

INTEGRATED INDUSTRIALIZATION IN NON-METROPOLITAN AREAS

VOLUME III

THE PHILIPPINES

Establishment of Pilot Projects in Aklan,  
Palawan and Surigao del Norte  
in Support of Integrated Industrialization  
in Non-metropolitan Areas

ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC  
BANGKOK



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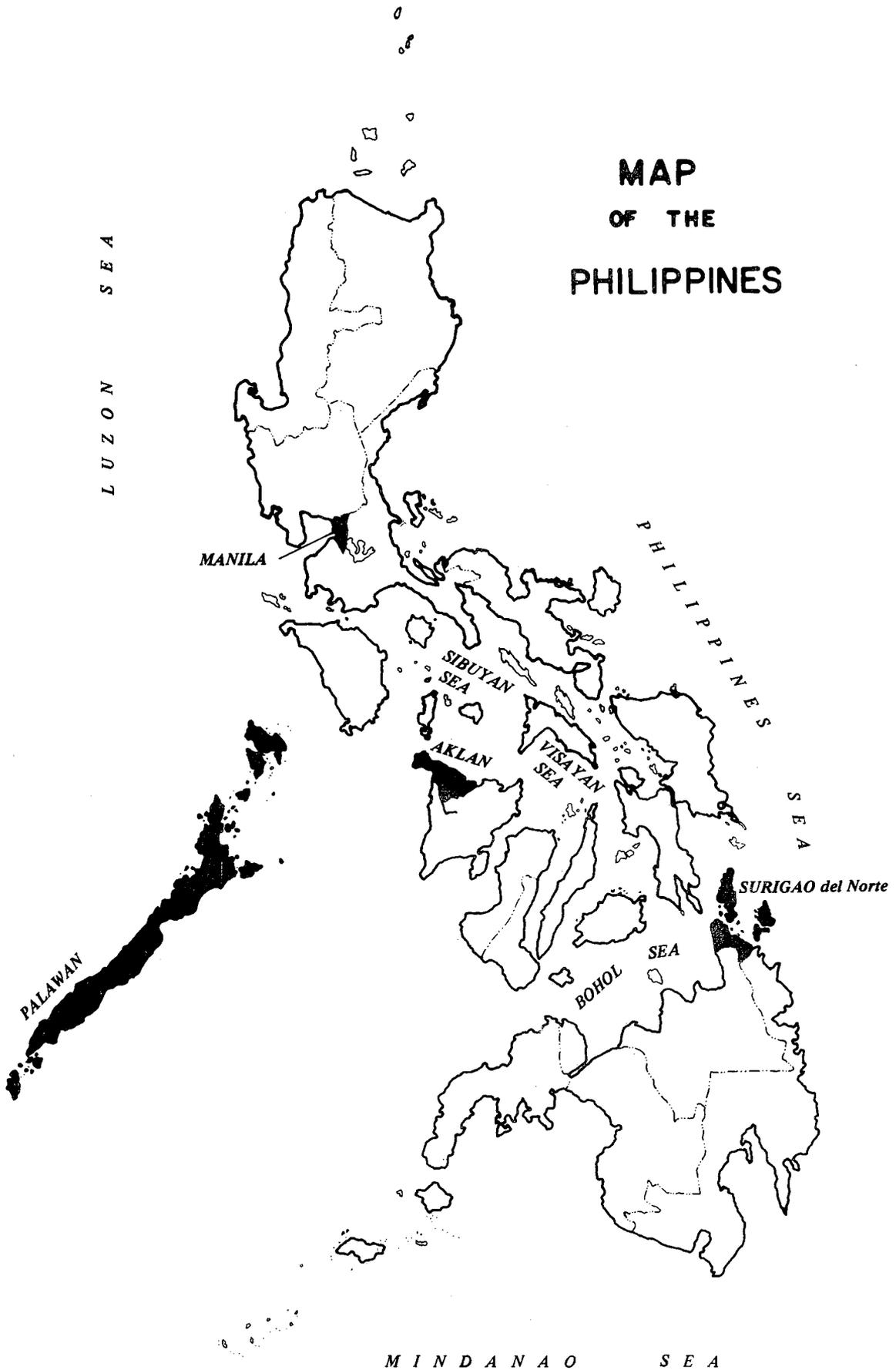
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# MAP OF THE PHILIPPINES



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## FOREWORD

Many Governments in the ESCAP region are aware of the crucial importance of the dispersal and relocation of industrial activities away from primate cities or metropolitan areas. Yet, at the same time, they face the enormous complexities of implementing industrialization in less developed regions of their countries.

Many of the development strategies formulated by these Governments are being re-oriented towards balanced growth, especially between rural and urban sectors, and integration of rural with urban development. Reflecting such emerging trends in policy formulation, the first session of the Committee on Industry, Housing and Technology, held in Bangkok in September 1975, recommended that the ESCAP secretariat initiate a survey project on integrated industrialization in non-metropolitan areas (INA), with a view to assisting the promotion of industries in non-metropolitan areas and developing policy guidelines for the governmental assistance required to that end. Ministers of Industry of the ESCAP region met in November 1977 and identified dispersal of industrial activities to non-metropolitan areas as one of the four necessary elements of new industrial policies and strategies for the coming years.

Progress has since been made by the organization of a fact-finding mission which undertook field surveys in eight countries during April to October 1977. The Intergovernmental Meeting on Integrated Industrialization in non-metropolitan Areas was held in Tokyo in March 1978, and a series of country survey missions were undertaken to plan for the establishment of pilot projects in selected non-metropolitan areas in Bangladesh, India, Indonesia, Malaysia, the Philippines, Sri Lanka and Thailand.

The present study contains findings and recommendations made by the ESCAP INA survey team in relation to the establishment of pilot projects in the Philippines. Programme of action was adopted at a meeting attended by representative of the Government.

I have no doubt that this series of studies will assist not only the Governments concerned in their implementation of pilot projects, but interested donor countries and international organizations in the preparation of their assistance programmes to supplement the efforts being made by the countries for industrialization of non-metropolitan areas.

I would like to take this opportunity to thank the Governments that have participated in this important programme initiated by ESCAP, and also the Governments of India and Japan for their generous assistance which has enabled ESCAP to carry out activities in this important field.

**J.B.P. Maramis**  
**Executive Secretary**  
**Economic and Social Commission**  
**for Asia and the Pacific**

Bangkok  
Thailand  
March 1979

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## LETTER OF TRANSMITTAL

ESCAP/UNIDO Division of Industry,  
Housing and Technology  
ESCAP, The United Nations Building  
Bangkok 2

13 October 1978

Dear Mr. Maramis,

I have the honour to submit the report of the ESCAP INA Survey Mission for the Philippines for the establishment of Pilot Projects in support of integrated industrialization, together with the Report of Working Session on the Establishment of Pilot Projects in Indonesia and the Philippines held at ESCAP from 10 to 13 October 1978.

In pursuance of the mandate given to the ESCAP INA Survey Mission, and based upon its findings and recommendations with regard to the possibilities of establishing pilot projects in some selected areas, and their impact on the economies of the countries concerned, especially those in the economically backward areas, a country programme of action for the Philippines, as contained in the report of the above mentioned meeting, was endorsed unanimously by the said meeting.

I am of the opinion that the pilot project programme, as contained in the mission's report and endorsed by the said meeting, should receive immediate attention of the ESCAP secretariat for its early implementation in the Philippines, so that ESCAP could play a catalytic role in supplementing the efforts made by the national Government with regard to industrialization in non-metropolitan areas.

I should like to take this opportunity to express my gratitude to the members of the team whose names are listed below, as well as the ESCAP secretariat for their assistance in the preparation of the report:

Members of the team for the Philippines:

SWARAJYA PRAKASH, H. UMEHARA,  
SYVELYN J. TAN, HERMINIA R. FAJARDO

Please accept, Mr. Executive Secretary, the assurances of my highest consideration.

**N. TABE**  
Project Co-ordinator  
Integrated Industrialization in  
Non-metropolitan Areas

Mr. J.B.P. Maramis  
Executive Secretary  
ESCAP secretariat  
United Nations Building  
Bangkok

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## ACKNOWLEDGEMENT

The ESCAP INA Survey Team would like to thank the Government of the Republic of the Philippines, in particular His Excellency, Mr. Vicente T. Paterno, Minister of Industry, and the Honourable Mr. Cesar P. Macuja, Deputy Minister of Industry and Chairman of the Commission on Small and Medium Scale Industries for their support, encouragement and guidance which had set the Team's task in the right direction and perspective.

Our sincere thanks also go to the Honourable Salvador P. Socrates, Deputy Minister of Local Governments and Community Development and Governor of Palawan, Honourable Leopoldo L. Ulanday, Assistant Minister of Trade, Messrs. Bienvenido Villavicentio, Humberto U. Amoranto, Alex G. Umadhay and Benjamin T. Leong, NEDA Directors, and Colonel Paterno V. Vilorio, Director, University of the Philippines Institute for Small Scale Industries. We are also grateful to Roberto Q. Garcia, Governor of Aklan and Jose C. Sering, Governor of Surigao del Norte for their valuable assistance rendered to the Team during its field mission, and the officials of various departments and agencies of National Government.

We also extend our thanks to Joseph Pernia, Zafrullah Masahud, Federico Luchico Jr. and Emmanuel Almonte of the Ministry of Industry for their administrative and technical services, and Jaime Abella Sison, Chief of the BAI Animal Feed Control Division and R.D. Manalo, Manager of the DBP Industrial Project Department who furnished us with technical data and information relevant to the economic aspects of the proposed pilot projects. Lastly, we would like to acknowledge, with deepest thanks the valuable assistance rendered by many citizens, farmers, entrepreneurs, and factory workers, whose day-to-day contacts by the Team were pleasant and useful.

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## ACRONYMS

BSMI	Bureau of Small and Medium Industries
BIIP	Bureau of Industrial Information Programme
CSMI	Commission on Small and Medium Industries
BAI	Bureau of Animal Industry
BPI	Bureau of Plant Industry
PCA	Philippine Coconut Authority
DBP	Development Bank of the Philippines
NEA	National Electrification Authority
NPC	National Power Corporation
PDS	Provincial Development Staff
MASICAP	Medium and Small Industry Co-ordinated Action Programme
NACIDA	National Cottage Industries Development Authority
NEDA	National Economic and Development Authority
SBAC	Small Business Advisory Centre
TAC	Trade Assistance Centre

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## **COUNTRY PROGRAMME OF ACTION FOR THE PHILIPPINES\***

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\* An Excerpt from the Report of the Working Session on the Establishment of INA Pilot Projects in Indonesia and the Philippines held in Bangkok from 10 to 13 October 1978.

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## COUNTRY PROGRAMME OF ACTION FOR THE PHILIPPINES

The meeting considered the findings and recommendations of the INA Mission and recommend the following:

1. Three pilot industrial firms should be installed as follows:
  - (a) A 15-ton per day feedmill plant in each of the provinces of Aklan and Palawan;
  - (b) A cassava starch processing plant in Surigao City.
2. The site of the projects should be as follows:
  - (a) Puerto Princesa City for Palawan;
  - (b) Kalibo for Aklan;
  - (c) Surigao City (Bad-as/Placer area) for Surigao del Norte.
3. A Technical Assistance Unit (TAU) should be set-up under the Commission on Small and Medium Industries (CSMI) in the three provinces.
4. The function of TAU would be as follows:
  - (a) Organization and monitoring of the three pilot firms:
  - (b) Promotion and development in an integrated manner of the agricultural inputs;
  - (c) Promotion, development and organization of related industries.
5. Under each of the functions, the proposed specific activities will be as follows:
  - (a) *Organization and monitoring of the three pilot firms*
    - (i) Conduct detailed feasibility studies as a basis for business plans for the respective pilot firms, including consideration of the industrial infrastructure support required;
    - (ii) Identify and organize entrepreneurs for private sector equity contribution to the pilot firm;
    - (iii) Arrangement for project loan financing (to be packaged with CSMI co-operating financing institutions), as may fit the requirements of the proposed pilot firms;
  - (iv) Organization of the pilot firms, start-up management team.
  - (b) *Promotion and development in an integrated manner of the agricultural inputs*
    - (i) Increase productivity of cassava, feedgrain crops and others as may be needed;
    - (ii) Extension of appropriate technology;
    - (iii) Up-grading of poultry and piggery stocks and disease control;
    - (iv) Provide for quality control assistance to the feedmills;
    - (v) Promotion of subcontracting supply arrangements with maximum number of industrial users (e.g., cassava-based glue extender to plywood plants);
    - (vi) Others as may be identified and needed.
  - (c) *Promotion, development and organization of related industries*
    - (i) Further identify related industries, in addition to the teams' findings;
    - (ii) Conduct feasibility studies on these related industries;
    - (iii) Identify and organize entrepreneurs;
    - (iv) Provide marketing, technical, financial and general consultancy services as may be needed during the operations of the firms;
    - (v) Arrange for training courses when needed by these enterprises;
    - (vii) Other.
6. TAU, in addition to the function enumerated in 5 above, should also co-ordinate and promote the project with the national and provincial agencies when needed.

7. TAU should also collect and collate necessary data in terms of project evaluation.
8. The three provinces should be declared pilot project areas.
9. As pilot projects, the cottage, small and medium industries, as may be developed from the nucleus firms, should be given special consideration in accordance with existing special incentives schemes.
10. ESCAP may be requested to consider the following assistance to be provided to the project through international organizations or interested donor countries:

(a) *For the pilot firms*

- (i) Pilot firms' start-up management group to manage the pilot projects for a specified period, after which management could be transferred to the entrepreneurs;
- (ii) Selection and provision of technology, technical know-how, plant design and layout and installation of machinery.

(b) *For the growth of related industries*

- (i) Provide technical experts when needed and as proposed by TAU;
- (ii) Undertake feasibility studies of projects as proposed;
- (iii) Assist in the selection and provision of technology, technical know-how, plant design and layout, installation of machinery;
- (iv) Others as may be proposed and needed.

11. Proposed activities are given below:

<i>Activity</i>	<i>Period</i>
(a) Organization of TAU and designation of the project co-ordinator	Month 1-3
(b) Organization of the ESCAP expert team	Month 1-3
(c) Conduct detailed feasibility study of the proposed pilot project	Month 4-5
(d) Identification and organization of entrepreneurs	Month 6-7
(e) Financial arrangements for the three pilot firms	Month 6-7

- (f) Final review of project plan
  - (g) Organization of the start-up management team and construction/installation of project
  - (h) Start-up and commercial operation of project
  - (i) Conduct feasibility studies for related industries
  - (j) Organization of feasible related industries
- Month 7  
Month 8 - as scheduled  
After a year's operation  
Year 2 after start of pilot firms' operations  
Year 3

12. Total cost of pilot projects are estimated as follows:

(a) **Budget summary**  
(in man-months)

Covering phases I and II for the three provinces

<i>Item</i>	<i>Man-months (per province)</i>	<i>Man-months (3 provinces)</i>
1. Foreign experts	54	162
2. Foreign management	144	432
3. National experts	396	1,138
4. Technical training	80	240
<b>Total</b>	<b>674</b>	<b>2,022</b>
Contingency of 25%		506
<b>Grand total</b>		<b>2,528</b>

(12-b) **Budgeting schedule**  
(in man-months for a province)

Phase I

Establishment of pilot enterprise

<i>Item</i>	<i>Man-months</i>
1. Pre-operation period (6 months)	
(a) Foreign expert team of 3 members	18
(b) National expert team of 10 members (Travel and maintenance only)	60
2. Organization and operation period (12 months)	
(a) Foreign management team of 3	36
(b) National expert team of 10	120
<b>Total</b>	<b>234</b>

**Phase II**  
**Establishment of related industries/enterprises**

1. Pre-operation period (6 months)	
(a) Foreign expert team of 6 (4 industries)	36
(b) National expert team of 12	72
2. Establishment and operation (12 months)	
(a) Foreign management team of 9 (3 industries)	103
(b) National expert team of 12	144
3. Technical training programme for 8 (10 months)	80
	<hr/>
Total	440
Grand total	<hr/> <u>674</u>

**Phase III**  
**Evaluation (to be carried out by ESCAP)**

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## SUMMARY OF FINDINGS AND RECOMMENDATIONS

### Objectives of the mission

The objectives of the mission were to identify and to set-up projects that would stimulate the industrialization process in the provinces of Aklan, Palawan and Surigao del Norte, with particular emphasis on the development of cottage, small and medium industries (SMI).

### Findings and recommendations

#### A. Industries

1. Eighty-five per cent on the average, of total population in each of these provinces is engaged in agriculture. Agricultural land utilization, intensive and extensive, however, is still very low.
2. The average family income in these provinces is generally lower than that of the country's and their respective regions and as compared to other provinces within the region.
3. Considering the factors as earlier mentioned in numbers 1 and 2, a major thrust of the Government's efforts and programmes is to develop the agricultural productivity of these provinces via intensive and extensive utilization of land. Also, the Government encourages the production of cash crops such as cassava, corn, sorghum, soya bean etc.
4. The programme however, has not gained impetus. A major deterring factor is the very limited local market. Agricultural products, except for copra and rice in these areas have heavily relied on the limited volume of consumer buyers. There are no industrial and/or institutional users of the crops at local level.
5. In all the three provinces there are virtually no manufacturing and/or processing industries in the SMI category and there are only one or two in the large-scale category. The raw material input to these large-scale industries are mostly mineral. Hence, these industries do not

directly support the government's programme in terms of increase in agricultural productivity.

6. What is needed therefore in these provinces is an industry that could serve as a nucleus enterprise, which by the nature of its operations, could stimulate the growth of agro-based and related industries via backward and forward as well as vertical and horizontal linkages.
7. From the study of the proposed industries of the NEDA and the PDS and from the findings of the team, the following industries are proposed as pilot projects:
  - (i) a 15 tons per day feedmill plants in the provinces of Aklan and Palawan and
  - (ii) a cassava starch (glue-extender) processing plant in Surigao City.

#### B. Growth centers/location

1. The NEDA and the PDS have identified growth centers for each of the three provinces. The growth centers are strategically located in terms of potentials for industrial development.
2. Although seven growth centers have been identified for each of Aklan and Palawan and five for Surigao del Norte, the initial focus of development may have to be in the provincial capitals, Kalibo for Aklan, Puerto Princesa City for Palawan and Surigao City for Surigao del Norte. This is in view of the present status and the development plans for the growth centers in terms of physical and economic infrastructure.
3. It is therefore recommended that the proposed pilot projects be located in the following areas which are only indicative. Detailed feasibility studies should be undertaken over the whole area of the islands of Palawan, Panay and Mindanao before final decision on the exact loca-

tion of the proposed projects is being made.

- (i) Puerto Princesa City for Palawan;
- (ii) Kalibo for Aklan and
- (iii) Surigao City (Bad-as/Placer area) for Surigao del Norte\*

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\* The working session on the establishment of INA pilot projects in Indonesia and the Philippines held at Bangkok from 10 to 11 October 1978 recommended the establishment of the pilot projects in the indicated areas. However the Philippines Government wishes to maintain flexibility in deciding the final location of the pilot projects.

### C. *Government assistance*

1. The entrepreneurs of the provinces of Aklan, Palawan and Surigao del Norte are in need of assistance namely information, guidance and support. Information assistance could be in the areas of assistances rendered by government agencies, alternative sources of finances, markets, new technologies etc. Guidance is needed in the areas of procedures, rules and regulations needed for setting up new industries, for possible industrial ventures suited in the areas etc. and support is needed in terms of direct marketing, financing, and technical aspects etc. of business operations etc.
2. The governments' assistance to promote and develop the cottage, small and medium industries is comprehensive in nature and scope. It provides for an integrated package of technical assistance geared to answer the needs of the entrepreneurs as stated in paragraph 1.
3. This package of technical assistance is easily accessible and availed of in the Metropolitan Manila area via the national offices and at the regional centers via the regional offices. The three provinces however are far from the Metropolitan Manila area and the regional centers. Considering the poor physical infrastructure facilities in these provinces, travel from them to either Manila or the regional centers is quite costly, inconvenient and time consuming. All of these are beyond the means of the provincial small entrepreneurs. As a consequence, government assistance at these provinces has been availed of on a very limited basis.

4. At these provinces, the government agencies that provide direct industrial assistance to the entrepreneurs are only those of the MASICAP and the NACIDA. By its functions and/or limited resources, these agencies are able to provide very limited assistance to the entrepreneurs of the said.
5. Two offices from the regional centres, namely SBAC and TAC, come to the areas by visit. However, the number of visits limit the intensive as well as extensive delivery of government assistance to these entrepreneurs. Understandably, this is because of the volume of demanded assistance coming from the entrepreneurs of the regional centres vis-a-vis the limited number of personnel and other resources of these offices.
6. While it may be ideal to establish branches of all government agencies directly involved in providing assistance to promote and develop industries in these provinces, this may not be realistic at the moment due to resource constraints as well as the volume of work available for each specific agency.
7. What is presently needed in each of these provinces should be an agency that could carry out the following functions:
  - (i) To study the requirements for the promotion and development of industries in these provinces;
  - (ii) To liase with the concerned agencies and offices at the regional/national level;
  - (iii) To organize and supervise the delivery of assistance; and
  - (iv) To monitor and supervise the promotion and development of industries.
8. It is therefore recommended that a Technical Assistance Unit (TAU) which can carry these functions be organized in these provinces.
9. Considering the present national, regional and provincial organizational set-up and functions in terms of industrial

promotion and development, it is further recommended that TAU be organized under the auspices of the Commission on Small and Medium Industries (CSMI) of the Ministry of Industry.

D. *Industrial data and statistics*

1. Industrial data and statistics for cottage industries in these provinces are collected by the NACIDA through its system of registration. However, the data and statistics have not been updated, and found rather inadequate for planning purposes, due to constraints in personnel and other resources. It is therefore recommended that this area be strengthened.
2. The development of the SMI sector in these provinces is still at its infancy stage. However, for the benefit of planners and implementors, both from the private and the public sectors, a reliable source of industrial data and statistics is indispensable. It is therefore recommended that a system of data collection with built-in mechanism for updating be considered by the proposed TAU.
3. It is further recommended that as an instrument for data gathering, registration of new industries with the TAU's may be introduced.

E. *Locational incentives*

1. At present infrastructure facilities, both physical and economic e.g. shortage of power, high rates of power, limited markets, high transportation cost etc., do not in itself provide impetus for entrepreneurs to specifically locate their ventures in these areas. It is therefore recommended that where and when it would fit existing rules, regulations and procedures, locational incentives such as special power rates be considered for these areas specifically and to other least developed areas in the country generally.

F. *Growth of industries other than agro-based*

1. As was mentioned earlier, the three provinces are rich in marine and forest resources. In the course of the study, several industries based on these resources and demand could be promoted and developed under the cottage SMI category, such as furniture, handicraft (rattan, bamboo, carpets making), ready made garments and other demand based industries listed in Chapter V.
2. It is therefore recommended that while the present focus of industrialization is agro-based, the promotion and development of these other industries should also be considered either in the near future or in the long-run.

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**THE PHILIPPINES**

**Establishment of Pilot Projects in Aklan, Palawan and  
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**Part One**  
**THE INTEGRATED REPORT**

**INTRODUCTION**

1. The Intergovernmental Meeting of Integrated Industrialization of Non-metropolitan Areas held in Tokyo from 23 to 29 March, strongly supported the proposal for the establishment of pilot projects in a number of countries including the Philippines, as an innovative new approach for industrialization of non-metropolitan areas.

2. Representatives of the Government's concerned indicated their preferences for specific project areas in their countries for the establishment of pilot projects, and the contents of the pilot projects as well as the objectives that such projects should seek to achieve.

3. In accordance with the work plan envisaged in the Draft Project Document IHT/IMIINA/3 dated the 20th February 1978, ESCAP proposed to implement the project activities under phase I involving project identification and feasibility studies and the formulation of concrete programme of action needed for the establishment of pilot projects in selected ESCAP member countries.

4. It was agreed that the ESCAP secretariat should organize a multi-disciplinary group of experts to undertake the feasibility studies on specific project areas of Bangladesh, India, Indonesia, Malaysia, the Philippines and Thailand.

*Objectives of the survey:*

5. The main objectives of the survey are:

- (i) to design the basic components of the core activities needed for the implementation of the pilot projects(s);
- (ii) to undertake economic appraisal of individual activities and of the pilot project as a whole; and
- (iii) to programme other aspects of managerial and administrative requisites for its implementation.

*Outline of the survey:*

6. In view of the objectives laid down above,

the survey in each project area will consist of three distinct parts, viz:

- (i) identification of growth centre(s) in project area;
- (ii) Critical evaluation of potential for industrial development; and
- (iii) programming for establishment of pilot projects(s).

7. The Philippine Government suggested the following three least developed areas for undertaking such a study by the ESCAP.

- (i) Aklan, Region VI (Western Visayas)
- (ii) Palawan, Region IV A (Southern Tagalog)
- (iii) Surigao del Norte, Region X (Northern Mindanao)

*The survey team:*

8. ESCAP constituted the following team for the survey of the three provinces, namely Aklan, Palawan and Surigao del Norte:

*Team Leader:* Noboru Tabe  
(INA Project Co-ordinator)

*Consultants:* Swarajya Prakash  
(Industrial economist)

H. Umehara  
(Agro economist)

Syvelyn J. Tan  
(Small and Medium Industry  
Development Expert)

Herminia R. Fajardo  
(Small and Medium Industry  
Development Expert)

*Time Horizon:*

9. Three months starting from the third week of July to the third week of October 1978, inclusive of the pre- and post, field survey desk work at ESCAP headquarters.

*Methodology of the survey:*

10. The team initially had preliminary discus-

sions with the officers of the Ministry of Industry, Commission on Small and Medium Industries, Ministry of Trade, Regional Executive Director of the National Economic and Development Authority (NEDA) Region IV-A and collected background information. Besides a number of other agencies dealing with industries for region IV-A were also contacted by the team to acquaint themselves with the policies and programmes of the National Government for the development of cottage, small and medium scale industries. The team also referred to the various documents, published and unpublished, of the National and Provincial Governments.

11. The field visits in the three provinces were carried out as follows:

Palawan Province -- 1 August to  
8 August 1978

Surigao Province – 14 August to  
26 August 1978

Aklan Province – 21 July to 28 July 1978  
3 September to  
9 September 1978

12. Before visiting the provinces, the team visited the regional centre of Regions IV, X and VI. Detailed discussions were conducted with the Regional Executive Directors of NEDA, the Centre Managers of SBAC and the Chief of the TAC on the regional development programme and the share of the concerned provinces in the overall development planning.

13. The field visits to the three provinces mainly included the following activities:

- (i) Discussions with the governors, the city and the municipal mayors, the provincial development staffs, the departments and/or agencies concerned with electricity, water, agriculture, education, port and etc., the constituents of the national government department like MASICAP, NACIDA, BDT and etc.;
- (ii) Discussions with the officers and members of the Chamber of Commerce of

the Philippines, Rotary clubs and other distinguished residents;

- (iii) Visits to existing large, medium, small and cottage industries producing different products;
- (iv) Interviews with the management and/or proprietors managers of the different enterprises visited;
- (v) Meetings with traders, wholesalers, retailers and exporters operating in the area and dealing with different products;
- (vi) Review of the plans and policies prepared by the National and Provincial Governments;
- (vii) Visits to the growth centres identified by the National and Provincial Governments, and
- (viii) Collection of relevant data on various aspects – for the purpose of the survey.

14. The places which the team visited, the offices and agencies contacted and a bibliography of the documents, published and unpublished, referred to are given in appendices I to III respectively.

15. The observation and recommendations in respect of each province surveyed were discussed with the Governors/Provincial Development Coordinators and the Mayors and their reaction sought. Wherever possible the reaction of the NEDA Regional Executive Directors, for the three provinces were also sought and incorporated in the report before finalization. Finally, the main recommendations were discussed at the National level with the Minister and the Deputy Minister of Industry/Chairman, Commission on Small and Medium Industries, the Assistant Minister of Trade, and the NEDA Director of Foreign Assistance Division. Finally, the draft report of the INA Mission to the Philippines was discussed in a meeting held at Bangkok from 10 to 12 October 1978. The meeting was attended by the Deputy Minister of Industry and Chairman of the Commission on Small and Medium Industries himself. The report was approved by the meeting with certain modifications in the presentation of the recommendations.

