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1. ミニッツ（合同評価報告書）
2. 凍結精液の品質管理に係る具体的活動
3. 凍結精液の生産・出荷状況
 - （1）凍結精液の生産・出荷本数（年間）
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6. アンケート結果
7. DAIRY PROGENY TESTING PROGRAMME IN INDONESIA

**MINUTES OF DISCUSSIONS ON
THE JOINT COORDINATING COMMITTEE MEETING ON THE
EVALUATION FOR
THE AFTERCARE TECHNICAL COOPERATION FOR THE
STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT
IN
THE REPUBLIC OF INDONESIA**

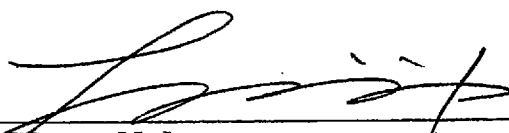
The Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Project Consultation Team, headed by Mr. Kazuo NAKAGAWA, to Indonesia from 12 May to 23 May 2002, for the purpose of evaluating the Project for the Aftercare Technical Cooperation for the Strengthening of Artificial Insemination Center Project (hereinafter in referred to as "the Project")

The Joint Evaluation Committee, which consists of members from JICA and members from the Government of Indonesia, was jointly organized for the purpose of conducting the evaluation and preparation of necessary recommendations to the respective governments.


After intensive study and analysis of the activities and achievements of the Project, the Joint Evaluation Committee prepared the Joint Evaluation Report (hereinafter referred to as "the Report"), that was presented to the Joint Coordinating Committee.

The Joint Coordinating Committee discussed the major issues pointed out in the Report, and agreed to recommend to the respective governments the matters attached hereto.

Jakarta, The Republic of Indonesia, May 23, 2002



Mr. Kazuo Nakagawa
Leader
The Project Consultation (evaluation) Team
Japan International Cooperation Agency
Japan



Dr. Sofjan Sudardjat D, DVM, MVS
Director General
Directorate General of Livestock Services
Ministry of Agriculture
The Republic of Indonesia

Joint Coordinate Committee Meeting
attendant list

Ir. Don P. Utoyo, MBA: Project Manager (Chair man)

Director of Breeding, Directorate General Livestock Services

Dr. Susanto Amintorgo

Director of AI Center Singosari

Sigit Hanggono, drh

Head of Livestock Service, East Java Province

Ahmad Muslim

Bureau of International Cooperation, Ministry of Agriculture

Djoni Liano

Head of sub directorate of Beef cattle, Directorate General Livestock Services

Agus HeriyantoDVM

Head of disease surveillance, Sub Directorate, Directorate General Livestock Services

Dr. Enmiek Herliyanti

Head of Feeding, AI Center Singosari (Counterpart)

Sarasitina

AI Center Singosari (Counterpart)

Hasan Basori

AI Center Singosari staff

JICA Long Term Experts: Mr.Zenichiro Kumada

Dr. Hozumi Tanaka

JICA Indonesia Office: Mr. Hirofumi Hoshi

Mr. Motoo Taki

Japanese evaluation team

Mr. Kazuo NAKAGAWA: Leader

Dr. Norio SAITO: Artificial Insemination / Frozen Semen Production

Mr. Chiaki KATAI: Program Evaluation

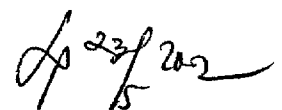
Indonesian evaluation team

Dr. Kurnia Achjadi DVM, MSc.: Leader

Dr. Sri Budiati : Artificial Insemination / Frozen Semen Production

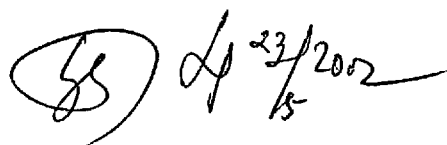
Ir. S. Nusantara Nasution MAgr.Sc: Progeny Test

Dr. Maradoli Hutasuhut: Program Evaluation



ATTACHMENT

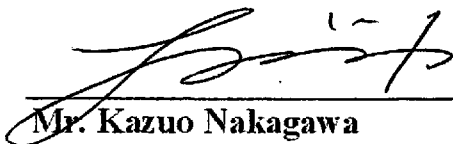
1. The Joint Evaluation Committee, which was jointly organized by JICA and the Government of the Republic of Indonesia, has presented the Report to the Joint Coordinating Committee.
2. The Joint Coordinating Committee has agreed and accepted the Report presented by the Joint Evaluation Committee and taken note of the recommendations for successfully sustaining and extending the Project achievements.
3. In order to extend the results of the Project to all over Indonesia, strategic policy framework for the promotion of livestock industry should be examined as soon as possible. For that purpose there should be discussions including the central government, the provincial government, GKSI, the dairy cooperatives and the artificial insemination centers. Indonesian side recognized well the importance of it and explained that they will initiate to consider to establish the committee for discussion among the organizations concerned.

Handwritten signature and date: 23/15/2002

**JOINT EVALUATION REPORT ON
THE AFTERCARE TECHNICAL COOPERATION FOR
THE STRENGTHENING OF
ARTIFICIAL INSEMINATION CENTER PROJECT
IN
THE REPUBLIC OF INDONESIA**

Jakarta, May 22, 2002

**JAPANESE - INDONESIAN
JOINT EVALUATION COMMITTEE**



Mr. Kazuo Nakagawa

Leader

The Japanese Evaluation Team

Japan International Cooperation Agency



Dr. Kurnia Achjadi DVM, MSc.

Leader

The Indonesian Evaluation Team

Bogor Agricultural University

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1. INTRODUCTION

Aftercare Study Team was dispatched on March 8, 2000 to work out the details of the Aftercare Technical Cooperation for the Strengthening of Artificial Insemination Center Project (hereinafter referred to as "the Project").

The Project started in July 11, 2000 by dispatching Japanese long-term experts.

In May 16, 2001, Project Consultation Team was dispatched and the Project was evaluated. The Team consulted the implementation plan of remaining period and recommended the sustainability of the Project.

At this time, with about two months remaining in the cooperation period, the Project Consultation Team (hereinafter referred to as "the Team") reviewed the Project in the Republic of Indonesia in May 2002.

The purpose of the Team is to evaluate the overall achievement of the Project objectives, to identify remaining problems, and to recommend any necessary matters to their respective governments.

