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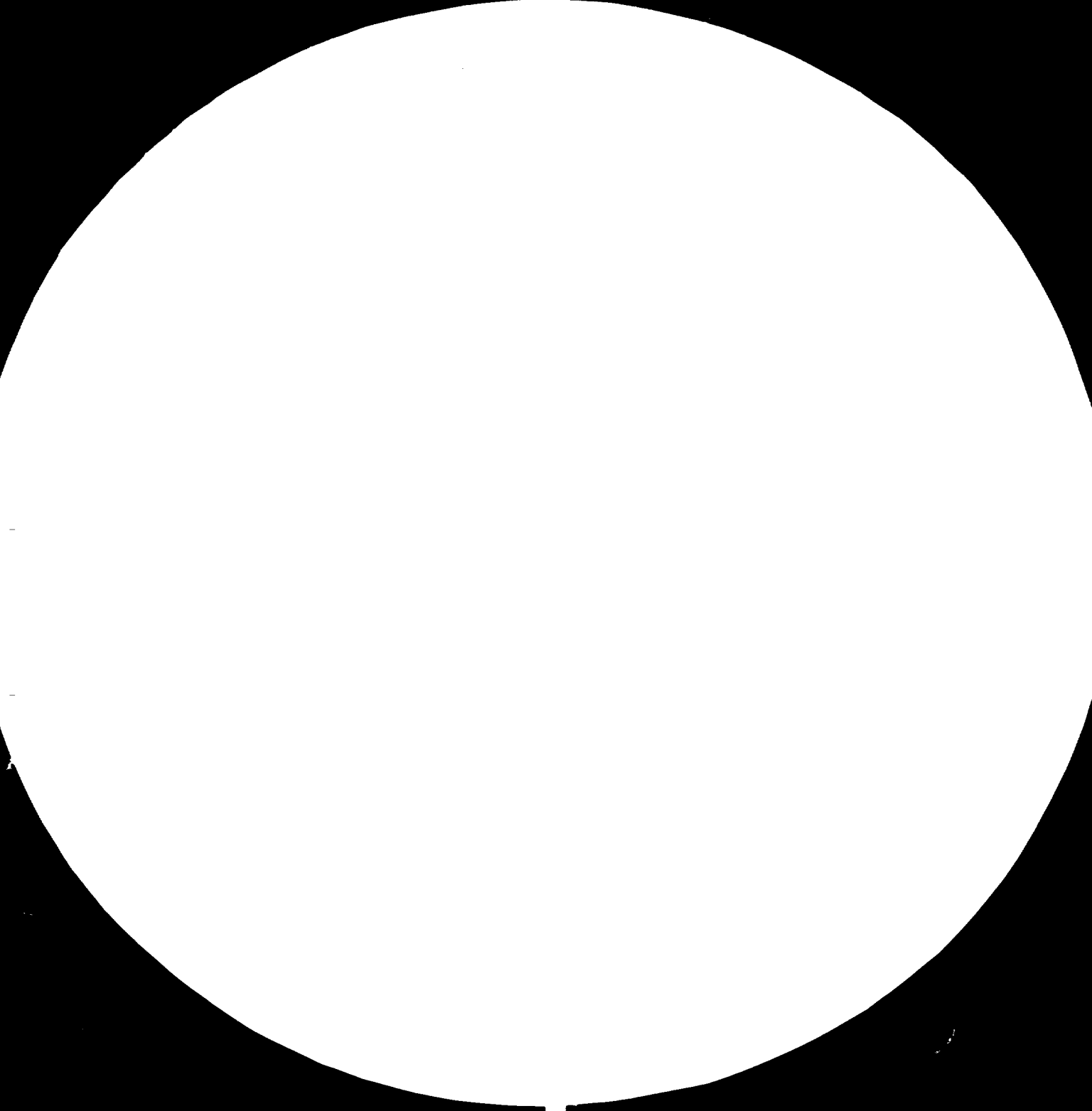
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UNITED NATIONS

TERMINAL REPORT ON THE DEVELOPMENT
OF SMALL-SCALE INDUSTRY

IN

PAPUA NEW GUINEA ,

PROJECT DP/PNG/74/039

PREPARED

FOR

THE DEPARTMENT OF COMMERCE AND INDUSTRY

BY

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INDUSTRIAL DEVELOPMENT ORGANISATION

ACTING AS EXECUTING AGENCY

FOR

UNITED NATIONS DEVELOPMENT PROGRAMME

1981

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A C K N O W L E D G E M E N T S

I have to record my thanks and appreciation to Mr. Tom Unwin, former Resident Representative UNDP, and to his successor, Mr. K. McGrath and to all the staff of the UNDP Office Port Moresby for their encouragement, co-operation and assistance. I would also like to record my thanks to Messrs. Udu Nou and Waosi Wekina, past and present Secretaries of the Department of Commerce and Industry and all the staff of that Department particularly the Division of Small-Scale Industry for the excellent support and co-operation they gave me in the execution of my project. Likewise, I must express my thanks to the National Planning Office and all others who unfortunately have to remain unnamed who also helped and encouraged me in very many ways.

Whatever has been achieved by the project would certainly not have been possible without all this assistance. Finally, my thanks are also due to the Headquarters staff of UNIDO Vienna, the United Nations Volunteer Organisation, all other volunteer organisations operating in Papua New Guinea, the Commonwealth Fund for Technical Co-operation and the Japan-PNG Goodwill Society who gave the project invaluable support. The project was an excellent example of co-operation between multilateral and bilateral agencies both government and non government.

It has been a pleasure and a privilege to have worked in Papua New Guinea, and I am confident that the present pragmatic programme of development for small-scale industry that has been planned will be a successful one, if the present momentum is maintained. I am also particularly happy that my report is not merely a record of advice

Papua New Guinea is a newly independent nation with a very small industrial sector employing about 10,000 persons. The contribution to GNP in 1978 being only 8.89 percent. Nearly eighty five percent of the population lives in the villages in a horticultural society as subsistence farmers quite unlike the typical rice culture villages of many Asian countries.

Over ninety five percent of all manufacturing industry is owned and managed by expatriate firms. There are also a very large number of constraints in regard to the promotion of small-scale industry. Some of these are unique to Papua New Guinea, such as the topography which makes surface transport enormously difficult; "the wantok" system; high wage levels; a small and fragmented market and most critical of all, the lack of entrepreneurial initiative in the industry field.

This of course does not necessarily mean that there is no future for small-scale industry in Papua New Guinea. In the Consultant's view, provided appropriate development strategies are pursued, small-scale industry despite the formidable constraints that exist has a good potential in Papua New Guinea. The country's cash economy is rapidly expanding by the greater exploitation of its forest, marine, and mineral resources. Also the agricultural sector is being diversified and modernised and this will result in closer linkages between agriculture and industry so vital for industrial development.

As far as the project is concerned, most of the immediate and long-term objectives of the project, namely: formulating a strategy for development; advising on policy support; generally strengthening the activities of the Department of Commerce; identifying potential

S U M M A R Y

The project is the outcome of a report made by a UNIDO/UNDP team which visited Papua New Guinea in 1974, which made recommendations regarding the potential and programmes for small-scale industry in PNG which were substantially accepted by the Government. A request was accordingly made by Government for UNIDO/UNDP assistance and it was anticipated originally that to implement the recommendations of the expert team with the changes and amendments decided by the Government would require financial resources of about US\$900,000 for experts, short-term consultancies, training, equipment, etc. over a period of five years. However, due to the shortage of UNDP funds, the project scope had to be drastically reduced and the Consultant assumed duties as Project Manager on 15/3/76 without any supporting staff either UN or national. He was also requested to function as Assistant Secretary, Small-Scale Industry in the Department of Commerce or as it was formerly known Business Development. Throughout the lifetime of the project, due to continuing shortage of funds, it was not possible to recruit anything like the expertise required to execute a project of the magnitude contemplated originally. However, the Consultant was able to obtain a few short-term consultancies and UN volunteer support as well as some manpower resources from other aid agencies. Also, as he functioned as Assistant Secretary (Small Industries) within the Department, he was able to direct the Division of Small-Scale Industry operations in such a manner as to ensure optimal utilisation of the resources that were available.

