

7.10 WOOD PROCESSING/PLYWOOD SUBSECTOR

Wood processing industries, in particular plywood processing, occupies a dominant position in the Study Area's manufacturing and therefore secondary sector in terms of production value, direct employment, and foreign exchange earnings. Wood processing accounted for roughly 65% (1993 to 1996 4-years average) of manufacturing output, though the trend is consistently falling (from 67% in 1993 to 63% in 1996). Wood processing is the manufacturing sector's "engine of growth" carrying some 4.0% points out of 8.5% real manufacturing growth (over the period 1993 to 1996), equivalent to roughly half of manufacturing sector growth performance.

The Study Area has a total of 22 plywood processing units (16 in West Kalimantan and 6 in Central Kalimantan) with a combined installed capacity of 1.8 million m³ of plywood (at 8-hour operations), and employing between 75% to 80% of the manufacturing sector's labor force. Plywood is also the dominant export commodity, the export value of which averaged US \$ 427 million (period 1992 to 1996) in West Kalimantan, and US \$ 117 million in Central Kalimantan.

However, this important manufacturing subsector is in serious structural and performance problems, because of the increasingly depleting raw material resource base (the sustainable level of log production is falling toward negligible levels in both Provinces by 2025, with the steepest fall taking place in West-Kalimantan in the coming five to ten years).

The objectives of the wood processing/plywood subsector action plan are to :

- (1) To maintain and/or create employment opportunities in the modern, urban based, manufacturing sector, thereby contributing to urban labor income
- (2) To assist the existing enterprise base in rationalization and structural adjustment measures (improvements in performance and processing, if & where needed, product and market diversification)
- (3) To assist indirectly in the conservation and preservation of the forest resource base
- (4) To contribute to the establishment of a manufacturing base in both Provinces, which is viable and sustainable in the medium to long-term, and
- (5) To promote an integrated approach between plantations, community based socio-economic development, and processing industry.

The action plan would involve the manufacturing enterprises, APKINDO, and the local, provincial and central government levels. The action program covers the following broad areas:

- (1) Improved forest resource management (sustainable forest regeneration) through adjustments in the regulatory framework, where needed (for example through a suitable redefinition of the rotation cycle for logged-over areas)
- (2) Formulation of a medium to long-term wood processing sector strategy, which is based on the objectives mentioned above and realistic in terms of implementability and operational targets (integrated approach, which addresses both, the forest resource base and the processing capacity in industry)
- (3) Exploit linkage potential with the proposed SSE sector action plan for wood waste/small scale artisan wood processing and production (non-industrial scale) integrated with community development
- (4) Provide direct consultancy services to wood/plywood processing industries with a view to improve efficiency, reduce waste rates, and diversify product ranges to higher value added products
- (5) Monitor industrial pollution and enforce the regulatory framework, and
- (6) Provide vocational, technical, and skill upgrading training for the labor force in this sub-sector.

CHAPTER 8

RECOMMENDED PROGRAMS AND PROJECTS

CHAPTER 8 RECOMMENDED PROGRAMS AND PROJECTS

This chapter presents 21 recommended key programs which support the recommended scenario (Scenario 2). The major strategies for Scenario 2 are selected for the purpose of changing the past patterns of excessive exploitation and development to more sustainable ones. The key programs are formulated to help to implement the major strategies of Scenario 2. Some of the programs are composed of projects. The profiles of the programs and projects are given in the following sections.

Many of the conventional programs, which have been implemented and need to be continued by the governments, are not included in the recommended programs of this chapter, because they do not have functions to change the past development patterns.

Among the recommended programs, it is considered that higher priority should be given to fourteen (14) programs shown in Table 8.1.1. To start the selected higher priority programs, the following nine (9) projects are formulated and presented in Volume 3 of the Final Report:

	Names of Priority Projects included in Volume 3 of Final Report	Chapter in Volume 3	Recommended Programs/Projects in Figure 8.1.1
1	Master Planning Study for Forest and Land Fire Disaster Management in West Kalimantan	Chapter 2 in Volume 3	8.19
2	Planning Study for Oil Palm Subsector Improvement in Kalimantan	Chapter 3 in Volume 3	8.4.1
3	Upgrading of Tayan-Pangkalanbun Section of Trans-Kalimantan Highway Project	Chapter 4 in Volume 3	8.8.1
4	Planning Study for Upland Ecological Development Corridor in Central Kalimantan	Chapter 5 in Volume 3	8.12
5	Master Planning Study for Pangkalanbun-Kumai Urban, Industrial and Port Development	Chapter 6 in Volume 3	8.11
6	Upland Rural Infrastructure Development for Poverty Alleviation in Kalimantan	Chapter 7 in Volume 3	8.5.3, 8.21
7	Kalimantan Upland Community Rescue and Development Project	Chapter 8 in Volume 3	8.4.3, 8.5.1, 8.5.2, 8.5.3, 8.13 and 8.14.1
8	Small and Medium Enterprises Promotion Project in Kalimantan	Chapter 9 in Volume 3	8.18
9	Development of Research Station and Field Centers in the Upstream Kapuas for the Kalimantan System Basic and Applied Research Institute	Chapter 10 in Volume 3	8.3
10	Planning Study on Community-Based Environmental Management for People's Gold Mining	Chapter 11 in Volume 3	8.16

Figure 8.1.1 Summary of Recommended Programs and Projects(1)

Program/Project Name	Sector	Major Strategies							Phase 1 1998-2003 (5years)	Phase 2 2004-2008 (5years)	Phase 3 2009-2018 (10years)	High Priority (Priority Projects Included by Volume 3)
		A	B	C	D	E	F	G				
8.1 KALIMANTAN REGIONAL POLICY REFORM PROGRAM	Regional Development	●	●	●	●						PRIORITY	
8.2 RESTRUCTURING PROGRAM OF PROVINCIAL SPATIAL STRUCTURE PLANS FOR KALIMANTAN	Regional Development	●	●	●							PRIORITY	
8.3 DEVELOPMENT PROGRAM OF THE KALIMANTAN SYSTEM BASIC AND APPLIED RESEARCH INSTITUTE	Scientific Research & Development	●	●	●	●						PRIORITY	
8.4 OIL PALM SUBSECTOR IMPROVEMENT PROGRAM	Agriculture Plantation	●	●	●	●						PRIORITY	
8.4.1 Planning Study for Oil Palm Subsector Improvement in Kalimantan								STUDY				
8.4.2 Pilot Project of Cooperative-Based Oil Palm Plantation Development								STUDY				
8.4.3 Participatory Oil Palm Smallholder Plantation Development Project for Local Farmers (Combining Oil Palm Plantation with Present Livelihood Means)												
8.4.4 Participatory Oil Palm Smallholder Plantation Development Project for Local Farmers and Transmigrants (A Modified PIR-Trans Scheme)												
8.4.5 Special Port Development Project for CPO Loading												
8.5 KALIMANTAN EXTENSIVE AGRICULTURE IMPROVEMENT PROGRAM	Agriculture, Forestry & Rural Development	●	●	●	●						PRIORITY	
8.5.1 Rubber Tree Replanting Component								PILOT				
8.5.2 Rattan Garden Promotion Component								PILOT				
8.5.3 Small-Scale Water Resources Management Component								PILOT				
8.6 KALIMANTAN LOWLAND AGRICULTURAL DEVELOPMENT PROGRAM	Agriculture & Water Resources				●							
8.6.1 Lowland Irrigation Systems Improvement Project in Kalimantan								STUDY				
8.6.2 Agricultural Products Value-added Enhancement Project in Kalimantan												
8.7 KALIMANTAN COMMUNITY FORESTRY DEVELOPMENT PROGRAM IN FORMER TIMBER CONCESSION AREAS	Forestry and Village Development	●	●	●	●							
8.8 TRANS-KALIMANTAN HIGHWAY PROGRAM	Road	●	●	●	●						PRIORITY	
8.8.1 Trans-Kalimantan Highway Southern Route: Tayan-Pangkalanbun								STUDY				
8.8.2 Trans-Kalimantan Highway Southern Route: Tayan Bridge												
8.8.3 Trans-Kalimantan Highway Southern Route: improvement of Banjarmasin-Pangkalanbun												
8.9 PONTIANAK METROPOLITAN AREA DEVELOPMENT PROGRAM	Urban	●	●	●	●							
8.10 KAPET SANGGAU DEVELOPMENT PROGRAM	Industry & SME				●	●						
8.10.1 Pemangkat Industrial Estate for Small and Medium Scale Food Processing Industries												
8.10.2 Sintete Port Development Project												
8.10.3 Sanggau, Tayan and Sekadau Urban Center Development Project								STUDY				
8.10.4 Entikong Free Trade and Processing Zone Development Project								STUDY				

Figure 8.1.1 Summary of Recommended Programs and Projects(1)

Program/Project Name	Sector	Major Strategies							Phase 1 (Years)	Phase 2 (Years)	Phase 3 (Years)	High Priority (Priority Projects included by Volume 3)
		A	B	C	D	E	F	G				
8.1 KALIMANTAN REGIONAL POLICY REFORM PROGRAM	Regional Development	●	●	●	●	●	●	●	1999-2003 (5years)	2004-2008 (5years)	2009-2018 (10years)	PRIORITY
8.2 RESTRUCTURING PROGRAM OF PROVINCIAL SPATIAL STRUCTURE PLANS FOR KALIMANTAN	Regional Development	●	●	●	●	●	●	●				PRIORITY
8.3 DEVELOPMENT PROGRAM OF THE KALIMANTAN SYSTEM BASIC AND APPLIED RESEARCH INSTITUTE	Scientific Research & Development	●	●	●	●	●	●	●				PRIORITY
8.4 OIL PALM SUBSECTOR IMPROVEMENT PROGRAM	Agriculture Plantation	●	●	●	●	●	●	●	STUDY			PRIORITY
8.4.1 Planning Study for Oil Palm Subsector Improvement in Kalimantan									STUDY			
8.4.2 Pilot Project of Cooperative-Based Oil Palm Plantation Development									STUDY			
8.4.3 Participatory Oil Palm Smallholder Plantation Development Project for Local Farmers (Combining Oil Palm Plantation with Present Livelihood Means)												
8.4.4 Participatory Oil Palm Smallholder Plantation Development Project for Local Farmers and Transmigrants (A Modified PIR-Trans Scheme)												
8.4.5 Special Port Development Project for CPO Loading												
8.5 KALIMANTAN EXTENSIVE AGRICULTURE IMPROVEMENT PROGRAM	Agriculture, Forestry & Rural Development	●	●	●	●	●	●	●				PRIORITY
8.5.1 Rubber Tree Replanting Component									PILOT			
8.5.2 Rattan Garden Promotion Component									PILOT			
8.5.3 Small-Scale Water Resources Management Component									PILOT			
8.6 KALIMANTAN LOWLAND AGRICULTURAL DEVELOPMENT PROGRAM	Agriculture & Water Resources	●	●	●	●	●	●	●				
8.6.1 Lowland Irrigation Systems Improvement Project in Kalimantan									STUDY			
8.6.2 Agricultural Products Value-added Enhancement Project in Kalimantan												
8.7 KALIMANTAN COMMUNITY FORESTRY DEVELOPMENT PROGRAM IN FORMER TIMBER CONCESSION AREAS	Forestry and Village Development	●	●	●	●	●	●	●				
8.8 TRANS-KALIMANTAN HIGHWAY PROGRAM	Road	●	●	●	●	●	●	●				PRIORITY
8.8.1 Trans-Kalimantan Highway Southern Route: Tayan-Pangkalanbun									STUDY			
8.8.2 Trans-Kalimantan Highway Southern Route: Tayan Bridge												
8.8.3 Trans-Kalimantan Highway Southern Route: Improvement of Banjarmasin-Pangkalanbun												
8.9 PONTIANAK METROPOLITAN AREA DEVELOPMENT PROGRAM	Urban	●	●	●	●	●	●	●				
8.10 KAPET SANGGAU DEVELOPMENT PROGRAM	Industry & SME	●	●	●	●	●	●	●				
8.10.1 Pematang Industrial Estate for Small and Medium Scale Food Processing Industries												
8.10.2 Sintete Port Development Project												
8.10.3 Sanggau, Tayan and Sekadau Urban Center Development Project									STUDY			
8.10.4 Entikong Free Trade and Processing Zone Development Project									STUDY			

Figure 8.1.2 Summary of Recommended Programs and Projects(2)

Program/Project Name	Sector	Major Strategies								Phase 1 1999-2003 (5years)	Phase 2 2004-2008 (5years)	Phase 3 2009-2018 (10years)	High Priority (Priority Projects Included by Volume 3)
		A	B	C	D	E	F	G	H				
8.11	Industry												PRIORITY
8.11.1	Kumai Industrial Estate Development Project									STUDY			
8.11.2	Kumai Port Development Project									STUDY			
8.11.3	Pangkalanbun-Kumai Urban Development Project									STUDY			
8.12	KALIMANTAN UPLAND ECOLOGICAL DEVELOPMENT CORRIDOR PROGRAM IN CENTRAL KALIMANTAN	Forestry, Agriculture & Public Works								STUDY			PRIORITY
8.13	INLAND KALIMANTAN HEALTH SERVICES IMPROVEMENT PROGRAM	Health								PILOT			PRIORITY
8.14	INLAND KALIMANTAN EDUCATION SERVICES IMPROVEMENT PROGRAM	Education								PILOT			PRIORITY
8.14.1	Inland Kalimantan Participatory Primary School Management Project									PILOT			
8.14.2	Inland Kalimantan Local Teacher Foster Project									PILOT			
8.14.3	Kalimantan Vocational Senior Secondary School Project									PILOT			
8.15	WEST KALIMANTAN REGIONAL WATER RESOURCES DEVELOPMENT AND SUPPLY PROGRAM	Water Resources								STUDY			
8.16	KALIMANTAN POLLUTION MONITORING PROGRAM	Environment								STUDY			PRIORITY
8.17	KALIMANTAN FISHERIES PROMOTION PROGRAM	Fisheries											
8.17.1	Fisheries Research Institute Development												
8.17.2	Fish Landing and Market Place Improvement Project												
8.18	KALIMANTAN SMALL AND MEDIUM ENTERPRISE PROMOTION PROGRAM	Agriculture & Manufacturing								PILOT			PRIORITY
8.19	KALIMANTAN FOREST FIRE DISASTER MANAGEMENT PROGRAM	Disaster & Forestry								STUDY			PRIORITY
8.20	KALIMANTAN TOURISM DEVELOPMENT PROGRAM	Tourism								PILOT			PRIORITY
8.21	KALIMANTAN KECAMATAN ROAD DEVELOPMENT PROGRAM	Road											PRIORITY