## I. STATUS OF THREE PROVINCES, AKLAN, PALAWAN AND SURIGAO DEL NORTE VIS-A-VIS THE RESPECTIVE REGIONS AND THE COUNTRY AS A WHOLE

16. The Philippines consisting of over seven thousand islands has a total area of 300,000 square kilometers with a population of 42 million according to the 1975 census. Administratively, the entire country is divided into 13 regions and 72 provinces. The rural population constitutes more than 2/3rd or about 70 per cent of total population. The three provinces which were taken up for survey by the INA Mission, namely Aklan, Palawan and Surigao del Norte belong to regions VI (Western Visayas), IV(a) (Southern Tagalog) and X (northern Mindanao) respectively. The position of these provinces, in terms of population, population density, employed and unemployed labour force and average family income as compared to the Philippines as a whole, is presented in Tables I-1 to I-4.

17. It may be seen from these tables that although the pressure on land is quite low, particularly in the case of Palawan, the average family income is very low in all these provinces as compared to their respective region, as well as compared to the other provinces within the regions. The average family income in Aklan and in Palawan are almost the lowest among the other provinces.

18. These three provinces are basically agricultural and urban population is confined to only one city in each of the provinces of Palawan and Surigao del Norte and to the town of Kalibo in Aklan. These provinces are also far away from the metropolitan city of Manila or even from the regional headquarters. Palawan for example is completely cut off and isolated from the main land.

19. Industrialization in the provinces is still in its infancy. There are only a few cottage industries. As far as large industry is concerned, there are only one or two in the provinces of Palawan

and Surigao del Norte and none in Aklan.

20. It may be seen from Table I-1 that Palawan accounts for 5 per cent of the total area of the country while Aklan and Surigao del Norte account for only 0.6 and 0.9 per cent respectively. The population of the 3 provinces all stands at 0.7 per cent to the country. In terms of man-land ratio, Palawan is one of the lowest in the country, 20 persons per square kilometer. Whereas, Aklan is slightly higher than the country's and the region's. Its ratio is 161:1. For Surigao del Norte, it is 109:1.

21. Table I-2 indicates the percentage of unemployed in the 3 provinces as compared to the total national labour force and to their respective regions. This shows that in respect of Aklan and Surigao del Norte the percentage of unemployed to the total labour force is more than the national, while in the case of Palawan it is less. The percentage of unemployed in the country is 7 while in Palawan it is 5. For Aklan and for Surigao del Norte it is 9.

22. As compared to the respective regions of the three provinces and to that of the country's, the average family income per year of the provinces are below par (Tables I-3 and I-4). The average national family income is ₱ 5,840. Regions IV-A, VI and X has ₱ 5,442, ₱ 5,483 and ₱ 3,803 respectively. Whereas, the provinces of Palawan, Aklan and Surigao del Norte has only ₱ 3,812, ₱ 2,971 and ₱ 3,811 respectively.

### *Conclusion*

23. Considering these factors, there is a need for developing cottage, small and medium industries in these provinces with a view to providing employment to the unemployed and increasing average earnings of the families.

Table I-1

**THE AREA POPULATION AND DENSITY OF POPULATION IN RESPECT OF  
THE PHILIPPINES VIS-A-VIS THE REGIONS AND THE PROVINCES**

Name	Area (sq. km.)	Percentage to Philippines	Total	Population (000)		Percentage to Philippines	Density of populations (per sq. km.)
				Urban	Rural		
Philippines	300,000	100.0	42,071	13,306	28,765	100.0	140
Region IV(a)	46,925	15.6	5,214	1,492	3,722	12.4	111
Palawan	14,896	5.0	300	57	243	0.7	20
Region VI	20,222	6.7	4,146	1,059	3,087	9.8	205
Aklan	1,818	0.6	293	27	266	0.7	161
Region X	28,328	9.4	2,313	431	1,882	5.5	82
Surigao Del Norte	2,739	0.9	298	58	240	0.7	109

Source: Compiled from the Regional Development Information, Manila 1978.

Table I-2

**THE TOTAL LABOUR FORCE - EMPLOYED AND  
UNEMPLOYED IN THE PHILIPPINES VIS-A-VIS  
REGIONS AND PROVINCES**

Name	Total labour force (000)	Em- ployed (000)	Un- em- ployed	Percen- tage of unem- ployed
Philippines	12,225	11,315	909	7
Region IV(a)	2,896	2,627	269	9
Palawan	97	92	5	5
Region VI	1,344	1,252	92	7
Aklan	97	88	9	9
Region X	698	665	33	5
Surigao Del Norte	90	82	8	9

Note: Labour force is defined as: employed (persons 10 years old and over who are engaged in gainful occupation) plus unemployed (refers to persons 10 years old and over who are looking for work for the first time and lack work experiences).

Source: Compiled from the Regional Development Information, 1978

Table I-3

**THE AVERAGE FAMILY INCOME OF THE  
COUNTRY, REGIONS AND THE PROVINCES**

Name	Average family income (In Pesos)		
	Total	Urban	Rural
Philippines	5,840	8,329	4,745
Region IV(a)	5,442	7,127	4,787
Palawan	3,812	4,884	3,601
Region VI	5,483	7,328	4,906
Aklan	2,971	3,448	2,910
Region X	3,803	5,632	3,430
Surigao Del Norte	3,811	4,505	3,652

Source: Regional Development Information, Manila 1978.

Table I-4

THE AVERAGE FAMILY INCOME IN THE PROVINCES OF REGION IV(a),  
VI AND X AND THEIR POSITION VIS-A-VIS PROVINCES TAKEN UP  
FOR SURVEY

<i>Name</i>	<i>Average family income (In Pesos)</i>
<i>Philippines</i>	5,840
<i>Region IV(a)</i>	5,442
<i>Provinces</i>	
1. Rizal	8,161
2. Cavite	6,590
3. Laguna	6,424
4. Occidental Mindoro	5,195
5. Batangas	5,160
6. Quezon	4,883
7. Ramblon	4,528
8. Oriental Mindoro	4,087
9. <i>Palawan*</i>	3,812
10. Marinduque	3,710
11. Aurora Sub-province	3,466
<i>Region VI</i>	5,483
<i>Provinces</i>	
1. Capiz	6,788
2. Iloilo	5,820
3. Negros Occidental	5,407
4. Antique	5,136
5. <i>Aklan*</i>	2,971
<i>Region X</i>	4,745
<i>Provinces</i>	
1. Camiguin	7,614
2. Misamis Occidental	4,879
3. Agusan del Norte	3,841
4. <i>Surigao del Norte*</i>	3,811
5. Misamis Oriental	3,808
6. Agusan del Sur	3,362
7. Bukidnon	2,803

Source: Regional Development Information, Manila 1978.

\* Indicate areas under survey.

## II. RESOURCES, ECONOMIC AND PHYSICAL INFRASTRUCTURE FACILITIES OF THE THREE PROVINCES

### A. RESOURCES

#### Agriculture

24. The main economy of all the three provinces is agriculture. More than 70 per cent of the population live on agriculture. The maincrops constitute palay, coconut, corn, abaca, cassava, fruits like banana and vegetables. However, the two major crops are palay (rice) and coconut. While palay production is perhaps surplus in Palawan and in Aklan. Surigao del Norte is just self-sufficient. All the three areas are surplus in coconut product. Surigao del Norte particularly ranks number 1 in Region X. At present, the major product is not being put to any industrial use in the provinces. Coconut meat, which is generally sun-dried to produce copra, is exported to either Manila or abroad. The other coconut components like water husk and shell are generally thrown as waste. Sometimes husk and shell are used as domestic fuel. The area planted to coconut and its production is given in Table II-1.

#### Forest

25. Of the three provinces, Palawan is quite rich in forest product. It exports a sizable quantity of major and minor produce generally to Manila. The other provinces have also more than one

third of their area under forest. These areas have not yet been operated and lagged due to the difficulty and high cost of transportation. The major produce of these forests are varieties of wood like ipil, apitong, dao, narra, yakal etc. Minor produce includes bamboo, rattan, almaciga etc. At present, other than some quantity and variety of wood, rattan and bamboo are used by cottage units for furnitures and handicrafts, the other forest produce are exported to Manila and to other provinces in raw forms. Table II-2 gives the land classification in the 3 provinces.

Table II-1

THE AREA, PRODUCTION/EXPORT OF COCONUT  
FROM AKLAN, PALAWAN AND SURIGAO DEL  
NORTE - 1975

<i>Province</i>	<i>Area</i> (hectares)	<i>Production</i> (tons)
1. Aklan	20,549	17,553
2. Palawan	31,273	26,339
3. Surigao del Norte	182,109	54,593* (103,466)**

Source: Socio-Economic Profile of the three provinces.

\* According to the information given by the Philippine Coconut Authority, the area is 187,500 hectares with production of 310 million pieces. (approximately 310,000 MT, assuming 1 piece is equivalent to 1 kilo on the average)

\*\* Industry profile.

Table II-2

	(Hectares)			
<i>Total</i>	<i>Classified</i> <i>alienable &amp;</i> <i>disposable</i>	<i>Unclassified</i> <i>forest</i> <i>land</i>	<i>Forest resources</i> <i>&amp;</i> <i>timber land</i>	
Aklan	181,789	68,237	89,389	24,163
Palawan	1,489,626	317,747	795,499	332,271
Surigao Del Norte	273,902	115,453	42,460	115,989

Source: Philippines Forestry Statistics - 1976.

## Marine

26. Next to agriculture, fishing is the other most important economic activity in the three provinces. These are the richest fishing grounds in their respective regions. It has been estimated that more than one-third of the national commercial fishing output in 1975 is from the Palawan waters alone. The important species of fishes are mackerel, skipjack, squid, anchovy and tuna varieties.

27. In Palawan, the productive fish areas are Bacuit Bay, Coron Bay, Malampaya Sound and Taytay Bay. The Sulu Sea which bounds Palawan to the east is also a rich fishing area. While in Surigao del Norte the water surrounding the offshore island particularly Melgal and Awasan Bay are quite rich in fishery resources. The coastal water in the West, the tip of Peninsular and the East Coast up to Placer and Claver have rich harvest of marine product. Fishing is one of the major resources of these three areas. Most of the fish is exported from these provinces to Japan, the United Kingdom and Manila. There are no industries based on fishing in these provinces, a major cause of which is the lack of marketing infrastructure like cold storage.

28. Besides fish, shells and seaweeds, which could be put to industrial use, are also found in abundance in these areas.

## Minerals

29. Mining is another important activity which has started in Palawan and in Surigao del Norte. In Palawan, the mineral resources in commercial quantities include nickel, copper, manganese and chromite. The other mineral deposit known to exist are silica sand, limestone, gold, iron, bynite, lead, sulphur and guano. In Surigao del Norte, the main minerals available include nickel, iron, cobalt, chromite, gold, limestone, shale, copper and red clay. While in Aklan, the metallic mineral of commercial value are reported to be copper, gold, manganese and chromite. So far, no attempts have been made to fully mine these minerals.

30. Most of the minerals are still in the various stages of commercial exploitation and perhaps the stage have not yet come where any venture could be thought of for development based on

this. Excepting limestone and shale, which is being mined commercially in Surigao del Norte and is being put into industrial use in the manufacture of cement, no other minerals are being used industrially and are being exported abroad particularly to Japan, the Federal Republic of Germany and the United States straight after mining.

## Livestock

31. The position of livestock in all the provinces is far from satisfactory. The poultries and piggeries are almost backyard activities in these provinces. However, this is an industry which could be developed in these areas.

## Conclusion

32. To sum up, the main resources of the three areas mainly consist of *agriculture* which include rice, coconut, cassava and abaca; *forests* which include varieties of wood, bamboo, rattan and other produce like almaciga and *marine* which include fish, shells, seaweeds and *minerals*.

## B. INFRASTRUCTURE

### Power/Electricity

33. The availability of power for industrial use in the provinces of Palawan and of Surigao del Norte is far from satisfactory. Although in Palawan, Puerto Princesa City and 2 municipalities out of 17 are electrified, power supply is not even sufficient to meet the demand for residential and commercial usage. Similarly, in Surigao del Norte, Surigao City and 12 municipalities out of 17 are electrified but power supply is not also sufficient to meet even just the present demand. As far as Aklan is concerned, power is available for industrial use only in the town of Kalibo, though 12 municipalities out of 17 are electrified. All these are reused by thermal power through the electric cooperatives.

34. According to the future plans however, power, sufficient for industrial usage, is expected in Puerto Princesa and in Surigao City by 1979 and 1982 respectively.

35. The rates of power for industrial use in the three provinces as compared to the rates at the regional centres are quite prohibitive. The range in

Table II-3

## THE POWER/ELECTRICITY POSITION IN THE THREE PROVINCES

<i>Province</i>	<i>Places electrified</i>	<i>Rate of power</i>	<i>Supply position</i>	<i>Planned increase of supply by</i>
1. <i>Aklan</i>	Kalibo Town of 12 Municipalities out of 17	₱ 0.85	available	
2. <i>Palawan</i>	Puerto Princesa City of 2 Municipalities out of 19	₱ 0.90	no surplus	1979
3. <i>Surigao Del Norte</i>	Surigao City of 12 Municipalities out of 24	₱ 1.13	no surplus	1982

the provinces is between ₱0.85 in Aklan to ₱1.13 in Surigao del Norte. While at the regional centers the range is between ₱0.35 in Metro Manila and ₱0.68 in Iloilo City. With the forecasted increase in power supply however, power rates for industrial usage is expected to decrease. Table III-3 below shows the power/electricity supply position and their rates in three provinces.

### Transport and communication

36. Transport and communication is very much undeveloped in the three provinces. Except the town of Kalibo and in the cities of Puerto Princesa and Surigao, the approaches to the interior is quite difficult and costly especially from the point of view of industrial development. Table II-4 shows the various economic infrastructure facilities available in the three provinces.

37. Likewise, telephone facilities in these provinces are only available in Kalibo, Puerto Princesa City and Surigao City.

### Technical Institute

38. There are two technical institutes known as School of Arts and Trade located one each in Surigao City and Kalibo. There is no such school in Palawan. This School of Arts and Trade offers two courses: (a) Diploma Certificate Course for 4 years for elementary graduate and (b) Degree Course in industrial technology for 4 years. The School provides diploma and degree in various trade like electronic, electrician, radio mechanic,

Table II-4

## THE INFRASTRUCTURE FACILITIES IN THE THREE PROVINCES

<i>Facilities</i>	<i>Aklan</i>	<i>Palawan</i>	<i>Surigao Del Norte</i>
1. <i>Roads (Total)-KM</i>	849.12	2,013.96	1,070.74
(a) Concrete	65.01	58.16	41.10
(b) Gravel	442.37	1,032.50	47.00
(c) Earth	341.73	923.43	982.64
2. <i>Airports (Total)</i>	2	16	2
(a) Main	1	1	1
(b) Feeder	1	15	1
3. <i>Sea Ports (Total)</i>	2	14	21
(a) National	1	3	1
(b) Municipal	2	11	20

Source: Provincial Socio-Economic Profiles of Three Provinces.

automotive technology, machine shop, welding, ceramics, building construction, drafting and industrial art. The wage of unskilled labour is ₱10-12 per day, while that of skilled labour varies from ₱15-20 in these areas.

### Marketing infrastructure

39. At present, the marketing infrastructure available in these provinces is quite weak, which does not provide impetus for increased economic activity. Copra, for example, a main produce, is

sold by most of the producers interviewed at prices much lower than the subsidized prices. Copra producers are forced to sell their produce to middlemen as the transactions are generally closed right at their farms. The difficulty and high cost of transportation from farm to market (established institutional buyers who buy at the subsidized price) vis-a-vis the volume of produce makes it uneconomical for the producers to sell the produce themselves. Hence, the reliance on the middlemen. Fish, another main resource, is sold at nominal prices especially during peak seasons due to the absence of inadequate cold storage facilities. Most of the cottage industries in the three provinces also encounter problems in marketing their products for lack of information on possible markets, difficulty and high cost of transporting the products from the factories to

the markets etc. The NACIDA units in these provinces could have by its function, assisted the cottage industries in their direct and indirect marketing assistance requirements. However, these units are staffed with one-man teams each. Hence, the marketing assistance to the producers as well as coverage is quite limited.

### **Conclusion**

40. To sum up, the existing economic infrastructure e.g. power supply and rates, marketing infrastructure, transport and communication and etc. in the three provinces does not provide impetus for industrial development. The forecasted increase in power supply and the expected corollary decreased in power rates would give boost to industrial development.

### III. INDUSTRIAL STRUCTURE, PROBLEMS AND INSTITUTIONAL FRAMEWORK

#### A. INDUSTRIAL STRUCTURE

41. The emphasis of the industrialization programme of the country is on enterprise development. As such, the definition of industry is broad based. It covers all economic activities which include the manufacturing activities where there is processing of raw materials, to the other economic activities such as fishing, logging, transportation, trading, farming, poultry, piggery etc.

42. Industries are classified into 4 categories namely: cottage, small, medium and large. The different categories have been defined as follows:

- (i) Cottage Industry: Total investment below ₱ 100,000.
- (ii) Small Industry: Total investment between ₱ 100,001 to ₱ 1,000,000.
- (iii) Medium Industry: Total investment between ₱ 100,0001 to ₱ 4,000,000.
- (iv) Large Industry: Total investment more than ₱ 4,000,000.

#### Cottage Industries

43. According to information available with the NACIDA, a registering and development authority for the cottage industries, there are 384 registered cottage units in Aklan, 481 units in Palawan and 174 units in Surigao del Norte. These units are engaged in the manufacture of bamboo crafts, ceramics, food processing, mat weaving, metal craft, needle craft, wood craft, shell craft etc. The number of registered units by type of industry, capital investment and workers employed are given in Tables III-1 and III-2. It may be seen from Table III-1 that the share of registered units in 1977 of each of the three provinces generally is lower than the other provinces in their respective regions. Although the NACIDA statistics has not been updated, in the sense that it represents only the cumulative total of units registered since NACIDA operated in the areas without classification as to active or inactive units, it is indicative of the slow growth

of cottage industries in these areas despite the abundance of raw materials and labour. This slow growth is related to the problems encountered by cottage industries producers.

#### Small, Medium and Large Industries

44. Confining only to manufacturing and processing industries, from interviews it was gathered that there are virtually no small and/or medium industries in these three provinces. As far as large industry is concerned, there are only one or two for each of the provinces of Palawan and Surigao del Norte and none for Aklan. The none growth of the SM1 in these provinces could be related, again, to the problems that entrepreneurs encounter in setting up new industries in these provinces. Therefore, all these provinces have yet to make a start so far as manufacturing industries are concerned.

#### B. PROBLEMS

45. It was noticed that most of the cottage industries which exist today are facing various problems. The main problems reported were the lack of marketing assistance and lack of finance. Technical know-how and assistance for new designs and improvement in old designs and improved technique of manufacturing was also lacking.

46. The detailed discussions with the associations of the NACIDA units and visit to individual units by the Team, it was observed that the units which had marketing facilities and wanted to expand their business could not do so because of lack of finance. They could not get the finance from the banking institutions because of collateral which they had to give for getting the loan and also could not get the financial assistance from the NACIDA which is supposed to provide loan up to ₱ 5,000 without collateral due to lack of funds with this organization.

47. Although there are no small and medium industries in these areas, the discussions with

Table III-1

## THE NUMBER OF REGISTERED COTTAGE UNITS WITH NACIDA

Region/Provinces	Total No. of units reg. 1963-77		Units reg. in 1977 workers employed No.	Percentage distributed as against national total	Capital investment (P 000)	Workers employed No.
	No.	Capital Investment (P 000)				
1. <i>Western Visayas</i>			128	2.52	567	450
i. <i>Akalan*</i>	384	606	1278	15	64	50
ii. <i>Capis</i>			6		15	33
iii. <i>Iloilo</i>			61		249	191
iv. <i>Negros Occidental</i>			46		239	176
2. <i>Mindoro</i>			121	2.38	293	380
i. <i>Marinduque</i>			6		14	19
ii. <i>Occidental Mindoro</i>			14		53	35
iii. <i>Oriental Mindoro</i>			47		123	124
iv. <i>Palawan*</i>	481	455	1164	11	39	22
v. <i>Romblon</i>			43		65	180
3. <i>Northern Mindanao</i>			137	2.70	396	446
i. <i>Agusau del Norte</i>			23		70	91
ii. <i>Agusau del Sur</i>			15		49	43
iii. <i>Bukidnou</i>			18		62	62
iv. <i>Camiguin</i>			13		15	17
v. <i>Occidental Misamis</i>			11		26	45
vi. <i>Oriental Misamis</i>			56		173	186
vii. <i>Surigao del Norte*</i>	174	281	546	1	3	2

Source: Loans and Registration Division, National Cottage Industries Development Authority.

\* Indicates areas under survey.

Table III-2

THE CATEGORY-WISE REGISTERED COTTAGE INDUSTRIES WITH NACIDA IN THE THREE PROVINCES  
(1963-1977)

Category	No. of registered units			Capital investment (P 000)			Workers employed (Number)		
	Aklan	Palawan	Surigao	Aklan	Palawan	Surigao	Aklan	Palawan	Surigao
Bamboo and rattan crafts	8	35	5	3	18	1	30	93	9
Ceramics	21	14	24	67	27	27	66	51	64
Embroidery	32	12	26	68	23	60	100	28	64
Fiber craft	33	-	4	23	-	1	130	-	19
Food preservation	26	73	8	73	62	12	107	234	93
Hat weaving	4	-	1	2	-	-	16	-	3
Loom weaving	50	1	9	2	1	6	244	4	30
Mat weaving	36	84	22	28	20	2	120	196	38
Metal craft	36	16	11	11	36	4	95	39	28
Needle craft	41	148	21	116	118	18	83	248	73
Piggery	15	6	9	52	4	13	36	13	24
Poultry	4	8	3	6	7	10	8	19	5
Poultry & piggery	10	7	1	1	4	1	23	19	3
Shell craft	2	10	2	6	15	1	8	38	5
Small agricultural hand tool	2	7	-	-	7	-	1	25	-
Toy craft	-	1	-	-	2	-	-	7	-
Wood craft	39	36	22	105	92	45	134	87	69
Related crafts	15	13	2	20	5	1	48	41	5
Other industries	11	7	3	19	5	10	29	14	10
Small mining operations	-	3	1	-	6	70	-	8	-
<b>Total</b>	<b>384</b>	<b>481</b>	<b>174</b>	<b>606</b>	<b>455</b>	<b>281</b>	<b>1,278</b>	<b>1,164</b>	<b>546</b>

Source: Compiled from the figures provided by loans and registration division NACIDA.

the Chamber of Commerce and Trade, local entrepreneurs in these provinces, and the survey of the existing economic infrastructure brought out the following factors which are responsible for the slow growth/non-growth of industrial activities in these provinces:

- (1) Lack of information and guidance on the part of entrepreneurs for setting up industries,
- (2) Shortage or non-availability of power/electricity,
- (3) High rates of power,
- (4) Lack of motivational programme for the entrepreneur development,
- (5) Lack of marketing infrastructure,
- (6) Lack of finance,
- (7) Lack of technical know-how,
- (8) Shortage of skilled workers in certain trades,
- (9) Poor economic infrastructure facilities,
- (10) Poor transport and communication facilities,
- (11) Absence of adequate organisational structure at the gross root level,
- (12) Absence of adequate assistance and incentives for the development of medium and small-scale industries in these areas.

### C. INSTITUTIONAL FRAMEWORK

#### Promotional activities

48. The Government promotes and develops cottage, small and medium industries by providing an integrated package of direct assistance to the country's entrepreneurs. View in a time series of enterprise develop, the assistance cover the different stages from project identification to the transition period from medium to large scale industries. In terms of the functional areas of business management the assistance covers finance, production, marketing, personnel training and general management concerns e.g. registration, licensing and etc.

49. The integrated package of direct assistance covers seven major programmes as follows:

- (i) *Enterprise project development* is geared towards promoting the establishment of new industries by providing assistance in terms of project identification and the preparation of project feasibility studies. This is undertaken by five specific government agencies of five specific activities/functions.
- (ii) *Entrepreneurial development* is a programme which develops entrepreneurial readiness at an early age by including entrepreneurship in the high school curriculum. The programme also covers motivational development, management skills training, introduction and training to management tools and techniques, feasibility studies and project preparation and Philippine entrepreneurship characteristics. This programme is undertaken by three agencies, two of which are run by the private sector. There are three specific activities/functions under the programme.
- (iii) *Innovative financing assistance* is a set of 7 financing packages designed to answer the different financing needs of various entrepreneurs in different ventures. The different needs include among others: financing ventures with no collateral to offer, financing with a limited collateral to offer, financing the development of viable new inventions and etc. The programme is undertaken by the DBP, the different commercial banks (to carry out the Industrial Guarantee and Loan Fund), the National Development Corporation, 2 private organizations and the World Bank.
- (iv) *Consultancy services* is designed to provide managerial and technical consultancy services to small business establishment to improve their productivity, efficiency and profitability. The package also provides for research and information on market channels, and sales promotion for the SMIs. In addition to the government's in-house consultancy services, some 40 groups of volunteers of private management experts in Metro Manila have been organized, whose services could be availed of on call basis even outside of Metro Manila.

- (v) *Regional promotions programme* includes subcontracting promotions which provide a means for contractors to locate subcontractors. It also includes the promotions and development of collective marketing schemes and of export marketing. These programmes are undertaken by different government agencies.
- (vi) *Technical assistance projects* include five specific projects all designed to upgrade the production process method as well as product quality. These projects are each sponsored either by government agency/agencies or by an international organization.
- (vii) *Growth enterprise development* is a package geared to sustain the growth and inability under competitive business condition of the SMI so that the enterprise graduates to the next enterprise category e.g. cottage to small, small to medium, medium to large. The package includes expansion financing assistance, advance entrepreneurship development and senior consultancy services.

### Organizational set-up

50. The organizational chart in the following page indicates the industrial organization in the Philippines, which is assigned with the different types of categories of industries and the types of work.

51. There are 12 main agencies with its operating arms under specific assistance to the cottage SMI entrepreneurs. The different assistance and its activities, geared towards the promotion and/or development of the cottage SMI, are co-ordinated and brought together to form an integrated assistance package (stated in para 11) by the creation of the Commission on Small and Medium Industries (CSMI) of the Ministry of Industry.

52. The CSMI is chaired by the Deputy Minister of Industry. The 12 member agencies are as follows: Ministry of Industry (MI), Ministry of Local Government and Community Development (MLGCD), National Economic and Development Authority (NEDA), Ministry of Agriculture (MA), Ministry of National Resources (MNR), Ministry

of Trade (MT), National Science Development Board (NSDB), Central Bank of the Philippines (CBP), Development Bank of the Philippines (DBP), University of the Philippines Institute for Small-Scale Industries (UP-ISSI), National Manpower and Youth Council (NMYC) and Bureau of Small and Medium Industries (BSMI). (Refer to organizational chart).

53. These 12 member agencies, except for the CBP, have established offices at each of the 13 regional centres. Under the regional set-up, the provinces are to be covered by the regional office from the regional centres. This could be done either by setting up branches in the provinces or by visits of technical staff to the provinces.

### Assistance to the three provinces

#### *Cottage industries*

54. Shifting the focus from the national and regional set-ups to the provinces of Aklan, Palawan and Surigao del Norte, the only office located in these provinces that deals directly with industries (that is manufacturing and/or processing) is NACIDA. NACIDA however is confined only to cottage industries. Much more, each office is staffed by only a clerk and an officer-in-charge. These teams of two personnel each are supposed to undertake tasks, such as:

- (i) Registration of cottage industries units;
- (ii) Loan processing and collection;
- (iii) Rendering of direct technical assistance, such as preparation of feasibility studies, production process improvement, etc.;
- (iv) Provision of market intelligence information;
- (v) Management of the NACIDA emporium of cottage products produced in their respective areas of operation;
- (vi) and others.

None of three offices have either telephones or transportation of their own.

### Conclusion

55. Given the limited personnel complement as well as the constraints on the physical facilities of these offices, intensive and extensive assistance

# ORGANIZATION CHART

MINISTRY OF INDUSTRY

MINISTER

DEPUTY MINISTER

ASSISTANT MINISTERS

COMMISSION ON  
SMALL AND MEDIUM  
INDUSTRIES

C S M I  
Regional  
Councils

DEPUTY MINISTER OF  
INDUSTRY CHAIRMAN

*Bureau of Industrial  
Co-ordination*

*Main function:* to provide assistance in developing industrial association organizations, mainly for medium and large industries

*Bureau of Industrial Information  
and Programme*

*Main function:* to collect the statistics and data and analyze the same in respect of medium and small-scale industries.

*Bureau of Small and Medium  
Industries*

*Main functions:* to provide necessary assistance and guidance for the development of medium and small-scale industries through the various agencies working in the region, and to co-ordinate their activities.

*Medium and Small-Scale  
Industries Co-ordinated Action  
Programme (MASICAP)*

*Main function:*  
to assist small and medium entrepreneurs in obtaining finances through the preparation of the required project feasibility studies.