The achievements of the project are certainly quite encouraging and beyond expectations considering the inputs it received.

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entrepreneurs and types of small-scale industries to be developed with an emphasis on local raw materials and available skills etc. were achieved. It could be said also that the project has made a substantial contribution to the overall industrial development of the country with a record of concrete achievement. There have certainly been the inevitable disappointments and failures, but overall, the Consultant is of the view that the project has been a success. One has only to compare the situation today with what existed in 1976 to realise this.

Particular mention must be made of the large number of government sponsored projects either already in the production stage or in an advanced state of implementation especially projects such as sericulture, salt, leathercraft, coir, handloom weaving, chalkboards, metalworking, cane furniture, handicrafts, wooden products, blacksmithy, ceramics etc. The speed of implementation of many of these projects has however been hampered by lack of technical staff, funds, bureaucratic procedural delays, and of course by the lack of sufficient policy support and an inadequate institutional framework and infrastructure. Proposals made by the Consultant in respect of some of these matters have yet to be accepted by Government.

On the training side, the project found opportunities for a very large number of Papua New Guineans to obtain training in a variety of fields both locally and abroad on multi-national and bilateral aid programmes. While the greater proportion of those involved in the training programmes were given mainly on-the-job training locally, both theoretical and practical training have been provided to departmental officers as well as to potential national

entrepreneurs on overseas courses.

Some research also has been done into the utilisation of local raw materials, but here again lack of qualified staff has hampered progress.

Although much has been achieved, a great deal more has to be done to provide the right pre-conditions for small industry development in Papua New Guinea.

Priority should therefore be given to consolidating what has so far been achieved and untiring efforts continue to be made to make the small industry programme a real success in PNG.

In conclusion, the Consultant must stress the gravity of the acute staff shortage situation that presently exists, and the necessity to recruit immediately experienced professionals, rather than romantic amateurs merely because the latter are more readily available. This could well be disastrous to the future of small-scale industry development.

The Consultant's recommendations regarding the future promotion and development of small-scale industry are given at pages 34-37.

Although the project officially terminates on 30/6/81, United Nations inputs will continue, as a large number of volunteers will be assisting Papua New Guinea in the promotion of small-scale industry in specialised fields for at least another two or three years.

The Consultant has also no doubt that short-term consultancies will be required from time to time in regard to existing and future projects.

Background

I. The Project

This project is the outcome of the recommendations contained in a report by a UNIDO/UNDP team of four Indian experts which visited Papua New Guinea in 1974 on the potentialities and programmes for development of small-scale industry in Papua New Guinea. The report with certain amendments was accepted in principle by the Government of Papua New Guinea. The Government however felt that, taking into consideration the socio-economic framework of Papua New Guinea, a cautious approach was necessary, but very high priority be given to this activity as it was very much in line with the main development philosophy enshrined in the Government's Eight Aims. It was felt that a time span of at least ten years would be required for the implementation of the project. UNDP/UNIDO assistance was accordingly provided for Preparatory Assistance in late 1975, on the request of the Government.

In the Preparatory Assistance Phase of the project, the immediate and long-term objectives were described as follows:

"Immediate Objectives

The immediate objectives of the project are:

- (a) to advise and assist the Government of Papua New Guinea in the formulation and implementation of an integrated programme of small-scale industry development, particularly in rural areas.
- (b) to advise on strengthening the activities of the Department of Business Development in the field of promotion of small industrial enterprises.

- (c) to assist in identifying potential entrepreneurs, and to select within Government priorities the types of small-scale industries and locations having favourable development prospects, and using locally available skills, and as far as possible, locally available materials.

Long-Term Objectives

The implementation of the full-scale project will accelerate the comprehensive development of small-scale, rural and village industries in accordance with the Government's established priorities and thus contribute to overall industrial development. It is expected that the project will provide increasing opportunities for Papua New Guinean participation in industrial activities, foster the creation of new employment opportunities, especially in rural areas and achieve a more equitable distribution of income, in particular between the urban and rural areas of the country."

It should be noted that the 12-month preparatory phase contemplated the provision of the following:

- 1 Project Manager
- 1 Rural Industries Expert
- 1 Mechanical Engineer
- Short-term Consultants
- Administrative Support Personnel
- Equipment
- Training of PNG Nationals

The co-operating agency of Government for the project was the Office of Business Development later named the Department of Commerce and Industry.

Unfortunately, however, due to the acute position regarding UNDP funds during 1975, it was possible to fund only the Project Manager. It was hoped however, that during the course of the year, some volunteer support would be made available. The Consultant was appointed Project Manager on 15/3/1975. As the shortage of funds continued during the Consultant's entire tenure of office of five years, he did not at anytime obtain the support of any long-term experts for the project. He was also not provided with official transport or administrative support personnel. Throughout the five years, the Consultant used his private car, but did not claim any travelling allowance. A secretary was provided only after four years. A counterpart was available only for a few months due to the non-availability of suitable candidates. Limited volunteer support however did become available subsequently as well as short-term consultancies. The Consultant did not go to UNIDO Headquarters, Vienna, for briefing when he took up his appointment. His only personal contact with UNIDO Headquarters was a very brief visit in 1978, when he was invited to read a paper at a seminar. Closer personal contact with UNIDO Vienna would have been extremely useful. In more than one sense, therefore, this project received step-motherly treatment which was perhaps unfortunate. There was also continual uncertainty regarding the future of the project, as it was extended piecemeal sometimes for less than a period of a year.

In this situation, no long-term planning of any practical value for the project was possible. The original long-term project envisaged an expenditure of about US\$900,000 to be spent over a period of 5 years. The inputs to the present project were far smaller than this amount over its lifetime of just over five years. In the circum-

stances, any attempt to measure inputs against the original outputs contemplated will be totally unrealistic. The Consultant, however wishes to record that in his opinion the outputs produced far exceeded expectations and compared very favourably with what might have been produced, had the original inputs been given.

At the request of Government, the Consultant also agreed to function as Assistant Secretary (Small Industries) without any additional remuneration, as this position had suddenly fallen vacant, and there was no suitable candidate available. Although it is not usual for experts to combine operational roles with advisory roles, in the particular circumstances of this case, the combination of roles helped considerably towards the implementation of the project, because the Consultant was able to involve himself directly with the staff of the Small Industries Division of the Department of Commerce and utilise their services in helping to implement the project.

II. Social and Economic Factors

Papua New Guinea emerged as an independent nation in September 1975. New Guinea is the next largest island in the world, after Greenland, and the area covered by the new nation of PNG is about 180,000 square miles, which extent is roughly half of the island. The remainder known as Irian Jaya is under Indonesian administration. Its problems in regard to the development of small-scale industry are also unique. It should be noted that New Guinea had been cut off for centuries from external influences by an accident of geography. The situation, topography, character and climate of Papua New Guinea, to which the migrant ancestors of the present inhabitants came offered them a refuge that was well secured from contacts with the outside world.

The topography of PNG has been one of the major constraints to rapid industrial development. Nearly one third of the country is composed of steep mountain peaks rising up to 10,000 feet. A similar area is covered with swamps where nothing can be cultivated or grown systematically. This has prevented the development of a good system of road or rail communications in a country which is quite large, with the result that many of the main urban centres are almost totally dependent on air or sea transport. The population of only 3,000,000 presents a small consumer market, which not only has a very low per capita income, but is badly fragmented into tiny and in some cases inaccessible parts.

