elevated by using mass pebrine inspection apparatus.	Ended	

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
(c-3) Scion production and distribution	(1) Establishment of scion production field	1. Present scion production fields are 42.6 a for M. alba and 7.3 a for M. cathayana.	To be increased area of field.	By Indonesian Expert
	(2) System of scion production and distribution	1. * Regulation of scion distribution is determined.	Scion production should be continued.	By Indonesian Expert
		2. During 4 years from 1981, 340,000 scions are distributed.		
(d) Training of technical staffs and farmers				
(d-1) Guidance of counterparts for training of technical staffs and sericultural farmers at the Sub-Center	(1) Moriculture	1. Textbook is revised.		
		2. Training of technical staffs and farmers is performed.	Training should be continued.	By Indonesian Expert
		3. Training of data collection is perfomred to technical staffs.		
	(2) Silkworm rearing	1. Foundamental knowledge and their exercise are lectured and are practiced to technical staffs.	Training should be continued.	By Indonesian Expert
		2. Guidance ability to farmers are elevated.		
	(3) Pest and disease control	1. Farmers' knowledge about importance of pest and disease control is improved by guidance of technical staffs.	Assignment of technical staffs to Sub-Center.	To be trained by Indonesian Expert.
(e) Guidance activities for the demonstration of sericultural techniques at the farmers groups (Pilot Unit)				
(e-1) Guidance activities for the demonstration of sericultural techniques.	(1) Moriculture techniques	1. Training of guidance technicians for Pilot Unit activity is performed.	Training should be continued.	By Indonesian Expert
		2. Application of fertilizer improvement of mulberry training and increasing method of mulberry yield are demonstrated.		
		3. Demo-farmers are selected and are guided to demonstration materials.		
	(2) Silkworm rearing	1. * Construction of young silkworm rearing house and planning of demonstration are advised from experts.	Guidance activities should be continued.	By Indonesian Expert
		2. * Farmers cocoon cros are increased through demonstration in demo-farmers.		
		3. Techniques of pupa killing, cocoon drying and reeling for sitting are guided at cocoon processing facilities.		

THEME	TITLE	ACHIEVEMENT	REMAINING SUBJECT	COUNTERMEASURE
(e-2) Survey on the actual condition of sericultural farmers	(1) Moriculture	1. * Actual condition of farmers is surveyed by short term expert. 2. Comparison between demo-farmer and general farmer is surveyed.	Ended	
	(2) Silkworm rearing	1. Actual condition of farmers is surveyed by short term expert from 1981 to 1982 and 1984. 2. Comparison between demo-farmer and general farmer is indicated nessecity for enlightenment of disinfection.	Ended	
(e-3) Technical assessment sericultural farmer	(1) Moriculture	1. Technical assessment is perfomred through result of survey on the actual condition by short term expert.		
	(2) Silkworm rearing	1. There are differences of techniques between regions especially grown silkworm rearing techniques. 2. Important items for guidance to farmers are found from technical assessment (Silkworm disease control and improvement of mounting method are important).	Technical assessment should be continued.	By Indoneisan Expert

Some Recommendation for
The Promotion of Sericultural Industry
in South Sulawesi .

To : Prof. Dr. ACHMAD AMIRUDDIN
The Governor of South Sulawesi Province

Dr. Shigeo ISHIKAWA
The Leader of Japanese Evaluation
Team for Teh Sericultural Development
Project .

Since 1976 both of Indonesian and Japanese governments have collaborated to develop the sericulture in South Sulawesi, however, cocoon crops have not improved until the level of - 1970. There for here I am going to mention about problems and countermeasures and influence on people in South Sulawesi .

1. Why cocoon production does not increase .

(1) Japanese Experts main effort is technical development and their demonstration through 5 Pilot Unit which is mentioned in Master Plan of Project. And extension of their practical use are depend on effort of Indonesian side .

In the field of technical development, locally adapted technologies developed by the project were demonstrated at each Pilot Units and the project get good result about the demonstration .

(2) According to the result of survey on sericultureal farmers carried out by Dr. Fujii, a member of the evaluation team the technologies developed by the project have began to permeat into farmers who are members of pilot unit and surrounders of them . Cocoon crops and incomes of farmers are increasing gradually, however according to a statis - tical analysis , total cocoon crops in South Sulawesi are not increased . Farmers who are not members of pilot unit has not good technologies becouse they isolated from pilot unit areas . When new technologies are permeated into farmers who are not lived in the area of pilot unit, cocoon crops in South Sulawesi would be increased .

(3) The developed technologies are not penetrated enough to whole farmers becouse of lack of extention effort. We also consider following reasons .

(a) Most of extension personnels have not enough knowledge about newly developed technologies especially ne- sessity for disinfection. That is one of the reasons about poor extention .

(b) Supply system of disinfectant and chemicals are not established .

(c) Some farmers do not like to pay preceding investment for example - price of 1 kg of sodium hypoclorite is Rp 3.500,- in Kimia Farma but farmers do not buy precedingly. 1 kg of sodium hypoclorite is as much as enough to rear 1 box (20.000 eggs) of silkworms.

(d) Disinfection should be done simultenously in same time . When a farmer does not disinfect his rearing room His rearing room come to source of pathogens. The pathogen from the rearing room is transferred by farmers or winds into other farmers rearing room where already disinfected . Subsequently farmers even performed disinfection also faile to good cocoon production .

(4) Countermeasures .

(a) Audio-visual teaching material for training and extension and it's suplementary readers are completed. This material is expected to enforce the activities for extension .
Mr. Hatta, studied on the field of extension in Japan, collabrated with Japanese experts to develop the new technologies. We expect that his activities will be supported by local Government .

(b) The project submitted " Material saving techniques " for the farmers who do not like to pay preceding investment .

(c) Newly established Sericultural Institute does not include the extension in its organisation. Extension is organized by another institute under the Department of Forestry. However extension of sericulture is needed techniques quite different from extension activities of forest management . When extension was separated to another institute , both of extension and technical development should be searched a way of mutual relation .

(d) Since extension is for the farmers in village. It is necessary to cooperate with another agricultural fields. In other to promote the sericulture (fitted) for some area, authorities concern such as government , province , kabupaten , kecamatan and desa are going to suuport by their policies .

(e) Sericulture promotion is needed to many capitals, ie construction of young silkworm rearing house, cocoon processing in the remote area, buying of chemicals, disinfectants, tools and so on.
Therefore it is better to introduce credit system from local bank or national Bank .

2. How the project influence to people of South Sulawesi .

(1) Indonesian experts who has enough ability to develop the technologies are growing up. Although they will face some problems about some technical development after Japanese experts will go back to Japan , they may solve the problem their own abilities . Our evaluation team expects that - they become leading expert on the sericulture in Indonesia. If they were transferred to another field, Indonesian sericultural development would be saffered to promotion. We also expect that Indonesian experts should be guide to their succesor .

(2) Technologies of sericulture and maintenance of machinaries are tranferred to Indonesian experts from Japanese experts.

(3) Sericultural farmers who are members and surrounding of pilot units are increasing their incomes. For introduction of new technologies to farmers the standard of living seems to become good .

(4) Farmers lived near the members of pilot units also gradually introduce new technologies developed by project .

(5) Since cocoon processing center has constructed and operated quality of raw-silk reeled by farmers by using its facilities is improved and its market price is higher than before. New technologies developed by the project is a completed system for sericultural improvement . This completed

system may introduce to villages wherever farmers want to began sericulture .

(6) Sericulture has enough opportunity for contribution to welfare of farmers .

普及効果測定報告

目　　次

緒　　言

1. 調 査 目 的

エバリュエーション調査団派遣にあたり，普及効果を測定し，プロジェクトで開発された技術が周辺の養蚕農民にどの程度普及したか，南スラウェシの養蚕技術の向上にどのように役立っているか，また新技術を農民に普及させるには何が必要なのかについて調査する。

2. 調 査 受 注 者

大日コンサルタント株式会社

主任業務担当者ならびに現地調査担当者

藤　井　　實

3. 業 務 期 間

自　昭和59年11月 2 日
至　昭和60年 1 月15日　　75日間

うち現地派遣期間

自　昭和59年11月 9 日
至　昭和60年 1 月 7 日　　60日間

4. 主な調査場所

インドネシア国南スラウエシ州の重点地区（5か所）

① Solie, Soppeng　　② Lalabata Riaj, Soppeng

③ Wanio, Sidrap　　④ Ugi, Wajo

⑤ Baraka, Enrekang

5. 調 査 事 項

① 基本統計調査　　② 稚蚕飼育所の調査　　③ 一般農家の調査

第１章　基本統計調査

1. 総農家数中の養蚕農家数（第１・１表）

５か村には5,182戸の農家があり，その約17％876戸が養蚕農家である。この地区内では徐々に養蚕農家数は増加しつつあるようだ。

2. 全畑地面積中の桑園面積

５か村には7158.33haの畑地がありその約６％397.61haが桑園である。全般的には徐々に桑園面積が増加しつつあるようであるが，Ugiのように83/84年に半減した所もあった。

3. 各村の養蚕統計

(1) 調　査　方　法

各村，各郡，各県，担当普及員，プロジェクトの各支所のすべての場所に行って当該村の統計値の収集に努めた。なお営繭又は収繭時期に遭遇しなかったので直接調査による収量を把握できなかった。

(2) 調　査　結　果

①　Solie Soppeng

養蚕農家数は233戸，全農家数の24％（第１・１表），桑園面積は139haで全畑地の10％を占め（第１・２表），年間収繭量20t（R／D前15ｔ），掃立箱数1,432箱（R／D前1,119箱），１戸当り収繭量86kg（R／D前63kg），箱当り収繭量14kg（R／D前13kg），１ha当り収繭量144kgであった（第１・３表）。

②　Ralabat Riaj Soppeng

養蚕農家数197戸全農家数の17％（第１・１表），桑園面積128haで全畑地の12％（第１・２表），年間収繭量20ｔ，（R／D前13.7ｔ），掃立箱数119箱（R／D前879箱），１戸当り収繭量100kg（R／D前75kg），１箱当り収繭量15kg（R／D前14kg），１ha当り153kgであった（第１・４表）。

③　Wanio Sidrap

養蚕農家数176戸全農家数の16％（第１・１表），桑園面積36.1haは全畑地の７％（第１・２表）を占めていた。年間収繭量7.6ｔ（R／D前6.5ｔ）掃立箱数420箱（R／D前380箱），１戸当り収繭量43kg（R／D前40kg），箱当り収繭量18kg（R／D前17kg），１ha当り209kg（R／D前212kg）であった（第１・５表）。

④　Ugi Wajo

養蚕農家数235戸で全農家数の23％（第１・１表）桑園面積77haで全畑地の５％

（第１・２表）を占めていた。年間収繭量11ｔ（R／D前13ｔ），掃立箱数739箱（R／D前827箱），１戸当り収繭量47㎏（R／D前56㎏），箱当り収繭量15㎏（R／D前16㎏，1ha当り144㎏（R／D前85㎏）であり，R／D前に比べ減少した（第１・６表）。原因は洪水とタバコの害によるものである。

⑤ Baraka Enrekang

養蚕農家数は35戸で全農家数の3.7％（第１・１表）桑園面積17haで全畑地の0.7％（第１・２表）を占めていた。年間収繭量２ｔ，掃立箱数90箱，１戸当り収繭量55㎏，1ha当り収繭量37㎏，箱当り収繭量22.0㎏であった（第１・７表）。

⑥ ５か村の合計

養蚕農家876戸で全農家の17％（第１・１表），桑園面積400haで全畑地の5.6％（第１・２表），年間収繭量60ｔ，掃立箱数3,800箱，箱当り収繭量16㎏，１戸当り69㎏，１ha当り152㎏（第１・８表）であり全般にR／D前より増加している。

4. ま　と　め

(1) ５か村を重点地域として養蚕の基本統計の聴取調査を行った。

(2) 養蚕農家は876戸（対全農家17％），桑園面積は398ha（全畑地の６％）で増加しつつある。

(3) 収繭量は60ｔで，掃立量，箱当り収繭量，１戸当り収繭量，１ha当り収繭量は１部を除きR／D前より増加した。（減少したところは洪水とタバコ害による）。

Tabel 1-1 Jumlah Petani Sutera (Lokasi Terpenting)
第1－1表 養蚕農家数（重点地域）

	Tahun 年 / 項目 Kegiatan	R/D 期間		協定期間 Periode Joint Committee					R/D 期間	
		76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Solie Soppeng	養蚕農家数（戸） Jumlah Petani Setera (kk)							230	233	238
	総農家数（戸） Jumlah Petani Semua (kk)					915	915	960	975	975
	Persentase							23.96	23.90	24.41
Lalabata Riaja Soppeng	養蚕農家数（戸） Jumlah Petani Sutera (kk)							183	197	199
	総農家数（戸） Jumlah Petani Semua (kk)					1105	1110	1112	1120	1120
	Persentase								17.59	
Wanio Sidrap	養蚕農家数（戸） Jumlah Petani Sutera (kk)	210	199	195	196	128	154	160	176	
	総農家数（戸） Jumlah Petani Semua (kk)	1105	1112	1112	1109	1110	1110	1116	1116	
	Persentase %	19.00	17.90	17.54	17.67	11.53	13.87	14.34	15.77	
Ugi Wajo	養蚕農家数（戸） Jumlah Petani Sutera (kk)	520			277	299	233	235	235	235
	総農家数（戸） Jumlah Petani Semua (kk)								1035	1035
	Persentase %								22.71	22.71
Baraka Enrekang	養蚕農家数（戸） Jumlah Petani Sutara (kk)								35	89
	総農家数（戸） Jumlah Petani Semua (kk)	966	966	966	966	937	927	934	936	952
	Persentase %								3.7	
Jumlah	養蚕農家数（戸） Jumlah Petani Sutera (kk)								876	
	総農家数（戸） Jumlah Petani Semua (kk)								5182	
	Persentase %								16.90	

