

NORTHERN PROVINCE

By Michael A. Oata

Michael Oata is Provincial Rural Development Officer for the Northern Province. He has been in the position for about a year, although he previously had 6 years as a field extension officer there, from 1964-70. Before becoming PRDO at Popondetta, he was PRDO Kerema, and he has also worked at Daru, in the Western Province, and Cape Rodney in the Central Province. Born at Bereina, in the Central Province, he received his education at Yule Island, and then went to the Popondetta Agricultural Training Institute. While with DASF he has visited Australia and Malaysia. He is 32 years of age, and he and his wife Amy have three children.



Michael Oata

The Northern Province is situated 9° south of the Equator, with a coastline of 320 km on the Solomon Sea. The boundary of the province borders with the Morobe Province in the north, follows the Waria River up to the foothills of the Owen Stanley Mountains, then follows the main ridge of the Owen Stanleys in a south-easterly direction to where it borders with the Milne Bay Province in the south-east.

It is estimated that of the total area of the province, of 20 700 sq km, approximately 15 % is good arable land, 14 % marginal and the remaining 71 % is mostly unusable, being either steeply mountainous or swampy. Of the arable land about half is of volcanic origin and is very fertile.

Present agricultural development is concentrated in the Kokoda Valley (180 to 365 m), Saiho area and Popondetta plains. Other areas with good potential for development are the alluvial terrain of the major rivers, the sparsely populated Ioma-Waria area, the Musa area, and the Managalasi area (914 m).

Of the arable land available, it is estimated that 4.5 % of this is planted to cash crops (half of this is abandoned plantations), 1.5 % subsistence crops and 0.5 % is used for cattle farms. In addition, 2 % of the marginal land is used for cattle grazing.

Seventy-five per cent of the marginal land is either grass savannah or forest.

Rainfall distribution is fairly even throughout the province with some areas like Kokoda, Managalasi, Saiho and Ioma at

times getting more than their fair share. The average annual rainfall is 2 286 to 2 540 mm of rain per year, falling mainly in the "wet season" from September to May. The hottest months are from June to September with July and August being the driest months. Some coastal areas sometimes have a dry spell in July to August, which due to the sandy nature of the soil leads to subsistence crop shortages.

A good all weather road links Oro Bay to Popondetta and Kokoda and has feeder roads into the villages and settlement blocks. It is possible that the present road connecting Oro Bay, Managalasi and Safia could be eventually extended to Abau in the Central Province and then to Port Moresby.

The main airstrips are at Girua (near Popondetta) and Kokoda. There are nine other smaller strips throughout the province.

Oro Bay has an overseas wharf and Killerton and Tufi both have small ships wharves.

Radio and telephone communication is not very reliable. Although Popondetta has STD, channels are overloaded. Radio communication within the province is also inadequate.

All areas of the province are accessible either by air, sea or road. Heavy rain however may close down roads and airstrips for weeks at a time.

People

Total province population in 1973 was 61 303 people with birth rate and death rate of 3 and 4 per thousand respectively. Manpower availability is good as there are not so many young people leaving the province as one would expect. This could be because there is plenty of land available for development and this may encourage the young people to stay and work the land.