Like many other developing countries, Papua New Guinea has a dual economy, but it is a dual economy with a difference. As one writer has observed, the economy is a paradox as it is primitive, less developed and modern -- all at the same time. While the primitive subsistence sector of the economy has the features of the horticultural society which existed about 10,000 years ago, its modern sector, particularly trade, banking, urban housing, construction, and communication, has the characteristics of a modern industrial state such as Australia.

The manufacturing sector itself is extremely small and very under-developed. Secondary industry contributes about 7% of the gross domestic product and employs 10% of the total workforce. The value of total manufactured output in 1974-1975 amounted to roughly US\$250 million at current prices and employment in manufacturing totalled about 19,000 persons in 1978. Between 1972 and 1978, employment in the manufacturing sector showed an over-all increase of only about 3,000 with an absolute decline in two of these years, whereas output increased in real terms

by 16% in 1973-1974 and 27% in 1974-1975. Industrial metals and machinery sub-section accounts for the largest share in total industrial employment, with slightly more than one third of the total manufacturing workforce. Two other industry groups, "food, drink and tobacco" and "other industries", employ the remainder. Apart from the narrowness of the industrial base, what is most significant is that it is estimated that nearly 95% of manufacturing industry is owned and managed by expatriates.

*" The paucity of linkages within the economy is also striking. Only 8 per cent of primary agricultural output feeds into the processing and manufacturing sector whereas 23 per cent is for final current consumption and 60 per cent is for direct export. Almost no processing is done of the output from the mining sector. In the manufacturing sector the inter-sectoral linkages are small, being 6 per cent of the total output of the sector. However, a further 14 per cent feeds into Construction and Building, 10 per cent feeds into transport and commerce and 9 per cent into agriculture. Where the linkages are strongest in the economy are between the tertiary industries, electricity, transport, commerce, etc. and the other industries. Inter-sectoral linkages are also well developed in the tertiary industries".

An informal sector is almost totally absent due partly to Government restrictions such as excessive protection of licenced firms, over regulation of transport, repair and maintenance services, commerce and industry etc. and too much emphasis on the orderly development of towns.

* Re-Orientations of Industrial Policies, Economic and Social Commission for Asia and the Pacific, p.75.

The manufacturing sector is dominated by capital intensive and labour-saving technologies. This domination has influenced those who have been trained technically. The tendency is always to throw away and replace rather than to repair, unlike many other developing countries where every effort is made to repair in order to save foreign exchange and to increase employment opportunities. High wage rates in PNG make such policies impractical.

Manufacturing is heavily concentrated in three Provinces out of a total of 21 - Morobe, Central and East New Britain - and located mainly in the urban centres of Moresby, Lae and Rabaul.

Over 85% of the population however lives in rural areas and as mentioned above is mainly involved in subsistence farming, although with the widening of the cash economy - larger numbers are now getting involved in cash cropping. The Highlands Region which is perhaps the least developed has the lowest share of industrial activity, but has the largest population.

If the artifact industry which employs large numbers (perhaps around 150,000) mainly on a part-time basis is not taken into consideration, rural industry as such is also virtually non-existent.

With a growing unemployment problem, particularly among the educated youth, the inability of the manufacturing sector to provide widening avenues of employment, is a matter of great concern. If present trends continue, it is estimated that by 1984 there will be 310,000 school leavers without wage-earning employment. This could have serious political implications. In addition, there is

considerable disparity in income levels between urban and rural workers. Minimum wages for rural workers grew by 5% in real terms from 1971-1976. In contrast, the urban minimum wage rose by 116% in the same period. As a result, the urban labourer earns much more than the rural plantation worker and very much more than the rural labourer. This wide disparity attracts the more skilled artisans to urban areas and has accelerated urban drift with a cumulative effect on unemployment, increases in crime, social tensions, pollution, and squatter settlements in urban areas. As yet however, there are no financial incentives for local industry in rural areas for fear of perhaps creating a favoured class. Recommendations for providing financial incentives for location of industry in rural areas were made in 1976 by the Consultant, but these recommendations did not receive support.

The urgent need to divert a greater proportion of resources to rural areas is recognised by the Government in its national development strategy. Government plans to reduce inequalities by creating income-earning opportunities in rural areas. It is also concerned with maintaining subsistence production and improving the range of subsistence goods available. Urban development will be seen as complementing rural development as the foundation for future industrial based expansion.

The administrative system is one of the most centralised among developing countries. It is heavily dependent on expatriates, quite a few of whom have little or no previous experience of the problems of developing countries or of development administration.

As in many developing countries, the provision of rural development services has been badly co-ordinated - resulting in poor delivery and consequent loss of confidence in Government Departments. Emphasis is therefore now being placed on planning at the "grass roots" level.

A major step towards involving rural people in the development process is the establishment of Provincial Governments of which there are twenty-one now. Previously, there had been considerable lack of communication between rural areas and the decision makers, with a consequent insensitivity to rural needs. It is hoped that the establishment of Provincial Governments will change this situation. Funds for small business development have been specially allocated to Provincial Governments under the National Public Expenditure Plan. Promotion of small-scale industry however remains a national function and backstopping for Provincial Projects is being provided by the Department of Commerce and Industry.

Fortunately, the vast amount of natural resources, mineral, forest and marine, along with plantation crops, have helped the economy to remain stable in recent years despite export price fluctuations. Sound economic management with the objective of maintaining a hard currency by the Government has kept inflation at relatively low levels. The country is however at present greatly dependent on Australian aid. It is the Government's objective to reduce progressively this dependency on Australia for financial support.

FINDINGS

The industrial sector in Papua New Guinea as mentioned earlier is small and under-developed, and the constraints to the development of small-scale industry - some of which are unique to Papua New Guinea - are formidable, viz.

Lack of entrepreneurs. PNG has a very short history of national entrepreneurship - having entered the cash economy relatively recently;

A high wage and cost structure. Wage levels for skilled and unskilled labour are the highest perhaps amongst the developing countries of Asia. The fortnightly urban wage is K73.56 in the main urban areas and the rural wage is K22.44;

Small and fragmented markets due to geographical conditions, as already mentioned, and a distribution network dominated by a few large expatriate firms which have no real commitment to promote national entrepreneurs;

Inadequate support from the Department of Supply in regard to purchase of locally manufactured goods by insistence on very high quality standards, etc.;

Difficulties in obtaining expatriate technical and managerial expertise as well as their high cost;

Socio-cultural features such as the 'wantok' system;

Inheritance of the technology of an industrially advanced country from the pre-independence era;

A subsistence agriculture based on horticulture which is at the moment unable to give a real fillip to rural industrial development;

Absence of an informal sector, as is found in nearly all other Asian countries, due to over regulation in local authority areas;

General lack of exposure of the indigenous population to an industrial culture;

A highly centralised public administration resulting in time consuming delays in regard to recruitment of key personnel thus hampering efficient operation of Government industrial promotion activities;

High cost of utilities such as electricity;

Disinclination of Government to give protection to infant industry except on an "import parity price" basis;

High cost of building construction;

Non-availability of land and buildings to potential national entrepreneurs at reasonable rentals.

As these constraints are very relevant to planning and implementing any programme of development and have to be either overcome or strategies adopted to deal with them, some detailed comment is necessary. However the need for brevity compels the Consultant to restrict these additional comments to a few of the more important.

The fact that these constraints exist does not however necessarily mean that the picture for small-scale industry development in Papua New Guinea is a gloomy one. Far from it. On the other hand, one must not have unrealistic expectations as regards the pace at which small-scale industry development in PNG can be forced. Hastening slowly should be the strategy.