Note:
 A: Back to the basic. Policy changes to attain the sustainability of the Kalimantan System
 B: To restructure the existing spatial framework for the era of plantation development
 C: To develop a basic and applied research institute for the Kalimantan System
 D: To initiate new rural development schemes in the era of plantation development
 E: To promote the development of primary urban centers and industries by providing infrastructure and environmental monitoring/management
 F: To support the development efforts in promoting small and medium scale industries and related agricultural activities
 G: To develop basic infrastructure to support medium-sized towns and urban-rural linkages in the middle stream areas
 H: To promote human resources development for Kalimantan

Major Strategies:

STUDY	Planning Study
PILOT	Pilot Project
	Implementation of the Project
PRIORITY	High Priority Program/Project

● The program is highly effective for implementing the designated major strategies
 ● The program is effective for implementing the designated major strategies

Figure 8.1.2 Summary of Recommended Programs and Projects(2)

Program/Project Name	Sector	Major Strategies								Phase 1 (5years)	Phase 2 (5years)	Phase 3 (10years)	High Priority (Priority Projects included by Volume 3)
		A	B	C	D	E	F	G	H				
8.11 PANGKALANBUN-KUMAL URBAN, INDUSTRIAL AND PORT DEVELOPMENT PROGRAM	Industry												PRIORITY
8.11.1 Kumal Industrial Estate Development Project										STUDY			
8.11.2 Kumal Port Development Project										STUDY			
8.11.3 Pangkalanbun-Kumal Urban Development Project										STUDY			
8.12 KALIMANTAN UPLAND ECOLOGICAL DEVELOPMENT CORRIDOR PROGRAM IN CENTRAL KALIMANTAN	Forestry, Agriculture & Public Works									STUDY			PRIORITY
8.13 INLAND KALIMANTAN HEALTH SERVICES IMPROVEMENT PROGRAM	Health									PILOT			PRIORITY
8.14 INLAND KALIMANTAN EDUCATION SERVICES IMPROVEMENT PROGRAM	Education									PILOT			PRIORITY
8.14.1 Inland Kalimantan Participatory Primary School Management Project										PILOT			
8.14.2 Inland Kalimantan Local Teacher Foster Project										PILOT			
8.14.3 Kalimantan Vocational Senior Secondary School Project										PILOT			
8.15 WEST KALIMANTAN REGIONAL WATER RESOURCES DEVELOPMENT AND SUPPLY PROGRAM	Water Resources										STUDY		
8.16 KALIMANTAN POLLUTION MONITORING PROGRAM	Environment									STUDY			PRIORITY
8.17 KALIMANTAN FISHERIES PROMOTION PROGRAM	Fisheries												
8.17.1 Fisheries Research Institute Development													
8.17.2 Fish Landing and Market Place Improvement Project													
8.18 KALIMANTAN SMALL AND MEDIUM ENTERPRISE PROMOTION PROGRAM	Agriculture & Manufacturing										PILOT		PRIORITY
8.19 KALIMANTAN FOREST FIRE DISASTER MANAGEMENT PROGRAM	Disaster & Forestry										STUDY		PRIORITY
8.20 KALIMANTAN TOURISM DEVELOPMENT PROGRAM	Tourism										PILOT		PRIORITY
8.21 KALIMANTAN KECAMATAN ROAD DEVELOPMENT PROGRAM	Road												PRIORITY

Note: A. Back to the basic. Policy changes to attain the sustainability of the Kalimantan System
 B. To restructure the existing spatial framework for the era of plantation development
 C. To develop a basic and applied research institute for the Kalimantan System
 D. To initiate new rural development schemes in the era of plantation development
 E. To promote the development of primary urban centers and industries by providing infrastructure and environmental monitoring management
 F. To support the development efforts in promoting small and medium scale industries and related agricultural activities
 G. To develop basic infrastructure to support medium-sized towns and urban-rural linkages in the middle stream areas
 H. To promote human resources development for Kalimantan

STUDY Planning Study
 PILOT Pilot Project
 Implementation of the Project
 PRIORITY High Priority Program/Project

The program is highly effective for implementing the designated major strategies
 The program is effective for implementing the designated major strategies

8.1 KALIMANTAN REGIONAL POLICY REFORM PROGRAM

Title:

Kalimantan Regional Policy Reform Program

Sector:

Regional Development

Location:

West Kalimantan and Central Kalimantan for a Pilot Program at the first stage East Kalimantan and South Kalimantan at the second stage

Time to be Implemented:

1999 ~ 2003

Institutions Responsible for Implementation:

- At the central government level, Bappenas, Bangda under the Ministry of Home Affairs, Cipta Karya of the Ministry of Public Works and Provincial Bappedas
- At the local government level, provincial Bappeda plays a coordinating role among provincial departments under the provincial governor office and regional offices of line agencies

Goals:

- To make a reform plan for existing policies related to regional development
- To formulate strategies to implement the reform plan
- To enact a law to provide a legal basis, as well as a budget basis for the policy reform
- To disseminate the concept and measures for the policy reform to related agencies

Rationale:

The existing development planning and administrative systems are still strongly oriented to sector interests and sectoral approaches. However, the policy makers of various sectoral government agencies have increasingly realized that regional policies and development programs/ projects should be more responsive to regional and local conditions in order to make further progress in economic and social development. For this purpose, a fundamental policy reform on regional development planning and implementation is required. The general direction of this policy reform is increased decentralization in budget allocation as well as in administrative tasks, and enhancement of regional and local initiatives for development. Through this policy reform, the local governments can take regional and local initiatives into account for regional development planning and implementation. As a result, the population and the business sector of the region could get a larger share of prospective development in the region.

The process for preparing the seventh five-year plan has come to an abrupt halt since early 1998 owing to the severe economic crisis. This situation, however, could and should be regarded as a rare, good opportunity to thoroughly think over the practice, its merits and shortcomings, and clearly see how to adjust it to face the coming post-crisis era.

In order to tackle these problems, both central government and local government levels of reform actions are required. At the central government level, Bappenas, Bangda and Cipta Karya are key actors in the regional policy reform. They should initiate intensive studies and

discussions for regional policy reform by involving a wide range of government sector agencies.

On the other hand, since the present way of preparing the provincial Repelitada is not so well designed as to foster mutual communications among the parties concerned with provincial development. Open forum-style meetings may be appropriate to present and exchange views and plans of those parties.

A series of meetings, which one may call the "Provincial Development Forum," should be held over at least two years of time before drafting the final version of Repelitada. The chairman of provincial Bappeda may chair the meetings, while provincial Bappeda will serve as the secretariat.

Contents of the Project

- To set a central committee for regional policy reform, consisting of Bappenas, Bangda under the Ministry of Home Affairs, Cipta Karya of the Ministry of Public Works and Provincial Bappedas at Bappenas at the central government level
- To conduct regular meeting for discussion on regional policy reforms
- To set a provincial committee for regional policy reform, consisting the following members for holding open-forum-style meetings:
 - the government sectors represented by their respective dinas;
 - the kabupaten and kotamadya each represented by its bupati or walikota;
 - the corporate sector represented by KADIN and various business associations; and
 - civic or non-governmental organizations working for development.
- To conduct regular meetings for discussion and for formulating a provincial regional development plan based on its own initiatives
- To present the plan for regional policy reform to a higher decision making body
- To enact a law of regional policy reform
- To disseminate the concept of the regional policy reform to provinces, as well as sectoral agencies

Related Plans, Programs and Projects:

- Decentralization programs in the Ministry of Home Affairs
- Pilot Project for District Autonomy (PPOD)
- Kecamatan Fund Scheme of the Kecamatan Development Program (KDP)

Important Policy Conditions:

The central government agencies acknowledge the significance of regional initiatives based on regional development planning by local governments.

Contribution to Different Goals:

This regional policy reform will change the system of benefit distribution of regional development efforts

8.2 RESTRUCTURING PROGRAM OF PROVINCIAL SPATIAL STRUCTURE PLANS FOR KALIMANTAN

Title:

Restructuring Program of Provincial Spatial Structure Plans for Kalimantan

Sector:

Regional Development

Location:

West Kalimantan and Central Kalimantan for a Pilot Program at the first stage
East Kalimantan and South Kalimantan at the second stage

Time to be Implemented:

1999 ~ 2003

Institutions Responsible for Implementation:

Bappenas, Bangda under the Ministry of Home Affairs, Cipta Karya of the Ministry of Public Works and Provincial Bappedas

Goals:

- To guide development activities based on long-term regional interests rather than sectoral interests
- To enhance the provincial government's technical ability to control or guide development activities based on regional interests within the province
- To enhance the provincial government's institutional ability to regulate landuses in accordance with a revised provincial spatial structure plan within the province

Rationale:

One of the key issues is the weakness of the regional or local entities in the planning and implementation of regional development. The local government is the only entity which can perceive the region as a total system for development, while the sectoral line government agencies cannot. The relationship among different sectors and the resource allocation should be a matter of the total system based on the regional approach, and should not be based on the sectoral approach. The weakness of the local government is derived from the impossibility to control the natural resources and tax revenues available to the region due to the present regulations. This reason is critical in two points. One is that the local government does not have enough funds for development based on regional initiatives. The other is that the local government cannot make effective decisions on resource utilization (including natural resources and other resources).

These problems cause the malfunctioning of the provincial spatial structure plan. In West and Central Kalimantan, the provincial spatial structure plans were made, but they are neither responsive to regional interests, nor effective in landuse regulation. Moreover, some parts of the existing provincial spatial structure plans are not based on land suitability.

The on-going synchronization process of provincial spatial structure between the provincial government and the regional forestry department is underway. However, the strong forestry interests partly reflecting the interests of plantation development tend to skew the provincial spatial structure.

The landuse plan is an essential tool for the local government to consider the totality of the region, to express the utilization of the resources and space based on the regional approach and land suitability, and to guide the actual development activities. How to make the provincial spatial structure plan responsive to regional interests and effective in landuse regulation is one of the key issues. In this sense, it is important to restructure the spatial structure according to land potential and suitable development models.

Through the restructuring of the spatial plan and formulation of development models, the local governments need to recognize the importance of improvement of existing livelihood means according to land potential. In this sense, the indigenous people in rural areas would also be the beneficiaries of the efforts at restructuring the provincial spatial structure.

The existing provincial spatial structure plan has a indicative nature but does not have powerful landuse regulations. After the completion of the above modification, relevant agencies need to re-start the synchronization process. The spatial structure plan with landuse regulating power could provide the local governments with a strong tool to effectively guide development activities.

Some parts of the existing provincial spatial structure plans are not based on land potential. It is necessary to modify it based on the spatial concept recommended (Figures 7.6.2 and 7.6.3 of this report) by JICA-SCRDP-Kaltengbar. Each landuse category corresponds to some development models, which are also recommended by JICA-SCRDP-Kaltengbar. In this sense, it is important to restructure the spatial structure according to land potential and suitable development models.

Objectives:

- To revise the existing provincial structure plan based on regional interests
- To institutionalize the restructuring of the provincial spatial structure plan into the plans of the sectoral agencies

Contents of the Project:

- To set up a working group for restructuring the provincial spatial structure plan
- To review the results of JICA-SCRDP-Kaltengbar
- To make a restructured spatial plan (See Table 8.2.1 and Figure 8.2.1 for modification in forestry landuse, and see Table 8.2.2 and Figure 8.2.2 for agricultural landuse.)
- To set up a committee for restructuring the provincial spatial structure plan
- To re-start a synchronization process between the provincial spatial structure plan and the forestry landuse plan
- To set up a landuse regulating committee for utilizing the restructured spatial plan

Related Plans, Programs and Projects:

- On-going Paduserasi Procedure (Synchronization Procedure) of the provincial spatial structure plan and the forestry landuse plan

Important Policy Conditions:

The provincial spatial structure plan should be the only landuse plan which has power in landuse regulation in one province.

Contribution to Different Goals:

Order patterns in spatial development and environmental management could be promoted on the basis of the restructured provincial spatial structure plan. This could lead to more sound and sustainable economic and social development, too.