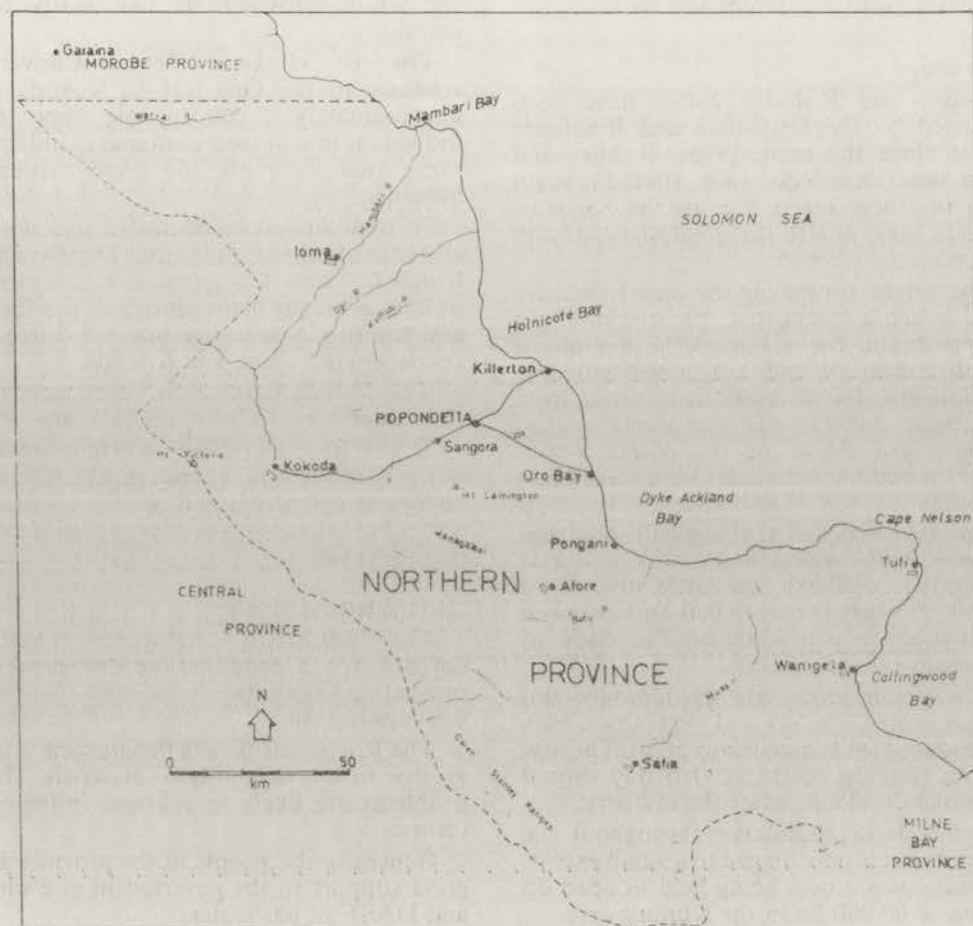
There are between 15 and 20 ethnic groups in the province. The largest would be the Orokaiva and Binandele group with affiliated language groups on the borders of these areas. This group would cover the Popondetta, Kokoda and Ioma areas and perhaps 75 % of the population. The Tufi and Musa areas have many small groups. For example, 3 000 people in Collingwood Bay have three distinct groups—Maisina, Korafe and Ubir.

The main religion is Anglican with some SDA, Catholic and United Church missions.

Sorcery is practised and feared in Tufi, Wanigela and the more remote parts of the province, but only concerns a small number of people and has little effect on general behaviour and development.

The people generally take a positive and responsible attitude towards social and economic development. Land disputes are rare and usually are directed towards government-owned land.

There are 65 primary schools, 4 vocational centres and 2 high schools plus 1 skulanka in the province. Some school leavers tend to drift around, particularly those living close to the main centres but most are taking part in some form of agricultural development in their villages.



The Popondetta Agricultural Training Institute (PATI) was opened in 1963 and currently turns out 80 graduates a year. This institute was the first of its kind in Papua New Guinea.

All vocational centres undertake some form of agriculture. The projects include livestock and vegetable farming. In fact all schools carry out projects in their schools, mainly vegetable growing.

The people are generally healthy but in the more remote areas the effects of lack of nutritious foods such as meat, fish or green vegetables is noticeable. The Department of Public Health is now taking action in trying to teach the people to eat more nutritious food. Adequate health services are provided through the main hospital at Popondetta and at other centres throughout the province.

The staple diet is mainly taro and sweet potato, supplemented by bananas, yams, pumpkin, green vegetables and corn.

Cash crops

Copra and Robusta coffee have been produced by the Orokaiwa and Binandele people since the early 1930s. Rubber and cocoa were introduced soon after; the main areas for these crops became the Saiho to Kokoda area, where the greatest expansion took place in 1959-65.

The bright future for the cocoa industry faded when armyworms, pantorhytes and other pests and diseases struck the plantations of both expatriate and indigenous settlers in the Sangara, Isivini and Girua areas from 1960. Some 3 000 ha of cocoa were damaged or destroyed. Most of the planters went bankrupt and the remainder were forced into a subsistence level of existence.

Cattle is a very fast-growing industry in the province with more and more requests coming in to establish new cattle projects. In the last 10 years about 10 000 ha have been fenced to graze over 4 000 head of cattle, in indigenous-owned projects.