Perhaps, the most critical constraint to small-scale industry promotion is the lack of national entrepreneurship as is the case in most developing countries, although the problem in PNG is much more acute. The present policies of the Government are heavily committed towards the promotion of national entrepreneurship amongst the indigenous population particularly in the rural areas. This also means that, unlike in centrally planned economies, the momentum of small-scale industry development must depend on the availability of potential industrial entrepreneurs who are today virtually non-existent.

In this context, therefore, Government's great hopes for the speedy development of modern factory type small-scale industry in rural areas, apart from cottage industries, will not become a reality in the near future in the great majority of rural areas, although we have achieved some limited success in certain provinces.

Moreover, at this time, neither the institutional framework nor the infrastructure facilities or other basic necessities exist in typically village areas for the promotion of economically viable small-scale rural manufacturing industries except for cottage industries.

These are hard facts which must be accepted and as the Consultant sees it, the first step towards industrialisation in rural areas will perhaps be the establishment of repair and maintenance workshops, followed by manufacturing industries based on utilisation of appropriate technologies and local raw materials, if they are economically viable and can be competitive with imported products. This too can only happen with the modernisation of agriculture or the exploitation of natural resources which will help to raise rural incomes.

The lack of capable national entrepreneurs interested in industrial opportunities is a key problem which cannot be solved overnight. While those with entrepreneurial initiative can perhaps with industrial management training improve their skills, it is not possible for Government "to manufacture" entrepreneurs.

The political, social and economic conditions at any particular time will determine the growth of entrepreneurship in any particular country. Government can however help to a great extent by the creation of a favourable climate for such growth by offering appropriate incentives, and providing the required infrastructure and institutional framework.

The wantok system which guarantees to those belonging to the same ethnic group or clan the right to seek and receive assistance from those who are more affluent has also been very detrimental to the promotion of industrial entrepreneurship, in the Consultant's experience. There are others who take the opposite view and regard the system as having great potential for industrial development, as it could mean a pooling of resources. However, the Consultant's own experience in PNG in regard to industrial ventures certainly does not bear this out. Its parasitical nature is disastrous to the entrepreneur.

Marketing is another major problem area. Although much data on individual projects has been collected, it is in many cases not adequate to assess market potential. Additionally, the domination of the distribution network by large expatriate firms which do not have any real commitment to promote the small-scale industrialist, is another problem which is compounded further by the

Department of Supply insisting on very high standards of quality for locally manufactured goods.

If small-scale industry is to be promoted in real earnest, a massive effort is necessary by Government involving considerable capital expenditure. In many cases, projects may have to be started off by Government or a Government sponsored organisation, and later hived-off when the time was appropriate to suitable entrepreneurs. The demonstration effect is extremely important in a developing country.

Government executed projects however face extreme difficulties due to the inflexibility of Government rules, and the best solution therefore is the establishment of an autonomous organisation to implement Government projects on a commercially viable basis which the Consultant has recommended.

Another crippling constraint is the lack of land and accommodation for the small entrepreneur. The small-scale industrialist with meagre financial resources and no collateral is unable to buy land even if land is available. Most of the prime industrial sites are presently in the possession of expatriate firms which can afford to develop them. Possession of resources to develop the land is one of the criteria for the alienation of Government land.

On the Consultant's initiative, an advertisement was placed in the daily paper in 1979 requesting nationals interested in setting-up small-scale repair and maintenance industries to make application to the Department of Commerce, in order to assess what assistance could be given to them. A study of the applications from nearly 100 showed that the major constraints to these applicants

starting off their projects was the difficulty in obtaining land, accommodation and finance. The rental cost of accommodation too is beyond the means of the potential indigenous entrepreneur. The alternative of constructing one's own accommodation is also quite difficult, as construction costs are now around K220 per square metre which is also beyond the means of a national entrepreneur even if he can get suitable land. Provision of worksheds by Government within an industrial estate complex at reasonable rentals is therefore essential, where in urban areas and semi-urban areas prospects for promotion of industry exist. Some element of Government subsidy is inevitable, as it is part of a promotional effort by Government.

Reference must also be made to the time consuming bureaucratic procedures that one has to go through in order to gain possession of Government land. A major project promoted by the Office of Business Development on which much time was spent by the Consultant is stagnating for the last three years, although all parties were ready to start off, due to the requirements of Land Board procedures.

Government's policies of maintaining an open economy with tariff protection for local industry granted only on the basis of "import parity price" has certainly not helped small-scale industrial development in PNG. The reluctance of Government so far to grant tax benefits as incentives, which, have been granted in many parts of the world, as well as tariff protection to small-scale industry has been based partly on the grounds, that such benefits and incentives will lead to increases in the cost of living and partly on the ideological grounds of the need to preserve or create an egalitarian society.

The exchange value of the Kina has appreciated considerably with the result that the few small industries that are in existence find it extremely difficult to compete with imported products which have become cheaper. The Department's moulded rubber goods factory is a case in point. Inevitably, also, local small-scale manufacturing industry is unable to export its products as they have become more expensive with continued revaluation. In this situation, therefore, identification of economically viable projects is not easy.

It should be noted however that the Government has provided certain incentives for indigenous entrepreneurs - namely: tax holiday for five years for national companies though not for individuals; a national investor's scheme; a credit guarantee scheme; and assistance for making feasibility studies. These incentives however are still insufficient.

The cost of electric power in PNG is very much higher than in other South East Asian countries, and more than double the cost in Australia, despite PNG's great resources of hydro power. The recent increase of 25% in the tariff will make the position even worse.

Another great weakness is the lack of training in industrial management. No well-organised training in this subject is yet imparted in the technical schools, universities or anywhere else. Attempts to organise such training locally have also not proved successful due to lack of qualified personnel and therefore the only other possibility, namely, training abroad, has been resorted to. Perhaps the ILO Regional Project for Entrepreneur Development could lend some support, but the support would be limited as this project has to cover the whole region with priority to the smaller countries. The expected linkage with

the ILO Project on Small Business Management also did not materialise.

Frustration has arisen with regard to recruitment of key technical staff, due to procedural delays, etc. A major project like the silk project has been very adversely affected by them. Whatever the rationale of these procedures may be, there should be some flexibility where projects involving physical outputs such as the silk project are concerned. The Consultant notes that the situation has since improved somewhat. However, he has brought the seriousness of the staff situation to the Secretary's notice, that unless key staff are in position by June this year at the latest much of what has been achieved so far will be lost. In fact, implementation of some projects on which much work has been done came to a halt due to poor management by inexperienced staff.

There is additionally conflict and overlapping amongst Government agencies in regard to the industry function, which is not only a constraint to development, but a waste of scarce Government resources. Differences of opinion as between the Division of Industrial Development and the Department of Commerce and Industry as regards their relative roles, have yet to be resolved. There is also no national strategy for industrial development.

Papua New Guinea Development Bank has made a very great contribution in promoting national entrepreneurship in the field of commerce and agriculture. However, its record in the field of industry is not impressive. With its enormous resources and support from the Asian Development Bank, the PNG Development Bank could play a much more active risk taking role which could have a very positive impact on Government's small industry development programme.

One has to accept the fact that for many years to come, Government will be dependent on foreign assistance in many technical fields for the promotion of a successful small industry programme.

Every country has to specially design its small industry development programme to suit its own unique conditions. It would be a fatal mistake to try and transplant wholesale policies and programmes copied from another country however successful such programmes may have been in that particular country. This is particularly true of Papua New Guinea.