Table 8.2.1 Recommended Modification of Forestry Landuse

Zone	Present Condition					Proposed Plan	
	Share of the area						
	West		Central				
HPH	HTI	Con.	HPH	HTI	Con.		
1	-	-	-	-	-	-	-
2	C	C	-	A	-	Selective logging, Landuse intensification	Landuse intensification
3	C	B	-	A	C	Selective logging, Landuse intensification	Landuse intensification
4	B	B	-	A	C	Selective logging, Landuse intensification	Landuse intensification
5	-	-	-	A	-	Landuse intensification	-
6	B	B	C	A	C	Selective logging and Natural Regeneration	Selective logging and Natural Regeneration
7	-	-	A	-	-	-	-
8	B	C	C	A	-	Selective logging and Natural Regeneration	Selective logging and Natural Regeneration
9	B	C	B	A	C	Selective logging and Natural Regeneration	Selective logging and Natural Regeneration
10	-	-	-	-	-	-	-

Share : A>B>C

Selective logging : The regulation should be enforced for sustainable use of the resources

Landuse intensification : The area adjust appropriate landuse for increasing productivity

Natural regeneration : Forest in the area should remain untouched for regeneration after logging

(1) Suitable area for agriculture Zone

1 Arable Land Suited to All Kinds of Crops

2 Arable Land Suited to Crops Except Paddy

3 Arable Land Suited to Tree Crops

4 Arable Land Suited to Tree Crops, Moderately Suited to Oil Palm

5 Arable Land Suited to Wetland Paddy

Source: JICA-SCRDP Kaltengbar

(2) Unsuitable area for agriculture Zone

6 Peat Soils

7 Acid Sulfate Soils

8 Sandy Soils

9 Steep Slopes

10 Coastal Sands

Figure 8.2.1 Distribution of Present Concession Areas for Industrial Tree Plantation (HTI)

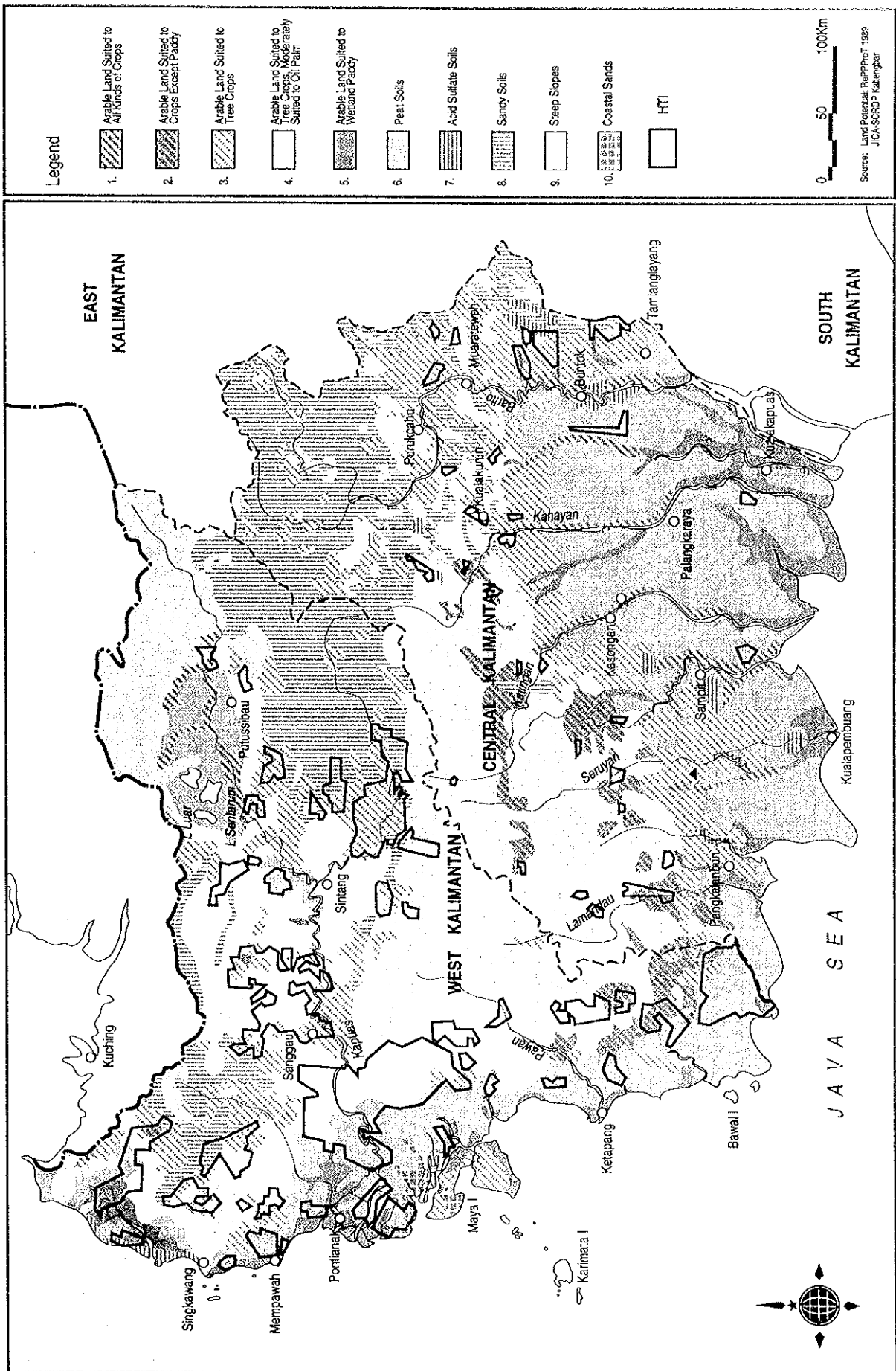


Table 8.2.2 Recommended Modification of Agricultural Landuse

Present Condition												Proposed Plan					
Zone	West						Central						Tree Crops	Paddy	Shifting Cultivation	Horticulture	
	Oil Palm		Shifting Cultivation	Horticulture	Oil Palm		Shifting Cultivation	Horticulture	Oil Palm		Paddy	Shifting Cultivation					Horticulture
	Implemented	Proposed			Implemented	Proposed			Implemented	Proposed							
1	-	-	B	-	C	-	B	-	-	-	-	-	-	Technical intensification	-	Technical intensification	
2	C	-	-	C	-	C	-	-	-	-	-	-	-	Technical intensification	-	-	
3	B	C	-	B	-	B	A	C	-	C	-	-	-	Acceleration of the plan	Acceleration of extensive agroforestry	-	
4	B	B	C	-	B	-	-	C	-	-	-	-	-	Careful implementation of the plan	Acceleration of extensive agroforestry	-	
5	-	C	B	-	C	-	-	-	C	-	C	-	-	Adjust the plan	Technical intensification	Technical intensification	
6	-	B	-	-	-	-	-	-	-	-	-	-	-	Adjust the plan	-	-	
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	-	C	-	-	-	-	-	-	-	-	-	-	-	Adjust the plan	-	-	
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Share : A>B>C

Technical intensification : Improvement of technical extension and irrigation facilities etc.

Careful management : Intensive technology may not apply to the area because soils is not well suited for the crops.

Acceleration of the plan : Soils are suited for the crop

Adjust the plan : Soils are not suited for the crop.

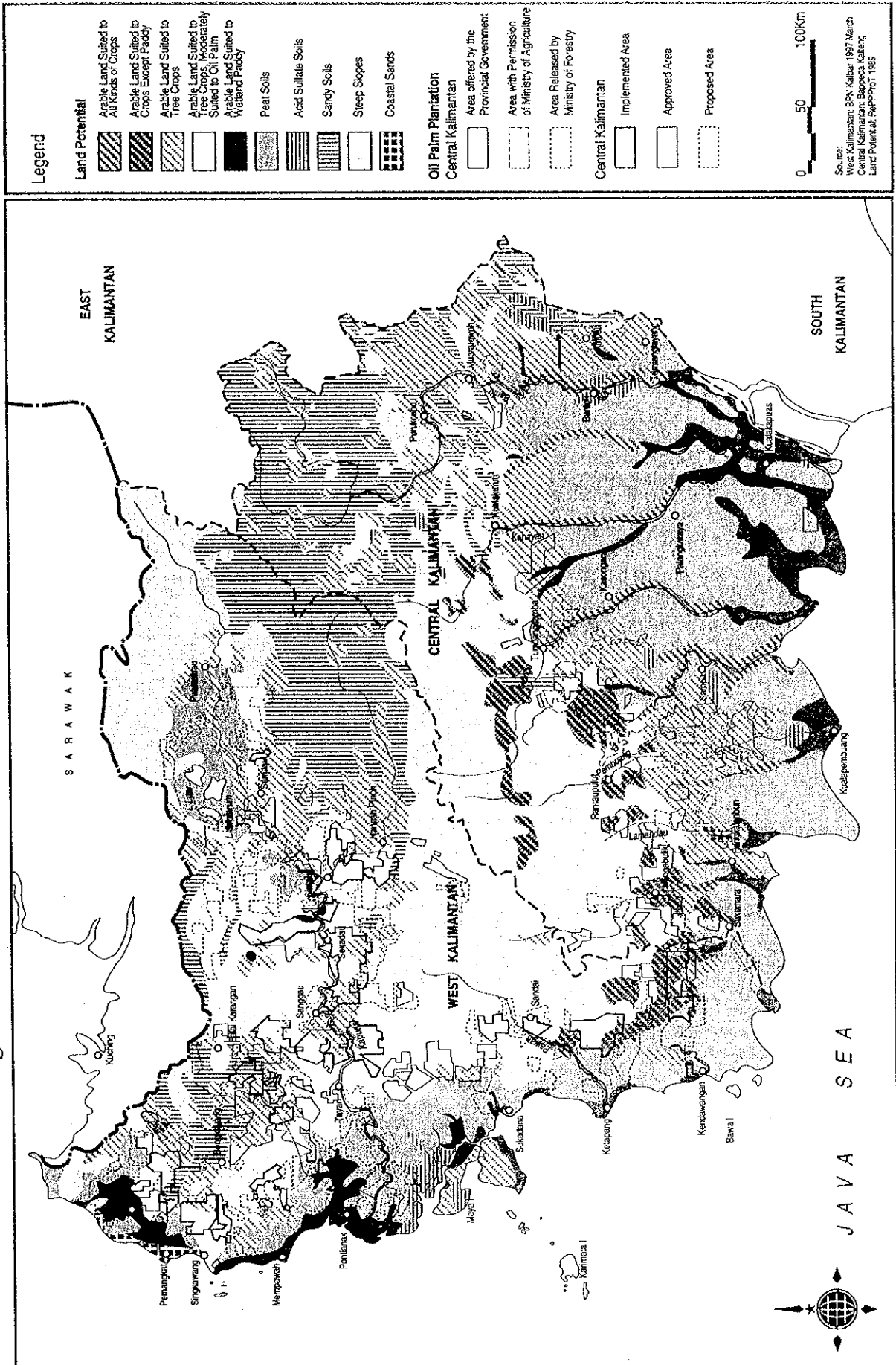
Acceleration of extensive agroforestry : Acceleration of environmental sound agriculture to establish buffer zone by expanding estate.

(1) Suitable area for agriculture Zone

- 1 Arable Land Suited to All Kinds of Crops
- 2 Arable Land Suited to Crops Except Paddy
- 3 Arable Land Suited to Tree Crops
- 4 Arable Land Suited to Tree Crops, Moderately Suited to Oil Palm
- 5 Arable Land Suited to Wetland Paddy
- 6 Peat Soils
- 7 Acid Sulfate Soils
- 8 Sandy Soils
- 9 Steep Slopes
- 10 Coastal Sands

Source: JICA-SCRDP Kaltengbar

Figure 8.2.2 Distribution of Present Oil Palm Plantation Concession Areas



8.3 DEVELOPMENT PROGRAM OF THE KALIMANTAN SYSTEM BASIC AND APPLIED RESEARCH INSTITUTE

Title:

Development Program of the Kalimantan System Basic and Applied Research Institute

Sector:

Scientific Research and Development

Location:

West Kalimantan, Central Kalimantan and East Kalimantan

Time to be Implemented:

1999 ~ 2003: Planning and Initial Development Stage

2004 ~ 2008: Second Development Stage

2009 ~ 2018: Full-scale Development Stage

Institutions Responsible for Implementation:

- Agency of Assessment and Application of Technology (BPPT) or National Academy of Science (LIPI) at the central government level
- Provincial governments at the local government level

Goals:

- To accumulate knowledge on the Kalimantan System through basic and applied research
- To develop practical technology and techniques based on knowledge of the Kalimantan System
- To monitor the natural and social resources of Kalimantan
- To diffuse the ideas and knowledge concerning the Kalimantan System

Rationale:

Kalimantan has salient features which are comparatively different from Sumatra and Sulawesi. In Kalimantan, the natural conditions and the socio-economic conditions have influenced each other to formulate a unique system of nature and socio-economy.

The development has been expanding at an increasingly rapid rate while being influenced by road and plantation development in the last decade. However, much of the Kalimantan System is not yet known, including gene resources, eco-systems of forests and lakes and local knowledge on forest resources and land management.

Kalimantan's regional development has to rely on the natural and social power of the Kalimantan System. In this sense, the accumulation of knowledge on the Kalimantan System itself is essential for application of such knowledge and utilization of natural resources for regional development.

For these purposes, it is important to establish a research institute covering various aspects of Kalimantan. However, it is not recommendable to establish a totally new research institute, but it is recommended to make a network of the existing research institutes and research groups (of both the government and private, as well as to set up a fund to support such research activities.

