

South Sulawesi Regional Office
Ministry of Agriculture
Republic of Indonesia

Japan International
Cooperation Agency
(JICA)

**SOUTH SULAWESI
REGIONAL AGRICULTURAL DEVELOPMENT
PLANNING / ATA - 140 PROJECT**

THE FIFTH AND SIXTH QUARTERLY REPORT

ON

PHASE III

(August 1980 - December 1980)

January 1981

**The RADP/ATA - 140 South Sulawesi
Project Team**

INDONESIA - JAPAN TECHNICAL COOPERATION PROJECT

ADT

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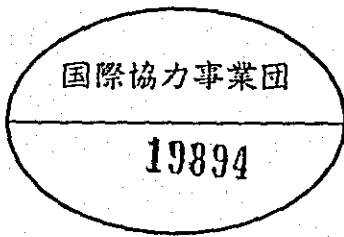
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**The RADP/ATA - 140 South Sulawesi
Project Team**

INDONESIA - JAPAN TECHNICAL COOPERATION PROJECT



国際協力事業団

19894

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I. INTRODUCTION

The fifth and sixth quarterly Report on phase III, RADP/ATA-140 South - Sulawesi, covers a period from August 1980 to December 1980.

As you know, the Joint - Committee was held in Jakarta in July - 1980, and the revised plan of operation for two more years (including - one - year's follow-up activities) was discussed and approved by both the Indonesian and Japanese sides.

According to this revised plan of operation, all the activities of this period were implemented.

It can be said that this period is the final stage of several preparatory works: budget, organization, construction, equipment and so on. The construction of model infrastructure in Enrekang was completed on time by the end of November.

These construction facilities will be utilized effectively for the Development of not only afforestation and grassland but also the socio - cultural condition^{of} the community, so these facilities were highly appreciated by the Kabupaten's and Kanwil Deptan at the thanksgiving ceremony for the construction.

Additionally, all the construction works in Jenepono were completed within this period.

Other constructions by the Indonesian side were also well undertaken by the Provincial Administration Government in accordance with the schedule. But several constructions could not be completed within this term and will be completed until the end of March 1981.

The pilot test activities themselves for each of the three fields were implemented in better condition using the model infrastructural facilities in this period especially for citrus.

The other preparatory works, especially the organization and the usage of the pilot test facilities in future, are not yet decided.

The basic concept of the Development Center consists of very important matters for the smooth implementations of the pilot test activities after the expiry of the Japanese Technical Cooperation in June 1982.

So, in the next quarter, we hope that the Indonesian authorities concerned will discuss and consider deeply about these matters.

II. Progress of the Budget Allocation.

Just as in previous years, the ATA - 140's Pilot Test Projects and the project on the Block III Regional Development Planning in their operational activity of the FY 1980/1981 obtain financial aid from two sources, i.e. :

- The Indonesian Government comprising the Central Government (National Budget) and the South Sulawesi Regional Administration (Regional Budget)
- The Government of Japan (JICA).

II-1. The Government (National Budget).

II-1.1. Central Government (National Budget).

a. The Citrus Development Pilot Test at Desa Tino in Kabupaten Jeneponten.

Salaries/Wages	Rp	4,455,000
Materials	"	2,900,000
Equipment & Machinery	"	500,000
Travels		
Construction		
Others : - handling cost for the		
Japan donated equipment	"	2,100,000
- Vehicle Operation Cost	"	5,000,000
		<hr/>
Total	"	13,955,000

b. The Afforestation/Reforestation Pilot Test at Desa Buntu Barana, Kabupaten Enrekang.

Salaries/Wages	Rp	1,815,000
Materials	"	1,050,000
Travels	"	2,000,000
Others : - handling cost for the		
Japan donated equipment	"	2,500,000
		<hr/>
	Rp	7,365,000

c. Grassland Improvement Pilot Test in Desa Buntu Barana, Enrekang.

Salaries/Wages	Rp	2,940,000
Materials	"	3,120,000
Equipment/Machinery	"	4,400,000

Travels	Rp	3,000,000
Construction	"	4,500,000
Barbed wire hedging for the border and the paddock (9000 m)	"	2,500,000
10 accessory paddock	"	2,500,000
10 drain water troughs for 10 paddock"		1,500,000
Others : - Soil tilling, 250 ha	"	4,900,000
- Selection Contral	"	500,000
- Soil analysis	"	1,200,000
- Vehicle operation	"	2,640,000
- Reporting administration"		686,000
- Handling cost for Japan- donated equipment	"	2,658,000
Total	Rp	34,544,000

d. The study for Block III Regional Agricultural Development
(the districts of Bone, Soppeng and Wajo).

Salaries/Wages	Rp	6,540,000
Materials	"	-
Equipment & Machinery	"	-
Travels	"	6,800,000
Construction	"	820,000
Others : - mapping	"	5,000,000
- administrative cost, reporting, meetings, elec- tricity, etc.	"	1,900,000
- vehicle operation	"	3,500,000
Total	Rp	24,560,000

Total cost by National Budget : Rp 82,424,000

II-1.2. South Sulawesi Regional Administration (Regional Budget).

a. Citrus Development Pilot Test in Desa Tino, Kabupaten -

Jenepono:

Salaries/Wages	Rp	2,940,000
Materials	"	1,500,000
Equipment & Machinery	"	1,000,000
Travels	"	2,500,000

Construction :	- Dormitory	Rp 18,900,000
	- Classroom	" 6,480,000
	- Clean water facility"	4,000,000
Others :	- Guidance & Control	" 720,000
	- Supervision	" 360,000
	- Vehicle operation	" 500,000
	- Administrative costs, mee- tings, reporting, etc.,	" 460,000
	T o t a l	Rp 39,360,000

b. Afforestation/Reforestation Pilot Test in Desa Buntu -
Barana:

Salaries/Wages	Rp -
Materials	" -
Equipment & Machinery	" -
Travels	" -
Construction : C type house (70 m2)	" 4,800,000
Others : -	" -
T o t a l	Rp 4,800,000

c. Grassland Improvement Pilot Test at Desa Buntu Barana,
Kabupaten Enrekang:

Salaries	Rp -
Materials	" -
Equipment & Machinery	" -
Travels	" -
Construction	" -
Additional road ballasting, 3,500 m	" 24,500,000
Others	-
T o t a l	Rp 24,500,000

d. The study for Block III Regional Agricultural Development
(Bone, Soppeng & Wajo):

None	
Total cost by Regional Budget :	Rp 69,660,000
Total cost by Indonesian Government (National & Regional Budget)	Rp 151,304,000

II-2. The Government of Japan (JICA).

Continued funds for the ATA - 140 Pilot Test Project donated by the Government of Japan consist of :

- field & survey equipment, including heavy machinery and vehicles
- training for Indonesian Counterparts in Japan
- dispatch of Japanese experts to Indonesia
- survey expenses for Japanese experts.

III. Progress of the construction works.

Such as shown in the progress of previous budget allocation for the Pilot Test sites both in Jenepono and in Enrekang, the finance for the model infrastructure works were procured from the South Sulawesi Regional Budget. Unlike the FY 1979/1980, where the regional budget served operational activities, in FY 1980/1981 merely construction cost is taken care of by this budget. This implies that the Central Government's allocation has increased its volume from year to year.

Thus, the budget allocation for 1980/1981 is arranged as follows :

- operational cost is provided from the national budget through programs of each sub-sector;
- model infrastructure works are financed from the South Sulawesi Regional Budget through the First Level Region Aid Program.

III-1. Construction by the South Sulawesi Regional Budget in Jenepono.

The construction of infrastructures on Regional Budget of 1980/1981, such as described previously, consists of the following performances :

- dormitory construction, 225 m² large
- classroom construction, 72 m²
- clean water facility

at a cost amounting to Rp 29,380,000.

Pursuant to the Presidential Instruction No. 144/1980, the work should be bid to local contractors residing in Kab. Jenepono.

Of the 12 contractors invited to tender by the Jenepono District Administration, only 6 entered their bids on December 4, 1980,

respectively : 1. C.V. Putri Solo at a bid of Rp 29,329,000

2. C.V. Bijaksana Building " Rp 42,220,000

3. C.V. Cahaya Tino " Rp 29,354,000

- | | |
|-----------------------|------------------|
| 4. C.V. Benteng & Co. | of Rp 28,572,000 |
| 5. P.D. Sub. | " Rp 26,383,000 |
| 6. C.V. Bajiminasa | " Rp 29,919,000 |

Only two of the six contractors were qualified for tender while the rest were disqualified because of their bid which exceeded the ceiling of budget available besides their failure to meet several specifications.

The two qualified contractors were : C.V. Pubri Solo and the representative of C.V. Benteng & Co.

Up to December 1980, the Co-manager has not decided which of the two won the bid.

III-2 Construction by Regional Budget in Enrekang.

Since two Pilot Tests occur in Buntu Barana, the project site at Enrekang, 2 construction works are financed by the Regional Budget of 1980/1981, respectively :

- a C type house for the expert and counterpart, financed by the Afforestation/Reforestation Project.
- continuation of road ballasting, extending 3500m from the Grassland Improvement Pilot Test. This is a continuation of the 2100m road financed on the 1979/1980 budget by the Afforestation/Reforestation Project.

The C type house construction cost less than Rp 20,000,000, so, pursuant to the Presidential Instruction No. 14A/1980, the contractor herefor was appointed after a few bids offered by a few contractors. The executor was C.V. Surya Kencana Enrekang at a cost of Rp 4,796, Rp 4,796,000,. The work is expected to commence in early January 1981.

The road ballasting, which will cover a length 3500 m, will consume a budget of over Rp 20,000,000; so, pursuant to the Presidential Instruction No. 14A/1980, the works will have to be bid upon to local contractors. 10 contractors were invited herefor through the Enrekang District Administration. Among them 7 entered bids on November 10, respectively :

- | | |
|--------------------|---------------------------|
| 1. P.T. Asrah Jaya | at a bid of Rp 23,706,000 |
| 2. C.V. Hakas | " " Rp 24,400,000 |
| 3. C.V. Kopi Jaya | " " Rp 24,773,000 |
| 4. C.V. Buntu Batu | " " Rp 24,410,000 |

5. C.V. Usaha Baru bid of Rp 24,210,000
6. C.V. Surya " " Rp 29,728,000
7. C.V. Surya Kencana bid of Rp 24,270,000

Most of these 7 contractors, however, did not meet the qualification for tender, so the Project Co-Manager, Mr. Parawansa and the tender committee deemed it necessary to make a retendering.

Up to the end of December 1980 it has not been decided, so the re-tendering will be accomplished in early January 1981.

III-3 Model Infrastructure Works in Enrekang (Afforestation and Grassland).

III-3.1 Main facilities :

- a. Farm road construction, 2,415.47 m. long
- b. Masonry construction, 845 m. long
- c. Installation of irrigation pipe, 205 m. long
- d. Installation of barbed wire fence, 4,822.8 m. long
- e. Supply of one pump and accessories, listed in Annex of the Bill of Quantities.

III-3.2 Amount of Construction Costs :

Total amount of Construction costs is US \$ 67,910 or Rp 42,444,000. Analysis of the amount is as follows ;

a. Afforestation		Rp 23,841,468.30
b. Grassland		" 12,683,100.77
	Real Cost	Rp 36,524,569.07
c. Temporary work		Rp 1,206,660.-
d. 10% Overhead cost		" 3,652,456.91
	Sub Total	Rp 41,383,685.98
e. Sales tax (P Pn.)		
2.5% of the sub Total		Rp 1,061,120.15
	Grand Total	Rp 42,444,806.13
	Round Up	Rp 42,444,000.-

III-3.3 Progress of Construction :

- The job contract was signed on July 28, 1980, by JICA and P.T. COLLI, for a construction cost amounting to US \$ 67,910 or Rp 42,444,000. Work schedule was four months until November 30. In the beginning of the works, the 2.5 km. road

from the bridge to the pilot test site was still in a poor condition, being steep and narrow.

- In August the main job was to improve the condition of the present road in order to be passable by trucks toward the grassland areas. The other jobs were to decide the detailed situation of the road, fence, culvert, pond and foundation for balance. Additionally, excavation works were also made at first, for example the road foundation, pond and pump pit.
- In September the main road from the bridge was not completed yet. Then the bulldozer was successfully led into the site; so the road construction and other excavation works were greatly proceeded.

It was proceeded to lay the foundation and the slope of the road in the grassland, and to gravel the road in the afforestation site. Other main works were excavation and embarkment of the nursery bed and installation of barbed wire fence in the grassland. One big problem at that time was the lack of laborer to proceed with the construction, so the supervisor strictly ordered P.T. COLLI to keep a sufficient number of laborers to accomplish the works.

- In October the main road from the bridge to the Center (2,1 km) was completed finally by C.V. BENTENG; and the main road from the center to the grassland was also improved in order to be passable by vehicles and bulldozer temporarily. Consequently the transportation of materials for construction was greatly advanced by then. Most of the materials, except the concrete pipes, PVC pipe, irrigation pump and timber for the house, were transported to the site and checked up by the supervisor. It was then started with grading, compaction and excavation for the drainage channel in the afforestation site. Grading and masonry works in the nursery bed were started effectively. In the grassland site, barbed wire fence construction and excavation of the drainage channel were completed.

- In November, at the end of the construction period, the important matter was to check and confirm the labor distribution and the work schedule. Job assignment was given to

each laborer. The nursery bed, the pump and facilities were completed in the first week. The PVC pipe was installed. In the grassland all the drainages were completed.

The second week, PVC Pipe was completely installed, and the balance foundation completed.

The third week, all the construction works in the afforestation site were completed and cleaned, while the culverts at the grassland site were completed.

The last week, the pump installation and cleaning in the grassland were completed.

So the model infrastructural works were not easy, but with great efforts of the supervisor and the contractor, all the works were completed in time, that is, on November 30, 1980.

The time schedule of the works is shown in Table.

III-3.4 The thanksgiving ceremony on the completion of the model infrastructure facilities in Enrekang.:

A ceremony was held at the Pilot Center in Enrekang on December 9, 1980, sponsored by the ATA-140 Project Team, on the completion of the model infrastructural works. Attended by more than 100 people, the thanksgiving ceremony had the following items :

- Opening;
- Report by the JICA consultant;
- Greeting/addresses :
 - By the Expert Team Coordinator;
 - by the chief of the South Sulawesi Kanwil Deputan; and by the Bupati of Enrekang.
- Saying Grace;
- P a u s e , and Closing.

Attached Paper 1.

THE GOVERNOR OF SOUTH SULAWESI
FIRST LEVEL REGIONAL SECRETARIATE
D E P U T Y II

PROJECT FOR THE TRAINING CENTER AND DEVELOPMENT
OF AFFORESTATION/REFORESTATION

Ujung Pandang, September 10, 1980.
No. 522.4/1799/DEPTEN.

To

The Director of C.V. Bontang & Co.
in Ujung Pandang.

Subject : Completion of the ATA-140 constructions in
Kampung Berekang.

With reference to your letter dated June 29, 1980, No. 049/B/VII/80, and to the report by the Project's Supervisory Board for Construction Works, your keen attention is requested concerning the following matters :

1. The construction works which have gone 4 - 5 months since the under-
signing of the contract on April 15, 1980, is estimated to have been
accomplished 50%, comprising among other things :
 - a. Road coating, 1750m. long, without roadside paths, ditch nor cul-
vert.
 - b. Clean water facility, with the provision of two cisterns and water
pipes.
 - c. Dormitory, with brickwall lining.
 - d. Classroom, with roofing and ceiling mounted.
2. On the base of some technical considerations by the Supervisory Board,
it has been decided to postpone the period of its completion until the
end of September 1980, scheduled as follows :
 - a. The road works should be completed by medio September 1980, as the
members of the Supervisory Board will make an inspection of the site
by that time.
 - b. Other works should be completed by the end of Sep : ber 1980, at
which time the works would be handed over from your side to ours.
3. Your earnest attention is called for in order to complete these works
immediately and to prevent any loss due to delay, such as mentioned in
the work contract.

It is thus to be understood and observed appropriately.

O/b The Governor,
The Project for the Training Center
and Development of Afforestation /
Reforestation
Co-manager

- cc. 1. The South Sulawesi Karwil Deptan Chief.
2. The ATA-140 Field Supervisor. H.M. Parawansa
3. Mr. S. KLIKAWA, the ATA-140 Project Team Leader.
4. F i l e.

Attached Paper - 2.

October 10, 1980.

To : Mr. Djoko Sujatno, the Project Supervisor.

From : Setsuzo Kikukawa, the Team Leader.

Subject : River Bank Stabilization Works at the River of Mata Allo.

The bridge itself has been completed at the beginning of June 1980, thus helping the transportation of construction materials and equipment thereafter, although it was delayed for about half a year.

According to the original design drawing, some river bank stabilization works were expected; however, those have not yet been implemented. And consequently the villagers have been worried of the possible damages to the bridge and river bank in case of floods during the coming rainy season which is just around the corner; and Mr. Mas'ud requested the team for the improvement of the stream by the usage of a bulldozer in the river bed at the project site on October 5.

Originally, the river works including the river bank stabilization works and so forth were under the jurisdiction of the D.P.U., and the management of the river would be the responsibility of the Bupati-s (in this case both the Bupati-s of Brekang and Wana Bo). Therefore, some procedures would be necessary before the usage of the bulldozer in the river as a rule.