The infrastructure and institutional framework that presently exists can only support a very limited programme of small industry promotion. It takes time to build up infrastructure and institutions particularly in a country where indigenous professional skills in this field are very limited and specialist expatriate skills not easy to obtain for providing the planning, organisation and implementation of any small industry development programme.

Once again, lest what I have said before may give the impression to the reader that the Consultant is a dismal prophet as regards the future of small-scale industry, he would like to stress that this is not so. Despite the impediments mentioned above, prospects for the future are bright as PNG has enormous potential in forest, marine and mineral resources. The exploitation of these resources will provide many "spin off" industrial opportunities for the potential small-scale industrial entrepreneur, and the present strategy of promoting the self-employed traditional as well as modern artisan will hopefully provide the entrepreneurs of tomorrow, as has been the case in other

countries. Moreover, educational standards are rising and communications within the country are improving, which are good auguries for the future.

ACTIVITIES CARRIED OUT: OUTPUTS PRODUCED AND ACHIEVEMENTS

In view of the fact that the resources planned for the project by way of full-time experts, machinery and equipment etc. never became available during the lifetime of the project, the Consultant had no alternative but to adopt a somewhat pragmatic approach using the limited resources that were available to him. However, as mentioned earlier, during the later phase of the project, volunteer support became available as well as a number of short-term consultancies which were funded under UNIDO's SIS scheme. This support proved invaluable and helped greatly to achieve many of the objectives originally contemplated in the long-term project document. Much support was also obtained from other volunteer organisations as well as from CPTC experts and of course departmental staff.

It should be noted, that the Consultant up to February 1980 continued in the dual role of an operational expert and an adviser. This meant that a substantial portion of the Consultant's time was involved in the day-to-day administration of the Division of Small-Scale Industry which had a large number of officers working for it including expatriate staff of many nationalities. Inevitably, there were times when conflict between the Consultant's role as UN adviser and his role as an operational expert arose. Fortunately however, this conflict did not escalate at any time into any major proportions. More specifically, project activities and achievements could be summarised as follows:

(a) Advising on policy support

The Consultant advised that the Department should restrict its activities to projects where the investment in machinery and equipment is under K75,000. This was because there were few nationals who had

the capability of involving themselves in very large projects and also because the resources of the Department were limited.

He also advised the provision of a package of incentives as policy support for the development of small-scale industries somewhat similar to that provided in other countries, but designed specially to suit PNG conditions.

A comprehensive memorandum on policy support for small-scale industry in Papua New Guinea was prepared and submitted. The policy support recommended covered:

- (i) Granting of financial and fiscal concessions with special reference to industries located in rural areas; concessions on duty; tariff protection; investment grants etc.;
- (ii) Industrial extension services;
- (iii) Marketing assistance, credit facilities, manpower training, infrastructure facilities, etc.

However, the submission did not receive favourable response from other Government Departments, on various grounds including the grounds that incentives may create a privileged class in society which was against the development philosophy of the Government, and also that the grant of incentives would lead to abuse.

The Consultant felt that in the context of Papua New Guinea, where there was very little knowledge of the techniques of small-scale industry promotion - the

time was not opportune to pursue this matter any further by trying "to convince" the critics despite the fact that a great deal of work had been done on the submission. He took the view that with the passage of time - at least some of the incentives he had proposed would inevitably have to be granted, though perhaps piecemeal, when it was realised that they were vital for industry promotion. This has since happened to some extent.

- (b) Assisting by identifying technical assistance needs and obtaining such technical assistance through UN and other bilateral and multilateral agencies.

UNIDO short-term consultancies were obtained for the following key projects:

1. Salt
2. Leather and tanning
3. Rubberised coir
4. Handloom weaving
5. Foundry development

Additionally, experienced volunteers who had specialised in their particular fields were identified and selected for promoting the following projects: handlooms; traditional handicrafts; wood-working; ceramics; blacksmithy; silk reeling; rubber moulded goods and leathercraft. Some of these volunteers were UN volunteers and served as members of the Consultant's project team while others were recruited from Volunteer Organisations operating in PNG such as AVS, IVS, and CUSO.

On the Consultant's initiative, CFTC expertise was also obtained for the sericulture, traditional handcrafts, industrial estates, coir fibre and cane furniture projects as UN funds were not available.

- (c) Assisting in obtaining training facilities abroad and locally for potential Papua New Guinean entrepreneurs and departmental staff.

Training facilities for potential entrepreneurs and small industry personnel involved in promotional work were obtained from UNIDO and through TCDC in India, Indonesia, Thailand, Korea and Philippines in fields such as furniture making, handcrafts, sericulture, ceramics, handloom weaving etc. Training facilities were also obtained in Japan and Ireland for departmental personnel in small-scale industry promotion. Locally organised training in various crafts was also being provided for a large number of nationals at a number of centres in the country where UN and other expatriate personnel assisted.

- (d) Assisting in strengthening departmental activities.

Departmental resources have been considerably strengthened by the creation of new positions on the recommendation of the Consultant such as Mechanical Engineer, Industrial Marketing Officer, Chemical Engineer, Coir and Leather Technicians, Business Development Officer (Technical) and Industrial Economist. Business Development Officers (Technical) would have a general engineering background and be responsible for industrial extension work in the Provinces. The Consultant considers these positions as vital to the success of any small industry development programme. The Consultant also

assisted in the identification and selection of suitable persons for specialist positions in the Department.

The Consultant by functioning as Assistant Secretary Small-Scale Industry in addition to his role as Project Manager resulted in considerable financial savings to Government, as the position of Assistant Secretary would have been held by a senior expatriate officer. He was however, unable to train a counterpart as there was no suitable candidate available.

- (e) Supervising the planning, implementation and management of Government pilot projects; identification and evaluation of new projects.

The Consultant was directly responsible for overall supervision of the implementation and management of a large number of departmentally sponsored projects such as: sericulture; salt; leathercraft; chalkboards; Aitape Small-Scale Industry Project; traditional handicrafts; cane furniture; blacksmithy; handloom weaving; bicycle assembly; rubber moulded goods; ceramics; coir; coconut scrapers; reconditioning of used motor vehicles.

It should be especially mentioned that the Consultant was very much involved with the management and development of the sericulture project on which considerable funds had been invested by Government. Note should also be made of a very successful Provincial Small Industry Project identified by the Consultant which is located in Aitape in a very under developed area in the West Sepik and the project is being implemented under the supervision of a specially selected

UN volunteer. A large number of small industry projects such as cane furniture, gunsmithy, industrial training, manufacture of baking ovens etc. are being promoted.

Notes on some of these projects are at Appendix A.

The Consultant has also left a comprehensive note in the Department on the further action that is required in regard to these projects.

Advice was also given on the feasibility of a number of projects. In some cases this advice was disregarded by other Departments with unfortunate results.

- (f) Assisting in investigating the feasibility of improving the infrastructure by establishment of industrial estates etc.

A submission was also prepared by the Consultant for the establishment of an industrial estates project in Port Moresby adjacent to the Small Industries Research and Development Centre so that the necessary extension services could be provided easily. This submission which envisaged the establishment of 12 units has yet to be approved by the Government as mentioned earlier. Suitable tenants have been provisionally identified.

In this connection it should be also stated that a recommendation for the establishment of an industrial estate in Port Moresby was made by another UNIDO expert recruited by the Division of Industrial Development. He recommended that this industrial estate should be managed and financed by the PNG

Development Bank and the tenants would be sub-contractors who had obtained large contracts on the Ok Tedi projects. A few manufacturing projects were also identified but no viability studies were made of any of them. The Consultant disagreed totally with the concept of the estate proposed which had the end objective of creating independent national industrial entrepreneurs for the reasons that such an estate would create if at all only a class of comprador entrepreneurs. There was also no guarantee of continued business. Moreover the PNG Development Bank had always insisted that it would require an economic return on its investment. No indication was given as to who would provide the training and extension services. The industrial estates expert did not discuss his draft report with the Consultant. However if the Division of Industrial Development wishes to go ahead with this project despite the fact that promotion of national entrepreneurship is the responsibility of the Department of Commerce, the Department of Commerce should have no objection. It is however understood that some of the land identified by the industrial estates expert has since been allocated to other applicants.