*Small Business Advisory Centre  
(SBAC)*

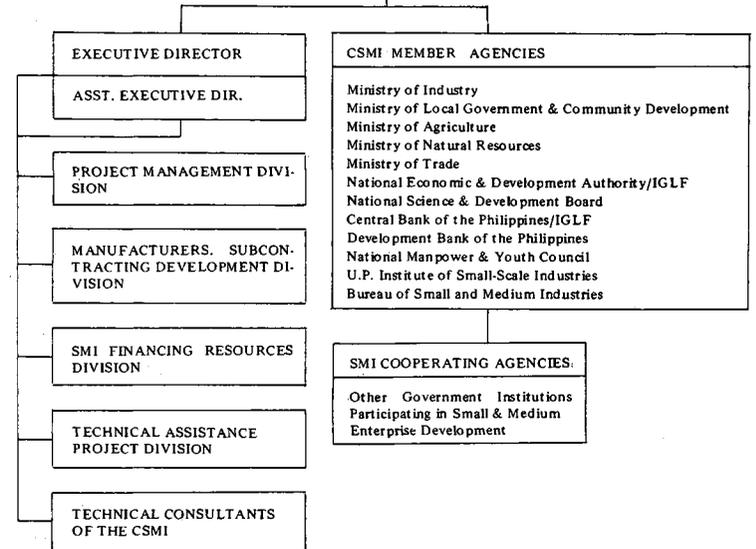
*Main function:*  
to provide management consultancy services to small business establishments which include advice on book-keeping, accounting system, cost analysis, layout plan, quality/inventory control, capital investment study, technical assistance, etc.

*Manila Barangay Industrial  
Development Programme*

*Main function:*  
to provide assistance to industries in the village of Manila.

*A Special Project to Carry-out  
Survey*

This survey confines to Manila and Iloilo



to an average of 376 units per province is not quite possible. Hence, although NACIDA by its function is supposed to provide an integrated assistance in the areas of finance, marketing and production to the cottage industries in the three provinces, it cannot undertake the task because of its present very limited personnel complement and physical facilities.

### **Small and medium industries**

56. Neither the Small Business Advisory Centres (SBAC), which provide consultancy services, nor the Trade Assistance Centres (TAC), which render direct and indirect marketing assistance, have offices in these provinces. Technical personnel from the regional offices visit these provinces. The visits however are also limited due to pressure of work coming from the entrepreneurs at the regional centres themselves. It could be noted that the average technical staff of each office of either the TAC or the SBAC is only 6. The six also are supposed to cover an average of five provinces in each region. The personnel constraints and the distance of these provinces from the regional centres would make ideal the establishment of branches of the said offices in the areas. However, with the present status of the SMI industries, practically none in these provinces may not as yet justify setting up branches.

57. In each of the three provinces, the MASICAP (Medium and Small Industries Co-ordinated Action Programme) has a team of 2 or 3 personnel. The team is composed of a business graduate and two graduating students. Their task is specifically confined to drafting project feasibility studies on request either from the banks or from the entrepreneurs. By its function, the MASICAP task is confined to meeting only one specific need of the entrepreneurs, the project feasibility study needed for financing purposes. Therefore, the other areas of industries/enterprise development for these areas are not met.

58. The entrepreneurs of these provinces look to only three sources of finance: the banks, NACIDA and the private individuals who charge exorbitant rates of interest and who are approached by the entrepreneurs as ultimate recourse.

59. Most of the entrepreneurs who have ventures to undertake, either do not have collateral

to offer, or their collateral is not sufficient to meet their financial needs. It could be noted that, in these areas, the IGLF financing scheme has not made the required impact. The reasons are quite varied and vague. Most of the entrepreneurs are also not even aware of these particular financing package. Under the scheme, the debt equity ratio could be as liberal as 90:10. The effective delivery of this particular financing package cannot be undermined, as its non-delivery means a major deterrent to the growth of new industries – a necessity in these three provinces.

60. This subject, therefore, may be a subject for review either by the Ministry of Industry or by the authorized agency, so that steps may be taken to improve the delivery system.

61. The NACIDA is the other institution that the entrepreneurs know of, which can offer them financing, even without collateral, of up to P5,000. However, NACIDA, at the moment, cannot push through with this programme for lack of funds.

62. As an ultimate recourse, entrepreneurs turn to loan sharks for their financing needs. Though this indicates the willingness of entrepreneurs to pay interest even as high as 20 per cent per month, just so he could start this venture. The dangerous implications to his financial operations and eventually to his enterprise could not be denied, and such source of financing cannot be encouraged.

63. The reliance of these entrepreneurs on these three traditional sources of finance is indicative of their unawareness of the other financing packages, as mentioned under the Innovative Financing Scheme in para 11. Again this highlights the need for a programme for information dissemination, guidance and support.

### **The need for a technical assistance unit**

64. Given the primary objective of stimulating the growth of new industries/enterprises in these areas, no agency operating in these provinces at present is capable of undertaking the task either due to the nature of its function or to the constraints of its resources. This brings the need for setting up a new institution in these provinces.

65. While all the integrated package of technical assistance, in terms of setting up new industries/enterprises needed by entrepreneurs are easily accessible in the regional centres and in Metropolitan Manila, this assistance is not available in these provinces, except on a very limited basis, as provided by the NACIDA and the MASICAP. As was mentioned earlier, setting up branches of the regional offices in these provinces may not be timely as yet, given the volume of projected work. What could be done is to set up a mechanism by which this assistance can be channelled to these provinces at an optimum level. The function of this new institution therefore would be:

- (i) To study the requirements of the industries in these provinces;
- (ii) To liaise with the concerned offices/agencies at the regional/national levels;
- (iii) To organize/supervise the delivery of the assistance to the provinces concerned;
- (iv) To monitor and supervise the entire project cycle of industrial promotion and development in these three provinces.

66. Considering the present national, regional and provincial organizational set-ups, in terms of industries/enterprises promotion and development, this new institution could best fit within the existing framework and mechanism of the CSMI. Hence, it should be established under the auspices of this agency and would be referred to as the Technical Assistance Unit (TAU) henceforth.

## **Industrial data and statistics**

### **Cottage industries**

67. The data on cottage industries is collected by the NACIDA, which registers cottage industries on a voluntary basis. These data, however, are on a cumulative basis, that is keeping track only of total units registered from the time NACIDA operated in the area till the present moment. Though plans have been made to update the data to identify the active and inactive (those which have ceased operation) units,

they could not be implemented due to resource constraints. Much more, the data available is inadequate e.g. no data as to rated capacities, etc. In view of the programme to mobilize the setting up of new industries, it may well be to the benefit of both the private and the public sectors, if this area could be improved.

### **Small and medium industries**

68. As was mentioned earlier, the SMI sector is still at its infancy stage in these provinces: hence, no industrial statistics is available. The limited data available for the team's use were also quite unreliable.

### **Registration – instrument for data gathering**

69. For the benefit of planners and implementors, both from the private and public sectors, a ready source of reliable industrial data and statistics is indispensable. As there are practically no SMI in these areas at present, registration of all new industries in these provinces may be introduced as an instrument to gather the necessary information for ready reference. This process could also be the beginning of a data bank in these areas. This task could best be carried out by the TAU.

### **Locational incentives**

70. The present infrastructure facilities, both physical and economic, (chapters I-III) e.g. shortage of power, high power rates, limited markets, transportation cost and difficulty, etc. in the three provinces do not provide by themselves impetus for entrepreneurs to specifically locate their ventures in these areas. At present, there are no special incentive schemes or system designed for entrepreneurs to specifically locate industries in least developed areas (LDA) like the three provinces, except those that are, in general, provided for under the Investment Promotion and Export Promotion Laws. It is therefore recommended that it may be considered by the Ministry of Industry where and when it would fit existing rules, regulations and procedures to give special attention to the least developed areas, especially the three provinces, for the establishment of pilot projects.

#### IV. IDENTIFICATION OF INDUSTRIES, POTENTIAL INDUSTRIAL VENTURES, PROPOSED INDUSTRIES, GROWTH CENTRES AND LOCATION

##### A. CONSIDERATIONS FOR IDENTIFICATION OF INDUSTRIES

71. Considering the present state of economy in these three provinces in terms of employment, average family income etc., and also their geographic location and the extent of development of their physical infrastructure, as discussed previously, the team considered three basic criteria for the type of industry that would be developed within the next five years. These criteria are:

- (i) It should be based on the resources locally available in these areas;
- (ii) It should complement the development efforts and programmes of the government; and
- (iii) It should support the economic activity of the maximum number of people.

72. Industries that could be developed based on resources are: marine, forest and mineral based. The development of forest and mineral based industries in these provinces however are deliberately left-out by their respective decision-makers and implementors, as the full development of these resources would pose serious environmental problems e.g. pollution, flood and etc. to these areas.

73. Efforts of the government are focused on increasing agricultural and marine productivity. Increased agricultural productivity is geared towards the intensive as well as extensive utilization of arable lands. Also, the production of cash crops such as coconut, cassava, corn, sorghum, soya bean etc. is encouraged. On the other hand marine productivity is geared towards the development of in-land fishing as well as improvement of catching method and technology for off-shore fishing. All the three provinces have under scored their priority of developing these resources in their Comprehensive Development Plans covering the periods 1978 to the year 2000.

74. At present however, the average percentage of the population engaged in agriculture and in fishing to total population for the three provinces is 85 per cent and 10 per cent respectively. Hence, the development of agriculture productivity will uplift the economic status of more people than it would be if marine resources were to be developed. Hence, the focus on agriculture.

75. Despite the government's supports and programmes geared towards increased agricultural productivity, specifically increase in the production of cash crops such as coconut, cassava, corn, sorghum, soya bean and etc., the programme has not gained impetus. A major deterring factor is the present very limited local markets for the agricultural products.

76. Considering the difficulty and high cost of transportation, the poor transport and communication facilities, the limited resources of the farmers etc. as discussed earlier, agricultural products in these provinces have relied heavily on local markets. Presently however, the local market is very limited. Factors contributing to this are:

- (i) the absence of industrial users and/or institutional markets for the products and; and
- (ii) the limited number of consumer users of agricultural products. It could be noted that the average total population for each of these provinces is only 297,000 with approximately only 16 per cent urban.

##### Conclusion

77. Hence, to provide impetus for increased agricultural productivity, local markets should be strengthened. This highlights the necessity of establishing local industrial users of agricultural products. Thus, the necessity to develop agro-based industries.

## B. POTENTIAL INDUSTRIES

78. After making a study of all the resources, economic infrastructure, market in the three provinces, the team lists out the following industries based on agro-resources and demand which could be taken up in different phases in these provinces. The first priority has to be given to the industries based on resources and gradually based on demand with the creation of more infrastruc-

ture particularly the marketing, and the increase in the income of the people of these areas.

### *Agro-based industries*

79. From the listing of the NEDA and the PDS and from the study of the team, the following is a summary of potential agro-based industries that could be set up in these provinces:

<i>Aklan</i>	<i>Palawan</i>	<i>Surigao del Norte</i>
1. Feedmill	1. Feedmill	1. Cassava starch processing
2. Coconut oil mill	2. Cassava starch processing	2. Cassava flour processing
3. Coconut decorticating plant	3. Rice milling	3. Copra refined oil
4. Abaca paper manufacturing	4. Copra oil	4. Copra crude oil
5. Mini sugar plant	5. Coir products	5. Coir products, mats, ropes etc.
6. Agricultural implements	6. Vinegar processing	6. Desiccated coconut
7. Charcoal making	7. Agricultural implements	7. Activated carbon
8. Bamboo craft	8. Peanut processing	8. Vinegar processing
9. Fiber craft	9. Bamboo products	9. Feedmill
10. Banana fiber industry	10. Corn products	10. Rice milling
	11. Food processing	

### *Other industries*

80. Industries, other than agro-based, which could be established in these provinces are:

<i>Aklan</i>	<i>Palawan</i>	<i>Surigao del Norte</i>
1. Cold storage facilities	1. Fish canning	1. Rattan & wooden furniture making
2. Shell craft	2. Shell craft	2. Ceramics manufacturing
3. Ceramic product	3. Wooden furniture	3. Hard board manufacturing
4. Organic fertilizer manufacturing	4. Rattan furniture	4. Basket making
	5. Ready made gaments	5. Matches manufacturing
	6. Plastic based products	6. Ice factory & cold storage
	7. Shoe manufacturing	7. Ready made garments manufacturing
	8. Sea food processing	8. Paper manufacturing
	9. Paints & varnishes	9. Laundry soap
	10. Hardware items	10. Crayons & chalks
	11. Ceramic products	11. Plastic products
	12. Ship/boat building	12. Hardware items, wire, nails
	13. Tricycle manufacturing	13. Cement products
	14. Meat processing	14. Asbestos cement
	15. Cold storage	15. Fire bricks
		16. Concrete pipe manufacturing
		17. Biscuit manufacturing

### C. PROPOSED INDUSTRIES/ENTERPRISES

81. Considering the fact that these are virtually no SMI industries (confining only to manufacturing and processing) in these provinces vis-a-vis the need to establish local industrial and/or institutional markets for agricultural products; and the development of the economic and the physical infrastructure facilities, the team has set two basic criteria in the selection of the nucleus industries/enterprises to be established. These criteria are as follows:

- (i) As nucleus industry/enterprise in each province, it should stimulate the growth of a number of related industries via backward and forward, as well as vertical and horizontal linkages; and,
- (ii) These industries could economically be established within the SMI category.

82. From among the agro-based industries listed above the following are proposed as pilot enterprises:

- (i) A feed mill each for Aklan and for Palawan; and
- (ii) A cassava starch processing plant for Surigao del Norte.

### D. GROWTH CENTERS

83. The concept of growth centers has already been recognized by the National and the Provincial Governments. Each province – Aklan, Palawan and Surigao del Norte has identified the growth centers/growth poles in their areas in consultation with the NEDA. Table IV-1 gives the growth centers/poles identified by each of the three provinces.

84. The above mentioned places have been selected as growth centers/poles on the basis of population, economic infrastructure, trade and commerce and the development programmes envisaged for these areas. These places will be developed as growth centers/poles for the overall economic development of the respective provinces.

85. The team visited all the growth centers/poles identified in Surigao del Norte and in Aklan. For Palawan however, only the growth centers/poles in the main land were visited.

86. Although there are 7 growth centers for each of Aklan and Palawan and 5 for Surigao del Norte, all of which are strategically located to serve as nucleus for industrial development, the focus of attention initially has to be in Kalibo,

Table IV-1  
GROWTH CENTERS IDENTIFIED IN THREE PROVINCES

<i>Aklan</i>	<i>Palawan</i>	<i>Surigao del Norte</i>
1. Kalibo Town	1. Puerto Princesa City	1. Badas-Placer Area *
2. New Washington	2. Boxas	2. Claver **
3. Banga	3. Cuyo	3. Mainit **
4. Numancia	4. Coron	4. Dinagat **
5. Altava	5. Taytay	5. Surigao **
6. Batan	6. Narra	
7. Ibajoy	7. Brook Point	

\* This area is 26 km from Surigao City. Apart from being declared as growth centers, for all economic activities, it has also been declared as an Industrial Area and there is proposal to set up an Industrial Estate.

\*\* Growth poles.

Note: All the above are Municipalities.

Puerto Princesa City and Surigao City respectively. This is because the level of development in terms of physical infrastructure e.g. power, transport and communications etc. as well as of economic infrastructure e.g. markets, banking facilities, trading activities etc. is highest in these areas in comparison to the rest.

### Conclusion

87. The initial nucleus industries therefore is recommended to be set up in Kalibo for Aklan,

Puerto Princesa City for Palawan and Surigao City for Surigao del Norte.

### E. HIGHLIGHTS OF THE PROPOSED PILOT PROJECT

88. Tables IV-2 and IV-3 below present in a nutshell the highlights of the team's proposed pilot project firms in regard to location, capacity, estimated project cost. Also included are the benefits that may accrue to the provinces in terms of industrial linkages and the qualitative efforts that the project may contribute to the development of the concerned areas:

Table IV-2

SUMMARY: LOCATION, CAPACITY, ESTIMATED PROJECT COST

<i>Location</i>	<i>Project</i>	<i>Capacity/MT (daily)</i>	<i>Investment</i>
1. <i>Kalibo, Aklan</i>	Feedmill	15	₱ 800,000
2. <i>Puerto Princesa City, Palawan</i>	Feedmill	15	₱ 800,000
3. <i>Bad-as-Placer, Surigao del Norte</i>	Cassava starch processing	-	₱ 3,000,000

Table IV-3

SUMMARY: LINKAGES AND EFFECTS

	<i>Feedmill</i>	<i>Cassava starch processing</i>
<i>I. Linkages</i>		
1:1 Forward linkages	<ul style="list-style-type: none"> <li>- Processed meat industry</li> <li>- others</li> </ul>	<ul style="list-style-type: none"> <li>- support textile industry</li> <li>- support plywood industry/local and foreign</li> </ul>
2:2 Backward linkage	<ul style="list-style-type: none"> <li>- fish meal processing industry</li> <li>- fish canning</li> <li>- rice &amp; corn milling</li> <li>- cassava flour processing</li> <li>- others</li> </ul>	<ul style="list-style-type: none"> <li>- Cassave flour making</li> <li>- Cassava based food products</li> <li>- others</li> </ul>
1:3 Horizontal linkage	<ul style="list-style-type: none"> <li>- Feed bags making</li> <li>- other feedmills</li> <li>- others</li> </ul>	<ul style="list-style-type: none"> <li>- growth of other cassave starch processing plants</li> <li>- bags making</li> <li>- others</li> </ul>

Table IV-3 (Continued)

	<i>Feedmill</i>	<i>Cassava starch processing</i>
<b>II. Effects</b>		
2:1 Use of local raw materials	– extensive use of cash crops	– extensive and intensive use of cassava, a cash crop
2:2 Income	– increase farm income through production expansion of feed-grains crops for farmers, and increase profits for hogs and poultry raisers	– increase income to farmers through increased production
2:3 Land utilization	– increase in hectareage of area planted as well as production per area	– increase land utilization as well as encourage increase production per hectare
2:4 Government programmes	– Accelerate programme on crop-shift – accelerate animal protein foods self-sufficiency	– support programme on localizing imported products
2:5 Employment		
– direct employment	13-15	–
– indirect employment	extensive	– extensive

**Part Two**

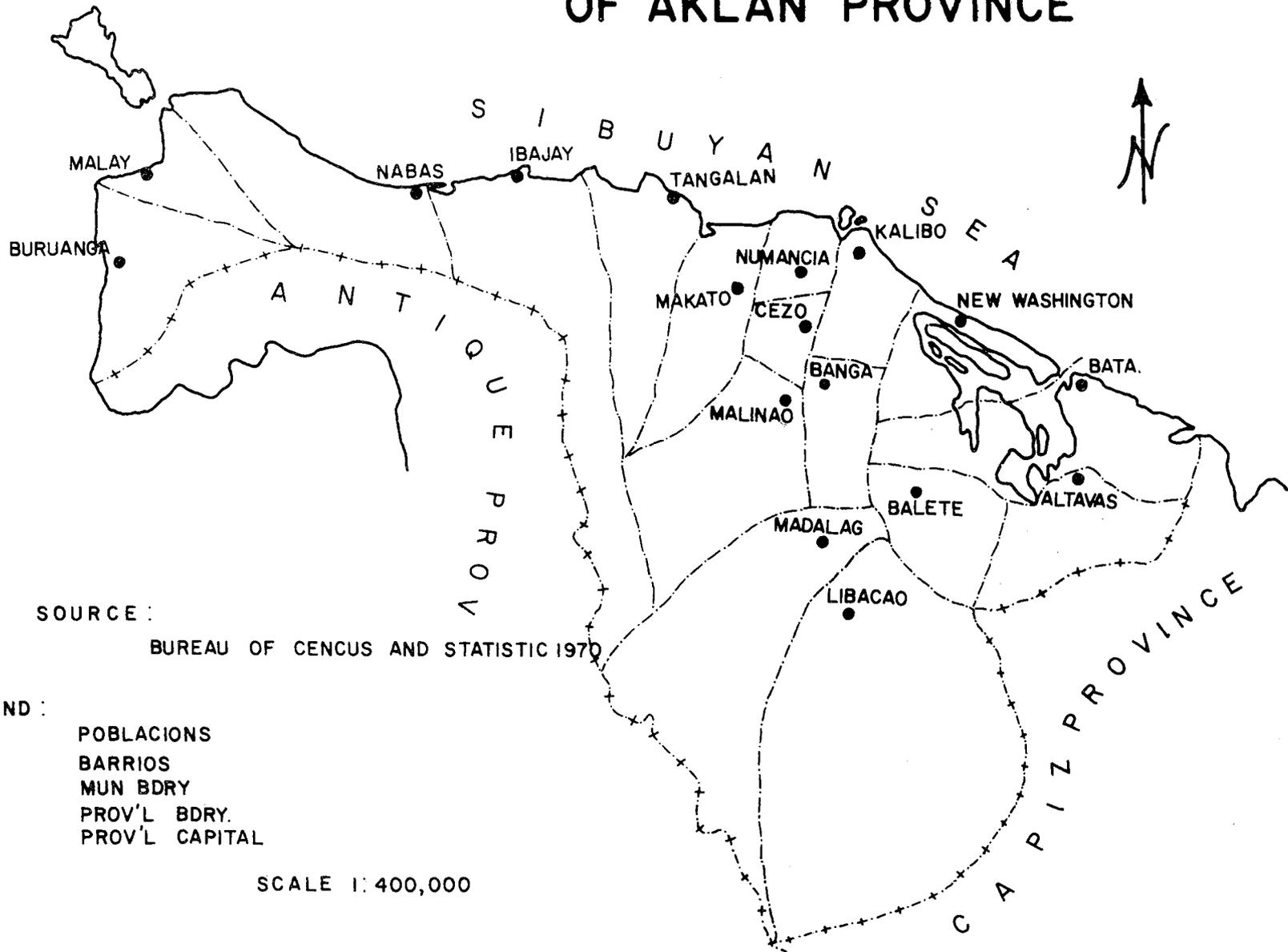
**THE AREA SURVEY REPORTS**

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# ADMINISTRATIVE UNIT MAP OF AKLAN PROVINCE



SOURCE :  
BUREAU OF CENCUS AND STATISTIC 1970

LEGEND :  
 POBLACIONS  
 BARRIOS  
 MUN BDRY  
 PROV'L BDRY.  
 PROV'L CAPITAL

SCALE 1:400,000

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## V. AREA SURVEY OF AKLAN PROVINCE

### A. REVIEW OF THE SOCIO-ECONOMIC PROFILE

#### *Geographic location*

89. Aklan is one of the four provinces on Panay island. Occupying the northwestern "panhandle" portion of the island, the province is bounded by the Sibuyan Sea on the north, the province of Antique on the west, and the province of Capiz on the south and the east. Estimated area of Aklan is 181,789 hectares, which is about 15 per cent of the total land area of the island of Panay.

#### *The land and its utilization*

##### *Area*

90. The anticline of Panay Island rises sharply from the sea in its north-western Peninsula. It extends southward increasing its peaks and width until it reaches the areas where the boundaries of eastern Antique, western Capiz, and southern Aklan meet. Thus, the southern and the western parts of Aklan are quite mountaineous. The slopes and drainages are generally downwards from the mountains of the south and the west to the narrow coastal plains and swamp lands of the north.

91. Aklan River is the largest river of the province which has its headwaters in Capiz and flows

northward into the Sibuyan Sea near the Poblacion of Kalibo, the capital town of Aklan. The lower Aklan river basin offers only a sizeable contiguous plain in the province.

92. In view of the topography and drainage system, the province has been divided into three sub-regions, namely the east, the central, and the west. East Aklan comprises the municipalities of Altavas, Batan, Balite, and New Washington. It is characterized by the dominance of upland and marsh-lands. Here, the level land, with 3 per cent or less slope, consists of a little over one-third of the total area (See Table V-1).

93. The most mountainous area is west Aklan, which comprises the municipalities of Ibajay, Malay, Nabas, and Buruanga. Two-thirds of its land area have slope with 18 per cent or more and only 14 per cent of the total area is level.

94. Central Aklan has two sub-areas, namely, the lower and the upper Aklan river basin area (central I) and the mountainous interior area (central II). The most contiguous and extensive level land in the province is found in central I, which covers the municipalities of Banga, Kalibo, Lezo, and Numancia, while central II which covers the municipalities of Libacao, Madalag, Malinao, Makato, and Tangalan, is deminated by mountainous slope lands.

Table V-1

LAND SLOPE DISTRIBUTION BY SUB-REGIONS

	Total Area	Slope area (hectares)				
		1 - 3%	3 - 8%	8 - 16%	18 - 30%	30% and over
East	36,360 (100.00)	12,980 (35.70)	10,130 (27.86)	4,030 (11.08)	8,250 (22.69)	970 ( 2.67)
Central I	15,033 (100.00)	12,380 (82.35)	2,070 (13.77)	210 ( 1.40)	173 ( 1.15)	0 ( - )
Central II	83,520 (100.00)	11,350 (13.59)	4,680 ( 5.57)	12,620 (15.11)	6,530 ( 7.82)	48,580 (58.17)
West	40,270 (100.00)	5,380 (13.34)	330 ( 0.82)	7,080 (17.58)	10,630 (26.40)	15,910 (39.51)
	175,183 (100.00)	43,290 (24.71)	17,180 ( 9.81)	23,670 (13.51)	25,583 (14.60)	65,460 (37.37)

Source: The Provincial Development Staff, *Socio-Economic Profile, 1977: Province of Aklan*.

### Land utilization

95. Data on land utilization in Aklan from different sources are quite inconsistent. Records of the Provincial Assessor's Office, however, give the following statistics:

Table V-2

LAND UTILIZATION IN THE PROVINCE OF AKLAN  
(as of June 30, 1976)

Purpose	Area in hectare (%)	
Agriculture <sup>1</sup>	86,470	(47.6)
Forest	67,904	(37.3)
Fishponds	4,971	( 2.7)
Pasture	1,572	( 0.9)
Residential	475	( - )
Industrial & commercial	9	( - )
Others <sup>2</sup>	20,863	(11.5)
TOTAL	181,789	(100.0)

1 Necessary adjustment was made.

2 This is the gap between total land area and the record obtained. It is believed that this gap is a part of forest land.

96. It could be assumed, based on Tables V-1 and V-2, that even some portion of lands with 18-30 per cent slope is already under cultivation in Aklan because agricultural land area exceeds the available land with 18 per cent and below slope. This would indicate acute shortage of cultivable land in the province. However, if we look at the population density, 1.61 person per hectare for Aklan in 1975, the second from the lowest among 5 provinces in Region VI, this shortage of cultivable land would seem unrealistic. In addition, the 1971 Agricultural Census reported 53,529.7 hectares of farm area in Aklan. It would seem very optimistic that during the span of only 5 years, agricultural land area expanded by more than 60 per cent.

97. It has been observed that the land utilization in Aklan is generally very extensive yet not intensive except in irrigated rice lands where double cropping is practised. It is, therefore, inferred that cultivation of relatively high slope land might

have something to do with prevailing farm practices of the people in those areas.

### Population

98. The Population Census in 1975 registered 293,349 persons residing in Aklan. The most populous municipality is Kalibo with 31,947 residents, and a density of 6.9 persons per hectare (See Table V-3). Average population density in the province is 1.61 persons per hectare and 2.58 persons per hectare in terms of physiological density. This figure does not indicate any acute population pressure in Aklan.

99. Out-migration has always characterized the people of Aklan through the years, as exhibited by the low annual population growth rate as follows: 1.53 per cent from 1960-1970 and 2.18 per cent from 1970 to 1975 in comparison with the national averages of 3.1 per cent and 2.8 per cent, respectively. However, the rate of outmigration seems to be decreasing.

100. The major factor that contributes to this out-migration has traditionally been the movement of migrant workers in the sugarcane plantations in nearby provinces, especially in the Negros islands. The basic factor behind it, however, seems to lie in the stagnant economy of the province itself.

### Economic activities

#### The main economy of the area

101. The economy of Aklan is basically agricultural. The labour force structure (Table V-4) shows the dominance of the primary industry which accommodated in 1975 nearly two-thirds of gainful workers in the province. Among those employed in the primary industry, approximately 90 per cent consisted of farmers and farm labourers, which indicates the importance of the agricultural sector in the local economy.

102. The tertiary industry weighted next, absorbing nearly one-fourth of labour force in Aklan. This apparent development, however, is not necessarily based on the local manufacturing industry. Instead, it could be assumed as a simple reflection of the local necessity for the distributive, administrative, and other services. The secondary industry is the least developed, but still occupied more than one-tenth of the labour force.