Other cash crops are cardamoms and Arabica coffee, chillies and vegetables. Fish are produced for local consumption. The new fisheries training centre at Oro Bay should encourage development of the industry.

Timber is in abundance throughout the province, but is only logged to a small extent. Negotiations are now being held to open up an area of 60 000 ha in the Kumusi area.

Tourism is developing slowly in the Tufi fiord area, associated with the tapa cloth industry at Wanigela.

There is potential for wildlife development, particularly crocodile farming and, on a small scale, butterfly farming.

Business

The Papua New Guinea Banking Corporation has a main branch at Popondetta with agents at Kokoda, Ioma, Afore and Tufi. The Papua New Guinea Development Bank is represented in the province and is mainly concerned with village cattle projects. There is also an agent of the Bank of New South Wales at Popondetta and Wanigela. Burns Philp and Steamships with seven other smaller stores are established in Popondetta.

Eight small village Savings and Loans Societies have amalgamated to form one for the whole province. It has nearly 6 000 members.

On the 31 Land Tenure Conversion schemes in the Oro Bay to Kokoda area approximately 2 000 people now have individual title to their customary land. In the same area there are 267 Land Settlement Schemes.

A total of ten co-operative societies are established in the province. The Orokaiwa Coffee Growers' Co-operative handles coffee purchases in the main centres of production and the Iji Co-operative buys all coffee and cocoa around Ilimo and Kokoda.

The Mount Lamington Fermentary near Popondetta buys all wet cocoa beans.

DASF buys all rubber and chillies (except in the Kokoda area where a private buyer for chillies is operating) and provides a market outlet for any cash crop where no commercial facilities exist.

Government activities

Co-operation between various departments is good and the Provincial Co-ordinating Committee is the main channel of communication.

The Provincial Works Programme is held up due to unavailability of materials. These problems are likely to continue in the near future.

Generally the people in the province give good support to the government as a whole and DASF in particular.

Missions

The dominant mission is the Anglican Mission. Missions have had a very strong influence on the development of the province. They provide a high standard of education and medical services throughout the province as well as teaching agriculture and helping the village people in their projects.

Self-help groups

Most of the groups are village action groups organized with the idea of developing their areas both economically and socially. Some groups are politically oriented as well.

There are 21 Youth Clubs, which are engaged in livestock projects, trade stores, social functions and help the village communities in economic activities.

There are 17 Women's Clubs which engage in basket weaving, sewing, cooking and at times hold social functions.

There are real leaders of both sexes in these clubs and they organize their club activities well.

Political

The province has six Local Government Councils—Cape Nelson (Tax K8), Ilimo

(K8), Afore (K5-K7), Higaturu (K10), Tamata (K7-K8), and (Oro Bay K8 men, 50t women). Oro Bay Council is the only one where women pay tax.

There are three electorates—two open, Ijivitari (Sergius Arek) and Sohe (Stephen Tago, Minister for the Environment and Conservation), and one regional (MacKenzie Daugi). MPs assist DASf with gathering information particularly from the more remote areas. MPs place a lot of emphasis on agricultural development in their meetings with the people.

There are several political or pressure groups in the province. The two biggest ones are Kapit and Ada. The Pangu party dominates throughout.

The Northern Province Area Authority was formed in 1972. The present president is Edric Eupu and vice-president is Bretherton Ombora. The Area Authority is closely involved in the planning of agricultural development in the province, and has allocated K25 500 to agriculture for the present financial year.



PRDO Michael Oata presenting his Provincial Agricultural Development Programme to the Area Authority meeting in Popondetta.

AGRICULTURAL DEVELOPMENT PROGRAMME

DASF has been preparing programmes for many years and these programmes have ranged from the very complex to the fairly simple. The ones that are now being prepared by PRDOs are the type of programme which the government requires for budgeting purposes, evaluation of staff activities, and also to provide information to other interested authorities such as the Papua New Guinea Development Bank, World Bank, consultants and so on.

Cattle

Throughout the province cattle farming has been very well taken up by the people, mainly in the Popondetta, Kokoda and lately Tufi subprovinces. There is a lot of potential for development of the cattle industry. People have realized this and are now pushing towards achieving this.

Total indigenous cattle projects at the end of 1975 were 211 with a total herd of 4 600 cattle. These projects are financed by PNG Development Bank loans, and repayments are up to schedule.