- (g) Assisted in collecting, collating and disseminating information regarding small-scale industry projects and prospects for potential entrepreneurs.

A great deal of information has been collected and a national was trained abroad in this special field. This national however, subsequently left the service. Non-availability of an industrial economist has also been a great drawback particularly in organising information and data for evaluation of small-scale industry projects.

(h) Assisted in expanding the activities of the Small Industry Research and Development Centre.

UN volunteers specialised in ceramics, woodworking, handloom weaving and leathercraft were attached to the Centre. The Consultant also located a specialist on rubber moulded goods who was responsible for setting up the factory which is now in operation.

This institution has expanded its activities considerably, but it is not functioning as it really should in relation to achieving the objectives of the Department in regard to small-scale industry development. The main reason for this has been the fact that since it was established, it never had a fully qualified and experienced industrial engineer in charge of its management and operation. Up to now it has been unfortunately the responsibility of amateurs with no specialised knowledge of the techniques of small industry promotion or research with the result that Government is not getting optimum benefit from it. It is essential therefore, that a properly qualified engineer with innovative talents and experience of industrial management be appointed as OIC - SIRDC with the least possible delay.

The Consultant has advised that the institution should have the following objectives:

- (i) Evaluation of small-scale industry projects for technical feasibility.
- (ii) Research into appropriate technologies in regard to the manufacturing industry.

- (iii) Training of entrepreneurs and other skilled personnel in special fields.
- (iv) Provision of common workshop facilities for small-scale industrialists.
- (v) Provision of a technical advisory service to small-scale industrialists.
- (vi) Management of pilot projects.

- (i) Represented PNG in Bangkok at an ESCAP Regional Meeting of senior officers involved in TCDC.

On a proposal made by the Consultant, a TCDC project especially designed for disadvantaged countries in the ESCAP Region has been accepted and is being implemented by ESCAP.

- (j) Accompanied the Minister of Commerce and Industry as adviser

- (i) to an ESCAP Ministers of Industry Meeting in Bangkok;
- (ii) to the International Silk Conference in India in 1978;
- (iii) on an observation tour of industry promotion in Thailand and the Philippines in 1980.

Also represented PNG at an ESCAP Regional Meeting of senior officials concerned with TCDC and the Fourth International Symposium on Small Businesses, at Seoul, Korea, in 1977.

Although the project officially terminates on the 30th of June 1981, United Nations will continue to be closely involved with the promotion of small-scale industry in

Papua New Guinea, as there will be eight volunteers working with the Department of Commerce in the following fields:

Sericulture (two)
Handcrafts (two)
Leathercraft
Mechanical Engineering
Blacksmithy

This is in a sense, a testimony to the achievements of the project.

The Consultant recommends that the work of these volunteers should be supervised by the Assistant Secretary, Small-Scale Industry of the Department of Commerce who will also co-ordinate with the Resident Representative, United Nations Development Programme, Port Moresby.

RECOMMENDATIONS

1. The policy of small-scale industry promotion should be one of caution and "hastening slowly" taking into consideration the present socio-economic context of Papua New Guinea.

2. Projects now being implemented or already in operation, namely: rubber moulded goods; salt; sericulture; provincial projects in Aitape and Kerema, North Solomons and East New Britain; handicrafts; ceramics; handloom weaving; wood products; bicycle assembly; chalkboard manufacturing; etc. should be put on a firm basis. The Consultant has left detailed advice as to the further action necessary on the various projects. The Department should continue to investigate new projects so that "momentum" is maintained. The need for careful planning and good management must be stressed.

3. Determined efforts should be made to recruit the key personnel required by the Division of Small-Scale Industry to fill particularly the positions of Chemical Engineer, Mechanical Engineer, Industrial Economist, Industrial Marketing Officer, OIC Small Industries Research and Development Centre and Business Development Officer (Technical) who will function as an Industrial Extension Officer. Provision exists in the establishment for these posts, but they have remained unfilled due to various reasons. Great care should also be taken to fill these posts with candidates who are professionally qualified and not inexperienced amateurs. Every Province should have a Business Development Officer (Technical).

Additionally, every endeavour must be made to fill vacant positions in the Handcrafts Development Division and also to obtain export marketing expertise from abroad.

A multi-disciplinary team at Headquarters is "a must" for project planning and management and also for providing technical and management advisory services to small-scale industry.

4. The relationship between the Division of Industrial Development of the Department of Labour and Employment and the Division of Industry in the Department of Commerce and Industry should be clarified as soon as possible. In the Consultant's opinion, the relevant gazette notification which determines the functions of the two departments is quite clear and should be strictly observed. The Department of Commerce being responsible for promotion of national entrepreneurship in industry and the Division of Industrial Development in the Department of Labour and Employment being responsible for promotion and development of overseas investment in secondary industry. The Consultant's views on this matter were expressed in a comprehensive memorandum.

More importantly, it is necessary to formulate a national industrial development strategy and clearly demarcate the roles of the Department of Primary Industry, Minerals and Energy, Commerce and Industry, Labour and Employment and the National Investment and Development Authority in relation to the industry function.

5. Similarly, important policy decisions regarding the promotion of traditional handcrafts and the Department's relationship with Village Arts etc. have to be taken

without any further delay. The proposal to hand over the trading activities of the Department to Village Arts should be pursued.

6. The establishment of an industrial estate in Port Moresby as a pilot project, as well as any recommendations of the HMT team on industrial estates if their report indicates that industrial estates for engineering products are feasible in Lae and Port Moresby or at both locations, should be pursued.

7. Information flow on small industry promotion between the Provinces and Headquarters should be improved.

8. The submission made by the Consultant regarding a package of incentives for small-scale industry development should be re-submitted for Government approval, with suitable amendments which take into consideration incentives that have since been offered by Government.

9. The management system at the Small Industry Research and Development Centre should be improved and proper costing be done on all research. Projects to be researched should be decided by Headquarters and not by the OIC - SIRDC.

10. Training opportunities for potential entrepreneurs, observation tours and training for Small Industries personnel in developing countries should continue to be arranged.

11. Bilateral Technical Assistance Agreements should be signed with countries such as India, South Korea, Japan, Malaysia and Thailand. Close contact should be continued with all bilateral and multilateral aid agencies.

SHORT NOTES ON PROJECTS

Sericulture

This project was inherited by the Department of Commerce and Industry from the then Department of Trade and Industry. On the advice of an expert from UNIDO, it was started off based on ericulture and not on mulberry silk. Conditions in PNG were considered exceptionally good for sericulture. However, from the inception, the project did not have qualified technical staff although considerable funds were invested by Government on buildings and equipment, etc. In 1976, the future of the project was in doubt as there were no returns whatsoever from it after an investment of about K500,000 and the Department was considering its closure. The Consultant however suggested that the project should be given a final chance and that, as recommended by an FAO expert who had earlier reported on the project, a switch over to mulberry silk be effected. This change was effected and as there were encouraging results from the change it was decided to continue with the project and additional funding from the Government was made available. The Consultant was also responsible for obtaining the services of a CFTC sericulture expert from India. A UN volunteer as reeling technician and another UN volunteer as Commercial Manager, both members of the Consultant's project team, also assisted this project along with four other volunteers from other volunteer agencies. At present, cocoons are being exported to Japan at a good price and inferior cocoons are being reeled and converted into handloom fabrics. The project has good potential but still has to overcome some problems before it becomes viable. A few hundred families in very under developed areas in the Southern and Western Highlands are benefitting from the

project which is smallholder based. Foreign collaboration appears to be the best strategy. An FAO team which investigated the project in 1980 has recommended that further assistance should be given to the project.