Since the equipment were already handed over to your Government, the usage or renting of the bulldozer should be decided by your side; but it should be considered carefully as to whom the bulldozer is to be rented to, because it is not of the type for watery or highly humid soil conditions.

In case it is inevitably necessary to use the bulldozer for the improvement of the M. Allo River stream, experienced and capable operators would have to be selected, and the bulldozer would have to be operated under the "gotongroyong" system of the villagers.

In addition to the extraordinary activities mentioned above, adequate fundamental river bank stabilization works such as protecting structures made of stonefilled wire baskets, stream control dikes and so forth are requested for the safety of the bridge in the future,

under the D.P.U.'s jurisdiction.

Therefore, the promotion of the detail design and the budget for the fundamental works of the river bank stabilization should be carried out as early as possible by the agencies concerned. Otherwise efforts for the bridge construction in the past will be in vain in the near future.

Thank you very much for initiative to the prompt cooperation among the agencies concerned.

- CC. 1. Mr. A.R. Malaka, Chairman of the SS BAPPEDA.
2. Mr. H.M. Parawansa, Deputy II Regional Secretary.
3. Mr. A. Quddus, Chief of the SS Province D.P.U.
4. Mr. Abdullah Dollar, Bupati of Enrekang.
5. Mr. Andilolo, Bupati of Tana Toraja.
6. F i l e.

Attached paper - 4

GREETING BY MR. OTE,

THE ATA-140 PROJECT TEAM COORDINATOR/LIAISON OFFICER
AT THE CEREMONY ON THE COMPLETION OF THE MODEL INFRASTRUCTURE FACILITY

Ladies and gentlemen,

Legally speaking, Mr. Kikkawa the Japanese Expert Team Leader ought to have the honor of giving this greeting, but it is a great pity that he cannot attend the ceremony as he was suddenly attacked by illness and went back to Japan in order to take his medical treatment last November.

Today, in stead of Mr. Kikkawa and on behalf of the Japanese experts' team, I would like to say my greeting at this ceremony.

First of all I would like to express my "Congratulations" on the completion of this Model Infrastructure Facility to all the attendance here, and also express especially my gratitude to Mr. Bupati of Enrekang, Mr. Camat of Alla, and Mr. Kepala Desa Buntu Barana and everybody in the Desa who gave us a kind and friendly cooperation in the construction works.

And then, I cannot forget the enthusiasm and effort of Mr. Governor and his staff of the Provincial Administration, and Mr. Mono and the other staff members of the ATA-140 Project for the development of Kabupaten Enrekang.

Having seen the progress of construction, I consider it was not an easy way. But to my pleasure, these works are completed on time thanks to the great effort of the supervisor Mr. Sekio and the contractor, in cooperation with all the attendance here.

Again I express my gratitude on behalf of the Japanese Experts' Team. Well, working for this Project here, I always think ^{of} not only friendship and human relations but also happiness gained by the development of the socio-economic life of the Indonesian people herself. And in order to create something, I think, the most important things are enthusiasm, effort and patient, reliance and self-confidence, and hospitality and friendship among the staff and the people concerned. As regards the construction work here, the fact is the same, I think. It is the enthusiasm of the people here that made success of the works, rather than that of the Japanese experts.

In this point of view, these successful construction facilities are the real property of the people of South Sulawesi, especially those of Kabupaten Enrekang. I hope these facilities will be kept and maintained by the people and officials concerned here for ever as one monument of the effect of efforts and friendship between Japan and Indonesia.

Lastly, considering our Project activities, this is only the starting point. I think, in order to achieve our objective, a better cooperation than before will be needed, between all of the attendants here and not only the Japanese experts Mr. Takaku and Mr. Harada but also the Indonesian counterparts' staff.

I hope the enthusiasm and the kind cooperation will be given to the ATA-140 Indonesia - Japan Technical Cooperation Project.

Thank you very much.

Attached paper - 5

ADDRESS BY THE SOUTH SULAWESI KANWIL DEPTAN CHIEF AT THE THANKSGIVING CEREMONY ON THE COMPLETION OF THE JICA MODEL INFRASTRUCTURE AT THE ATA-140 PILOT TEST IN DESA BUNTU BARANA, KAB. ENREKANG, ON DECEMBER 9, 1980.

Honorable Dupati of Enrekang,
Honorable Coordinator of the JICA Experts' Team,
Honorable Co-manager for the ATA-140 Project,
Honorable audience,

First of all I would ^{thank} the ATA-140 Project Co-manager for rendering me this opportunity to give an address at this thanksgiving ceremony on the completion of the JICA-constructed model infrastructure at the ATA-140 Pilot Test in this village.

Next I would like to thank the coordinator of JICA experts' Team and the JICA consultant for having accomplished the model infrastructural works, which serve as a significant element in the context of the completion of Pilot Tests on Afforestation/Reforestation and Grassland Improvement in the region of Enrekang.

We should also extend our gratitude to Almighty God for His Grace that has enabled us to organize this thanksgiving ceremony on the completion of the model infrastructure, attended together on this happy day.

Dear audience,

Afforestation in the broad sense implies every effort to retain or maintain and to develop continuously the condition of the soil and its atmosphere so they may function optimally as productive element, as means of water use regulation and as means of environmental protection.

Afforestation is carried out by means of reforestation inside forest territory, growing trees on free public lands, estate renovation, pasture establishment simultaneously to improve livestock feed, and other efforts of soil conservation such as terracing etc.

Lands extending about 1.2 million ha. throughout the South Sulawesi Province are to be restored as to their fertility, 0.35 million ha. of them situated inside forest territories. Those are critical lands, including those around the spot we are standing now, which, due to inconsistency

between the use and the capacity, has undergone physical, chemical as well as biological devastations, eventually endangering hydrology, orology, agricultural production, settlement and socio-economic living condition of the affected environment.

Critical lands may be generated, for the least part, by natural processes, and for the most part by human deeds, either directly or indirectly.

Human beings can generate critical lands through the following deeds :

1. Destruction of forests and other vegetation to be converted into farms;
2. Forest exploitation disregarding its well-being;
3. Upland farming without considering efforts of soil conservation;
4. Burning sege grass (alang-alang) for the purposes of games and grazing.

Those activities are thus far still prevailing even in this region, thus leading to an annual increase of critical lands, to the extent of 1 - 2 % of the present critical lands.

Dear audience,

The Government, in this case the Deptan, in the frame of her effort to restore critical lands in South Sulawesi and particularly in Enrekang, has since 1977 cooperated with the Government of Japan through the RADP/ATA-140 Project, a cooperational project engaged in Regional Agricultural Development Planning.

In this cooperational project, the Government of Japan extends her grant consisting of expertise, project equipment and trainings in Japan for counterparts, officers and authorities dealing with the project.

The aims of the ATA-140 Project are :

1. Formation of a Master Plan on agricultural development in South Sulawesi and the recommendations for its implementation.
2. Creation or discovery of developmental pilot projects in two Kabupaten-s, respectively Enrekang and Janeponto.

For Kabupaten Enrekang the projects referred to are one on Afforestation/Reforestation and one on livestock grassland improvement, to be functioning as evaluation of the implemented plan, to serve for soil conservation and at the same time to convert critical areas into productive and fertile areas with commodities suitable and profitable to the community.

The pilot test on afforestation is located under the DAS Saddang Reforestation & Afforestation Territory which comprises critical lands of 150,000 ha. inside and 222,000 ha. outside the forest territory, 58,000 ha. of which is included under the Kabupaten of Enrekang.

Those critical areas being generally mountain slopes consisting of sedge grass-lands, pastures, upland field and bare lands, it is very difficult to utilize them as paddy fields, upland farms or homeyards, and thus more inclined to serve as forests and grazing lands.

The Saddang watershed area is the water source for the Saddang Irrigation area, to supply about 92,000 ha. of paddy fields in Kabupaten Pinrang and Sidrap. Hence the Saddang watershed area is highly significant in the South Sulawesi role as food barn for Eastern Indonesia and thus the effort of natural resource conservation in this watershed area, particularly the area within the Kabupaten-s of Enrekang and Tana Toraja, calls for attention and various measures. Afforestation commodities developed by the Pilot Test in this region are not only various species of pioneer woods, as several species of industrial and horticultural crops will also be cultivated, such as fruit corresponding to the soil and climatic condition. Thereby the Pilot Test on Afforestation/Reforestation in this region will convert unproductive lands into productive ones.

Honorable audience,

On the base of the Provincial policy for the development of animal husbandry production, the pastures at the northern part of Kabupaten Enrekang have been appointed as areas for the development of pure Bali cattle.

This matter will yield problems in arranging the land-use pattern, between the determination of grassland area and that of afforestation area.

With the increase of livestock population in this region, i.e. at averagedly 12 % a year, while relatively the grassland does not grow, in extent nor in productivity, crops for afforestation and reforestation will be disturbed.

Consequently this pilot test is aimed at the increase of pasture capacity in mountainous areas, the prevention of microtopographic changes on mountain slopes resulting from wild grazing, safeguarding of afforestation/reforestation territories, conservation of natural resources, and the

target is to promote Bali cattle population in the frame of effort to consolidate the South Sulawesi position as supplier of pure Bali cattle breed for other provinces.

Closing this speech, I wish to extend my gratitude to the Japanese Experts' Team and the JICA consultant for having completed the Model Infrastructural works in the context of the Pilot Test on Afforestation/Reforestation and that on grass-land improvement as a realization of the cooperation between the Governments of Japan and Indonesia in regional agricultural development planning in South Sulawesi. I wish to thank the Regional Administration of Kabupaten Enrekang and all the parties who have assisted in the Project efforts toward this successful fruit.

Thank you.

Buntu Barana, December 9, 1980.
The South Sulawesi Kanwil Deptan
Chief,
Drs. Djoko Sujatno.

Attached paper - 6

ADDRESS BY THE BUPATI OF ENREKANG AT THE THANKSGIVING CEREMONY ON THE COMPLETION OF THE JICA MODEL INFRASTRUCTURE AT THE ATA-140 PILOT TEST, DESA BUNTU BARANA, ON DECEMBER 9, 1960,

It is a precious opportunity for me to attend this ceremony where I may meet and speak face-to-face to the honorable gentlemen.

As we may know and see for ourselves, this region has a geographic condition of being undulated, hilly and mountainous. The hills and mountains are relatively irregular in their lay-out, scattered out-of-line, hence their irregular gradients and slopes, and consequently encouraging erosion and further on creating critical lands.

Of the entire extent of this Kabupaten, which is about 1786,01 km², about 57.630 km² comprises critical land, and this fact does not only retard the development of agricultural production but also frequently generates disaster to the inhabitants.

In order to cope with ^{this} problem, reforestation has been conducted since Pelita I to cover an area of 32.150 ha. In addition hereto, efforts have also been made to resettle people living in and around the forest territory in Kecamatan Baraka, rehabilitation of natural disaster-stricken people at Assan, also in Kecamatan Baraka, aid and compensation to people who used to live in critical areas of Kecamatan Maiwa, and other efforts such as public counselling on the significance of environmental maintenance and the hazards likely to occur when forests are carelessly cut and lands are carelessly used. What we are seeing today is one of our series of efforts to relieve this region and its people, and even other regions in South Sulawesi, from a chronic disease suffered so long, thus all our efforts of uplevelling public welfare in this region will be more consolidated.

This project has at the same time led to an improvement in other aspects, e.g. the means of communication as one of the aspects to be prioritized in the development in correspondence to the geographic condition such as mentioned above.

The means of communication referred to is the one successfully opening the economic traffic between Buntu Barana and Maliba, which hitherto has only been passable by non-motorized carriages. With the opening of

this road the regions around Buntu Barana will be able to develop more, and thus it may be anticipated now that the surrounding regions will later on become production centers, particularly for annual crops. This pilot test is at the same time a symbol of friendship and cooperation between two nations, Indonesia and Japan.

Dear audience,

As you may have known, according to the original plan, this pilot test would have been located at Asaan of Kecamatan Baraka, considering that this region was highly potential for agricultural development. Nevertheless, on the base of technical consideration, the pilot test has been moved over to Buntu Barana. This implies an open probability for Asaan to be developed in the future.

Therefore on this occasion I would once again suggest that for future agricultural development Asaan may be given the privilege.

Dear audience,

In relation to the completion of this pilot test, please allow me on this happy occasion to express my sincere appreciation and gratitude to the JICA, the Government of Japan, the Deptan, the Governor of South Sulawesi, and the Indonesian counterparts.

To the regional administration and the people of this region, the pilot test will further stimulate and encourage them to enhance their efforts so they will be able to develop this region on their own strength and ability.

In this connection I would like to send my message to the local community, please take as great advantage as possible of this Pilot Test.

Thank you.

The Bupati of Enrekang,

Abdullah Dollar.

IV. PROGRESS OF THE ADMINISTRATIVE ASPECT

It was most important to pre-evaluate and to make up a revised Plan of Operations in the first quarter of this year.

On the base of this pre-evaluation of the activities it was clarified that the delay of the progress of activities was about one year's time due to the delay in construction works at the Pilot Center especially in Kabupaten Enrekang. And it was approved by the Joint Committee held in Jakarta on July 3 and 10, 1980, that a follow-up activity would be required for the achievement of the purposes and detailed activities mentioned in the plan of operation for at least one year until June 1982. Therefore the actual revised Plan of operation was made up by the end of July.

IV-1. Policy of the revised Plan of Operation.

- The Pilot Center should be considered as the major facility for community development in the area, and thus it is most important to acquire the local community's enthusiasm and cooperation to the project activities.

Then it is absolutely necessary to encourage the Central as well as the Provincial Governments to raise the necessary budget for the arrangement of structures and organization of the Pilot Center and also to conduct a man-power development in order to make the Pilot Center last for ever.

- This three years' cooperation period should be considered as the preparatory stage for the maintenance of the pilot test activities by the Indonesian authorities concerned in the future.

Therefore it is very important to harmonize the present project in each field, e.g. afforestation, grassland improvement and Citrus improvement, implemented respectively by the DAS Saddang Development Planning Project, the Provincial level Animal Husbandry Service and the Food Crop Agricultural Service. And it is most important to conduct the technical and personnel exchanges with these agencies concerned which will execute these pilot tests after the expiry of the cooperation in the future.

IV-2. Target of the activities within the cooperation period.

- To make a feasibility report within the present period of R/D until the end of June 1981, even if the pilot test activities were

delayed, making use of the data obtained merely until this moment. But the situation of the case study for the training on Planning technique is clarified hereby.

- To implement fundamentally all of the actual contents of the Plan of Operation, with a one-year technical follow-up of cooperation until the end of June 1982.
- To make a structural and organizational of each pilot test Center and to establish the system of their operation and maintenance.
- To establish the actual system of the implementation technique for each pilot test activity.
- To establish a guideline for the operation and maintenance of the equipment provided by the Japanese Government.

IV-3. Progress of the administrative matters within the fifth and sixth quarterly period from August to December 1980.

Based on the revised plan of operation as mentioned previously, many procedures were taken to proceed the activities concerned with the Project.

IV-3.1. Budget allocation.

a. It is the key point as to how much local budget of Fiscal Year 1981/1982 we can obtain from the Central Government. Therefore, in making the necessary budget for next year, the Project Co--manager Mr. Mono Syamsuddin and the Coordinator Mr. Ota came up to Jakarta in September 1980 to explain the necessity of budget and the contents of activities to the BAPPENAS, the Directorate Generals of respectively Animal Husbandry, Forestry etc.

As result of the explanation, each of the agencies concerned seemed to deeply understand the ATA-140 Project, and this was very important for the follow-up activity by the cooperation of the Japanese Government to the Project.

b. On the other hand, as efforts to develop other parties' understanding of the project, certain persons of the Provincial Parliament were invited to the Project site, in Pangkajene, in September and to visit in Jember, in December 1980.

c. Other activities in the frame of efforts to develop people's understanding of the Project, news reporters were invited to the Project site, and besides, some ceremony was held at the Project site on ad hoc basis.

IV-3.2 Organization and structure.

Regarding this matter, discussions and considerations were continuously made with each of the agencies concerned, on the base of the organization chart approved by the Joint Committee.

However, it has not been concluded yet as to which agency would organize these pilot test Centers in the future. Anyway, it is necessary to decide the organization and structure as early as possible.

Attached paper - 7

REPUBLIC OF INDONESIA
MINISTRY OF AGRICULTURE
J A K A R T A

Jakarta, July 1980.

No. 1296/B/1980.

To

The Deputy I Chairman,
BAPPENAS in Jakarta.

Enclosure : 1 bundle.

Subject : Prolongation of the Project
on RADD/ATA-140 South Sulawesi.

As already known, in the context of technical cooperation between the Japanese Government and the Ministry of Agriculture, the Project on RADD/ATA-140 South Sulawesi initially active in January 1977 will be expired by June 1981.

In its implementation, the activities were divided in two phases; the first phase which lasted 30 months from January 1977 through June 1979 has had the following matters accomplished :

- a. Formation of a Master Plan on South Sulawesi Regional Agriculture Development;
- b. Feasibility study for two Kabupaten-s respectively Jeneponto and Enrekang, and pre-feasibility study for 4 pilot tests, i.e. Citrus, Afforestation, Grassland improvement and Shrimp Cultivation.