Indigenous beef production for the market was 15 508 kg for the year 1974-75.

Total expatriate-owned cattle number 2 750 head with another 600 head belonging to DASF. Production last financial year was 71 077 kg.

Approximately 60 tonnes of beef a year are now exported from the province; 30 tonnes are consumed locally.

There are slaughtering facilities at Kokoda (Mamba Pastoral Co.) and Popondetta (PATI).

The Anglican Mission has cattle projects at Popondetta and at Saga in the Kokoda area. The Catholic missions at Asimba and Jombai help the villages by supplying them with cattle and barbed wire for their projects.

In 1975, 14 new projects were stocked with 220 head, in the Popondetta and Kokoda areas. For 1976, 4 new projects of 60 head each are planned for Kokoda, 5 of 70 head each for Popondetta, and 3 of 30 head each for Tufi.

Investigations will be carried out in 1976 for possible new projects as follows: 3 at Managalasi, 5 at Tufi, 3 at Kokoda, 3 at Ioma and 4 at Popondetta.

In the long term, it is possible with the development of the Musa grassland potential and natural increase on existing projects that cattle numbers in the province could be doubled by 1980. With the increase in cattle numbers the industry could be worth K500 000 by the end of 1980.

Extension officers are carrying out a programme to establish improved pastures on indigenous-owned projects. In 1975 improved pastures were established on four projects in the Popondetta area. In 1976 it is planned to complete four more 12½ ha projects in the Popondetta area, plus ½ ha each on the following projects: 40 in the Popondetta area, 30 in the Kokoda area, 5 in the Musa area and 3 in the Tufi area.

Mimosa pudica, a legume which was originally introduced to the province as a cover-crop in rubber plantations, has become a troublesome weed in the province. It covers large areas of land which could be good cattle grazing land. Cattle will not eat it because of its thorns, and its vigorous growth quickly kills useful pasture plants. Research work into biological control of this menace has not had any success so far.

Tests were carried out in the province in 1975 to find out the cheapest method of control, and it was found that slashing combined with spraying was the cheapest method. The control programme will begin in 1976. After the mimosa is killed by spraying, new pasture will be planted immediately.

Farmers will be encouraged to use a rotational grazing programme so that weeds will not become a problem in pastures. Lack of understanding by farmers at present contributes to weed problems in pastures.

Training for farmers is continuously carried out, both by field extension officers and at special training schools. In 1975, 7 farmers from the Popondetta area attended a Farmer Training Course at Bisianumu. There were also field days at Mamba Estate for the benefit of cattle farmers in the Kokoda and Popondetta areas.

In 1976, 5 farmers from the Musa area, 3 from Tufi and possibly 3 from Ioma are expected to attend the Bisianumu training course. For the benefit of all farmers two field days are planned for Mamba and two at PATI.

Training for farmers is a continuing part of DASF's extension effort.



Members of the Northern Province Area Authority and Michael Oata visiting a cattle project.

Other plans for the development of the cattle industry include improved slaughtering and marketing facilities.

The Northern Province Cattle Farmers' Association is establishing a butcher shop with a coolroom at Popondetta, in 1977-78.

It is planned that coolroom facilities available at PATI will be doubled in 1978-79. The possibility of a co-operative owned central abattoir by 1980-81 will be investigated.

It is hoped that the Northern Province Cattle Farmers' Association will be able to take over most of government responsibility for the development of the cattle industry, by 1978-79. The government will continue to provide veterinary and research services.

Coffee

Robusta coffee is grown in the lowland areas of the province and Arabica in higher areas. It is estimated that there are 960 ha of Robusta and 195 ha of Arabica. Production in 1974-75 was 525 tonnes of Robusta and 75 tonnes of Arabica.

Owing to low prices, there have been only small plantings in recent years. The total area of coffee is therefore almost entirely mature trees.

There are about 7 000 families growing coffee.

Owing to lack of enthusiasm on the part of growers, a planned increase in area planted to coffee has not been achieved, although an increase in total production was achieved in 1974-75.

Four Arabica nurseries have been established at Biagi in preparation for new plantings there.

More trees are being planted by the people mainly in the Wawonga, Managalasi and Kokoda areas. Officers of the Department have also started teaching people to rejuvenate old plantings.

In 1975 replanting of Tufi cyclone losses was partly achieved, and this will continue during 1976.