Tabel 1-2 Luas Pemilikan Tanah dan Kebun Murbei

第1・2表 耕地面積と桑園面積

村	Tahun 年 / 項目 Kegiatan	R/D 期間		協定期間 Periode Joint Committee					R/D 期間	
		76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Solie Soppeng	桑園面積 Luas Tanaman Murbei								139.25	184.25
	(ha) 耕地面積（除水田）Luas Tanaman Semua						1275	1315	1350	1350
	(ha) % Persentase								10.31	13.65
Lalabata Riaja Soppeng	桑園面積 Luas Tanaman Murbei								128.53	159.03
	(ha) 耕地面積（除水田）Luas Tanaman Semua					1090	1090	1092	1099	1120
	(ha) % Persentase								11.80	14.20
Wanio Sidrap	桑園面積 Luas Tanaman Murbei	30	24	21	25	21	28	30.50	36.10	
	(ha) 耕地面積（除水田）Luas Tanaman Semua	489	486	487	493	498	516.33	516.33	516.33	
	(ha) % Persentase	613	4.94	4.31	5.02	4.22	5.42	5.91	6.99	
Ugi Wajo	桑園面積 Luas Tanaman Murei	181.95			98.9	108.95	115.57	155	77.08	82
	(ha) 耕地面積（除水田）Luas Tanaman Semua							1676	1680	1688
	(ha) % Persentase							9.24	4.58	4.85
Baraka Enrekang Enrekang	桑園面積 Luas Tanaman Murbei								15.65	46.8
	(ha) 耕地面積（除水田）Luas Tanaman Semua							2501.5	2503	2505
	(ha) % Persentase								0.67	1.87
Junlah m	桑園面積 Luas Tanaman Murbei								397.61	
	(ha) 耕地面積（除水田）Luas Tanaman Semua								7158.33	
	(ha) % Persentase								5.55	

Tabel 1-3 Daftar Perkembangan Persuteraan Alam di Lokasi Yang Penting

第1－3表　重点地域の養蚕業の推移　　Solie Soppeng

Tahun 年 / Kegiatan 項目	R/D 期間		Periode Joint Committee 協定期間					R/D 期間	
	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Jumlah Petani Sutera (kk) (A) 養蚕農家数(戸)							230	233	238
Luas Tanaman Murbei (ha) (C) 桑園面積(ha)								139.25	184.25
Hasil Panen Kokon/box (kg) (E) 箱当り収繭量							13	14	15
Hasil Panen Kokon/tahun (kg) (F) 年間繭生産量							14,547	20,048	
Hasil Panen Kokon/ha (kg) (G) 1 ha当繭生産量								143.97	
Hasil Panen Kokon/kk (H) 1戸当繭生産量							63.27	86.04	
Jumlah Bibit Yang Dipelihara/thn. (box) (I) 掃立箱数							1,119	1,432	
Lain-lain その他									

F = I x E

F = C x G

F = H x A

Tabel 1-4 Daftar Perkembangan Persutaraan Alam di Lokasi Yang Penting

第1－4表　重点地域の養蚕業の推移　　Lalabata Riaja Soppeng

Tahun 年 / Kegiatan 項　目	R/D 期　間		Periode Joint Committee 協定期間					R/D 期　間	
	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Jumlah Petani Sutera (kk) (A) 養蚕農家数(戸)							183	197	199
Luas Tanaman Murbei (ha) (C) 桑園面積(ha)								128.53	159.03
Hasil Panen Kokon/box (kg) (E) 箱当り収繭量							14	15	16
Hasil Panen Kokon/tahun (kg) (F) 年間繭生産量							13,678	19,725	
Hasil Panen Kokon/ha (kg) (G) 1 ha当繭生産量								153.47	
Hasil Panen Kokon/kk (H) 1戸当繭生産量							74.74	100.13	
Jumlah Bibit Yang Dipelihara/thn. (box) (I)　掃立箱数							879	1,119	1,013 S/d Dec.'84 84年12月まで
Lain-lain　その他									

F = I x E

F = C x G

F = H x A

Tabel 1-5 Daftar Perkembangan Persuteraan Alam di Lokasi Yang Penting

第1－5表　重点地域の養蚕業の推移　　Sanio Sidrap

Kegiatan 項　目 \ Tahun 年	R/D 期　間		Periode Joint Committee 協定期間					R/D 期　間	
	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Jumlah Petani Suetera (kk) (A) 養蚕農家数(戸)	210	199	195	196	128	154	160	176	
Luas Tanaman Murbei (ha) (C) 桑園面積(ha)	30	24	21	25	21	28	30.50	36.19	
Hasil Panen Kokon/box (kg) (E) 箱当り収繭量	9	10	14	12	14	13	17	18	
Hasil Panen Kokon/tahun (kg) (F) 年間繭生産量	3,645	1,560	2,940	2,880	2,366	3,822	6,460	7,560	
Hasil Panen Kokon/ha (kg) (G) 1 ha当繭生産量	121.5	65	140	115.2	112.7	136.5	211.8	208.9	
Hasil Panen Kokon/kk (H) 1 戸当繭生産量	17.4	7.8	15.1	14.7	18.5	24.8	40.4	43.0	
Jumlah Bibit Yang Dipelihara/thn. (box) (I)　掃立箱数	180	156	210	240	169	294	380	420	
Lain-lain　その他									

F = I x E

F = C x G

F = H x A

Tabel 1-6 Daftar Perkembangan Persuteraan Alam di Lokasi Yang Penting

第1－6表　重点地域の養蚕業の推移　　Ugi Wajo

Kegiatan 項　目 \ Tahun 年	R/D 期　間		Periode Joint Committee 協定期間					R/D 期　間	
	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Jumlah Petani Sutera (kk) (A) 養蚕農家数(戸)	520			277	299	233	235	235	235
Luas Tanaman Murbei (ha) (C) 桑園面積(ha)	181.95			98.9	108.95	115.57	155	77.08	82
Hasil Panen Kokon/box (kg) (E) 箱当り収繭量				19.78	17	16.4	16.04	15	
Hasil Panen Kokon/tahun (kg) (F) 年間繭生産量				22,430	15,640	13,940	13,264	11,085	
Hasil Panen Kokon/ha (kg) (G) 1 ha当繭生産量				226.80	143.55	122.74	85.57	143.81	
Hasil Panen Kokon/kk (H) 1戸当繭生産量				80.98	52.31	59.83	56.44	47.17	
Jumlah Bibit Yang Dipelihara/thn. (box) (I)　掃立箱数				1,134	920	850	827	739	
Lain-lain　その他									

F = I x E

F = C x G

F = H x A

Tabel 1-7 Daftar Perkembangan Persuteraan Alam di Lokasi Yang Penting

第1－7表　重点地域の養蚕業の推移　　Baraka Enrekang

Tahun 年 / Kegiatan 項　目	R/D 期　間		Periode Joint Committee 協定期間					R/D 期　間	
	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Jumlah Petani Sutera (kk) (A) 養蚕農家数(戸)								35	89
Luas Tanaman Murbei (ha) (C) 桑園面積(ha)								16.65	46.80
Hasil Panen Kokon/box (kg) (E) 箱当り収繭量							17.3	22.0	15.6
Hasil Panen Kokon/tahun (kg) (F) 年間繭生産量								1,930	
Hasil Panen Kokon/ha (kg) (G) 1 ha当繭生産量								36.8	
Hasil Panen Kokon/kk (H) 1 戸当繭生産量								55	
Jumlah Bibit Yang Dipelihara/thn. (box) (I)　掃立箱数								90	
Lain-lain　その他									

F = I x E

F = C x G

F = H x A

Tabel 1-8 Daftar Perkembangan Persuteraan Alam di Lokasi Yang Penting

第1－8表　重点地域の養蚕業の推移　　Jumlah 5 Desa

Tahun 年 / Kegiatan 項　目	R/D 期　間		Periode Joint Committee 協定期間					R/D 期　間	
	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Jumlah Petani Sutera (kk) (A) 養蚕農家数(戸)								876	
Luas Tanaman Murbei (ha) (C) 桑園面積(ha)								397.7	
Hasil Panen Kokon/box (kg) (E) 箱当り収繭量								15.88	
Hasil Panen Kokon/tahun (kg) (F) 年間繭生産量								60,348	
Hasil Panen Kokon/ha (kg) (G) 1 ha当繭生産量								151.74	
Hasil Panen Kokon/kk (H) 1戸当繭生産量								68.89	
Jumlah Bibit Yang Dipelihara/thn. (box) (I)　掃立箱数								3,800	
Lain-lain　その他									

F = I x E

F = C x G

F = H x A

第２章　稚蚕飼育所の調査

1. 調　査　方　法

予め作成した調査用紙によって飼育所の責任者，普及員，インドネシアカウンターパートと共に聴取した。なおR／D前の成績は昭和57年秋調査団が行った調査の報告書（昭和58年発行）の資料を用いた。

2. 調　査　結　果

①　運　営　組　織

昭和57年3月から，所有者，運営責任者はそのままであるが，技術責任者，担当普及員の交替があった（第２・１表）。

②　施　　設

ATA72によって示されたとおりの施設であり，R／D前に比べて井戸とポンプの施設ができ，改善されていた。（第２・３表，第２・３表－２）

③　稚　蚕　用　桑　園

Wanio以外の4か所は稚蚕用桑園があり，昭和57年10月調査（R／D前）よりも広くなっていた。Wanioにはまだ設置されていない。その他はR／D前と変っていなかった（第２・４表）。

④　稚　蚕　飼　育　法

ATA72に示す方法によって行われている（第２・２表）。

⑤　消　　毒

飼育終了後とさらに飼育開始前と2回，飼育所と蚕具の消毒を行い，蚕体消毒は各齢2回ずつ行い，消毒剤はさらし粉である（第２・５表）。

⑥　配　　蚕

3眠中に稚蚕飼育関係者が行っている（第２・５表）。

Tabel 2-1 Personil yang berhu bungan dengan Tempat Pemeliharaan Ulat Kecil

第2－1表　稚蚕飼育所関係者

調査地点 Tempat Pegamatan / 項目 Kegiatan		Pemilit tempat Pemeliharaan Ulat Kecil 所有者	Penanggung Jawab Keuangan 飼育所運営責任者	Penanggung Jawab Teknik 技術責任者	Penyuluh 担当普及員
Dari Mar.'82 昭和57年3月から	Solie Soppeng	Kelompok Tani 農家群	M. Tahir Mude	M. Tahir Mude	Sudirman B.
	Lalabata Riaja Soppeng		Usman Koro	Pannu/M. Salam *1	Hamka L. Beddu Mas *2
	Wanio Sidrap		Abdul Latif	Abdul Latif	Corneluistsing
	Ugi Wajo		Usman P.	Usman P.	A. Sulthan
	Baraka Enrekang		Abdul Karmas	Abdul Karmas	S. Daud/M. Amin. D. *3
Sampai Peb.'82 昭和57年2月まで	Solie Soppeng	M. Tahir Mude	M. Tahir Mude	NY. Tahir タヒル夫人	Sudirman
	Lalabata Riaja Soppeng	A. Assaad	A. Assaad	A. Assaad	Hamka
	Wanio Sidrap	Kolepok Tani 農家群	Kolepok Tani 農家群	Kolopok Tani 農家群	Corneluis Asing
	Ugi Wajo	Usman P.	Usman P.	Usman P.	Aris Bus
	Baraka Enrekang	Proyek プロジェクト	Tanidan Proyek 農家とプロジェクト	Kodil Suli 普及員	Kodil Suli

*1 Jan. '84 Diganti 昭和59年1月交替

*2 Apr. '84 Diganti 昭和59年4月交替

*3 Agu. '83 Diganti 昭和58年8月交替

Tabel 2-2 Cara Pemeliharaan Ulat Kecil di Pilot Unit

第2－2表　パイロットユニットにおける稚蚕飼育法

Kegiatar　項　目	Keterangan　説　明
1. Persiapan kebun untuk Ulat kecil 稚蚕用桑準備	Satu bulan sebelum hakitate, dilaksanakan-pemangkasan 掃立1カ月前に伐採 Pemupukan　施　肥 Pepuluh hari setelah pangkas disemprot dengan larutan DDVP atau Basudin. 伐採10日後DDVP又はバスデン散布
2. Desinfeksiruang dan peralatan 飼育所と蚕具の消毒	Seminggu sebelum hakitate dengan larutan kaporit. 掃立1週間前にさらし粉で消毒
3. Tnkubasi telur 催　青	Dilaksanakan dalam ruangan pemeliharaan ulat kecil dengan memakai kotak penctasan; pada saat cuaca kering lantai disiriam - pada saat telur telah mencapai titik biru, digelapkan. 稚蚕飼育所内で催青枠に入れる。乾燥時は床に散水， 催青後は室を暗くする。
4. Hakitate 掃　立 手足消毒	Antara Jam.9.00 ∿ 10.00, dan Jam. 11.30 pemindahan ulat ke sasag pemeliharaan. 9時～10時掃立，11時30分掃き落し蚕座。 飼育所に入る前にさらし粉液で手足の消毒。
5. Desinfeksi, tangan, kaki	Sebelum masuk ruangan, tangan, kaki dicuci kaporit
6. Desinfeski tubuh ulat 蚕体消毒	30 menit sebelum hakitate, sehari sebelum tidur dan setiap bangun tidur, dengan kapori 5%, kapur 95%. 掃立30分前，就眠1日前。 起蚕時に実施。さらし粉5％，石炭95％。
7. Pemberian makan 給　桑	Setiap hari 3 kali, Jam. 7.00, Jam. 12.00, Jam. 17.00. 毎日3回（7時，12時，17時） Stadia I sampai dengan makan pertama Stadia III daun dicris, selanjutnya dengan tangkai.　1齢から3齢第1回目までは切り桑を， 3齢2回目以後は全芽を与える。
8. Alat/bahan pemeliharaan 飼育用具	Pemeliharaan menggunakan rak, Stadia I dan II, memakai kertas parafin atas bawah, sedang Stadia III hanya pakai penutup saja. 棚使用，1～2齢上下に防乾紙，3齢は上のみに防乾紙使用。

Tabel 2-3 Bangunan Tempat Pemeliharaan Ulat Kecil

第2－3表　稚蚕飼育所の施設（その１）

調査地名 Tempat Pegamatan / 項目 Kegiatan		建物建設年 Tahun Pembuatan	飼育所の広さ Ukuran Bangunan 奥行 Panjang	間口 Lebar	面積 Luas	飼育型式 Type tempat Ulat dipelihara	消毒槽 Kolam air Untuk cuci/desinfeksi	水利 Sumber air
			m	m	m^2			
Dari Mar. '82 昭和57年3月から	Solie Soppeng	'81 昭56	16	6	96	蚕箔，箱使用	あり	井戸とポンプ
	Lalabato Riaja Soppeng	'81 昭56	16	6	96	蚕箔	あり	井戸とポンプ
	Wanio Sidrap	'82 昭57	16	6	96	蚕箔	あり	井戸とポンプ
	Ugi Wajo	'82 昭57	16	6	96	蚕箔	あり	井戸とポンプ
	Baraka Enrekang	'82 昭57	16	6	96	蚕箔	あり	井戸とポンプ
Sampai Peb. '82 昭和57年2月まで	Solie Soppeng	'74 昭49	9	6.5	58.5	箱	なし	水道
	Lalabata Riaja Soppeng	'73 昭48	9	5	45	箱	なし	井戸
	Wanio Sidrap	'77 昭52	9	6	54	固定棚	なし	井戸
	Ugi Wajo	'73 昭48	10	6	60	蚕箔	なし	川
	Baraka Enrekang	'77 昭52	10	6	60	固定棚	なし	井戸又は川