Table V-3  
POPULATION AND GROWTH RATES BY MUNICIPALITY: 1960, 1970 AND 1975

Municipality	Population			Average annual rate of population growth	
	1975	1970	1960	1970-75	1960-70
Altavas	16,855	14,319	13,325	3.01	0.86
Balete	15,827	14,310	12,677	2.09	1.22
Banga	22,462	21,560	18,582	.83	1.51
Batan	21,248	20,025	17,466	1.13	1.38
Burnanga	10,311	9,291	8,393	2.10	1.02
Ibajay	30,343	27,129	25,305	2.26	.70
Kalibo	31,947	30,247	21,303	1.05	3.36
Lazo	8,224	6,890	5,942	3.52	1.49
Libacao	20,243	15,837	14,913	5.02	0.61
Madalag	14,209	12,440	10,883	2.68	1.35
Makato	14,972	13,287	11,951	2.41	1.07
Malay	8,770	7,623	6,816	2.82	1.12
Malinao	16,483	14,947	13,987	1.93	1.41
Nabas	15,051	13,850	11,879	1.68	1.55
New Washington	22,131	19,131	15,966	2.97	1.83
Numancia	13,764	12,285	10,194	2.30	1.88
Tangalan	10,509	9,987	7,650	1.08	3.01
Aklan	293,349	263,358	226,232	2.18	1.58

Source: Population Census, 1969, 1970 and 1975

### Agriculture

103. For 1971, the Agricultural Census reported that there were in Aklan 19,080 farmers cultivating 53,529.7 hectares. For the same year, the most important crops in the province are rice and coconut whose area occupied 41,826.4 hectares or nearly 80 per cent of total farm area, as shown in Table V-5. The dominance of food crop area with relatively small size farms, the apparent lack of dominant cash crops except coconut, the relatively large number of unclassifiable farms (others in Table V-5), and the comparatively small average size of farm, all indicates a predominance of subsistence agriculture.

104. Average yield of crops exhibited in Table V-6 are generally quite low compared with national average of each crop, which is also a trend commonly observed in subsistence farms.

### Livestock

105. Livestock population by kinds is given in Table V-7. Almost all of these animals are kept and raised in small numbers at the backyard of households. It is a common practice of these "backyard" livestock raisers to sell animals when they are in need of cash or have surplus, otherwise the product is consumed domestically. There is virtually no large-scale commercial livestock farm. Although, small projects are gradually established.

### Fishery

106. The Provincial Development Staff of Aklan recorded that 2,338 households, or 4.7 per cent of all households, in the province are engaged in fishing in 1975. However, a majority of them are small-scale fishermen. Commercial fishing under

Table V-4  
LABOUR FORCE STRUCTURE OF AKLAN

<i>Industries</i>	<i>Grainful workers (1975)</i>		<i>Experienced workers (1970)</i>	
	<i>Number</i>	<i>Per cent</i>	<i>Number</i>	<i>Per cent</i>
Primary industry:	57,331	64.8	47,002	58.6
Farmers, fishermen, hunters, loggers and related workers	56,970	64.4	46,936	58.5
Miners, quarrymen	361	0.4	66	0.1
Secondary industry:	10,234	11.6	13,570	16.9
Craftsmen, production process workers, and related laborers	10,234	11.6	13,570	16.9
Tertiary industry:	20,857	23.6	19,608	24.6
Service, sports and related workers	5,692	6.4	4,459	5.6
Sales workers	4,225	4.8	4,081	5.1
Professional, technical and related workers	3,958	4.5	4,214	5.3
Workers in transportation and communications	2,653	3.0	1,987	2.5
Clerical workers	1,493	1.7	1,137	1.4
Stevedores and related freight handlers and labourers not elsewhere classified	1,287	1.4	2,052	2.6
Administration, executive and managerial workers	455	0.5	749	0.9
Others	1,094	1.2	929	1.2
<b>Total</b>	<b>88,422</b>	<b>100.0</b>	<b>80,180</b>	<b>100.0</b>

*Source:* Bureau of the Census and Statistics, *1970 Census of Population and Housing*, and National Census and Statistics Office, *1975 Integrated Census of the Population and its Economic Activities*.

operation are only 5 with 9 vessels, the number of which remained constant as in 1970.

#### *Mining*

107. Mining and quarrying under operation in Aklan are simple extraction and/or gathering of clay for pottery, sand and gravels for construction work, and pebbles for handicraft. 361 miners and quarrymen (Table V-4) are engaged in clay extraction and pebble gathering. So far, no large-scale mineral extraction has been attempted, although numerous claims on metallic deposit such as gold, silver, copper, iron, manganese and cobalt are in file.

#### *Forestry*

108. Forestry in the province is again very much

of subsistence. No commercial logging has been undertaken. However, the cutting and gathering of woods for fuel, the cutting of nipa, rattan, wild abaca, bamboo for raw materials for handicrafts and for various other purposes are major sources of income for hundreds of families in the province.

#### *Manufacturing industry*

109. The 1975 Census of establishments, listed 417 manufacturing establishments with 999 workers in Aklan. In addition, there were also 259 NACIDA-registered cottage industries with 1,023 employees in 1976.

110. Despite the inconsistency in data, an analysis of the 1977 census on establishments reveals two

Table V-5  
NUMBER OF FARMS, AREAS BY TYPE OF FARM (1971)

<i>Type of Farm</i>	<i>No. of farms</i>	<i>Area (ha)</i>	<i>Average area per farm</i>
Palay	11,095	25,039.4	2.26
Corn	133	331.5	2.49
Coconut	4,830	16,787.0	3.48
Tobacco	-	-	-
Sugarcane	-	-	-
Citrus	1	1.0	1.00
Vegetable	5	1.1	0.22
Tuber	69	140.0	2.02
Coffee	-	-	-
Abaca	96	405.9	4.23
Banana	122	738.8	6.06
Pineapple	1	1.0	1.00
Other fruit	37	118.1	3.19
Chicken	-	-	-
Hog	81	200.3	2.47
Cattle	190	1,619.2	8.52
Others	2,420	8,146.6	3.37
Bamboo	-	-	-
<b>Total</b>	<b>19,080</b>	<b>53,529.7</b>	<b>2.81</b>

Source: Bureau of Census and Statistics, 1971 *Agricultural Census*.

important facts with regard to existing manufacturing industry in the province. Firstly, the manufacturing establishments in Aklan are still very small in terms of both employment and sales as shown in Table V-8. In terms of entrepreneurs, it is a common pattern in the province that a single entrepreneur invests his capital on different enterprises, resulting in ownership of diversified establishments. Secondly, a simple processing with low-level technology is the type of manufacturing process used. Products are exclusively for local market to meet the daily necessity of the people, as indicated by Table V-9. This could be indicative of the narrowness or limitation of market which resulted to the minimal stage of industrial development in this area.

### *Infrastructure*

#### *Electricity*

111. Electric power in the province are supplied by either Aklan Electric Co-operatives (AKELCO) or electric utilities (both private and public). However, supply is mostly limited to the population in each municipality. During calendar year 1976, a total of 2 million KWH of electricity was purchased from AKELCO. Most of this power was consumed by households (38.8 per cent) and commercial enterprises (34.9 per cent), with only 11.5 per cent consumed by public buildings, 11.4 per cent by industrial enterprises (mostly ricemills) and 3.4 by security lights.

Table V-6

## HOUSEHOLDS REPORTING AREA, PRODUCTION, AVERAGE YIELD BY CROP: 1975

<i>Crop</i>	<i>Households reporting crop<sup>1</sup></i>	<i>Effective crop area (ha)</i>	<i>Total production (tons)</i>	<i>Average yield (tons/ha)</i>
Palay	16,339	38,076.7	50,177	1.31
Corn	2,156	2,639.3	2,674	1.01
Sorghum	23	1,802.1	2	-
Root crops	2,457	3,562.7	1,822	0.51
Vegetables	1,018	2,223.6	356	-
Banana	1,552	1,901.3	1,817	0.53
Pineapple	131	666.6	63	0.69
Coffee	51	477.0	20	0.04
Melon	41	305.5	34	0.12
Cacao	8	170.2	-	-
Starapple	92	144.7	53	-
Mango	63	50.5	18	0.36
Papaya	80	48.4	9	0.19
Coconut	5,028	8,751.5	11,302	1.29
Tobacco	35	537.0	209	1.29
Abaca	583	481.9	247	0.65
Sugarcane	74	356.2	48	0.13
Others	151	300.0	101	-

<sup>1</sup> From a total of 22,871 agricultural households reporting type of crops grown.

Source: NEDA Region VI/PDS AKLAW, 1975 *Socio-economic Census of Panay*

112. Electricity in Aklan costs much higher than in Manila and other metropolis (PO 85/KW vs. PO.15 - .30/KW). Presently, however, power for industrial use is available.

#### *Transport and communication*

113. All towns in Aklan except Madalag are connected by the road network (total length is 849.2 kilometers). However, many villages do not still have any road system except trails or farm dikes to pass in going to the town centres. This hinders marketing of farm products.

114. There are three ports currently existing in Aklan, one national port Dumaguít and two municipal ports at the poblacions of Batan and New Washington respectively. However, port works

and facilities are generally not well developed, especially the national port at Dumaguít. Telephone service is only available in the capital town, Kalibo, while domestic telegram services are found at each town.

#### *Financial institutions*

115. Financial institutions, except the Rural Banks, are mostly found in Kalibo only. At present, there are two government banks (the Development Bank of the Philippines, the National Bank of the Philippines) and two private commercial banks in Kalibo. However, the loaning operation of these banks in Aklan seems to be quite minimal particularly to manufacturing industries.

Table V-7

## LIVESTOCK POPULATION IN 1969 AND 1976

<i>Livestock and poultry</i>	1969	1976
Cattle	12,000	17,780
Carabao	17,800	21,020
Swine	35,200	61,750
Horses	102	428
Goats	4,582	11,116
Sheep	29	N.A.
Chickens	275,050	349,480
Ducks	8,215	18,990
Geese	204	174
Turkeys	320	865

## B. CONSIDERATIONS FOR IDENTIFICATION OF INDUSTRIES

### *Necessity of agro-based industries*

116. As revealed in the foregoing chapter, the present stage of economy in the province of Aklan is basically agricultural and the development of the manufacturing industry is still minimal. The limited availability of infrastructural, technological, and financial basis for industrial development are major factors that have deterred Aklan's development.

117. In order to let the economy move toward industrial development, it is considered that exploration and expansion of local markets for possible industries will be a key strategy. Since agriculture is the only major industry of Aklan, the local market can effectively be explored through expansion of agricultural production which involves either increase of land productivity or increase of crop area by means of intensified land utilization or physical expansion of crop area. Judging from the current under-utilization of land in Aklan, any difficulty will not be involved in increasing crop area as long as a definite market demand for crops exists. In this regard, the type of possible industries must be those using locally available agricultural products as major raw materials. Here lies necessity for agro-based industry for the development of the area.

### *Efforts of the local government*

118. In respect of agricultural production expansion, the provincial government of Aklan has envisaged two programmes: the crop-shift programme and the animal food self-sufficiency. Under crop-shift programme, it is planned that rice production will be concentrated in better irrigated areas of around 10,000 hectares; while in inferior rice land, crop-shift is recommended from low productive upland as well as lowland rice to other profitable cash crops such as coconuts, rootcrops, and feedgrain crops (corn, sorghum, soybean, etc). This programme however will not gain impetus unless accompanied by support programmes that would develop local markets.

119. Second is the animal protein food self-sufficiency programme under which the promotion of livestock industry, the up-grading of local/native stock of animals and the local production of mixed feeds are planned.

120. In the search and identification of possible industry to be promoted as an ESCAP project, the foregoing programmes are taken into consideration so that the project will be consistent with the development efforts of the local government.

## C. POSSIBLE GROWTH CENTRE AND LOCATION

121. As to the pinpointing which among the seventeen (17) municipalities are the most favourable possible growth centres, the existence of utilities, transportation and communication networks, commercial and banking institutions will play a major role and should be weighed against industry locational factors as raw materials sources, labour skills, and market distribution structure. The various factors will have to be assessed in terms of the industry to be identified as a pilot project of the ESCAP.

122. Of the foregoing enumerated factors, basic requirements were selected to serve as the criteria for choosing the growth centre. The following table gives comparative analyses of these basic ingredients for development potential of an area such as physical and geographic infrastructure, telecommunication services, banking, insurance and distributive establishments.

123. As indicate in Table V-1, Kalibo occupies

Table V-8

## MANUFACTURING ESTABLISHMENTS IN AKLAN BY EMPLOYMENT SIZE AND SALES

	No. of establishments	Average total employment			Average monthly sales					No data
		1-4	5-9	10-19	Less than P50	P50-P999	P1,000-P4,999	P5,000-P9,999	P10,000 P19,999	
Kalibo	123	111	10	2	1	62	27	5	3	25
Altavas	21	21	-	-	-	21	-	-	-	-
Balete	17	16	1	-	-	17	-	-	-	-
Banga	34	32	1	1	-	30	2	-	1	1
Batan	24	22	1	1	-	19	2	-	-	3
Burnanga	10	10	-	-	-	9	1	-	-	-
Ibajay	41	38	3	-	-	39	1	1	-	-
Lezo	7	7	-	-	-	6	1	-	-	-
Libacao	17	17	-	-	-	17	-	-	-	-
Madalag	14	14	-	-	-	14	-	-	-	-
Makato	28	28	-	-	-	28	-	-	-	-
Malay	6	6	-	-	5	1	-	-	-	-
Malinao	24	24	-	-	-	24	-	-	-	-
Nabas	9	7	2	-	-	6	3	-	-	-
New Washington	38	36	2	-	-	38	-	-	-	-
Numancia	14	12	1	1	-	10	2	-	2	-
Tangalan	12	12	-	-	-	12	-	-	-	-
Total (No.)	439	413	21	5	6	353	39	6	6	29
(%)	100.0	94.1	4.8	1.1	1.4	80.4	8.9	1.4	1.4	6.5

Source: National Census and Statistics Office, 1977 Census of Establishments.

the dominant position as an overall centre for transportation and telecommunication, banking, trading networks of the province, etc. Kalibo is the only town in Aklan where public telephone and private telecommunication services are available, all kinds of financial, insurance institutions as well as distributive establishments exist, and direct connection to Manila through air transportation is found. In 1976, 83 per cent of total electricity supplied by AKELCO was consumed in Kalibo alone.

124. The only infrastructure that is available in the province and yet not be found in Kalibo is the seaport. However, the two ports (the national port at Dumaguít and the municipal port at the poblacion) of New Washington, 10 kilometers

from Kalibo, have been serving as an outpost for Kalibo.

125. Among the three seaports operating within the province, the national port at Dumaguít, New Washington and the Batan municipal port are the best as far as geographical location is concerned, while, the municipal port of New Washington has been No.1 in terms of port works and facilities installed and volume of business handled. Although the existing port facilities of the national port at Dumaguít is very poor and the ship now travelling between Aklan and Manila anchors in the Batan Bay, with passengers and goods ferried from the ship to Dumaguít by barge, once the port works are completed, it will easily replace the present position of the New Washington municipal port.

Table V-9  
MANUFACTURING ESTABLISHMENTS BY CLASSIFICATION

<i>Classification</i>	<i>Number of establishments</i>	<i>Classification</i>	<i>Number of establishments</i>
1. <i>Food manufacturing and processing</i>		4. <i>Metal &amp; metal working</i>	
Popcorn & pop rice confectionery	4	Blacksmith	3
Rice & corn mill	201	Tinsmith	5
Bakery	30	Iron & steel works	7
Noodle factory	1	Machine shop	3
Native cake factory (puto)	1	Total for 4	17
Ice plant	1	5. <i>Concrete Products</i>	
Popsicle factory	2	Tiles	2
Banana flour mill	1	Hollow blocks	12
Total for 1	241	Total for 5	14
2. <i>Wearing apparel</i>		6. <i>Miscellaneous</i>	
Abaca slippers	1	Printing press	4
Tailoring	108	Candle factory	
Dressmaking	20	Raffia	2
Garment manufacturing	1	Pottery	16
Shoe manufacturing	1	Shellcraft	2
Total for 2	131	Silk screening	1
3. <i>Wood &amp; wood products</i>		Ruber flower pots	1
Sawmill	1	Total for 6	25
Furniture	10	Grand Total	439
Total for 3	11		<u><u>439</u></u>

126. There are two projects concerning new port construction, one at Bo. Colong-colong, Ibajay, and the other at Bo. Dapdap in Tangalan. Both are still presently under construction. The disadvantage of these two ports is in the fact that their utilization might be seasonal. Sibuyan Sea is rough during the height of the northeast monsoon.

127. Possible growth centres identified by the Provincial Development staff are Batan for the eastern Aklan, Kalibo for the central, and Ibajay for the west. Seaport construction project as well as the proposed industrial estate development programme at Colong-colong is along with the identification of Ibajay as one of the growth centres. Unless Colong-colong port, however, becomes a year-round port, it is most likely that Ibajay will remain as sub-distributive

centre in the province or as a growth pole. Although Batan has long been serving as a sub-centre in eastern Aklan, its development as a major growth centre may not be materialized in the near future due to its geographic location. Based on the foregoing considerations, it is believed that Kalibo is the major growth centre of the province and is therefore recommended as the site for the ESCAP pilot project.

#### D. POSSIBLE INDUSTRIES CONSIDERED

##### *Source of raw materials*

128. For the pilot project choice, weight has been given to industries that will utilize available raw materials in the area. The following is an examination of possible raw materials by sources (industrial sectors).

Table V-10

DISTRIBUTION OF FACTORS SELECTED FOR GROWTH CENTER IDENTIFICATION:  
AS OF 1975

Municipality	Distance from Kalibo (km)	Seaport	Airport	Telecommunication services			Banking Institu- tion	Financial, insurance, real estate business	Distri- butive estab. <sup>1</sup>	Electric- power consumed <sup>2</sup> 1976
				Public telephone	Public telegram	Private telegram				
Kalibo	-	-	Secondary	1	1	6	5	13	445	1,615
Numancia	4.5	1(M) <sup>3</sup>	-	-	1	-	-	2	35	55
Banga	7.5	-	-	-	1	-	1	3	54	92
Lezo	8.5	-	-	-	1	-	1	-	17	34
Makato	9.0	-	-	-	1	-	1	-	23	30
Malinao	12.0	-	-	-	1	-	1	-	27	29
Tangalan	19.0	-	-	-	1	-	1	-	25	-
Madalag	19.0	-	-	-	1	-	-	-	20	-
Libacao	26.0	-	-	-	1	-	1	-	13	-
New Washington	10.0	2(N,M) <sup>4</sup>	-	-	1	-	1	-	55	15
Balete	17.0	-	-	-	1	-	1	-	25	6
Altavas	38.0	-	-	-	1	-	1	1	50	-
Batan	45.5	1(M) <sup>3</sup>	-	-	1	-	1	2	42	-
Ibajay	30.0	-	-	-	1	-	1	2	90	58
Nabas	39.5	-	-	-	1	-	1	-	54	-
Burnanga	88.0	-	-	-	1	-	1	1	27	-
Malay	96.0	-	Feeder	-	1	-	1	1	65	-
<b>TOTAL</b>	-	4	2	1	17	6	19	25	1,060	1,936

Note: 1 Wholesale and retail enterprise, hotels, restaurants.

2 Supplies by Aklan Electric Co-operatives only. Unit is thousand KWH.

3 M stands municipal port.

4 N stands national port.

Source: Provincial Development Staff, *Socio-Economic Profile 1977: Province of Aklan* (1978)

### *Farm products*

129. Among scores of different crops planted annually in Aklan, readily available surplus comes only from coconut and rice production. Rice is a food crop, consumed immediately after milling. Therefore, rice itself cannot be used for any industrial purpose. However, the by-product of milled rice, rice bran, is one of the important ingredients for feeds which could be made full use of by the feed mill industry.

130. Coconut, as widely known, is a very important source of vegetable oil with high value for industrial usage. Other than coconut oil, shell and coir can also be used for various purposes. Practically therefore no portion of coconut is wasted. In spite of its high value for industrial use and its abundance in the area, there has not been any coconut processing plant in the province except the one which is at present under construction in Banga. So far, all the coconut harvested has been bought by the middleman buyer and shipped out to the coconut processing plants located in various parts of the country.

131. Among the crops found in the province, corn, sorghum, soybean, coffee, cacao, tobacco, abaca, sugarcane, cassava and sweet potato are possible raw materials for manufacturing industries. Presently, none but corn has a sizeable volume of production and all the harvest is practically used for the subsistence of farms. A main factor that has deterred the increase to surplus productivity of these products is the non-existence and/or uncertainty of the market.

132. Corn production in Aklan was 2,673 tons in 1975. A big portion of this went to the backyard livestock as well as human consumption. It is assumed that no meaningful change with regard to consumption pattern and production has occurred since 1975. Hence, the readily available corn for industrial use is limited at present. However, expansion of corn production in the province, will have no difficulty both technically and area-wise, provided that local market is available.

### *Livestock products*

133. As far as livestock is concerned, only surplus of meat itself or left-over of dressed meat could be a possible raw material for certain manufacturing industry. Supply and demand analysis done

by the PDS, however, found that meat supply in the province is 970 short tons as of 1976. This indicates no readily available surplus for meat processing. The only possibility is bone meat production which would be using left-overs collected from 5 existing abattoirs.

### *Forestry products*

134. Nearly one-fifth of the province is covered by commercial forest (34,126 *has*). None theless, no forest resource has ever been exploited massively in Aklan. In view of topography with extensive slope land, however, conservation of forest growth should be given the first priority.

### *Fishery products*

135. Fishery resources around Aklan is very rich and yet the fish caught annually by Aklan fishermen is not sufficient for provincial consumption, according to the study of the PDS. Besides, most of the cultured fish in fishponds are exported to Metro Manila where they can claim better prices than in the province. Therefore, it is assumed that there is no surplus in fishery production at present. For industrial purpose, however, the abundant left-over fishes could be converted to fish meal.

### *Mining and quarrying products*

136. No metallic minerals such as gold, silver, copper, iron, manganese and cobalt have ever been extracted because they exist only in claims and no geological survey has been done as yet. Minerals under extraction in Aklan are non-metallic such as sand and gravel for construction and clays for pottery and brick-making. Since clay deposit in Lezo, Buruanga and Ibajay is reported inexhaustible in quantity, the possibility to make use of it for industries such as ceramics seems to be very high.

137. Guano and phosphate rock in Nabas, whose deposits are reported to be commercial quantities, may be used as raw materials for the fertilizer industry. However, this operation is expected to involve tremendously large capital investment, hence, not fall within the cottage, small and medium industries category.

### *Industries suggested by the local government*

138. The Provincial Comprehensive Plan for the

years 1977 to 2000 as prepared by the PDS listed the following as investment potential in the province:

- (a) Deep-sea fishing
- (b) Feed milling
- (c) Shark-fishing industry
- (d) Prawn culture
- (e) Muscovado sugar mill
- (f) Abaca industry
- (g) Shell craft
- (h) Bamboo craft
- (i) Coconut coir extraction
- (j) Banana plantation
- (k) Coconut shell and other by-products utilization
- (l) Mining and quarrying: fertilizer industry, marble quarry, manganese, clay
- (m) Organic fertilizer production
- (n) Banana fibre extraction.

139. Among those listed here, due consideration is given to feed milling, muscovado sugar mill,

abaca industry, coconut industry, fertilizer industry, clay product industry and banana fibre extraction, since the rests are not manufacturing industries. Out of these 7 industries, fertilizer industry is eliminated from further consideration due to the aforementioned reason.

140. However, when we take into consideration the local demand for the products of muscovado sugar mill, abaca and banana industries could be left out. Local demand for muscovado sugar is very limited while that of the abaca and the banana industries entail exploration of foreign market. Hence the alternatives for possible industries to be set up as pilot project are:

- (a) Feed mill
- (b) Coconut coir extraction
- (c) Coconut shell processing (charcoal)
- (d) Clay products.

*Evaluation of the alternative industries*

141. The inter-industry linkages of each of these industries is shown in the table below:

<i>Industry</i>	<i>Backward linkage</i>	<i>Forward linkage</i>	<i>Lateral linkage</i>
A. Feedmill	Coco oil Molasses Fishmeal Corn Rice bran Soy Bean Sorghum Ipil-ipil	Poultry Piggery	Feedbags Trucking Barging
B. Clay products	Quarrying	Construction Tourism Coco charcoal	Trucking Barging Handicraft Cocoshell Crafting
C. Coco Charcoal	Copra drying	Activate Carbon Carbide	Trucking Barging Copra drying Bags or sacks
D. Coco coir	Copra drying	Upholstery Rope	Furniture Baling Car & truck industry

142. From the table, it can be seen that the feed-mill and other coconut products processing industries present the widest spatial linkage with other projects. The setting up of clay products will, however, link with the construction industry both for roads, bridges and housing. Each alternative for the pilot industry is presented hereunder vis-a-vis relevant factors to be considered.

#### *Feed mill*

143. The market viability of the project will be dependent on the existence of poultry and hog population in the area. At present, there is no commercial feed manufacturing in the island of Panay. The Bureau of Animal Industry has its on-going Animal Dispersal Programme in Aklan. This is supported by the Animal Breeding Station to be established in Ibaday and the Piggery Project being planned. The BAECON-BAI January 1976 census gives the total chicken and hog population for the island of Panay as follows:

	Hogs	Chickens
for the island of Panay as follows:		
	<i>Hogs</i>	<i>Chickens</i>
Aklan	61,750	349,480
Antique	43,980	410,330
Capiz	65,810	638,040
Iloilo	<u>150,250</u>	<u>1,831,690</u>
Totals	<u>321,790</u>	<u>3,229,540</u>

144. In the province of Aklan, hogs are mainly produced in family "backyards", where edible hog feed is free e.g. by-products of farm operations, family table scraps, and kitchen wastes. Chicken, on the other hand, also on a backyard production level, are practically left to feed for themselves in the fields and are not produced on commercial scale. These are usually for home consumption and selling of excess in the public markets.

145. It is therefore apparent that commercial feed production does not present an encouraging picture, based on present total population of livestock vis-a-vis the existence of commercial farms that can afford the prices of commercial feeds. The question may be whether the establishment of a commercial feed mill will motivate the setting up of commercial piggeries and poultry farms

or vice versa. A second factor to consider is the composition of feed ingredients from the point of view of raw materials supply. Major feed ingredients are given Table V-11 in terms of percentage targe volume breakdown as to source.

146. Technologically, feed milling calls for quality and efficient formulation techniques capable for adjustment on a timely basis to variations in nutritive value contents of the different ingredients. In the bigger mills in the country, this is a computerized set-up. Hence, a feed mill project in its comprehensive sense is an elaborate set-up that may not easily be implemented with a low capital base. Feed "mixing" as mentioned will need a large supply of corn. The projected corn production of Aklan by the Bureau of Plant Industry for 1987 is 10,886 metric tons which indicates the need for commercial corn production in the province.

#### *Clay products*

147. In spite of the fact that clay is available in practically "inexhaustible" quality in Lezo, Buruanga and Ibaday, this raw material has so far been used only for pottery making e.g. traditional cooking pots and flower pots. In view of present construction trends, which specify increasing use of bricks and clay tiles in residential houses and commercial buildings, brick and tile production may be considered for a pilot project. However, present volume of local demand does not seem to warrant the development of this industry.

148. It seems that the development of the ceramics industry in this area is caused by lack of knowledge and information on product potential as well as available technology for this type of industry. If so, the basic crude pottery technology in the province will have to be enhanced by training and development.

#### *Coconut charcoal*

149. The most critical aspect for this industry is the collection of coconut shells. Copra drying is done in each coconut farm. Hence the coco shells supply is distributed all over the province. The average recovery of charcoal from the shell, with an efficient kiln, is 25 per cent by weight. The charcoal kiln, therefore, has to be located as close as possible to the copra drying point, which very often are in the midst of the plantation away

Table V-11  
FEED INGREDIENTS AND SOURCES OF ACQUISITION (PER CENT)

<i>Feed Ingredients</i>	<i>Total</i>	<i>Sources</i>	
		<i>Domestic</i>	<i>Imported</i>
Copra Meal	9.0	100.0	0.0
Corn Bran	7.0	100.0	0.0
Fish Meal	3.2	18.0	82.0
Meat Meal	6.4	8.0	92.0
Molasses	4.1	100.0	0.0
Pollard	10.1	100.0	0.0
Rice Bran	8.6	100.0	0.0
Soybean Meal	6.4	4.0	96.0
Sorghum	2.3	0.0	100.0
Yellow Corn	20.4	33.0	67.0
White Corn	6.2	93.0	7.0
Vitamin Supplements	0.7	12.0	88.0
Other Ingredients	15.6	92.0	8.0
<b>Total</b>	<b>100.0%</b>	<b>67.3%</b>	<b>32.7%</b>

*Source:* Centre for Research and Communication "Study of the Feed Milling Industry in the Philippines, 1975," Based on information provided by Philippine Association of Feed Millers, Inc.

from the road. Significant to keep in mind is the cost advantage of hauling charcoal instead of the coconut shell, 75 per cent of which will just be dissipated on carboniation as fuel gases.