Contents of the Project:

Planning and Initial Development Stage

- To formulate a concept of a Kalimantan Research Institute
- To prepare strategies for forming the research institute in a step-wise manner
- To design a organizational structure for developing the Kalimantan Research Institute
- To build consensus among related government agencies

Second Development Stage

- To start building the network of research institutes and research activities in Kalimantan
- To start funding basic and applied research on the Kalimantan System

Full-scale Development Stage

- To establish a basic and applied research institute on scientific research and technology development concerning the Kalimantan System
- To conduct basic and applied research in natural science, social science and technology development for preservation and utilization of natural resources
- To conduct research concerning the local knowledge on utilization of forest and other natural resources (ethno-biology and ethno-zoology)
- To conduct monitoring of natural resources (forest resources, inland water fisheries resources and coastal water fisheries resources)
- To fund basic and applied research on the Kalimantan System
- To develop training material for policy-makers and school teachers on the Kalimantan System

Related Plans, Programs and Projects:

- Kalimantan Fisheries Research Institute (proposed by SCRDP-Kaltengbar)
- Kalimantan Upland Agriculture Development Program

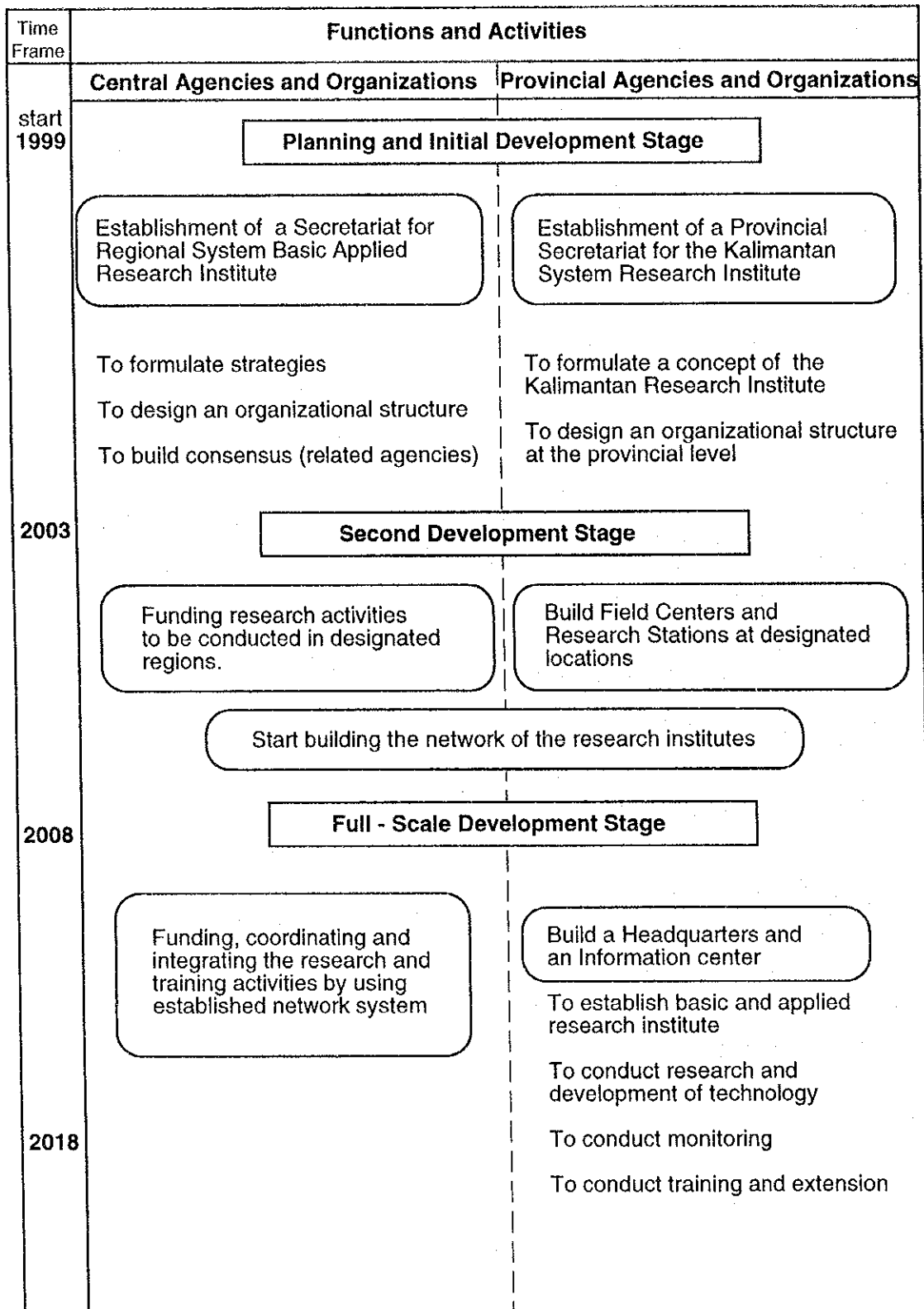
Important Policy Conditions:

It is important for the government to acknowledge the Kalimantan System as one of unique systems which constitute Indonesia in policy formulation. This kind of acknowledgment of regional systems is also important to formulate effective development policies and programs for Eastern Indonesia.

Contribution to Different Goals:

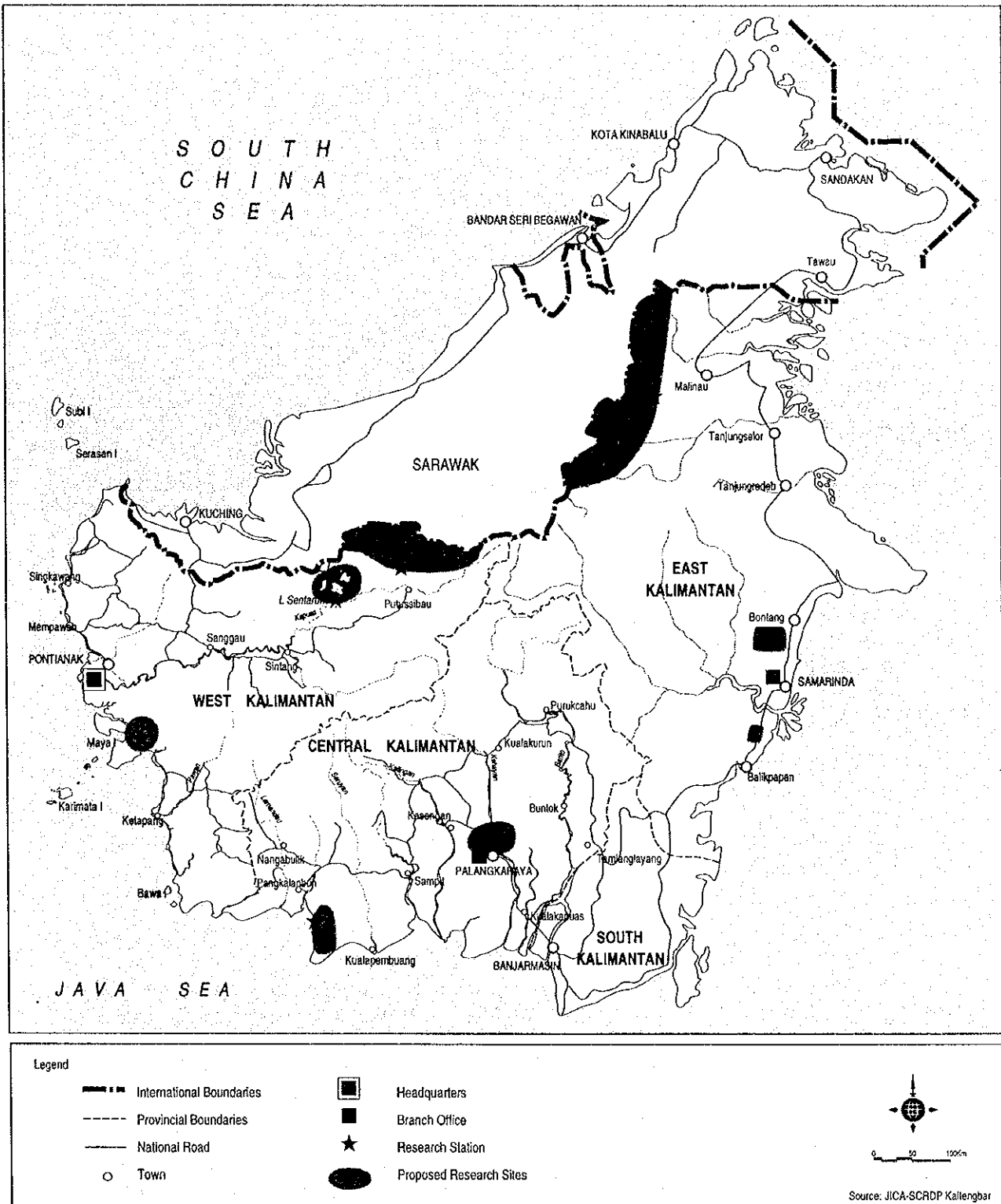
The sustainable economic and social development of Kalimantan is not possible without the deep knowledge and serious application efforts of the knowledge for actual development.

Figure 8.3.1 Development Stage and Activities



Source: JICA SCRDP-Kaltengbar

Figure 8.3.2 The Kalimantan System Basic and Applied Research Institute's Network (Recommendation)



8.4 OIL PALM SUBSECTOR IMPROVEMENT PROGRAM

8.4.1 Planning Study for Oil Palm Subsector Improvement in Kalimantan

Title:

Planning Study for Oil Palm Subsector Improvement in Kalimantan

Sector:

Agricultural Plantation

Location:

West Kalimantan, Central Kalimantan and East Kalimantan

Time to be Implemented:

1999 ~ 2003: Planning Study and Policy Reform

Institutions Responsible for Implementation:

- Directorate General of Plantation, Ministry of Forestry

Goals:

- To prepare appropriate business environment for the oil palm industry
- To prepare appropriate arrangements for smallholders in oil palm plantation development
- To secure the sustainability in respects of the environment, the oil palm business and local people's rural livelihoods in the development of oil palm industries and plantations

Rationale:

The oil palm subsector has been emerging as a key subsector in the economic development of West Kalimantan and has been followed by Central Kalimantan. Although the establishment of the plantation industry can have positive impacts on the economic development of the study area, such as increases in regional income and employment, specialization in palm oil production and the concentration of large oil palm plantations in the area are likely to have some undesirable impacts, not only on the economy but also on the society and the environment.

Impacts of Oil Palm Plantation Development

- 1) The regional economy will become highly dependent on the production of a single primary product, palm oil, whose price fluctuates according to the situation of international markets.
- 2) A large part of the profit generated in the plantation industry will be "repatriated" to Jakarta or to outside of Indonesia because it is a capital intensive industry and because of limited availability of loans from local banks.
- 3) The land allocation for oil palm plantations is usually decided by the provincial government and other agencies. Some local people are forced to alter their ways of farming and living due to the increased competition for land resources due to the development of an oil palm plantation.
- 4) Although the impacts of oil palm plantation development are difficult to assess and predict, the expansion of areas planted with oil palms at an unprecedented speed is expected to cause severe environmental degradation.

5) Food production may decrease without proper landuse planning since a large part of the lands on which oil palm plantations are being or planned to be established are currently used for food crop cultivation.

6) Most oil palm plantation projects are located in areas where other alternative economic activities are not available to smallholders once the lands endowed with resources are cleared for large-scale plantations.

Impacts of the Present Economic Crisis

The bright prospects of the oil palm subsector have disappeared since the beginning of the economic crisis. The oil palm subsector has been facing an emerging unfavorable business environment, such as the increase of export taxes on CPO, unsmooth flow of credit money for smallholder development, complicated and time consuming permission procedures, and unsupportive road development policies.

Implementing the policies for providing a good business environment for the oil palm subsector is very important for West and Central Kalimantan, which still have many oil palm plantations to be developed. If the government continues unfavorable policies against the oil palm subsector, it would largely delay the realization of the potential of oil palm plantations and oleochemical industries.

Needs of the study project

For the purpose of mitigating these possible negative impacts of the development of the oil palm subsector and realizing adequate contribution of the oil palm subsector to regional economies and societies, it is necessary to conduct a comprehensive study on policies concerning the oil palm subsector ranging from plantation development to downstream industries because the economic and political environments were largely altered due to the economic recession and the government change.

Contents of the Project

- To review the recent development of the oil palm industry
- To review the recommendations on the oil palm industry by JICA SCRDP-Kaltengbar
- To study measures for improving the business environment
- To study models of cooperative-based oil palm plantation development
- To study community based participatory landuse planning schemes
- To study two types of assistance schemes for smallholder plantation development: one for both new development and the other for established oil palm areas
- To make an implementation program for improving the business environment for the palm oil industry

Important Policy Conditions:

- The export tax of crude palm oil needs to be normalized after the present economic recession.
- The export tax of oleochemical products needs to be set for encouraging more domestic processing.
- Regulations of foreign investment in the oil palm industry need to be liberalized.
- Credit schemes for oil palm smallholder plantation development need to be normalized.
- Infrastructure provision policies to support oil palm plantation development need to be supported by the government.

Contribution to Different Goals:

- This planning study considers a wide range of goals of developing the oil palm industry.

8.4.2 Pilot Project of Cooperative-Based Oil Palm Plantation Development

Title:

Pilot Project of Cooperative-Based Oil Palm Plantation Development

Sector:

Agricultural Plantation

Location:

West Kalimantan and Central Kalimantan

Time to be Implemented:

1999-2003: Study and Pilot Project

Institutions Responsible for Implementation:

- Directorate General of Plantation, Ministry of Forestry

Goals:

- To promote equitable regional development through oil palm plantation development
- To distribute more shares to local people who participate in oil palm plantation development as smallholders
- To secure business feasibility of development and operations of oil palm plantations
- To promote the development of small and medium enterprises

Rationale:

The bright prospects of the oil palm subsector have disappeared since the beginning of the economic crisis. The oil palm subsector has been facing an emerging unfavorable business environment, such as the increase of export taxes on CPO, unsmooth flow of credit money for smallholder development, complicated and time consuming permission procedures, and unsupportive road development policies.

This unfavorable business environment of the oil palm industry was created partly because the new government administration after May 1998 introduced negative policy attitudes against the conglomerates, which have played major roles in the oil palm plantation business and downstream industries.

Actually the government considers the introduction of cooperative-based scheme for oil palm plantation development. However, it is risky to totally replace all the existing oil palm plantation development schemes with the new cooperative-base scheme because such drastic changes in oil palm related policies might suddenly deteriorate the investment environment of the oil palm industry in Indonesia.

Implementing the policies for providing a good business environment for the oil palm subsector is very important for West and Central Kalimantan, compared to the case of Sumatra, another major oil palm production region. West and Central Kalimantan still have many oil palm plantations to be developed. If the government continues unfavorable policies against the oil palm subsector, it would largely delay the realization of the development potential of oil palm plantations and of oleochemical industries.

In this sense, it is really necessary to study the feasibility (economic, financial, legal and social feasibility) of cooperative-based oil palm plantation development schemes. Such development schemes have generally two different types. One is the scheme for smallholder plantation development in the areas where oil palm plantations have been already established. The other scheme is designed for new development of both nucleus plantations and smallholder plantations.