Tab 2-3 Bangunan Tempat Pemeliharaan Ulat Kecil

第2－3表　稚蚕飼育所の施設（その１）

調査地名 Tempat Pegamatan / 項目 Kegiatan		Ruang Penyimpanan Daun 貯桑室	Keadaan Lan 床	Dinding 壁	Jendela 窓	Langit 天井	Tempat Cuci Tangan 手洗設備	Tempat Cuci Kaki 足洗設備
Dari Mar. '82 昭和57年3月から	Solie Soppeng	あり	セメント	(腰)セメント (上)枝	ガラス窓	ベニヤ	あり	あり
	Lalabata Riaja Soppeng	あり	セメント	(腰)セメント (上)枝	ガラス窓	ベニヤ	あり	あり
	Wanio Sidrap	あり	セメント	(腰)セメント (上)枝	ガラス窓	ベニヤ	あり	あり
	Ugi Wajo	あり	セメント	(腰)セメント (上)枝	ガラス窓	ベニヤ	あり	あり
	Baraka Enrekang	あり	セメント	(腰)セメント (上)枝	ガラス窓	ベニヤ	あり	あり
Sampai Peb. '82 昭和57年2月まで	Solie Soppeng	なし	土間	紙張り	ガラス窓	竹	あり	なし
	Lalabata Riaja Soppeng	なし	川砂	板	ガラス窓	竹	なし	サンダル使用
	Wanio Sidrap	なし	土間	板	ガラス窓	ニッパヤシ	なし	なし
	Ugi Wajo	なし	セメント	板	ガラス窓	竹	なし	なし
	Baraka Enrekang	なし	土間	板	ガラス窓	竹	なし	なし

Tabel 2-4 Kebun Untuk Ulat Kecil

第2－4表　稚　蚕　用　桑

調査地名 Tempat Pegamatan / 項目 Kegiatan		Luas Kebun 稚蚕用桑園面積	Pemilik Kebun 桑園所有者	Transaksi Memperoleh Daun 桑葉入手契約	Pemelihara Kebun 桑園管理者	Jarak Kebun 桑園までの距離
		a				
Dari Mar. '82 昭和57年3月から	Solie Soppeng	200*	Tahir	な　し	所有者	隣　接
	Lalabata Riaja Soppeng	250*	Proyek	な　し	〃	〃
	Wanio Sidrap	な　し	農家群	購　入	〃	不　定
	Ugi Wajo	200*	Usman P.	な　し	〃	隣接又は 1 km
	Baraka Enrekang	250*	Proyek	な　し	〃	100 m
Sampai Peb. '82 昭和57年2月まで	Solie Soppeng	300	Tahir	な　し	所有者	3 km
	Lalabata Riaja Soppeng	131	Assaad	な　し	〃	1 km
	Wanio Sidrap	60	農家群	な　し	〃	1.5 km
	Ugi Wajo	200	Usman P.	な　し	〃	隣　接
	Baraka Enrekang	不　定	Proyek	購　入	〃	不　定

* 昭和57年10月よりも広い Lebih Luas daripada Okt. '82.

Tabel 2-5 Desinfeksi dan Penyaluran Ulat

第2－5表　飼育所の消毒と配蚕

調査地名 Tempat Pegamatan / 項目 Kegiatan		Desinfeksi ruang/alat 飼育所の消毒	Desinfeksi Tubah Ulat 蚕体消毒	Bahan Desinfektan 消毒剤	Saat Penyaluran Ulat 配蚕時期	Yang membawa Ulat kepetani 配蚕者
Dari Mar. '82 昭和57年3月から	Solie Soppeng	飼育前後2回	す　る	さらし粉	3眠中	稚蚕飼育責任者
	Lalabata Riaja Soppeng	〃	〃	〃	〃	稚蚕飼育者
	Wanio Sidrap	〃	〃	〃	〃	〃
	Ugi Wajo	〃	〃	〃	〃	稚蚕飼育責任者
	Baraka Enrekang	〃	〃	〃	〃	〃
Sampai Peb. '82 昭和57年2月まで	Solie Soppeng	飼育前1回	不　明	さらし粉	3眠前	壮蚕飼育者
	Lalabata Riaja Soppeng	〃	〃	ホルマリン	〃	稚蚕飼育者
	Wanio Sidrap	しないときあり	〃	さらし粉	〃	〃
	Ugi Wajo	飼育前1回	〃	〃	〃	壮蚕飼育者
	Baraka Enrekang	〃	〃	ホルマリン	〃	稚蚕飼育者

Tabel 2-6 Penerimaan Uang Pade Pemeliharaan Ulat Kecil
第2－6表　飼育所収入調査

調査地名 Tempat Pegamatan / 項目 Kegiatan		Box Yg Dihaakitate/1kali 1回掃立箱数	Hasil Kokon kg/box 1箱当り収繭量	Hasil Kokon kg/box 1回当り収繭量	Haruga Ulat Kecil		Harga Bibit/box 蚕種代金	Harga Kokon 繭単価	Harga Ulat Kecil Semua/kali 総飼育料／回
					Dari Hasil 収繭量当り	Uang Bibit 蚕種代			
		box	kg	kg				RP/kg	RP
Dari Apr. '83 Sampai Nop. '84 昭58年4月〜昭59年11月	Solie Soppeng	31.73	17.39	551.77	30%	Termasuk 含む	5,000 RP	2,000 RP	331,060
	Lalabata Riaja Soppong	28.73	18.62	534.86	30%	Termasuk 含む			320,912
	Wanio Sidrap	24.91	17.30	430.96	25%	Tambah 加える			340,050
	Ugi Wajo	32.91	16.52	543.57	30%	Tenmasuk 含む			326,144
	Baraka Enrekang	13.4	18.51	284.08	30%	Temasuk 含む			148,846
Dari Mar. '82 Sampai Juli '82 昭57年3月〜昭57年7月	Solie Soppeng	20.25	22.53	456.18	20%	Tambah 加える	3,000 RP	2,500 RP	228,090
	Lalabata Riaja Soppeng	11.25	22.22	249.94	27.3%	Termasuk 含む			170,792
	Wanio Sidrap	15.25	21.43	327.15	25%	Tambah 加える			287,597
	Ugio Wajo	20.25	21.75	466.49	30%	Termasuk 含む			249,868
Sebelum Peb. '82 昭和57年2月以前	Solie Soppeng	18.75	8.6	161.3	50%	Termasuk 含む	3,500 RP	2,500 RP	201,500
	Lalabata Riaja Soppeng	15	16.7	250.5	50%				313,200
	Wanio Sidrap	10	10.0	100.0	40%				100,000
	Ugi Wajo	20	11.8	236.0	50%				295,000
	Baraka Enrekang	10	17.0	170.0	50%				212,500

Tabel 2-7 Kebutuhan Biaya Untuk Pemeliharaan Ulat Kecil

第2－7表　労賃，桑葉代，雑費調査

調査地名 Tempat Pegamatan	Kegiatan 項目	Gajl Pekerja 労賃		Pembelion Daun Murbei 桑葉代		Kebutuhan Lain 雑費	
		per satu hari 1日当り労賃	semua/1 Periode 1蚕期労賃	per satu box 1箱当り桑代	semua/1 Periode 一蚕期桑代	per satu box 1箱当り雑費	semua/1 Periode 一蚕期雑費
		RP	RP	RP	RP	RP	RP
Dari Apr. '83 Sampai Nop. '84 昭58年4月 ～ 昭59年11月	Solie Soppeng	750	*5 67,840	2,071	65,727	*6 2,089	66,273
	Lalabata Riaja Soppeng	750	64,462	2,000	57,455	2,000	57,455
	Wanio Sidrap	*2 920	68,975	*2 2,769	68,975	*2 2,422	60,340
	Ugi Wajo	750	73,636	*6 1,889	62,182	*6 1,972	64,909
	Baraka Enrekang	750	31,500	2,000	26,600	2,000	26,600
Dari Mar. '82 Sampai Juli '82 昭57年3月 ～ 昭57年7月	Solie Soppeng	*1 321	20,250	1,750	35,438	1,400	28,350
	Lalabata Riaja Soppeng	750	50,625	1,725	17,250	1,800	20,250
	Wanio Sidrap	*2 2,363	81,778	*2 5,363	81,778	*8 1,557	23,750
	Ugi Wajo	*1 860	90,250	2,000	40,500	*9 1,173	23,750
Sebelum Peb. '82 昭和57年2月以前	Solie Soppeng	*1 270	18,750	1,400	26,250	1,296	*7 24,300
	Lalabata Riaja Soppeng	*1 464	20,875	1,400	21,000	1,287	*7 19,300
	Wanio Sidrap	*3 357	20,000	1,400	14,000	1,400	*7 13,800
	Ugi Wajo	*3 357	25,000	1,400	28,000	1,285	*7 25,700
	Baraka Enrekang	*4 714	*4 21,420	1,400	14,000	1,400	*7 14,000

*1 Dari Jumlah Box Yg Dipemelihara　飼育箱数によって定める。

*2 Dari Hasil Kokon　収繭量によって定める。

*3 Dari Satu Periode Pemeliharaan　一蚕期によって定める。

*4 Perkiraan　推定値

*5 Pokok RP2,500, Tambah/Kurang Dari Hasil　基本は2,500RPであるが，収繭量を加味する。

*6 Pokok RP2,000, Tambah/Kurang Dari Hasil　基本は2,000RPであるが，収繭量を加味する。

*7 RP1,180/satu box + RP3,600/100 m^2 empat Pemeliharaan Ulat Kecil　1箱当り1,180RPと飼育所100 m^2 当り 3,600RPを加える。

*8 RP1,000/satu box + RP8,500　1箱当り 1,000RPに 8,500RPを加える。

*9 RP1,000/satu box + RP3,500　1箱当り 1,000RPに 3,500RPを加える。

Tabel 2-8 Penerimaan dan Pengeluaran Uang Pada Pemeliharaan Ulat Kecil

第2－8表　飼育所収支計算（一蚕期当り）

Kegiatan 項目 / 調査地名 Tempat Pegamatan		Berapa Harga Ulat Kecil 稚蚕代金	Uang Yang Digunakan					Keuntungan 収益	Penerima Keuntungen 利益金受領者
			Uang Pekerja 人夫賃	Uang Daun 桑代	Uang Bibit 蚕種代	Uang Yg Lain[2] 雑費	Jumlah 合計		
		RP	RP	RP	RP	RP	RP	RP	
Dari Apr. '83 Sampai Nop. '84 昭58年4月〜昭59年11月	Solie Soppeng	331,060	67,840	65,727	127,955	66,273	327,795	3,265	M. Tahi Mude
	Lalabata Riaja Soppeng	320,912	64,462	57,455	135,000	57,455	314,341	6,572	Usman Koro
	Wanio Sidrap	340,050	68,975	68,975	124,545	60,340	322,840	17,210	Group Petani 農家群
	Ugi Wajo	326,144	73,636	62,182	109,545	64,909	310,273	15,871	Usman P.
	Baraka Enrekang	148,846	31,500	26,600	56,000	26,600	140,700	8,146	Proyek プロジェクト
Dari Mar. '82 Sampai Juli '82 昭57年3月〜昭57年7月	Solie Soppeng	228,090	20,250	35,438	-	28,350	84,038	144,052	M. Tahir Mud
	Lalabata Riaja Soppeng	170,792	50,625	17,250	33,750	20,250	121,875	48,917	Usman Koro
	Wanio Sidrap	287,597	81,778	81,778	-	23,750	187,306	100,291	Group Petani 農家群
	Ugi Wajo	349,868	90,250	40,500	60,750	23,750	215,250	134,614	Usman P.
Sebelum Peb. '82 昭和57年2月以前	Solie Soppeng	201,500	18,750	26,300	66,000	24,300	135,350	66,150	M. Tahir Mude
	Lalabata Riajo Soppeng	313,200	20,900	21,000	53,000	19,300	114,200	199,000	A. Assaad
	Wanio Sidrap	100,000	20,000	14,000	35,000	13,800	82,800	17,200	Group Petani 農家群
	Ugi Wajo	295,000	25,000	28,000	70,000	25,700	148,700	146,300	Usman P.
	Baraka Enrekang	212,500	21,420	14,000	35,000	14,000	83,000	129,500	Proyek プロジェクト

⑦ 飼育所の収支

ⓐ 収 入 調 査（第2・6表）

Wanio を除く4か所は飼育料は繭代金の30％と定めている。Wanio では繭代金の25％と蚕種代金と定めている。したがって蚕作が悪いときは収入が少くなっている。R／D前の古い飼育所では箱当り収繭量が少く掃立量も少かったので，飼育料金が繭代の50％という高率であり，繭代が2,500RPであるにもかかわらず，現在より少かった。

新しく'81,'82年に建造したパイロットユニットでR／D前に2回，少量ずつ飼育したが蚕作は良好であった。飼育料は各所によって異っているが，現在よりも少なかった。

R／D期間中は，蚕種の孵化不良，洪水害，タバコ害等があったが，それ以外は蚕作良好であった。繭代が2,000RPになったが収入は多くなった。

ⓑ 労賃，桑代，雑費（第2・7表）

Wanioは繭代金の8％を労賃に当てている。他では1日当り750RPであった。

桑葉代は1箱当り2,000RP－2,500RPであるが，蚕作が悪いときは減額していた。Wanio では繭代金の8％を支払っていた。

雑費は，Wanioは繭代金の7％であり，他は2,000RPを基本として蚕作に応じて減額していた。

ⓒ 収 支 計 算（第2・8表）

Wanioは蚕種代は別に徴集し，25％の飼育料のうち8％ずつ賃金と桑代に，7％を雑費に充当するので，常に繭代の2％は確実に収益がある。他の飼育所では1蚕期当り平均3,000RP～15,000RPの黒字であった。しかし蚕作不良のため43回中12回も支出超過のことがあり，かつ飼育責任者は無給で従事していた。もし責任者にも1日750RPを支払えば15日間で11,250RPの支出増になり，Solie，Lalabato Riaja，Baraka では赤字に転落する。また蚕種代の減額を受けたり，桑代の雑費を削って表面上黒字にしているようである。