2. OUTLINE OF THE PROJECT

2-1 Objectives of the Project

1) Super Goal

Dairy industry in the Republic of Indonesia is promoted

2) Overall Goal

Productivity at dairy farmer's level is improved

2) Project Purpose

Function of the Artificial Insemination Center in Singosari is strengthened

2-2 Activities and Outputs of the Project

1) Outputs

- a. High quality frozen semen is provided
- b. Technology for Artificial Insemination is improved
- c. Progeny test is operated

2) Activities

a. Production of Frozen Semen

- a-1. Monitoring survey
- a-2. Re-training of frozen semen production techniques
- a-3. Improvement of the dilution method
- a-4. Improvement of feeding management for dairy bulls
- a-5. Health management and disease control for bulls

b. Training and re-training of artificial insemination techniques

- b-1. Monitoring Survey

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- b-2. Training and re-training for artificial insemination technicians
- b-3. Field technical guidance to dairy cooperatives
- c. Progeny Test for dairy cattle
 - c-1. Support and Advice for Progeny test

3. PREPARATION OF PDMe (Project Design Matrix for Evaluation)

Project Design Matrix for evaluation (hereinafter referred to as "PDMe", ANNEX 11) was prepared based on the Detail of Implementation Plan (hereinafter referred to as "DIP", ANNEX 12) by the joint evaluation team.

4. OBJECTIVES AND METHOD OF THE EVALUATION

4-1. Objectives of the evaluation

Evaluation activities were performed with the purposes of:

- 1) Evaluating the overall achievements of the Project based on DIP and PDMe;
- 2) Identifying remaining problems and recommending necessary measures to be taken after the termination of the Project to the respective governments, and
- 3) Considering the lessons learned from the Project activities in order to reflect them on future projects in the interest of making them more effective and efficient.

4-2. Items of the Evaluation

Evaluation activities were conducted by the Joint Evaluation Team, which was composed of the Japanese Evaluation Team and the Indonesian Team in accordance with the DIP, and the PDMe. These activities included report analysis, field survey, and discussions with concerned officials staff members based on the five Evaluation Components listed below

1) Relevance

The extent to which the Project is consistent with the priorities and policies of the target group, recipient, and donor.

2) Effectiveness

A measure of the extent to which the Project attains its objectives. Effectiveness measures the extent to which the achieves its purpose, or whether this can be expected to happen on the basis of the outputs.

3) Efficiency

An economic term which means that the aid uses the least costly resources to achieve the result. Efficiency measures the output qualitatively and quantitatively in relation to the inputs. This generally requires comparing alternative approaches in achieving the same outputs in order to see whether the most efficient process has been used.

4) Impact

A term in indicating whether the project has had an effect on its surroundings in terms of technical, economic and socio-cultural, institutional, and environmental factors.

5) Sustainability

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The extent to which the objectives of the project will continue after the project is completed; also, the extent to which the groups affected by the project want to and can take charge themselves to continue accomplishing its objectives. Sustainability is concerned with measuring whether an activity or an impact is likely to continue after donor funding has been withdrawn. The project needs to be environmentally, financially, and socially sustainable.

4-3. Composition of the Joint Evaluation Team

4-3-1. Japanese side

- 1) Mr. Kazuo NAKAGAWA: Leader
Managing Director, Agricultural Development Cooperation Dept.,
Japan International Cooperation Agency (JICA)
- 2) Dr. Norio SAITO DVM: Artificial Insemination / Frozen Semen Production
Director, Technical 1st Div.,
National Livestock Breeding Center
- 3) Mr. Tamotsu SAKURAI: Progeny Test
Deputy Director, Milk & Dairy Production Div., Livestock Industry Dept.,
Agriculture Production Bureau,
Ministry of Agriculture Forestry and Fisheries
- 4) Mr. Chiaki KATAI: Program Evaluation
Staff, Livestock and Horticulture Div.,
Agricultural Development Cooperation Dept.,
Japan International Cooperation Agency (JICA)

4-3-2. Indonesian side

- 1) Dr. Kurnia Achjadi DVM, MSc.: Leader
Associate Professor of Reproduction and Obstetrics Department
Bogor Agricultural University
- 2) Dr. Sri Budiati DVM : Artificial Insemination / Frozen Semen Production
Head of Sub Directorate of Ruminant, Directorate of Livestock Breeding
Directorate General of Livestock Services,
Ministry of Agriculture
- 3) Ir. S. Nusantara Nasution MAgr.Sc: Progeny Test
Head of Breeding Examination Section, Directorate of Livestock Breeding
Directorate General of Livestock Services,
Ministry of Agriculture
- 4) Dr. Ir. Maradoli Hutasuhut: Program Evaluation
Head of Livestock Foreign Aide Section, Planning Div.
Directorate General of Livestock Services,
Ministry of Agriculture

4-4. Schedule of the evaluation

The schedule is attached as ANNEX 1.

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5. MAJOR ACHIEVEMENT OF PROJECT ACTIVITIES

The major achievements of the Project activities as of May, 2002 are summarized below and the detail explanations are in ANNEX 9.

5-1. Production of Frozen Semen

1). Monitoring survey

After the start of the Project, survey on frozen semen production in BIB Singosari was implemented. Within the activity, many aspects concerning the semen production (such as the procedures of semen collection, dilution and freezing, the situations of counterparts and the machinery and the equipment, the management of the bulls, the production of roughage and the budgets) were examined. Based on this survey result, actual inputs were planned and the aftercare activities were started.

2). Improvement of the dilution method

Although the dilution method using egg yolk-tris sugar solution had already been introduced to counterparts and been used for freezing semen since 1986, the dilution using skim milk solution has revived since 1997 because of the budget deficiency and less understanding of the superiority of egg yolk-tris in the field. Therefore, the comparative examination was conducted for these 2 methods. As the result, it was demonstrated that higher quality semen could be produced using egg yolk-tris sugar solution.

Moreover, the after-thawing survival rate of frozen semen was improved by 10 to 15 % using Masuda Method, in which the equilibration time was largely lengthened. This method made the processing of large amounts of semen possible, and the productive efficiency was largely improved.

3). Re-training of frozen semen production technique

The new processing method above mentioned and the sanitary handling of semen were intensively instructed to counterparts. And the counterpart training in Japan was conducted in the subjects of frozen semen production, artificial insemination and bull management. Beside of these, counterparts have actively joined the publishing of the manuals "Technology of Frozen Semen Processing for Cattle", and have fully understood what is necessary for producing high-quality frozen semen.

4). Improvements of feeding management for dairy bulls

The appropriate feeding system was established such as the change of feeding time of concentrates (from once to twice per day). Effective utilization of silage and hay made the stable feeding possible in both rainy and dry season. Though there is still a problem of the deficiency of roughage in dry season, BIB Singosari can handle this by purchasing corn from outside. The management for individual bulls is now possible according to their body condition score (BCS) and daily gain (DG). Also, the good communication with semen production laboratory make the feedback from the quality of collected semen possible.