Contents of the Project

- Review of the recommendations of the planning study for oil palm subsector improvement in Kalimantan
- Selection of communities and private enterprises for pilot projects (two sites in already established oil palm plantation areas, and two sites for new oil palm plantation development in relatively new plantation areas)
- Permission procedure for implementing the pilot projects
- Implementation of the pilot projects
- Mid-term review of the pilot projects
- Modification of cooperative-models of oil palm plantation development

Related Plans, Programs and Projects:

- Assistance schemes for smallholder plantation development

Important Policy Conditions:

The government re-considers the importance of creating better business environment for development of the oil palm industry.

Contribution to Different Goals:

Serious efforts at encouraging local participation and SME development would reduce the speed and scale of oil palm plantation development, resulting in decreasing negative impacts on the regional society and environment.

8.4.3 Participatory Oil Palm Smallholder Plantation Development Project for Local Farmers (Combining Oil Palm Plantation with Present Livelihood Means)

Title:

Participatory Oil Palm Smallholder Plantation Development Project for Local Farmers (Combining Oil Palm Plantation with Present Livelihood Means)

Sector:

Agriculture and Rural Development

Location:

- West Kalimantan, especially in the relatively high population density areas, such as the Kapuas river basin

Time to be Implemented:

1999 ~ 2003: Model development and the implementation of pilot projects
2004 ~ 2018: Application to all the designated development schemes

Institutions Responsible for Implementation:

Implemented by local farmers and plantation companies
Coordinated and assisted by the Directorate General of Plantation, the Ministry of Agriculture and the local governments of the two provinces

Objectives:

- To combine oil palm plantation development with present livelihood means (swidden agriculture, rubber groves and fruit tree groves),
- To secure the present livelihood means by participatory landuse planning at the community level,
- To allow smooth implementation of oil palm plantation development

Rationale:

In the last decade, West Kalimantan has experienced the rapid expansion of large-scale oil palm plantations. In the near future, Central Kalimantan will also go through a similar experience. Under this condition, there have been an increasing number of incidents of land disputes and social conflicts between indigenous communities and plantation companies.

Such land disputes and social problems derive from the companies' careless approach to plantation development, as well as misunderstandings of the social settings of plantation development. In West Kalimantan, the population density of the target areas of plantation development is relatively low (15-20 persons per km²) compared to that of Java and Bali. However, it is not vacant land or vacant forest. It is the place where indigenous people make a living utilizing land and forest resources, although their utilization is of low density. If plantation companies fail to pay attention to such social situations, the companies' activities will easily cause land disputes and social conflicts with the local people.

Many such cases result not only in the delay of crop production, but also in the poor performance of the plantation business. Now, most plantation companies are struggling with

how to deal with local communities for the smooth development and operation of oil palm plantations. So far, however, no systematic means to solve such problems are available to plantation companies.

By carrying out the participatory landuse planning at the community level for the above mentioned objectives, the following effects will be expected:

- Local people can minimize the risks associated with starting smallholder oil palm plantations by securing the present livelihood means.
- Local people do not have to resettle so that their community base will be preserved while accepting smallholder oil palm plantations.
- Oil palm plantation companies can carry out their plantation development smoothly in cooperation with local people and communities.
- Extensive agricultural lands, such as swidden lands, rubber groves and fruit tree groves, have ecological values with a higher biodiversity in the areas of oil palm plantations.

Contents of the Project:

- Participatory landuse planning and land adjustment at the community level for oil palm plantation development while securing the present livelihood means (swidden lands, rubber groves and fruit tree groves)
- Oil palm plantation development
- Community road development
- Extensive agriculture improvement
- The characteristics of the location of this kind of projects are as follows:
 - Upland farming areas of relatively high population densities
 - Project locations should be under the following conditions:
 - Desa(s) involved in this scheme should exist in areas with plans for oil palm plantation development.
 - Designated plantation development areas should already have an approval of the government.
 - Land suitable for tree crop development in the designated village should be more than 50% of its total area.

Related Plans, Programs and Projects:

- Oil palm development by private companies
- The Nucleus and Smallholder Estate (PIR) Scheme
- Rural Road Development Project
- Agricultural Resources, Facilities and Infrastructure Development Program
- Agribusiness Development Program
- Food and Nutrition Development Program
- Integrated Smallholder Estate Crop Development Project

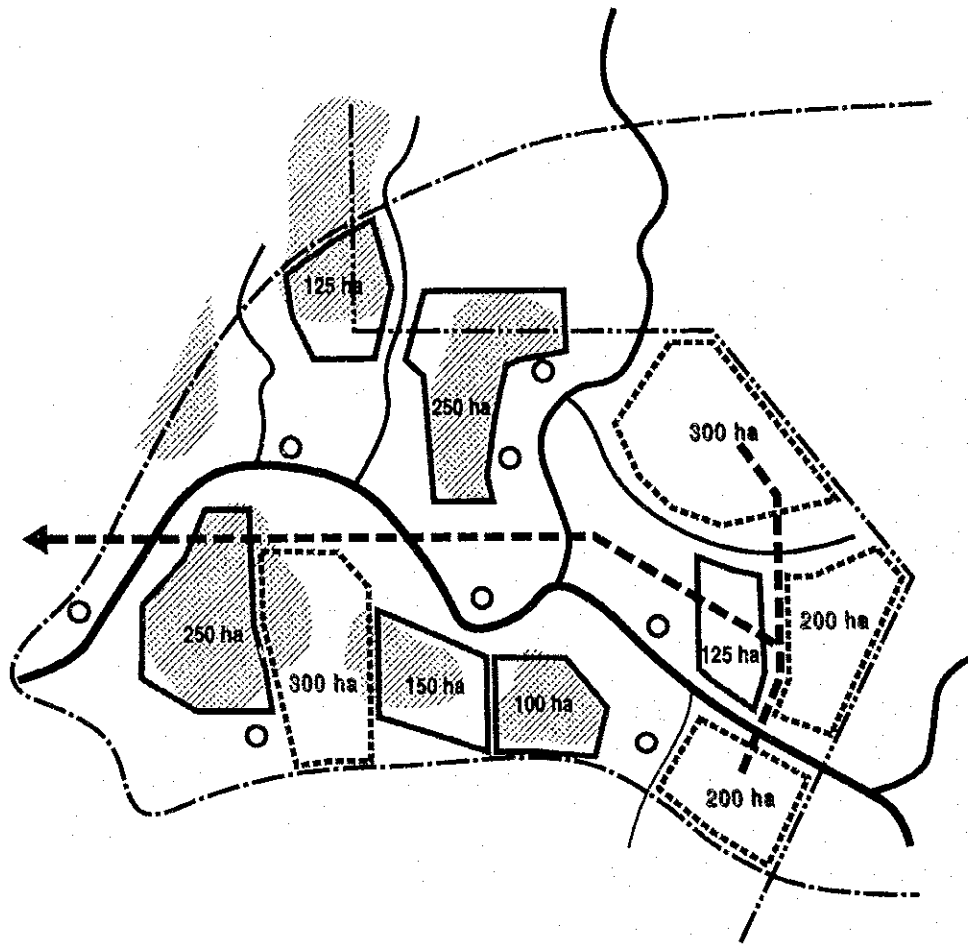
Important Policy Conditions:

- Local farmers' participation at first stage of landuse planning
- Coordination with rural development programs carried out by the public sector

Contribution to Different Goals:

- Smooth rural development by the empowerment of the people in the local community
- Industrial development in the two provinces (e.g., oleochemical industry development)
- Landuse intensification with agricultural diversification
- Sustainable agricultural development associated with environment conservation
- Stabilization of income sources by crop diversification and sustainable community development

Figure 8.4.1 Landuse Plan for the Proposed Scheme for Oil Palm Plantation Development with Local Farmers



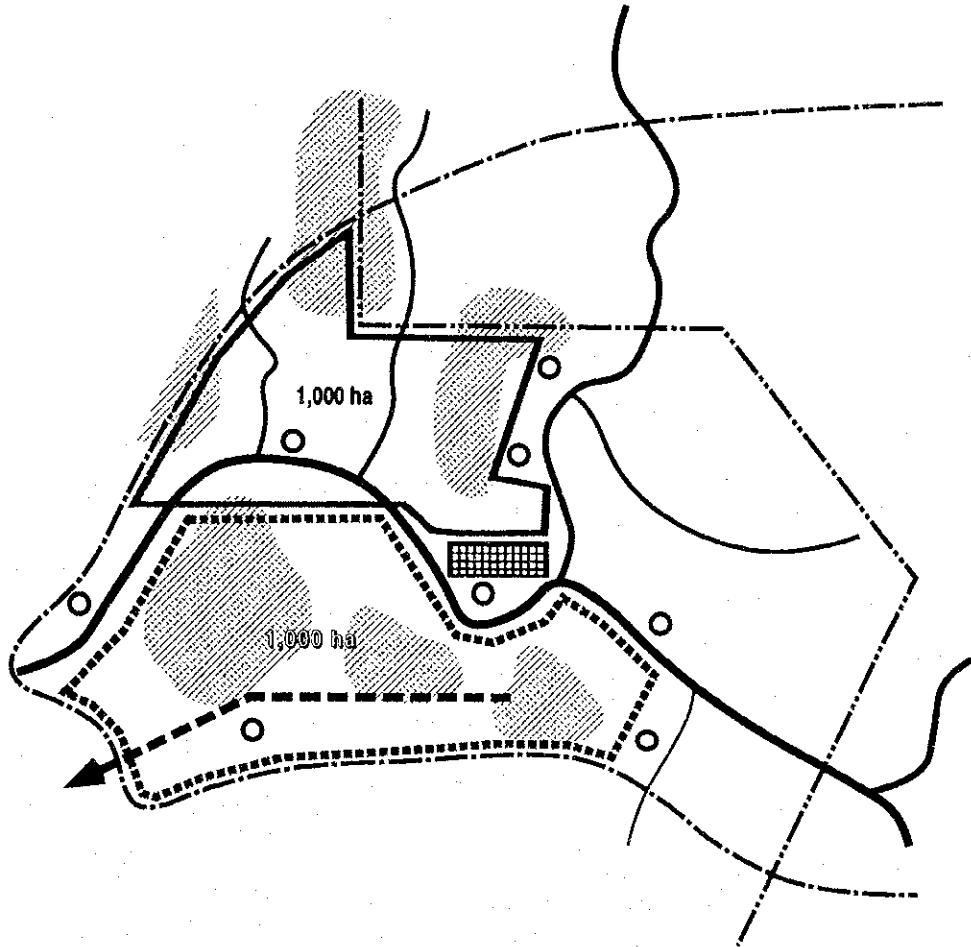
LEGEND :

- Desa Boundaries
- Scheme Boundaries
- ~~~~~ River
- Plantation Road
- ////// Alang-alang Area
- Nucleus plantation Area
- Smallholders plantation Area
- Dusun's Settlement

Total area for the scheme in desa	4,000 ha
Number of dusun	8
Population in the scheme	2,200
Number of households (ave. 5.5 / h)	400
Required area for plantation development	
<u>Actual planting area</u>	
for nucleus estate	700 ha
for smallholders	800 ha
Total actual planting area	1,500 ha
<u>Area to be provided</u>	
for nucleus estate	1000 ha
for smallholders	1000 ha
Total estate area	2,000 ha

Source: JICA-SCRDP Kaltengbar

Figure 8.4.2 Landuse Plan of Nucleus and Smallholder Plantations for the Conventional Scheme (An Example)



LEGEND :

- +---+ Desa Boundaries
- Scheme Boundaries
- ~~~~~ River
- ==== Plantation Road
- ▨▨▨▨ Alang-alang Area
- ▤▤▤▤ Nucleus plantation Area
- ▣▣▣▣ Smallholders plantation Area
- Dusun's Settlement
- ▩▩▩▩ Resettlement Site

Total area for the scheme in desa	4,000	ha
Number of dusun	8	
Population in the scheme	2,200	
Number of households (ave. 5.5 / h)	400	
Required area for plantation development		
Actual planting area for nucleus estate	700	ha
for smallholders	800	ha
Total actual planting area	1,500	ha
Area to be provided		
for nucleus estate	1000	ha
for smallholders	1000	ha
Total estate area	2,000	ha

Source: JICA-SCRDP Kaltengbar

8.4.4 Participatory Oil Palm Smallholder Plantation Development Project for Local Farmers and Transmigrants (A Modified PIR-Trans Scheme)

Title:

Participatory Oil Palm Smallholder Plantation Development Project for Local Farmers and Transmigrants (A Modified PIR-Trans Scheme)

Sector:

Agriculture, Rural Development and Transmigration

Location:

- The districts of Kotawaringin Barat and Timur, Central Kalimantan
- The district of Ketapang, West Kalimantan

Time to be Implemented:

1999 ~ 2003: Model development and the implementation of pilot projects
2004 ~ 2018: Application to all the designated development schemes

Institutions Responsible for Implementation I:

- Implemented by local farmers, plantation companies and the Ministry of Transmigration
- Coordinated and assisted by the Directorate General of Estate, the Ministry of Agriculture and the local governments of the two provinces
- Designation of conservation forest for environmental protection by the Ministry of Forestry

Objectives:

- To combine oil palm plantation development with present livelihood means (swidden agriculture, rubber groves, fruit tree groves and rattan gardens),
- To secure the present livelihood means by participatory landuse planning at the community level,
- To accommodate transmigration settlements of suitable scales, so that the transmigration settlements do not socially and economically disturb the existing communities,
- To prepare the reserve lands for future development both for transmigrants and local people,
- To allow smooth implementation of oil palm plantation development.

Rationale:

In the areas of low population density like most of Central Kalimantan and part of West Kalimantan, the oil palm plantation development usually requires transmigration settlements for attaining necessary labor power. However, the conventional transmigration settlements of 500-2,000 households are too large compared with the existing communities (50-100 households). As a result, the introduction of such large-scale transmigration settlements creates social tension with the existing communities partly due to the acquisition of local people's lands for the development of oil palm plantation and transmigration settlements, and partly due to their social and cultural differences.