150. A second aspect to consider is the age of coconut trees in the area which is given at more than 60 years old for 60 per cent of total number of trees in the whole of Aklan. Only 21 per cent are in their peak production period, as of 1976. Aside, therefore, from the dispersed collection problem, nuts from old trees tend to give a relatively low yield of charcoal.

151. Also to be considered would be the shipping out of charcoal to its market. Mindanao production of coconut charcoal feeds the activated carbon plants and the carbide plant in the island. Excess charcoal is also being shipped to Japan directly or through Cebu traders. Charcoal produced in Aklan may have to go through traders in Cebu and probably Manila. Hence the economics of the project will have to be critically determined.

#### *Coconut coir*

152. Unless the market is definitely confirmed,

coco coir production in the country may not be attractive as a main item for production. As a side activity to other operations, the viability may be considered. Also, stripping technology has not been fully developed in this field.

#### *Proposed industry: feed mill*

153. A feed mill is proposed as a pilot project. The following are factors taken into consideration for the choice.

#### *Inter-industry linkage*

154. It is assumed that the feed mill industry entails the most extensive inter-industry linkage among the four alternatives. The expected linkages – backward and forward – as well as vertical and horizontal are summarized as follows:

- (a) expansion of agricultural production, especially feedgrains which a feedmill requires in great quality;
- (b) Possible acceleration of raw material processing industries such as fish meal, copra meal, bone meal, ipil-ipil leaf meal, and so forth;
- (c) promotion of livestock industry such as

piggery and poultry project by means of supplying lower-priced, quality commercial feed; and

- (d) possible spatial linkage with regard to bulk collection of raw materials and delivery of mixed feeds to livestock farms within the province.

155. These linkages would trigger the exploration and expansion of markets which is considered a critical factor for the industrial development of the province.

#### *Consistency with the local government plan*

156. In view of the afore-said linkages, the proposed feed mill project would support the planned crop-shift in low productive areas and at the same time, accelerate, through the promotion and development of the livestock industry, the attainment of self-sufficiency in meat protein supply.

157. However, for this proposed project to succeed, support of the government is necessary as follows:

- (a) Full assistance and co-operation from the Bureau of Animal Industry, specifically in the field of feed quality control;
- (b) Supply of electric power to the project by AKELCO;
- (c) Extension of appropriate technology such as high-yielding, better feedgrain seeds, proper ways of planting and harvesting, fertilization, and no forth, by the Bureau of Agricultural Extension;
- (d) Programming areas to be planned by feedgrain crops;
- (e) Financial assistance to poultry and piggery project by the Development Bank of the Philippines; and
- (f) Up-grading of the stocks, pest and disease control and extension service by the Bureau of Animal Industry.

### **E. REVIEW OF THE PROJECT FEASIBILITY**

158. It was found that a group under the provincial Development Staff of Aklan has been working for two or three years on a possibility of setting up a feed mill project. Recently, the

group came up with a publication (mimeographed) entitled *A Project Feasibility Study on the Aklan Feedmill* (to be referred to as the PDS/PFS hereafter). It is understood that this study was undertaken as part of various development planning activities of the PDS. What is taken here therefore is a critical review with regard to the following variables: potential demand, production, raw material supply, cost and return.

#### **Brief outline of the proposed project**

##### *Size of the proposed feed mill*

159. The size of the proposed feed mill is with a capacity of 300 bags per day. Assuming an effective operating capacity of 90 per cent, the milling plant can produce 270 bags per day, or an annual production of 84,240 bags which could feed 5,447 hogs, 9.3 per cent of present hog population, and 46,800 chickens, 17.9 per cent of present poultry population.

##### *Equipment*

160. Proposed basic necessary equipments are: two hammer mills with a capacity of 1,200 kilogrammes each per hour, one 1,500 kilograms per batch feed mixer. Two generator sets with a capacity of 100 KW to 120 KW are also proposed to augment in availability of power during power failures.

##### *Location*

161. Proposed possible project site is a portion of the Provincial Plant Nursery in Barrio Nalook, Kalibo. It is approximately two kilometers inland from the National Highway to New Washington and Kalibo. It will be adjacent to the proposed provincial motor pool and the proposed rice mill complex of the National Grains Authority.

##### *Organization*

162. It has been proposed in the study that with regard to the organization, the project will be constructed, operated and managed by the Provincial Government. For effective operation a Technical Assistance Unit under the Commission of Small and Medium Industries may be created which could guide and assist the management in the construction, operation and further development of the project.

### Proposed investment

163. The proposed feed mill project has a total investment cost of P 800,000 for its first year of operation. Table investment is itemized in Table I-12.

Table V-12

#### TOTAL INVESTMENT PLAN

Items			
A. Fixed investments			
a.	Building (mill, office and powerhouse)	P 93,400	
b.	Machinery and equipment	312,875	
c.	Transport facility	5,000	
d.	Office furniture and equipment	7,000	
e.	Water tank	4,000	
f.	Experimental hog pen	<u>7,500</u>	P 429,775
B. Other Investments			
a.	Installation costs	10,000	
b.	Test-run expenses	3,750	
c.	Organizational expenses	<u>5,096</u>	P 18,846
	Sub-total		P 448,621
C. Working capitals: (raw materials, sacks and supplies, etc.)			
			<u>351,379</u>
	Total Investments		<u><u>P 800,000</u></u>

164. The proposed financing scheme is 75:25 debt-equity ratio with project term to be arranged with the Development Bank of the Philippines, at 12 per cent interest per annum. The provincial government is proposed to put up the remaining 25 per cent (P 200,000) from its 20 per cent internal revenue allotment.

### Potential demand for feeds

#### General background

165. According to the food consumption study of the Ministry of Agriculture, annual *per capita* consumption of pork and poultry meat in Western Visayas were 5.5 kilograms and 4.0

kilograms, respectively.<sup>1</sup> Based on these rates of consumption, the total demand in Aklan in 1976 was computed at 1,653 tons for pork and 1,203 tons for poultry meat. These represent 39,690 heads of hogs and 1.2 million heads of chickens in live animal. Since the population of hogs and chickens in Aklan in 1976 were reported to be at 58,865 heads and 261,164 heads respectively, one might conclude that the local supply of hogs for pork is in surplus while poultry meat supply is insufficient.

166. However, the *per capita* rate of consumption stated above is lower than the national average by 1.7 kilos in pork. In poultry consumption rate is around the average. In addition, the current level of consumption in Aklan is definitely far below the recommended level of annual *per capita* intake of animal protein food; e.g. recommended rate is 18 kilograms for pork and 13 kilograms for poultry.<sup>2</sup> The Provincial Development Staff has computed the amount of annual insufficiency at around 900 tons.<sup>3</sup> The Bureau of Animal Industry's District Office also stated, in its 10-year Development Plan that the people of Aklan had never been adequately nourished with animal protein foods and that the present local production is still very inadequate to meet the effective demand of the people for meat, eggs, and milk.<sup>4</sup>

167. Demand for meat is highly elastic to the income level. Another study on meat consumption pattern revealed that difference in pork and in poultry meat consumption between the lowest and the highest income level reaches as high as 4 to 5 times.<sup>5</sup>

168. In view of the fact that Aklan ranks, in terms of average family income, the lowest among the provinces of Region VI (P 2,971 as compared to P 5,483 for the average in the Region) it could be assumed that the current level of meat con-

<sup>1</sup> E.F. Aviguetero and et. al., Regional Consumption Patterns for Major Foods, 1974-76 (Department of Agriculture Special Studies Papers No.78-13, May 1978), Table 5 and 9.

<sup>2</sup> Recommended by the Ministry of Health.

<sup>3</sup> PDS, *Provincial Development Plan 1977-2000*

<sup>4</sup> Bureau of Animal Industry District Office, A Ten-Year Development Plan on the Production of Animal Protein Foods, FY 1976-1985

<sup>5</sup> E.F. Aviguetero and et. al., Income and Food Consumption (Department of Agriculture Special Studies Papers No.78-15, June 1978), Tables 7 and 10.

sumption in Aklan can easily be doubled, provided that income level of the people will be lifted along with the planned economic development of the area. Here lies a necessity as well as possibility of developing the livestock industry in the province. A significant link to this development is the promotion and development of the feed mill industry.

#### *Livestock population and its projection*

169. The feasibility of the project heavily depends on the existing local demand for commercial feeds. Variables that affect the size of local market are the population of the livestock, the number of animals being fed mixed feeds, and the daily and/or annual rate of feed consumption.

170. According to the census data obtained by the Bureau of Animal Industry (BAI), Aklan had 58,865 hogs and 261,164 chickens in 1976.

Based on this figure, PDS projected in its feasibility study the population of the livestock. As shown in Tables V-13 and V-14, the population of hogs and chickens were broken down into commercial and backyard which was further divided into backyard I, that which was mixed feed and the backyard II, that which does not use commercial feeds. For the commercial and the backyard I, PDS employed 10 per cent growth rate and 7 per cent for backyard II. In the light of a study conducted by the U.P. College of Agriculture, which confirmed the 7 per cent annual growth rate for hog population in the Philippines and the subsequent effects of low-cost quality feed being made available by the proposed feed mill project, the PDS assumption for hog population projection seems to be quite realistic. For poultry population, BAI employed a 6 per cent growth rate. In this regard, the PDS projection for poultry is illy optimistic. However, this difference will not matter. From projections in Tables V-13 and V-14, Aklan will have by 1980

Table V-13

#### POPULATION PROJECTION OF HOGS BY COMMERCIAL AND BACKYARD FARMS

<i>Types</i>	<i>1978</i>	<i>1979</i>	<i>1980</i>	<i>1981</i>	<i>1982</i>	<i>1983</i>
Piggery Farm	970	1,067	1,174	1,291	1,420	1,562
Backyard I <sup>1</sup>	2,733	3,006	3,307	3,638	4,002	4,402
Backyard II <sup>2</sup>	65,590	70,171	75,083	80,339	85,963	91,980

Note: 1 Use commercial feeds.

2 Not use commercial feeds.

Source: PDS Feasibility Study.

Table V-14

#### POPULATION OF CHICKEN BY COMMERCIAL AND BACKYARD FARMS

<i>Types</i>	<i>1978</i>	<i>1979</i>	<i>1980</i>	<i>1981</i>	<i>1982</i>	<i>1983</i>
Poultry Farm	-	4,611	5,072	5,579	6,137	6,751
Backyard I	12,296	13,526	14,878	16,366	18,003	19,803
Backyard II	295,092	315,746	337,851	361,500	386,805	413,882
Total	307,388	333,885	357,801	383,445	410,945	440,436

Source: PDS Feasibility Study.

approximately 80,000 heads of hogs and 36,000 chickens.

*Rate of feed consumption per head*

171. The most critical point in feed consumption is the daily and/or annual rate of feed consumption per head. The PDS study simply adopted the daily consumption rates of 2.5 kilograms for hogs and 0.12 kilograms for chickens; which are, in terms of annual rate of consumption, equivalent to 18.25 bags (50 kg. per bag) for each hog and 0.87 bags for every chicken. There is no explanation in detail for justifying the use of these rates.

In our own analysis, however, annual rate of feed consumption per head of hogs is assumed at 11.6 bags while that of poultry is at 0.45 bags. Basic assumptions and procedures in reaching the above rates are as follows:

Hogs:

- (a) Total recommended amount to be fed per hog is 311.8 kgs. as shown in Table V-15.
- (b) Assumed 8 months, instead of 7 months, as a growth period for hogs due to the inferior facilities and feeding methods of most raisers using mixed feeds. As a result, 30 days delay in hog growth causes subsequent additional feeds of 67.6 kilograms as shown in Table V-15.
- (c) Since 8 months is the assumed growth period, the total life cycle of hogs is computed at 1.5 years.

- (d) Based on the foregoing assumptions, annual consumption is computed at 568.1 kilograms or 11.4 bags per head.
- (e) There are however boars for breeding, pregnant and lactating sows which consume around 3.0 kilograms per day for long or period. In this respect, 0.2 bags more is added to the average, resulting in 11.6 bags per head per year as a possible rate of consumption.

*Poultry:*

- (a) Total recommended rate per broiler is 3.7 kilograms for 8 weeks, as shown in Table V-16.
- (b) Assuming 3 harvests per year, annual rate of feed consumption will be 11.1 kilograms per broiler.
- (c) Assuming that, in case of layers, the 8th week level of daily consumption is fed 10 months, feed consumption per layer per year is 39.7 kilos.
- (d) Assuming that the proportion between layers and broilers in term of population is 2 to 3 heads, average rate of feed, consumption per head per year is 22.5 kilogram or 0.45 bags.

172. In comparison, the PDS's rates are nearly 2 times higher to be conservative, the later projections will be used henceforth.

*Feed demand projection*

173. It is not known exactly how many animals (hogs and chickens) are fed mixed feed in Aklan. However, the PDS study in 1977 found that

Table V-15  
RECOMMENDED RATE OF FEED FOR HOGS

Growth stage	Recommended rate of feed <sup>1</sup>			Assumed delay of growth	
	No. of days	Daily	Total	No. of days	Additional feed
Pre-starter	50	0.20 kg.	10.00 kg.	-	- kg.
Starter	30	0.90	27.00	3	2.70
Grower	90	1.95	175.50	18	35.10
Pattener	30	3.31	99.30	9	29.80

<sup>1</sup> Bureau of Animal Industry.

Table V-16

## RECOMMENDED RATE OF FEED FOR BROILER

Week	Recommended rate <sup>1</sup>	
	Daily	Weekly
1st	16	112
2nd	27	189
3rd	36	252
4th	55	385
5th	77	539
6th	91	637
7th	109	763
8th	120	840
Total	-	3,717

<sup>1</sup> Bureau of Animal Industry.

about 4 per cent of backyard raisers are using commercial feeds in the province and that there are some commercial poultry and piggery farms which are solely dependent upon mixed feeds. Besides, it is known that around 60,000 bags of feeds were shipped to Aklan during a year's period from March 1974 to February 1975. (Weight of bags at that period was most probably 40 kilograms per bag). Assuming 10 per cent of total bags of feeds were dealer's stocks, around 43,000 bags of 50 kilograms were consumed within that year.

174. It is believed that, due to transportation and handling cost, the price of feed shipped to Aklan is definitely higher than if feeds were produced in the province, assuming the same quality. It is also likely that, if a low-priced, quality, mixed feed was available, more farmers would use it and perhaps some would use more of it.

175. Therefore, potential requirements have been computed in Table V-17 on three possible basis, namely:

- (a) Only 4 per cent of the hogs and poultry will be fed mixed feeds;
- (b) 6 per cent of the hogs and poultry will be fed mixed feeds; and
- (c) 8 per cent of the hogs and poultry will be fed mixed feeds.

176. If 4 per cent of the animals considered was fed mixed feeds, the 1976 consumption would have been around 2,000 bags only, which is far below the 1974-75 level of feeds shipped-in. Therefore, it is believed that this assumption is too conservative to be realistic.

177. At 6 per cent the 1976 consumption would have been 48,000 bags, consisting of 40,970 bags of hog feeds and 7,051 bags of poultry feeds. In view of the 1974-75 level of feed volume, it is believed that at the 6 per cent level would be a realistic short-run goal, given a lower-priced, high quality, mixed feed.

178. At 8 per cent, the 1976 consumption would have been 64,000 bags, which seem to be a little exceeding the realistic volume. However, this could be a realistic goal by 1980. Assuming that the proposed project will start operation, say by 1980, the size of the demand for feeds will approximately be between 65,000 bags and 87,000 bags, which means that the proposed feed mill can start operation at either 70 per cent or 80 per cent of the rated capacity.

## Production and raw materials

### *Production schedule*

179. The commercial feeds to be produced by the proposed feed mill will include the four kinds of hog feeds, namely, starter, grower, breeder, and fattener, and four poultry feeds covering starter, broiler, growing and laying mash. Table V-18 shows the projected production by year and by kind of feeds. Based on this projection, the feed mill will start operation at 70 per cent efficiency level for the first year and increasing gradually to 95 per cent of rated capacity (300 bags per day). In the production schedule, the feed mill will only produce hog feeds during the first year of operation, and poultry feeds will be introduced on the second year and onwards.

### *Feed quality control*

180. One of the important technical aspects in feed milling is quality control. The requirements of which are: (i) (laboratory) analysis on raw materials as well as finished products, (ii) sulfide test to assure the complete eradication of toxic substance that becomes detrimental

Table V-17  
PROJECTED POPULATION AND FEED CONSUMPTION 1978-1983

	1976 <sup>1</sup>	1978	1979	1980	1981	1982	1983
<b>Hogs:</b>							
Population <sup>2</sup>	58,865.0	69,283.0	74,244.0	79,564.0	85,268.0	91,385.0	97,944.0
Food consumption (bag of 50 kg.) <sup>3</sup>							
4% assumption	27,313.4	32,147.3	34,449.2	36,917.7	39,564.3	42,402.6	45,446.0
6% assumption	40,970.1	48,221.0	51,673.8	55,376.5	59,346.5	63,603.9	68,169.0
8% assumption	54,626.7	64,294.6	68,898.4	73,835.4	79,128.6	84,805.2	90,892.0
<b>Chickens:</b>							
Population <sup>2</sup>	261,164.0	307,388.0	333,885.0	357,801.0	383,445.0	410,945.0	440,436.0
Food consumption (bag of 50 kg.) <sup>3</sup>							
4% assumption	4,701.0	5,533.0	6,009.9	6,440.4	6,902.0	7,397.0	7,927.8
6% assumption	7,051.4	8,299.5	9,014.9	9,660.6	10,353.0	11,095.5	11,891.8
8% assumption	9,402.0	11,066.0	12,019.8	12,880.8	13,804.0	14,794.0	15,855.6

Note: 1 Census data obtained by the Bureau of Animal Industry.

2 Projected by Provincial Development Staff.

3 Food consumptions were computed on the basis of: Hogs, 11.6 bags per year (average for all hogs), chickens, 0.45 bags per year (average for all chickens).

Table V-18  
PROJECTED PRODUCTION OF HOG AND POULTRY FEEDS  
(50 kilos/Bag)

	Preparatory	1st Year	2nd Year	3rd Year	4th Year	5th Year
<b>Hog feeds:</b>						
Starter	2,808	6,552	5,616	6,318	6,669	6,669
Grower	11,232	26,208	22,464	25,272	26,676	26,676
Breeder	5,616	13,104	11,232	12,636	13,338	13,338
Fattener	8,424	19,656	16,948	18,954	20,007	20,007
Sub-total	28,080	65,520	56,160	63,180	66,690	66,690
<b>Poultry feeds:</b>						
Starter	-	-	1,872	2,106	2,223	2,223
Grower	-	-	7,488	8,424	8,892	8,892
Broiler	-	-	3,744	4,214	4,446	4,446
Laying	-	-	5,616	6,318	6,669	6,669
Sub-total	-	-	18,720	21,060	22,230	22,230
<b>GRAND TOTAL</b>	<b>28,080</b>	<b>65,520</b>	<b>74,880</b>	<b>84,240</b>	<b>88,920</b>	<b>88,920</b>

Source: PDS Feasibility Study.

to the growth and health of animals, (iii) to compute and keep records of feed conversion efficiency in comparing the performance of other competitive brands, (iv) efficient quality control in laboratory of the Bureau of Animal Industry, University of the Philippines, and Philsugin (currently Philsucom), (v) to check feed quality of its own experimental farm.

181. Ideally, the project has to have its own laboratory which involves quite a substantial amount of additional investment of about P 400,000 at current prices. In the light of the limited capital resources and the proposed size of the plant, however, the installation of laboratory facilities and equipment seems to be untimely. A possible alternative in this regard will be to solicit the full assistance of the Bureau of Animal Industry as conceived by the PDS proposal.

#### *Raw materials: requirements and supply*

182. The raw material requirements by kind and at different efficiency levels (60% and 90% of rate capacity are presented in Table V-19.

183. Among the raw materials listed in the table, all but sorghum is available locally. The highest required raw material is corn. At the first year of operation, corn products (ground corn, corn gluten meal, corn meal) requirements will amount to 2,200 tons. At 90 per cent efficiency rate, corn requirement is projected to be double. Since the corn harvested in the province in 1975 was reported only at 2,673 tons, massive drive to expand corn productivity should be taken, otherwise the feed mill operation will encounter difficulty in its acquisition of this basic ingredient.

184. Soybean is a very high quality protein

Table V-19

#### ANNUAL REQUIREMENTS OF RAW MATERIALS BY KINDS AND AT DIFFERENT LEVEL OF OPERATION<sup>1</sup>

(Unit: ton)

Raw Materials	Hog feeds		Poultry feeds		Total	
	60% operation	90% operation	60% operation	90% operation	60% operation	90% operation
Yellow corn	-	-	-	2,084.9	-	2,084.9
Ground corn	842.4	947.7	-	-	842.4	947.7
Corn gluten meal	561.6	631.8	-	42.1	561.6	673.9
Corn meal	786.2	884.5	-	-	786.2	884.5
Pollard	2,246.4	2,527.2	-	-	2,246.4	2,527.2
Rice bran	2,471.0	2,780.0	-	600.2	2,471.0	3,380.2
Rice middling	561.6	631.8	-	-	561.6	631.8
Soybean meal	140.4	158.0	-	499.1	140.4	657.1
Fish meal	617.8	695.0	-	383.3	617.8	1,078.3
Molasses	898.6	1,010.9	-	105.3	898.6	1,116.2
Bone meal	157.2	176.9	-	-	157.2	176.9
Shell powder	56.2	63.2	-	37.9	56.2	101.1
Sorghum	842.4	947.7	-	-	842.4	947.7
Salt	39.3	44.2	-	16.8	39.3	61.0
Ipil-ipil leaf meal	157.2	176.9	-	63.2	157.2	240.1
Copra meal	337.0	379.1	-	305.4	337.0	684.5
Supplement	56.2	63.2	-	16.8	56.2	80.0

<sup>1</sup> Computed based on the Table 13, 14, 15, 16, 17, 18, 19, 20 of PDS Feasibility Study.

supplementing ingredient. The project needs 140 tons of soybean meal at 60 per cent efficiency rate and 657 tons at 90 per cent. During the crop year 1976, it was reported that the area planted to soybean was 350 hectares with total production of 210 tons. Therefore, this crop should also be included in the increase agricultural productivity drive.

185. Fish meal requirements at the initial operation is estimated at 618 tons. Dried and/or wasted fish itself are abundant in the province. However, fish meal supplied locally is inferior in its quality due to the primitive way of processing, which often results in high salt content and inclusion of disease germs. In order to make full use of locally available raw materials, some methods for proper processing of fish meal should be introduced.

186. Sorghum is not locally available at present although its production was once tried in 1975. Since this is a grain that comes close to corn in feeding value and nearly 1,000 tons annually will be required by the project, sorghum planting should be introduced in the province as an integral part of this project.

### Cost and return

187. The major determinants that contribute to the cost per bag of feeds are costs of raw materials, bag, labour, general operation, depreciation, interest on invested capital, and operating capacity of feed mill plant.

#### *Basic assumption and facts*

- (a) Rated plant capacity of the proposed project: 300 bags per day. If we assume an effective operating capacity at 70 per cent, actual production will be 210 bags per day, 5,460 bags per month, and 65,520 bags per year. If the plant is operated at 90 per cent of its rated capacity, 270 bags per year.
- (b) Proposed personnel requirements and compensation.
- (c) Ingredients and cost of hog feeds: see Table V-21.
- (d) Ingredients and cost of poultry feeds: see Table V-22.
- (e) Projected operation expenses: see Table V-23.

Table V-20  
PERSONNEL REQUIREMENTS AND MONTHLY COMPENSATION

<i>Position</i>	<i>No. of personnel</i>	<i>Monthly compensation (P)</i>
Manager	1	700
Mill supervisor	1	600
Cashier	1	550
Book-keeper	1	500
Warehouseman	1	500
Salesman	1	500
Clark-typist	1	300
Hammermill operator	1	350
Mixer operator	1	350
Laborers	3	900
Driver	1	350
<b>Total</b>	<b>13</b>	<b>5,600</b>

Source: PDS Feasibility Study.

#### *Detailed total cost per bag*

188. Based on the foregoing assumption and facts, the detailed costs were computed in Table V-23.

189. As indicated in the table, raw material (ingredients) cost comprises 88 per cent of total cost per bag in the case of hog fattener and 92 per cent in the case of broiler mash. The cost of raw materials therefore is a major factor which affects market price. Here lies the comparative advantage of a feed mill located at raw material-based or near the source(s) of raw materials.

190. In Table V-24, general operating costs are relatively high compared with other minor cost items. The reason may lie in the fact that the proposed plant depends on self-generation in power supply. At present, AKELCO cannot make available its electricity supply to the feed mill. However, if low-cost electricity becomes available in the future, further cost reduction of feeds could be expected.

191. There is not so much cost differential per bag at different efficiency levels of operation. At the level of 70 per cent, total cost is P0.33 more expensive than at operation of 90 per cent as shown in Table V-25.

Table V-21  
RAW MATERIAL COST FOR HOG FEEDS

Ingredients	Cost per kilo P	Hog Feeds							
		Starter		Grower		Breeder		Fattener	
		Rate %	Cost P	Rate %	Cost P	Rate %	Cost P	Rate %	Cost P
Yellow corn	1.10	-	-	-	-	-	-	-	-
Ground corn	1.31	25.0	13.75	5.0	2.75	5.0	2.75	5.0	2.75
Corn gluten meal	1.30	10.0	6.50	5.0	3.25	5.0	3.25	5.0	2.50
Corn meal	1.00	15.0	7.50	14.0	7.50	5.0	2.50	-	-
Pollard	0.75	20.0	7.50	25.0	9.38	15.0	5.63	20.0	7.50
Rice bran	.70-.80	10.0	4.00	20.0	7.50	38.0	14.55	20.0	7.50
Rice middling	1.20	-	-	-	-	-	-	20.0	12.00
Soybean meal	2.40	4.0	4.80	1.0	1.20	-	-	-	-
Fish meal	3.10	9.0	13.95	6.0	9.30	5.0	7.75	2.0	3.10
Molasses	0.30	5.0	0.75	8.0	1.20	8.0	1.20	11.0	1.65
Bone meal	2.30	0.8	0.80	0.7	0.81	-	-	-	-
Shell powder	0.30	0.7	0.10	0.8	0.12	0.5	0.08	-	-
Sorghum	1.10	-	-	10.0	5.50	10.0	5.50	10.0	5.50
Salt	0.30	0.5	0.08	0.5	0.08	0.5	0.08	0.5	.08
Ipil-ipil meal	0.70	-	-	1.0	0.35	3.0	1.05	1.5	.52
Copra meal	0.80	-	-	2.0	0.80	5.0	1.75	5.0	2.00
Supplement	18.48	0.5	4.62	0.5	4.62	0.5	4.62	0.5	4.62
<b>Total</b>		<b>100.0</b>	<b>64.48</b>	<b>100.0</b>	<b>54.36</b>	<b>100.0</b>	<b>50.71</b>	<b>100.0</b>	<b>49.72</b>

Note: Necessary correction was made.

Source: PDS Feasibility Study.