5). Health management and disease control for bulls

Though the health check (especially for infectious diseases) and the administration of antihelminthic and vitamins have been periodically conducted since before the Project, the hoof cutting also become periodically carried out after the technique was re-introduced to BIB Singosari. Rubber mats were adopted on the concrete floor of bull pen, which also was intended to reduce the bulls' stress. The sanitary management of bulls was established through cleaning of bull barns and use of disinfectants.

5-2. Training and re-training of artificial insemination techniques

1). Monitoring survey

Monitoring survey of the farmers who joined the first and the second Progeny Test was conducted to understand the field situation of artificial insemination and the reproduction. Even though some farmers had quitted the dairy farming, the techniques transferred from the former project remained and have diffused to the farmers around. Many farmers recognized that the milk production of individual cow can be increased through breeding improvement. On the other hand some farmers suffered much from the occurrence of reproductive disorders.

2). Training and re-training for artificial insemination technicians

In the BIB Singosari, totally 295 participants (in 2001, including a small number of participants for goat inseminator) were trained as artificial inseminator, pregnancy diagnose, reproductive veterinary assistance, semen handling technician and AI supervisor. The training fee was paid by the institutions that the participants were belonged to.

On the other hand, 5 re-training programs (152 participants in total) were implemented aiming to give new technology and information to veterinarians, artificial inseminators and extension workers in dairy cooperatives. Many participants were satisfied with the program, and the curriculum was improved according to their requests.

3). Field technical guidance for dairy cooperatives

Field technical guidance to dairy cooperatives joining to the Progeny Test was carried out. Within this activity, improvement of low-nutrition was instructed and the comparative examination of the treatment methods for reproductive disorders was conducted. As the results, the iodine flashing was confirmed to be the most economic and efficient. The activity to diffuse this treatment method has been continued. During this activity 2 textbooks and 1 poster were produced and distributed ("Reproductive physiology and disorders", "Clinical reproduction" and "Inseminasi Buatan dan Gangguan Reproduksi").

For the dairy farmers, one feeding and breeding management course and 3 foot-care training courses were held in each dairy cooperative.

5-3. Progeny Test for dairy cattle

1). Support and Advice for Progeny test

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The method of Progeny Test program for dairy cattle has been transferred sufficiently, and the technical support has been adequately implemented.

As the result of the technology transfer, the 3rd Progeny Test Program (1995-2003) has been adequately carried out until now. For Example, frozen semen from 5 candidate bulls was distributed to the field and 274 daughter cows were born. And more than half (141/274) of the daughter cows have got pregnant and 54 of them have already delivered calves.

In addition the 4th Progeny Test Program (1998-2006) has been also adequately implemented, for example more than 70% (6,902/9,000) of frozen semen from 5 candidate bulls have been distributed

Though the Progeny Test scheme asked the farmers to keep the daughters until the completion of 1st lactation period, some farmers have to sell the cows because of their financial constraint. The decrease of the number of daughters means the low reliability of the proven sires.

6. RESULTS OF THE EVALUATION

6-1. Relevance

6-1-1 Relevance of the Project Purpose

1) Relevance of project purpose along development policy

The improvement of frozen semen production technology and productivity of domestic animals has been one of the priority areas for the central government in order to increase the income of small-scale farmers as described in the existing national development plan (PROPENAS). The Directorate General of Livestock Services (hereinafter referred to as "DGLS") strategic plan has set targeted the growth of livestock production. Thus, the project purpose stays relevant to the government policy both at national and provincial level.

2) Relevance of project purpose to needs/demands of beneficiaries

As the frozen semen production techniques improve the livestock production in farmers' level, the Project meets the needs and demands of artificial insemination technicians as well as farmers.

6-2. Effectiveness

Outputs of the project that are carried out for nine years in the past were revitalized well by technical cooperation of aftercare.

Real activity showed promotion of dairy farming by reinforcement of linkage with other organizations concerned.

6-3. Efficiency

The inputs from the Japanese and Indonesian sides are summarized in ANNEX 2-6. Necessary inputs have been made by Japanese and Indonesian side. Most part of the expected outputs have been achieved with the efforts of experts and counterparts. In addition, supplementary interviews/surveys revealed that neither particular input nor activity was thought to be unnecessary. Thus, the project is

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thought as efficient in the sense that inputs have been fully utilized at their utmost potentials.

1) Inputs from Japanese side

a. Dispatch of Japanese Experts

Long-term experts in 2 different fields (Frozen Semen Production, Artificial Insemination) and 7 short-term experts have been assigned to the Project as planned. The details of their names, fields, duration are shown in ANNEX 2.

b. Acceptance of counterpart personnel for training in Japan

A total of 4 counterpart personnel have finished their trainings in Japan. Three more counterpart personnel are training in Japan now. The details are shown in ANNEX 3.

c. Provision of Equipment

Equipment for the aftercare program were carefully selected taking BIB Singosari's capability into consideration. The equipment provided has been working properly and maintained as required. The details are shown in ANNEX 5.

d. Provision of Local Operation Cost

Japanese side also bore the travel allowances of counterpart personnel to attend field technical guidance to the outside.

2) Inputs from Indonesian side

a. Assignment of the counterpart personnel

Assignment of counterparts for the Project has been satisfactory in quality and quantity. At present, 14 counterpart personnel are assigned to the Project. The details are shown in ANNEX 4

b. Budget allocation for the Project operation

Indonesian side has secured the budget for the assignment of administrative staff, domestic telephone charges, water service fees, electricity fees, facility management and maintenance costs, etc. The details are shown in ANNEX 6

6-4. Impact

6-4-1 Technical Impact

The dairy farmers had more understanding about the genetics and the conception rates were improved using the frozen semen produced by BIB Singosari. They realized the disadvantage of the inbreeding and the importance of genetic improvement. The reliability on BIB Singosari was increased, because we can see the fact that the demand of frozen semen was increased.

Technology interchange with another artificial insemination center in west Java (Lembang) become more frequent since BIB Singosari was re-strengthened.

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6-4-2 Social and Cultural Impact

As for the Progeny Test, BIB Singosari center is functioning as the center of the Progeny Test among the related institutions such as DGLS, Union of Indonesian Dairy Cooperative (hereinafter referred to as " GKSI "), and dairy cooperatives. It was understood by each institution that close communication of staff among the institutions is very important.

The participants (AI technicians) who joined the project activities changed their negative image of BIB Singosari to positive one.

6-5. Sustainability

6-5-1 Institutional Aspects

The Project objective was strengthening the function of the BIB Singosari under the supervision of Indonesian central government. In order to push forward the Progeny Test smoothly, it is necessary to have support from the central government, the provincial government, GKSI, dairy cooperatives (KUD, etc) and farmers, therefore the linkage and cooperation of the related institutions become important.