In order to avoid unnecessary social tension, it is necessary to carefully design the schemes for oil palm smallholders for both the local people and transmigrants in order to achieve the above objectives.

Careful and participatory landuse planning for oil palm plantation development and transmigration settlement development can attain the following results:

- To develop lands suitable for agriculture development in underdeveloped areas of relatively low population densities
- To improve the economic viability of oil palm plantations by smooth planning and implementation
- To avoid land disputes, labor disputes and other social conflicts between plantation companies and local people and between transmigrants and local people
- To meet the labor requirements for new plantation development in areas of relatively low population densities
- To secure a sustainable livelihood for plasma farmers and transmigrants, including their future generations, i.e., to avoid risks derived from heavy dependence on oil palm plantation

Contents of the Project:

- Participatory landuse planning and land adjustment at the community level for oil palm plantation development and transmigration settlements
- Oil palm plantation development (a modified PIR-Trans scheme)
- Small-scale transmigration settlement development
- Community road development
- Extensive agriculture improvement
- The characteristics of the location of this kind of project are as follows:
- Upland farm areas of relatively low population densities
- Plantation development schemes located in the district of Ketapang, West Kalimantan
- Project locations should be under the following conditions:
- Desa(s) involved in this scheme should be located in areas with plans for oil palm plantation development.
- Designated plantation development areas should already have an approval of the government.
- Land suitable for tree crop development in the designated village should be more than 50% of its total area.

Related Plans, Programs and Projects:

- Oil palm development by private companies
- The Nucleus and Smallholder Estate (PIR) Scheme
- Rural Road Development Project
- Agricultural Resources, Facilities and Infrastructure Development Program
- Agribusiness Development Program
- Transmigration programs in upland areas

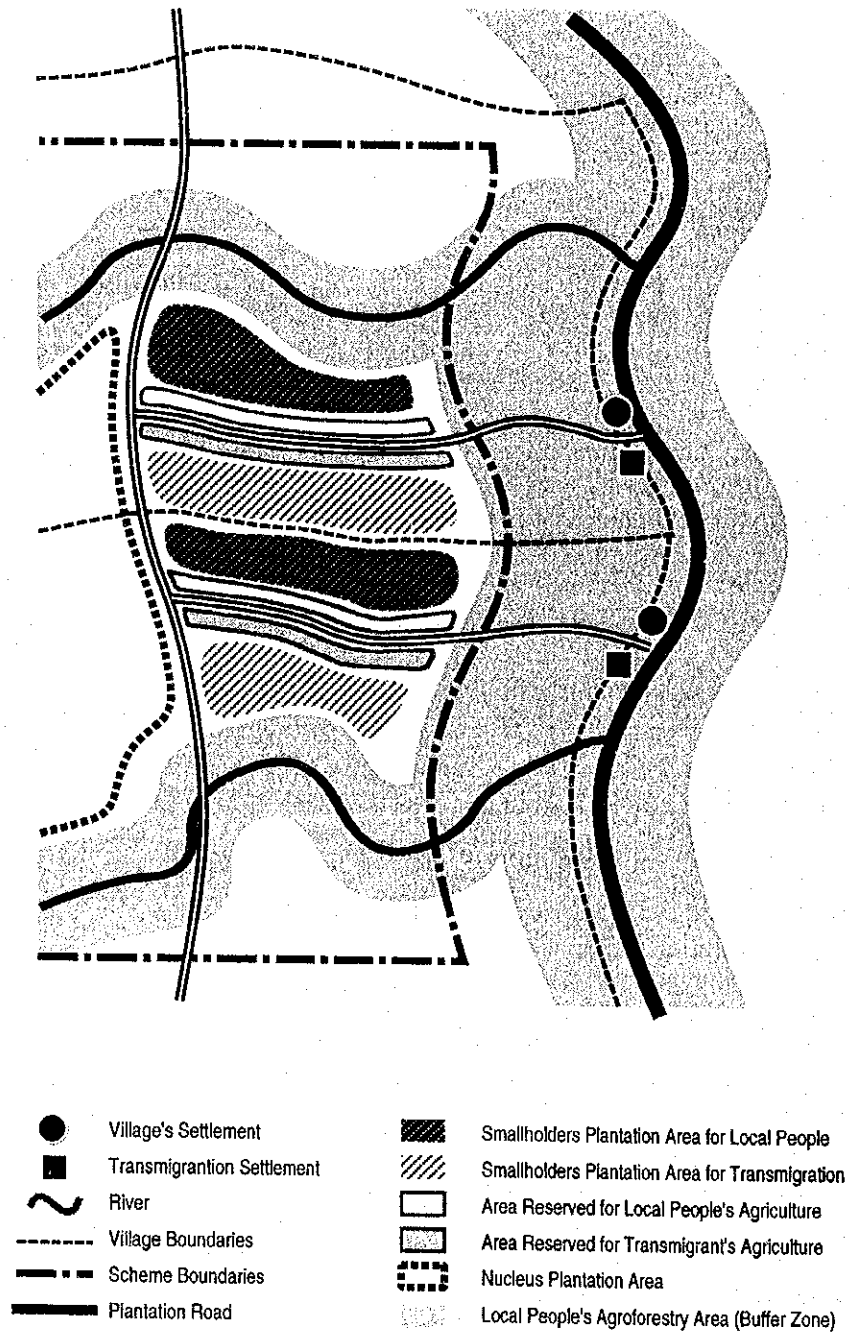
Important Policy Conditions:

- Local farmers' participation at first stage of landuse planning
- Coordination with rural development programs carried out by the public sector
- Modification of the transmigration program to fit with this scheme

Contribution to Different Goals:

- Industrial development in the two provinces (e.g., oleochemical industry development)
- Landuse intensification with agricultural diversification
- Sustainable agricultural development associated with environment conservation
- Stabilization of income sources by crop diversification and sustainable community development
- Smooth rural development by the empowerment of the people in the local community
- Accommodating transmigrants without social and economic conflicts

Figure 8.4.3 Landuse Plan for the Proposed Scheme for Oil Palm Plantation Development with Local Farmers and Transmigrants



Source: JICA-SCRDP Kaltengbar

8.4.5 Special Port Development Project for Crude Palm Oil Loading

Title:

Special Port Development Project for Crude Palm Oil Loading

Sector:

Transportation

Location:

- Telukair, Kendawangan in West Kalimantan
- Sampit and Sukamara in Central Kalimantan

Time to be Implemented:

1999~2003: Engineering Design and Construction
2003~2007: Construction

Institution Responsible for Implementation:

Ministry of Communications
Coordinated and assisted by Provincial Governments

Objectives:

- To secure the outlet of crude palm to outside regions
- To facilitate oil palm plantation development

Rationale:

In the last decade, West Kalimantan has experienced the rapid expansion of large-scale oil palm plantations. In the near future, Central Kalimantan will also go through a similar experience. Since at present there are not enough downstream industries for crude palm oil (CPO) in Kalimantan, CPO produced in Kalimantan's oil palm plantation needs to be transported outside of Kalimantan, to Java or outside of Indonesia. Therefore, port facilities for loading CPO to ships are required promote the development of oil palm plantations.

On the other hand, the bright prospects of the oil palm subsector have disappeared since the beginning of the economic crisis. The oil palm subsector has been facing an emerging unfavorable business environment including high export taxes of CPO and unsupportive road development policies.

In order to promote the oil palm subsector's development in Kalimantan, it is essential for the government to provide infrastructure to support oil palm plantation development and downstream industries. Road and ports handling CPO are among the most needed infrastructure.

Contents of the Project:

- Preparation of the master plan of special port development for CPO loading in West and Central Kalimantan
- Engineering design of selected special ports and supporting infrastructure
- Construction of selected special ports and supporting infrastructure

Related Plans, Programs and Projects:

- Oil palm plantation development by private companies
- The Nucleus and Smallholder Estate (PIR) Scheme
- River transport development plans
- Road development plans
- Commercial port development plans

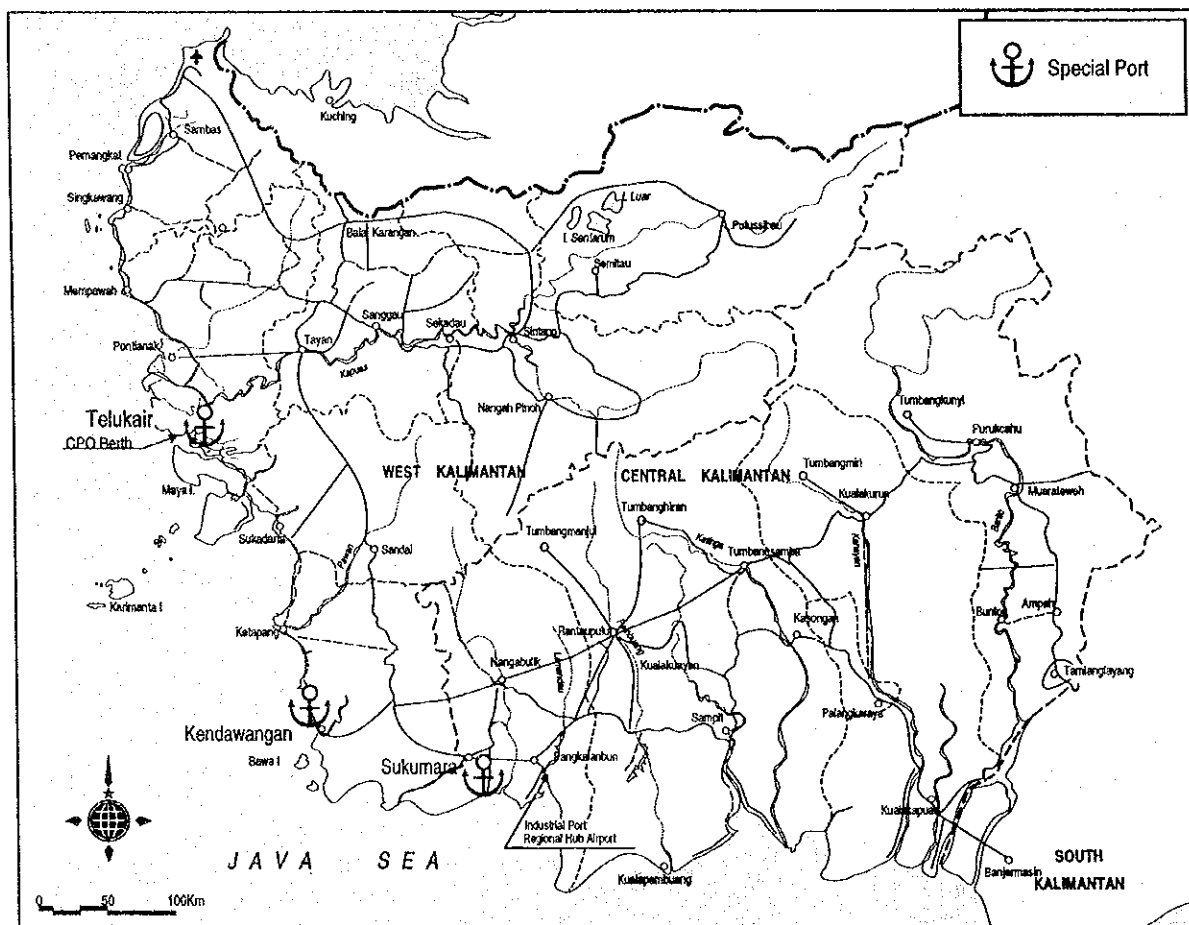
Important Policy Conditions:

- Policies on establishing a good business environment for the oil palm subsector

Contribution to Different Goals:

- Development of oil palm plantation smallholders

Figure 8.4.4 Proposed Location of Special Ports for CPO Loading



Source: JICA-SCRDP Kaltengbar

8.5 KALIMANTAN EXTENSIVE AGRICULTURE IMPROVEMENT PROGRAM

This program includes: 1) Rubber Tree Replanting Project; 2) Rattan Garden Promotion Project; 3) Small Scale Water Resources Management Project. Designated villages will implement the most suitable project(s) applicable to their farmers and communities. Some villages will apply one of these components, while others may apply two or all of these components.

8.5.1 Rubber Tree Replanting Component

Title:

Rubber Tree Replanting Component

Sector:

Agriculture, Forestry and Rural Development

Location:

West Kalimantan, Central Kalimantan, South Kalimantan and East Kalimantan

Time to be Implemented:

1999 ~ 2003: Pilot project by local NGOs in West Kalimantan
2004 ~ 2008: Full-scale Development in the whole Kalimantan

Institutions Responsible for Implementation:

- Directorate General of Plantation, the Ministry of Forestry
- Provincial government

Goals:

- To improve the productivity of rubber plantations in extensive agricultural areas
- To keep the diversity of the income sources of extensive farmers
- To secure a sustainable livelihood for extensive farmers

Rationale:

Rubber smallholders generally practice swidden farming, i.e., cultivate food crops and some other cash crops (e.g., fruits and forest products) together with rubber.

The significance of smallholder rubber production can be summarized as follows:

- 1) Smallholder rubber groves cover more than 95% of the total area of rubber planted.
- 2) More than 90% of the total rubber production in the region is produced by smallholders.
- 3) Rubber smallholders account for nearly one third of the total households in both provinces.
- 4) The smallholders depend on cash income from the sale of rubber for a substantial part of their basic needs.
- 5) Despite the price fluctuation in international markets, rubber is one of the most stable income sources for rubber smallholders, who also cultivate a variety of other crops.
- 6) Second to wood products, rubber is the largest export commodity in both provinces.
- 7) International prices of natural rubber are expected to improve as world demand grows.
- 8) Smallholder rubber groves, which are a low-input agroforestry system with the regrowth of natural forest, contribute to environmental conservation.