Table V-22  
RAW MATERIAL COST FOR POULTRY FEEDS

Ingredients	Cost per kilo ₱	Hog Feeds							
		Starter		Grower		Breeder		Fattener	
		Rate %	Cost ₱	Rate %	Cost ₱	Rate %	Cost ₱	Rate %	Cost ₱
Yellow corn	1.10	25.0	13.75	25.0	13.47	55.0	30.25	44.0	24.20
Ground corn	1.10	-	-	-	-	-	-	-	-
Corn gluten meal	1.30	-	-	-	-	4.0	2.60	-	-
Corn meal	1.00	-	-	-	-	-	-	-	-
Pollard	0.75	-	-	-	-	-	-	-	-
Rice bran	.70-.80	34.0	13.60	30.0	12.00	5.0	2.00	23.0	9.20
Rice middling	1.29	-	-	-	-	-	-	-	-
Soybean meal	2.40	16.0	19.20	12.0	14.40	20.5	24.60	9.0	10.80
Fish meal	3.10	7.0	10.85	6.0	9.30	8.0	12.40	7.0	10.75
Molasses	0.30	-	-	5.0	0.75	-	-	5.0	0.75
Bone meal	2.30	-	-	-	-	-	-	-	-
Shell powder	0.30	0.5	0.08	1.5	0.15	0.5	0.08	2.0	1.30
Sorghum	1.10	-	-	-	-	-	-	-	-
Salt	0.30	0.5	0.08	0.5	0.08	0.5	0.08	0.5	0.08
Ipil-ipil meal	0.30	1.0	0.15	5.0	0.45	1.0	0.15	2.0	0.30
Copra meal	0.80	15.0	6.00	15.0	6.00	5.0	2.00	9.0	4.80
Supplement	18.48	1.0	9.24	0.5	4.62	0.5	4.62	0.5	4.62
<b>Total</b>		<b>100.0</b>	<b>72.95</b>	<b>100.0</b>	<b>61.22</b>	<b>100.0</b>	<b>78.78</b>	<b>100.0</b>	<b>66.80</b>

*Note:* Necessary correction was made.

*Source:* PDS Feasibility Study.

Table V-23  
PROJECTED OPERATING EXPENSES

(unit: pesos)

<i>Items</i>	<i>Preparatory</i>	<i>1st year</i>	<i>2nd year</i>	<i>3rd year</i>	<i>4th year</i>	<i>5th year</i>
<i>Administrative and operating expenses</i>						
1. Salaries and wages	33,600	67,200	77,280	85,008	93,508	107,534
2. Employees benefits	5,920	11,840	12,432	12,432	12,432	12,432
3. Depreciation expenses	10,932	21,864	21,864	21,864	21,864	21,864
4. Interest of loans	72,000	72,000	67,897	63,302	58,156	52,302
5. Insurance expense	856	1,713	1,713	1,713	1,713	1,713
6. Gasoline, fuel and lubricants	16,100	32,200	35,420	38,962	42,858	47,144
7. Power consumption	10,000	20,000	22,000	24,200	25,410	26,680
8. Repair and maintenance	3,033	6,067	6,673	7,341	8,075	8,882
9. Office supplies	1,200	2,400	2,472	2,546	2,623	2,701
10. Tares and licenses	4,298	8,596	9,026	9,477	9,951	10,448
11. Sales tax	36,567	131,990	156,321	175,860	185,632	185,632
12. Sales tax	1,562,596	2,718,785	3,367,586	5,232,441	5,633,145	5,633,145
13. Sacks	70,200	163,800	187,200	210,600	222,500	222,300
14. Handling expenses	4,212	9,828	11,232	12,636	13,338	14,005
15. Pre-operating expenses	942	1,884	1,884	1,884	1,884	1,884
16. Miscellaneous expenses	17,828	40,350	48,704	54,569	57,549	60,426
<b>Total expenses</b>	<b>1,850,284</b>	<b>4,310,517</b>	<b>4,029,704</b>	<b>5,954,837</b>	<b>6,390,438</b>	<b>6,409,182</b>

*Source:* PDS Feasibility Study.

Table V-24  
PER BAG COSTS OF MIXED FOODS

(Unit: pesos)

	<i>Bag feeds</i>				<i>Poultry feeds</i>			
	<i>Starter</i>	<i>Grower</i>	<i>Breeder</i>	<i>Fattener</i>	<i>Starter</i>	<i>Grower</i>	<i>Broiler</i>	<i>Layer</i>
Ingredients	64.48	54.36	50.71	49.72	72.95	61.22	78.78	66.82
Bag	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Labour <sup>1</sup>	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
General operating costs <sup>2</sup>	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82
Depreciation	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Interest <sup>3</sup>	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
<b>TOTAL</b>	<b>71.13</b>	<b>61.02</b>	<b>57.37</b>	<b>56.38</b>	<b>79.61</b>	<b>67.88</b>	<b>85.44</b>	<b>73.48</b>

<sup>1</sup> Here in labour cost is included Employees Benefits in Table V-23.

<sup>2</sup> Sum of such expenses as insurance, gasoline, fuel, lubricants, power, repair and maintenance, office supplies, taxes and licenses, handling expenses, pre-operating expense, and miscellaneous.

<sup>3</sup> Covered total capital invested (P 800,000) with 12% interest rate per annum.

Table V-25  
TOTAL COST, SELLING PRICE, MARKET PRICE, AND NET RETURN PER BAG OF FEEDS

(Unit: pesos)

	<i>Cost per bag</i>		<i>Selling price<sup>1</sup></i>	<i>Market Price<sup>2</sup></i>	<i>Difference</i>	<i>Return</i>	<i>Net return after sales tax<sup>3</sup></i>
	<i>70%</i>	<i>90%</i>					
	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(4-3)</i>	<i>(3-2)</i>	
<b>Hogs feeds:</b>							
Starter	71.46	71.13	74.50	75.00	0.50	3.37	2.28
Grower	61.35	61.02	67.50	70.00	2.50	6.48	4.39
Breeder	57.77	57.37	66.00	72.50	6.50	8.63	6.54
Fattener	56.71	56.38	65.00	65.00	0.00	8.62	6.53
<b>Poultry feeds:</b>							
Starter	-	79.61	83.00	84.50	1.50	3.39	1.30
Grower	-	67.88	72.00	72.00	0.00	4.12	2.03
Broiler	-	85.44	86.00	82.50	-3.50	0.56	-1.53
Layer	-	73.48	76.00	80.50	4.50	2.52	0.43
<b>Weighted average</b>	<b>63.82</b>	<b>63.49</b>	<b>69.64</b>	<b>-</b>	<b>-</b>	<b>6.15</b>	<b>4.06</b>

<sup>1</sup> Taken from PDS Feasibility Study. Considerations behind the pricing at this rate were not given.

<sup>2</sup> Taken from the commercial feed dealers in Kalibo, Aklan, in September 1970.

<sup>3</sup> Average sales tax per bag of animal feed is P 2.09.

### *Projected price and its competitive power*

192. The price at which the products of the proposed feed mill is to be sold is a key factor to its market inabity, assuming that the quality of its product is comparable to other brands.

193. The PDS study has, as shown in Table V-25, computed the selling price based simply on the raw material costs. No explanation was given. Selling price per bag varies from ₱65 for hog fattener to ₱86 for broiler mash and they are set ₱0.56 to ₱8.63 higher than the total cost per bag at 90 per cent efficiency level.

194. Commercial feeds in Kalibo at the time of the survey are sold from ₱65 to ₱82.50 per bag as shown in Table V-25. Compared with these market prices, selling prices of the proposed feed mill are relatively cheaper, except the broiler mash of which projected selling price is ₱3.50 higher. The largest difference between market and the proposed price is ₱6.50 for hog breeder, while there is no price difference between hog fattener and poultry grower.

195. Since the market for commercial feeds within the province is just sufficient for the proposed capacity of the feed mill, as stated earlier, capturing almost all the possible market is imperative for the first four or five years' operation. The basic strategy for it is, to lower the price of feeds even just by one peso than the prevailing market price. This is under the assumption that the quality of the feeds is comparable to other brands.

196. In view of this, the proposed pricing of the PDS/PFS is not recommended. In case of poultry broiler mash, total cost per bag is already exceeding the market price. It is recommended that it be checked. In the case of hog breeder and poultry grower, there is still enough space to reduce the selling price in view of the wide gap existing between total cost and the proposed price.

### *Net return per bag*

197. The net return after sales tax is deducted varies with the kind of feed. In the case of poultry broiler mash, net return per bag is negative at ₱1.53. In the case of other feeds, net return is all positive varying from ₱0.43, the lowest, to ₱6.54 the highest. Since the difference between the selling price (₱69.64) and the total cost (₱63.39) in weighted average is ₱6.15 per bag, it is expected that the project can gain ₱4.06 as an average net return per bag sold.

198. The net return was computed based on the assumption that all the product is sold at the proposed selling price right at the mill site immediately after it was produced. In actual marketing, however, the feed mill has to put up market outlets in the different parts of the province, which would mean additional marketing cost such as transportation and handling, dealer's margin and others.

199. Assuming that total amount invested is paid within 7 years, an equal annual installment amounts to ₱114,286, which means the minimum net return to be attained will be ₱1.74 per bag at the first year of operation (70% efficiency level), and ₱1.36 per bag at 90 per cent efficiency level. In view of the weighted average net return per bag, it appears that there is no difficulty for the project to gain the minimum requirement for annual installment payment.

### **Conclusion**

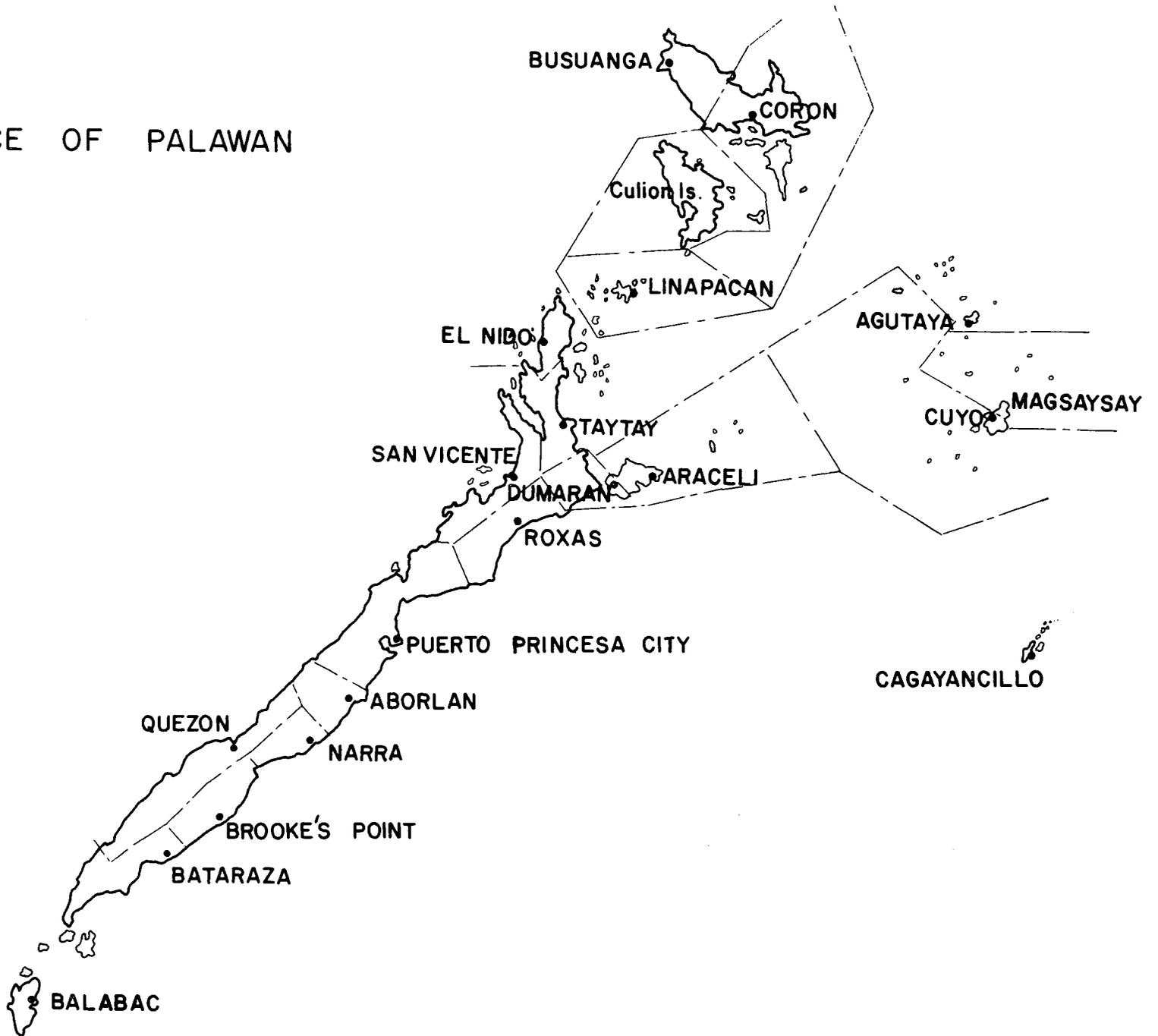
200. Based on the foregoing review, the proposed project is feasible. In the light of the rapid change of factor cost as well as the limitation in available data and information for the detailed study at this moment however, it is highly recommended that further comprehensive feasibility study be undertaken before the project implementation.

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PROVINCE OF PALAWAN



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## VI. AREA SURVEY OF PALAWAN PROVINCE

### A. REVIEW OF SOCIAL AND ECONOMIC PROFILE

#### The land and its Utilization

201. The province of Palawan is part of Region IV-A, the Southern Tagalog Region. It is a long narrow island lying southwest and west of the main group of the Philippine Islands. It is bounded by the South China Sea to the West and North and by the Sulu Sea to the East.

202. The province has 19 municipalities with 10 located in the main land and 9 island municipalities. It has one city, Puerto Princesa City, the capital of the province which is strategically located almost mid-way of the main island.

203. It is the second largest province of the Philippines with a total land area of 1,489,630 hectares. The province is composed of 1,769 islands and islets with a total coastline of 1,959 kilometers. The main island from tip to tip has a length of 650 kilometers.

204. Out of the total land area of 1,489,630 hectares, 454,407.5 hectares have been classified as arable land. Of this only 19 per cent or 86,069 hectares have been cultivated, of the 19 per cent, 56.76 per cent is planted to rice, 26.84 per cent to coconut and 16.40 per cent to seasonal crop and corn cashew, root crops, vegetables etc.

#### Population

205. The population of the province, based on the 1975 census, was placed at 300,065. Annual growth rate is 4.78 per cent. The density of the population is 5 persons per hectare or 15 persons per square kilometers. This is the lowest in the region and perhaps in the entire country. About 81 per cent of total population is located in the rural areas, the maximum concentration of which is in Brooke's Point (33,025), Puerto Princesa City (27,229), Quezon (24,461). In the other municipalities, it is below 20,000.

206. The total actual working force of the province is 91,768 or 30.58 per cent of total popula-

tion. The table below shows the classification of the labour force by major occupation:

Table VI-1  
LABOUR FORCE BY MAJOR OCCUPATION

<i>Occupation</i>	<i>Number</i>	<i>% Distribution</i>
1. Farmers, farm managers	39,739	55.07
2. Farm workers	23,480	32.54
3. Industrial workers, Governments employees	16,566	18.05
4. Fishermen	8,476	11.75
5. Commerce and trade or sale workers	3,043	3.32
6. Others	464	
<b>TOTAL</b>	<b>91,768</b>	<b>100%</b>

Source: 1976 Socio-Economic Profile.

#### Economic activities

##### *The main economy of the area*

207. The main economy of the province is agriculture, next are logging and mining. About 85 per cent of the population depends on agriculture for livelihood. But, its productivity has been very low. Some of the major constraints to its development have been listed in the Palawan Long-Range Comprehensive Development Plan, Part II as follows:

- (i) General soil infertility,
- (ii) Incomplete soil surveys/analysis,
- (iii) Lack of technical knowledge on the part of the farmers,
- (iv) Lack of infrastructure and transportation facilities,
- (v) Marketing constraints e.g. inaccessibility of the markets and lack of storage facilities,
- (vi) and others.

208. The main resources of the province are: agriculture, forests, marine and minerals.

## Agriculture

209. The potential agricultural area of the province is 4,544,075 hectares, of which 86,069 hectares or 19 per cent is cultivated and the remaining 368,338 hectares i.e. 81 per cent is uncultivated.

210. The major agricultural crops are palay and coconut, of the total cultivated area, 57 per cent is planted to paly, 27 per cent to coconut and the remaining 16 per cent to seasonal crops, e.g. corn, root crops, banana, cashew and vegetables. The province is surplus in both the main crops vis. palay and coconut, which are exported. The area also grows corn, cashew the other vegetables/fruits in sufficient qualities, and even sends outside the province. The following table gives the area and production of the main agricultural crops:

Table VI-2

### THE AREA AND PRODUCTION OF AGRICULTURAL CROPS (1976)

<i>Crops</i>	<i>Area (hectare)</i>	<i>Production</i>
1. Palay	48,854	1,973,498 (cavans)
2. Corn	2,327	60,865 (cavans)
3. Coconut	31,273	300,000 (tons)
4. Vegetables	148	1,537 (tons)

Source: Economic Profile and Philippine Coconut Authority - 1976.

## Forest

211. Forest produce is another important resource of the area. The standing timber reserves include the commercially important hard wood varieties like ipil apitong, marange, akle, ralitas and narra. The province also abounds in minor forest produce such as almasiga, rattan, nipa, shingles, fire wood, tanbark and kalingag. The area is surplus in most of forest produces which are exported outside the province. A few small and cottage industries are utilizing/processing these raw materials to a limited extent and sawing, making furniture and crafts. Almasiga a minor forest produce, which is found in abundance, is a basic raw material for paints and varnish industry. It is exported to Manila. The

forest produce of different varieties also offer good scope for industrial use.

## Marine

212. The province is one of the richest fishing grounds of the Philippines. In 1974 approximately 37 per cent of the national commercial fish output was from Palawan waters. In 1976, the province's contribution to national fish caught increased to approximately 67 per cent. Four fishing grounds which are considered of national importance belong to Palawan water. These are Malampaya sound, Taytay Bay, Bacuit Bay and Coron Bay. Tables IV-3 and IV-4 indicate the fish production and fish productivity in the province.

213. Palawan is also rich in other form of marine life like sea-shells, seaweeds and tropical fishes. Balabac, which is located in south, is abundant in seaweeds like Eucheema (gozo), caulerpa (lato), sea-shell as troca (samong), cowries (baboy-baboy), trepang, sponges and spring lobsters.

Table VI-3

### FISH PRODUCTION VIS PROVINCIAL DEMAND IN 1973

(unit: metric tons)

Annual demand	10,140
Production	
Municipal	9,940,988
Commercial	169,904,560
Total	179,845.558
Surplus	169,705.588
Processed (Dried, salted, smoked, frozen)	5,601.897

Source: Socio-Economic Profile.

Table VI-4

### COMMERCIAL FISHING PRODUCTION IN PALAWAN IN 1973

<i>Fishing Grounds</i>	<i>Production</i>
Taytay Bay	183.59
Sula Sea	77,329.64
Bacuit Bay	67.12
Caron Bay	4,280.87
Malampaya Sound	88,043.34
<b>TOTAL</b>	<b>169,904.56</b>

Source: Socio-Economic Profile

214. Similarly, Narra has a variety of shells like caulerpa, troca, black lipped oysters, cowries, trepang etc. Cuyo and El Nido have enchenes and other sea shells.

215. Some cottage industries are already utilizing these shells, processing them and selling and it could be further encouraged by providing some necessary inputs. As far as fish is concerned, it is being exported mostly in raw form without being processed.

#### *Mineral*

216. The mineral resources in commercial quantity include nickel, copper, manganese and chromite. Other deposits are silica sand, limestone, gold, iron, byrite, lead, sulphur, acid, guano. There are 15 mining companies operating in the province dealing in the metallic and non-metallic minerals. Most of the firms are still in the various stages of commercial exploitation. It is too early to think of any mineral for industrial use, unless the complete statistics is known. Table V-5 indicates the existing status of various minerals in the province.

#### *Livestock*

217. Livestock and poultry production in the province is generally small scale and primarily for domestic consumption. Feed for backyard poultry and swine consists mainly of kitchen left-over and farm by-products. Forage crops are used in limited quantities and concentrated feeding is practically unknown. In recent year, however, commercial poultry and hog raising in the province has gained impetus. With the provision of the necessary institutional support, this resource has wide potentials for development.

#### **Infrastructure**

##### *Power*

218. The present source of power is thermal. The total generation capacity is 900 KW, which is fully utilized rather over loaded. Therefore power supply is presently inadequate for the industrial use of the province. Area electrified is only the "poblacion" of Puerto Princesa City 10 KM to north and 13 KM to south. Before the end of 1978 however, the newly installed generator which as a total capacity of 9,000 KW will be operational. Thus 5,600 KW is projected to be

Table VI-5  
TOTAL ESTIMATED FIRM RESERVES AND  
PRODUCTION FOR METALLIC AND  
NON-METALLIC MINERALS IN  
PALAWAN (1975)

<i>Kind</i>	<i>Estimated firm Reserves</i>	<i>Production</i>
<b>Metallic minerals</b>		
Laterite iron	144,830,083 mt.	
Mercury	5,255,436 mt.	
Nickel	329,753,626 mt.	
Quick silver		8.4 mt
<b>Non-metallic minerals</b>		
Marble	566,800,000 cu.m	
Talc	6,000 mt.	
Saprolite	172,981,380 mt.	
Sihia sand	4,400,900 mt.	121,455 mt.
Pyrite	-	25,641 dmt.
Guano	-	643 mt.
Alumina sand	-	28,282 mt.
Gravel, sand & earth	-	225,002 cu.m.

Source : 1976 Palawan Socio-Economic Profile.

made available both for industrial and for residential usage by 1979.

219. The power rate in Palawan is 2.57 times higher than the Manila rate. The PALECO (Palawan Electric Cooperative) collects P.90/KWH while MERALCO (Manila Electric Company) charges only P.35/KWH. However, with the operation of the new generator, it is projected that power rates will be decreased by roughly 20 per cent.

220. Assuming that the plan of PALECO pushes through, power supply and rates then will not be major constraints, as it is today, to the promotion and development of small and medium scale industries in the area for at least the next 3 years. However, the power rate at 20 per cent reduced rates from present rate will still be at P.72/KWH or 2.06 times higher than Manila rates.

221. This brings to mind the question: "Could

products produce in this area compete with products produced in the Metropolitan Manila area given the cost of power?”. Government has to look into this aspect and take necessary measures for reducing the power rates.

#### *Transportation and communications*

222. The main transport facilities of the province is by land and by water. Air travel is available but coverages are only Puerto Princesa, Coron and Cuyo with origins from Manila.

223. Land: From interviews with the local entrepreneurs, it was gathered that transport has been a limiting factor in the mobility of goods in the area. Though there are sufficient transportation plying the routes to the main municipalities, the road network is very poor. This accounted for the high transport cost and product spoilage. From the 1976 Socio-Economic Profile it was gathered that total road network is only 2,272 kilometers which covers only 6 to 9 municipalities, and 92 barrios out of 223 barrios. 85 per cent of the road is gravel and earth which makes travel even more difficult during the rainy season. Table V-6 gives the types of roads and their mileage. However, within the next 5 years, road condition in Palawan is projected to improve as Palawan is one of the 22 provinces that will be covered by the Rural Roads Program with total budget of \$US 15 million coming from the USAID.

224. Water: From interviews, it was also gathered that by the geographic location of the

Table VI-6

#### PALAWAN PROVINCE ROAD NETWORK

Length of the island	650 km
Road network	2,275,885
Coverage	6 municipalities out of 92 Barrios out of 223
Division by Surface	
Gravel	45.45%
Earth	40.65%
Private	11.35%
Asphalt	2.36%
Concrete	2 %

Source: 1976 Palawan Socio-Economic Profile, PLRDPC Part I.

province, it relies greatly on water transport for mobility. The municipalities and barrios in the mainland which are not reached by land are generally serviced by water transport. Of 20 municipalities, 14 have ports, 3 of which are national ports and 11 municipal. Also, 4 more ports are projected to be constructed. From interviews, it was also gathered that rates for water transport is not standardized. Rates vary greatly on ones ability to negotiate and haggle.

#### *Communications*

225. As far as communication is concerned, only Puerto Princesa has telephone facilities. The Philippine Long Distance Telephone Co. has a branch in the city which connect the city to other parts of the country. Telegraph facilities exist in municipalities.

#### *Finance*

226. There are three commercial banks, one Development Bank and five rural banks in the province. All are located in Puerto Princesa City except the four rural banks located each in Brooke's Point, Coron, Narra and Roxas municipalities. The only bank which can serve the needs of the industries for their long term requirement is the Development Bank of the Philippines (DBP), which is located in the capital town and supposed to serve the entire province. The rate of interest varies between 12 to 14 per cent and loan is given based on collaterals. The feasibility report is prepared by the MASSICAP team, which is appraised by the bank and then the loan is granted to the entrepreneur. So far, the DBP has sanctioned loans to only 15 units, with total loan value of about P 1 million as of June 30, 1978. The distribution by nature of industry are as follows:

<i>Industry</i>	<i>No. of units</i>	<i>Loan value (000)</i>
Garments	3	340
Bakery	3	145
Others	9	553
Total	15	1,038

Source: DBP - Development Bank of the Philippines - Puerto Princesa City.

## *Skills*

227. One of the drawbacks for the development of industries is the lack of skills in the area. There is an acute shortage of trained skilled workers for industries. There are three schools for craftsmen in the province – one also located in the capital city which provide training in basket making, bamboo and fiber craft, embroidery and tailoring. The course is for six months and provides basic elementary training only. This is not a professional institution for creating skills for commercial purposes. Therefore, there is an urgent need for setting up a technical institute which could train people for highly skilled jobs in different mechanical, electrical, and carpentry/crafts trades.

## **B. POSSIBLE GROWTH CENTERS AND LOCATION**

228. The National Economic Development Authority (NEDA) Region IV-A and the Provincial Development Staff (PDS) have identified 7 growth centers namely: Puerto Princesa City, Brooke's Point, Narra, Roxas, Coron, Taytay and Cuyo. The team endorses the identification of growth centres by NEDA/PDS.

229. Of the seven growth centers, Puerto Princesa City is recommended to be the site of the ESCAP pilot projects and other industrial activities for the following reasons:

- (i) Of the seven areas, Puerto Princesa will be the only area where power for industrial use will be available. It is projected that while Narra will soon have a power plant, power supply will be sufficient only for residential and commercial uses. There are no immediate plans of providing power to the five other municipalities.
- (ii) The city is planned to be the center of government developmental efforts for the province. As industrialisation is one of the main components of development, the establishment of the ESCAP project in Puerto Princesa will be complimentary to the government's programme.
- (iii) Located midway in the mainland of the province, the city by its geogra-

phical position and its extent of development, serves as the crossroad to the northern and to the southern municipalities. Hence, its sphere of influence will be of a wider scope than any of the six other growth centers.

230. So far as manufacturing and processing industries are concerned, except one large scale unit which processes timber and one medium scale unit engaged in wooden furniture and tiles, all are cottage units, in the province. As per the list supplied by the NACIDA there are reported to be 481 cottage units in the province of which about one third are located in Puerto Princesa City. It was learnt from the field visits that about 30 to 40 per cent of these units were closed due to difficulties of finance and marketing. Due to constraint of personnel, NACIDA office located in the city did not have the up-to-date list. It was also gathered, on the other hand, that more than 100 cottage units were in operation but were not registered with NACIDA. Perhaps these units felt that no useful purpose will be served with this registration. So far only 38 cottage units were provided loan worth ₱25,000 during 1976 and the units also could not get any other assistance from NACIDA either in the form of technical know how or marketing. The types of cottage industries registered with NACIDA, their capitalization and employment is given in Table VI-7 below:

231. Thus practically the present industrial structure of the province consists of cottage sector which is also not organized and having problems of finance, knowhow and marketing. So far as organizational aspect is concerned, the only organization to look after them is NACIDA which is highly inequipped for providing necessary assistance. For the development of medium and small sector, the only organization is MASICAP located in the city which has only one role to play i.e. preparation of feasibility reports for the purpose of finance by the DBP and other hands. This organization has no expertise to guide entrepreneurs for identification of items for development. The SBAC, the technical wing of the Ministry of Industry is unable to reach the entrepreneurs in the province, being located at the regional headquarters.

Table VI-7

COTTAGE INDUSTRIES REGISTERED WITH NACIDA  
July 1963 – December 1977

Industry	Number registered	Capitalization (000)	Factory workers
Palawan	481	455	1,164
Bambo and rattan crafts	35	18	93
Ceramics	14	27	51
Embroidery	12	23	28
Food preservation	73	62	234
Loom weaving	1	1	4
Mat weaving	84	20	196
Metal craft	16	38	39
Needle craft	148	118	248
Piggery	6	4	13
Poultry	8	7	19
Poultry and piggery	7	4	19
Shell craft	10	15	38
Small agricultural hand tools	7	7	25
Toy craft	1	2	7
Wood craft	36	92	87
Related crafts	13	5	41
Other industries	7	5	14
Small mining operation	3	6	8

Source: NICIDA – Manila.

232. The main factors responsible for the poor industrial structure in the province could be attributed to the following:

- (i) Poor transport and communication system,
- (ii) Higher cost of transportation,
- (iii) Non-availability and high rate of power,
- (iv) Absence of water works,
- (v) Non-availability of required skills,
- (vi) Unfavourable location of the Province,
- (vii) High incidence of malaria, and
- (viii) Absence of proper organization to look after the development of industries.