At the same time, the transfer of technology from senior staff to junior staff is important, so upbringing / employment of the successors is necessary for enforcement of institutional stability.

6-5-2 Financial Aspects

A certain amount of budget for the implementation of the Project has been allocated from the central government. Considering the termination of the Project, it is required for government to try furthermore to secure sufficient budget for suitable operation of BIB Singosari including maintenance cost for equipment.

On the other hand, BIB Singosari has its own income source by selling the frozen semen and Joint Production Sharing (KSO) scheme with farmer's organization. Better utilization of it will improve the financial sustainability of BIB Singosari.

6-5-3 Technical Aspects

Most counterpart personnel have attained a sufficient level of technology in each technical field. In addition, many of them are eager for introducing the new technologies, based on their own recognition of their technical capacity.

The re-training of an artificial insemination technician has been held by the Project. When the sustainability is concerned, such training courses should be conducted in the manner to respond the needs and requests from the field technicians.

From these conditions, it can be said that technical sustainability of the Project is secured as far as human resources concerned.

6-5-4 Others

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BIB Singosari should announce the project results open to the public to gain better understanding and support from the Indonesian people including dairy farmers.

7. CONCLUSION

Based on the discussions with officials concerned and counterpart personnel as well as field surveys, the Committee recognized that Project has achieved its objectives set by Minutes of Discussions and remaining problems being within the competence of the trained counterparts. Accordingly, it is appropriate that the technical cooperation should terminate on the 10th July 2002, as scheduled in the Minutes of Discussions.

8. RECOMMENDATIONS

The following issues and necessary measures are recommended by the Committee to the Government of Indonesia in order to sustain and further develop the achievement of the Project.

- 1) As there are still 2 months of the Project period remained, both sides should continue their efforts to complete the activity.
- 2) To sustain and strengthen the current activities of BIB Singosari, allocation of necessary budget, assignment of necessary staffs and maintenance of equipment are important. Especially for the financial stability BIB Singosari should make effort to secure the own income from selling the frozen semen and Joint Production Sharing (KSO).
- 3) For the successful implementation of the Progeny Test, financial support from the central government, the provincial government, GKSI and the dairy cooperatives is required (The estimated cost for one Progeny Test is shown in ANNEX 8). And the establishment of an authorized committee consisting of all the related institutions is strongly recommended. Every constraint or problems including financial issue in the implementation should be discussed in the committee, and fine solution should be found out by the co-operation of the institutions.
- 4) The training and re-training courses for artificial inseminators, pregnancy diagnose, reproductive assistant veterinarians, handling semen technicians and AI supervisors should be continuously conducted on schedule and according to their needs and requests to extend the improved technology in Indonesia.
- 5) Inter-section meeting in BIB Singosari that is now effectively going on, should be continued for the mutual understanding and the cooperation among the each section.
- 6) BIB Singosari was established for the benefit of the all cattle farmers in Indonesia, therefore JICA cooperate it. During the evaluation it was explained that the institutes that can gain their own income might become independent as a national policy. In future Indonesian government would like to change the role of BIB Singosari as a government semi business/corporate center and as a National Assessment Center for the provincial AI Laboratory. And Indonesian

side explained the new center's function/role will still remain as it is.

- 7) After the termination of the Project, JICA requests BIB Singosari to report the progress of their activities especially Progeny Test to JICA Indonesian office through Directorate General of Livestock Services periodically (at least once a year) for the better monitoring by JICA.

9.LESSONS LEARNED FROM THE PROJECT

- 1) The Project didn't have PDM at the start. It was necessary to make PDM for the steady implementation of the plan and co-owning consciousness of the objective.
- 2) For the implementation of the Progeny Test, the cooperation among various institutions is essential. If periodic consultation with the related institutions had been conducted more from the beginning of the Project, the implementation of the Progeny Test could have been smoother.
- 3) The farmers' cooperation was necessary to realize the reliable Progeny Test. It was noticed that more precise survey and careful analysis of the farmers before the selection were important, especially about their economic situation, degree of their interest for joining the program and the technique level.
- 4) Modification of Japanese technology according to Indonesian condition was very effective to implement the Progeny Test scheme. For example milking data from one area were regarded as if they were collected from one big farmer or a few farmers (decided by the height from sea-level etc.) to simplify the evaluation of bulls.
- 5) The existence of active dairy cooperatives in East Java was so helpful for the Project implementation especially the Progeny Test program.

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ANNEX 1

Schedule of the Joint Evaluation Committee

Date & Time	Activities
14/may(Tue)	1 st Joint evaluation committee meeting (Explanation of method of consultation etc.)
15/May(Wed) AM PM	Leaving Jakarta city to Surabaya Courtesy Call East Jawa Province
16/May(Thu)	Field survey to Singosari AI center (Meeting with Project counterparts)
17/May(Fri)	Field survey to pilot farmers (KUD , Dairy Farmers and GKSI)
18/May(Sat)	Making draft evaluation report
19/May(Sun)	Japanese team discussion & meetings Making draft evaluation report
20/May(Mon) AM PM	Leaving Surabaya to Jakarta city 2 nd Joint evaluation committee meeting (Review of Activities etc) (Making draft evaluation report)
21/May(Tue)	3 rd Joint evaluation committee meeting (Making evaluation report)
22/May(Wed)	Final Joint evaluation committee meeting (Signing the report) Joint Coordinating Committee meeting
23/May(Thu)	Signing the minutes

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ANNEX 2

Dispatch of Japanese Experts

1. The long term expert

	The field	Name	Attached organization	Dispatched period	Notes
1	Artificial insemination	TANAKA Hozumi	Independent	11 Jul. 2000—10 Jul.2002	Dispatching
2	Frozen semen production	KUMADA Zenichiro	NLBC Nikappu station	11 Jul. 2000—10 Jul.2002	Dispatching

NLBC: National Livestock Breeding Center

2.The short term expert

	The field	Name	Attached organization	Dispatched period	Notes
1	Progeny test 1	NAKABAYASHI Ken	NLBC Iwate Station	04 Apr.2001—09Jun.2001	
2	Maintenance of equipment	MAHARA Motoo	LIAJ Maebashi Station	04Apr.2001—19May2001	
3	Feeding and management of bulls	ENDOU Tamotsu	NLBC Iwate Station	04Apr.2001—09Jun.2001	
4	Progeny test 2	MATUI Shiro	NLBC Iwate Station	11Oct.2001—10Dec.2001	
5	Semen processing and handling	OMIYA Gen	Iwate Prefecture	24Oct,2001—20Dec.2001	
6	Maintenance of management by the machinery and materials	WATANABE Toru	NLBC Niikappu Station	07Mar,2002—15May2002	
7	Progeny test 3	MATUMOTO Shigeo	LIAJ Maebashi Station	12May,2002—14July2002	