Six 37 sq m nurseries will be established at Wawonga and lower Chirima during 1976.

DASF will continue to encourage new plantings. There is little interest shown in expansion in main areas, but more interest in remote places. Increased price could result in new plantings.

Improved storage facilities have been built at Tufi, and 8 pulpers will be obtained for the Tufi area during 1976. New buildings are planned for 1976 at Ioma and Safia.

From 1978 consideration should be given to establishing a central coffee mill in Popondetta, to save shipping costs to Lae. This would improve the price paid to growers.

There are two main coffee buyers in the province. The Orokaiwa Coffee Growers' Co-operative handles coffee purchases in the main areas. The Iji Co-operative handles coffee and cocoa purchases around Ilimo and Kokoda.

DASF buys in the Ioma, Tufi and Safia areas. A new buying point will be set up for Wawonga in 1976.

The parchment standard is good, and growers are generally familiar with crop culture and processing.

Longterm increases in planting and production will very much depend on the world coffee prices.

Rubber

There are 600 growers in the Kokoda area, 300 in the Saiho area and 150 in the Popondetta area. The total area planted to rubber in the province is 309 ha. The main areas are Kokoda and Popondetta. Two hundred ha at Kokoda are mature rubber, and 88 ha of new plantings are immature. In the Popondetta area there are 73 ha of mature rubber, and 28 ha of immature plantings.

The total production for 1974-75 was 200 tonnes.

There is interest showing in the Kumusi and Kokoda areas and steps are being taken to open more new trees in these areas. Twenty new blocks were opened in the Ilimo area in 1975.

Expatriate plantations at Kokoda and Mamba are tapping, but plantations at Awala, Sangara and Wijo have been abandoned.

These could be re-opened by the government if the price is economic. The government purchased Igora plantation in 1975, and DASF is supervising harvesting and processing.

The main activity in the province is now to plant high-yielding rubber. A Malaysian bud-grafting expert will be visiting the province in January 1976 for 6 weeks to train staff and farmers in bud-grafting techniques.

New nurseries of ordinary seed are being established, and buds of high-yielding rubber will be grafted onto these plants. A nursery has been established at Kokoda and another is planned for 1976.

Tapping of 28 ha of new rubber is to commence in Popondetta land settlement schemes and land tenure conversion areas, in 1976.

Approximately 500 abandoned blocks at Saiho and Sangara could be reopened in 1977-78, if prices permit. This will be combined with reopening of abandoned expatriate plantations, which will provide processing facilities under the nucleus estate system.

In 1975 new factories were built at Hamara and Haki.

The creping machinery at Igora plantation is now available to process cup lump and polybag lump for the whole province. In 1981 the Ombisusu syndicate may convert to crepe production machinery.

Smoked sheet is purchased from village factories by DASF. The Ombisusu syndicate is preparing to take over buying from DASF in 1978-79. If first moves are successful, a complete takeover is expected by 1981. The syndicate will need trucks to collect the rubber at the village and take it to the baling centre.

Supply of acid for processing has been a problem in some areas. DASF aims to remedy this problem in 1976.

Cocoa

There is not very much activity in this crop, especially where the armyworm and pantorhytes attacked the cocoa in the Sangara land settlement scheme. Whatever is left is still being harvested. Understandably, the village people do not show much interest in this crop.

Area of village plantings is 810 ha. Area of land settlement schemes is 226 ha. Of the total area, 643 ha is mature, and 150 ha immature.

Total production in 1974-75 was 272 tonnes, although a potential production of 350 tonnes has been estimated.

Approximately 300 ha need replanting, as trees are over 20 years old.

Although the problem of pests and diseases is still important in the province, growers are being encouraged to plant dieback-resistant clonal cocoa, which gives a stronger tree more able to withstand attack by pests and diseases. This combined with pest control practices recommended by the Entomology Branch of DASF will enable the cocoa industry to go ahead again in the province.

In 1975 DASF investigated pest and disease control in all areas, and responsibility for pest control is now with the growers.

Most interest in new plantings comes from the land settlement schemes at Sangara and Kokoda. Village plantings are static.

In 1975 4 000 clonal cuttings from the DASF research station at Lejo, and *gliricidia* shade, were distributed to interested growers. In 1976 the aim is to encourage planting of about 20 000 clonal cuttings to land settlement schemes at Kokoda and Sangara, and to land tenure conversions in the Popondetta area. In the next five years we hope to replace old plantings with improved clonal cuttings, to rejuvenate and expand existing plantings.