### C. POSSIBLE INDUSTRIES CONSIDERED

233. It may be seen from the above that Palawan Province has rich resources which include agriculture – palay and coconut; forest – major and minor produce like varieties of wood and almasiga; minerals like nickel, copper, manganese, chromium, silica sand, limestone etc.; marine resources which include fish and shells. All these resources provide scope for industrial development in the area – in a phased manner. The Provincial Development Staff with the assistance of NEDA has also identified certain industries based on these resources and listed them in their development plan, 1975-2000. The team studied the prospects of these industries as well as conducted a quick market study of the items imported in the area from outside and suggests the following industries to be encouraged in the area in course of time.

#### Agro-based industries:

1. Feedmill
2. Cassava starch processing
3. Rice milling
4. Copra oil
5. Coir products
6. Vinegar processing
7. Agricultural implements
8. Peanut processing
9. Bamboo products
10. Corn products
11. Food processing

#### Others:

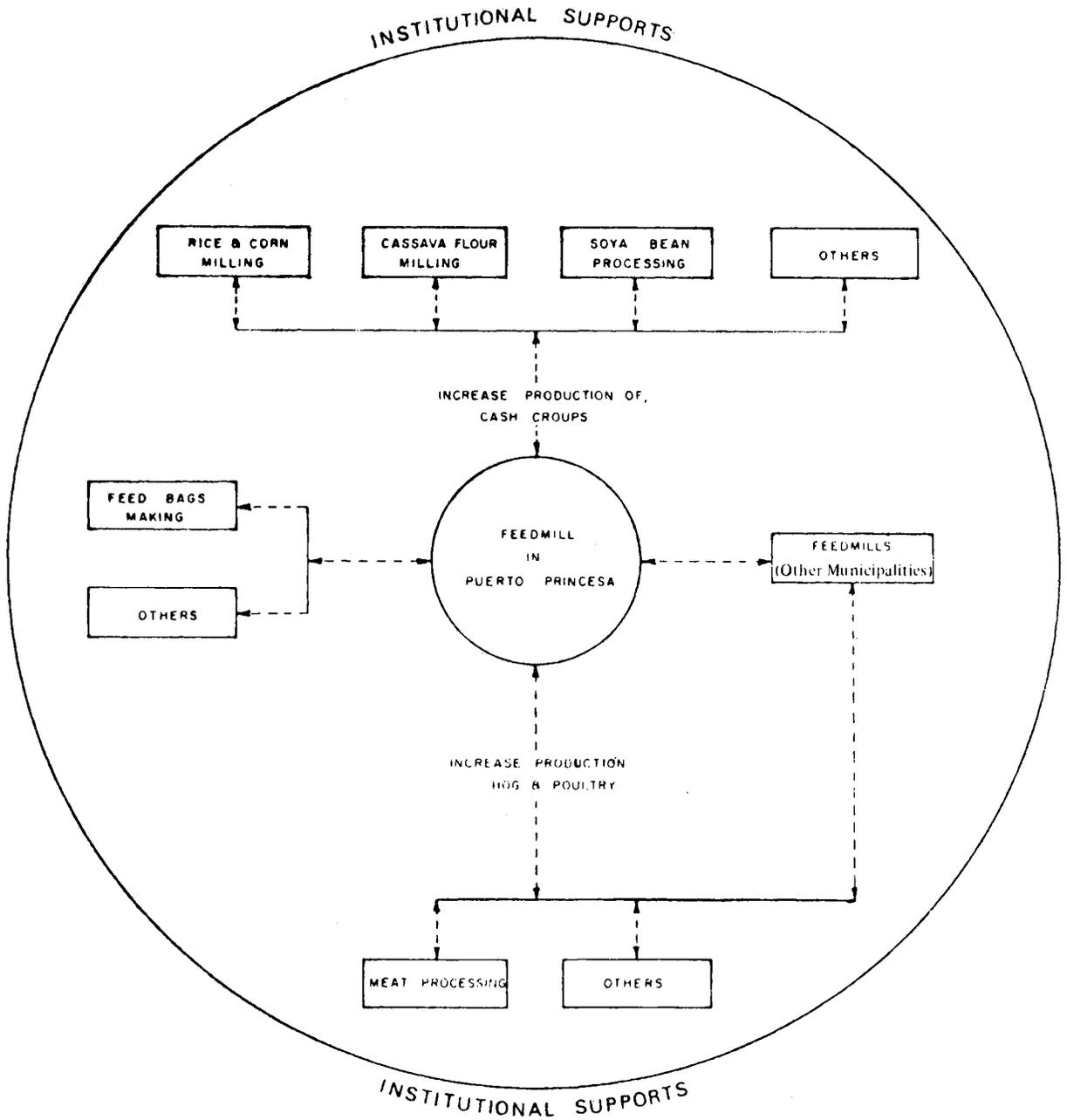
1. Fish canning
2. Shell craft
3. Wooden furniture
4. Rattan furniture
5. Ready-made garments
6. Plastic based products
7. Shoe manufacturing
8. Sea foods processing
9. Paints and varnishes
10. Hardware items
11. Ceramic products
12. Ship/boat building
13. Tricycle manufacturing
14. Meat processing
15. Cold storage

#### Proposed industry for the Pilot Project

234. From among the identified agro-based industries, the feedmill is hereby proposed for the Pilot Project, mainly for the following reasons:

- (i) Setting up a feedmill plant will stimulate the development of the cash crop products on one hand, and the live-stock production on the other. The former would contribute to increase

DIAGRAM : PROJECT CYCLE



land utilization. This will be in terms of increase in hectaraage planted as well as productivity per hectare cultivated. Whereas the latter would support the efforts of the government in attaining self-sufficiency in animal protein, and

- (ii) The proposed pilot firm, if given the necessary institutional support, would stimulate the growth of a maximum range (backward, forward and horizontal linkages) of related industries. Such are: cassava flour milling, coconut processing, rice and corn milling, meat processing and others (refer diagram). The promotion, development and organization of these industries once found feasible, would trigger the industrialization of the province.

#### D. PRE-FEASIBILITY STUDY

235. The core areas studied in the course of the field survey were: (a) the determinants of demand for commercially mixed feeds, and (b) the local availability of raw materials.

##### Determinants of demand

236. Demand for commercial feeds may be determined by the following variables:

- (i) Hog and poultry population and feeding practices;
- (ii) Prices of feeds;
- (iii) The availability of feeds.

##### *Hog and poultry population and feeding practices*

237. The 1976 BAI survey on animal population reported that as of January, 1976, the province had produced a total of 70,470 hogs and 429,910 chickens. At these population levels, some 1,010,912 bags of feeds would have been needed if all of the above were fed commercially mixed feeds at the computed annual intake of 11.6 bags per hog and .45 bags per chicken (refer Aklan Report, Tables V-15 and V-16).

238. Present total consumption of feeds in the province however is very minimal. Feeds are all imported from Manila. These are generally purchased for fighting cocks and not for poultry

or swine. The poultry and swine raisers generally shy away from commercial feeds in favour of kitchen refuse and home mixed feeds. This is mainly due to two reasons:

- (i) the prohibitive prices of feeds, and
- (ii) the general inavailability of feeds in their respective locality.

239. From interviews, roughly 10 per cent of interviewed poultry and swine raisers professed that they would want to totally do away with the inconvenience and time consuming exercise of mixing their own feeds or depending on kitchen refuse, of which supply is also unstable, if only commercial feeds of cheaper prices were available and at their respective localities.

##### *Price of feeds*

240. No exact or reliable data could be gathered on the prices of feeds in the province. However, from interviews, it was gathered that at current prices of feeds in Palawan, cost of feed per chicken (broiler) per day fluctuates between P.25 to P.30. For raisers, to attain reasonable profits, cost of feeds per chicken per day should not exceed P.20. Given the cost differential, the raisers then do not have any other alternative except to turn to home-mixed feeds and kitchen refuse.

241. Assuming that the selling price of feeds produced in Palawan could be equal to the proposed selling price of the Aklan feedmill, without jeopardizing its financial feasibility, cost of feeds per chicken (broiler) per day would only be P.17. (refer to Table V-25, Aklan Report). At a cost serving of P.03, based on the acceptable cost of P.20, the probability of bringing a shift in the feeding habits of raisers is quite high.

##### *The availability of feeds*

242. Availability of feeds in this study for the province of Palawan refers to 2 categories: (1) availability of feeds at the locality of the raisers and (2) availability of feeds at the time of purchase.

243. *At the locality.* The main land of Palawan has a total of 11 municipalities and the city of Puerto Pincesa. The city and 4 other municipalities in the main land have been identified by the NEDA and by the PDS as growth centers.

These areas, however, are very far from each other. Average travel time from one municipality to the next, based on the growth center visited, is 1½ hours on gravel and earth roads. From interviews on the visit of the Team of Brooke's Point, Narra, Puerto Princesa and Roxas it was learned that feeds are generally only available in Brooke's Point and Puerto Princesa City. Sometimes, it is available in Narra. Considering the distance, travel time and inconvenience, raisers would rather prefer to use home-mixed feeds and kitchen refuse than travel all the way to Puerto Princesa City or Brooke's Point.

244. *At the time of purchase.* In addition shipment of feeds to the province is not on a regular basis. So that raisers often times find themselves going home empty handed, after the long and inconvenient travel. Hence, instead of taking the risk, they would rather turn to home-mixed feeds and kitchen refuse.

245. From the foregoing discussion it could be deemed that in order to bring about a shift in the feeding practice of the hog and poultry raisers in the province, from the home-mixed feeds and kitchen refuse to the commercial feeds, such should be made available at a reasonable price and with a very effective logistic programming.

#### Projected hog and poultry population

246. Based on BAI computations, average animal growth rate of animal population is 7 per cent. In the case of Palawan, however, this is projected to double due to the following factors:

- (i) The establishment of the feedmill in the locality would bring regular supply of feeds to the area and at reasonable prices. This would encourage present hog and poultry raisers to expand their operations and at the same time encourage prospective entrepreneurs to put up their own farms, and
- (ii) The integrated programme on poultry and swine promotion and development, as part of the proposed project, is also expected to accelerate the animal growth rate of the province.

247. Considering the foregoing premises, the

table below shows the projected hogs and poultry population within the next 5 years.

Table VI-8

#### PROJECTED HOG AND CHICKEN POPULATION

Years	1	2	3	4	5
Hog	91,977	104,853	119,533	136,267	155,345
Chick- en	561,113	639,668	729,222	831,313	947,697

#### Estimated hog and poultry population that will be using commercial feeds

248. The estimates are made of the hog and poultry population that will be using commercial feeds at three level that is low estimate, medium and high. These are based on a survey undertaken by the Aklan PDS and the team's field interviews in Palawan.

##### *Low estimates*

249. A survey of the Aklan PDS on the percentage of total hog and poultry population that uses commercially mixed feeds, noted it to be at 4 per cent. This percentage is assumed to be the low percentage of animal population that will be using commercial feeds in Palawan.

250. Hog and poultry raising is relatively more developed in Aklan as compared to that in Palawan. However, like Palawan, all their feeds are imported from other provinces, of which supply is also irregular. Unlike Palawan though, feeds, when available, are priced highly but at a level where raisers could still make money on their produce. Since the establishment of a local feedmill plant would make available feeds that are relatively cheaper than the ones now prevailing in the market, it is expected that more raisers would be encouraged to use commercially mixed feeds. Hence, the four per cent is used for the low estimates level.

##### *High estimates*

251. For the high estimates, 10 per cent is used. This is based on the percentage of the interviewed hog and poultry raisers who professed that they would want to totally do away with the inconvenience of mixing their own feeds if feeds at rea-

sonable prices were available in their localities. It is also significant to note that these two own the bigger, if not the biggest, farms in the province.

*Medium estimates*

252. For the medium estimates, the average of the high and the low estimates was used. This is at 7 per cent of total animal population. Table VI-9 shows these estimates.

**Estimated annual feed requirements**

253. Based on Table VI-9 and on the assumption that animal diet will be at computed intake, estimated total feed requirement is presented in Table VI-10.

**Conclusions**

254. From the foregoing discussion, it appears that the market viability of the project is de-

pendent on the shift in the feeding practice of raisers, that is from home mixed feeds and kitchen refuse to commercial feeds. To bring about this shift, two major factors have to be considered, namely:

- (i) The prices of feeds should be at a reasonable level. Based on broiler feeds, it should not exceed P 0.20 per chicken per day, and
- (ii) The effectivity of the logistic programming.

If these two requirements are met, then the proposed project firm is viable, market-wise. Since these are critical variables, in terms of market viability, it is recommended that these be studied further in detail.

Table VI-9  
HIGH, MEDIUM AND LOW ESTIMATES OF HOG AND POULTRY POPULATION  
THAT WILL CONSUME COMMERCIAL MIXED FEEDS  
(50 kilogram bags)

Years	Hog			Poultry		
	High	Medium	Low	High	Medium	Low
1	9,198	6,438	3,679	56,111	39,278	22,405
2	10,485	7,340	4,194	63,967	44,777	25,587
3	11,953	8,367	4,781	72,922	51,046	29,169
4	13,627	9,539	5,451	83,131	58,192	33,253
5	15,535	10,874	6,214	94,770	66,339	37,908

Table VI-10  
ESTIMATED ANNUAL FEED REQUIREMENTS  
(in 50 kilogram bags)

Years	Hog			Poultry			Total		
	High	Medium	Low	High	Medium	Low	High	Medium	Low
1	106,697	74,681	42,676	24,800	17,675	10,100	131,497	92,356	52,776
2	121,624	85,144	48,650	28,785	20,150	11,514	150,411	105,294	60,165
3	138,655	97,057	55,460	32,815	22,971	13,126	171,470	120,028	68,586
4	158,073	110,652	63,232	37,409	26,186	14,964	195,482	136,839	78,195
5	180,206	126,138	72,082	42,647	29,853	17,059	222,853	155,991	89,141

## Recommended plant size

255. At medium level estimates, the projected annual feed requirements would warrant the establishment of a 16 or 17 tons per day capacity plant, that is assuming 300 working days per year at one shift. However, to be conservative and to give way for the possible horizontal growth of the feedmill industry in the province, a minimum economic size plant with a capacity of 15 tons per day will be adequate in meeting the projected demand as well as inventory requirements and would be quite flexible to accommodate further increases in sales. Hence it is recommended. The rated daily and annual capacity of the plant vis-a-vis the number of shifts is presented in Table VI-11.

256. Presently, the production of rice bran, ipil-ipil leaves and shells is in abundance. On the other hand, the production of sorghum, corn and rootcrops (substitute ingredient) is below the projected requirements of the plant. It is projected that production of these products will improve due to the following factors:

- (i) The establishment of the feedmill will create local demand for said produce; hence, encourage increased production, and
- (ii) The integrated programme on the promotion and development of the agricultural inputs, which would be organized and co-ordinated by the TAU, would provide the impetus. Hence, accelerate production and productivity.

257. The supply of these raw materials therefore would not be a problem, if given the necessary institutional support, which should be launched and in hand with the establishment of the feedmill plant.

Table VI-11

### ESTIMATED PLANT OUTPUT BASED ON NUMBER OF SHIFTS

<i>Shifts/day (at 8 hours/shift)</i>	<i>Rated capacity (in 50 kg. bags)</i>	
	<i>Daily</i>	<i>Annual</i>
1 shift	390	90,000
2 shifts	600	180,000
3 shifts	900	270,000

258. The remaining 22 per cent of feed ingredients could be imported from Manila until local substitutes are developed.

## Estimated plant output

259. The plant is estimated to run at an efficiency rate of 70, 80 and 90 per cent for the first, second, and third to fifth years respectively. At these assumed efficiency rates and at a one shift per day operation, plant output was computed at 63,000, 72,000, 81,000 bags per day for the respective period stated above.

## Raw materials

260. As was stated earlier in the Aklan Report, raw materials comprise about 88 per cent of total cost per bag, in the case of hog fattener, and 92 per cent in the case of broiler mash. Any savings therefore, that could be derived from this cost component would affect the projects viability. Here lies the advantage of strategically locating a feedmill plant near its source(s) of raw materials.

261. On the average 78 per cent of the poultry and hog feed formulation ingredients based on the BAI minimum requirements, could be obtained locally. The ingredients are copra meal, corn bran, corn grits, fish meal, ipil-ipil meal, rice bran, shell grits, sorghum and yellow corn.

262. Based on the BAI Reference Feed Formulation, Table VI-12 below shows the average annual raw material requirements of the feedmill plant.

Table VI-12

### RAW MATERIALS AND VOLUME TO BE UTILIZED PER YEAR

<i>Item</i>	<i>Volume (in kg.)</i>
Copra meal	451,710
Corn Bran	540,540
Corn germ meal	103,950
Corn grits	213,570
Fish meal	109,620
Ipil-ipil meal	149,620
Rice bran	500,850
Sorghum	360,990
Yellow corn	551,800
Shell grits	75,600

## Conclusion

263. The technical feasibility of this proposed project is dependent on the development of the local agricultural inputs for raw materials. Although the production of these agricultural products is presently below the requirements of the plant, it is projected that this would improve, and the impetus of which will be provided by the integrated programme on the promotion, development and organization of the agricultural produce and the establishment of the feedmill plant.

### Total project cost

264. In association to the Aklan Report the proposed feedmill plant would require a total project cost of P 800,000, the breakdown of which is as follows:

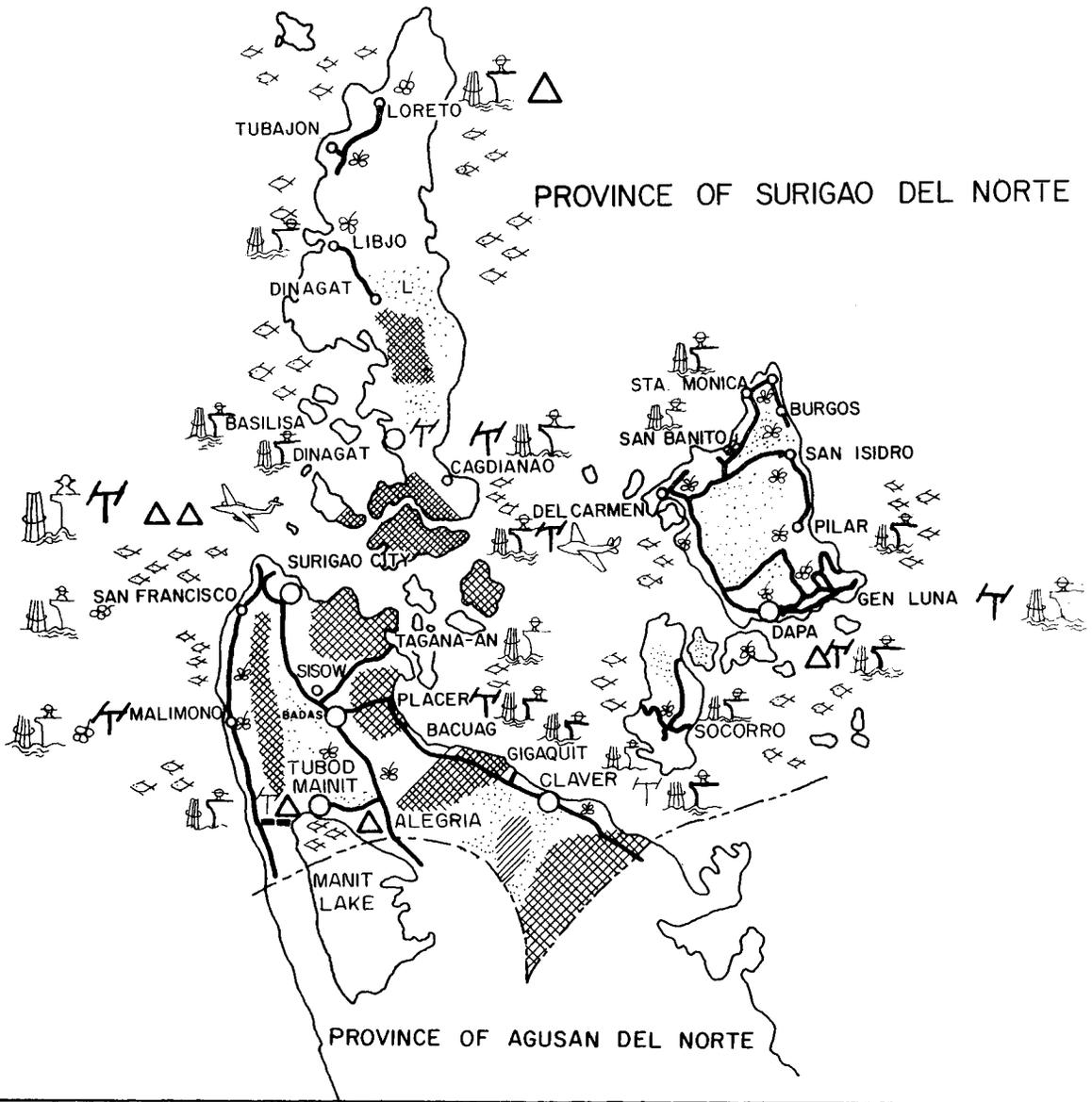
Table VI-13

#### TOTAL INVESTMENT PLAN

<i>Items</i>	<i>P</i>	<i>P</i>
A. Fixed Investments		
a. Building (mill, office and powerhouse)	93,400	

<i>Items</i>	<i>P</i>	<i>P</i>
b. Machinery and equipment	312,875	
c. Transport facility	5,000	
d. Office furniture and equipment	7,000	
e. Water tank	4,000	
f. Experimental hog pen	<u>7,500</u>	429,775
B. Other Investments		
a. Installation costs	10,000	
b. Test-run expenses	3,750	
c. Organizational expenses	<u>5,096</u>	<u>18,846</u>
Sub-total		448,621
C. Working capitals: (raw materials, sacks and supplies, etc.)		<u>351,379</u>
Total investments		<u><u>800,000</u></u>

265. Considering the financial limitation of the entrepreneurs, it is proposed that a financing package for this project be studied by the TAU and/or any agency that may be proposed by the TAU.



PROVINCE OF SURIGAO DEL NORTE

LOCATION MAP  
SCALE: 200,000

LEGEND

- |   |               |    |                             |     |                                      |   |              |
|---|---------------|----|-----------------------------|-----|--------------------------------------|---|--------------|
| ☆ | SURIGAO CITY  | —  | ROADS                       | ⚡   | ELECTRICITY                          | 🥥 | COCONUT AREA |
| ○ | GROWTH CENTER | ✈️ | AIRPORT                     | △ △ | BANKING INST.<br>(Rural, Commercial) | ▨ | MINING AREA  |
| ○ | GROWTH POLE   | ⚓  | WHARF                       | 🐟 🐟 | FISHING AREA                         | ▤ | FOREST AREA  |
|   |               | ≡  | HYDRO-ELECTRIC<br>POTENTIAL | --- | GEOTHERMAL<br>POTENTIAL              |   |              |

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## VII. AREA SURVEY ON SURIGAO DEL NORTE PROVINCE

### A. REVIEW OF THE SOCIAL AND ECONOMIC PROFILE

#### Land and its utilization

266. Surigao del Norte forms part of Region X of the Philippines. It is situated in the north-eastern tip of Mindanao bounded by the province of Surigao del Sur on the south and the Agusan province on the west. The entire length of the province is exposed to the Pacific Ocean. The province includes besides Surigao Mainland, several groups of islands viz. Dinagat, Siargao, Bucas Grande, Hikdop, Nonoc, Zaragosa, Sumilom, Basul, San Jose, Masapilid and others. The more important of these island groups are the Dinagat and Siargao islands.

267. It has 26 municipalities, 12 of which are in the Mainland, 9 in Siargao and 5 in Dinagat Island. Surigao City, the old city in the province and also its capital is right at the northern tip of the mainland. The entire territory of the province is made up of the mainland proper and two main islands – Dinagat and Siargao.

268. The province is quite favourably located in the region and because of its location, it has become a trade point for Surigao del Sur, Agusan del Sur and del Norte and Southern Leyte provinces. Leading companies in the Visayan and in Manila take their goods to other provinces only through Surigao City. It has perhaps one of the best harbours and airports in the region. Being advantageously located, and due to the favourable facilities developing, Surigao del Norte is envisaged to be the centre of regional development activity for future development.

269. The total area of the province is 2,739.2 sq. kms. or 273,902 hectares which forms 0.09 per cent of the total area of the country. Of this, the mainland covers about 40 per cent of the area and the remaining 60 per cent comprised by the two islands viz. Dinagat and Siargao.

270. Out of the total land area of 273,902 hectares, 232,768 hectares, i.e. about 85 per

cent is cultivable land. Of this 182,109 hectares, i.e. 78 per cent are utilized by coconut plants yielding an average copra production of 62,704,540 kilograms in 1974 as per record of the NEDA, Region X. This makes the province the number one coconut producer in the entire region of Northern Mindanao. The remaining cultivable area is planted to rice, corn, abaca, cassava and other agricultural crops. The reserve forest area constitutes about 27,233 hectares which constitutes about 10 per cent of the total land.

#### Population

271. The population of the province as per 1975 was placed at 297,354 with a growth rate of 4.5 per cent annually. The density of population is 109 persons per sq. kilometres which is higher than Northern Mindanao's 81.6 and a little lower than the country's 139.4. Of the total, about 77 per cent of the population is located in rural areas and the remaining 28 per cent in the capital city and other municipalities. Of the rural population the maximum concentration is in the municipalities of Dinagat (22,131), Mainit (17,000), Dapa (15,000) and Placer (13,000). In the remaining municipalities, it is below 10,000.

272. The total working force is 95,596 which constitutes about 32 per cent of the total population. The occupational pattern of classification of working force population has been given in Table VII-1.

273. It may be seen from the table that the total unemployment is placed at 6,650 which constitute about 7 per cent of the total working force. This is not very significant. The main point relates to the underemployment and the lower income of the people in the province. According to the various economic indicators worked out by the NEDA Region X, the province is quite low in most of the socio-economic indicators of development.

Table VII-1

## OCCUPATIONAL PATTERN OF LABOUR FORCE

Sector	1975	
	Total	% dist.
A. Labour force	95,596	
B. Total employment	89,937	100 %
1. Agriculture	54,817	(60.95)
2. Industry	15,712	(17.47)
(a) Mining	2,878	( 3.2 )
(b) Manufacturing	9,129	(10.15) *
(c) Construction	3,004	( 3.34)
(d) Utilities	702	( 0.78)
3. Rest of Economy	19,408	(21.58)
(a) Transport	2,006	( 2.23)
(b) Commerce	4,236	( 4.71)
(c) Services	12,600	(14.01)
(d) Others	567	( 0.63)

\* Mainly constitutes persons employed in copra making.

## Economic activities

*The main economy of the area*

274. The main economy of the area is agriculture and fishing. Although, various mining activities have also started. However, more than 80 per cent of the population is dependent on agricultural produce. Therefore, the majority of the population lives on this sector of the economy. Due to lack of various factors, the productivity is very low and it has further been aggravated by the lack of marketing infrastructure.

275. In the Comprehensive Development Plan, the NEDA has already listed the following problems and constraints:

- (1) Educational system has not sufficiently tapped its full leadership potential for the total socio-economic development of the province;
- (2) Prevalence of agricultural low productivity, and over-concentration in the production of few agricultural crops, such as coconut and rice;
- (3) Lack of marketing facilities, such as cold storage for preservation of perish-

able products and berthing facilities for foreign vessels;

- (4) Inability of the human resources to respond to development trends;
- (5) Inadequate provision, maintenance and improvement of infrastructure facilities, such as roads, bridges, power supply, communication, and transport vehicles;
- (6) Inadequacy of funds for development projects of the province;
- (7) Lower production output of nutritious agricultural product relative to consumption needs of the province;
- (8) Increasing number of the population living under sub-marginal condition and insufficiency of corresponding social services; and
- (9) High incidence of malnutrition.

*Agricultural resources*

276. The province of Surigao del Norte is basically agricultural. Of the total area of 273,902 hectares, 232,768 hectares is devoted to agriculture, where 80 per cent of its population depends for their living. The main food crop is rice, besides, cassava, corn, banana, camote, legumes and vegetables.

277. There are 19,940 hectares in the province planted to rice. Of this, 4,280 hectares are irrigated while 15,660 are all rainfed. The average production per hectare in both rainfed and irrigated areas is 45 cavans. The overall production of rice in the province for the year 1975 was 1,094,907 cavans (50 kilos per cavan) valued at P 54,745,375. No surplus is available of any agricultural crop which could be used for industrial purposes. Rather these are in short supply.