蚕作不良と繭代金の低落が収入を悪くしているようである。

3. ま と め

R／D後の稚蚕飼育所ではATA72に示された施設，方法で稚蚕飼育を行っていた。井戸，ポンプが新設され，一般に蚕作は良好であった。しかし飼育技術以外の原因で不作の場合もあった。飼育所の収支は黒字であった。

第３章　養蚕農家調査

1. 調　査　方　法

予め調査用紙を作成し，各調査対象農家を訪問し，聴取により記入した。調査は日本人，インドネシア側カウンターパート，技術普及員が立会ったが，地方語の都合で，技術普及員が主に質問した。調査農家は，第３・１表，第３・２表に示すとおりであり，パイロットユニット構成農家は全員，それ以外の一般の農家は同一村内の近隣の者から，パイロットユニット構成農家の半数近くを選んだ。選びかたは比較的優秀と思われる者を普及員が選んだ。

なお，第３・１表にみられるようにパイロットユニット発足以来，構成農家に変動が多数みられた。その理由は次のようであった。

(1) 本人又はその配偶者の死亡，疾病，老齢化のため廃業。

(2) 遺産相続のとき桑園を遺産として相続できなかった。

(3) パイロットユニットの稚蚕飼育料の支払いを惜しんで，自分で稚蚕飼育を実施するため脱退。（これは各地に多く，しかもなかには初回だけは良好の成績を得た者もあるが，次第に悪くなり，復帰した者，復帰を希望している者が多い。）

(4) 転　　業（農業を止めた者）

なお，パイロットユニット加入希望者は甚だ多いので補充には困らぬようである。

なお調査結果を数字で表すと共に，増減欄にａ，ｂ，ｃの符号で農家各戸の状況を示した。ａは協定前及びR／D前よりも増加，改善又は良好な状況で不変のもの。ｂは協定前より増加したが途中低下したこともあった。ｃは低下又は改善されぬまま不変のものを示した。

2. 調　査　結　果

① 栽　　桑

a 桑　　園

第３・３表に示すように協定前及びR／D前にくらべ桑園面積は増加し，各農家毎にみても97％が増加している。構成農家の方が面積が広い。

b 桑　品　種

約10％の農家が奨励品種のアルバを桑園の１部に植えたのみである。（第３・４表）。

c 桑園収穫回数

ほとんどの農家が年間収穫回数を増加している（第３・５表）。

d 桑収穫方法

なた使用から，鋏又はかまに改善した者が47％あり，構成農家の方が改善率が良い。（第３・６表）

Tabel 3-1 Name-nama Petani Sutera Anggota Pilot Unit 調査したパイロットユニット構成農家名

LOK ASI 地 名	SOLIE SOPPENG	LALABATARIAJA SOPPENG	WANIO SIDRAP	UGI WAJO	BARAKA ENREKANG
No.	100	200	300	400	500
1.	M. Tahir Mude	*Tahang	Adbul latif	Usman. P	Abdul Karmas
2.	*La Made	*La Hola	*Juarang	*Baharu	Ambe Anca
3.	Ibrahim	Ballu	*Mida	Damang	Ambe Mina
4.	*Salama	La Boko	Barema	Made	*Indo Riko
5.	*La Keng	Mellong	*Cammuna	Sompung	Jahuri
6.	*La Dalle	*Yasse	Hartati	Hodding	Indo Suriana
7.	Beddu Side	*Kawi	H. Hani	Dekeng	Indo Sanaria
8.	*Muin	La Semmang	H. Hudri	Congkeng	Indo Hamida
9.	*Danno	*La Tang	La Sanatu/Nadi	Talebbe	*Indo Sini
10.	*La Pammu	Mansse	La Mallo	La Odding	*Rabaiya
11.	Abu	*Happe	*Lunrung	Maddu. R	*Indo Nadi
12.	Sitti	*Kanno	*Tani	Made Amin	Mama Saeful
13.	*Beddu Napisa	Palalo	*Hawang	Sellang	*Sarimen
14.	Bengnga	Pannu	Masauleng	Saleng	Indo Pasendeng
15.	La Tanra	Sinasa	I Namang	Talitti	Indo Hayati
16.	Asni	*Tahere	Osi	Arifin	Nene Mapul
17.	Sinosi	*La Tuo	Ramli	Kalleng. T	Indo Des
18.	Buhera	*Siraje	Karrang	Badaru	Indo Tasin
19.	Alimin	*Habi	I Salema	Makka	*Jamiah
20.	I Sagena	*Haruna	Saleng	Duma	Jadia
21.	I Sanang	Halawiah	I Sidah		
22.	*Nori	La Deppung	Yupe		
23.	Beddu Baluku	Tarima	Timang		
24.	A.M. Tahir	*Jahe	I Bake		
25.	*Hude	Matta	*Bangnga		
26.			Nanrang		
27.			I Lasse		
28.			Abdurramang		
29.			La Side		
30.			*Sempo		

Keterangan : * = Petani Pengganti.
注 交代した農家

Tabel 3-2 Nama-nama Petani Sutera Non Pilot Unit 調査した一般養蚕農家名

LOK ASI 地 名	SOLIE SOPPENG	LALABATARIAJA SOPPENG.	WANIO SIDRAP	UGI WAJO	BARAKA ENREKANG
No.	100	200	300	400	500
51.	Abdul Samad	La Nong	I Balla	Mallawa	Inang
52.	Cammu	Cengkarin	Manggong	Mangre	Natsir
53.	Naima	La Hiya	I Dauda	Mangge	Raba
54.	Yupe	La Dehe	H. Sanebe	Jibe	Napi
55.	La Jaga	La Mendong	I Diwi	H. Daiyan	Baco Marupi
56.	I Sanna	Samissi	Sanawiah	Beddu	Ambe Uri
57.	Syamsani	Palemma	I Tija	Supu	Dara
58.	Passe	La Inggi	H. Syamsiah	Sengangeng	Uce
59.	Moni	I Tanggi	I Muna	Mina	Arifin
60.	La Tage	La Mosi	Syarifuddin	Amir	Muna
61.	Halimah	Codde	Jawa		
62.	La Genggeng	La Tepu	Condong		
63.			La Ressang		
64.			Mariaseng		

Table 3-3 Luas Kebun Murbei
第3－3表 桑 園 面 積

Tempat Pengamatan 調査地名	Anggotaor/Non 構成非構成別 *1	78/79年 Jumlah 合計 (A)	78/79年 Petani yg diamati 調査農家数	78/79年 Rata² 平均	年 Jumlah 合計	年 Petani yg diamati 調査農家数	年 Rata² 平均	年 Jumlah 合計 (B)	年 Petani yg diamati 調査農家数	年 Rata² 平均	(B)/(A) x 100	Naik/Turun 増減 *2 a	b	c
		ha	kk(戸)	ha	ha	kk(戸)	ha	ha	kk(戸)	ha		kk(戸)	kk(戸)	kk(戸)
Solie	A	16.90	17	0.99	26.15	22	1.19	30.35	25	1.21	180	24	0	1
Soppeng	N	10.30	10	1.03	10.40	10	1.04	13.90	12	1.16	135	11	0	1
Lalabata Riaja	A	9.05	17	0.53	-	-	-	19.21	25	0.77	212	25	0	0
Soppeng *3	N	6.55	12	0.55	-	-	-	7.30	12	0.61	111	12	0	0
Wanio	A	7.38	27	0.27	10.20	30	0.34	12.28	30	0.41	166	28	0	2
Sidrap	N	2.15	11	0.20	4.60	14	0.33	5.70	14	0.41	265	14	0	0
Ugi	A	12.59	20	0.63	19.40	20	0.97	21.80	20	1.09	173	20	0	0
Wajo	N	2.60	10	0.26	2.60	10	0.26	2.80	10	0.28	108	10	0	0
Baraka	A	8.40	19	0.44	9.90	20	0.50	12.50	20	0.63	149	18	0	2
Enrekang	N	3.75	9	0.42	6.60	10	0.66	7.20	10	0.72	192	10	0	0
Jumlah 合計	A	54.32	100	-	65.65	92	-	96.14	120	-	-	115	0	5
	N	25.35	52	-	30.80	44	-	36.90	58	-	-	57	0	1
	A+N	79.67	152	-	96.45	136	-	133.04	178	-	-	172	0	6
Rata² 平均	A	-	-	0.54	-	-	0.71	-	-	0.80	177	96%	0%	4%
	N	-	-	0.49	-	-	0.70	-	-	0.64	146	98%	0%	2%
	A+N	-	-	0.52	-	-	0.71	-	-	0.75	167	97%	0%	3%

*1: A: Petani Sutera Anggota Pilot Unit パイロットユニット構成養蚕農家
N: Petani Sutera Non Anggota Pilot Unit 一般養蚕農家

*2
a: Naik/Sama 上昇又は不変 78/79 82/83 83/84
b: Naik/Sama Tapi Ada Turun 上昇又は不変しかし下降あり
c: Turun 下降

Kalau 78/79 Tidak Ada, a Atau b, 78/79年にないときはa又はbとする

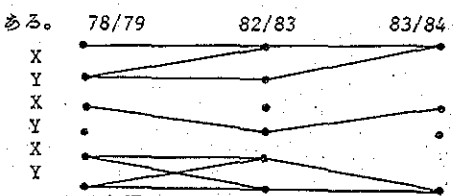
*3 Lalabuta Riaja Soppeng, 82/83 Tidak Ada 82/83年は欠調

Tabel 3-4 Jenis Murbei
第3－4表 桑 品 種

Tempat Pengamatan 調査地名	Anggota /Non 構成 非構成別 *1	78/79 Petani yg Diamati 調査農家数	78/79 Type 型 *2 X	78/79 Type 型 *2 Y	82/83 Petani yg Diamati 調査農家数	82/83 Type 型 *2 X	82/83 Type 型 *2 Y	83/84 Petani yg Diamati 調査農家数	83/84 Type 型 *2 X	83/84 Type 型 *2 Y	Naik/Turn 増減 *3 a	Naik/Turn 増減 *3 b	Naik/Turn 増減 *3 c
		kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)
Solie	A	17	0	17	22	3	19	25	4	21	4	0	21
Soppeng	N	10	2	8	10	2	8	12	2	10	2	0	10
Lalabata Riaja	A	17	1	16	-	-	-	25	2	23	2	0	23
Soppeng	N	12	0	12	-	-	-	12	0	12	0	0	12
Wanio	A	27	2	25	30	5	25	30	6	24	6	0	24
Sidrap	N	11	0	11	14	0	14	14	2	12	2	0	12
Ugi	A	20	0	20	20	0	20	20	0	20	0	0	20
Wajo	N	10	0	10	10	0	10	10	0	10	0	0	10
Baraka	A	19	0	19	20	0	20	20	0	20	0	0	20
Enrekang	N	9	2	7	10	2	8	10	2	8	2	0	8
Jumlah	A	100	3	97	92	8	82	120	12	108	12	0	108
合 計	N	52	4	48	44	4	40	58	6	52	6	0	52
	A+N	152	7	145	136	12	124	178	18	160	18	0	160
%	A	100	3	97	100	9	91	100	10	90	10	0	90
	N	100	8	92	100	9	91	100	10	90	10	0	90
	A+N	100	5	95	100	9	91	100	10	90	10	0	90

*1 A: Petani Sutera Anggota Pilot Unit パイロットユニット構成農家
N: Petani Sutera Non Anggota Pilot Unit 一般養蚕農家

*2 X: Alba Ada 奨励桑品種アルバがたとえ1部でも植えてある。
Y: Alba Tidak Ada 奨励桑品種アルバが全然植えていない



*3
a: Naik/Sama 上昇又は不変
b: Naik/Sama Tapi Ada Turun 上昇又は不変しかし下降あり
c: Turun/Suma 下降又は不変

*4 Lalabata Riaja Soppeng 82/83 Tidak Ada 82/83年は欠調

Table 3-5 Pengambilan Dacin Dalam Setahun Dari Satu Pohon
第3－5表　桑園（同一株から）年間収穫回数

Tempat Pengamatan 調査地名	Anggotaor/Non 構成非構成別 *1	78/79年 Jumlah 合計	78/79年 Petani yd diamati 調査農家数	78/79年 Rata² (A) 平均	82/83年 Jumlah 合計	82/83年 Petani yg diamati 調査農家数	82/83年 Rata² 平均	83/84年 Jumlah 合計	83/84年 Petani yg diamati 調査農家数	83/84年 Rata² (B) 平均	(B)/(A) x 100	Naik/Turun 増減 *2 a	b	c
		hali(回)	kk(戸)	Kali(回)	Kali(回)	kk(戸)	Kali(回)	Kali(回)	kk(戸)	Kali(回)		kk(戸)	kk(戸)	kk(戸)
Solie	A	75	17	4.41	125	22	5.68	148	25	5.92	132	24	1	0
Soppeng	N	39	10	3.90	40	10	4.00	55	12	4.58	117	8	3	1
Lalabata Riaja	A	57	17	3.35	-	-	-	130	25	5.20	155	25	0	0
Soppeng *3	N	49	12	4.08	-	-	-	54	12	4.50	110	12	0	0
Wanio	A	95	27	3.52	150	30	5.00	205	30	6.83	194	30	0	0
Sidrap	N	44	11	4.00	63	14	4.5	76	14	5.43	136	14	0	0
Ugi	A	137	20	6.85	99	20	4.95	108	20	5.4	79	0	0	20
Wajo	N	66	10	6.6	59	10	5.9	62	10	6.2	94	5	1	4
Baraka	A	99	18	5.5	83	19	4.37	96	20	4.8	73	7	2	11
Enrekang	N	52	9	5.16	38	10	3.8	46	10	4.6	89	1	1	8
Jumlah	A	463	99	-	457	91	-	687	120	-	-	86	3	31
合計	N	250	52	-	200	44	-	293	58	-	-	40	5	13
	A+N	713	151	-	657	135	-	980	178	-	-	126	8	44
Rata²	A	-	-	4.68	-	-	5.02	-	-	5.73	122	72%	2%	26%
平均	N	-	-	4.80	-	-	4.55	-	-	5.05	105	69%	9%	22%
	A+N	-	-	4.72	-	-	4.87	-	-	5.51	117	71%	4%	25%

*1: A: Petani Sutera Anggota Pilot Unit　パイロットユニット構成養蚕農家
N: Petani Sutera Non Anggota Pilot Unit　一般養蚕農家

