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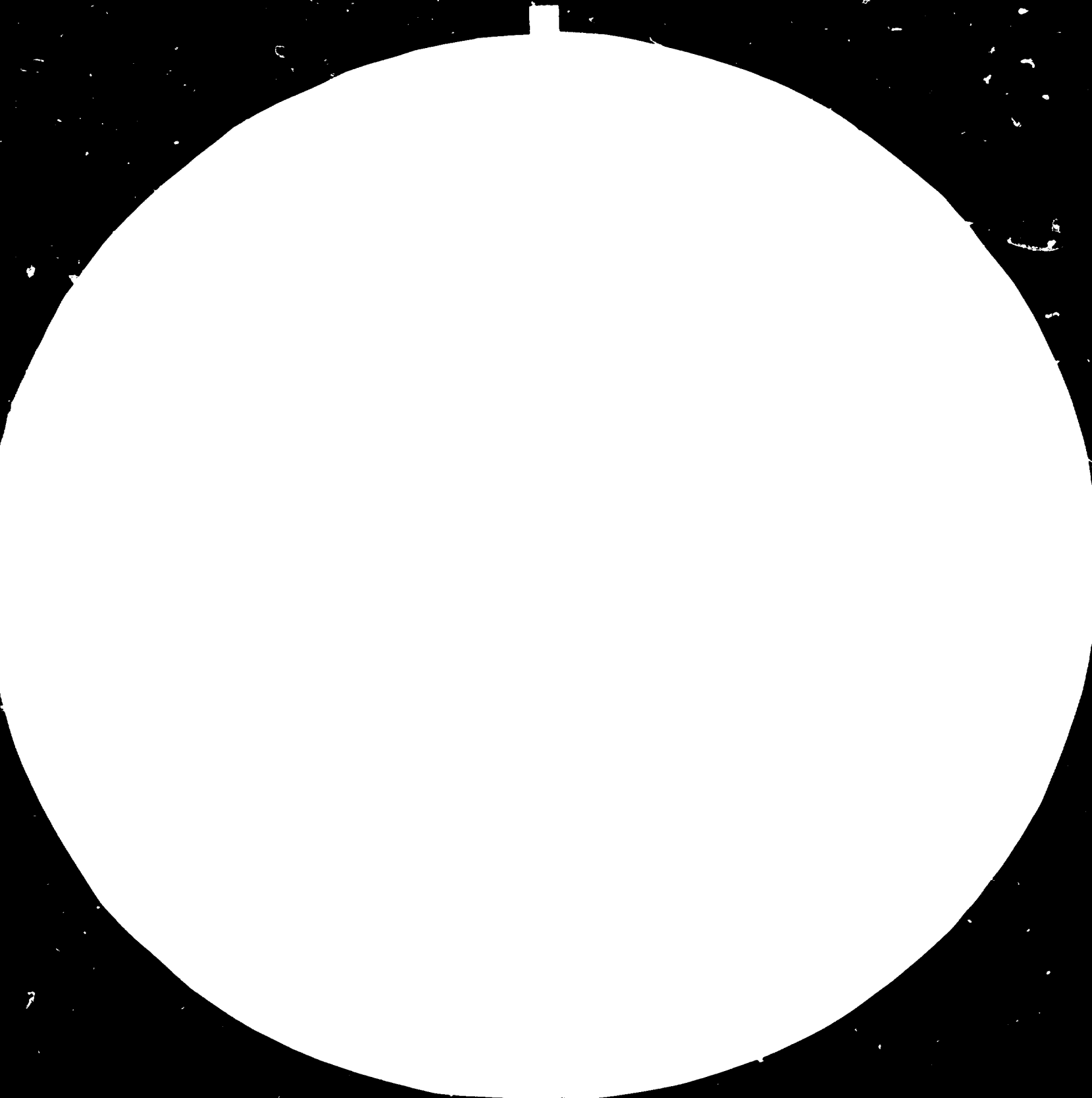
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Indonesia.

ASSISTANCE TO THE DEVELOPMENT
OF SMALL SCALE INDUSTRIES

DP/INS/78/078

INDONESIA

FINAL REPORT

DEC 1983 - OCT 1984

Prepared for the Government of Indonesia
by the United Nations Industrial Development
Organization, Executing Agency for the
United Nations Development Programme

BASED ON THE WORK OF L.P. BISHOP

INDUSTRIAL ENGINEER

3120

This report has not been cleared by the United Nations
Industrial Development Organization which does not therefore
necessary share the views presented.

from Mr. Zimmermann
D-1455

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1.0 OBJECTIVES AND LOGIC

In 1983 it was decided by the Government of Indonesia and the United Nations Development Programme to extend the technical assistance available to small scale industries already in operation, throughout the mainland, to cover Ujung Pandang and South Sulawesi.