LIAJ: Livestock Improvement Association of Japan

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ANNEX 3

Acceptance of Counterpart Personnel in Japan

	Training subject	Name	Mainly training place	Period
1	Artificial insemination	Dr. Sarastina	NLBC etc.	24 Oct. 2001—20 Dec. 2001
2	Dairy training development	Dr. Susanto Amintorogo	NLBC etc.	09 Jul. 2001—19 Jul. 2001
3	Progeny test	Ir. Jack P	NLBC, LIAJ	03 Jul. 2001—02 Aug. 2001
4	Bull breeding management	Dr. Enniek Herwiyanti	NLBC, LIAJ	13 Aug. 2001—04 Nov. 2001
5	Breeding and artificial insemination technology for cattle	Dr. Herliantien	NLBC etc.	
6	Animal reproduction	Dr. Oloan Parlindungan Lubis	NLBC, Rakunogakuen University	07 May 2002—28 Jul. 2002
7	Frozen semen production	Ir Nugro Menik Nurhayati	NLBC, LIAJ	

ANNEX4

List of Counterpart

The disposition list of counterparts

No.	Name	Field	Position in Livestock Services
I. Project Management			
1	Dr. Sofjan Sudardjat D.	Project Director	Director General of Livestock Production
2	Ir. Don Purjono Utojo	Project Manager	Director of Breeding of DGLS
3	Ir. Zeinuddin Gairach	Secretary	Secretary of DGLS
4	Dr. Budi Triakoso	Animal Health	Director of Animal Health of DGLS
5	Ir. Supodo Budiman	Cultivation	Director of Cultivation
6	Dr. Susanto Amintorgo	BIB Singosari	Director of AI Center Singosari
7	H. Suharyo Husen		Director of International Cooperation Bureau, Ministry of Agriculture
II. Counterpart			
1	Dr. Susanto Amintorgo	Director	Director of AI Center Singosari
2	Dr. Herliantien	Vice Director	Head of Frozen Semen Production
3	Dr. Emiek Herwiyanti		Head of Feeding and Management of Bulls
4	Dr. Sarastina		Chief of Frozen semen Production
5	Dr. Oloan Parlindungan Lubis		Chief of Animal Health
6	Ir. Jack P		Chief of Feeding and Management of Bulls
7	Ir. Nugro Menik Nurhayati		Sub-chief of Frozen Semen Production

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ANNEX 5

List of Equipment Provided JICA

No	DATE	DISTRICTION	EQUIPMENT NAME	COMPANY NAME / STYLE	Company Seller	UNIT	UNIT PRICE	TOTAL PRICE
1	14.Mar.01	1	Filling and Sealing machine 0,25 ML MRS3 (for intergr, syst) 110/220V 50HZ CE, Old Ref. YE250/-250000 * 50HZ Suction Pump + Filter Old Ref. B060/-B060000 * (Another 8 kinds equipment)	IMV Technology	PT. Gambir Trading Company Ltd.	1Set		\$ 37,931,88
2	14.Mar.01	1	Temperature Recoder (Digital Temperature controller, High Precision) Ref. GA025+2GA026+GA014 * 2 ways temperature regulator, Old ref. - GA025000 * (Another 2 kinds equipment)	IMV Technology	PT. Gambir Trading Company Ltd.	1Set		\$1.355.59
3	14.Mar.01	1	Large LN2 quick freezer * Container CF 400 wide opening, Old ref. XA114 * (Another 16 kinds equipment)	IMV Technology	PT. Gambir Trading Company Ltd.	1Set		\$20.255.39
4	28.Mar.01	1	Foto copy machine, copier type 4570 (45 copier) with Sorter 20 bins (MG 2009)	Thosiba	PT. Aneka Infokom Tekindo Malang	1		\$6.235.26
5	25.Apr.01	1	Computer * MS. Windows 98 SE Japanese Version * MS. Office 2000 Japanese Version * MS. Office 2000 Standard English Version * File Maker Pro Ver. 5.0 Japanese Version * HP Desk Jet 950 * HP Laser Jet 1100	IBM Net Vista N2Q - Micro Tower Black Casing * Bitcom Pentium III - 600	PT. Perkorn Indah Murni Jakarta	3	\$1000 \$440 \$925 \$490 \$510 \$310 \$425	\$3000 \$440 \$925 \$980 \$510 310 \$425
6	4.May.01	1	Fotocopy (Old from JICA Indonesia Jakarta)	XeroxVivace 500				
7	19.Jun.01	1	Ultrasonic Cleaner, model no. USK-4 w/ trans, CD-220-06	Luchi	PT. Antusiactipta Prima	1 3	\$2.571.4	\$2.571.43
8	3.Aug.01	1	Forage cutter, model. SFC-1830 (Stainless stell cover), Cap. 900-5000 kg/hour, Power. 2.5 - 7.5 Ps * Diesel, model. IF 75H, 7,5K	Star Yanmar	PT. Antusiactipta Prima	1		\$8.300.000
9	6.Aug.01	1	Spectrophotometer, Model No. 118-0112U-1500, Machine with trans. AC 220V	Hitachi	PT. Antusiactipta Prima	1	\$7.924.004	\$7.924.004
10	28.Aug.01	1	Personal Computer with 15 inch color display	Fujitsu FMV - Deskpower	Tokyo, Japan	1Set		¥357,986
13	28.Dec.01	1	Digital Camera, FP-4700 Zoom, CCD:4.3 Mega pixels, Lens:3xOptical Zoom, Memory: 16 MB, Weight:256 g		PT. Dargaritma Marta Lestari	1	\$924.00	\$924.00

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ANNEX 6

Budget Allocation for the Project by Indonesian side (Rupiah)

No.	Budget years	Government routine budget 1)	Government project budget for frozen semen production 2)	Cooperative frozen semen production 3)	Returned to AI center (20%) from government income	Income for government from frozen semen stock AI center has sold
1.	1998/1999	364.317.000	753.425.000	-		508.246.412
2.	1999/2000 SPL-OECF	492.547.000	600.000.000 1.750.000.000	1.354.635.000	70.000.000	515.407.852
3.	2000 SPL-OECF	593.583.000	2.600.000.000 400.000.000	875.000.000	200.000.000	827.277.960
4.	2001	1.037.234.000	1.000.000.000	1.582.500	169.448.500	Target: 1.020.000.000
5.	2002	1.054.236.000	1.100.000.000	2.212.500.000	120.000.000*	Reality: 847.242.500 Target: 904.000.000

1) Salary, electricity, phone, etc.

2) Material for frozen semen production, bull care (feeding, medicine), laboratory equipment.