The possibility of a cocoa industry in the Collingwood Bay area will be investigated.

Improvements to fermentaries have been built at Ioma and Kikinonda and Iji will be improved in 1976.

Iji co-operative buys cocoa around Ilimo and Kokoda. Mount Lamington Fermentary handles all wet cocoa beans. DASF buys elsewhere.

Coconuts

Coconuts are planted throughout the lowland areas of the province, but only a small proportion of the crop is processed for sale. Workload for copra production is unattractive to the coastal village grower, who generally is satisfied with a low cash income.

The quality of copra produced is fair, being either smoke-dried or sun-dried. DASF aims for this crop include an intensive promotion and propaganda campaign to encourage people to harvest more nuts and produce better copra with Ceylon type driers.

In 1975, 5 driers were completed, between Bakumbari and Pongani. Four more Ceylon type driers are planned for this area in 1976. In the next five years, DASF will aim to erect Ceylon type driers and hot air driers wherever requested.

As a rough estimate, there are 2 300 ha of coconuts in the province. There is one expatriate plantation of approximately 100 ha.

In 1975, village production was increased from 62 to 70 tonnes per year. Production aim for the next five years is 100 tonnes per year.

Three new nurseries were established at Keppel Point, and palms damaged at Tufi by the cyclone were replanted.

Aims for 1976 include expansion of existing gardens at land settlement schemes at Keppel Point and Wanigela and replacement of dead palms at Cape Nelson (all in the Tufi area).

Marketing of copra is partially handled by co-operatives. A complete transfer is aimed at for 1976.

Chillies

People show a keen interest in this crop and are rapidly increasing their plantings. Women and children do 95 % of the work. Both soil and climatic conditions favour this crop. Because of the high value for weight, chillies are ideal for remote areas. If prices remain good, present rate of expansion will continue.

The quality of the birds-eye chillies from the Northern Province is high, due to strict control by DASF field extension workers.

The main production areas are Kokoda, Managalasi and Musa. Total area is very difficult to estimate as it is combined with subsistence gardens. However, production for 1974-75 was 100 tonnes. Average price was 57 t per kg.

All produce is purchased by DASF, except in the Kokoda area. In 1975, marketing and storage facilities were improved at Safia and Namudi. The marketing outlet at Kokoda will be improved in 1976, and new marketing and storage facilities will be provided at Awala (Musa area). Hot air driers could be required in wetter areas such as Wawonga and Managalasi.

Provided the price level is maintained, expansion will continue in existing areas. Within two years, Ioma and Tufi could be more involved in chilli production.

Fishing

Hardly any fishing is done at all, except for local consumption. With the establishment in 1975 of the fisheries base at Oro Bay, with boatshed, accommodation, freezer and store, it is hoped that more interest will be shown by the people towards fishing for cash.

In 1975 a fisheries shed at Tufi, and a smokehouse at Oro Bay were also completed. An ice-making machine was installed at the end of the year at the Oro Bay fisheries centre. Another smokehouse is planned for Pongani in 1976.

Production from Oro Bay during 1975 was 300 kg, for the Popondetta market. Six

hundred kg of smoked fish was sold at Oro Bay.

There is also a privately owned freezer at Tufi, but local conflict is retarding development of the industry there.

DASF now has two boats, although one is awaiting repair. With these two boats operational, ice delivery from Oro Bay with a fish purchasing service will be extended to all interested fishermen, following the pattern of a similar service in the Milne Bay Province.

Increasing commercial fishing is then expected on the north coast, Oro Bay, Pongani, Tufi and Wanigela.

Two fisheries training courses, both for village fishermen and for government officers, were held in 1975, and eight villagers were given continuous training at Oro Bay. Training and assistance will continue to be given to all fishing groups or individuals interested in commercial fishing.

The possibility of installation of a freezer at Wanigela will be investigated.

Six ponds at Kokoda were prepared and stocked with tilapia during 1975.

Trout fishing at high altitudes could become a tourist attraction, and it is planned to introduce trout to Wawonga and Managalasi in 1976.