*2:
a: Naik/Sama -　上昇又は不変
b: Naik/Sama Tapi Ada Turun　上昇又は不変しかし下降あり
c: Turun　下降

Kalau 78/79 Tidak Ada, a Atau b, 78/79年にないときはa又はbとする

*3 Lalabata Riaja Soppeng, 82/83 Tidak Ada　82/83年は欠調

78/79	82/83	83/84

Table 3-6 Alat Untuk Ambil Daun

第3－6表 桑収穫用具

Tempat Pemgamatan 調査地名	Anggota /Non 構成非構成別 *1	78/79年			82/83年			83/84年			Naik/Turun 増減 *3		
		Petani yg Diamati 調査農家数	Type 型 *2		Petani yg Diamati 調査農家数	Type 型 *2		Petani yg Diamati 調査農家数	Type 型 *2				
			X	Y		X	Y		X	Y	a	b	c
		kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)
Solie	A	17	0	17	22	3	19	25	5	20	5	0	20
Soppeng	N	11	1	10	11	3	8	12	4	8	4	0	8
Lalabata Riaja	A	17	0	17	-	-	-	25	6	19	6	0	19
Soppeng	N	12	0	12	-	-	-	12	0	12	0	0	12
Wanio	A	27	0	27	30	20	10	30	29	1	29	0	1
Sidrap	N	11	0	11	14	1	13	14	8	6	8	0	6
Ugi	A	20	0	20	20	20	0	20	20	0	20	0	0
Wajo	N	10	0	10	10	0	10	10	1	9	1	0	9
Baraka	A	19	0	19	19	4	15	20	5	15	5	0	15
Enrekang	N	9	0	9	10	6	4	10	6	4	6	0	4
Jumlah	A	100	0	100	91	47	44	120	65	55	65	0	55
合計	N	53	1	52	45	10	35	58	19	39	19	0	39
	A+N	153	1	152	136	57	79	178	84	94	84	0	94
%	A	100	0	100	100	52	48	100	54	46	54	0	46
	N	100	2	98	100	22	78	100	33	67	33	0	67
	A+N	100	1	99	100	42	58	100	47	53	47	0	53

*1 A: Petani Sutera Anggota Pilot Unit パイロットユニット構成農家
N: Petani Sutera Non Anggota Pilot Unit 一般蚕委農家

*2 X: Bukan Parang 刀（なた）以外のもの
Y: Parang 刀（なた）

*3
a: Naik/Sama 上昇又は不変
b: Naik/Sama Tapi Ada Turun 上昇又は不変しかし下降あり
c: Turun/Sama 下降又は不変

	78/79	82/83	83/84
X			
Y			
X			
Y			
X			
Y			

*4 Lalabata Riaja Soppeng 82/83 Tidak Ada 82/83年は欠調

Table 3-7 Cara Pendangiran

第3－7表 除草方法

Tempat Pemgamatan 調査地名	Anggota /Non 構成非構成別 *1	78/79年 Petani yg Diamati 調査農家数	78/79年 Type 型 *2 X	78/79年 Type 型 *2 Y	82/83年 Petani yg Diamati 調査農家数	82/83年 Type 型 *2 X	82/83年 Type 型 *2 Y	83/84年 Petani yg Diamati 調査農家数	83/84年 Type 型 *2 X	83/84年 Type 型 *2 Y	Naik/Turun 増減 *3 a	Naik/Turun 増減 *3 b	Naik/Turun 増減 *3 c
		kk( )	kk( )	kk( )	kk( )	kk( )	kk( )	kk( )	kk( )	kk( )	kk( )	kk( )	kk( )
Solie	A	17	0	17	22	0	22	25	0	25	0	0	25
Soppeng	N	10	0	10	10	1	9	12	1	11	1	0	11
Lalabata Riaja	A	17	0	17	-	-	-	25	2	23	2	0	23
Soppeng	N	12	0	12	-	-	-	12	4	8	4	0	8
Wanio	A	27	0	27	30	0	30	30	0	30	0	0	30
Sidrap	N	11	0	11	14	0	14	14	0	14	0	0	14
Ugi	A	20	0	20	20	0	20	20	1	19	1	0	19
Wajo	N	10	0	10	10	0	10	10	0	10	0	0	10
Baraka	A	19	0	19	20	0	20	20	1	19	1	0	19
Enrekang	N	9	0	9	10	2	8	10	4	6	4	0	6
Jumlah	A	100	0	100	92	0	92	120	4	116	4	0	116
合計	N	52	0	52	44	3	41	58	9	49	9	0	49
	A+N	152	0	152	136	3	133	178	13	165	13	0	165
%	A	100	0	100	100	0	100	100	3	97	3	0	97
	N	100	0	100	100	7	93	100	16	84	16	0	84
	A+N	100	0	100	100	2	98	100	7	93	7	0	93

*1 A: Petani Sutera Anggota Pilot Unit パイロットユニット構成農家
N: Petani Sutera Non Anggota Pilot Unit 一般養蚕農家

*2 X: Tidak Pakai Cangkul くわを使わぬ方法
Y: Cangkul くわを使用する方法

*3
a: Naik/Sama 上昇又は不変
b: Naik/Sama Tapi Ada Turun 上昇又は不変しかし下降あり
c: Turun/Sama 下降又は不変

*4 Lalabata Riaja Soppeng 82/83 Tidak Ada

	78/79	82/83	83/84
X			
Y			
X			
Y			
X			
Y			

82/83年は欠調

Table 3-8 Berapa Kali Pendangiran/Tahun

第3－8表　年間除草回数

Tempat Pengamatan 調査地名	Anggotaor/Non 構成非構成別 *1	78/79年 Jumlah 合計	78/79年 Petani yg diamati 調査農家数	78/79年 Rata² (A) 平均	82/83年 Jumlah 合計	82/83年 Peiani yg diamati 調査農家数	82/83年 Rata² 平均	83/84年 Jumlah 合計	83/84年 Petani yg diamati 調査農家数	83/84年 Rata² (B) 平均	(B)/(A) x 100	Nail/Turun 増減 *2 a	Nail/Turun 増減 *2 b	Nail/Turun 増減 *2 c
		kali (回)	kk (戸)	kali (回)	kali (回)	kk (戸)	kali (回)	kali (回)	kk (戸)	kali (回)		kk (戸)	kk (戸)	kk (戸)
Solie	A	68	17	3.82	130	22	5.91	155	25	6.2	162	24	1	0
Soppeng	N	35	10	3.5	36	10	3.6	40	12	3.3	94	8	1	3
Lalabata Kiaja Soppeng *3	A	108	17	6.35	-	-	-	155	25	6.2	98	24	0	1
	N	61	12	5.08	-	-	-	56	12	4.67	92	8	0	4
Wanio	A	32	27	1.17	81	30	2.7	105	30	3.5	299	30	0	0
Sidrap	N	11	11	1.0	28	14	2.0	40	14	2.86	286	14	0	0
Ugi	A	229	20	11.45	244	20	12.2	232	20	11.60	101	11	3	6
Wajo	N	105	10	10.5	106	10	10.6	108	10	10.8	103	10	0	0
Baraka	A	75	19	3.95	78	20	3.9	102	20	5.1	129	12	6	2
Enrekang	N	45	9	5.00	42	10	4.2	50	10	5.0	100	3	2	5
Jumlah 合計	A	512	100	-	533	92	-	749	120	-	-	101	10	9
	N	257	52	-	212	44	-	294	58	-	-	43	3	12
	A+N	769	152	-	745	136	-	1,043	178	-	-	144	13	21
Rata²	A	-	-	5.12	-	-	5.79	-	-	6.24	122	84%	8%	8%
	N	-	-	4.94	-	-	4.82	-	-	5.07	103	74%	5%	21%
	A+N	-	-	5.06	-	-	5.48	-	-	5.86	116	81%	7%	12%

*1: A: Petani Sutera Anggota Pilot Unit パイロットユニット構成蚕糸農家
N: Petani Sutera Non Anggota Pilo Unit 一般蚕糸農家

*2:
a: Naik/Sama 上昇又は不変
b: Naik/Sama Tapi Ada Turun 上昇又は不変しかし下降あり
c: Turun 下降

Kalau 78/79 Tidak Ada, a Atau b, 78/79年にないときはa又はbとする

*3: Lalabata Riaja Soppeng, 82/83 Tidak Ada 82/83年は欠調

78/79	82/83	83/84

Table 3-9 Junis Pupuk Apa yg Dipakai

第3－9表 施用肥料の種類

Tempat Pemgamatan 調査地名	Anggota /Non 構成非構成別 *1	78/79年 Petani yg Diamati 調査農家数	78/79年 Type 型 *2 X	78/79年 Type 型 *2 Y	82/83年 Petani yg Diamati 調査農家数	82/83年 Type 型 *2 X	82/83年 Type 型 *2 Y	83/84年 Petani yg Diamati 調査農家数	83/84年 Type 型 *2 X	83/84年 Type 型 *2 Y	Naik/Turun *3 増減 a	Naik/Turun *3 増減 b	Naik/Turun *3 増減 c
		kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)
Solie	A	17	1	16	22	22	0	25	25	0	25	0	0
Soppeng	N	10	2	8	10	6	2	12	9	3	9	0	3
Lalabata Riaja Soppeng	A	17	0	17	-	-	-	25	15	10	15	0	10
	N	12	0	12	-	-	-	12	7	5	7	0	5
Wanio	A	27	0	27	30	29	1	30	30	0	30	0	0
Sidrap	N	11	0	11	14	3	11	14	12	2	12	0	2
Ugi	A	20	0	20	20	20	0	20	20	0	20	0	0
Wajo	N	10	0	10	10	0	10	10	1	9	1	0	9
Baraka	A	19	0	19	20	3	17	20	11	9	11	0	9
Enrekang	N	9	0	9	10	9	1	10	9	1	9	0	1
Jumlah	A	100	1	99	92	74	18	120	101	19	101	0	19
合計	N	52	2	50	44	18	26	58	38	20	38	0	20
	A+N	152	3	149	136	92	44	178	139	39	139	0	39
%	A	100	1	99	100	80	20	100	84	16	84	0	16
	N	100	4	96	100	41	59	100	66	34	66	0	34
	A+N	100	2	98	100	68	32	100	78	22	78	0	22

*1 A: Petani Sutera Anggota Pilot Unit パイロットユニット構成農家
N: Petani Sutera Non Anggota Pilot Unit一般養蚕農家

*2 X: Urea/Lain 尿素その他
Y: Tidak Dipupul 無 肥

"3
a: Naik/Sama 上昇又は不変
b: Naik/Sama Tapi Ada Turun 上昇又は不変しかし下降あり
c: Turun/Sama 下降又は不変

	78/79	82/83	83/84
X			
Y			
X			
Y			
X			
Y			

*4 Lubabata Riaja Soppeng 82/83 Tidak Ada 82/83年は欠調

Table 3-10 Berapa Kali Dipupuk/Tahun
第3－10表　年間施肥回数

Tempat Pengamatan 調査地名	Anggotaor/Non 構成非構成別 *1	78/79 年 Jumlah 合計 (A)	78/79 年 Petani yg diamati 調査農家数	78/79 年 Rata² 平均	82/83 年 Jumlah 合計	82/83 年 Petani yg diamati 調査農家数	82/83 年 Pata² 平均	83/84 年 Jumlah 合計 (B)	83/84 年 Petani yg diamati 調査農家数	83/84 年 Rata² 平均	(B)/(A) x 100	Naik/Turun 増減 *2 a	Naik/Turun 増減 *2 b	Naik/Turun 増減 *2 c
			kk(戸)			kk(戸)			kk(戸)			kk(戸)	kk(戸)	kk(戸)
Solie	A	2	1	2	64	22	2.91	78	25	3.12	-	24	1	0
Soppeng	N	4	2	2	14	6	2.33	21	9	2.33	-	9	0	3
Lalabata Riaja	A	0	0	0	-	-	-	32	15	2.13	-	15	0	10
Soppeng *3	N	0	0	0	-	-	-	13	7	1.86	-	7	0	5
Wanio	A	0	0	0	64	30	2.13	98	30	3.27	-	30	0	0
Sidrap	N	0	0	0	4	3	1.33	27	12	2.25	-	12	0	0
Ugi	A	0	0	0	90	20	4.50	114	20	5.7	-	20	0	0
Wajo	N	0	0	0	0	0	0	1	1	1	-	1	0	9
Baraka	A	0	0	0	4	3	1.33	17	11	1.55	-	11	0	9
Enrekang	N	0	0	0	34	9	3.78	40	9	4.44	-	9	0	1
Jumlah	A	2	1	-	222	75	-	339	101	-	-	100	1	19
合計	N	4	2	-	52	18	-	102	38	-	-	38	0	20
	A+N	6	3	-	274	93	-	441	139	-	-	138	1	39
Rata²	A	-	-	2	-	-	2.96	-	-	3.36	-	83%	1%	16%
平均	N	-	-	2	-	-	2.89	-	-	2.68	-	66%	0%	34%
	A+N	-	-	2	-	-	2.95	-	-	3.17	-	77%	1%	22%

*1: A: Petani Sutera Anggota Pilot Unit　パイロットユニット構成養蚕農家
N: Petani Sutera Non Anggota Pilot Unit　一般養蚕家

*2:
a: Naik/Sama　上昇又は不変
b: Naik/Sama Tapi Ada Turun　上昇又は不変しかし下降あり
c: Turun　下降

78/79	82/83	83/84

Kalau 78/79 Tidak Ada, a Atau b, 78/79年にないときはa又はbとする

*3 Lalabata Riaja Soppeng, 82/83 Tidak Ada　82/83年は欠調

Table 3-11 Cara Bawa Daun

第3-11表 桑運搬方法

Tempat Pemgamatan 調査地名	Anggota /Non 構成非構成別 *1	78/79年 Petani yg Diamati 調査農家数	78/79年 Type 型 *2 X	78/79年 Type 型 *2 Y	82/83年 Petani yg Diamati 調査農家数	82/83年 Type 型 *2 X	82/83年 Type 型 *2 Y	83/84年 Petani yg Diamati 調査農家数	83/84年 Type 型 *2 X	83/84年 Type 型 *2 Y	Naik/Turun 増減 *3 a	Naik/Turun 増減 *3 b	Naik/Turun 増減 *3 c
		kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)
Solie	A	17	0	17	22	0	22	25	0	25	0	0	25
Soppeng	N	11	0	11	11	0	11	12	0	12	0	0	12
Lalabata Riaja	A	17	1	16	-	-	-	25	2	23	2	0	23
Soppeng	N	12	4	8	-	-	-	12	5	7	5	0	7
Wanjo	A	27	0	27	30	1	29	30	0	30	0	0	30
Sidrap	N	11	0	11	14	0	14	14	0	14	0	0	14
Ugi	A	20	0	20	20	3	17	20	5	15	5	0	15
Wajo	N	10	0	10	10	0	10	10	0	10	0	0	10
Baraka	A	19	0	19	19	0	19	20	0	20	0	0	20
Enrekang	N	9	0	9	10	0	10	10	0	10	0	0	10
Jumlah	A	100	1	99	91	4	87	120	7	113	7	0	113
	N	53	4	49	45	0	45	58	5	53	5	0	53
合 計	A+N	153	5	148	136	4	132	178	12	166	12	0	166
%	A	100	1	99	100	4	96	100	6	94	6	0	94
	N	100	8	92	100	0	100	100	9	91	9	0	91
	A+N	100	3	97	100	3	97	100	7	93	7	0	93