3) Dinas, KUD, GKSI; It depend of how much straw they want to produce.

*: We had received on January 2002.

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ANNEX 7

THE ESTIMATE BUDGET PROPOSAL FOR SUPERIOR BULL'S DAIRY CATTLE PRODUCTION (Progeny Test) FROM 1995 TO 2003

by BIB Singosari

ITEM	VOLUME AND PRICE OF ITEM	TOTAL (Rp.)
I. THE 1st YEAR		
A. PRODUCTION OF SUPERIOR CALF BULL (CANDIDATE BULL) PROGRAM		
1. Import of the elite 5 bulls's frozen semen (300 doses)	300 doses x \$3 (300 x 3 x Rp. 10,000,-)	Rp. 90,000,000,-
2. Supervision for preparation and selection of local elite cow and so distribution of superior bull's frozen semen	2 persons x Rp. 1,250,000,-	Rp. 2,500,000,-
SUB TOTAL (I) :		Rp. 92,500,000,-
II. THE 2nd YEAR		
3. SUPERVISION FOR PLANNING MATING OF ELITE COW		
3.1. Recording AI, pregnancy and parturition of elite cow	2 persons x 3 times x Rp. 1,250,000,-	Rp. 7,500,000,-
4. RECORDING FEE		
4.1. Insemination, pregnancy and parturition of elite cow	150 head x 3 x Rp. 2,000,-	Rp. 900,000,-
5. PROQUIREMENT OF SUPERIOR BULL CALF		
5.1. Buying 20 bull calves	20 head x Rp. 3,000,000,-	Rp. 60,000,000,-
6. REARING OF SUPERIOR BULL CALF (CANDIDATE BULL)		
6.1. Milk feed's calves for 3 months	20 head x 8 l x 90 days x Rp. 2,500,-	Rp. 36,000,000,-
SUB TOTAL (II) :		Rp.104,400,000,-
III. THE 3rd YEAR		
7. REARING OF SUPERIOR BULL CALF		
7.1. Feed concentrate's calves for 12 months	20 head x 2.5 kg x 360 days x Rp. 3,000,-	Rp. 54,000,000,-
SUB TOTAL (III) :		Rp. 54,000,000,-
IV. THE 4th YEAR		
8. REARING OF SUPERIOR BULL CALF		
8.1. Feed concentrate's calves for 12 months	5 head x 2.5 kg x 360 days x Rp. 3,000,-	Rp. 13,500,000,-
9. PRODUCTION OF CANDIDATE BULL'S FROZEN SEMEN		
9.1. Production of frozen semen 9.000 doses from 5 candidate bulls for progeny testing	9,000 doses x Rp. 5,000,-	Rp. 45,000,000,-
SUB TOTAL (IV) :		Rp. 58,500,000,-
B. PROGENY TESTING PROGRAM		
1. SUPERVISION (EAST, CENTRAL AND WEST JAVA)		
1.1. Preparation and selection of recipient cow	2 persons x Rp. 1,250,000,-	Rp. 2,500,000,-
1.2. Recording AI of recipient cow	2 persons x Rp. 1,250,000,-	Rp. 2,500,000,-
SUB TOTAL (B1) :		Rp. 5,000,000,-

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V. THE 5th YEAR		
2. SUPERVISION (EAST, CENTRAL AND WEST JAVA)		
2.1. Recording AI, pregnancy diagnose, parturition of recipient cow	2 persons x 3 times x Rp. 1,250,000,-	Rp. 7,500,000,-
2.2. Recording of growth of daughter cow	2 persons x Rp. 1,250,000,-	Rp. 2,500,000,-
3. RECORDING FEE		
3.1. Insemination, pregnancy diagnose, parturition of recipient	3,000 head x 3 x Rp. 1,000,-	Rp. 9,000,000,-
3.2. Recording of growth measure of daughter cow	800 head x Rp. 1,000,-	Rp. 800,000,-
4. PROQUREMENT OF RECORDING FORM AND EARTAG		
4.1. Form of recording of recipient cow in the farm's stall	3,000 pcs x Rp. 1,000,-	Rp. 3,000,000,-
4.2. Form of AI, pregnancy and parturition of recipient cow	3,000 pcs x Rp. 1,000,-	Rp. 3,000,000,-
4.4. Buying of eartag for recipient cow and daughter cow	4,000 pcs x Rp. 2,500,-	Rp. 10,000,000,-
4.6. Buying of eartag applicator	10 pcs x Rp. 500,000,-	Rp. 5,000,000,-
	SUB TOTAL (V) :	Rp. 40,800,000,-
VI. THE 6th YEAR		
5. SUPERVISION (EAST, CENTRAL AND WEST JAVA)		
5.1. Recording of growth of daughter cow	2 persons x 4 times x Rp. 1,250,000,-	Rp. 10,000,000,-
6. RECORDING FEE		
6.1. Recording of growth measure of daughter cow	500 head x Rp. 1,000,-	Rp. 5,000,000,-
	SUB TOTAL (VI) :	Rp. 15,000,000,-
VII. THE 7th YEAR		
7. SUPERVISION (EAST, CENTRAL AND WEST JAVA)		
7.1. Recording AI, pregnancy diagnose and parturition of daughter cow	2 persons x 3 times x Rp. 1,250,000,-	Rp. 7,500,000,-
8. RECORDING FEE		
8.1. Insemination of daughter cow testing	350 head x Rp. 2,000,-	Rp. 700,000,-
8.2. Pregnancy diagnose of daughter cow testing	250 head x Rp. 2,000,-	Rp. 500,000,-
8.3. Recording of parturition of daughter cow testing and milk yield record	150 head x 10 x Rp. 5,000,-	Rp. 7,500,000,-
	SUB TOTAL (VII) :	Rp. 16,200,000,-
VIII. THE 8th YEAR		
9. SUPERVISION (EAST, CENTRAL AND WEST JAVA)		
9.1. Recording of milk yield of daughter cow testing	2 persons x 4 times x Rp. 1,250,000,-	Rp. 10,000,000,-
10. RECORDING FEE		
10.1. Recording of milk yield of daughter cow testing	150 head x 5 x Rp. 5,000,-	Rp. 3,750,000,-
	SUB TOTAL (VIII) :	Rp. 13,750,000,-
	TOTAL (I + + VIII) :	Rp. 400,150,000,-