The Industrial Engineer recruited took up his post December 1983 with the purpose of assisting the government in the planning and implementation of various programmes for the development of small industries, particularly the establishment of Mini Industrial Estates, small scale industry development centres and the formulation of policies and incentives for the promotion of small scale industries.

In its attempt to promote the development of locally owned and managed industries, the Government took it upon itself to help local entrepreneurs to overcome certain constraints which had been identified as having a retarding effect on the development of a sound cadre of citizen entrepreneurs.

These constraints included the entrepreneurs very limited access to financial institutions due to their inability to offer acceptable levels of security; non-availability of factory premises, limited (nonexistent) information on Market potential and so forth.

2.0 ACTIVITIES CARRIED OUT AND OUTPUTS PRODUCED

2.1 Mini Industrial Estate Ujung Pandang

In view of the emphasis placed in the job Description concerning Mini Industrial Estates, the highest priority was given to these by the Industrial Engineer on arrival at post.

Work had lagged behind and it was necessary to put much pressure on the developer to complete the building of lecture, showroom and workshops.

Once these were completed and Kanwil personnel allowed to take possession, the installation of machinery both woodworking and engineering section advanced rapidly.

Unfortunately, the agent from whom the machinery had been purchased and who was responsible to wire in and run to the Kanwils inspection. Failed to satisfy the basic load requirements of electrical cables from machine to distribution board and after many weeks of discussions refused to re-wire with cables of sufficient capacity. The Kanwil had no alternative but to appoint another company to re-wire all machinery in workshops.

This work was completed in July 1984 and with a promise that power was to be connected by electricity authority, plans were drawn up by the Industrial Engineer in cooperation with BIPIK for a Technical Training scheme to commence in August. This could not be put into operation through delay in power connections and although the Kanwil had contracted and paid for this to be carried out no connections have been made to date.

Eventually from enquiries made by the Industrial Engineer through the Electrical Authorities it was established that the temporary cables installed in the proposed Small Scale Industrial Area were of insufficient loading to supply any further installations and the new electrification programme for the industrial site would not be completed until 1984.

All that could be agreed was that the Mini Industrial Estate would be given priority for power. However, the Industrial Engineer frustrated by the delays in power connection arranged with BIPIK assistance for a generator to be hired so that a start could be made in technical training on the workshop floor.

This commenced Sept 10th at which time 19 student attended from many parts of the country these students included BIPIK personnel. The course included Workshop drawings and practical work on Shaping machine, Centre lathe and general machine operation.

The present situation is that the estate is complete with machinery installed, wired internally and administration staff are at post.

Although 68 entrepreneurs have been located in Ujung Pandang and district needing workshop space and with skills covering a tremendous range of products including engineering, woodworking, foundry work, textiles, paperproducts, wirefencing, fish meal and food, electrical work etc. (See Appendix I).

Little can be done to encourage any to build at the Mini Estate until the power is extended to the area. To date only three have taken advantage and built warehouse with no need for power supply.

2.2 Mini Industrial Estate Pare-Pare

This estate is virtually in the same position as at the Ujung Pandang Estate only that the power connections may be delayed until Mid 1985.

The 86 + entrepreneurs located in Pare-Pare (See Appendix II) cover a similar range of manufacturing as Ujung Pandang and many are desperate to find alternative workshop space. The local authorities have a drive to exclude workshops from residential areas.

There are plans for BIPIK to arrange that staff from Pare-Pare Mini Estate to receive early training at the Ujung Pandang (MIE) where electrical connections are more advanced.

2.3 Common Workshop Facilities (C.S.F.)

The facilities at Massepe with its workshop, offices and lecture room had stagnated for sometime.

This was changed when in March 1984 the Pilot Scheme for Blacksmiths workshop was installed and interested entrepreneurs from districts as far away as Rantepao were invited to visit and compare the modern idea of Blacksmiths shop with its power operated forge and bench grinding machine against the traditional method of working on the floor with one employee fully occupied in operating hand bellows to forge.

The facilities were further expanded in May 1984 when the first stage foundry was operational this consisted of furnace and equipment to produce Non-Ferrous castings with the Crucible Furnace being built in Ujung Pandang.

It was the first of its kind in the district and is used as a training base for those entrepreneurs interested in producing pulleys, boat propellers, spoons and many additional items in aluminium and bronze.