*1 A: Petani Sutera Anggota Pilot Unit パイロットユニット構成農家
N: Petani Sutera Non Anggota Pilot Unit 一般養蚕農家

*2 X: Bukan Dipikul 人力以外（車，馬等）
Y: Dipikul 人力（肩上，肩を使用）

*3
a: Naik/Sama 上昇又は不変
b: Naik/Sama Tapi Ada Turun 上昇又は不変しかし下降あり
c: Turun/Sama 下降又は不変

	78/79	82/83	83/84
X			
Y			
X			
Y			
X			
Y			

*4 Lalabata Riaja Soppeng 82/83 Tidak Ada 82/83年は欠調

f　除　草　体　系

ほとんどがくわ等の人力を使用している。くわを使用しない者は除草剤を使用している。（第３・７表）

年間除草回数は，増加している所が多い。構成農家の方が回数が多い（第３・８表）。

g　施　　肥

協定前，R／D前よりも尿素施用農家は増加し，構成農家の方が率が高い。（第３・９表）。

施肥回数も協定前，R／D前よりも増加し，構成農家の方が回数が多い（第３・10表）。

h　桑運搬方法

ほとんどが人の頭や肩で運び，協定前，R／D前と変化は少ない（第３・11表）。

②　育　　蚕

a　育蚕施設

育蚕場所は協定前，R／D前にくらべ改善された者が増加し96％にも達し，かつ構成農家の方がやや改善率がよい（第３・12表）。

育蚕施設の改善は約半数行われ，そのうち天井にビニールを張るのは最も多く行われ，次いで床に石灰を撒くことであり，壁面に石灰を塗ることは，1/3以下である。協定前，R／D前より改善された農家が多く，構成農家の方が率が高かった（第３・13表）。

b　貯　　桑

貯桑場所の飼育所からの分離は協定前，R／D前より多く行われた。また構成農家の方が高率であった。（第３・14表）

c　年間飼育回数

年間飼育回数は，Solie，Lalabata Riaja，Wanioでは協定前，R／D前より増加した。しかしUgi，Barakaでは協定前よりも減少したが，R／D前よりも増加した。構成農家の方が飼育回数が多い（第３・15表）。

d　蔟中病蚕除去と収繭

蔟中の病蚕除去は，協定前は行われなかったが，R／Dまでに行われるようになり，R／D後さらに多く行われるようになった。構成農家の方が実施率が高い（第３・16表）。

早期収繭の改善指導をして来たが，R／D前には既に改善され，R／D後は一般農家も改善されて来た。構成農家の方が実施率（100％）がよい（第３・17表）。

e　消　　毒

飼育所・蚕具の消毒は協定前はほとんど行わなかったが，協定後増加し，さらにR／D後も実施農家率が増加した。構成農家の方が実施率が高い（第３・18表）。

消毒回数（前蚕期終了後，次蚕期開始までの期間中の実施回数）は，ほとんど１回であった。（第３・19表）。

Tabel 3-12 Ruang Pemeliharaan Ulat Besar

第3－12表 壮蚕飼育場所

Tempat Pegamatan 調査地名	Anggota /Non 構成非構成別 *1	78/79				82/83				83/84				Naik/Turun 増減 *2		
		Petani yg Diamati 調査農家数	Ruang Pemeliharaan 飼育場所 Bangsal (B) 別棟	Kolong Ramah (K) 床下	Rumah (R) 室内	Petani yg Diamati 調査農家数	Ruang Peneliharaan 飼育場所 Bangsal (B) 別棟	Kolong Ramah (K) 床下	Rumah (R) 室内	Petani yg Diamati 調査農家数	Ruang Pemeliharaan 飼育場所 Bangsal (B) 別棟	Kolong Ramah (K) 床下	Rumah (R) 室内	a	b	c
		kk	kk	kk	kk	kk	kk	kk	kk	kk	kk	kk	kk	kk	kk	kk
Solie	A	17	1	3	13	22	0	22	0	25	0	25	0	24	0	1
Soppeng	N	11	0	9	2	11	0	11	0	12	0	12	0	12	0	0
Lalabata Riaja	A	17	0	16	0	-	-	-	-	25	1	23	1	24	0	1
Soppeng *3	N	12	0	12	0	-	-	-	-	12	0	12	0	12	0	0
Wanio	A	27	1	5	21	30	0	29	1	30	0	30	0	29	0	1
Sidrap	N	11	0	4	7	14	0	11	3	14	1	12	1	13	0	1
Ugi	A	20	0	8	12	20	1	19	0	20	1	19	0	20	0	0
Wajo	N	10	0	3	7	10	0	8	2	10	0	8	2	8	0	2
Baraka	A	19	1	2	16	19	2	13	4	20	4	15	1	19	0	1
Enre Kang	N	9	1	4	4	10	0	10	0	10	0	10	0	9	0	1
Jumlah	A	100	4	34	62	91	3	83	5	120	6	112	2	116	0	4
合 計	N	53	1	32	20	45	0	40	5	58	1	54	3	54	0	4
	A+N	153	5	66	82	136	3	123	10	178	7	166	5	170	0	8
%	A	100	4	34	62	100	3	91	6	100	5	93	2	97	0	3
	N	100	2	60	38	100	0	89	11	100	2	93	5	93	0	7
	A+N	100	3	43	54	100	2	91	7	100	4	93	3	96	0	4

*1 A: Petani Satera Anggota Pilot Unit パイロットユニット構成農家
N: Petani Sutera Non Anggota Pilot Unit 一般養蚕農家

*2
a: Naik/Sama 上昇又は不変
b: Naik/Sama Tapi Ada Turun 上昇又は不変しかし下降あり
c: Turun/Sama 下降又は不変

*3 Lalabata Riaja Soppeng 82/83 Tidak Ada 83/83年は欠調

		78/79	82/83	83/84	78/79	82/83	83/84
Bangsal	別棟 (B)						
Kolong Rumah	床下 (K)						
Rumah	室内 (R):						
	(B)						
	(K)						
	(R)						
	(B)						
	(K)						
	(R)						

Tabel 3-13 Perbaikan Tempat Pemelihara an Ulat Besar

第3－13表　壮蚕飼育所の改善

Tempat Pegamatan 調査地名	Anggota /Non 構成 非構成別 *1	78/79				82/83				83/84				Naik/Jurun 増減 *2		
		Petani yg Diamati 調査農家数	Petani yg Memperbaik 改善農家数			Petani yg Diamati 調査農家数	Petani yg Memperbaik 改善農家数			Petani yg Diamati 調査農家数	Petani yg Memperbaik 改善農家数					
			2 Langit 天井	Dinding 壁	Lantai 床		2 Langit 天井	Dinding 壁	Lantai 床		2 Lengit 天井	Dinding 壁	Lantai 床	a	b	c
Solie	A	17	0	0	0	22	7	7	7	25	8	8	8	8	0	17
Soppeng	N	11	0	0	0	11	0	0	0	12	6	6	6	6	0	6
Lalabata Riaja	A	17	0	0	0	－	－	－	－	25	3	3	3	4*4	0	21
Soppeng *3	N	12	0	0	0	－	－	－	－	12	0	0	0	0	0	12
Wanio	A	27	0	0	0	30	26	8	20	30	27	10	23	29*4	0	1
Sidrap	N	11	0	0	0	14	4	0	1	14	12	3	5	12*4	0	2
Ugi	A	20	0	0	0	20	18	18	9	20	18	18	10	18*4	0	2
Wajo	N	10	0	0	0	10	2	1	1	10	2	1	1	2*4	0	8
Baraka	A	19	0	0	0	19	1	1	1	20	4	4	4	4	0	16
Enrekang	N	9	0	0	0	10	0	0	0	10	0	0	0	0	0	10
Jumlah	A	100	0	0	0	91	52	34	37	120	60	43	48	63	00	57
合　計	N	53	0	0	0	45	6	1	2	58	20	10	12	20	00	38
	A+N	153	0	0	0	136	58	35	39	178	80	53	60	83	00	95
%	A	100	0	0	0	100	57	37	41	100	50	36	40	52	0	48
	N	100	0	0	0	100	13	2	4	100	34	17	21	34	0	66
	A+N	100	0	0	0	100	43	26	29	100	45	30	33	47	00	53

*1　A: Petani Sutera Anggota Pilot Unit　パイロットユニット構成農家
　　N: Petani Sutera Non Anggota Pilot Unit　一般養蚕農家

*2
　　a: Naik/Sama　上昇又は不変
　　b: Naik/Sama Tapi Ada Turun　上昇又は不変しかし下降あり
　　c: Turun/Sama　下降又は不変

*3　Lalabata Riaja Soppeng 82/83 Tida Ada　82/83年は欠調

*4　Beberapa Orang Petani Memperbaiki Tempat Pemeliharaan Ulat Besar 1 Atau 2 Bagian Saja　1－2カ所しか改善しなかった農家がある。

	78/79	82/83	83/84
sudah	実施済		
belum	まだ		
sudah		実施済	
belum		まだ	
sudah			実施済
belum			まだ

Table 3-14 Tempat Penyimpanan Daun

第3－14表 貯 桑 場 所

Tempat Pemgamatan 調査地名	Anggota /Non 構成非構成別 *1	78/79年 Petani yg Diamati 調査農家数	78/79年 Type 型 *2 X	78/79年 Type 型 *2 Y	82/83年 Petani yg Diamati 調査農家数	82/83年 Type 型 *2 X	82/83年 Type 型 *2 Y	83/84年 Petani yg Diamati 調査農家数	83/84年 Type 型 *2 X	83/84年 Type 型 *2 Y	Naik/Turun 増減 *3 a	Naik/Turun 増減 *3 b	Naik/Turun 増減 *3 c
		kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)
Solie	A	17	0	17	22	22	0	25	25	0	25	0	0
Soppeng	N	11	0	11	11	2	9	12	11	1	11	0	1
Lalabata Riaja	A	17	3	14	-	-	-	25	8	17	8	0	17
Soppeng	N	12	1	11	-	-	-	12	2	10	2	0	10
Wanio	A	27	0	27	30	16	14	30	24	6	24	0	6
Sidrap	N	11	0	11	14	2	12	14	6	8	6	0	8
Ugi	A	20	3	17	20	18	2	20	18	2	18	0	2
Wajo	N	10	0	10	10	0	10	10	0	10	0	0	10
Baraka	A	19	0	19	19	3	16	20	7	13	7	0	13
Enrekang	N	9	3	6	10	8	2	10	8	2	8	0	2
Jumlah	A	100	6	94	91	59	32	120	82	38	82	0	38
合 計	N	53	4	49	45	12	33	59	27	31	27	0	31
	A+N	153	10	143	136	71	65	178	109	69	109	0	69
%	A	100	6	94	100	65	35	100	68	32	68	0	32
	N	100	8	92	100	27	73	100	47	53	47	0	53
	A+N	100	7	93	100	52	48	100	61	39	61	0	39

*1 A: Petani Sutera Anggota Pilot Unit パイロットユニット構成農家
N: Petani Sutera Non Anggota Pilot Unit 一般養蚕農家

*2 X: Diluar Tempat Pemeliharaan Ulat 壮蚕飼育所の外
Y: Didalam Tempat Pemeliharaan Ulat 壮蚕飼育所の中

	78/79	82/83	83/84
X			
Y			
X			
Y			
X			
Y			

*3
a: Naik/Sama 上昇又は不変
b: Naik/Sama Tapi Ada Turun 上昇又は不変しかし下降あり
c: Turun/Sama 下降又は不変

*4 Lalabata Riaja Soppeng 82/83 Tidak Ada 82/83年は欠調

Table 3-15 Frekwensi Pemelinaraan Periode/Tahun
第3－15表 年間飼育回数

Tempat Pengamatan 調査地名	Anggotaor/Non 構成非構成別 *1	78/79 年 Jumlah 合計	78/79 年 Petani yg diamati 調査農家数	78/79 年 Rata² 平均 (A)	82/83 年 Jumlah 合計	82/83 年 Petani yg diamati 調査農家数	82/83 年 Pata² 平均	83/84 年 Jumlah 合計	83/84 年 Petani yg diamati 調査農家数	83/84 年 Rata² 平均 (B)	(B)/(A) x 100	Naik/Turun 増減 *2 a	Naik/Turun 増減 *2 b	Naik/Turun 増減 *2 c
			kk(戸)			kk(戸)			kk(戸)			kk(戸)	kk(戸)	kk(戸)
Solie	A	81	17	4.76	124	22	5.64	170	25	6.80	143	23	1	1
Soppeng	N	52	11	4.73	60	11	5.45	71	12	5.92	125	12	0	0
Lalabata	A	72	17	4.24	-	-	-	170	25	6.80	160	25	0	0
Riaja Soppeng *3	N	60	12	5.00	-	-	-	71	12	5.92	118	12	0	0
Wanio	A	94	27	3.48	150	30	5.00	206	30	6.87	197	30	0	0
Sidrap	N	44	11	4.00	63	14	4.50	71	14	5.07	127	14	0	0
Ugi	A	142	20	7.10	124	20	6.20	137	20	6.85	96	7	8	5
Wajo	N	66	10	6.60	63	10	6.30	69	10	6.90	105	6	3	1
Baraka	A	105	19	5.53	83	19	4.37	96	20	4.80	87	6	2	12
Enrekang	N	52	9	5.78	38	10	3.80	46	10	4.60	80	0	1	9
Jumlah	A	494	100	-	481	91	-	779	120	-	-	91	11	18
合計	N	274	53	-	224	45	-	328	58	-	-	44	4	10
	A+N	768	153	-	705	136	-	1107	178	-	-	135	15	28
	A	-	-	4.94	-	-	5.29	-	-	6.49	131	76%	9%	15%
Rata²	N	-	-	5.17	-	-	4.98	-	-	5.66	109	76%	7%	17%
平均	A+N	-	-	5.02	-	-	5.18	-	-	6.22	124	76%	8%	16%