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ANNEX 8

Progress Situation and Achievement of the Activities in Each Field

Active plan		The arrival target	Progress situation and achievement	A degree of achievement
Items	Active content			
A. Production of Frozen semen				
A-1. Inspection	Inspection of the status quo and project.	Basic data of active course.	Make active course on the strength of inspection.	4
A-2. Production of frozen Semen	Retraining of staff and examination of the diluted solution.	Quality stability and improvement of frozen semen.	Stability and improvement of frozen semen quality.	4
A-3. Feeding management of bulls	Improvement of feed supply and breeding environment. Preventive hygiene and disease countermeasure.	Health maintenance of bulls. The prevention of bull diseases.	Improvement of over weight bulls by appropriate breeding management. Carry out foot care and sanitary collection semen.	4 3 3
B. Artificial Insemination (AI)				
B-1. Inspection	Inspection of the status quo and project.	Basic data of active course.	Make active course on the strength of inspection.	4
B-2. Training and Retraining of AI	Hold the retraining and co-operation for the training held by BIB Singosari.	Diffusion of AI and improvement of reproductive rates.	Hold five retraining in the whole Indonesia and transfer the technique.	3
B-3. Reproduction and Reproductive disorders	Traveling guidance for KUD	Improvement of breeding management.	Improvement of reproduction and breeding management.	3
B-4. Progeny test (PT)	Support and guidance for implementation of progeny test.	Improvement of dairy cattle.	Carry out 3, 4 and 5 th PT as planned.	3
C. Consultation on maintenance of machinery and equipment	Support and instruct for maintenance. Selection of the special field and apply the experts.	Instruct that the spot staff can maintain the machinery after the completion of this project.	Dispatch the short term expert for the maintenance of the laboratory and breeding management machinery.	4
D. Training of counterparts in Japan	Selection of the counterpart for supplementary training and support.	Train the talented man for independent management.	Counterparts have dispatched four and three persons in 2001 and 2002.	3



The plan from now.

A. Frozen semen production

- 1) We have investigated the point at issue according to the active course.
- 2) Improvement and continuance of counterpart's techniques.
- 3) Application of Egg-Tris diluted solution continually.
- 4) Establish the cultivation system of rough feeds.
- 5) Maintain and improve the preventive hygiene and disease countermeasure.

B. Artificial Insemination (AI)

- 1) We have investigated the point at issue according to the active course.
- 2) Support the training and retraining held by BIB Singosari.
- 3) Support the independent activity of the counterparts.
- 4) Support and advise for the continuance of the progeny test.

C. Consultancies on maintenance of machinery and equipment

- 1) Establish the periodical maintenance system and support the acquisition of local cost.

D. Training of counterparts in Japan

- 1) Organize the support system that counterparts can get the information and the technique.

*: The degree of achievement is classified the following.

- 4: It has already completed.
- 3: It will expect to finish until the completion of this project.
- 2: It has remained the subject.
- 1: It has not activated.

Retraining on the strength of JICA plan in BIB Singosari

	Opening date	Participant	Subject	Expense (Rp.)
First	13-15 Mar. 2001	33 persons	Synchronization of estrus and ovulation. Reproductive and feeding management. Biotechnology. The issue on artificial insemination. 7 lectures and practice	26,165,195
Second	30-31 Jul. 2001	29 persons	Breeding and reproductive management. Basic reproduction. Reproductive disorders and treatment. The issue on artificial insemination. 4 lectures and practice	11,950,000
Third	1-2 Aug. 2001	27 persons	Breeding and reproductive management. Basic reproduction. Reproductive disorders and treatment. The issue on artificial insemination. 4 lectures and practice	11,420,000
Fourth	12-13 Nov. 2001	33 persons	Breeding and reproductive management. Feeding management. Basic reproduction. Reproductive disorders and treatment. The issue on artificial insemination. 5 lectures and practice	21,467,000
Fifth	14-15 Nov. 2001	30 persons	Breeding and reproductive management. Feeding management. Basic reproduction. Reproductive disorders and treatment. The issue on artificial insemination. 5 lectures and practice.	15,780,000

**Training on the strength of the independent plan in BIB Singosari
Achievement in 2001**

General

No.	Subject	Expense / person	Members	Duration
1.	Bovine Inseminator I.	1,350,000 (Rp.)	23	3 weeks
2.	Bovine Inseminator II.	1,350,000	22	3 weeks
3.	Bovine Inseminator III.	1,350,000	39	3 weeks
4.	Bovine Inseminator IV.	1,350,000	23	3 weeks
5.	Pregnancy diagnosis (PKB)	1,250,000	26	2 weeks
6.	Assistant Veterinary (ATR)	1,250,000	9	2 weeks
7.	Handling Semen	750,000	8	5 days
8.	Goat Inseminator	1,000,000	5	10 days
9.	AI Supervisor	1,250,000		2 weeks
			155	

Student / Activity

No.	Subject (University students)	Expense / person	Member	Duration
1.	Inseminator I. (Yogyakarta) Gadgah Mada University	230,000 (Rp.)	22	2 weeks
2.	Inseminator II. (Malang) Muhamadiyah University	230,000	29	2 weeks
3.	Inseminator III. (Malang) Brawijaya University	230,000	27	2 weeks
			78	