In the next phase, which is the 2 years' prolongation period of the cooperation to last from July 1979 through June 1981, the activities are continuations of those of the previous phase, comprising :

- a. Establishment of three pilot tests, i.e. :
 - 1) in Kabupaten Enrekang : Afforestation and Grassland Improvement;
 - 2) in Kabupaten Jeneponto : Citrus development.
- b. Study on agricultural development in Block III, covering the Kabupaten-s of Bone, Soppeng and Wajo, in the context of the formation of a Master Plan on Block III's Agricultural Development.

For the purpose of recognizing the results of the Project implementation,

a Joint Committee session was opened on July 3, 1980, which arrived at the resolution that the Project has shown positive results in implementing the stipulated Plan of Operation while various obstacles are still encountered. Those obstacles include e.g. the delay in the completion of physical structures for the development of grassland and afforestation in Kabupaten Enrekang (road and bridge) which has led to a delay in the establishment of model infrastructure by the Japanese experts and Japanese equipmental aid in South Sulawesi.

It is estimated that those delays will lead to overdue completion of part of the activities by the termination date of the cooperation, particularly in the context of technological transfer to Indonesian counterparts.

For your convenience we are sending you as enclosure the resolution of the Joint Committee session held on July 3, 1980, and the report by the Japanese Technical Guidance Team for the ATA-140 presented at the Meeting of the Ministry of Agriculture on July 10, 1980.

In accordance with the resolution of the Joint Committee and the discussion with the Japanese Technical Guidance Team for the ATA-140, the Ministry of Agriculture would herewith recommend a prolongation of the RADD/ATA-140 Project for one year's period starting from July 1981 to be terminated by June 1982.

For this prolongation, contributions are expected from Japan, e.g.:

a. Dispatch of experts for the following specialities :

- 1) Regional Planning
- 2) Coordinator / Liaison Officer
- 3) Citrus development
- 4) Afforestation
- 5) Grassland improvement
- 6) Advisor to be stationed at the Planning Bureau of the Ministry of Agriculture.

b. Equipment, i.e. spare parts for the Japanese equipmental aid already received.

c. Dispatch of trainees to Japan for the specialities of :

- 1) Regional Planning
- 2) Citrus development
- 3) Afforestation
- 4) Grassland improvement.

The Rupiah requirement for 1980/1981 will be provided for in the Project Sheet for Regional Agriculture Development and in the Regional Budget of the South Sulawesi Regional Administration.

Thank you for your attention.

The Secretary General,
Signed Panoedjoe.

- CC.1. The Bappenas' Chief of
the Bureau for Agr. and Irrigation.
2. The Bappenas' Chief of the Bureau for Overseas Economic Cooperation.
 3. The Chief of the Bureau for Overseas Technical Cooperation, Cabinet secretariate.
 4. The Ministry of Foreign Affairs, Director of Technical Cooperation.
 5. The Governor of South Sulawesi.
 6. The Chairman of the South Sulawesi Bappeda.
 7. The Chief of the South Sulawesi Kanwil Departemen Pertanian.
 8. The Director of the Planning Bureau, Ministry of Agriculture.
 9. Mr. I. SUZUKI, the Project Advisor.

Attached paper - 8

Agenda of the Weekly Meeting

August 4, 1980.

1. Construction of Model Infrastructure. :
 - (1) Jeneponto - Trial of Water Supply (August 5)
 - Remarks : Reporting to Kepala Desa.
 - Report of completion to JICA Jakarta.
 - Inspection by Mr. UCHIDA, JICA JKT. OFFICE.
 - Payment.
 - (2) Enrekang :
 - Contract was signed on July 28, 1980.
 - Amount : Rp 42,444,000 ,-
 - Period of Contract : July 28 -- November 30, 1980.
 - Remarks : Transportation of the bulldozer.
 - : Arrangement of Contractors (three).
 - Safety maintenance (Persons and facilities).
2. Preparation of Citrus contest : Budget.
 - : Information.
 - : Facilities.
3. Custom clearance and transportation of the equipment
 - (1) Budget and Documents.
4. Reporting to DAPPENAS.
5. Budget.
 - (1) Provincial Budget - Operation Cost (Rp 8,980,000).
6. Technical Training in Japan (Mr. Kala and Mr. Suantra).
 - (1) New counterpart for Afforestation.
7. Training for equipment the operators (one or two persons for each pilot test project).
8. Operation of Executive body (Working Groups).
9. Taking care of traffic accident.
10. Reporting on Block III.
11. Annual Report.

Attached paper - 9

DEPARTEMEN PERTANIAN
KANTOR WILAYAH PROPINSI SULAWESI SELATAN

Jalan Dr. Ratulangi No. 47 Telp. No. 28047 - 3057

UJUNG PANDANG

Ujung Pandang, August 4, 1980.

No. 200/ATA-140/8/80.

To The Chief of the South Sulawesi Provincial

Animal Husbandry Service

in Ujung Pandang.-

Subject : Travel cost to Jakarta for Mr. Leonardus Kala' Pong Masak.

In the context of the program for the dispatch of our counterparts for training in Japan, it is informed to you that according to the information received from the ATA-140 Project Liaison Officer Mr. M. OTA Mr. Leonardus Kala' Pong Masak from the Grassland Improvement Pilot Test Project will go in for a job training in Japan by medio August 1980, for a duration of 6 months. It is estimated that he will depart on August 15 from Ujung Pandang to go on to Japan on August 20.

In conformity to the stipulation of the Colombo Plan, the expenses to be borne by the Japanese side will cover merely the travel cost from the International Airport in Jakarta, while that from the place of origin to Jakarta and vice versa will be burdened on the Indonesian side.

We would thus expect that the travel cost from Ujung Pandang to Jakarta and vice versa would be borne by the Project on Animal Husbandry Development, Subdivision ATA-140 1980/1981, under the budget allocation for travel expenses, amounting to Rp 250,000 to be used for the trips to and from Jakarta and for the expenditure during his stay in Jakarta.

It is thus presented to you, thanking you in advance for your kind cooperation.

Cq. The Kanwil Deptan Chief,
The ATA-140 Project
Co-manager,

Mono Syamsuddin.

- CC. 1. The Director,
Deptan's Bureau for Planning,
Jakarta.
2. The Director for Program Establishment,
Directorate General of Animal Husbandry,
Jakarta.
3. The SS Kanwil Deptan Chief, UP :
4. Mr. S. KIKKAWA, the Experts' Team Leader.
5. F i l e.

Attached paper - 10

DEPARTEMEN PERTANIAN
KANTOR WILAYAH PROPINSI SULAWESI SELATAN
Jalan Dr. Ratulangi No. 47 Telp. No. 28047 - 3057
UJUNG PANDANG

Ujung Pandang, August 20, 1980.
No. KL 210/2442/VIII/80.

To
The Rector of the Hassanuddin University
in Ujung Pandang.-

Subject : Personnel Aid to the Indonesia - Japan
Cooperational Project for Grassland Improvement.

We would kindly request for your assistance in the following matters :

- a) Since the beginning of 1977 a cooperational project on Regional Agricultural Development Planning between the Governments of Indonesia and Japan has existed under the name of 'ADP/ATA-140 South Sulawesi. At this phase the project has reached the stage of implementation, with Pilot Test activities e.g. one on Grassland Improvement located at Desa Buntu Barana in Kabupaten Enrekang.
- b) Livestock population in South Sulawesi has recently had a rapid growth, but on the other hand livestock grazing land has not developed naturally both in quantity and quality; hence a research is called for, in order to increase the grazing capacity of natural ^{pasture} or this purpose the Japanese Experts' Team has prepared a plan for study, expecting to receive personnel aid from the Hasanuddin University.
- c) We may add that, before reaching this implementation stage, a few of the Hasanuddin University personnel have once taken part in the establishment of pre-feasibility study for the pilot test, thus assisting the experts' team; among those was Mr. M. Thahir Jarre, specialist on livestock feed and lecturer for the Animal Husbandry Departement of the Faculty of Agricultural Sciences, Hasanuddin University.

In this connection, particularly with the present activities of implementation, we would kindly request for your assistance by way of once again allowing Mr. Thahir Jarre to take part in the project studies/surveys such as the following :

- a 8-month survey from August 1980 through March 1981;
- survey trips to the project site : 5 days of the month.

Looking forward to a favorable reply from you, we thank you for your assistance.

- | | |
|--|---|
| CC.1. Director of the Deptan's
Planning Bureau in Jakarta. | The South Sulawesi Kanwil Deptan,
Chief, |
| 2. Dean of the Faculty of Agr. Sciences,
UNHAS. | Drs. Djoko Sujatno |
| 3. Chief of the Provincial Animal Husbandry Service. | |
| 4. Chief of the Animal Husbandry Department, Fac. of Agr. Science UNHAS. | |
| 5. Mr. S. KIKKAWA, the Experts' Team Leader. | |
| 6. F i l e. | |

Attached paper - 11

Jeneponto District Agricultural Extension Service

Jeneponto, August 23, 1980.

No. 812/a.2/8/1980.

To

The South Sulawesi Kanwil Deptan Chief
in Ujung Pandang.

Subject : Consultants and part-time counterparts
for the Citrus Development Pilot Test.

With reference to the letter of the Kanwil Deptan Chief acting as Supervisor to the ATA-140 Citrus Pilot Test, dated August 6, 1980, numbered 204/ATA-140/VIII/80, concerning the request for consultants and part-time counterparts to the ATA-140 Citrus Development Pilot Test at Desa Tino of Kecamatan Batang, Kabupaten Jeneponto, we would kindly present you the names of persons to be at the disposal of the Project, listed as follows :

No.	Name	Position in the Agency	Position in the ATA-140
1.	M. Nur Usman	Chief, Kabupaten Agr. Ext. Service	Consultant
2.	Ir. Dollah Maddo	Subject Matter Specialist, Kab. Agr. Ext. Service	Part-time counterpart
3.	Abd. Rasyid Maro	Staff member, Kab. Agr. Ext. Service	D i t t o

It is thus presented to you for your information.

Thank you.

Kabupaten Jeneponto
Agricultural Extension Service,
Chief,

M. Nur Usman.

- CC. 1. Chief of the Provincial
Agricultural Extension Service
2. Chief of the Provincial Inspector Office
for Agricultural Extension Service
3. Mr. S. KIKKAWA, Experts' Team Leader
4. F i l e.

Attached paper - 12

MINISTRY OF AGRICULTURE
SOUTH SULAWESI REGIONAL OFFICE

Project on Regional Agricultural Development ATA-140

U J U N G P A N D A N G

Ujung Pandang, September 2, 1980.

No. 219/ATA-140/IX/80.

To

The Chief of the Sddang Watershed Project
in M a k a l e.-

Subject : Counterparts requested from the Saddang Watershed Project.

1. It is informed that Mr. I Gde Made Suantra, technical staff of the Saddang Watershed Project assigned as full-time counterpart for the execution of the ATA-140 Pilot Test on Afforestation/Reforestation at Desa Buntu Barana, has arrived in Tokyo on August 21, 1980, for the purpose of a 6 months' training concerning the Pilot Test.
2. In this connection, the expert for this Pilot Test is in need of one more fulltime counterpart, to be assigned from the Saddang Watershed Project, in order to be guided in the Pilot Test implementation and at the same time to be prepared for a future training in Japan after Mr. Suantra's return to his post.
3. The person required is one who can accompany and cooperate with the expert concerned in performing his activities in Ujung Pandang and at the project site.
4. More important is, that with the arrival of equipmental aid required for the Pilot Test, it is even more urgent to have personnel from the Saddang Watershed Project to be prepared for future operation of the equipment.
5. For the above purpose it is expected that the persons would be assigned sooner, in view of the urgent field activities.

Thank you for your assistance.

The South Sulawesi Regional Office,
Ministry of Agriculture,
ATA-140 Project Co-manager,

Mono Syamsuddin.

- CC. 1. The South Sulawesi
Kanwil Deptan Chief,
2. The Project Manager in Jakarta.
3. The Team Leader Mr. S. KIKKAWA.
4. F i l e.

Attached paper - 13

Agenda of the weekly meeting

September 3,

I. Equipment

1. Check of the equipment.
 - 1) Places : Ujung Pandang
Project site
 - 2) Report on checking to JICA Hdq. :
Dead-line days after arrival at Ujung Pandang.
2. Conveyance of the equipment.
 - 1) Order
 - 2) With packing or after opening the packing (after checked U.P.)
 - 3) Storage (Places and methods)
3. Responsible person for conveyance and to take charge (counterparts).
 - 1) conveyance .
 - 2) taking charge (keeping);
making the list of equipment.
 - 3) no. plate .
4. Role of expert.
 - 1) checking
 - 2) instruction on the method of conveyance
 - 3) training for usage of those equipment
5. O t h e r s .

II. Citrus.

1. Review of contest for next year's practice
 - 1) Method of proposal to join the contest (2 months ago)
Extension Service has to propagate to all producers
 - 2) judgment by Kecamatan according to the maturing period
at least 3 persons have to judge throughout the Kabupaten
 - 3) proposers have to convey the fruit to the site of judgment.
 - 4) To clarify the other way of judgment according to the purpose
(elite tree or quality improvement)
2. Selection of the existing orchard.
 - 1) to show the improvement of cultivation such as thinning, pruning,
budding etc.

Item	Desa	Name of the owner.
1.	Tino	Mr. Amiruddin (former chief of extension service)
2.	Tolo	Mr. Camat (Kelara)
3.	Taroang

Compensation money will be necessary

5 trees @ (Rp 10,000 ?)

- 2) To survey the difference of the growing condition such as flowering, maturing etc., by the elevation from sea level (at each 100 m's altitude).

10 places x 2 trees = 20 x 2,000 = 40,000

- 3) Ecological Survey.

Tankan - 1 tree x 3 places (same as No. 1 above) = 6 trees
 Ponkan - 1 tree

- 1) 2) 3) should be done under the cooperation with extension service for one day per week.

Attached paper -- 14

MINISTRY OF EDUCATION AND CULTURE
HASANUDDIN UNIVERSITY
UJUNG PANDANG

September 9, 1980.

No. 5206/C.06.01./80.

The South Sulawesi Kanwil , Deptan Chief
in Ujung Pandang.

Subject : Personnel Aid for the Indonesia - Japan Cooperational
Project on Grassland Improvement.

With reference to your letter No. KL 210/2442/VIII/80 dated
August 20, concerning the above-mentioned subject, we would
herewith kindly inform you that we do approve of Mr. Ir.M.Thahir
Jarre, Lecturer for the Faculty of Agricultural Sciences of the
Hasanuddin University, to be engaged in the study/Survey for
the Indonesia - Japan Cooperational Project on Grassland Im-
provement.

We do appreciate your confidence in us. Thank you.

The Rector,

A. Amiruddin.

- CC. 1. Director of the Deptan's Planning
Bureau in Jakarta.
2. The Dean of the Faculty of Agricultural Sciences,
UNHAS, Ujung Pandang.
 3. The Chief of the South Sulawesi Provincial
Animal Husbandry Service in Ujung Pandang.
 4. The Chief of the Animal Husbandry Department, Faculty of Ag. Scien-
ces, UNHAS, Ujung Pandang.
 5. Mr. S. KIKKAWA, The Expert Team Leader.
 6. Ir. M. Thahir Jarre.
 7. F i l e.

Attached Paper .. 15.

Agenda of the Weekly Meeting

August 10, 1980.

1. Citrus Contest

1) Technical aspect

2) Administrative aspect :

- in Kanwil Deptan

- in Kabupaten Jenepono

- in each Desa

2. Preface of the annual report

3. Answer to the BAPPENAS' inquiry August 16,

4. Operation of Executive Body :

Citrus August 20, at Kantor Kepala Desa in Tino at 10.00

5. Release of the equipment

6. Training in Japan ; August 15.

7. Release of the DAS Saddang's budget.

Attached paper - 16

AGENDA FOR THE WEEKLY MEETING

September 22, 1980, 10.00 a.m.

1. Report about the result of the meeting in Jakarta last week;
Respectively by Mr. OTA and Mr. MONO.
2. Schedule for Mr. Watanabe (Short-term expert on Mechanica)
- including the conveyance of equipment.
3. Progress of the construction works
 - 1) Local (including the erection of generator-houses in Enrekang and Jenepono).
 - 2) J I C A.
4. Instructory Mission for the model infrastructure which will be here
around the first week of October.
5. O t h e r s .

Attached paper - 17

DEPARTEMEN PERTANIAN
KANTOR WILAYAH PROPINSI SULAWESI SELATAN

Proyek Pengembangan Pertanian Regional ATA - 140
Jalan Dr. Ratulangi No. 47 - Telepon No. 28047 - 3057

U J U N G P N D A N G

Ujung Pandang November 10, 1980.
No. 254/ATA-140/XI/80.

To : The Chief of the Agricultural Extension Service of Kabupaten
Jeneponto.
From : The ATA-140 Project Co-manager.
Subject : Transfer of the ATA-140 Project inventory goods.

It is kindly informed that the storage room at the Citrus Pilot Test site in Desa Tino is already completed. And since the equipment stored temporarily at the Extension Service storage room at Desa Tino are to be used immediately by the Japanese Expert, it is requested that you could have them transferred to the above-mentioned storage room at the Pilot Test site.

Specification of the equipment is shown on the enclosed list.

Thank you.

- CC. 1. The South Sulawesi Kanwil Deptan Chief.
2. The Experts' Team Leader Mr. S. KIKKAWA.
3. F i l e .

Attached - 10

Agenda of the Weekly Meeting

on October 27, 1980.