When the first stage foundry become operational the workshop machinery including lathe and shaping machine at the C.S.F. came into use to machine and finish the castings produced ready for sale.

The second stage foundry that includes a Cupola Type furnace to produce Iron Castings was also built in Ujung Pandang by one of the more skilled entrepreneurs with the assistance of UNIDO Team.

It is presently being tested, after which, one Cupola Furnace is to be erected at the Massepe (CSF) and a second in entrepreneurs workshops Ujung Pandang.

These Cupola are the first in Sulawesi and will form the nucleus of the foundry industry that can only expand very rapidly.

The Common Services Facilities in Massepe now consist of administration office, lecture room, store, generator house, machinshop, blacksmiths workshop and foundry, all in separate buildings.

The permanent staff at the (CSF) have training schemes for the various projects and can now train entrepreneurs from South Sulawesi in modern blacksmithing methods, general engineering and foundry work.

2.4 Foundry

Early on arrival at post, the Industrial Engineer in discussions with the Director Perindustrian on a programme of action, decided in addition to the duties laid out in the Job Description to promote one or more industries that Sulawesi was desperate for, the obvious industry being Foundry Work.

A plan was made for a two stage approach the first stage to encourage several small entrepreneurs to add to their workshops a Crucible Type Furnace and to manufacture Non Ferrous castings that included the much in demand fishing boat propellers, pullies for driving machinery and household utensils etc. Although the Crucible Furnaces on the main islands are fueled with kerosene those put into operation in Sulawesi utilized the charcoal readily available especially in isolated village workshops.

This first stage scheme came on stream in May - June 1984 and has been expanding since, with one or more advanced entrepreneurs now producing very complex castings. During the making and production testing of the first crucible manufactured in Ujung Pandang, a training scheme to include entrepreneurs from far distant places in South Sulawesi was drawn up by BIPIK and UNIDO Team.

Entrepreneurs from Rantepao, Pare-Pare, Sidrap and Ujung Pandang attended the scheme in technical and practical training. The training of twelve entrepreneurs and BIPIK personnel was carried out in one of the more advanced entrepreneur's workshop with the most important operation being that all took part in the actual manufacture of aluminium and bronze castings.

Before the first stage had been completed the second stage, Foundry scheme was put into operation to manufacture in Ujung - Pandang two Tilting Type Cupola Furnaces capable of a production rate of 500 - 1000 Kilos each of Grey Cast Iron Castings per day. This scheme being far more ambitious and one that will have a tremendous impact on engineering in Sulawesi in general.

The first cupola build in Ujung Pandang by a small scale entrepreneur, during its second test run in September 1984, met with great success and the first grey Iron Castings were produced.

This second test firing was made with a mixture of local charcoal, coal and limestone. There will be further test runs made at which time imported firing coke will be used to make comparisons in operating turnover.

The Industrial Engineer has produced a simple Manual on both Crucible and Cupola furnaces covering manufacture and operation. This will be printed in English and Bahasa Indonesian and will be available to all interested parties.

2.5 Assistance to entrepreneurs

Many of the 70 or so entrepreneurs in the Ujung Pandang have been visited by the UNIDO Team (See Appendix I) with advice being given on such matters as improvement of quality, additional lines of manufacture, production techniques and preparation of loan applications through the Development Bank and others.

The UNIDO Team carried out a similar scheme in Pare-Pare where some 86 local entrepreneurs have been located with interests in the possibilities of Mini Industrial Estate. (See Appendix II)

Unfortunately, whilst the team found much enthusiasm among entrepreneurs, especially in Pare-Pare, the authorities are pressing them to move away from residential areas.

Little can be done until the power lines are installed at which time entrepreneurs will be vying for plots and the developer will be encouraged to clear land, level and build workshops.

3.0 ACHIEVEMENT OF IMMEDIATE OBJECTIVES

3.1 Mini Industrial Estate Ujung Pandang

Mini Industrial Estate Ujung Pandang has been completed and although power connections are delayed the machine shop can and has run with temporary generator supply.

This has enabled the permanent BIPIK personnel including workshop instructors to demonstrate the uses of available machinery and equipment.

Providing these are sufficient funds, this generator supply should be fully utilized with training scheme initiated by Industrial Engineer for both BIPIK personnel and local entrepreneurs.

3.2 Mini Industrial Estate Pare-Pare

Mini Industrial Estate Pare-Pare is complete to power connections and the permanent BIPIK personnel are having and will continue to take Technical training at the Estate in Ujung Pandang until such time the Pare-Pare estate comes on stream.