Scheme in 2002**General**

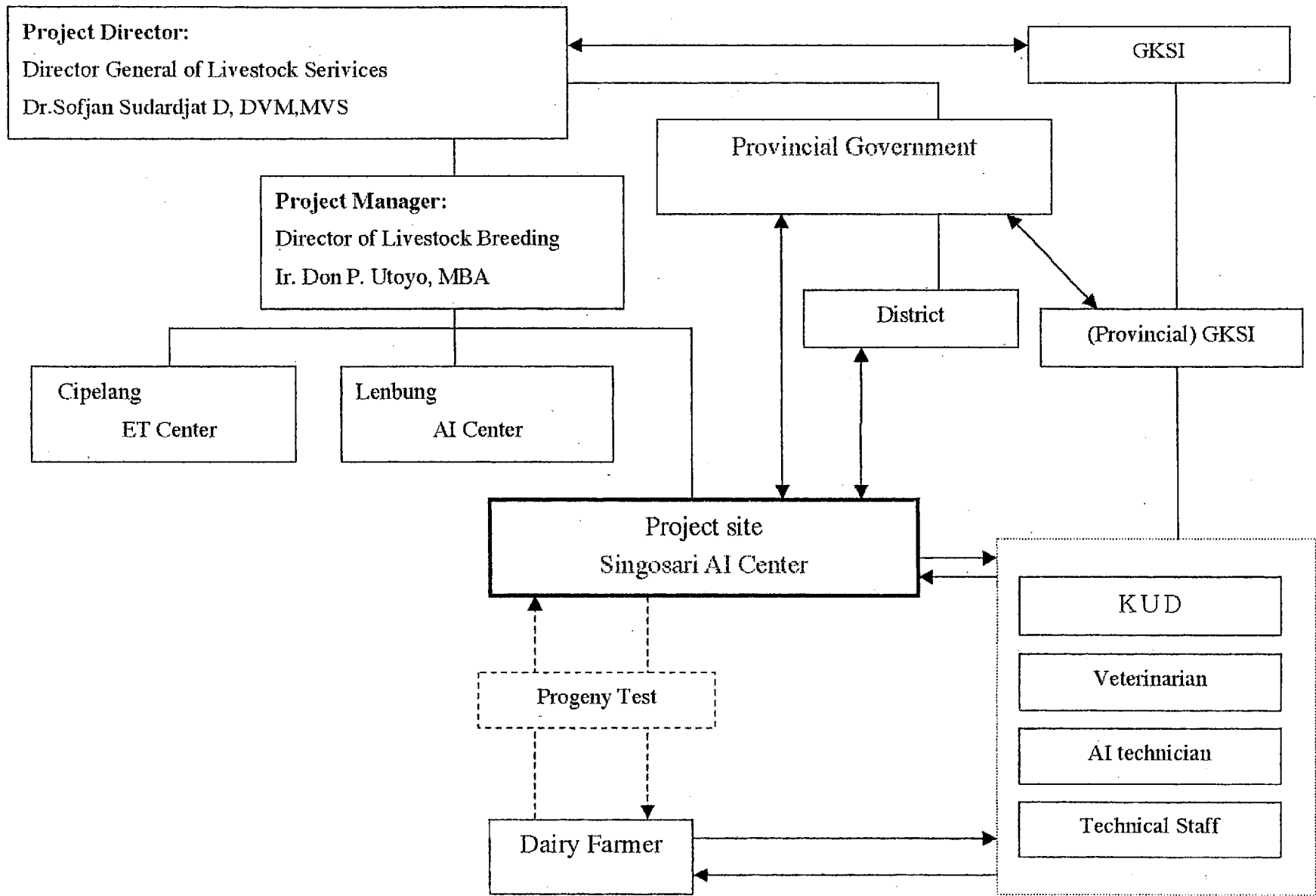
No.	Subject	Expense / person	Member	Duration
1.	Bovine Inseminator I.	2,250,000 (Rp.)	23	4-24 June 2002
2.	Pregnancy diagnosis (PKB)	2,100,000		
3.	Assistant Veterinary (ATR)	2,100,000		
4.	Handling Semen	1,000,000		
5.	Goat Inseminator	1,750,000		
6.	AI Supervisor	2,100,000		

Student / Activity

No.	Subject	Expense / person	Member	Duration
1.	Inseminator I. (Surabaya) Airlangga University	500,000	19	2 weeks
2.	Inseminator II. (Malang) Muhamadiyah University	500,000	20	15 May-04 June 2002.

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Organization of the Progeny Test



ANNEX 11

Project Design Matrix of The aftercare technical cooperation for strengthening of artificial insemination center project

Term of cooperation: 2 years from 11 July 2000

Target Area: Malang, East Jawa

Targeting group: Singosari AI center

(PDM) May., 16, 2002

Narrative Summary	Verifiable Indicator	Means of Verification	Important Assumptions
(Super Goal) Dairy industry in the republic of Indonesia is promoted	Result after certain period of the Post-Project	Evaluation of survey of the post-project	The policy of dairy farming is no change and carried out steadily
(Overall Goal) Productivity at dairy farmer's level is improved	Milk yield increases per one dairy cattle in a dairy farmer		
(Project Purpose) Function of the Artificial Insemination Center in Singosari is Re-strengthened	Result of final stage and after certain period of the post-project High quality frozen semen produced by candidate bulls and quantity of supply increases	1. Sperm vitality rate of after melting 2. Inspection-report (before supply) 3. Production report (Frozen semen) 4. Supply report	Progeny test is continued The policy of dairy farming is carried out
(Outputs) 1. High quality frozen semen is provided 2. Technology and knowledge for Artificial Insemination Technicians are improved. 3. Progeny test is operated	1. 10,000 dose of frozen semen of progeny test approved are produced. 2. The conception rate of a progeny test participation dairy farmers are improved. 3. In 3rd Progeny Test, the pregnant daughter cow are kept in the farmers In 4th Progeny Test, planned mating for a daughter cow are carried out surely	1. Production report 2. Report from KUD, Experts 3. Survey report (progeny test)	An enough budget for a progeny test, material is secured. A dairy farmer participates in a progeny test enterprise, cooperate.
(Project Activities:) 1. Production of frozen semen a. Monitoring survey b. Re-training of frozen semen production techniques c. Improvement of dilution method d. Improvement of feeding management for dairy bulls e. Health management and disease control for bulls 2. Training and re-training of artificial insemination techniques a. Monitoring survey b. Training and re-training for artificial insemination technicians c. Field technical guidance to dairy cooperatives 3. Progeny test for dairy cattle Support and Advise for Progeny Test	Input (Japanese side) 1. Dispatch of the expert and others The long term: Frozen semen production, Artificial insemination The short term: Maintenance of equipment (Lab.) Semen processing and handling, Feeding management of bulls, Maintenance of machinery and equipment (breeding management), Progeny test 1,2,3 2. Machinery, Equipment. 3. Receipt of the Indonesian personnel for technical training. 4. Some parts of local cost expenditures necessary for the execution of the physical infrastructure. (Indonesian side) 1. Counterparts and administrative personnel. 2. Land, building and other facilities. 3. Supply of replacement of machinery, equipment, instrument, vehicles, tools, spare parts and any other materials necessary for the implementation of the project other than those provided through JICA. 4. Sufficient financial support.		A contagious disease of a domestic animal does not occur in a neighborhood. Improved technology is to be applied by the Singosari center staff. Changes in the staff that seem to give serious influence to project administration are not digested. Pre-conditions: Well cooperation of organization and people concerned with the project.

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ANNEX12

Detail of Implementation Plan

Period Component Activity	First Year								Second Year																									
	1st			2nd			3rd		4th			1st			2nd		3rd		4th															
	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7									
A. Frozen Semen Production																																		
A-1 Survey	←→																																	
A-2 Production of frozen semen													█		█																			
A-3 Feeding and Management of bulls													█		█																			
B. Artificial Insemination																																		
B-1 Survey	←→																																	
B-2 Training and retraining AI technicians													█		█																			
B-3 Reproduction and Reproduction disorder													█		█																			
B-4 Progeny Test													█		█																			
C. Consultancies of Maintenance of Machinery and Equipment																																		
C-1 Consultations on Maintenance	←→																																	
C-2 Dispatch short-time expert													█		█																			
D. Other Consultancies																																		
D-1 Training of counterpart in Japan													←→		←→																			
D-2 Reconstitution and/or revision of guidelines													←→		←→																			
E. Final Report													←→		←→																			

█ Dispatch short-time expert