1. The possible time to use the dormitory and classroom.
 - 1) Experts and counterparts need desks and chairs to sit and analyze the data at the project site respectively;
 - 2) When will electricity be available;
 - 3) Usage of water for drinking and other domestic purposes;
 - 4) Other accessory equipment for living.
2. The schedule for the river bank stabilization works :
 - 1) Survey by the D.P.U.;
 - 2) Budget for the construction of those works;
 - 3) When it will be implemented.
3. Model infrastructure:
 - 1) Grassland : finish until mid-November with 15 laborers and engineer-
Mr. Ninang.
 - 2) Forestry : finish until the end of November with 25 laborers and en-
gineers Mr. Chensang and Mr. Lalang.
4. Progress of the construction works on the 1980/1981 budget :
 - 1) Enrekang
 - 2) Jenepono.
5. Progress of the First Quarterly Report of the second year of Phase III.
Mr. Tadjuddin will act as the editor.

Attached paper - 19

Agenda of the Weekly Meeting on November 10, 1980

1. Preparation of feasibility study reports :

1) Composition of the feasibility study report and respective deadlines:

Volume I - Main Report : April 1981.

Volume II - Technical Report : January 1981.

Volume III - Engineering Report : December 1980.

Volume IV - Administrative Report : July 1981.

Note : Draft of Volume I, II and III should be printed until the end of January 1981 because the drafts have to be submitted to the Leaders' Conference held in Tokyo in February 1981.

2) Necessary data until the end of 1980 should be analyzed in Volume II by each expert and counterpart.

3) Net incremental value with and without project in the future should be estimated until the end of December 1980 by each expert and counterpart in consultation with the Team Leader.

4) Initial cost and annual operating cost by year by pilot test should be finalized until the end of December by the Team Leader and the Co-manager.

5) Vol. III has to be finalized before Mr. Sekio's departure for home in December.

6) Vol. IV will be finalized by the Coordinator (Liaison Officer) after the clarification of the Evaluation Team's conclusion.

7) Recruitment of excellent typists as early as possible to conquer the peak of typing jobs from December 1980.

2. Finalization of the Report on Block III :

1) S c h e d u l e

2) Translation

3) Publication.

Attached paper - 20

December 20, 1980.

To
The ATA-140 Project Co-manager Mr. Mono Syamsuddin.
Subject : Existing Problems to be overcome.

Dear Mr. Mono Syamsuddin,

Having finished investigation of the three pilot test sites, I am returning to Jakarta in the morning of the 20th. It is regrettable for me to leave without seeing you again to confirm several points which we are now facing.

I think it is necessary for us to keep a close contact with each other for the smooth implementation of the Project during Mr. Kikkawa's absence.

In this reference, I would like to inform you about my views on the present situation of the Project, such as the following; and you are kindly requested to pay your due considerations to those matters and to take the appropriate measures.

1. C i t r u s :

- (1) All the facilities such as classroom, dormitory and drinkwater are expected to be completed by the end of next March;
- (2) Ecological survey of Citrus trees grown throughout the area of Jeneponto, which is a basic material for planning the future development, should be conducted according to the plan to be drawn by Mr. Miura;
- (3) Detailed plan of the Citrus Contest of 1981 should be prepared well in advance with Mr. Miura's advice;
- (4) Establishment of the Pilot Farmers' Group is to be studied for the implementation of improved cultivation techniques and marketing;
- (5) Immediate procedures should be taken to utilize the farmers' orchard for the purpose of demonstration, which has been requested by Mr. Miura last September.

2. G r a s s l a n d :

- (1) The road from the Center to the Pilot Ranch should be repaired so it would be passable by all kinds of vehicles under all kinds of weather;

- (2) The Plan for improving grass growth throughout the 500 ha. area by seedling and fertilization is to be studied with Mr. Harada's advice;
- (3) Cattle grazing should be controlled so the newly planted trial grassland would not be disturbed;
- (4) The prospect of introducing the improved method in this Project to farmers' grassland in the surrounding area is to be studied in the F/S for future development project.

3. Afforestation :

- (1) All facilities are expected to be completed by the end of next March, similarly to those in Jeneponto;
- (2) Your cooperation is expected in formulating the idea of establishing a "Land-conservation Center" which is now being studied by Mr. Takaku and the DAS Saddang Project.

4. O t h e r s :

Your strict control on the matters mentioned below is required :

- (1) Management of vehicles and drivers to secure the safety of experts and counterparts;
- (2) Measures are required to protect equipment against thieves;
- (3) Equipment and workers at the Pilot Test should be utilized exclusively for the Project activities.

Finally, I would like to inform you that I am planning to meet you each month from next year on to follow the monthly progress of activities carried out by both sides.

Looking forward to your further cooperation,

the ATA-140 Project Advisor,

Isao SUZUKI.

Attached paper - 21

MINISTRY OF AGRICULTURE
SOUTH SULAWESI REGIONAL OFFICE
REGIONAL AGRICULTURAL DEVELOPMENT PLANNING/ATA-140 PROJECT

U J U N G P A N D A N G

Ujung Pandang, December 24, 1980.

No. 278/ATA-140/XII/80.

To Mr. Isao SUZUKI,
The ATA-140 Project Advisor,
in Jakarta

Reference : Your letter dated December 20, 1980.

Dear Sir,

With refernce to your letter dated December 20, 1980, the following matters will be presented to you :

1. C i t r u s :

- (1) A bid has been made for the construction of the classroom, dormitory and drinkwater facility, while the warrant for the work will be issued on the return of Mr. Parawansa, the Project Co-manager concerning the Provincial Budget, who is temporarily joining a $3\frac{1}{2}$ month training in Jakarta but will be in Ujung Pandang for a week during the Christmas New Year season. The works will be completed within 100 days from the date the warrant is issued.
- (2) I am ready to assist in the accomplishment of Mr. Miura's plan for an ecological survey of Citrus trees all over Jeneponto.
- (3) I fully agree with you concerning the good in - advance preparation for the detailed plan of the Citrus Contest of 1981 under Mr. Miura's coordination.
- (4) I agree with you that a study be conducted by Mr. Arifin and Mr. Onggeng Bactiar, together with Mr. Miura, on the establishment of a Pilot Farmer's Group.
- (5) I am just waiting for Mr. Miura's tailed plan for the utilization of farmers' orchards for the purpose of demonstration.

2. G r a s s l a n d :

- (1) A bid has been made for the repair works of the road from the

Center to the Pilot Ranch, while the execution of the works is only waiting for Mr. Parawansa's return. It is scheduled to be completed within 3 months from the date the warrant is issued.

- (2) I approve of what is being carried out by Mr. Harada; yet in my opinion it would be even better if more productive techniques be applied, such as the demonstration held by the Animal Husbandry Service in Kabupaten Gowa.
- (3) I shall tell the counterpart Mr. Syata and the officer at the Project site to control cattle grazing so as not to damage the trial grassland.
- (4) In my opinion the method employed by Mr. Harada is still to be upgraded with another one which the livestock farmers can really afford to follow. Therefore it would be better if Mr. Harada tries to apply several methods really suitable to those farmers.

3. A f f o r e s t a t i o n :

- (1) I have attempted to enable the facilities in this Center to be completed by the end of March the way it is with those in Jeneponto, except for the dormitory and classroom equipment of which I am not sure yet since they are awaiting the budgetary consent from Jakarta.
- (2) I am much interested in the idea of establishing a "Land Conservation Center" you referred to. Aline with this idea, I myself would like to blend my idea therein, so the "Land-Conservation Center" would not only be aimed at wood species for the interest of afforestation but also at a combination of various productive crops for the interest of local farmers. And thus the "Land-Conservation Center" will emphasize terrace establishment with a mixed cropping of wood species, estate crops, food crops and grass as livestock forage, and will serve as a Center for the establishment of integrated commodity as one of the policies of the Ministry of Agriculture in the present development of Indonesian agriculture.

Therefore, I suppose this idea will open the way to another cooperation after the termination of the present technical cooperation.

Lastly, on my part it is certain that your understanding and your helping hand will be a supporting factor to the success of this cooperation.

Thank you.

The South Sulawesi Kanwil Deptan,
ATA-140 Project Co-manager,

- CC. 1. As report to the South Sulawesi
Kanwil Deptan Chief.
2. The RADP Project Manager in
Jakarta.

MONO SYAMSUDDIN
NIP.: 080007696.

V. Equipment arriving for the pilot tests from JICA

All the equipment provided by the budget of Fiscal Year 1979 was transported to each pilot test site until the end of September. The packages were opened and checked by the experts and counterparts. Inspection report was submitted to JICA in early October 1980 by Mr. M. OTA, the Coordinator/Liaison Officer of the RADP/ATA-140 South Sulawesi Project.

The equipment was mostly in good condition. Only a few tools and spare parts were lost during the voyage. So the project requested for replacement of the lost ones, to be sent again to the project by marine insurance.

Next came all the equipment of Fiscal Year 1980, except for 4 vehicles, in Ujung Pandang on October 21 and on December 13, 1980. Most of them were in good condition. They were opened and checked and at this moment they are being arranged at the pilot test site.

Thus most of the equipment from Japan planned according to the Plan of Operation has already been sent to the Project.

Four vehicles, consisting of two land-cruisers, one mini-bus and one water tank car will be purchased in Indonesia in January 1981.

For the Fiscal Year 1981/1982 it will be necessary to supply some office equipment and spare parts for the smooth implementation of each pilot test.

The total amount of budget is not so big, being only Rp 15,000,000 available.

VI. Pilot Test Activities

VI-1 Citrus Pilot Test

VI-1-1. Model Orchard.

- (1) Sowing seeds of the Tannin variety.

700 seeds of the Tannin variety were sown in the model orchard on August 8, 1980. These seeds began to germinate on August 21, and about 90% of them germinated completely on September 1, 1980. These seedlings were used to test the growth of seedlings, etc.

- (2) Sprinkling on the present nursery bed.

Making use of the irrigation pump, pipe and ϕ 50 mm. vinyl hose donated by JICA, water sprinkling was done successfully on the present nursery bed.

The present nursery bed was so dry that sprinkling will be conducted continuously from then on.

- (3) Training staff members for the operation and maintenance of equipment and machinery.

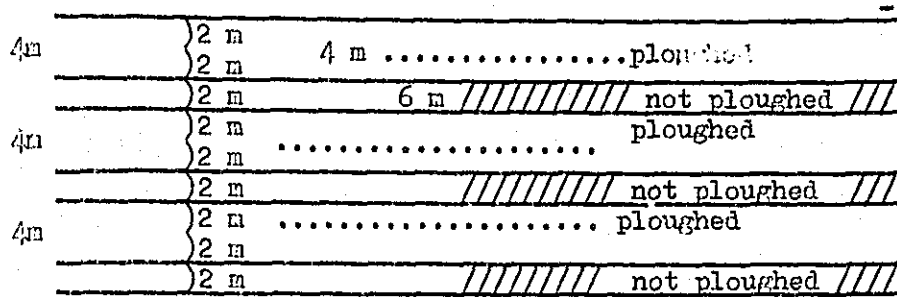
Mr. Watanabe, expert on mechanics, came to the Project for 2 months. During that period two training courses were held in Jeneponto, respectively from September 23 to 26 and from November 11 to 12, 1980. Training was given to two or three pilot center staffs assigned for each of the equipment and machines, i.e. sprinkler, generator, power tiller, chain saw etc.

And it was the very first experience in Desa Tino electric light was put on at the pilot test site on September 24, 1980.

- (4) Arrangement of the plant spacing.

Transplanting space was arranged on October 5 - 6 and from October 23 to 24, rows were arranged along with the contour line, at 6 m's width and 4 m's row interspacing. And then, in order to make the transplanting space, a 4 m. strip of land, in line with the contour line, was already tilled with the use of the bulldozer at the time of the model infrastructure construction, so that the 4 m's row interspacing was arranged in the center line of the 4 m's tilled

space, such as shown by the following chart :



(5) Meteorological Observation.

A few staff were assigned to the site continuously so that meteorological observation on precipitation and temperature could be started on December 1, 1980. There has hitherto been no place to keep the instruments, so they were kept at the Extension Service of Jeneponto.

VI-1-2. Present Nursery Bed.

(1) Grafting.

It has been started to conduct grafting since early November. Ponkan and Tankan, selected through the Citrus contest as the qualified mother trees for the future, were used as scions. Other scions of Ponkan came from Kabupaten Bulukumba.

(2) Spraying of chemicals.

Many cases of insect invasion were apparent in the present nursery bed. Thus in order to control Citrus leaf miners on the seedling stocks the following chemicals were sprayed 4 times, respectively :

- November 11 : Nicotine sulphate 1,200 x (8.5 cc/10 l. water)
- December 17 : Nicotine sulphate 1,000 x (10 cc/10 l. water).
- December 25 : Isoxathion 1,000 x (10 cc/10 l. water)
- December 29 : Nicotine sulphate 1,000 x (10 cc/10 l. water).

VI-1-3. General Survey and Observation.

(1) Occurrence of withered trees and wilted leaves.

Severe wilting of the leaves and, occasionally, withered trees, were seen in Jeneponto from the end of August when it was the midst of dry season. The evidence was considered to be due to the following causes :

- I) weakness of tree vigor as result of last year's over-bearing;
- II) high rate of transpiration due to severe drought and strong wind;
- III) disturbed water balance in trees with fruit harvest (when water supply from the root is lacking, water reserved in fruit will flow back to the tree to keep the water balance physiologically by itself);
- IV) presence of the footrot pest *Phytophthora*;
- V) retardation of photosynthesis by the pest parasitism, resulting in lack of nutrition and thus in decay of the tree.

The occurrence of withered trees was not merely due to one of the abovementioned causes but rather due to a combination of causes I), II) and III) at the same time as major cause, accelerated by causes IV) and V).

(2) Sprinkling and Sprouting.

It was clarified that sprinkling had the effect of promoting sprouting, through the result of the following test, making use two trees of the Tankan variety :

- Oct. 6 - sprinkling was started; leaves of the trees were wilting heavily;
- Oct. 14 - tree leaves were restored to the normal shape;
- Oct. 25 - comparing with the current shoot on October 6, the 13% A trees and 35% B trees were sprouting and then leaf buds were developed in some sprouts;
- Oct. 31 - 58% of A trees and 55% of B trees were sprouting and then many terminal buds were developing leaves;
- Nov. 6 - most of the current shoot have developed leaves completely and some have had flag leaves.

On the contrary, trees which did not get sprinkling started to sprout just at the end of November or early December.

(3) Condition of Sprouting and Blooming in the Citrus area.

- I) Kampong Kanan-kanan in Desa Tino and Kampong Bangkaraloe in Kabupaten Bantaeng : most of Tankan and Jeruk nipis variety were already sprouting and blooming on November 12, 1980;

Attached paper - 22

To : Mr. Mono Syansuddin, the Project Co-Manager.
From : Setsuzo KIKKAWA, the Project Team Leader.
Subject : Operational aspects of the Pilot Test in Jeneponto.

July 17, 1980.

A house for the field manager was already built in July and the construction of model infrastructure will be completed by the end of July 1980.

Thus the full operation will be available from the beginning of August.

The following activities are thus urgently requested :

- (1) The house will for the time being be used simultaneously as the office of the Pilot Test and as accomodation for the expert and counterpart. Therefore the necessary equipment for the test and accomodation, such as desks, chairs, beds and so forth (Refer to attached paper) should be installed as early as possible.

At the same time, particular countermeasures should be taken for the supply of domestic water, together with the necessary manpower such as janitor, watchman etc.

Particularly the installation of the generator provided by JICA and drinking facilities should be arranged immediately.

- (2) Provision of the necessary facilities for the temporary shed, for the accomodation of small equipment (Refer to the Illustration by Mr.Miura).
- (3) Weed control at the established model orchard.

In order to prevent weeds in the established model orchard until the time of Citrus tree transplantation (i.e. until January 1982), it is urgently requested to take the following countermeasures :

- I) growing beans and other crops as cover crops to prevent weeds; operational budget should be provided in order to secure the seeds, the harvest and the necessary manpower;
- II) other methods to improve soil fertility.

- (4) C o n t e s t.

In order to fix the date for the execution of the Contest, the expert and counterpart have to survey into the actual condition of fruit maturity on the pre-selected mother trees and other excellent trees.

All provisions, including the necessary budget and manpower, should be finalized as early as possible.

(5) Provision nursery beds in the model orchard.

The maturity of the Tannin variety is just around the corner. Therefore a new nursery bed should be settled in the model orchard as the first test by the expert; all provision, including seeds, compost and sand for soil improvement should be made as early as possible. At the same time, the rental period for the previous nursery bed should be prolonged for one more year because the growth condition of the stocking is not so rapid as expected.

(6) Some items described in the Plan of Operation are not available in the model orchard because only young trees are there. Therefore, improvement in the cultivation technique has to be tested in the existing orchards with the approval of the owners and paying some compensation to them. This method of test has not been provided yet fundamentally except some trials in the orchard of Mr. Amiruddin adjacent to the project site.

(7) Construction of the remaining facilities.

The remaining construction of houses and drinkwater facilities should be undertaken as early as possible.

Thank you for your cooperation.

VII. FORESTRY

I have already passed four quarters of the year after arriving in Indonesia, that is one year's time. When I look back upon the year, this one year is, actually, equivalent to the preparatory period.

During the fifth and sixth quarter of the year, the main activities were construction of Model Infrastructure, the trial operation of the machinery and equipment from Japan, and the planting out to the Pilot Test Forest Site.