278. The only commercial crop in the province is coconut. There are 182,100 hectares fully devoted to it, producing a record of 54,593 metric tons in 1975. According to information supplied by the Philippine Coconut Authority the total area under plantation is 187,500 hectares with production of 310 million pieces (approx. 310,000 MT). The total value was P 65,512,106, the highest in the region. The major quantity of coconut after drying by crude and native method is being exported to other

places in the country and abroad without utilizing it further for industrial uses. The shell and husk is being used as fuel for domestic use.

#### *Marine resources*

279. The province of Surigao del Norte is almost surrounded by water. Of the 26 municipalities, only 3 are found in the interior, yet they are situated along the periphery of Lake Mainit.

280. The water surrounding the province has been found to be one of the richest fishing grounds in the country. Various species of fish (mackerel, skipjack, squid, anchovy, etc.) abound in the shallow waters, while tuna is abundantly caught in the deeper trough in the Pacific Sea. Yearly several fishing companies troop to this areas particularly in the municipality of Pilar to buy tuna for export to Japan and the United States. As per record of the Bureau of Fishery, 1,460,000 kilos of fish has been caught in the sea of Surigao in 1975 with a total value of ₱ 7,300,000.

281. This is also one of the major resources of the area which has not yet been tapped for industrial use.

#### *Mineral resources*

282. The main minerals reported to be available in the province includes nickel, iron, cobalt, chromite, coal, gold, limestone, shale, copper and red clay. Nickel, iron, cobalt, chromite, limestone and shale are already being processed. While limestone and shale is being mined and used in the manufacture of cement, the remaining minerals are being exported. Gold and coal minerals are being explored. As regards copper and red clay, indications have been found regarding the reserves in certain areas. Most of these minerals are found within the radius of 70 km from Surigao City and in the island of Dinagat. Except limestone and shale which is already being used for the manufacture of cement, there does not appear to be any scope in the near future for putting other minerals to any industrial use in the small and medium sectors of industry in the province.

#### *Forest resources*

283. The total area classified as forest constitutes 273,902 hectares. Of this the timberland is only 115,989 hectares. The main species of

wood available in the province include timber for construction purposes, fire wood and timber for making furnitures. The timber for construction purposes includes Lauan (Red and White, Tanguale, Mayapic, Almon and Bajetican). The timber suitable for furniture found is narra, lauan, acacia, mangcono (iron would) and tindalu. Besides, the other species available are rattan, bamboo and nipa. The bacauan specie of wood is suitable for medicinal purposes.

284. The Bureau of Forestry informed that this is an excess logging area and there is possibility for exploring more timber in the forests of Surigao province. The forest charge is P 19 per cubic metre if exported in log form and P 14 if logs are processed and sent outside.

#### *Livestock resources*

285. Livestock production in the province is largely a backyard activity. There are only three commercial poultry houses in the province. Two are in the city and one in Claver. Of the 230,440 bird population, only 17,520 are raised in the three commercial poultry houses, the rest are in backyards. The total combined value of all these birds is however placed at P 2,304,400.

286. In view of the above no industry could be set up as the basis of present livestock position. At present, there is a need to develop livestock resources, particularly the piggery and poultry which will give boost to the economic development of the area.

#### **Infrastructure**

##### *Electricity*

287. Out of the 26 municipalities and Surigao City in the province, only 12 municipalities are served with electricity. Excepting the Surigao City all the other 12 municipalities have just electricity for domestic lighting and only for 2-4 hours at night. Their capacity varies between 30 to 60 KVA. Surigao City is only place in the province which has an installed capacity of 1,273 KW and generating 221,000 KWH per month for the following uses/consumption.

Residential	—	57,000 KWH
Commercial	—	147,000 KWH
Public Building	—	17,000 KWH
Total	—	221,000 KWH per month

288. The present capacity is fully utilized and no surplus power is available for industrial use. Discussion with the President of SURNECO revealed that the National Power Corporation has a plan to provide hydro-power to the province by 1980 or after. He further pointed that even if it is not available by that time to get hydro-power, 69 KV line is expected from Cabadbaran, Agusan del Norte 80 km. from Surigao City and the power generated by this could be given to small and medium scale industries on primary basis. However, this is also not expected before 1980. There seem to be no hope for getting power for industrial use in any other place in the province.

289. The present rate of power is ₱ 1.13 per unit of KWH. These rates are very high as compared to the rates in Cagayan de Oro and Butuan where the rates are 20 centavos and 35 centavos per unit of KWH. The rates also compare very unfavourably with Manila power rates of 35 centavos per unit of KWH. Perhaps efforts are being made to bring these rates down but when and to what extent is not yet certain.

290. This concludes that no industry could be taken up even in Surigao City based on power for another two years, except for the industry to install its own generating set.

#### *Transport and communications*

291. Surigao City, the capital of the province is connected with Manila Cagayan de Oro and Cebu by air, sea and road transport. The city is also well connected with all the municipalities of the province by road, sea and in certain places by air. There are 1,070.56 kilometres of road linking the different parts of the province with earth macadam type and paved with concrete and asphalt. The recent concreting of the Philippine-Japan Friendship Highway has facilitated the improvement of travel along the area. The following table indicates the length of national and provincial road in the province.

Type	Kilometres	
	National	Provincial
(1) Concrete	46.98	32.13
(2) Asphalt	-	1.70
(3) Gravel or stone	61.17	311.69
(4) Unsurfaced	3.60	141.42
Total	<u>111.75</u>	<u>486.94</u>

Source: Economic Atlas - 1976.

292. A number of first-class passenger transport are plying the route up to the regional centre – Cagayan de Oro City. Sea travel also gets the share of infrastructure expansion with the extension of the Surigao wharf. Since business mainly depends on sea transport, recently Surigao has been declared an open port. The Surigao Airport is also one among the few in the region which is concreted and efforts are underway to increase the number of plane trips.

293. There are five commercial radio communication system operating in the area in the city of Surigao. Besides the government telephone exchange the Philippine Long Distance Telephone Co. (PLDT) has established a station in the city to link Surigao with the telephone network in the country. Perhaps more attention is needed for the development of transport and communication for industrialization of the area.

#### *Skills*

294. There is no problem of having skilled and unskilled labour in the province. The unskilled labour could be hired at ₱ 10 to ₱ 12 per day, while the rates of skilled workers are ₱ 15 per day. Surigao del Norte School of Arts and Trade, which was set up in 1969, prepares student for middle level technology. It offers two courses (a) Diploma Certificate Course of four years for elementary graduates, and (b) Degree Course in Industrial Technology for four years. There are only two such schools in the Region X – one at Cagayan and one at Surigao. Apart from this there are two private schools providing technical hands to the region. On an average, about 480 students came out every year from the Surigao del Norte School of Arts and Trade, of which 80 are degree holders. It was learnt that 80 per cent of the students coming out of the school go out of the province for jobs while 20 per cent remained in the province, particularly in the mining industries.

295. The school provides diplomas and degrees in the following trades: for boys: electronic, electrician, radio mechanic, automotive technology, machine shop welding, ceramics, building construction, woodworking, draftsmen and industrial arts. For girls: garment making, hand-crafts, food canning and preservation and cosmetics. The school is well equipped with

the requisite machinery and equipment for providing training. The two private institutions provide short-term training courses in different trades, like radio repairs, T.V. servicing, motorcycles, mechanic, refrigeration, etc.

296. In view of the above, no difficulty is envisaged in getting trained skilled workers with middle-level technology for the proposed industries in the province.

#### *Financial institutions*

297. In the province, there are nine banks operating – all branches are located in Surigao City. Besides there are a few rural banks in other municipalities – primarily providing loan for agriculture. The banks located in the city include SRB, DBP, PNB, RCBC, MBTC, IBAA, UCPB, BPI and FSB. Except DBP, all other banks give only short-term loan for two years to be refunded in installment according to their terms of agreement. The loan varies between 60 to 100 per cent of the collateral security offered and depending upon that, the rate varies between 14 to 19 per cent. Therefore, these banks could at utmost cater to the needs of existing industries requiring additional capital.

298. The Development Bank of the Philippines (DBP) is the only bank which provides long-term loan to the industrial unit. The bank is assisted by the MASICAP team for the preparation of feasibility report which is further appraised by the bank and the loan is given varying from 5 to 7 years, on rate of interest varying between 12 to 14 per cent depending upon the collateral. The bank provides loan to the extent of 70 per cent of the entitled collateral. The loan is provided both for fixed as well as for working capital (3 months' requirements of working capital) and is refundable in installments as per agreement.

299. The branch manager has the authority to sanction loan up to P 150,000, beyond this the case are referred to the Manila office. They have also a small team which goes round the other places in the province for processing applications and giving guidance to entrepreneurs. It may be relevant to mention that the DBP sanctioned loans to 50 cottage and small-scale industries in the province. The industry-wise classification of loan is as follows:

<i>Type of products</i>	<i>No. of units</i>
(1) Bakery	17 cottages
(2) Furniture	5 "
(3) Garment (tailoring)	6 "
(4) Hollow blocks	3 "
(5) Ice plant	3 "
(6) Radio assembly, etc.	3 "
(7) Mining	<u>13</u> "
	<u>50 cottages</u>

300. The following three points are very important from the point of view of finance:

- (1) None of the banks including DBP is availing facilities under Industrial Guarantee Loan Fund (IGLF).
- (2) The rate of interest for savings deposit is 7 per cent and for time deposit it varies between 12 to 15 per cent. This is an attractive interest rate for the people to invest and therefore this factor is perhaps deterrent to investment in industrial ventures.
- (3) Although, there is a provision for "clean loan", normally it is not possible to get loans without collateral. The collateral requirement is beyond the reach of the cottage, small and medium industries entrepreneurs.

## **B. CONSIDERATIONS FOR IDENTIFICATION OF INDUSTRIES**

### **Necessive of agro-based industries**

301. As pointed in earlier the major resources of the province are agriculture, marine and minerals. Among the mineral resources, the limestone and shale are already being utilized by a large company engaged in the manufacture of cement in the province. So far as other minerals are concerned, perhaps it is too early to think of many medium or small industry to be based on them. Therefore, the two resources which could be put to industrial use are agriculture and marine. Fishing is the important marine resource which requires and calls for more infrastructure to be developed before taking up industry based on this. Agriculture resources of the area could be tapped immediately for industrial use. The agro-industry will process the local raw material,

involve the local people, would be labour intensive and would not require high technology and would also provide direct and indirect employment to a large number of people.

#### **Efforts of local government in increasing agricultural production – policy and future plans**

302. In the Comprehensive Development Plan of Surigao del Norte – 1978-2000 priority has been assigned to the development of agriculture and marine resources, being two important resources of the area on which the entire economy depends. A number of programmes have been envisaged to develop these important sector of the economy. Great stress has also been laid on the exploration of different minerals found in these provinces and setting up of cottage, small and medium industries based on them to provide additional employment and to give boost to the economy of these areas.

303. It is therefore suggested that priority be given to the development of industry based on agriculture and marine resources of the province till the other resources like minerals are fully explored and commercially exploited for industrial use. The demand for the manufactured goods in these areas will ultimately increase with the increase in purchasing power of the people, as these development programmes envisaged by the national and provincial government move in.

### **C. POSSIBLE GROWTH CENTRES AND LOCATION**

#### **Growth centres/areas identified by NEDA – National Government**

304. The NEDA, Region X as well as the provincial government both have notified Bad-as-Placer area, the Surigao core area, to serve as the growth centre. This area is 26 kilometers from Surigao City on the main road connected by highway. Besides, the NEDA and the provincial government has also declared Claver, Mainit, Dinagat and Siargao as the growth poles in the province. These municipalities considered as growth pole are also well connected by roads, air and sea and are within the radius of 60 kilometers from Siargao city. The team visited all these municipalities and areas, studied in detail

their location, area, population, infrastructure and development plans from the point of view of locating industries. Due to various constraint of essential necessities in these areas, the team is of the view that the first focus of attention for industrial development has to be Surigao City or its vicinity, Badas-Placer Area.

305. In the development plan of the province Badas-Placer Area has already been marked for a mini-industrial estate. About 100 hectares of land has been taken and a Corporation is being set up which would have shares by provincial government, DBP, PNB and the private sector. The corporation will have a total capital of ₱5 to ₱10 million for the development of the area and the construction of Industrial Estate. Power is expected in the area by 1980.

306. The industrial estate will be managed by a corporation known as Surigao del Norte, Mini-Industrial Estate Corporation in which the ownership constitutes one-third each of five provincial entrepreneurs and the general public. The time frame for the development of the industrial estate is as follows:

- |                                      |                           |
|--------------------------------------|---------------------------|
| (1) Formation of corporation         | October/<br>November 1978 |
| (2) Actual acquisition of land       | December 1978             |
| (3) Development of the land/<br>area | May/June 1979             |
| (4) Electricity                      | May/June 1980             |

307. The team feels that this is a good and the right move of the government for the development of industries in the province. The team endorses the selection of Badas-Placer Area as a suitable growth centre for development of industries and Claver, Mainit, Binagat and Surigao as growth poles.

### **D. INDUSTRIAL STRUCTURE – POLICY AND ORGANIZATIONAL SUPPORT**

308. According to the list supplied by the PDS, there are reported to be 5 large scale units (4 mining and 1 manufacturing cement), 4 medium units (1 mining and 3 logging) and 15 small-scale units engaged in fishing, logging, saw milling, rice and corn milling and charcoal making. This shows that there are only a few units actually

in the manufacturing line. As per the list supplied by the Loans and Registration Division of the NACIDA, Manila, there are 174 registered units (1963-77) in the province engaged in various crafts. Table VII-2 gives the type of craft, number of units, capital investment and workers employed in the cottage sector. However, according to the information given by the local NACIDA office at Surigao City, there are only 50 units mainly engaged in the manufacture of bakery products, shoe manufacturing, furniture making, rattan furniture and tailoring. But of these more than 80 per cent are located in Surigao City alone. The team visited about 50 per cent of these units located in Surigao City and had discussion with them to the demand for their items and their problems. It was observed that this sector is confronted with the problems relating to finance, marketing and know-how of improved methods. Mostly the units engaged in items like bakery products, shoe manufacturing, tailoring etc. pointed out the difficulty of finance for expanding their business. The demand for these items appear to be good in the area and expanding. Since units are mostly run by the people with limited finances who have no collaterals to offer, they are unable to get finance from the banks, while NACIDA which could provide loan up to P 5,000 without collateral have no funds to give loan to these units. As a result, these units cannot expand their business inspite of the increasing demand. On the other hand, most of the units have been closed down due to marketing difficulties. No information and guidance is available to the units particularly engaged in crafts for marketing their products, and no preference is being given even in the purchases made by the Government Departments because of the system of bidding by the manufacturer, dealers or any one. Under this system, the lowest bidder gets the orders. It was observed that the marketing problem is also related to the technique of manufacturing, technology and the improvement in designs. There is practically no agency to provide this type of guidance to these units. The local NACIDA office is highly inequipped for the purpose and needs strengthening. The discussions of the team with the Administrative NACIDA, brought out the fact that due to constraint of overall funds with NACIDA, they are unable to strengthen the provincial offices.

309. Besides the NACIDA local office, which is supposed to look after the cottage units in the province, but which is unable to function due to constraint of funds and personnel, the other agency is MASICAP which has a very limited function to perform i.e. preparation of feasibility report for the clients of the DBP asking for finance. The other agency i.e. Small Business Advisory Centre (SBAC) is located at Cagayan de Oro – the regional centre for Region X, and therefore not in a position to serve the area effectively.

310. Considering the facts as exist today, the team would place the following suggestions for consideration by the Government:

- (1) An institution be set up at the provincial level either by the National Government or Provincial to look after the industrial development of the area;
- (2) This institution may deal with all types of industries viz medium, small and cottage;
- (3) A system of registration may be introduced for all the industrial units as an instrument for industrial data gathering;
- (4) This organization should be able to provide all information guidance and assistance to the entrepreneurs, in a coordinated manner and act as a liaison with other concerned agencies like SBAC, NACIDA, TAC, banking institutions, etc.;
- (5) The existing organizations also need strengthening to be more effective and purposeful;
- (6) A policy support for industrialization of economically least developed areas are necessary, with view to removing regional imbalances. It is necessary to have some special incentives for such areas for setting up industries. Similarly more incentives/facilities would be necessary for cottage, small and medium industries vis-a-vis the large-scale sector; and
- (7) Finance is the main and most important input which have to be taken care of by the government besides banks particularly for the class of people who cannot afford collaterals

Table VII-8  
COTTAGE INDUSTRIES REGISTERED WITH NACIDA  
– July 1963 - December 1977 –

<i>Industry</i>	<i>Number registered</i>	<i>Capitalization</i>	<i>Factory workers</i>
		₱	
Surigao del Norte	174	281,424.75	546
Bamboo & rattancrafts	5	1,516.25	9
Ceramics	24	27,388.25	64
Embroidery	26	60,223.50	65
Fibercraft	4	1,424.60	19
Food preservation	8	12,399.60	93
Hat weaving	1	52.00	3
Loom weaving	9	6,084.70	30
Mat weaving	22	1,462.50	38
Metalcraft	11	3,574.15	28
Needlecraft	21	18,358.70	73
Piggery	9	12,947.00	26
Poultry	3	9,969.00	5
Poultry & piggery	1	1,000.00	3
Shellcraft	2	612.50	5
Woodcraft	22	44,553.80	69
Related crafts	2	162.70	5
Other industries	3	9,695.50	10
Small mining operation	1	70,000.00	..

but have enterprise to go into industries.

311. To sum up, there is practically no one agency to look after the problems of cottage, small and medium industries in the province and entrepreneurs have to run to various organizations and even then, no proper guidance is provided to them. The people who have money do not want to set up industries because they want to make quick money in trading and even if they deposit their money in banks they get as much as 15 per cent interest without any risk. The people who want to set up industry or expand the existing ones, do not have money and therefore they are frustrated. It was felt that entrepreneurs should be encouraged to set up industries with proper guidance, assistance and support.

312. The team during their visits also found people who are willing to take up risk in industrial venture but due to lack of proper guidance, information and data are reluctant to go forward.

## E. POSSIBLE INDUSTRIES CONSIDERED

313. The team listed out the following industries based on the resources and demand in the province, which could be taken up in the area. Priority has to be given to industries based on resources and gradually based on demand with the creation of more infrastructure, and the increase in the income of the people of the area.

### Proposed industries

#### *Based on resources*

##### *Agro based:*

- (1) Cassava flour and starch processing
- (2) Copra refined oil
- (3) Copra crude oil
- (4) Rubberized coir manufacturing
- (5) Coir products – mats, ropes, etc.
- (6) Dessicated coconut

- (7) Activated carbon
- (8) Venigar manufacturing
- (9) Feed mill
- (10) Rice mill

*Marine Based:*

- (11) Fish canning
- (12) Shell craft

*Forest Based:*

- (13) Wooden furniture
- (14) Rattan furniture
- (15) Hard board manufacturing
- (16) Basket making
- (17) Matches

*Demand Based:*

- (18) Lee factory and cold storage
- (19) Ready made garments
- (20) Radio assembly
- (21) Stationary items
- (22) Laundry soap
- (23) Chalk cryons
- (24) Plastic products
- (25) Hardware items – wires, nails
- (26) Cement products
- (27) Asbestos cement
- (28) Fire bricks
- (29) Concrete pipe manufacturing
- (30) Hollow blocks
- (31) Biscuit manufacturing
- (32) Spare part of mining

314. These industries have been suggested based on resources and market studies carried out by the team. Studies have also been carried out by the UPISSI, the PDS and the NEDA and most of these items have also been identified by the various agencies. The discussion with the Chamber of Commerce and Industry, knowledgeable people, traders and wholesalers, have also confirmed the items identified by the team.

## F. PROGRAMME OF THE PROJECT

### Feasibility of the Project:

315. Considering all the aspects: resources, infrastructure, skills, marketing etc., in the Province of Surigao del Norte, the team suggests the following three alternate projects in the province.

- A. Cassava processing
- B. Coconut processing
- C. Fish canning

316. None of these items are being processed in the area. However, the raw material is in surplus. The setting of the above three projects, in a phased manner, will give rise to another product i.e. feed mill which would ultimately generate the development of piggeries and poultry and thus help in the overall development of the province particularly in the rural areas. At present, there is practically no development of piggeries and poultry in the area.

317. The following chart indicates the items which could be processed under the three heads:

#### A. Cassava Processing

- (1) Flour
- (2) Starch
- (3) Cassava meal

#### B. Coconut Processing

- (1) Drying
- (2) Crude oil
- (3) Refined oil
- (4) Venigar
- (5) Coir processing
- (6) Charcoal/ activated carbon
- (7) Copra meal

#### C. Fish Canning

- (1) Ice and cold storage
- (2) Fish canning
- (3) Fish sauce
- (4) Fish meal

318. The three meals i.e. cassava, copra and fish will ultimately give impetus for setting up a

feedmill unit which would ultimately encourage setting up more piggeries and poultry for which there is a prime need in the rural areas of the province.

319. The marketing of these processed materials will be as follows:

A. <i>Cassava</i>	<i>Market</i>
Flour	Domestic
Starch	Export to other places in the region/country
Meal	Domestic
B. <i>Copra</i>	<i>Market</i>
Oil	Domestic/export
Venigar	Export
Coir	Domestic/export
Charcoal	Export
Copra Meal	Domestic
C. <i>Fish</i>	<i>Market</i>
Ice and cold Storage	Domestic
Cans	Domestic/export
Sauce	Export
Fish meal	Domestic

320. Some of the important and relevant data in respect of raw materials of these items is given below:

- A. *Cassava* – 1975-76
- (1) Cassava plantation 5,500 hectares
  - (2) Estimated production (quantity) 77,000 metrics tons
  - (3) Estimated production (value) P 31 million

Cassava is fast becoming an important food crop in the province especially in the island of Dimagat where rice and corn is not extensively grown. With the influx of population along that side, cassava is resorted to as a major substitute for staple by the people. Among the municipalities with big cassava hectarage are Dimagat, Rizal, Albor, Tanganan, Placer, Gigaquit, Bacunag and Claver.

The land and soil characteristic of Surigao del Norte mainland is adoptable to large cassava plantation even under coconut trees. Of late, a large plantation of cassava is being

carried out at all possible places in the province and the crop is ready within six months of its plantation. The cassava flour and the manufacture of starch would help solve food shortage and support the textile and chemical manufacturing industries. Thus it will have both backward and forward linkages and serve as an ancillary to chemical industries.

The approximate initial cost for setting up a plant would be P 3 million, and will require about 1,000 kW. consumption of power and would provide direct and indirect employment to a large number of people.

- B. *Copra* – 1975-76
- (1) Coconut Plantation 187,500 hectares  
(hectares) (1975)
  - (2) Production 310 million  
pieces
  - (3) Copra availability 62,160 metric tons
  - (4) Export from province (copra) 71,000 M.T. Value  
- P 149  
million
  - (5) Price of coconut P 0.25 to P 0.30
  - (6) Price of copra P 1.50 per kilogram  
(Average)

\* Copra also come partly from Surigao del Sur and exported from Surigao del Norte.

The processing of coconut in the province will give birth to a number of industries as stated above and provide large direct and indirect employment and would ultimately raise the overall economy of the area. The unit has thus to be an integrated one which would also provide a good demonstration effect to the people of the area. A detailed feasibility report has already been prepared by the PDS, for an integrated plant on coconut processing which may be reviewed by the technical experts, before the plant is set up.

- C. *Fish* – 1975-76
- (1) Fish catch 1460 M.T. - P 7.3 million  
(all kinds)
  - (2) Types of fish: tuna,  
Sardines, bangus,  
anchovies, mac-  
kerel, etc.

- |                                      |   |
|--------------------------------------|---|
| (3) Fish export<br>(tuna)            | 99 M.T. -P 198,000<br>(as per local<br>customs re-<br>cord) |
| (4) Price of tuna<br>fish for export | P 2.00 per<br>kilo  |

Several projects that will complement the fishing industry of the province are fish canning/processing and a strategic chain of ice plant and cold storage installations. While the best locations for ice plant and cold storage would be Surigao City, Placer, Dapa or Pilar and Dimagat, the fish canning plant could be located at Dimagat, Dapa or Pilar.

(Source: Bureau of Fisheries, NEDA report and Provincial Dev. Comprehensive Plan)

It is suggested that a detailed feasibility report may be prepared by a technical team on cassava starch and fish canning projects before the plant is set up.

## Annex I

### PLACES VISITED BY THE TEAM

1. *Manila*
- Palawan**
  2. Puerto Princesa City
  3. Narra
  4. Brook's Point
  5. Roxas
  6. *Cagayan de Oro*
  7. *Cebu*
  8. *Butuan*
- Surigao del Norte**
  9. Surigao City
  10. Placer
  11. Mainit
  12. Dapa, Siargao
- Aklan**
  13. *Iloilo*
  14. Kalibo
  15. Numancia
  16. New Washington
  17. Ibajay
  18. Libacao
  19. Tangalan

## **Annex II**

### **OFFICES CONTACTED AND VISITED**

#### **MANILA**

1. Ministry of Industry
2. Bureau of Small and Medium Industries
3. Bureau of Industrial Information Programme
4. Commission on Small and Medium Industries
5. Ministry of Trade
6. Bureau of Mines
7. Bureau of Fisheries
8. Regional Executive Director NEDA Region IV(a)
9. Director, External Assistance NEDA
10. Director, Regional Development Staff, NEDA
11. Philippine Coconut Authority
12. Administrator, NACIDA
13. Bureau of Animal Industry (Feeds Control Division)
14. National Electrification Authority
15. National Power Corporation
16. Bureau of Forestry
17. Director, University of the Philippines, Institute for Small-Scale Industry (UP-ISSI)
18. Trade Assistance Centre
19. Development Bank of the Philippines
20. Philippines Agro-systems and Development Incorporated
21. Ministry of Agriculture (National Food Agricultural Council)

#### **AKLAN**

1. Governor, Aklan
2. Provincial Administrator and Coordinator (PDS)
3. Mayor, Kalibo
4. Manager, Development Bank of the Philippines, Kalibo
5. Manager, all Commercial Banks (in a meeting)
6. Medium and Small Industry Coordinated Action Programme (MASICAP)
7. Bureau of Fisheries
8. Bureau of Animal Industry
9. Bureau of Plant Industry
10. National Cottage Industries Development Authority (NACIDA)
11. Farm Systems Development Corporation
12. Visit to Industrial units

## **ILOILO**

1. Regional Executive Director, NEDA
2. Small Business Advisory Centre, (SBAC)
3. Trade Assistance Centre (TAC)
4. NACIDA

## **PALAWAN**

1. Governor of Palawan
2. Provincial Administrator and Coordinator (PEDC)
3. Provincial Agriculturist-Bureau of Agricultural Extension
4. Mayors and Municipal Development Coordinators of Brooke's Point, NARRA, Roxas
5. Administrator, Iwahig Penal Colony
6. Mayor, Puerto Princesa City
7. City Development Coordinator
8. Branch Managers, Development Bank of the Philippines  
Metro Bank  
Philippine National Bank
9. President, Palawan Philippine Chamber of Commerce
10. President, Palawan National College of Agriculture
11. NACIDA
12. MASICAP
13. Bureau of Animal Industry, Provincial Office
14. Bureau of Plant Industry, Provincial Office
15. Hog and Poultry Farms
16. President, Fisheries Association
17. National Census and Statistics Office
18. Visit to Industrial units, (NACIDA Registered and Non-registered)
19. Bureau of Agricultural Economics
20. Philippine Port Authority

## **SURIGAO DEL NORTE**

1. Governor of Surigao del Norte
2. Provincial Administrator and Coordinator (PDS)
3. Provincial Treasurer
4. Provincial Agriculturist Office
5. Mayor, Surigao City
6. City Development Coordinator
7. Manager, Development Bank of the Philippines
8. Manager, United Coconut Planters Bank
9. Manager, 9 Commercial Banks (in a meeting)
10. President, SURNECO
11. Surigao del Norte School of Arts and Trade

12. St. Jude Technical School
13. Bureau of Mines
14. Bureau of Trade
15. MASICAP
16. Bureau of Fisheries
17. Bureau of Forestry
18. President, Surigao Trade Retailers Association
19. GRANEX Export
20. NORMINDA Copra
21. President, Industrial Estate, Badas-Placer, Surigao del Norte
22. NACIDA Registered Producers Association
23. Pacific Cement Co. Inc.
24. President, Chamber of Commerce and Trade
25. Mayor, Placer
26. Mayor, Mainit
27. Visit to Industrial Units

#### **CAGAYAN DE ORO**

1. SBAC
2. TAC
3. Regional Executive Director, NEDA
4. Visit to Industrial Units

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