3.3 Common Services Facilities in Massepe

Common Services Facilities in Massepe are fully operational including the following:

- A/ Foundry producing castings.
- B/ Machine shop, machining the items produced by foundry.
- C/ Blacksmith workshop with power machinery for training of local entrepreneurs on increased production, improved quality and new lines.

3.4 Training Schemes

Training Schemes have been carried out in Rantepao - Massepe - Pare-Pare - Ujung Pandang.

Subjects covered include:

- A/ Technical training.
- B/ Methods of obtaining finance.
- C/ Workshop design.
- D/ Modern machinery and how to increase production rate.
- E/ Quality improvement.

4.0 UTILIZATION OF PROJECT RESULTS

4.1 Mini Industrial Estates

Mini Industrial Estates will as mentioned elsewhere in this report make a tremendous impact on the production rate and quality of entrepreneurs range of products. They will if fully utilized, have a marked affect on new lines, subcontract work and production rate.

4.2 Foundry Work

Foundry Work in the base on which all engineering revolves. Already there are some five to six small foundries churning out boat propellers of many sizes the price range from 3000 rupiah - 150,000 Rupiah each.

Once the Cupola furnaces are fully productive and iron castings available in Sulawesi many of these small foundry entrepreneurs will expand into this field.

4.3 Common Services Facilities

Common Services Facilities have been found ideal for small towns and villages where groups of entrepreneurs (SENTRAS) operate. These C.S.F. should be encouraged to train personnel from other areas to staff additional C.S.F. when expansion takes place.

4.4 B I P I K

BIPIK have now the possibilities through the MIES and C.S.F.S. of training extention officers to cover the whole of South Sulawesi and funds should be budgeted for .

4.5 Work Plan

The work plan drawn up for the period December 1983 - October 1984 is shown under Appendix III.

5.0 FINDINGS

5.1 Manufactured Items

There is a tremendous market within Sulawesi for manufacture articles so many of which are at present imported. Traditionally locally manufactured goods have been limited to very simple design.

There has been a change of outlook in the range of items being manufactured in that entrepreneurs realize they must move with the times and not only increase the range of articles being produced, but are becoming aware that most important is the need for quality improvement.

Unfortunately, especially in small scale industries, the small 3 - 10 man businesses have found it almost impossible to gain technical advice in their attempts to improve the quality of their products.

The Industrial Engineer found on his arrival the numerous entrepreneurs awaiting anxiously for him to commence his duties. So many questions being put to him of very simple nature and in a way rather pathetic that these questions had not been answered earlier.

The major problem being that virtually all those involved in small scale industries have no knowledge of English and therefore have no access to even the most elementary technical publications.

The Government programme for Mini Industrial Estate plus Common Services Facilities in the more isolated districts will have a tremendous impact in offering technical advice to the non English speaking entrepreneur.

5.2 Financial Assistance

The great problem encountered when encouraging a small scale entrepreneur to expand his activities, are difficulties experience when approaching either Development or Merchant Banking concerns. They agree that they wish to assist any entrepreneur to expand, unfortunately they put up many arguments as to why they are reluctant to process loans.

It is always the same, if we lend money and the entrepreneur is a failure it is the Bank who takes blame.

They quote the numerous cases where loans have been processed and have been complete loss to the bank, never the successes. It is most difficult to convince them of the ability any entrepreneur to make a worth while contribution to the small scale industry, even when a man is located and has successfully in his 2 - 3 man business for years supported several families. The items manufactured of simple design, poor quality and low production rate, only needing the support of a small loan to purchase simple machinery and so be able to produce greater range of items with faster production rate and vastly improved quality.

The banks must be prepared to take greater risks in assisting a man who only has his hands and ability to succeed.

Even when producing an excellent Feasibility Study, records of past performance and recommendations from International Technical Advisors the Bank will only be prepared to "talk turkey" if entrepreneur has security to cover any amounts he may wish to have advanced by the Bank.

6.0 CONCLUSIONS

6.1 Industrial Engineer

There is a need for UNIDO/UNDP to continue a service in Sulawesi for small scale industries, by not only extending the project but also to expand especially in the field of technical advice and marketing. It is essential that any UNIDO officer recruited for Sulawesi should be given at least basic Bahasa Indonesia, as without being able to communicate, he would be at a distinct disadvantage.

6.2 Mini Industrial Estates

Once the Mini Industrial Estate are operational, they with the common service facilities available, will bring about a marked improvement in the quality of manufactured articles through the use of workshops and modern machinery and methods for those entrepreneurs waiting to take advantage of these facilities.