This quarterly report deals with :

- 1) Model Infrastructure construction.
- 2) Trial Operation of the machinery and equipment.
- 3) Expedition to Mt. Rante Mario.
- 4) Land Conservation Center Plan.

VII - 1.

Construction of Model Infrastructure was started from July 28 and ended on December 9. Therefore these two quarters (from July 1 to December 31) almost overlapped the period of Model Infrastructure - construction.

During this period, activities on the Pilot Test Plantation were limited so as not to disturb the construction activity.

So the Model Infrastructure were completed within the term of contract and passed the inspection by the inspector from JICA Jakarta Office.

As a result of completion, we have twelve nursery terraces - ($35^m \times 6^m$) with pipe watering system in the Nursery.

The Nursery was already installed with underground piping from the pond, and also 4 discharging bulbs. The watering system is by a so-called jet liner irrigation system but no sprinkler.

The pipe is 50×4^m with many small holes like a needle's eye opened regularly. And if the pipes are connected with each other by coupling, the watering pipe could be 36 meter long within even discharge capacity. Then it is tied with the outlet bulb and pressure is added by the engine-driven pump.

It can irrigate an area 8 meter wide and 35 meter long = 280 square meter.

According to the detail design plan, four outlet bulbs were installed.

Near the nursery, the potting house (10^{li} x 10^{mi}) was constructed and the warehouse (3^{mi} x 5^{mi}) was constructed near the potting house.

VII - 2.

The machinery and equipment provided by ^{U.S.} Japanese Government arrived during this period, too.

It included heavy machinery such as Bulldozer (12 ton) and tractor etc. And a short-term expert for machinery arrived from Japan in September to extend a guidance on how to operate the above-mentioned machinery and equipment for the staff members at each Pilot Test site in Jeneponto and Enrekang for about two months.

The manual on operation and maintenance will be edited in - another issue.

Anyhow the machinery and equipment are very expensive and valuable, so we should take good care in operating, handling and maintaining them in accordance with the manual and in obedience to the supervisor. .

VII - 3.

The expedition to Mt Rantemario was conducted in July.

The result was not a satisfactory one, because of many limitations, but it was just the first trial.

We will try again and make effort to gain the best result.

Following is the report.

Expedition to Mt. Rantemario.

July 24, 1980. Fine weather.

- 7 : 30 Suantra, the secretary to the Desa and myself started for the expedition on foot with luggage on our backs.
- 8 : 30 Bala Batu, 930 m. a.s.l; temperature 22^o C.
Taking a break. Ground height was read by altimeter and temperature by cylindrical thermometer.
- 9 : 55 Pasar Haliba, 1.030 m. a.s.l.
It was " pasar " (market) day, so the market was crowded with people from Parombian, Uluwae etc. coming to sell local products and to buy daily commodities from peddlers.
We took a coffee break ; they served " Kopi aseli " that was coffee arabica species, and we bought several " gula merah " (palm sugar) to restore our vital power during this expedition.
- 11 : 10 Uluwae River, 710 m. a.s.l.
Temperature was 25^oC, and river water temperature was 20.4^oC.
We walked down straight from the hill about 300 meter, and crossed the river. It was about 20 m. wide, the water was clean and abundant in quantity.
The stones in the river were already getting rounded like cobblestones ; this means that the river was in its middle reaches, just out of the upper reach.
The Uluwae river originates from Mt. Rantemario.
- 12 : 00 Kampung Parombian, 8660 m. a.s.l.
We took lunch although it was the fasting month.
They consider it an exceptional case a side dish was " DANKE " made of water - buffalo milk.
After lunch we called villagers to inquire after the situation of the route to Mt. Rantemario, we employed 4 guides who had much experience in the mountain. They used to work in collecting rattan and " damar " i.e. resin from *Agathis* spp.
As kerosene is more widely spread now, the demand for damar is decreasing, so recently they seldom collect damar.

According to the local people, during the Dutch occupation time, there used to be a village called Sarang around this place, consisting of 100 households. They used to keep coffee plantation under supervision of Dutchmen.

There also used to be a mess where 12 Dutchmen dwelled in those days. They had maintained the coffee plantation and exported coffee product to European countries under the name of Kalosi - coffee, i.e. Kopi Arabica jenis Kalosi DP.

But as consequence of the world war and the internal unrest, most of the plantation was deserted, so the coffee trees were left without attention and maintenance.

15 : 30 The triangular Point, Q 1.263, 1,065 m. a.s.l.

The triangular stone still existed in front of the private house and it was a little weathered, but the code no. Q 1.263 was visible.

This Q 1.263 and the altitude were read from a topographic map issued in 1931 - 1932.

It was a great surprise that, in those days, the reconnaissance had been done in these remote places.

16 : 30 1,120 m. a.s.l.

We went into the deep valley; several tall trees were found, known by the name "dadap". There used to be a coffee plantation under those trees and the dadap used to be shelter trees for the coffee trees.

17 : 00 1,260 m. a.s.l., temperature 23°C.

The trail followed up the contour line, so we passed the valleys and ridges alternately.

We stopped at one valley to stay overnight. There used to be some housing here, as we found chilly plants and watering facilities around.

It was getting colder as time passed. At 20:00 the thermometer showed 18°C. We got into the tent to sleep.

July 25, 1930.

Fine weather.

05:00 Temperature was 15.8°C . We were awakened by the sound of birds singing cheerfully. It felt a little cold, but it could be warmer than in tree-less places, because we were inside a bush. We had breakfast. Having adjusted the altimeter and packed, we left at 7:15.

08:00 1,540 m. a.s.l.
We were on the northern ridge, over which we saw grasslands, but the valley area was a secondary forest in vegetation.

08:30 1,640 m. a.s.l.
We found many acorns on the trail, and looked up the trees to identify the characteristic leaves known as those of a *Quercus* species. The guide called them "Pali", and according to the DAFTAR HAMA POHON-POHONAN SULAWESI SELATAN, it is identified as *Quercus abendanonii*.

09:00 Terowari, 1,750 m. a.s.l.
"Terowari" means a place which can be seen from both sides. Here we had a scene of the magnificent Mount Rantemario, and considered the route to the top of the mountain. Far below we saw the River Uluwae.

11:00 1,590 m. a.s.l.
From Terowari we took a downward route. Having passed a former coffee plantation which was already deserted by now, we had lunch at the big valley. Temperature was 20°C , and the river water temperature was 15.6°C .

"Cucuk" trees were seen along the river.
Cucuk is identified as *Saurauia* spp. from above-mentioned source.

13:30 1,710 m. a.s.l.
Two lemon trees were growing on a place where a housing used to be. The lemon trees were poorly maintained, so that too many branches were pest-invaded, and the fruit were quite smaller than usual, with plenty of seeds.

We passed several coffee plantations on the valley; coffee trees were bearing some fruit but they were very thin and invaded by "Saruogase"; they needed cleaning.

The ground was rocky and little litter was found.

14 : 15 1,740 m. a.s.l.

We took the route to follow the small river, so we had to climb steep slopes and to struggle with bushes.

The valley site was quite fertile and we found many traces of wild pigs or "Anoa" looking for food.

15 : 15 1,890 m. a.s.l.

We reached a stone bank which was 1 meter wide and 1 meter high just along the contour line, built formerly by Dutchmen in order to divide the Forest Reserve Area and the Plantation Area. In other words, below the border of the stone bank, they were allowed to fell trees and make a plantation while above it - nobody was allowed to fell trees.

I suppose, the forest was already damaged partially by local people or there might be some fear of the possible damages on the forest area in those days. Here we could only see secondary forests; the trees were not so tall and tree species were limited. This stone bank continues for miles like the great wall of China.

16 : 00 2,140 m. a.s.l.

We were on the ridge with a beautiful panorama.

Over the ridge it might have been newly burnt so only grasses and small bushes were to be seen.

This kind of ridge with grasses was also seen scattered over the opposite mountain ranges.

The mountain in front was Mt. Rantemario, but it was still a great distance away.

17 : 00 2,150 m. a.s.l.

We went across the ridge into the Virgin Forest.

In a moment it was getting dark and cold inside the Virgin Forest.

Plenty of rattan was hanging down from the high trees and we were forced to struggle with the thorny rattan and to walk - avoiding the thorns.

We decided the camp site and prepared our meal, consisting of rice, canned fish and vegetable soup. THE GUIDE LOOKED FOR NEW SHOOTS OF WILD GRASS AND MADE A VEGETABLE SOUP. It tasted a bit bitter because they did not get rid of the lye while cooking, but it was edible and no problem "tidak apa-apa".

July 26, 1980.

Fine weather.

06 : 00 Temperature was 12° C.

Very cold! The 4 guides told us they did not sleep at all last night, so they sang songs all night long.

We carried one dome tent only, with a capacity of 4 people.

When we employed the guides, we asked if they could stay over - night without a tent, on which they replied that it was usual for them to stay in the high mountains when they worked for the collection of rattan and damar.

So, we did not worry about them. But having heard that they could not sleep I could not help feeling sympathy.

Anyhow, morning coffee was very delicious.

07 : 00 We started survey.

On the ridge site (2.250 - 2.300 m. a.s.l.) we found 3 damar trees of Agathis species.

40 cm breast height diameter and 20 m tall x 1.

30 cm " " " " 25 m " x 2.

The corn was opened already but we did not find any seeds and wilding under the Agathis trees.

The seeds are winged and are easily carried away by wind, and they could be eaten by mouses or squirrels.

Vegetation here was a bit different from a Tropical Rain - Forest. The trees were not so high and vegetation layer was not so distinct.

However, we didn't have enough time and were insufficiently - equipped.

09 : 00 We started on our way back.

VII - 4.

Meanwhile the DAS SADDANG Project has drawn up a plan for a Land Conservation Center to be a demonstration area for land and water conservation practice and on the job training, about 500 ha. around our Pilot Test Site.

The site was already measured an compass survey by the DAS SADDANG staff.

Topographic survey will be followed by us.

ATTACHED PAPER - 23.

Development plan : A Project of integrated farming in the context of Forest, Soil and Water Conservation Program in Desa Buntu - Barana, Kecamatan Alla, Kabupaten Enrekang, South Sulawesi.

I. Ultimate goal to be achieved (for the Saddang watershed Area) :

1. Extension Center on the program for Forest, Soil and Water Conservation.
2. Training Center on dry land farming.
3. Model Center of advanced farming integrated with the program for Forest, Soil and water conservation.
4. Model advanced nursery for crop development elsewhere.
5. A Center for the research on the effect of integrated farming on the program for Soil, Forest and Water conservation.
6. Recreation spots.
7. Development of this pattern in each Kabupaten within the DAS SADDANG when it has succeeded.

II. Efforts :

1. An area of approx. 500 ha is required herefor, situated in a small watershed area i.e. the Borre River watershed area, bordered around by the surrounding mountain ridges.
2. Several river branches within this DAS will be developed so their courses will run harmoniously with local farming.
3. All the lands belong to the local people who volunteer to participate in the development.
4. In the five years' plan, this area will be developed with the following farming patterns :
 - a. Reforestation (by permanent vegetation) in suitable sites , e.g. river sides, slopes of over 50 % gradient, ravines and hill tops, for the provision of firewood and construction wood for villagers (People's forest),

- b. Integrated farming on dry lands :
 - bench terraces on 15 - 30 % slopes.
 - ridge terraces on 30 - 50 % slopes.
 - mix - farming, :
 - a) commercial crops / fruit.
 - b) food crops on bench / ridge terraces.
 - c) grass on terraces.
 - d) animal husbandry.
- c. Check dams on suitable spots and fishery.
- d. Controlled waterways.
- e. Establishment of stations for river discharge and water quantity gauge at certain places.
- f. Installation of microclimatic recorders at this site.
- g. Training centers for farmer groups of each Kabupaten.
- h. Recreation and study - trip spots.

III. Activities preceding long - range development :

1. Feasibility study.
2. Negotiation with foreign countries concerning technical and material assistance.
3. Master Plan formation.
4. Exploration and mapping.
5. Formation of an annual operation schedule.

Implementation in 1981 / 1982 :

1. Costs for the feasibility study : approx. Rp. 5.000.000,- .
2. Negotiation with Japan for technical and material assistance.
3. Master Plan formation by experts and counterparts.

Implementation in 1982 / 1983 :

1. Exploration and mapping.
2. Formation of annual operation schedule.
3. First year's implementation according to the phases of the Master Plan.
4. Training of full - time operators.

Note :

This is merely a rough description of the idea for a long - range development. It ought to be more detailfully described by experts from the central government by means of a feasibility study.

Makale, October 25, 1980.

Project for the DAS SADDANG
Reforestation & Afforestation
Planning and Development ,

Chief ,

R.R. Buranda .--

This plan was then also sent to the Central Directorate General
of Forestry.

MEASUREMENT OF THE ATA-140 PROJECT SITE DEVELOPMENT

WATERSHED EXAMPLE

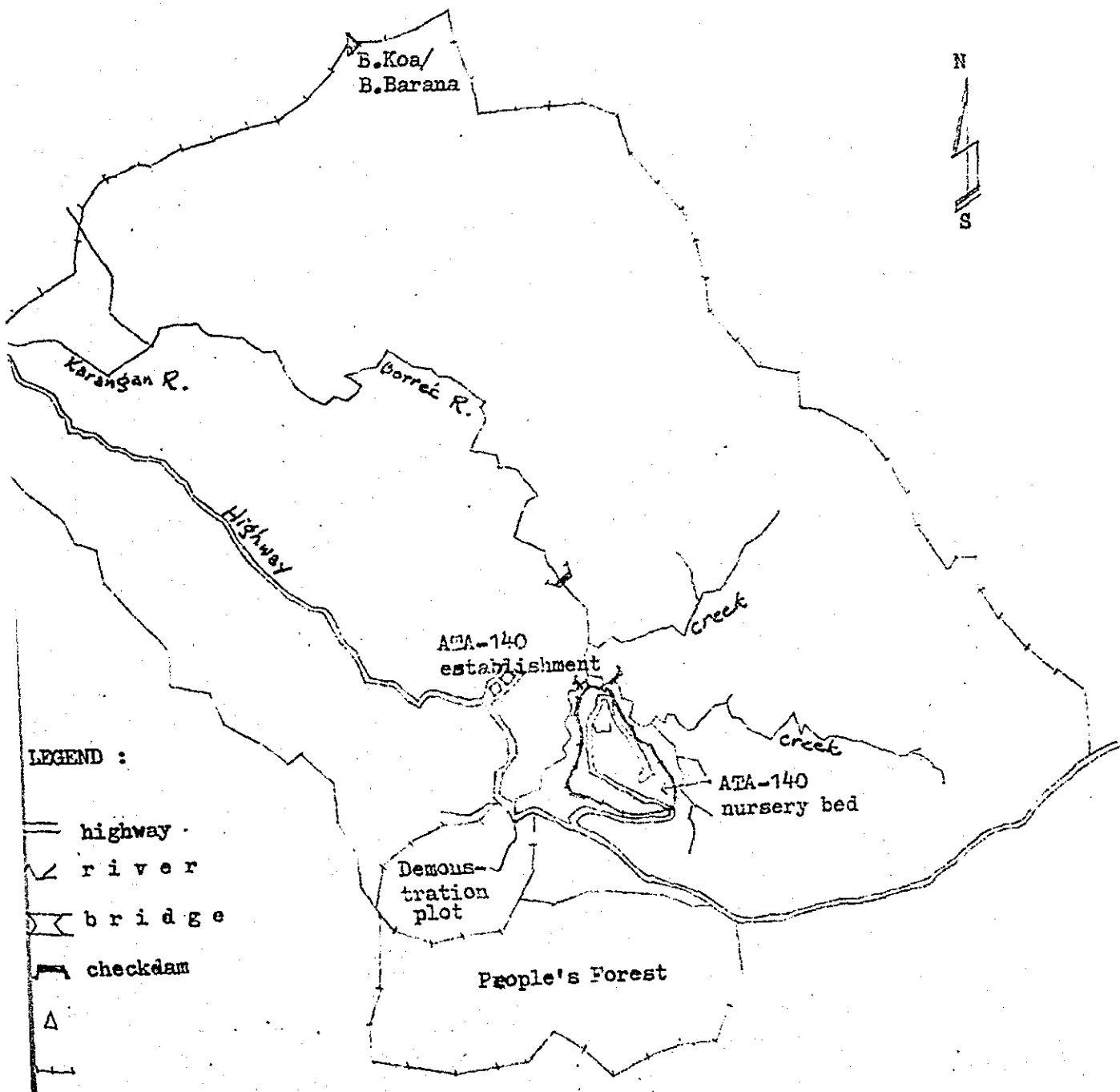
Location : Rante Limbong

Kecamatan : A l l a

Kabupaten : Enrekang

Extent : 500 ha.

S C A L E 1 : 10,000.



ATTACHED PAPER - 24.

Makale, October 28, 1980.

No. 786/III/3/DASS.SS/80.

To : The Director for Reforestation & Rehabilitation,
Directorate General of Forestry in Jakarta .

Subject : Plan for the Development of the AEA - 140 Project
at the DAS SADDANG.

We are presenting here an overall plan for the AEA-140 Project development in the context of the program for forest, soil and water conservation.

As already known, the first phase of the AEA-140 Project being carried out comprises merely the following matters :

- a. Training facility for afforestation / reforestation officers and farmer groups.
- b. Establishment of a model advanced nursery extending 0.5 ha.
- c. Establishment of a model reforestation plot extending 10 ha, and
- d. Establishment of a 500 ha large model mini - ranch.