The people's rubber is characterized by low land productivity, which is around 500 kg per ha. It is because many of them plant so called local species, non-clone rubber trees. On the other hand, the clone rubber trees could produce much more volume, whose production is more than 1,000 kg per ha. The low productivity rubber groves account for 92% and 86% in terms of planted area in West Kalimantan and Central Kalimantan, respectively.

It is clear that there is a huge potential to increase the output of rubber, considering the existing people's rubber groves of still low productivity. In order to increase the productivity of rubber trees, it is necessary for farmers to plant clone rubber trees. Farmers can grow clone rubber trees when they join government smallholder rubber plantation projects, such as those assisted by World Bank and ADB. However, such project implementation was limited in the number of villages and households involved and rigid in its project management. Therefore, other types of arrangements which encourage farmers to plant clone rubbers is needed. The characteristics of such arrangements are as follows:

- More flexible project arrangement for seedlings, chemicals, credits and planting places
- More flexible availability of clone rubber seedlings or budding material
- Wider and more flexible availability of training of budding skills to farmers
- More flexible availability of credits to buy clone rubber seedlings and chemical package
- More low-cost packages of chemical fertilizers and pesticides to grow clone rubber trees
- More low-cost technical packages, which allow farmers to reduce the input of chemical fertilizers and labor for weeding

Contents of the Project:

- To prevent the existing rubber groves which have been established on swidden fallows from being destroyed by rapid expansion of oil palm plantations
- To encourage the extensive farmers to replant their rubber groves with high-yield rubber trees by the following measures:
 - Developing the low-cost model for replanting high-yield rubber trees
 - Community-based development of bud wood gardens for clone rubber trees
 - Establishing experimental and demonstration plots with the participation of rubber farmers
 - Developing the scheme of flexible assistance for present rubber farmers
 - Training extension workers for this project

Related Plans, Programs and Projects:

- Oil palm plantation development by private companies
- Smallholder Rubber Development Project (SRDP)
- Tree Crop Smallholder Development Project (TCSDP)
- Tree Crop Smallholder Sector Project (TCSSP)
- Smallholder Tree Crop Processing Project (STCPP)
- Smallholder Rubber Agroforestry Program
- Social Forestry Development Project (SFDP)

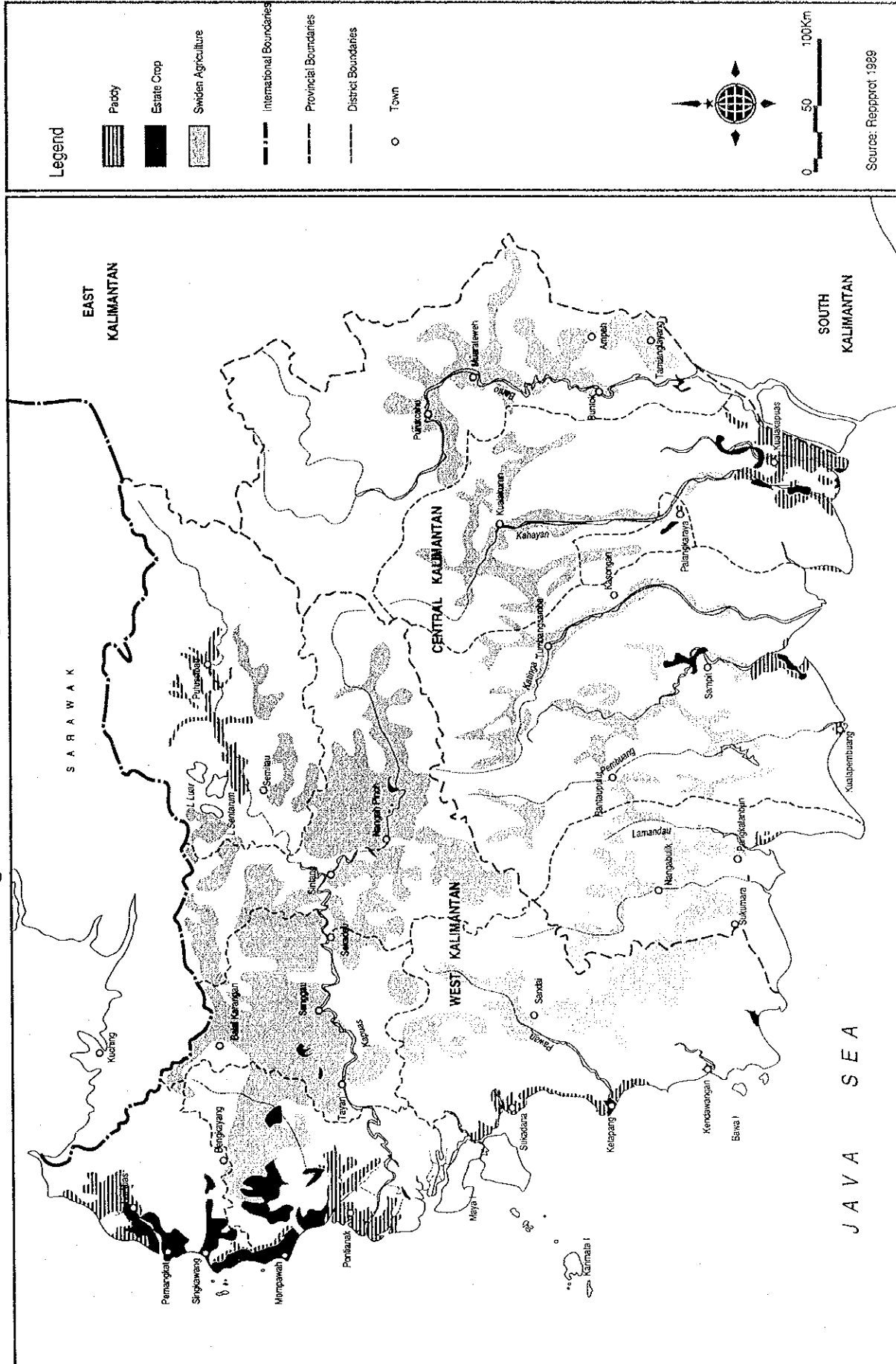
Important Policy Conditions:

- Cooperation with oil palm plantation development projects
- Coordination with rural development programs and projects by other related agencies

Contribution to Different Goals:

- Industrial development, especially rubber manufacturing
- Sustainable agricultural development associated with environment conservation

Figure 8.5.1 Extensive Agriculture Areas



8.5.2 Rattan Garden Promotion Component

Title:

Rattan Garden Promotion Component

Sector:

Forestry, Industry and Trade

Location:

- Central Kalimantan for Pilot Project
- Central Kalimantan, South Kalimantan, East Kalimantan and West Kalimantan for full-scale implementation

Time to be Implemented:

1999 ~ 2003: Pilot Project in Central Kalimantan

2004 ~ 2018: Full-scale Implementation in Central Kalimantan, South Kalimantan, East Kalimantan, and West Kalimantan

Institutions Responsible for Implementation:

- Ministry of Forestry (for approval for the use of forest lands for rattan cultivation)
- Ministry of Industry and Trade (for promotion and assistance for the improvement of processing and marketing, including export)
- Provincial Governments

Goals:

- To promote rattan cane sales in foreign countries
- To promote rattan cultivation in extensive agriculture areas
- To secure a sustainable livelihood for extensive farmers
- To diversify and expand the income sources of extensive farmers
- To diversify upland regional economies

Rationale:

Rattan used to be one of the largest cash income sources for farmers in the two provinces. Their methods of making rattan gardens have been well refined, based on swidden agriculture for paddy and natural regrowth of vegetation in swiddens.

However, since the end of the 1980s, the export ban of semi-processing rattan canes has been implemented. This has lowered the prices of rattan canes considerably. Many rattan farmers also have shifted their efforts to other businesses, such as rubber and informal gold mining.

Recently the export ban was lifted. The export of rattan canes is open now. However, the export ban in the 1990s has changed the situations not only of rattan farmers but also the former importing countries. Some measures to promote rattan cultivation and export are needed now. With some efforts at rattan cane sales promotion, smallholder rattan would be one of the important economic sectors in the two provinces.

Contents of the Project:

- Acknowledgment of smallholder rattan cultivation and its economic importance by the central and local governments
- Research and development (R&D) on rattan cultivating practices by local farmers together with the establishment and management of experimental and demonstration plots with the participation of farmers

- Establishment of marketing promotion organizations to assist in rattan production and export

Related Plans, Programs and Projects:

- Agricultural Resources, Facilities and Infrastructure Development Program
- Agribusiness Development Program
- Integrated Smallholder Estate Crop Development Project
- Replanting- Rehabilitation and Extension of Export Crops (PRPTE)
- Smallholder Tree Crop Processing Project (STCPP)
- Smallholder Rubber Agroforestry Program
- Social Forestry Development Project (SFDP)

Important Policy Conditions:

- Acknowledgment of rattan cultivation by local people who practice extensive agriculture and its economic importance by the Ministry of Forestry
- Coordination with rural development programs and projects by other related agencies

Contribution to Different Goals:

- Stabilization and diversification of the sources of smallholder incomes by crop diversification
- Sustainable rural and community development

8.5.3 Small-Scale Water Resources Management Component

Title:

Small-Scale Water Resources Management Component

Sector:

Agriculture, Rural Community Development and Water Resources

Location:

- West Kalimantan, Central Kalimantan and East Kalimantan
- Any upland and extensive agriculture areas where wetland paddy cultivation is practiced
- Lands suitable for wetland paddy in hilly and mountainous areas
- Villages with a land of 5 ~ 25 ha suitable for wetland paddy cultivation

Time to be Implemented:

1999 ~ 2003: Pilot Project by Local NGOs in West Kalimantan
2004 ~ 2018: Full-scale Improvement in West Kalimantan, Central Kalimantan and East Kalimantan

Institutions Responsible for Implementation:

- Regional Offices of Ministry of Public Works (Kanwil PU)
- Provincial Offices of Public Works (Dinas PU)

Goals:

- To stabilize food self-sufficiency in the region
- To improve the productivity of wetland paddy cultivated in hilly and mountainous areas
- To secure a sustainable livelihood for farmers in upland agricultural areas
- To provide a domestic water supply for local communities

Rationale:

The stabilization of food self-sufficiency is the most important issue for the study area. The study area is not self-sufficient in rice and the deficit will grow without effective measures. Other regions of the country do not have a large surplus of rice to support the population of the study area (rice import is estimated to be more than one million tons in 1998). The prices of rice are expected to rise as the supply and demand situation becomes tighter in domestic and world markets.

There exist some potential areas for wetland paddy fields whose productivity can be enhanced with small-scale irrigation systems. Small-scale investment and self-reliant type implementation can be applied.

In the last ten years, the frequency of long and severe drought has increased. To respond to this climate change, as well as to the productivity decrease of their upland extensive farming, the farmers increasingly feel the necessity of having some wetland paddy fields, if possible irrigated ones.

Contents of the Project:

- Identification of communities which have small-scale potential of irrigation in upland areas
- Construction of small-scale irrigation canal hoed works, gates etc. for areas between 5 to 25 ha
- Water pipelines and primary water treatment to facilitate the community's access to clean water

Related Plans, Programs and Projects:

- Rural Water Supply and Sanitation Sector Project
- Agricultural Resources, Facilities and Infrastructure Development Program
- Food and Nutrient Diversification Program
- Village Irrigation Program (PID)
- Irrigated Agriculture Development Project
- Smallholder Food Crop Agriculture Development Project

Important Policy Conditions:

- It is necessary to provide the farmers (with irrigated fields in upland areas) with extension works more suitable to the local farmers conditions, so that the farmers become used to the usage of chemical fertilizers and pesticides.
- It is necessary to make more credit available to wetland paddy farmers in upland areas so that they can use more chemical inputs.

Contribution to Different Goals:

- Improvement of local people's living conditions
- Community development with the participation of farmers and village leaders

8.6 KALIMANTAN LOWLAND AGRICULTURAL DEVELOPMENT PROGRAM

8.6.1 Lowland Irrigation Systems Improvement Project in Kalimantan

Title:

Lowland Irrigation Systems Improvement Project in Kalimantan

Sector:

Agriculture and Water Resources

Location:

- Any subdistrict in lowland agricultural areas where potential and feasibility exist in West Kalimantan and Central Kalimantan
- Farm lands suitable for wetland paddy cultivation (See the potential area in Figure 8.6.1.)

Time to be Implemented:

2004 ~ 2018: Needs Identification and Implementation

Institutions Responsible for Implementation:

- Ministries of Public Works and Agriculture
- The local governments of the two provinces, especially the provincial department of public works

Goals:

- To stabilize food self-sufficiency in the study area
- To improve the productivity of wetland paddy cultivated in lowland agricultural areas
- To raise the incomes of wetland paddy farmers
- To improve the existing non-technical irrigation systems
- To construct small or medium scale irrigation facilities for the existing rain-fed paddy fields

Rationale:

The study area is not self-sufficient in rice and the deficit will grow without effective measures. Other regions of the country do not have a large surplus of rice to support the population of the study area (rice import is estimated to be more than one million tons in 1998). The prices of rice are expected to rise as the supply and demand situation becomes tighter in domestic and world markets. There exist some wetland paddy fields whose productivity can be enhanced with better irrigation systems.

Contents of the Project:

- Improvement of the existing semi-technical and non-technical irrigation systems
- Construction of small or medium scale irrigation facilities in the existing rain-fed paddy fields (25 ~ 1,000 ha)
- Intensification of wetland paddy production in the irrigation schemes
- Provision of seeds, fertilizers, tools and equipment on a pilot basis
- Establishment and management of demonstration plots with farmers' participation to demonstrate the effect of improved paddy production technology

- Technical training for Dinas staff, extension workers, farmers and village leaders on village irrigation operation and maintenance, intensive farming systems, post harvest technology, water supply and sanitation, etc.