It is recommended that Mini Estate in Ujung Pandang should expand in 1985 with an additional workshop to house the wood working machinery, rather than at present squashed in with the engineering workshop, as it is not practical owing to wood dust to have them together.

It is also recommended that there should be included with expansion of this estate a ~~separate~~ workshop for electrical section, there being a great demand among local entrepreneurs for this trade.

It is further recommended that thought be given to the inclusion in budget plans for a workshop suitable for Motor mechanic training. These recommendations have been fully discussed with BIPIK who are enthusiastic at the possibilities of expanding the new Mini Industrial Estates to cover a greater range of practical training so desperately needed.

6.3 Sub Contracts

Whilst the UNIDO team in their efforts to find outlets for sub contract work, found much resistance from large concerns who complained of poor quality, erratic delivery etc. all agreed that providing there was a marked improvement in quality they would not hesitate to place fresh orders with small entrepreneurs. They all agreed that the M.I.E. would enable the entrepreneurs to have access to better machinery and equipment which in turn would encourage improved quality and faster turnover.

6.4 Common Services Facilities

The C.S.F. at Massepe is proving its worth, one only needs to visit to see the enthusiasm of local entrepreneurs in the area.

BIPIK are aware of this and should expand this facility to other parts of Sulawesi the first one to consider should be in Rantepao who are desperate for Blacksmiths workshop, Foundry, Motor Mechanics and Electrical training.

APPENDIX I

Entrepreneurs who have submitted requests for consideration in allocation of building sites on Ujung Pandang Mini Industrial Estate.

A	Garments textiles	40
B	Metal work	11
C	Blacksmiths	2
D	Furniture (Wood & Metal)	7
E	Floor and roofing tiles	2
F	Silver ware	1
G	Hat manufacture	3
H	Printing	1
I	Book making	1
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Much advice has been given to the above located entrepreneurs in such matters as

- A Improvement in quality.
- B Additional lines of manufacture.
- C Production techniquen.
- D Preparation of loan applications.
- E Improved machinery uses.

APPENDIX II

Entrepreneurs who have submitted requests for consideration in allocation of building sites on Pare-Pare Mini Industrial Estate.

A Metal work	30
B Wood work	37
C Garments	12
D Printing	7
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	86
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Much advace has been given to the above located entrepreneurs in such matters as

- A Improvement in quality.
- B Additional lines of manufacture.
- C Production techniguen.
- D Preparation of loan applications.
- E Improved machinery uses.

WORK PLAN OF UNIDO EXPERTS IN UJUNG PANDANG (DP/INS/78/078)

DECEMBER 1983 - SEPTEMBER 1984

APPENDIX III

NO.	DESCRIPTION	!	FEB	!	MAR	!	APR	!	MAY	!	JUN	!	JUL	!	AUG	!	SEP	!	REMARKS
1.	COMMON SERVICE FACILITIES - MASSEPE.	!		!		!		!		!		!		!		!		!	COMPLETED.
2.	FOUNDRY PILOT SCHEME - MASSEPE.	!		!		!		!		!		!		!		!		!	COMPLETED.
3.	BLACKSMITH WORKSHOP PILOT SCHEME - MASSEPE.	!		!		!		!		!		!		!		!		!	COMPLETED.
4.	BLACKSMITH WORKSHOP PILOT SCHEME - RANTEPAO.	!		!		!		!		!		!		!		!		!	EXTENSION SERVICES PROVIDED.
5.	MINI INDUSTRIAL ESTATE - UJUNG PANDANG.	!		!		!		!		!		!		!		!		!	ELECTRICITY COMPLETE COMPLETE
6.	MINI INDUSTRIAL ESTATE - PARE - PARE.	!		!		!		!		!		!		!		!		!	
7.	DEVELOPMENT OF SUB CONTRACTING.	!		!		!		!		!		!		!		!		!	LITTLE SUCCESS. CONTINUING.
8.	TECNICAL TRAINING IN COOPERATION WITH BIPIK.	!		!		!		!		!		!		!		!		!	CONTINUING.
9.	MANAGEMENT TRAINING IN COOPERATION WITH BIPIK.	!		!		!		!		!		!		!		!		!	CONTINUING .
10.	ASSISTANCE TO INDIVIDUAL ENTREPRENEURS.	!		!		!		!		!		!		!		!		!	MANY ASSISTED.
11.	IDENTIFICATION NEW ENTREPRENEUR AND PRODUCT OPPORTUNITIES.	!		!		!		!		!		!		!		!		!	MANY LOCATED.
12.	INDUSTRIAL PROFILES.	!		!		!		!		!		!		!		!		!	CONTINUING.