The first phase is scheduled to end in June 1981.

In order to be more beneficial in the long run, this project should be developed toward farm improvement, integrated with the program for forest, soil and water conservation.

An area extending at least 500 ha will be required herefor, situated in a small sub-watershed area of the DAS SADDANG.

The particular area has existed such as shown on the enclosed map.

There is the Master Plan left for us to form, which will have to be preceded by a feasibility study and negotiations with Japanese experts in the context of the required technical and material assistance.

They are apparently willing to assist if the Indonesian side has developed the concrete plan.

In our letter dated October 27, 1980 No. 786/III/3/DASS.SS/80 we have put forth a request for a budget to finance the feasibility study in 1981 / 1982, amounting to Rp. 5.000.000 , - .

The feasibility study would possibly be carried out by the Directorate for Reforestation & Rehabilitation, together with the Japanese expert, so the plan may be directed toward farm improvement in the context of the program for forest, soil and water conservation.

In the future this project may be made use of by the DAS SADDANG - Project as a Training & Extension Center and a Model Center of advanced farm integrated with the program for forest, soil and water conservation, later on to be expanded to different Kabupaten's.

We are looking forward to your kind attention shown by the dispatch of an official of the Directorate for Reforestation & Rehabilitation to the DAS SADDANG Office in Makale for preliminary observation.

Thank you.

Project for the DAS SADDANG
Reforestation & Afforestation
Planning and Development ,

Chief,

R.R Buranda.

VIII. GRASSLAND IMPROVEMENT

(Muniaki Harada, H, Syota Samusi).

VIII-1. .

Research Works.

In order to establish criteria for grassland development, the following research works were continued on the productivity and fertilizer response of native grasses, introduction of forage crops, selection of suitable trees for afforestation, etc.

VIII-1-1.

The productivity and fertilizer response of native grasses.

During the testing period from April 9 to December 18, 1980, the amount of grass production in Non-fertilizer, Standard fertilizer and Double fertilizer are 1,029 kg / 10 a, 2,469 kg / 10 a, 4,517 kg / 10 a respectively in short type grassland, and 1,176 kg / 10 a, 2,092 kg / 10 a, 3,212 kg / 10 a respectively in tall type grassland.

In the short type grassland which consists of grasses of high palatability, the amount of annual production is estimated to be about 15 ton / ha without fertilizer.

The production was increased 2.4 times as much with the application of 1 ton / ha / year NPK 13.13.13 compound fertilizer, and 4.4 times as much with the same fertilizer amounting 2 ton / ha / year.

In case of the tall type grassland which consists of grasses of low palatability, the fertilizer response was poorer with the increase of grass production of 1.6 and 2.7 times as much as that with the application of the same amounts mentioned above.

The vegetational density was improved remarkably by the application of compound fertilizer, while the bare land increased with the succession of cutting at the non-fertilizer plots.

Data concerned :

(H) : No fertilizer application.

(B) : N : P : K - 13 : 13 : 13 kg per 10 are, per year.

(D) : N : P : K - 26 : 26 : 26 kg per 10 are, per year.

Date of application : April 9, May 28, September 2, December 18.

% of the total amount was applied on each date.

Experimental plot : 1 m² x 5 plots for each block.

i) Fresh weight of each cutting time (kg / 10 a) :

Plot	Short type grassland :			Tall type grassland :		
	N	S	D	N	S	D
April 9 :	-----	-----	-----	-----	-----	-----
May 28 :	304	760	1.442	284	520	870
June 30 :	-----	488	786	-----	414	750
Sept. 2 :	(345)	(427)	(769)	498	276	488
Nov. 19 :	206	336	550	200	398	612
Dec. 18 :	114	458	870	194	384	512
Total :	1.029	2.469	4.517	1.176	2.092	3.212.

() : Estimated weight.

ii) Vegetational cover of each cutting time (%) :

Plot	Short type grassland :			Tall type grassland :		
	N	S	D	N	S	D
April 9 :	78	76	75	74	72	75
May 28 :	70	91	99	61	84	86
June 30 :	73	91	97	67	88	94
Sept. 2 :	---	---	---	83	80	82
Nov. 19 :	73	84	94	66	82	87
Dec. 18 :	62	81	91	67	82	83

iii) Bare - land of each cutting time (%)

Plot	Short type grassland :			Tall type grassland :		
	N	S	D	N	S	D
April 9 :	41	41	46	51	46	46
May 28 :	44	35	25	51	40	46
June 30 :	46	32	22	65	32	25
Sept. 2 :	---	---	---	41	34	31
Nov. 19 :	42	24	16	53	33	24
Dec. 18 :	65	36	18	64	36	31

iv) Leaf height of each cutting time (cm) :

Date	Plot	Short type grassland :			Tall type grassland :		
		N	S	D	E	G	D
April 9	1	28	29	24	47	46	42
May 28	1	30	32	42	45	36	35
June 30	1	33	40	46	41	40	34
Sept. 2	1	---	---	---	46	41	37
Nov. 19	1	26	29	36	31	40	31
Dec.	1	28	33	44	33	39	33

VIII - 1 - 2.

Introduction of forage crops.

For the selection of suitable species of forage crops at the project site, 5 legumes and 5 grasses were tested.

As a consequence, all legume species manifested themselves to be unsuitable for the site, because of their poor regrowth, low resistance against trampling, difficulty in seed collection, etc.

On the other hand, however, creeping type grasses such as *Brachiaria brizantha* (Signal grass), or *Holcus minutiflora* (Ho - lasses grass) seemed to be promising. Those creeping type grasses can be propagated by planting stalks directly to the soil and they can spread themselves toward all directions by their stolons.

Although not suitable for grazing, *Pennisetum purpureum* (Elephant grass) also grew well.

As it is vigorous enough to grow big and easy to be propagated by stalks, it can be introduced for land conservation. As a substitute for seed production field designed by the original plan, we prepared a stalk supplying field of *Brachiaria brizantha* for further propagation.

Zea mays (maize), of course, is one of ^{THE} valuable forage crops, but it requires intensive cultivation and has much risk to be damaged by wild hogs.

Data concerned :

Pasture plants introduced :

a. *Stylosanthes humata*.

e. *Stylosanthes guianensis*.

b. *Glycine wightii*.

f. *Desmodium uncinatum*.

c. *Desmodium intortum*.

g. *Panicum maximum*.

d. *Macrotyloma axillare*.

h. *Helinus minutiflora*.

Methods :

Date of seed sowing : February 13, 1980.

Seed bed : $1 \times 2 \text{ m} = 2 \text{ m}^2$.

Method of sowing : row planting, two rows in one meter width

Quantity of seeding : a) - g) 6 g / m², h) 2 g / m².

Basic fertilizer : compound fertilizer.

N : P : K = 13 : 13 : 13.

Quantity of fertilizer application : a) - f) 50 g / m², g) - h) 100g/m².

i) Height of Introduced Pasture Plants (cm) :

Species	a	b	c	d	e	f	g	h
March 12	2	7	2	6	4	4	-	-
March 17	7	21	9	13	11	9	-	15
April 10	16	55	35	75	25	33	-	33
April 23	29	73	75	90	40	93	-	64
May 26	Intrusion of Bali cattle to the testing site.							
June 30	29	50	46	85	39	205	-	65
	23	37	43	76	30	28	-	42
July 26	37	106	111	140	70	100	-	84
	---	---	---	---	---	---	---	---
Sept. 2	53	126	135	95	105	150	-	124
	30	50	97	76	96	45	-	85
Nov. 19	32	70	91	145	120	84	-	116
	27	45	85	75	51	43	-	75
Dec. 4	30	80	86	115	59	-	-	120
	26	36	80	97	50	-	-	94

a) : Plant height.

b) : Community height.

ii) Comparative Growth : better 5. 4. 3. 2. 1. 0 - worse.

Date	Species	a	b	c	d	e	f	g	h
March 12		1	5	2	2	1	1	0	0
March 17		1	5	3	2	3	1	0	1
April 10		2	5	3	2	3	1	0	1
April 23		3	5	4	4	4	2	0	4
May 26	Intrusion of Bali cattle to the testing site.								
June 30		4	4	5	4	4	2	0	3
July 26		4	5	5	5	5	2	0	5
Sept. 2		3	5	5	5	5	1	0	5
Nov. 19		2	5	3	5	5	1	0	5
Dec. 4		2	4	4	5	5	0	0	5

iii) Seed production and other qualities :

0 : excellent ; Δ : Medium ; X : Poor ; ? : Unknown.

Articles	Species	a	b	c	d	e	f	g	h
Seed quantity		0	0	0	Δ	0	X	-	X
Seed dropping		X	0	X	0	X	X	-	?
Seed Quality		?	Δ	0	0	0	?	-	?
Seed production		X	Δ	X	0	Δ	X	-	X
Plant vigor		X	0	0	0	0	X	-	0
Regrowth		X	Δ	Δ	Δ	Δ	X	-	Δ
Trampling resistance		X	X	X	X	X	X	-	Δ
Insect resistance.		0	Δ	Δ	0	0	0	-	0

The other forage crops were introduced to the testing site where a paddock was once set up, and the soil was supposed to be rather fertile.

Brachiaria brizantha (Signal grass).

It was introduced by way of planting stalks in June 1960 without fertilizer application.

As the weather had been dry when it was planted, only 1/3 of stalks seemed to survive, however those survived grew vigorously enough to spread out with their stolons creeping.

The grass height was 121 cm on September 2 and covered half of the site introduced; on November 19, the grass height was 138 cm covering 30% of the site introduced, standing crop weighed 3.550 g/m².

Pennisetum purpureum (Elephant grass) :

It was introduced by way of planting stalks in the middle of June 1960 without fertilizer application.

The grass grew vigorously enough to attain the height of 151 cm by September 2, 260 cm by September 30, and 300 cm by November 19. Although unsuitable for grazing, it is easily introduced to the site and will be able to play some role for land conservation, etc.

Zea mays (Maize) :

The native species obtained at the market of Ujung Pandang was introduced with different fertilizing treatments on March 26. Those were not vigorous enough to overcome the woods that intrude and eventually perished by the damage caused by wild hogs.

VIII - 1 - 3.

Fence construction and Afforestation.

Fence is one of the essential installations in ranch construction in order to control herds of cattle effectively ; however, it is also the most sensitive element of the ranch, because it would be damaged easily and frequently by cattle.

In tropical areas, we can find varieties of legume trees whose branches regenerate only to be cut off and planted to the ground. But if those fence stakes are dead, they gradually get rotten in the warm, humid climate. We made the survey to find out the suitable species of legume tree for fence construction and chose Java Tree (tarate) as the best.

In case of the fence around the propagation field of Brachiaria brizantha constructed in early June, 141 stakes (61.3 %) already sprouted out of 230 ones on December 3 and the other stakes seem ready to grow in the near future.

All the fence construction with *Lumniza Grandis* (Tamate) was successfully finished by the end of November.

From the viewpoint of land conservation, soil enrichment and forage supply, the legume trees are the most suitable for the implementation of afforestation in grasslands.

Following the example demonstrated by the South Sulawesi Province Animal Husbandry Service at the ranch of Pattalasang, we introduced *Glyricidia maculata* (Gawal) and *Sesbania grandiflora* (Turi) into our project site. According to the survey made on September 30, 65.2 % of Gawal planted in early August successfully sprouted their buds. Turi also grows very fast, but as it is introduced by seed, much care must be taken for weed control and fertilizing.

As a general rule, trees are liable to be suppressed by grasses in their early stage of growth, so that legume trees and pasture grasses must be introduced with much regard to their interaction in order not to be destructive to each other.

ATTACHED PAPER: - 25.

Report : A VISIT TO WEST SUMATRA IN THE CONTEXT OF
A COMPARATIVE STUDY AT THE PADANG MEGGATAS
ANIMAL HUSBANDRY PROJECT.

By : N. Syata Sausi.

Here is a report of the visit I made with the Japanese Expert Mr. F. Harada to the Padang Meggatas Animal Husbandry Project in the context of a comparative study as a realization of the cooperational program between Indonesia and Japan in the Regional Agricultural Development Project on Grassland Improvement.

We left Ujung Pandang for Jakarta on September 6, 1980, and stayed one night in Jakarta. On September 9 we left for Padang with Mr. Suzuki, the Project Advisor and Ir. Hariyadi of the Deptan's Bureau for Planning in Jakarta. We could, however, not land on Padang due to the heavy downpour, and flew back to Jakarta.

We started again from Jakarta the next day, this time without Mr. Suzuki who was not feeling so well. We were welcomed by one of the Kawil Deptan staff of West Sumatra at the Tabing Airport, Padang. We left the Airport straight for Bukit Tinggi where we visited the Animal Disease Investigation Center (Balai Penelitian Penyakit Hewan = BPPH). The Director received us and gave us explanation on the BPPH's activities since its initial establishment.

On September 11, we visited the Padang Meggatas Animal Husbandry Project, received by the Project Chief, who gave us a detailed information of the Project's various activities before taking us to the Project site.

This Project was commenced in 1974 on the basis of a technical assistance by West Germany, which was to last about 4 years in a status of a Regional Technical Executive Unit managed by the West Sumatran Provincial Animal Husbandry Service. In 1977 the West German side handed the Project over to the Indonesian side ; the Indonesian Government, in this case the Directorate General of Animal Husbandry, transformed this Project from a Regional (Provincial) level Technical Executive Unit into a Central one.

This Project aims at the provision of livestock breed and grass strains to be spread around the West Sumatran region.

Some items explained by the chief of the Project on Livestock - Breeding and Livestock Forage Cultivation at Padang Mengatas were as follows :

1. General data :

Location : Padang Mengatas, Kecamatan Jangkat, Kabupaten 50 Kota.

Distance : 12 km from Payakumbuh ;

44 km from Bukit tinggi ;

130 km from Padang.

Climate : - Average temperature 22.3° C.

Highest temperature 29° C around 1 p.m.

Lowest Temperature 17° C around 3 - 5 p.m.

- Average humidity : 70.

Morning till noon: 95.

Noon till evening: 55.

- Mean annual precipitation : 2,000 mm.

Soil : - Extent 251.5 ha.

- Condition according to investigation in 1973 :

K₂O = 15.00 mg / 100 gr. = Medium.

MgO = 0.66 mg / 100 gr. = Medium.

CaO = 0.42 mg / 100 gr. = Meagre.

P₂O₅ = 2.10 mg / 100 gr. = Good.

pH = 4.8 - 5.3 = Acid.

Conclusion : Suitable for a rotational pasture system cattle husbandry.

2. The system for livestock feed provision :

a) Pasture management :

- 24 plots = 213 ha.

- Mechanically managed.

- Trample - resistant grasses are grown :

Brachiaria brizantha.

Brachiaria decumbens.

Star grass.

Panicum maximum.

- Fertilization :

N = 200 kg / ha / year.

P = 90 kg / ha / year.

K = 60 kg / ha / year.

- Rotation : 1 x 32 days.
- Duration on the pasture : 6 days.
- Renovation : 1 x 6 years.
- Grazing capacity : 7 head / ha.

b) Silage management :

- 8 silo vessels : $400 \text{ m}^3 = 30.000 \text{ kg}$.
- maize fields : 4 plots = 20 ha.
- High feed provision for the dry season.

c) Cut - grass management :

- 3 plots = 15.3 ha = 1.596 tons.
- production = 120 tons / ha / year.
- for horse and cow mothers.

3. The system for livestock protection :

a) Newly arriving livestock :

- about 3 weeks' quarantine.
- faeces and blood tests by the Animal Hygiene Laboratory at Bukit - tinggi.
- onco / octo parasitic treatment.
- vaccination.
- plot quarantine.
- rotational pasture.

b) Old raised livestock :

- rotational pasture.
- regular, twice-a-week examination by the Animal Hygiene Team.
- quarantine confinement for sick livestock.
- annual mass anti - worm treatment.
- octo parasitic treatment once in 3 weeks, applying a sprayer.
- mass vaccination.

Mortality rate : about 2 %.

4. Fattening system :

- Slaughter cattle :

1. Local breed (PO) :

Age : 1 1/2 - 4 years.

Fattening duration : 210 to 305 days.

Slaughter cattle are bought in local livestock markets.

Quarantined for about 3 weeks, getting anti-parasitic treatment and preventive injections.

Raised in the pasture for 3 - 4 months on concentrate diet.

Afterwards raised in paddocks for 4 - 6 months, fed on silage and concentrate.

2. Cross breed :

F 1 Simmental of Padang Mengatas origin, age 1.5 years.

F 2 Brahman of Padang Mengatas origin, age 1.5 years.

Method of implementation :

Fattening duration

Age group	Breed	Average initial weight (kg)	Average ultimate weight (kg)	Average daily gain (gram)
2 years	Local	164.17	268.42	592
3 years	Local	248.86	371.04	586
4 years	Local	324.50	434.45	523

Fattening duration 305 days.

Age group	Breed	Average initial weight (kg)	Average ultimate weight (kg)	Average daily gain (gram)
	Local	293	437.6	441
	Local	290	445.4	510
	Local	355.7	475.3	391

Fattening duration

Age group	Breed	Average initial weight.
F 1	Simmental	264
F 1	Brahman	221

Training for animal husbandry officers :

Duration : 2 weeks, boarding provided.

30% theory and 70% practice.

Trainees : 66 officers from West Sumatra and other regions.

Students' orientation course :

Duration : 2 days, in the form of a study tour.