Vegetables

A large quantity of vegetables, mainly local types, is sold at local markets. Since the Fresh Food Project commenced buying in late 1974, a total of 123 tonnes was purchased in 1974-75. Very small quantities of European-type vegetables are grown, mainly in the Kokoda and Managalasi areas. Seeds are being distributed to these areas. Production purchased during 1974-75 was 735 kg.

All main centres have small local markets and usually hold this on one day of the week. Popondetta town market operates 7 days a week. Kokoda market operates once a fortnight.

Increased production of European vegetables will be encouraged by DASF, to provide supplies for Popondetta. A vegetable extension officer of the Department will visit all outstations to advise farmers and provide seed.

The Department also aims to improve and increase vegetable supplies for all outstations, particularly for Tufi, Afore, Ioma and Kokoda.

DASF now provides a purchasing service to all growers on the road linking Oro Bay to Kokoda. Vegetables purchased by this service are sold to institutions. As production increases, any surplus to local requirements could be sent to Port Moresby.

A market survey in Popondetta was completed in 1975, and a constant check will be kept on vegetable prices in all centres.

The aim is to maintain a steady increase in production of European vegetables to 10 tonnes and local vegetables to 300 tonnes by 1980. Possible limitations to the programme may be bad weather, insect or disease attacks, or shortage of seed.

Other developments

Wildlife. There is potential for wildlife development particularly crocodile farming. Investigations have been carried out at Musa and Kumusi areas, and development and training will be according to the village farmers' interest.

Three potential crocodile farmers will visit PATI crocodile training farm in 1976. Other farmers in the Kumusi and Musa areas will be encouraged to join the programme.

If the short-term crocodile programme is successful, it is anticipated that rapid expansion in crocodile farming will occur in lower Musa, Kumusi and Mambari areas. It is desirable that this industry be associated with fish projects, as the fish offal can be fed to the crocodiles.

Butterfly farming may be introduced to the Waria to Ioma area by 1978 if a pilot farm now being developed at nearby Garaina, in the Morobe Province, is successful.

Wildlife management areas will be defined according to the demand in the province. Rangers and other government officers will be recruited to protect and preserve the wildlife resources of the province.

Pigs. Three pig farmers with a total of 20 pigs have started projects. Encouragement and supervision will be given to these farmers, and to others who show interest. Farmers will be encouraged to visit PATI pig project so as to improve their management and feeding techniques.

Poultry. There is no commercial project. Village stock is being upgraded by introduction of stock from PATI.

The future of the pig and poultry industries in the Northern Province depends mainly on

the ability of the province to become self-sufficient in cheap foodstuffs—sorghum, maize, fishmeal and so on.

Cardamom. This is a relatively new crop and is only grown in the Managalasi area. Progress is slow, and with shortage of expert staff in the area, not much field work is done on this crop. There is one expatriate-owned plantation and some village plantings. Total area under cardamom in 1974-75 including Boikik plantation was 69.62 ha, with only 20 ha of indigenous plantings. Indigenous production was 272 kg.

DASF maintains two nurseries at Managalasi. A drier was built at Afore in 1975, and another is to be built at Kawowoki. Villagers are being encouraged to expand old gardens, and demonstrations are held on harvesting. Most of the buying and most of the advice comes from the expatriate plantation at Afore.

In the long term, expansion may be extended to Wawonga.

Rice. Seven trial village plots were established in 1974-75, but were wiped out by the insect pest *leptocorisa*. Investigations into the control of the insect are continuing.

Ginger. A plot of ginger has been established at Popondetta to provide planting material for village ginger production.

However, there has been no demand from the villagers, who generally have their own ginger growing in food gardens. Development of this industry is awaiting advice on the market potential.

All of these small projects depend on the attitudes of the village farmer and world markets, which could change from day to day.

Redevelopment of Sangara Settlement Scheme

Planning is now well advanced for the redevelopment of the Sangara area where cocoa crops were devastated by pantorhytes.

This will take the form of a nucleus estate with smallholder and village oil palm development scheme along similar lines to the Hoskins scheme in West New Britain.

The nucleus estate of 4 000 ha will be developed by the Papua New Guinea government in conjunction with the Commonwealth Development Corporation. The World Bank has recently had a Mission in Papua New Guinea to appraise the project and it is hoped that it will approve a credit to assist government development of the proposed 1 200 smallholder and village blocks totalling some 5 000 ha.

If approved it is expected that oil palm plantings will commence in 1977.