Salt Project

PNG presently imports all its salt requirements. Consumption is increasing by about 15 percent per year. The total import bill is over K700,000. The initial investigations on this project were made by experts provided under New Zealand aid. The experts however did not come to any definite conclusion as to the feasibility of the project, and they advised further investigation.

The Consultant shortly after he was appointed as Project Manager obtained the services of a UNIDO expert under the SIS scheme who advised that there appeared to be prospects for the development of a viable salt project, but that further investigations on weather conditions and soil etc. were necessary. He recommended a pilot project of 100 acres, if such a project was technically feasible and financially viable. The services of the same UNIDO expert were later obtained on two subsequent occasions and he finally recommended that the Department should obtain a financial feasibility and an engineering study of the project from a firm of consultants. The Department then obtained further advice from the General Manager of an Australian firm of salt manufacturers as well as from a firm of salt manufacturers in New Zealand. Both parties recommended that the first step should be the packaging of imported salt, to be followed by the investigation of a pilot project later. The Consultant however advised Government that the more prudent course of action would

be to go ahead with the pilot project first, as the cost of the pilot project recommended by the Australian consultant was not very high. His advice was accepted and work on the pilot project is now being completed. Hopefully, the first harvest of salt is expected in May. It is estimated that a yield of 750 - 1000 tonnes of salt could be obtained. The Consultant has arranged for further consultancy assistance to be made available through the Industrial Development Unit of CFTC during the operational phase of the pilot project. Completion of the pilot project was delayed by seven months as its construction work is being done by the Department of Works and Supply over which the Department of Commerce has no control.

Rubber Moulded Goods

When the Consultant arrived in the country, second-hand machinery had been ordered for the manufacture of rubber moulded goods, namely thongs (rubber slippers) and car mats, utilizing natural rubber. However, it was noted that some additional machinery was required to set up a manufacturing operation. After discussion and advice on the feasibility of the project from a UN expert who was advising the Department of Primary Industry on the development of the natural rubber industry, it was decided to go ahead with the project for rubber moulded goods. The services of an Australian volunteer with long experience in rubber moulded goods were obtained from AVS to erect the machinery and commission the plant. The plant now is in operation and is managed entirely by nationals. However, a major problem of marketing exists due to the reluctance of Government to give adequate protection against plastic thongs which are freely imported and somewhat cheaper.

The plant has therefore to work at a level below capacity and as a result the project at present is not viable. Scrap rubber with no opportunity cost is used as the basic raw material. The Consultant believes that a determined marketing effort could make this project viable. Export possibilities should be investigated particularly as we have already made some small exports. The plant has a rated capacity of 400 pairs of rubber slippers per 8 hour shift. The thongs and car mats produced are of high quality.

Timber Products

Important projects that the Division of Small Industry is involved in are the manufacture of tool handles, chalkboards and furniture. The chalkboard project was identified by the Consultant. About K50,000 worth of chalkboards are purchased by the Education Department annually. Upto 1977, chalkboards were imported. The Department executed the contract in 1978 and 1979 and sub-contracted part of the contract to small contractors. However if the Department is to continue undertaking this order annually a more efficient management system is necessary as it has to be organized on a country wide basis.

Leathercraft

On the advice of the Consultant, the services of a UNIDO expert were obtained in 1976 to report on prospects for the establishment of a tannery and leathercraft industry. The expert reported that the volume of hides presently available in PNG was insufficient to economically justify the setting up of a tannery. He however advocated the establishment of a leathercraft industry based on imported leather and the export of salted hides. The project based on imported leather is now in operation and is in

charge of a UN volunteer who is attached to the Consultant's project. A variety of items such as sandals, belts and handcrafts are being produced. This project is doing quite well with no marketing problems. The project for the export of salted hides is the responsibility of the DPI which has control of the abattoirs and it has not been implemented. The Department has raised the matter several times with DPI. It is hoped that some progress can also be made on this project too.

Coir

Since 1975, the Consultant endeavoured to obtain acceptability of coir by the Department of Supplies for brooms, brushes etc., but these endeavours did not succeed as that Department preferred products utilizing man made fibres. Moreover, the technology of coir making on a cottage scale is not known in Papua New Guinea, though it has an extensive acreage under coconut. A large fibre mill is also lying idle in Madang due to the poor price of fibre in the world market. On the initiative of the Consultant, the prospects for rubberized coir as a possible use for coir fibre were investigated by a UNIDO expert who reported that it would not be economically viable. He however advised the investigation of the market in Australia for other fibre products such as needle felt etc. If the coir fibre mill in Madang could be reactivated, there would be a source of fibre for the indigenous population who could then make a variety of fibre products at least for domestic use. The Consultant was subsequently able to obtain assistance from the Industrial Development Unit of CPTC for funding a consultancy to investigate the market for coir fibre products in Australia as UNIDO did not have the funds and the IPF was exhausted. This took nearly one and

a half years. It is likely that on the findings in the CFTC report the Madang coir fibre mill will be reactivated.

Aitape Small-Scale Industry Promotion Centre (W. Sepik)

This project was identified by the Consultant in 1977 and with the support of an outstandingly good UN/ Austrian Volunteer Service volunteer, it has proved to be a real success in a very under developed area. The project is promoting brickmaking; cane furniture manufacture; gunsmithy; repair and maintenance of automobiles and boats etc. and training of nationals in metalworking.

Foundry

The services of a UNIDO expert were obtained to report on the prospects of developing a foundry industry. His report revealed that there was a vast amount of war time scrap available which could be utilised to manufacture amongst other products grinding media for the large Bougainville copper mine and the proposed Ok Tedi Copper Mines. Further follow up is however necessary in consultation with the Industrial Development Division. A pilot foundry project has also been recommended by the UNIDO expert. However the development of the project is dependent on the establishment of a plant to manufacture grinding balls for the two large copper mines.

Blacksmithy

Over the last four years, the Department has been promoting blacksmithy which was unknown to PNG. Rural people are now being trained in this trade to make simple agriculture tools from scrap. Four Provinces have already been covered by the master blacksmith who is an IVS volunteer.

Handlooms

Excellent progress has been made on this project. Textile weaving is not traditional to PNG. Prior to 1976, the weaving of woollen carpets and cotton bedspreads was introduced. However the looms used were of a simple type and productivity was poor. The project has now been expanded and a greater range of items are now being woven in cotton, wool and silk utilising the fly shuttle loom under the guidance of a master handloom weaver who is a UN volunteer. Designs have also been improved. The Consultant feels that there are good prospects particularly in regard to the weaving of Papua New Guinean silk, if good quality silk is produced. The project is one which must be given high priority because of its linkages with the sericulture industry.

Traditional Handcrafts

This is one of the most important areas of activity of the Division of Small-Scale Industry and the Consultant was naturally deeply involved with its development. Handcrafts provide employment part time or full time to many thousands of people in rural areas. Unfortunately for the last four years, there has been a decline in exports due to various reasons, and the Department along with the National Cultural Council has been hard pressed to revive the flagging fortunes of the industry. Although in 1975, virtually no trading activities of any significance were undertaken by the Department, today however, in order to assist the producers and keep alive the craft despite the fact that departmental resources are limited, large scale trading activities have been undertaken by the Department. Last year's turnover was over K150,000. However, many

problems still exist in regard to policy issues which need early settlement with the National Cultural Council. A member of the Consultant's project team is located in Sepik, the largest artifact producing area in PNG as a Handcraft Extension Officer. CPTC has also provided considerable assistance for this project.