Participants : College and high school students from West Sumatra, North Sumatra, Aceh, Jambi and Riau.

Number of participants : 12,916 people.

Training for livestock farmers :

a) 2 weeks' training ; boarding provided ; 30% theory and 70% - practice.

Trainees : livestock farmers from West Sumatra, West Java and East Java.

Number of trainees : 204 people.

b) 3 days' training ; 100 % theory ; field study.

Number of courses : 34 ; number of trainees : 760.

Incentives for livestock farmers :

- grass seedlings : 2,188,445 slips.

- fertilizer : 2,390 kg.

- guidance, etc.

On September 12, 1960, we visited the West Sumatran Kanwil Deputi to bid farewell before leaving for Jakarta and further to Ujung Pandang on September 14.

This is thus a brief report on the visit Mr. Harada and I made in the context of a comparative study to West Sumatra. Hope it will be of benefit as a standard of comparison against our project implementation.

ATTACHED PAPER - 2 .

REPORT OF THE GRASSLAND PROJECT ACTIVITIES
AT BUNTU BARANA, ENNEKANG, DURING
THE PERIOD OF JUNE-SEPTEMBER 1980

Activities at the grassland site at Bala Datu are as follows :

1. H e d g i n g :
 - About 9 km long at the grassland, of which \pm 4 km was accomplished by September.
 - About 4400 m² (110 m x 40 m) around the nursery , entirely completed.
 - At the 60 m x 60 m cattle yard, completed.
2. Grass growing on the nursery ; the grass species grown were :
 - Brachiaria brizantha - on 64 beds ;
 - Pennisetum purpureum - on 5 beds.

Genral (Glyricidia maculata) was also grown.

10 beds had not been planted on as the dry season had started.

Details of the accomplishment during the period from June to September 1980 are as follows :

J u n e 1980 :

- 2 - 4 - Excavations for hedge post driving at the nursery.
 - Conveyance of hedge posts into the location.
- 5 - 10 - Driving hedge posts at the nursery.
 - Soil tilling for the nursery bed establishment.
- 11 - 14 - Establishment of barbed wire hedges for the nursery.
 - Soil tilling continued.
- 16 - 20 - .. Conveying Brachiaria brizantha grass into the nursery site.
 - Planting Brachiaria brizantha on 32 beds and Pennisetum - purpureum on 1 bed.
- 21 - Soil tilling for 60 beds, measuring 1 x 30 m.
- 22 - Fetching the above grass species for the second time from Saruwali.
- 23 - 25 - Conveyance of the above grass species.
 - Planting Brachiaria brizantha on 32 beds and Pennisetum - purpureum on 4 beds.
 - Excavations for cattle yard hedge posts (extent: 60 x 60m).

- 27 - Continuing excavation for the hedge posts.
- Excavation of plant holes to bury Garam seeds in ; plant in interval 50 x 50 cm.
- Sprinkling the Brachiaria grass.
- 28 - 30 - Ground levelling for the establishment of a lodging place at the ranch location.
- The Japanese Team visited the location to determine soil pH and to weigh grasses.

July 1980 :

- 1 - 3 - Conveyance of hedge posts into the location.
- Excavation for the ranch hedge posts.
- Driving hedge posts for the cattle yard.
- 4 - Second Conveyance of hedge posts into the location.
- Excavation of hedge post holes completed as far as \pm 1 km to the South of the ranch location.
- 5 - 8 - Excavation for hedge posts \pm 1 km to the east of the ranch.
- 9 - 11 - Driving hedge posts at the south of the location.
- 12 - Replacing hedge posts of the nursery, at the same time re-installation of barbed wire hedges.
- 15 - 16 - Completion of hedge post driving, extending about 2 km.
- 18 - 25 - Installation of rectangles for the cattle yard hedge posts.
- Sprinkling the Brachiaria brizantha grass.
- Barbed wire hedging of the cattle yard.
- Excavation of holes for Garam seeds.
- 26 - Arrival of the Japanese Team to measure grass height at the nursery.
- Weeding at the nursery.
- 28 - Continued excavation around the circumference.
- 29 - Conveyance of barbed wire from the roadside of the Limbong Route ; quantity : 100 rolls of barbed wire and 5 rolls of smooth wire.
- 30 - Excavation of holes^{for} hedge posts and simultaneously driving posts.
- 31 - Conveyance of 8 rolls of barbed wire for the cattle yard hedge.

August 1980 :

- 1 - 2 - Excavation of hedge post holes and at the same time driving the posts.
- Barbed wire hedging at the cattle yard.

- Installation of rectangles for the cattle yard posts.
- 4 - Grass growing along Brachiaria grass.
- Excavation of hedge post holes, at the same time driving posts.
- Repairing the lodging house.
- 5 - 8 - Conveyance of plywood into the location.
- Repair of the lodging place continued.
- Excavation for the hedge post holes and at the same time - driving the posts.
- 9 - 20 - Replacing the posts at the roadside.
- Planting Turi (Sesbania grandiflora).
- Mounting the house walls and floors - completed.
- EXCAVATION OF POST HOLES AND DRIVING POSTS.
- 21 - Weeding.
- Hedge post driving.
- 22 - Conveyance of 90 rolls of barbed wire from Karangas to Lim - bong route.
- 23 - Conveying and driving hedge posts.
- Weeding.
- 25 - 31 - Installation of rectangles for the hedge posts.
- Removal of weeds from the Brachiaria brizantha, Pennisetum purpureum and the Japanese model grass.

September 1980 :

- 1 - 11 - Conveyance and installation of wires.
- Measuring / weighing grass on the model grassland.
- Grass cutting on the model grassland, at the same time ap - plying NPK fertilizers at a dosage of 100 - 200 grams per bed.
- 12 - 16 - Weeding at the model grassland.
- Receiving 30 kg nails from Ujung Pandang for the barbed / smooth wire installation.
- 17 - 19 - Conveyance / installation of barbed / smooth wires.
- 20 - 30 - Ditto (continued).
- Conveyance and driving of hedge posts.
- Hole excavation for hedge posts.
- Installation of rectangles for hedge posts.

October 1980 :

- 1 - 2 - Unloading and checking cases with equipment donated by the - Japanese Government.

- 3 - 4 - Conveying materials for the isolation paddock.
- Assisting in house construction at the Afforestation site.
- Conveyance of hedge posts to the site.
- Repairing hedges destroyed by buffaloes.
- Assisting in house roofing at the Afforestation site.
- 6 - Conveyance of hedge posts and excavation of hedge post holes / hedge post driving.
- 7 - Assisting in uplifting the bulldozer which drowed during the dam construction.
- 8 - Conveyance of hedgeposts and excavation of hedge post holes.
- Installation of hedge posts and rectangles.
- Barbed wire hedging.
- 9 - 13 - Conveyance of hedge posts and excavation of hedge post holes.
- Improving Mr. Harada's model nursery.
- Repairing hedges destroyed by buffaloes.
- 14 - Conveyance of barbed wire to the site.
- Conveyance of hedge posts and excavation of post holes.
- Hedge post driving.
- 15 - Installation of barbed and smooth wires.
- Conveyance of barbed wire to the site, and hedge post hole excavation.
- 16 - 18 - Conveyance of barbed wire to the site.
- Hedge post driving.
- Dismounting and fixing bulldozer apparatuses.
- Conveyance of hedge posts and repairing hedges destroyed by buffaloes.
- 22 - 29 - Conveyance of hedge posts.
- Installation of hedge posts and hedge rectangles.
- Conveyance of barbed wire to the site.
- Installation of barbed and smooth wires and repairing hedges destroyed by buffaloes.
- 30 - 31 - Hole excavation and hedge post driving.
- Conveyance of hedge posts and barbed wire.
- Installation of barbed and smooth wires.

November 1980 :

- 1 - 5 - Conveyance of hedge posts.
- Post hole excavation / hedge post driving.
- Conveyance of barbed wire.
- Installation of barbed wire.

- 6 - 11 - Conveyance of hedge posts.
- Hedge post driving and installation of barbed & smooth wires.
- 12 - 14 - Assisting in the construction of isolation paddock.
- Conveyance of hedge posts.
- Installation of hedge posts and rectangles.
- Conveyance of barbed wire and installation of barbed / smooth wires.
- 15 - 18 - Vaccination of cattle at the site.
- Excavation of hedge post holes.
- Conveyance of hedge posts, installation of hedge posts and rectangles.
- Conveyance of barbed wire ; installation of barbed and smooth wires.
- Replacement of dead hedge posts.
- 19 - Measuring and weighing grass.
- Conveyance of hedge posts.
- Hedge post hole excavation / hedge post driving.
- Installation of barbed wire.
- 20 - 24 - Unloading and checking cases with equipment from Japan.
- Measuring and weighing grass.
- Conveyance of hedge posts.
- Installation of barbed and smooth wires.
- Hedge post driving.
- Replacement of dead hedge posts.
- Conveyance of barbed and smooth wires.
- 25 - 27 - Conveyance of hedge posts.
- Hedge post driving and installation of rectangles.
- Installation of barbed and smooth wires.
- Repairing Mr. Harada's trial grassland hedge.
- Excavation of hedge post holes.
- 28 - 29 - Repairing Mr. Harada's trial grassland hedge.
- Replacement of dead hedge posts.
- Soil tilling at the site.

14. Employees engaged in this Grassland Project, namely :

- | | |
|-------------------|----------------|
| 1. Mr. Randi. | 8. Kawan. |
| 2. Mr. Hamed. | 9. Syamsuddin. |
| 3. Muhammad. | 10. Boko. |
| 4. Ahmad. | 11. Hedi. |
| 5. Baso. | 12. Mansidi. |
| 6. Kamaruddin. | 13. Gudin. |
| 7. Kallih / Doko. | 14. Rustandi. |

Banta, Bantua, November 1980.

ATTACHED PAPER - 27.

Agricultural Officers'
Training and Extension Center
Batangkaluku.

December 12, 1980.

No. DI. 240/1211.12/80 lt.

To : Mr. Hono Syamsuddin, ATA-140 Project Co-manager.
Subject : Request for a lecture.

It is kindly informed to you that we are conducting an Animal Husbandry Training (on slaughter livestock and livestock forages) participated by 30 trainees sent by Animal Husbandry Services of 6 provinces in Eastern - Indonesia.

The training has been going on since November 23, to last till December 20, taking place at the Agricultural Officers' Training Center in Batangkaluku.

In order to improve the trainees' educational experience, we would like to kindly request Mr. Harada, the grassland expert, to give a lecture to the trainees at the Training Center in Batangkaluku on Monday, December 15, 1980, from 10 to 11.30 a.m.

In case the above - mentioned time is inconvenient for Mr. Harada, however we could rearrange the schedule in accordance with his available time.

Thank you for your kind cooperation.

The Training Center
Director,

Drs. H. Abdurrazak.

CC.

1. Mr. H. OPA, ATA-140 Project Coordinator.
 2. Mr. F. HARADA, ATA-140 Project Grassland Expert.
 3. F i l o.
-

IX. Supporting Activities.

IX - 1. Mr. Horiya Miyamoto, Resident Representative of JICA Jakarta Office, visited to observe the real condition of the Pilot Test site in Enrekang from July 31, to August 4, 1980.

Before going to see the site, he signed the contract document for the Model Infrastructural works with P.T COLLI in Ujung Pandang.

As result of his four day visit to Ujung Pandang, the construction work and all the other activities were very much accelerated.

His schedule is shown on Attached Paper 28.

IX - 2. JICA Follow-up Team on Infrastructural Works, led by Mr. T. HATAI, visited the AEA - 140 Project from September 30 to October 11, 1980.

Observing the condition of the model infrastructural works at each pilot test site in Jeneponto and Enrekang, they instructed technical and administrative matters for contract to the supervisor and the other officials concerned.

The visit by this instructory mission is very timely and fruitful for our project activity, especially for construction. Members of the Team and their Schedule are enlisted such as shown on Attached Paper - 29.

IX - 3. Short - term Expert on Mechanics.

Mr. MATTHEE visited Ujung Pandang as short - term expert on mechanics for two months' duration from September 19 to November 18, 1980.

His main job was to train counterpart staffs at each pilot test site in Jeneponto and Enrekang on operational techniques and maintenance method of the donated heavy machinery and equipment.

One more important matter is to publish the operational manual thereon.

The training was well performed to many counterparts in charge of machinery, in accordance with the attached schedule.

The Manual for Operation and Maintenance is already composed in English and it is now being translated into the Indonesian Language. It will be published by the RUDP / AEA-140 Project Team in March 1981.

Itinerary of Mr. MORIYA MIYAMOTO
Resident Representative JICA .

31/7 Arr. at Ujung Pandang 14.40 (GA 702) (Together with Mr. R. KATO,
Chief advisor for ATR - 186
Reforestation Project in
South - Sumatra).

Leave for Soppeng escorted by the Sericulture Team. ! Stay in Soppeng.

1/8 Observation of the ground water digging site. ! Provided with
Leave for Enrekang 10.30 ! 2 - 3 motor -
Observation for the contract on the model infras- ! cycles to see
tructure, the explanation will be given by Mr. TAKAKU ! the construct-
ion site in
afforestation.

Arriving at Project site 14.00 (15.00) !

Observe until 18.00 !

Arriving at 19.30 !

! Stay in Toraja
! Cottage Hotel
! in Rantepao.
!

2/8 DAS SADDANG office 10.00

Leave for Ujung Pandang.

3/8 Signing of the contract (Mr. R. KATO, leaves for Jakarta).

4/8 Leave for Jakarta 0.55 (GA 781).

ATTACHED PAPER - 29.

JAPAN INTERNATIONAL COOPERATION AGENCY

No. 625 / SH / 9 / 80.

Jakarta, September 25, 1980.

Mr. Indra Kartasemita
Head, Bureau for
International
Technical Cooperation
Secretariat Cabinet.

Dear Sir,

JICA Follow - up Team on Infra - structural
Construction of JICA Agricultural Projects.

We have the pleasure to inform you that JICA Headquarters has decided to send the above mentioned team, whose names and schedule are shown in the attached list, to Indonesia from September 30 to October 11, 1980.

The purpose of their visit to Indonesia is to study and to examine the present condition of model infra-structural construction works at Middle Level Agricultural Technician Training Project (ATA-237) and South Sulawesi Agricultural Planning Project (ATA-140), a part of the cost of which is financed by JICA.

We would much appreciate if you could communicate the above matter to the authorities concerned and take steps to facilitate the team's activities in Indonesia.

Thank you very much for your kind cooperation.

Sincerely yours ,

HORIYA HIYAKOTO
Resident Representative
Japan International
Cooperation Agency.-

- CC. 1) Dr. A.T. Birowo
Head, Bureau of Planning
Department of Agriculture.
- 2) Ir. Salmon Padmonegara
Head, Agency for Agricultural
Education, Training and Extension.
- 3) Mr. H o n o
Co - Manager of ATA - 140 Project.
- 4) Mr. Abdul Razak
Director of Batang Kaluku ELPP.
- 5) Mr. I. Suzuki
Advisor to ATA - 140, Bureau of
Planning, Dept. Agriculture.
- 6) Mr. S. Kikkawa
Team Leader of JICA Experts
to ATA - 140.
- 7) Dr. M. Kanbe
Team Leader of JICA Experts
to ATA - 237.
- 8) Mr. K. Kubo
JICA Expert to ELPP Batang Kaluku.

MEMBER LIST

1. Mr. TAKURO IMAI : Director,
(Leader) Ground Improvement Engineering
Office,
Hokuriku Agricultural
Administration Bureau,
Ministry of Agriculture,
Forestry and Fisheries (MAFF).
2. Mr. MASASHI SUGAWARA : Finance and Accounting Dept.
(Budget & Contract) Japan International Cooperation
Agency (J I C A).
3. Mr. MASAKATSU ISHII : Agricultural Development
Cooperation Department,
J I C A.

MENTATIVE SCHEDULE

- SEPTEMBER 30 : Arrival in Jakarta (TG 413).
- OCTOBER 1 : Meeting with Embassy & JICA.
- 2 : Move to Ujung Pandang (GA 784).
- 3 : Meeting with officials concerned
of ATA - 237.
- 4 : Field Survey at Batangkaluku Training
Centre of BPLLP.
- 6 : Meeting with officials concerned of
ATA - 140.
- 7-9 : Field survey at Enrekang & Jeneponto.
Return to Jakarta (GA 703).
- 10 : Report to Embassy and JICA.
- 11 : Return to Japan (CX 500).

ITINERARY FOR THE SHORT - TERM EXPERT Mr. MATSUMURA

(P l a n)

(September 19 to November 16)

September	19 (Fri.)	- Arrival at Jakarta.
	20 (Sat.)	- Visit to JICA Jakarta Office, Embassy of Japan.
	21 (Sun.)	- Jakarta --> Ujung Pandang.
	22 (Mon.)	- Meeting with the ATN - 140 Team.
	23 (Tue.)	!
	24 (Wed.)	! Visit to Jeneponto, Citrus Pilot Test Site ;
	25 (Thu.)	! Receiving cheque and Trial land cruising for the
	26 (Fri.)	! equipment provided by JICA.
	27 (Sat.)	↓
	28 (Sun.)	
	29 (Mon.)	! Visit to Enrekang, Afforestation & Grassland - Pilot Test Site.
	30 (Tue.)	!
October	1 (Wed.)	!
	2 (Thu.)	!
	3 (Fri.)	!
	4 (Sat.)	! Receiving cheque and Trial land cruising
	5 (Sun.)	! for the equipment provided by JICA.
	6 (Mon.)	!
	7 (Tue.)	!
	8 (Wed.)	!
	9 (Thu.)	↓
	10 (Fri.)	
	11 (Sat.)	
	12 (Sun.)	
	13 (Mon.)	!
	14 (Tue.)	!
	15 (Wed.)	! Orientation to the Staff of the Development Cen -
	16 (Thu.)	! ter Part I.
	17 (Fri.)	!
	18 (Sat.)	!