*1: A: Petani Sutera Anggota Pilot Unit パイロットユニット構成養蚕農家
N: Petani Sutera Non Anggota Pilot Unit 一般養蚕農家

*2:
a: Naik/sama 上昇又は不変
b: Naik/sama Tapi Ada Turun 上昇又は不変しかし下降あり
c: Turun 下降

78/79	82/83	83/84

Kalau 78/79 Tidak Ada, a Atau b, 78/78 年にないときは a 又は b とする

*3 Lalabata Riaja Soppeng, 82/83 Tidak Ada 82/83 年は欠調

Table 3-16 Per Lakuan Terhadap Ulat Sakit/Mati 1 - 2 hari

第3－16表 Sebelum Panen Kokon 病死蚕の収繭1～2日前除去

Tempat Pemgamatan 調査地名	Anggota /Non 構成 非構成別 *1	78/79年			82/83年			83/84年			Naik/Turun 増減 *3		
		Petani yg Diamati 調査農家数	Type 型 *2		Petani yg Diamat 調査農家数	Type 型 *2		Petani yg Diamati 調査農家数	Type 型 *2				
			X	Y		X	Y		X	Y	a	b	c
		kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)
Solie	A	17	0	17	22	22	0	25	25	0	25	0	0
Soppeng	N	11	0	11	11	2	9	12	9	3	9	0	3
Lalabata Riaja	A	17	0	17	-	-	-	25	25	0	25	0	0
Soppeng	N	12	0	12	-	-	-	12	2	10	2	0	10
Wanio	A	27	0	27	30	30	0	30	30	0	30	0	0
Sidrap	N	11	0	11	14	10	4	14	12	2	12	0	2
Ugi	A	20	0	20	20	20	0	20	20	0	20	0	0
Wajo	N	10	0	10	10	0	10	10	0	10	0	0	10
Baraka	A	19	1	18	19	17	2	20	20	0	20	0	0
Enrekang	N	9	0	9	10	10	0	10	10	0	10	0	0
Jumlah	A	100	1	99	91	89	2	120	120	0	120	0	0
合 計	N	53	0	53	45	22	23	58	33	25	33	0	25
	A+N	153	1	15]	136	111	25	178	153	25	153	0	25
%	A	100	1	99	100	98	2	100	100	0	100	0	0
	N	100	0	100	100	49	51	100	57	43	57	0	43
	A+N	100	1	99	100	82	18	100	86	14	86	0	14

*1 A: Petani Sutera Anggota Pilot Unit パイロットユニット構成農家
N: Petani Sutera Non Anggota Pilot Unit 一般養蚕農家

*2 X: Sudah 実施
Y: Belum 未実施

*3
a: Naik/ Sama 上昇又は不変
b: Naik/Sama Tapi Ada Turun 上昇又は不変しかし下降あり
c: Turun/Sama 下降

	78/79	82/83	83/84
X			
Y			
X			
Y			
X			
Y			

*4 Lalabata Riaja Soppeng 82/83 Tidak Ada 82/83年は欠調

Table 3-17 Panen Kokon Hari Keberapa
第3－17表　上蔟後何日で収繭するか

Tempt Pengamatan 調査地名	Anggotaor/Non 構成非構成別 *1	78/79年 Jumlah 合計 (A)	78/79年 Petani yg diamati 調査農家数	78/79年 Rata² 平均	82/83年 Jumlah 合計	82/83年 Petani yg diamati 調査農家数	82/83年 Peta² 平均	83/84年 Jumlah 合計 (B)	83/84年 Petani yg diamati 調査農家数	83/84年 Rata² 平均	(B)/(A) x 100	Naik/Turn *2 a	Naik/Turn *2 b	Naik/Turn *2 c
			kk(戸)			kk(戸)			kk(戸)			kk(戸)	kk(戸)	kk(戸)
Solie	A	73	17	4.29	132	22	6.00	150	25	6.00	140	25	0	0
Soppeng	N	47	11	4.27	49	11	4.45	65	12	5.42	127	9	0	3
Lalabata Riaja	A	84	17	4.94	-	-	-	150	25	6.00	121	25	0	0
Soppeng *3	N	55	12	4.58	-	-	-	59	12	4.92	107	11	0	1
Wanio	A	99	27	3.67	178	30	5.93	180	30	6.00	163	30	0	0
Sidrap	N	46	11	4.18	75	14	5.36	78	14	5.57	133	14	0	0
Ugi	A	84	20	4.2	120	20	6.00	121	20	6.05	144	20	0	0
Wajo	N	50	10	5.00	50	10	5.00	50	10	5.00	100	10	0	0
Baraka	A	83	19	4.39	129	19	6.79	139	20	6.75	154	20	0	0
Enrekang	N	45	9	5.00	54	10	5.40	59	10	5.90	118	8	0	2
Jumlah	A	423	100	-	559	91	-	740	120	-	-	120	0	0
合計	N	243	53	-	228	45	-	311	58	-	-	52	0	6
	A+N	666	153	-	787	136	-	1051	178	-	-	172	0	6
Rata²	A	-	-	4.23	-	-	6.14	-	-	6.17	146	100%	0%	0%
平均	N	-	-	4.58	-	-	5.07	-	-	5.36	117	90%	0%	10%
	A+N	-	-	4.35	-	-	5.79	-	-	5.90	136	97%	0%	3%

*1: A: Petani Sutera Anggota Pilot Unit　パイロットユニット構成養蚕農家
N: Petani Sutera Non Anggota Pilot Unit　一般養蚕農家

*2:
a: Naik/sama　上昇又は不変
b: Naik/sama Tapi Ada Turun　上昇又は不変しかし下降あり
c: Turun　下降

78/79	82/83	83/84

Kalau 78/79 Tidak Ada, a Atau, b, 78/79年にないときはa又はbとする

*3 Lalabata Riaja Soppeng, 82/83 Tidak Ada　82/83年は欠調

蚕体消毒の実施農家数は協定前は皆無であったが，R／D前には増加し，さらにその後は増加した（第3・20表）。

f　蚕　　病

協定前には微粒子病が最も多かった。その後微粒子病が減少し，次いでこうじかび病が首位を保っていたが，協定前には膿病が首位を占め，現在に到っている。（第3・11表）。

③　育　蚕　成　績

a　掃　立　箱　数

Solie，Lalabata Riaja，Wanio においては協定前さらにR／D前よりも掃立箱数は増加した。しかしUgi においては協定前よりも掃立箱数は減少したが，R／D前よりも増加した。Baraka においては掃立箱数が減少した。（第3・22表）。

b　年　間　収　繭　量

各地とも協定前あるいは，R／D前よりも，収繭量が増加し，約3倍になった。とくに構成農家の収繭量の増加が激しかった。（第3・23表）

c　箱当り，面積当り収繭量

Baraka 以外は面積当り収繭量は増加した（第3・24表）。箱当り収繭量は，協定前よりも増加し，Ugi（洪水とタバコ害）以外はR／D前よりも増加した（第3・25表）。

④　農　家　経　営

a　技　術　的　側　面

新しいパイロットユニットができてから蚕の飼育量（掃立量）は多くなった農家が多数を占めているが，中には減少した農家もあった。（第3・26表）

桑園収量も増加したと答えたものが 95% を占めたが，中には減少（洪水とタバコ害）と答えた者もあった（第3・26表）。

年間収繭量は 98% の者が増加したと答え，そのうち構成農家は全員増加したと答えた。また減少したと答えた者は全然なかった（第3・27表）。

b　経　済　的　側　面

養蚕収入は構成農家全員が増加したと答え，一般農家のうち 90% が増加し，3%が不変，7%が減少（Ugi の洪水とタバコ害）があった。（第3・27表）

養蚕は農家にとって重要であると答えた者が構成農家は100%を占め，一般農家でも1戸を除き残りは重要であると答えた。（第3・28表）

c　農　家　の　意　識

今後養蚕を積極的に進めたいという者が構成農家の全員を占め，一般農家でも 86% が積極的に今後も進みたいと答えていた（第3・28表）。

Tabel 3-18 Disinfeksi Ruang/Alat

第3-18表 飼育所蚕具の消毒

Tempat Pengamatan 調査地名	Anggota /Non 構成非構成別 *1	78/79年 Petani yg Diamati 調査農家数	78/79年 Type 型 *2 X	78/79年 Type 型 *2 Y	82/83年 Petani yg Diamati 調査農家数	82/83年 Type 型 *2 X	82/83年 Type 型 *2 Y	83/84年 Petani yg Diamati 調査農家数	83/84年 Type 型 *2 X	83/84年 Type 型 *2 Y	Naik/Turun 増減 *3 a	Naik/Turun 増減 *3 b	Naik/Turun 増減 *3 c
		kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)
Solie	A	17	0	17	22	8	14	25	9	16	9	0	16
Soppeng	N	11	0	11	11	1	10	12	7	5	7	0	5
Lalabata Riaja	A	17	0	17	-	-	-	25	11	14	11	0	14
Soppeng	N	12	1	11	-	-	-	12	3	9	3	0	9
Wanio	A	27	0	27	30	17	13	30	26	4	26	0	4
Sidrap	N	11	0	11	14	4	10	14	8	6	8	0	6
Ugi	A	20	0	20	20	20	0	20	20	0	20	0	0
Wajo	N	10	0	10	10	3	7	10	2	8	2	0	8
Baraka	A	19	0	19	19	9	10	20	12	8	12	0	8
Enrekang	N	9	0	9	10	8	2	10	8	2	8	0	2
Jumlah	A	100	0	100	91	54	37	120	78	42	78	0	42
合 計	N	53	1	52	45	16	29	58	28	30	28	0	30
	A+N	153	1	152	136	70	66	178	106	72	106	0	72
	A	100	0	100	100	59	41	100	65	35	65	0	35
%	N	100	2	98	100	36	64	100	48	52	48	0	52
	A+N	100	1	99	100	51	49	100	60	40	60	0	40

*1 A: Petani Sutera Anggota Pilot Unit パイロットユニット構成農家
N: Petani Sutera Non Anggota Pilot Unit 一般養蚕農家

*2 X: Disinfeksi Ruang/Alat 飼育所，蚕具の消毒
Y: Tidak Disinfeksi 消毒しない

	78/79	82/83	83/84
X			
Y			
X			
Y			
X			
Y			

*3
a: Naik/Sama 上昇又は不変
b: Naik/Sama Tapi Ada Turun 上昇又は不変しかし下降あり
c: Turun/Sama 下降又は不変

*4 Lalabata Riaja Soppeng 82/83 Tidak Ada 82/83年は欠調

Table 3-19 Berapa Kali Disinfeksi Ruang/Alat (Sampai Hakitate Dari Sesudah Bmebheraan)

第3－19表　飼育所，蚕具の消毒回数（飼育終了から掃立までの間）

Tempat Pengamatan 調査地名	Anggotaor/Non 構成非構成別 *1	78/79年 Jumlah 合計 (A)	78/79年 Petani yg diamati 調査農家数	78/79年 Rata² 平均	82/83年 Jumlah 合計	82/83年 Petani yg diamati 調査農家数	82/83年 Rata² 平均	83/84年 Jumlah 合計 (B)	83/84年 Petani yg diamati 調査農家数	83/84年 Rata² 平均	(B)/(A) x 100	Naik/Turun 増減 *2 a	b	c
			kk(戸)			kk(戸)			kk(戸)			kk(戸)	kk(戸)	kk(戸)
Solie	A	0	0	0	10	8	1.25	10	9	1.11	-	8	1	16
Soppeng	N	0	0	0	1	1	1.00	7	7	1.00	-	7	0	5
Lalabata Riaja	A	0	0	0	-	-	-	11	11	1.00	-	11	0	14
Soppeng *3	N	1	1	1	-	-	-	3	3	1.00	-	3	0	9
Wanio	A	0	0	0	17	17	1.00	26	26	1.00	-	26	0	4
Sidrap	N	0	0	0	4	4	1.00	8	8	1.00	-	8	0	6
Ugi	A	0	0	0	20	20	1.00	20	20	1.00	-	20	0	0
Wajo	N	0	0	0	3	3	1.00	2	2	1.00	-	2	0	8
Baraka	A	0	0	0	9	9	1.00	12	12	1.00	-	12	0	8
Enrekang	N	0	0	0	8	8	1.00	8	8	1.00	-	8	0	2
Jumlah	A	0	0	-	56	54	-	79	78	-	-	77	1	42
合計	N	1	1	-	16	16	-	28	28	-	-	28	0	30
	A+N	1	1	-	72	70	-	107	106	-	-	105	1	72
Rata²	A	-	-	0	-	-	1.04	-	-	1.01	-	64%	1%	35%
平均	N	-	-	1	-	-	1.00	-	-	1.00	-	48%	0%	52%
	A+N	-	-	1	-	-	1.03	-	-	1.01	-	59%	1%	40%

*1: A: Petani Sutera Anggota Pilot Unit　パイロットユニット構成養蚕農家
N: Petani Sutera Non Anggota Pilot Unit 一般養蚕農家

78/79	82/83	83/84

*2
a: Naik/sama　上昇又は不変
b: Naik/sama Tapi Ada Turun 上昇又は不変しかし下降あり
c: Turun　下降
Kalan 78/79 Tidak Ada, a Atau b, 78/79年にないときはa又はbとする

*3 Lalabata Riaja Soppeng, 82/83 Tidah Ada　82/83年は欠調

Tabel 3-20 Desinfeksi Tubuh Ulat

第3－20表　蚕体消毒の実施

Tempat Pemgamatan 調査地名	Anggota /Non 構成 非構成別 *1	78/79			82/83			83/84			Naik/Turun 増減 *3		
		Petani yg Diamati 調査農家数	Type 型 *2		Petani yg Diamati 調査農家数	Type 型 *2		Petani yg Diamati 調査農家数	Type 型 *2				
			X	Y		X	Y		X	Y	a	b	c
		kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)	kk(戸)
Solie	A	17	0	22	22	9	13	25	10	15	10	0	15
Soppeng	N	11	0	11	11	0	11	12	5	7	5	0	7
Lalabata Riaja	A	17	0	17	-	-	-	25	10	15	10	0	15
Soppeng	N	12	0	12	-	-	-	12	1	11	1	0	11
Wanio	A	27	0	27	30	28	2	30	27	3	27	0	3
Sidrap	N	11	0	11	14	9	5	14	12	2	12	0	2
Ugi	A	20	0	20	20	20	0	20	20	0	20	0	0
Wajo	N	10	0	10	10	1	9	10	1	9	1	0	9
Baraka	A	19	0	19	19	10	9	20	17	3	17	0	3
Enrekang	N	9	0	9	10	10	0	10	10	0	10	0	0
Jumlah 合計	A	100	0	100	91	67	24	120	84	36	84	0	36
	N	53	0	53	45	20	25	58	29	29	29	0	29
	A+N	153	0	150	136	87	49	178	113	65	113	0	65
%	A	100	0	100	100	74	26	100	70	30	70	0	30
	N	100	0	100	100	44	56	100	50	50	50	0	50
	A+N	100	0	100	100	64	36	100	63	37	63	0	37