Ceramics

There are ceramic projects in operation in Port Moresby, Kainantu, North Solomons and Rabaul. This industry appears to be well suited to Papua New Guinean skills and there is also a good domestic market for hand made ceramicware.

Cane Furniture

Projects are in operation in Pes, Daru and Kerema. All seem to be doing well. A new project is being planned for Wewak. A CPTC expert, from its Industrial Development Unit, whose services were obtained on the initiative of the Consultant is currently advising on the development of the project.

Kerema Small-Scale Industry Centre

This Centre has a wide range of activities. A number of business groups composed mainly of ex-trainees have been set up. The main products are handcrafts and bamboo and cane furniture.

Napa Napa Boatyard

One of the best projects identified. After much argument with the Department of Transport this boatyard which was to be stripped and abandoned by Government was handed over to the Department of Commerce. However by the time it was actually handed over, it had been partially stripped and also partially destroyed by vandals. The Department quickly arranged a joint venture composed of the Provincial Government, local villagers and a consortium of small expatriate ship repair firms to reactivate the boatyard and expand its operations. However, for the last 24 months there has been no decision by the Land Board on the application made by this consortium for a lease of the boatyard. This million Kina national asset continues to deteriorate and will soon be quite worthless. What has happened is truly tragic.

Boron Rubberwood Project

The Consultant has initiated action to obtain the services of a CFTC expert to examine the feasibility of treating rubber wood to make it suitable for furniture manufacture etc. as is done in Sri Lanka and Malaysia. This project if feasible will help the rehabilitation of the rubber plantation industry as well as provide a relatively cheap source of timber to the people particularly in areas like the Gulf Province.

Appendix "B"

UNITED NATIONS VOLUNTEERS WHO WERE ASSOCIATED
WITH THE PROJECT

<u>Name</u>	<u>Field of Specialization</u>
1. W. Hanspeter	Woodworking
2. K. Kazanjian	Ceramics
3. L. Separatnam	Silk Reeling
4. D. Liyanage	Leathercraft
5. C. Kappagoda	Handcrafts
6. W.B. Dassanayake	Handloom
7. W. Moser	Mechanical Engineering
8. W. Weismuller	Mechanical Engineering
9. J. Cunningham	Commercial Management - Sericulture Project

LIST OF PARTICIPANTS WHO WENT OVERSEAS ON SMALL INDUSTRIES
TRAINING COURSES/SEMINARS/OBSERVATION TOURS ETC

<u>Name</u>	<u>Course</u>	<u>Country</u>	<u>Sponsor</u>
John Maraga	Motor Mechanic	Japan	Japan-Papua New Guinea Goodwill Society
W. Siuna	Motor Mechanic	Japan	Japan-Papua New Guinea Goodwill Society
Joseph Kaleapo	Intensive Practical Training in Sericulture	Mysore, India	CFTC
Michael Maya	Intensive Practical Training in Sericulture	Mysore, India	CFTC
Henry Manuke	Motor Mechanic	Japan	Japan-Papua New Guinea Goodwill Society
Steven Nepao	Motor Mechanic	Japan	Japan-Papua New Guinea Goodwill Society
John Sendi	Diploma in Tropical Sericulture	Mysore, India	Indian Govt.in collaboration with Swiss Government
John Samar	Project Implementation and Operations	Dublin, Ireland	IDA
G.Mwayemwana	Handicrafts Export Survey	Japan & Eurpoe	CFTC
G.Mwayemwana	Handicrafts Marketing Export	Jakarta, Indonesia	Indonesian Government
James Sangat	Handloom Weaving	Bandung,Indonesia	Indonesian Government

<u>Names</u>	<u>Course</u>
Lohia Daroa	Export Marketing & wholesale handicrafts
James Paiva	Export Marketing & wholesale handicrafts
Herman Makis	Silk Weaving
Sapa Lavare	Sericulture
Philimon Sapuda	Sericulture
Jack Aru	Sericulture
Conrad Laman	Leather Tanning
Heni Igo	Small Industry Entrepre- neur Development
Felix Rotsomana	Small Industry Entrepre- neur Development
Waosi Wekina	Study Tour of Malaysia, Philippines and Thailand
Ajeet Kanwal	Study Tour of Malaysia, Philippines and Thailand
Alban Elisha	Sericulture Observation Tour
Conrad Benkenansi	Furniture Manufacture
Matthew Sissi	Furniture Manufacture
Morakai Aru	Furniture Manufacture
Kaive Apu	Handloom Weaving
V.Misikaram	Introduction to Project Appraisal

C

<u>Country</u>	<u>Sponsor</u>
New Delhi, India	Indian Government
New Delhi, India	Indian Government
India	UNIDO
Mysore, India	CFTC
Seoul - S.Korea	UNDP
Seoul - S.Korea	UNDP
Madras, India	CFTC
Dublin, Ireland	EEC
Dublin, Ireland	EEC
Malaysia, Thailand and Philippines	CFTC
Malaysia, Thailand and Philippines	CFTC
China	FAO
Thailand	UNDP
Thailand	UNDP
Thailand	UNDP
Thailand	UNDP
Dublin, Ireland	EEC

<u>Names</u>	<u>Course</u>
C.N'Drawai	Introduction to Project Appraisal
M.Okaipa	Training Methods and Skills
A.Kamarai	Training Methods and Skills
Litau Lani	Identification of Industrial Projects and Investment Opportunities
J.Kaguhonama	Identification of Industrial Projects and Investment Opportunities
D.Aristako	Agro-Based Industrial Development
K.Aijuwo	Tenth Regional Industrial Development
V.Misikaram	High Skilled Machinist
Kila Wari	Expert Group Meeting on Industrialisation in Relation to Rural Development
Paul Nakmai	Methods of Evaluation of Industrial Projects
A.Karkana	Seminar on Small Enterprise Development
P.Francis	Small Industry Promotion

<u>Country</u>	<u>Sponsor</u>
Dublin, Ireland	EEC
Hyderabad India	UNIDO
Hyderabad India	UNIDO
Dublin, Ireland	EEC
Dublin, Ireland	EEC
Kuala Lumpur Malaysia	ESCAP/FAO
Quezon City Philippines	Netherlands Government
Japan	Japan-Papua New Guinea Goodwill Society
Vienna, Austria	UNIDO
Tokyo, Japan	World Bank
Japan	Japanese Government
Hyderabad, India	UNIDO

	<u>Course</u>
M.Oraka	Small Industry Promotion
Francis Ronny	Seminar on Small Enterprise Development
Paul Mitu	Regional Industrial Development Course
Kila Wari	Confectionary Manufacture
A.Rungwa	Sericulture
T.Nou	Sericulture
L.Kanan	Bakery
N.Ereman	Leather
T.Dogo	Boat Building
H.Jackson	Boat Building
R.Kuanando	Diesel Engine Fuel Injection
O.Gamu	Building Construction
Ronald Mein	Export Marketing and Wholesale handicrafts

Country

Sponsor

Hyderabad, India

UNIDO

Nagoya, Japan

Japanese Government

Quezon City
Philippines

Netherland Government

Japan

Japan-Papua New Guinea
Goodwill Society

Japan

Japan-Papua New Guinea
Goodwill Society

Japan

Japan-Papua New Guinea
Goodwill Society

Japan

Japan-Papua New Guinea
Goodwill Society

Japan

Japan-Papua New Guinea
Goodwill Society

Japan

Japan-Papua New Guinea
Goodwill Society

Japan

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Japan-Papua New Guinea
Goodwill Society

New Delhi India

Indian Government