October	19 (Sun.)	
	20 (Mon.)	
	21 (Tue.)	
	22 (Wed.)	Orientation to the Staff of the Development -
	23 (Thu.)	Center Part II.
	24 (Fri.)	
	25 (Sat.)	
	26 (Sun.)	
	27 (Mon.)	
	28 (Tue.)	
	29 (Wed.)	Making a Management Plan for the Development
	30 (Thu.)	Center.
	31 (Fri.)	
November	1 (Sat.)	
	2 (Sun.)	
	3 (Mon.)	
	4 (Tue.)	
	5 (Wed.)	Making a Manual for the Equipment.
	6 (Thu.)	
	7 (Fri.)	
	8 (Sat.)	
	9 (Sun.)	
	10 (Mon.)	After - care - Jeneponto.
	11 (Tue.)	
	12 (Wed.)	
	13 (Thu.)	Report making.
	14 (Fri.)	
	15 (Sat.)	Leave Ujung Pandang.
	16 (Sun.)	
	17 (Mon.)	Reporting to the Ministry of Agriculture
	18 (Tue.)	Leave for Japan.

IX-4 Short - Term Expert on Entomology.

THE SURVEY
OF THE CITRUS PEST FAUNA IN SOUTH SULAWESI

By : Y. SAKAGAMI.

I. INTRODUCTION

Citrus trees are grown in all continents and archipelagoes of the world in areas where their water and soil requirements can be met, and where the temperature does not fall below freezing point. This type of climate, the perennial nature of the tree, as well as the vegetation associated with it, favor the occurrence of a large number of species of arthropods that form a settled and balanced ecosystem with the vegetation in Citrus groves. As a matter of course, South Sulawesi and Japan are not only at the geographic extremes, their Citrus crops are grown under entirely different climatic conditions. These differences contribute to the different spectra of insect pests attacking each country's Citrus trees.

On the other hand, information of the Citrus pests in South Sulawesi are extremely few. When I visited some sections of the Agricultural Department of Indonesia in Jakarta and the Hasanuddin University in Ujung Pandang, I could not get any useful information about South Sulawesi Citrus pests. Therefore the field survey, indeed, was the most important need of this region, and it would be mainly scheduled to confirm the fauna of the Citrus pests.

This object was attained by some survey trips from the northern part to the southern part and was proved probably about the distribution of Citrus pests in South Sulawesi.

However, the problem of pest control was put off, taking into consideration the present status of Citrus pests which are far from ecological researches and the absence of general surveys in each district. That is why pest control is the synthetic management included in the cultivation, depending on the ecological studies about each species of Citrus pests of which the geographical distribution, life history and so on were already known, and about an ecosystem consisting of the -

interrelationship between pests, natural enemy and the plant itself. Accordingly, this problem remains for further research.

II. FAUNA OF THE CITRUS PESTS IN SOUTH SULAWESI

Many kinds of the pests were observed and collected. But it was difficult to identify each species of the collected pests exactly in such short duration even if there were enough information of taxonomy, thus some of the specimens which were collected everywhere in South Sulawesi were divided in two parts, and duplicates were given to the charge of Dr. Fachruddin of the Hasanuddin University, Ujung Pandang, while the others were carried back to Japan and would be identified exactly further.

In this situation, names of the pests in this report were decided as anonymous.

The major pests of South Sulawesi Citrus, also those established in wide distribution in this region, were Phyllocnistis citrella, Parlatoria zizyphus, two species of Pseudococcus, Pinaspis and / or Lepidosaphes sp., two species of Pulvinaria, Aleurocanthus sp. (probably not A. spiniferus), and three species of Aphids. But in Selayar, which is also the oldest Citrus growing area in South Sulawesi, some kinds of major pests could not be found contrary to our experience that the older growing area had many pests generally.

The distribution of the pests in South Sulawesi is shown in the attached Table (See next page).

Further on, five more species of weevils were discovered in the regions from Enrekang to Selayar; especially one of them entirely harmed new shoots in young orchards at Bonto Tiro, Bulukumba. But the other weevils may not be so injurious.

Other minor pests, leaf hoppers and grass hoppers, were shown in wide distribution and living upon young shoots only. Injuries^{caused} by the former was indistinct, the latter was found in every orchard, especially much in such orchards as mixed cropping with Citrus and maize and they usually ate both plants.

The pests which were expected before the field survey, namely Dacus pedestris, Diaphorina citri, Prays endocarpa etc. were not discovered. Only a few fruit of Pomelo that became monstrous, probably

due to infestation of Prays endocaria, were found somewhere around Gamba, near Soppeng, Palopo etc., but not any stage of the pest was discovered. Some nymphs of Psylla were found in many places, but they have not yet been indentified as either Diaphorina citri or not.

According to my observation during the short term stay, South Sulawesi could be classified roughly into three areas, those were :

- (1) Selayar and around Bonto Tiro in Bulukumba;
- (2) Surrounding regions of Jenepono including Bantaeng;
- (3) Northern part of South Sulawesi, centered at Soppeng.

Characters observed of these areas were as follows :

(1) Fauna of the pests was less than in (2), and Selayar has less pests due to the absence of some Aphids. Species of scale insects were a little different from the other areas. Many trees destroyed by diseases were found, but dead and defoliated trees were few.

(2) Many kinds of scale insects and also their parasites and predators were observed. Especially in this area aphid distribution was few at the low altitude zone below \pm 100 m. above sea level.

Trees which were diseased, defoliated and dead due to water deficiency were found more than in the other areas.

(3) Diseases were rarely found. Aphids and some kinds of scale insects were much found, but some kinds were absent. Dead and defoliated trees were none.

DISTRIBUTION OF INSECT PESTS IN SOUTH SULAWESI

Kabupaten/Kunicipality	Luwu	Tator	Soppeng	Wajo	Bone	Bulu-	Sela-	Ban-	Jene-	Gowa	UP	Maros	Pare-2	Sidrap	Enre-
	reng	Makale	Watan-	Pitum-	Camru	Bonto	Bonto	Ban-	Batang	Borong	Gamba	Siden-	Alla		
Keamatan	reng	Soppeng	panua	Tiro	imatene	taeng	Kelara	loe	Tompo-	Bangka-	Tinggi-	Binamu			
1. Parlatoria zizyphus	++	+	++	++	+	++	+	++	++	++	++	++	++	++	+
2. Pulvinaria sps.	+	++	++	+	+	++	++	++	++	+	+	+	+	+	+
3. Pinaspis and/or Lepidosaphes sps.	+	+	+	+	+	++	+	++	++	++	+++	+	+	+	+
4. Pseudococcus sps.	+	+	+	+	+	++	+	++	++	++	++	+	+	+	+
5. Iserya sps.			±		±		±		±		±		±		
6. Aonidiella sp.	+														
7. Aleurocanthus sp.	++	+	++	+	+	+	+	++	++	++	++	++	++	+	++
8. Aphididae spp.	+	+	++			++		±	++(±)	?	±	?	±		
9. Phyllooonistis citrella	+	+	++	+	++	++	+	++	++	++	++	+	+	++	+
10. Prays endocarpa	+				+							+			
11. Weevils (5 sps.)			+	+		++	++	+	+	+				++	+
12. Leaf hopper	+	±	+	+	+	+		+	+	±		?	+	+	+
13. Grasshopper			+			+	+	+	++	+				+	+
14. Leaf rollers			?			+	?		+	?		?			
15. Rust mite		±							±				±		±

	Pomelo	Jeruk manis	Ponkan	Jeruk manis	Pomelo	Ponkan	Ponkan	Tankan	Tankan	Jeruk manis	Jeruk manis	Pomelo	Jeruk manis	Jeruk manis	Jeruk manis
C															
i															
k															
t															
i															
r															
n															
u															
d															
s															
s															

++ ; More ; + : much ; ± : less ; +? : Probably.

III. THE PROBLEMS OF DEAD AND DEFOLIATED TREES

Many trees which were dead and defoliated were found everywhere in Jenepono and nearby; the occurrence seemed to be due to water scarcity. But, according to my and Mr. Miura's observation, the withering and defoliation were not only due to water deficiency but rather caused by complex factors such as the following :

1. As fruit overproduction occurs, more water is required by the plant itself, and after fruit harvesting, the tree lacks water because its vigor has been consumed during the hot dry season.
2. Tree vigor is weakened by infestation of the pest and disease.
3. Pest infestation weakens the vigor due to the decline of photosynthesis and to the consumed nutritive substances which must be accumulated in the plant body.

IV. PEST MANAGEMENT

Major insect pests are probably harmful for Citriculture in South Sulawesi. But there is not so urgent necessity for their control as far as the farmers' economic benefit is concerned except for the negative effect on the tree vigor. On the other hand, I have already heard that the consumers' requirement was not so intense concerning the quality of fruit outlooks in this country. However, for the support of constant fruit production and tree vigor, pest management is the most important problem.

Nevertheless, I think it is not easy to conduct pest control, for the following reasons :

1. Absence of general survey of the pests as to the biology and the geographic distribution of each pest;
2. Absence of ecological studies of the pest population, particularly research studies on the relationships between pest and its natural enemies;
3. Absence of examinations of the effectiveness of chemicals for each pest, including the problems of :
 - (1) phytotoxicity;
 - (2) invalidation of chemicals by light, rain, water for use, heat, etc.;
 - (3) water pollution and residue in the soil;
 - (4) toxicity for human beings and animals;

4. Present condition of planting;

it is very difficult to apply chemicals to such trees as plantings around houses, because chemicals will be extremely dangerous to man and other beings;

5. Lack of information of pests and diseases, and also because of the reasons mentioned under no. 1 to 3. For example, on the present situation of Citrus diseases in South Sulawesi, farmers asked about the method of treatment for already damaged trees.

But it is common knowledge that there are few chemicals which are effective to treat plants already infested, and it is the most important matter to prevent diseases.

At the present status of world disease control there is a proverbial saying : "Prevention is better than cure".

V. RECOMMENDATION

Tree crops such as Citrus, which become quasi-permanent plantings, usually harbor a wide range of insect and mite pests within the orchard environment, as we have shown in this region, and pose diverse and unique requirements for the application of pesticides. The actual application requirements are influenced by the nature of the tree target, the specific pest problem, and the characteristics of the pesticide and its formulation.

The first problem in South Sulawesi, as has been previously mentioned, is the establishment of general pest surveys, which means the : research into the exact distribution and identification of the Citrus pests, and studies on the life history and occurrence of each insect pest in each different region throughout the year.

Next problem is the examinations of effective pesticide against each Citrus insect pest, which include the relationship between plant and chemicals, and the decision for effective stages to be applied on the pest.

After these problems are entirely solved, the Citrus insect pest control plan in South Sulawesi will be begun to make up smoothly and to take the first step towards it.

If chemicals are used carelessly without establishment of these suggestions, a new pest which was unexpected before the application

will possibly occur, such as experiences in Citriculture in Japan and other countries.

VI. AGRICULTURAL CHEMICALS PROBABLY EFFECTIVE FOR THE CITRUS INSECT PEST CONTROL IN SOUTH SULAWESI

In accordance to my experience in Japan, I would only suggest some effective chemicals that may be usable for the major Citrus pest control in South Sulawesi.

These chemicals are shown in the following table :

Name of Pest	General name of chemical	Effective stage of the pest
Parlatoria zizyphus and other scale insects	Isoxathion, Fenitrothion	} Nymphae and young adults
	Formothion, Phenthoate	
	Dinethoate, Mecarbun	
	Methidathion, EPN	
	Asephate	
Aleurocanthus sp.	Isoxathion, Methidathion	} Nymphae and puparium
	Thioneton	
Phyllocnistis citrella	Nicotine sulphate	Eggs, Young larvae
	Isoxathion, Formothion	} Larvae
	Dinethoate, ESP	
	Phosnet	

A D D E N D U M

SCHEDULE FOR THE FIELD SURVEY

D e c e m b e r 1980

- 9 (Tue.) Arrival at Jakarta
- 10 (Wed.) Visit to JICA Jakarta Office and other agencies
- 11 (Thu.) Jakarta - UP
- 12 (Fri.) Meeting with the ATA-140 Team members
- 13 (Sat.) Visit to the Food Crop Service in South Sulawesi
- 14 (Sun.)
- 15 (Mon.) Jeneponto - Field Survey in Jeneponto
- 16 (Tue.) d i t t o
- 17 (Wed.) d i t t o
- 18 (Thu.) Back to UP
- 19 (Fri.) Making specimens
- 20 (Sat.) Visit on Dr. Fachruddin at the Hasanuddin Univ., UP.
- 21 (Sun.)
- 22 (Mon.) Visit to the Maros Agricultural Research Station
- 23 (Tue.) To Soppeng
- 24 (Wed.) (Unable to go to Sidrap due to flood)
- 25 (Thu.) Back to UP
- 26 (Fri.) Making specimens
- 27 (Sat.)
- 28 (Sun.)
- 29 (Mon.) Jeneponto - Field survey at the Project Site
- 30 (Tue.) Back to UP
- 31 (Wed.)

J a n u a r y 1981

- 1 (Thu.)
 - 2 (Fri.)
 - 3 (Sat.)
 - 4 (Sun.)
- } New Year's Holiday
- 5 (Mon.) Jeneponto
 - 6 (Tue.) To Selayar
- } Field Survey
- 7 (Wed.) Selayar - Lecture on Citriculture in the evening, together With Mr. Miura.

- 8 (Thu.) Bulukumba (Kecamatan Bonto Tiro) - Field Survey
- 9 (Fri.) Back to UP
- 10 (Sat.) Making specimens
- 11 (Sun.)
- 12 (Mon.) To Enrekang, Project Site
- 13 (Tue.) Tana Toraja
- 14 (Wed.) P a l o p o
- 15 (Thu.) Wajo, Soppeng
- 16 (Fri.) Sidrap - Back to UP
- 17 (Sat.) Making specimens
- 18 (Sun.)
- 19 (Mon.)
- 20 (Tue.) Jeneponto (Kecamatan Bangkala)
- 21 (Wed.) Jeneponto - Project site
- 22 (Thu.) Jeneponto (Kecamatan Kelara)
- 23 (Fri.) Making specimens
- 24 (Sat.) " "
- 25 (Sun.)
- 26 (Mon.) To Gowa - Field Survey
- 27 (Tue.) Visit on Dr. Fachruddin, Hasanuddin Univ. UP
- 28 (Wed.)
- 29 (Thu.)
- 30 (Fri.) Making report
- 31 (Sat.)

} Field Survey

} Field Survey

February 1981

- 1 (Sun.) Making report
- 2 (Mon.) d i t t o
- 3 (Tue.) Jeneponto - Project Site
- 4 (Wed.) d i t t o
- 5 (Thu.) Leave UP for Jakarta
- 6 (Fri.) Reporting to JICA Jakarta Office
- 7 (Sat.) Visit to Bogor
- 8 (Sun.) Leave Jakarta for Tokyo.

To : Dr. Fachruddin,
Hasanuddin University, Ujung Pandang.

LIST OF SPECIMENS OF CITRUS PESTS IN SOUTH SULAWESI

No. of Glass Tube	Collected site of Specimen	Date Collected	Remarks :
1.	Desa Onto, Selayar	Jan. 8, '81.	Pulvinaria sp.
2.	Desa Tino, Jeneponto	Jan. 6, '81.	Pinaspis sp. (?)
3.	Bonto Tiro, B'kamba	Jan. 7, '81.	Parlatoria sp.
4.	Bulu, Kelara, J'ponto	Dec. 22, '80.	Aleurocanthus sp.
5.	Ujung Pandang.	Jan. 2, '81.	Toxoptera citricidua (?)
6.	Watansoppeng	Dec. 24, '80.	"
7.	Watansoppeng	Dec. 22, '80.	Pulvinaria sp.
8.	Ujung Pandang	Jan. 2, '81.	Parlatoria zizyphus.
9.	Ujung Pandang	Jan. 2, '81.	Pinaspis sp.
10.	Ujung Pandang.	Jan. 10, '81.	Pseudococcus sp.
11.	Watansoppeng	Dec. 24, '80.	Leaf hopper.
12.	Desa Bolono, Palopo	Jan. 14, '81.	Aonidiella sp.
13.	Watansoppeng	Jan. 16, '81.	Myzus persicae (?).
14.	Watansoppeng	Jan. 16, '81.	Pseudococcus sp.
15.	Watansoppeng	Jan. 16, '81.	Pulvinaria sp.

* No. 2, 4, 8, 9, 10, 11 and 15 are established in wide distribution.

* Aphids were few distributed at low altitude areas such as about below 100 m sea level.

* Diaphorina citri was not to be found anywhere.

* The fruit of Pomelo which may be bored by Prays endocarpa were - found somewhere around Canba, near Soppeng, Palopo etc., but not any stages of the pest, P. endocarpa, was discovered.

Y. Sakagami,
The RABP/ATA-140 South Sulawesi
Project .-