*1 A: Petani Sutera Anggota Pilot Unit　パイロットユニット構成農家
N: Petani Satero Non Anggota Pilot Unit　一般養蚕農家

*2 X: Ya　実施
Y: Tidak　実施しない

*3
a: Naik/Sama　上昇又は不変
b: Naik/Sama Tapi Ada Turun　上昇又は不変しかし下降あり
c: Turun/Sama　下降又は不変

78/79	82/83	83/84
X		
Y		
X		
Y		
X		
Y		

*4 Lalabata Riaja Soppeng　82/83 Tidak/da　82/83年は欠調

Table 3-21 Nama Jenis Penyakit Ulat yg Paling Banyak

第3-21表 最も多い蚕病名

Tempat Pegamatan 調査地名	Anggota /Non 構成非構成別 *1	78/79					82/83					83/84				
		Petani yg Diamati 調査農家数	Nama Jenis Penyakit 蚕病名 *2				Petani yg Diamati 調査農家数	Nama Jenis Penyakit 蚕病名 *2				Petani yg Diamati 調査農家数	Nama Jenis Penyakit 蚕病名 *2			
			P	A	F	N		P	A	F	N		P	A	F	N
		kk戸	kk戸	kk戸	kk戸	kk戸	kk戸	kk戸	kk戸	kk戸	kk戸	kk戸	kk戸	kk戸	kk戸	kk戸
Solie	A	17	17	0	0	0	22	0	0	0	22	25	0	0	0	25
Soppeng	N	11	11	0	0	0	11	0	0	0	11	12	0	0	0	12
Lalabata Riaja Soppeng *3	A	17	17	0	0	0	-	-	-	-	-	25	0	0	0	25
	N	12	12	0	0	0	-	-	-	-	-	12	0	0	0	12
Wanio	A	27	27	0	0	0	30	0	0	0	30	30	0	0	0	30
Sidrap	N	11	11	0	0	0	14	0	0	0	14	14	0	0	0	14
Ugi	A	20	20	0	0	0	20	0	0	0	20	20	0	0	0	20
Wajo	N	10	11	0	0	0	10	0	0	0	10	10	0	0	0	10
Baraka	A	19	19	0	0	0	19	0	0	0	19	20	0	0	0	20
Enrekang	N	9	9	0	0	0	10	0	0	0	10	10	0	0	0	10
Jumlah 合計	A	100	100	0	0	0	91	0	0	0	91	120	0	0	0	120
	N	53	53	0	0	0	45	0	0	0	45	58	0	0	0	58
	A+N	153	153	0	0	0	136	0	0	0	136	178	0	0	0	178
%	A	100	100	0	0	0	100	0	0	0	100	100	0	0	0	100
	N	100	100	0	0	0	100	0	0	0	100	100	0	0	0	100
	A+N	100	100	0	0	0	100	0	0	0	100	100	0	0	0	100

*1 A: Petani Sutera Anggota Pilot Unit パイロットユニット構成農家
N: Petani Sutera Non Anggota Pilot Unit 一般養蚕農家

*2 P: Pebrine 微粒子病
A: Aspergillus こうじかび病
F: Flacherie 軟化病
N: N.P.V 膿 病

*3 Lalabata Riaja Soppeng 82/83 Tidak Ada 82/83年は欠調

Table 3-22 Jumlah Bibit Yang Dipelihara

第3－22表 掃 立 箱 数

Tempat Pengamatan 調査地名	Anggotaor/ Non 構成非構成別 *1	78/79 Jumlah 合計 (A) box	78/79 Petani yg diamati 調査農家数 kk(戸)	78/79 Rata² 平均 box	82/83 Jumlah 合計 box	82/83 Petani yg diamati 調査農家数 kk(戸)	82/83 Rata² 平均 box	83/84 Jumlah 合計 (B) box	83/84 Petani yg diamati 調査農家数 kk(戸)	83/84 Rata² 平均 box	(B)/(A) x 100	Naik/Turun 増減 *2 a kk(戸)	b kk(戸)	c kk(戸)
Solie	A	135.5	17	7.97	262	22	11.91	328	25	13.12	142	24	0	1
Soppeng	N	83.0	11	7.73	117	11	10.64	131	12	10.92	154	11	0	1
Lalabata	A	62.0	17	3.65	-	-	-	210	25	8.40	339	25	0	0
Riaja Soppeng *3	N	57.5	12	4.79	-	-	-	75.5	12	6.29	131	12	0	0
Wanio	A	49.0	27	1.81	118.5	30	3.95	175.5	30	5.85	358	29	1	0
Sidrap	N	22.0	11	2.00	53.0	14	3.79	86.0	14	6.14	391	14	0	0
Ugi	A	278.75	20	13.94	143.75	20	7.19	278.6	20	10.80	100	0	3	17
Wajo	N	82.5	10	8.25	83.50	10	8.35	103.5	10	10.35	125	7	3	0
Baraka	A	85.5	19	4.51	63.25	19	3.33	59.5	20	2.98	70	3	4	13
Enrekang	N	41.5	9	4.61	28.75	10	2.88	38.75	10	3.88	94	4	2	4
Jumlah	A	610.75	100	-	587.5	91	-	1048.6	120	-	-	81	8	31
合 計	N	288.50	53	-	282.25	45	-	434.55	58	-	-	48	5	5
	A+N	899.25	153	-	869.75	136	-	1483.15	178	-	-	129	13	36
Rata²	A	-	-	6.11	-	-	6.46	-	-	8.73	172	67%	7%	26%
平 均	N	-	-	5.44	-	-	6.27	-	-	7.49	151	82%	9%	9%
	A+N	-	-	5.88	-	-	6.40	-	-	8.33	165	73%	7%	20%

*1: A: Petani Sutera Anggota Pilot Unit パイロットユニット構成養蚕農家
N: Petani Sutera Non Anggota Pilot Unit 一般養蚕農家数

78/79	82/83	83/84

*2:
a: Naik/sama 上昇又は不変
b: Naik/sama Tapi Ado Turun 上昇又は不変しかし下降あり
c: Turun 下降

Kalau 78/79 Tidak Ada, a Atau b, 78/79年にないときはa又はbとする

*3: Lalabata Riaja Soppeng, 82/83 Tidak Ada 82/83年は欠調

Table 3-23 Jumlah Produksi Kokon/Tahun
第3－23表　年間収繭量

Tempat Pengamatan 調査地名	Anggota/or/Non 構成非構成別 *1	78/78年 Jumlah 合計 (A) kg	78/78年 Petani yg diamati 調査農家数 (戸)	78/78年 Rata² 平均 kg	82/83年 Jumlah 合計 (戸)	82/83年 Petani yg diamati 調査農家数 kg	82/83年 Rata² 平均 kg	83/84年 Jumlah 合計 (B) kg	83/84年 Petani yg diamati 調査農家数 (戸)	83/84年 Rata² 平均 kg	(B)/(A) x 100	Naik/Turun 増減 *2 a kk(戸)	b kk(戸)	c kk(戸)
Solie	A	1,607	17	96.58	4,672	22	217.31	5,852.5	25	234.1	364	25	0	0
Soppeng	N	712	11	64.73	1,306	11	118.75	1,795.0	12	149.58	252	10	2	0
Lalabata Riaja	A	698	17	41.06	-	-	-	3,970.0	25	158.8	569	25	0	0
Soppeng *3	N	646	12	53.83	-	-	-	911.0	12	75.92	141	12	0	0
Wanio	A	555.5	27	20.57	2,023.5	30	67.45	3,390.0	30	113.0	610	29	1	0
Sidrap	N	200.0	11	18.18	686	14	49.00	1,300	14	42.86	650	14	0	0
Ugi	A	2,160.0	20	108.0	2,786	20	139.3	4,117.0	20	205.85	191	18	2	0
Wajo	N	563.0	10	56.3	859	10	85.9	1,287	10	128.7	229	7	3	0
Baraka	A	805.5	19	42.55	920	19	48.42	1,063	20	53.15	131	7	8	5
Enerkang	N	429.0	9	47.67	623	10	62.3	909	10	90.9	212	7	1	2
Jumlah 合計	A	5,829.0	100	-	10,401.5	91	-	18,392.5	120	-	-	104	11	5
	N	2,550.0	53	-	3,474.0	45	-	6,202.0	58	-	-	50	6	2
	A+N	8,379.0	153	-	13,875.5	136	-	24,594.5	178	-	-	154	17	7
Rata² 平均	A	-	-	58.29	-	-	114.30	-	-	153.27	316	87%	9%	4%
	N	-	-	48.11	-	-	77.20	-	-	106.93	243	86%	10%	4%
	A+N	-	-	54.76	-	-	1,020.26	-	-	138.17	294	86%	10¥	4%

*1: A: Petani Sutera Anggota Pilot Unit
N: Petani Sutera Non Anggota Pilot Unit

*2:
a: Naik/sama
b: Naik/Sama Tapi Ado Turun
c: Turun

Kalan 78/79 Tidak Ada, a Atau b, 78/79

*3 Lalabata Riaja Soppens, 82/83 Tidak Ada

78/79	82/83	83/84

82/83

Table 3-24 Jumlah Prodoksi Kokon kg/ha
第3－24表 面積当り収繭量

Tempat Pengamatan 調査地名	Anggota/Non 構成非構成別 *1	78/79		82/83		83/84		(B)/(A) x 100	Naik/Turun 増減 *2		
		Petani yg Diamati 調査農家数	Rata² 平均 (A)	Petani yg Diamati 調査農家数	Rata² 平均	Petani yg Diamati 調査農家数	Rata² 平均 (B)		a	b	c
		kk(戸)	kg/ha	kk(戸)	kg/ha	kk(戸)	kg/ha		kk(戸)	kk(戸)	kk(戸)
Solie	A	17	95.09	22	178.28	25	192.83	203	23	1	1
Soppeng	N	11	69.13	11	125.58	12	129.14	187	11	1	0
Lalabata Riaja	A	17	77.13	-	-	25	206.66	268	24	0	1
Soppeng *3	N	12	98.63	-	-	12	124.79	127	12	0	0
Wanio	A	27	75.27	30	198.38	30	276.06	367	27	3	0
Sidrap	N	11	93.02	14	149.13	14	228.07	245	11	2	1
Ugi	A	20	171.56	20	143.61	20	188.85	110	10	3	7
Wajo	N	10	216.54	10	330.38	10	459.64	212	7	3	0
Baraka	A	19	96.25	19	92.93	20	85.04	88	3	5	12
Enrekang	N	9	114.4	10	94.39	10	126.25	110	4	2	4
Jumlah 合計	A	100	-	91	-	120	-	-	87	12	21
	N	53	-	45	-	58	-	-	45	8	5
	A+N	153	-	136	-	178	-	-	132	20	26
Rata² 平均	A	-	107.31	-	158.44	-	191.31	178	73%	10%	17%
	N	-	100.59	-	112.79	-	168.08	167	78%	14%	8%
	A+N	-	105.17	-	143.86	-	184.87	176	74%	11%	15%

*1: A: Petani Sutera Anggota Pilot Unit パイロットユニット構成養蚕農家
N: Petani Sutera Non Anggota Pilot Unit 一般養蚕農家

*2
a: Naik/Sama 上昇又は不変
b: Naik/Sama Tapi Ada Turun 上昇又は不変しかし下降あり
c: Turun 下降

Kalau 78/79 Tidak Ada, a Atau b 78/79年にないときはa又はbとする。

78/79	82/83	83/84

*3 Lalabata Riaja Soppeng 82/83 Tidah Ada, 82/83年は欠調

Table 3-25 Jumlah Produksi Kokon kg/bok

第3－25表 一箱当り収繭量

Tempat Pengamatan 調査地名	Anggota/ Non 構成 非構成別 *1	78/79年 Petani yg Diamati 調査農家数	78/79年 Rata² 平均 (A)	82/83年 Petani yg Diamati 調査農家数	82/83年 Rata² 平均	83/84年 Petani yg Diamati 調査農家数	83/84年 Rata² 平均 (B)	(B)/(A) x 100	Naik/Turun 増減 *2 a	b	c
		kk(戸)	kg	kk(戸)	kg	kk(戸)	kg		kk(戸)	kk(戸)	kk(戸)
Solie	A	17	11.86	22	17.83	25	17.84	150	20	5	0
Soppeng	N	11	8.38	11	11.16	12	13.70	163	9	3	0
Lalabata Riaja	A	17	11.26	-	-	25	18.90	168	25	0	0
Soppeng *3	N	12	11.23	-	-	12	12.07	107	12	0	0
Wanio	A	27	11.34	30	17.08	30	19.32	170	27	3	0
Sidrap	N	11	9.09	14	12.94	14	15.12	166	14	0	0
Ugi	A	20	7.75	20	19.38	20	18.46	238	15	5	0
Wajo	N	10	6.82	10	10.28	10	12.43	182	7	3	0
Baraka	A	19	9.46	19	14.55	20	17.87	189	19	1	0
Enrekang	N	9	10.34	10	21.67	10	23.46	227	8	2	0
Jumlah	A	100	-	91	-	120	-	-	106	14	0
合計	N	53	-	45	-	58	-	-	50	8	0
	A+N	153	-	136	-	178	-	-	156	22	0
Rata²	A	-	9.54	-	17.70	-	17.54	184	88%	12%	0%
平均	N	-	8.84	-	12.31	-	14.27	161	86%	14%	0%
	A+N	-	9.32	-	15.95	-	16.58	178	88%	12%	0%

*1: A: Petani Sutera Anggota Pilot Unit パイロットユニット構成蚕委農家
N: Petani Satera Non Anggota Pilot Unit一般蚕委農家

78/79	82/83	83/84

*2
a: Naik/Sama 上昇又は不変
b: Naik/Sama Tapi Ada Turun 上昇又は不変しかし下降あり
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Kalau 78/79 Tidak Ada, a Atau B 78/79年にないときはa又はbとする

*3 Lalabata Riaja Soppeng 82/83 Tidah Ada. 82/83年は欠調