Related Plans, Programs and Projects:

- Agricultural Resources, Facilities and Infrastructure Development Program
- Food and Nutrient Diversification Program
- Village Irrigation Program (PID)
- Irrigated Agriculture Development Project
- Integrated Swamp Development Project
- Smallholder Food Crop Agriculture Development Project

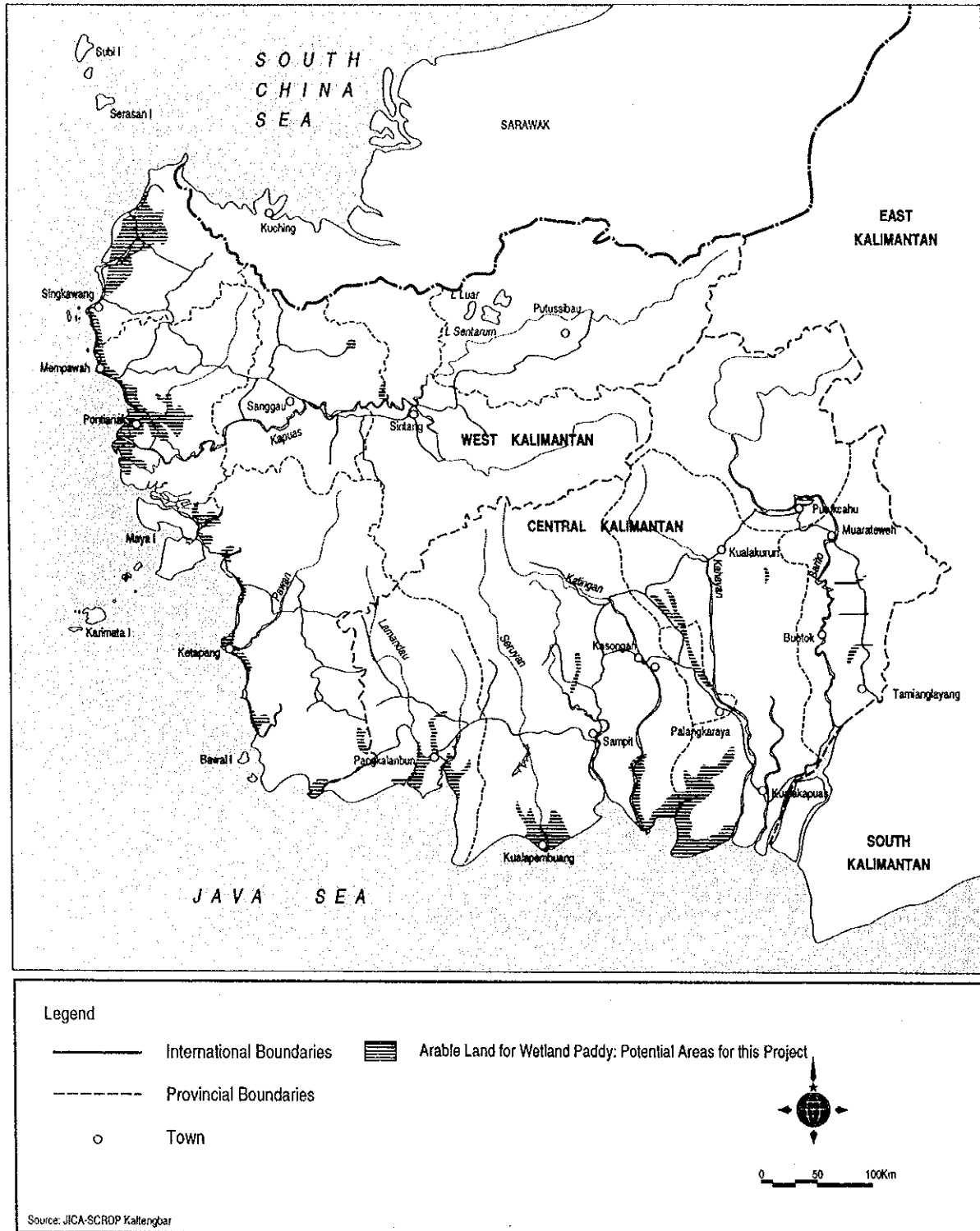
Important Policy Conditions:

- Coordination between the Ministry Public Works and the Ministry of Agriculture

Contribution to Different Goals:

- Soil conservation by the introduction of improved farming techniques
- Community development with participation of farmers and village leaders in the project
- Water supply for domestic use

Figure 8.6.1 Potential Areas for the Irrigation Systems Improvement Project



8.6.2 Agricultural Products Value-added Enhancement Project in Kalimantan

Title:

Agricultural Products Value-added Enhancement Project in Kalimantan

Sector:

Agriculture, Industry and Trade

Location:

- Any subdistrict in lowland agricultural areas with potential for enhancing the value added of agricultural products by the improvement of farming techniques, processing, packaging, marketing, etc.
- Any village that does or tries to improve the value added of their agricultural products by such means as processing, packaging, cooperative marketing, partnerships with the private business sector, etc.
- The Districts of Sambas, Pontianak and Ketapang in West Kalimantan and the lowland areas of every district in Central Kalimantan

Time to be Implemented:

2004 ~ 2018

Institutions Responsible for Implementation:

- Ministries of Agriculture and Industry and Trade
- The local governments of the two provinces

Goals:

- To raise the incomes of smallholder farmers
- To improve the value added of agricultural products in the study area
- To increase market-oriented agricultural production in villages with little experience
- To strengthen village level facilities and institutions for market-oriented agricultural production
- To facilitate project management and institutional capacity building

Rationale:

Agricultural products and their processed products significantly contribute to the economy of the study area. Many farmers in lowland agricultural areas lack necessary and/or effective means of adding value to their products. The quality of agricultural raw materials are not good enough and their supply is not stable to support industrial development. Demand for fresh and processed agricultural products is growing and expected to grow in the future along with income growth and urbanization. There exist markets for agricultural products in Java and surrounding countries, especially Singapore and Malaysia. New demand for food will be created on Natuna Island upon its development

Contents of the Project:

- Establishment of farmer groups/ cooperatives for market oriented agricultural production (including food crops, horticulture, tree crops, and livestock) and agro-processing in the forms of canning, drying, freezing, juice and concentrate production, etc.

- Provision of credit for farmers, their groups/ cooperatives and small scale agro-based processing industries and traders
- Improvement of public sector support facilities, such as market access roads, markets, seed production facilities, veterinary centers, etc.
- Consultation to promote partnerships between farmers and the private sector
- Marketing promotion for domestic and export markets
- Establishment of training centers for extension workers and farmers on post harvest technology, packaging, processing, marketing, etc.
- Technical and institutional training for Dinas staff

Related Plans, Programs and Projects:

- Agricultural Resources, Facilities and Infrastructure Development Program
- Agribusiness Development Program
- Food and Nutrient Diversification Program
- Integrated Smallholder Food Crop Agriculture Development Project
- Integrated Smallholder Estate Crop Development Project
- Integrated Smallholder Livestock Development Project
- Smallholder Tree Crop Processing Project (STCPP)
- Integrated Economic Development Area (KAPET) for the district of Sanggau
- Integrated Economic Development Area (KAPET) for the Kahayan Kapuas Barito (KAKAB) area
- Integrated Economic Development Area (KAPET) for the Sampit And Pangkalanbun (SANBUN) area
- Natuna Island Development Project

Important Policy Conditions:

- Coordination between the Ministry Agriculture and the Ministry of Industry and Trade

Contribution to Different Goals:

- Food and nutrient diversification
- Community development with the participation of farmers and village leaders in the project
- Diversification of economic activities in the two provinces

8.7 KALIMANTAN COMMUNITY FORESTRY DEVELOPMENT PROGRAM IN FORMER TIMBER CONCESSION AREAS

Title:

Kalimantan Community Forestry Development Program in Former Timber Concession Areas

Sector:

Forestry and Village Development

Location:

Communities located in Ex-HPH areas (former timber concession areas), Production Forest areas in West Kalimantan, Central Kalimantan and East Kalimantan

Time to be Implemented:

2004 - 2008: Model development & Pilot Projects Implementation in West Kalimantan
2009 - 2018: Application to all the designated development schemes in West Kalimantan, Central Kalimantan and East Kalimantan

Institutions Responsible for Implementation

- Implementation by local farmers and local communities
- Local governments at the provincial and district levels
- Ministry of Forestry

Goals:

- To maintain the forest resources of logged-over forests for sustainable use
- To provide an income source for the local people who live in logged-over forests
- To avoid land disputes, labor disputes and other social problems in logged-over forests
- To secure a sustainable livelihood for the local people and their future generations

Rationale:

In the huge forest areas of Kalimantan, it is impractical and unrealistic for the government or the provincial forest service of the local government to effectively control all of the forests, including the enforcement of forestry management. A more decentralized management system is needed for forest management to ensure sustainable regional development. Larger powers to dispose of or conserve forest resources should be given to the provincial government. At the same time, more substantial power to control forests within their own territory should be given to local communities.

The present schemes for logging concession (HPH) and industrial tree plantation (HTI) have been applied to large companies. For seeking the above goals, some institutional arrangements, which enable local communities to implement HPH and HTI (so called "Local HPH and Local HTP"), are required for forest management by local people who live in logged-over forest areas.

Through this program, local farmers in upland remote areas can keep the existing livelihood means by securing existing extensive agriculture land. Local people do not have to resettle, therefore the community base (territory, secondary forest, settlements and social organizations) will not be disturbed by developments.

Contents of the Project:

- Review of the existing landuse plan and local people's landuse in the forest areas of Kalimantan
- Establishment of basic rules and guidelines for the social forestry program for Kalimantan
- Development of alternative models of the social forestry program suitable for Kalimantan
- Identification of suitable areas for applying the social forestry program for pilot projects
- Formulation of a landuse plan for each community for pilot projects
- Establishment of agreement between the community and the government for pilot projects
- Community road development and maintenance in pilot projects
- Implementing extensive agriculture improvement efforts in pilot projects
- Evaluation of the results of the pilot project implementation
- Full-scale implementation of the program in other Kalimantan provinces

Related Plans, Programs and Projects:

- Industrial Tree Plantation Schemes (HTI)
- Social forestry program for timber concession companies (Former Bina Desa Hutan)
- Production Forest Management Unit(KPHP)

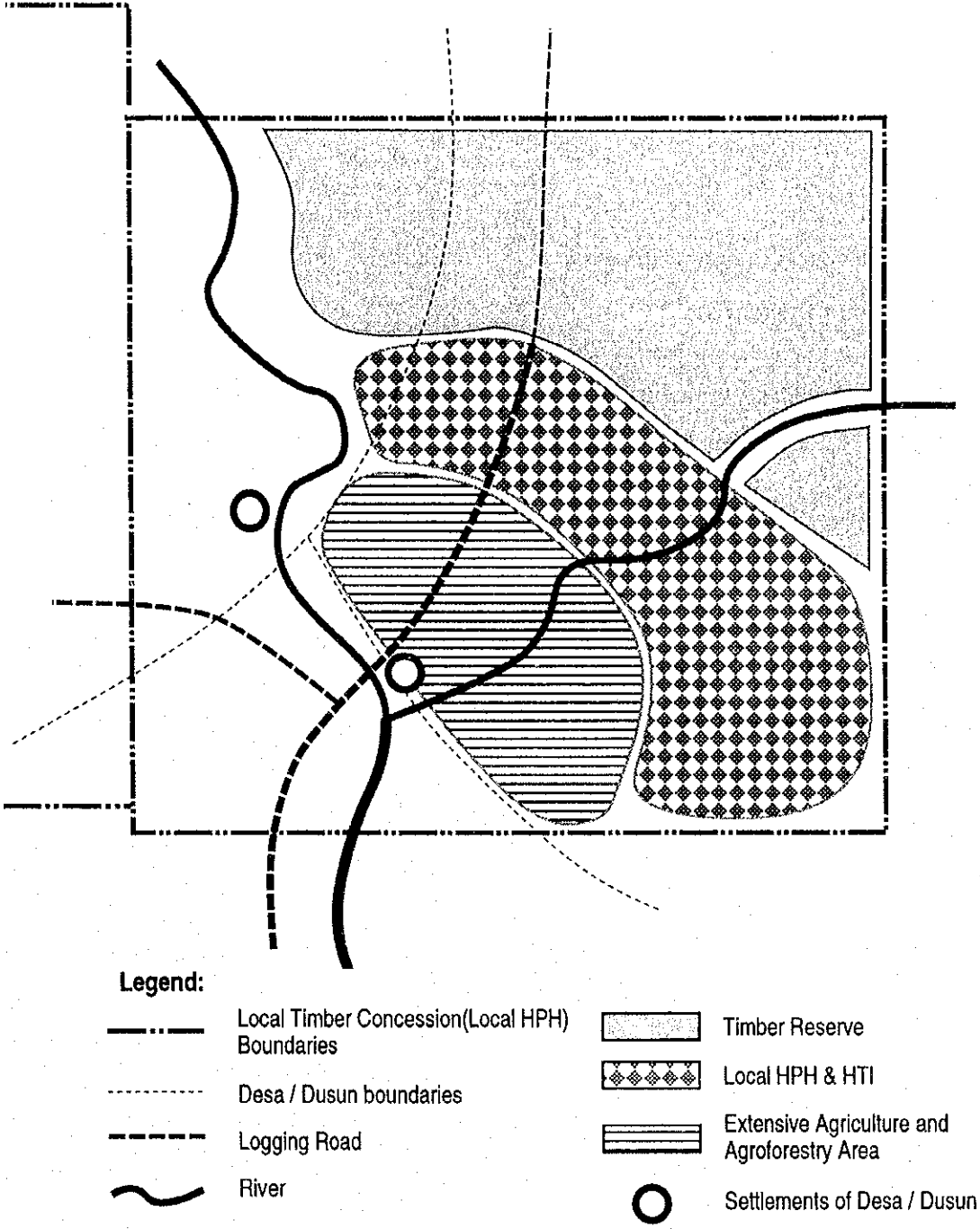
Important Policy Conditions:

- Acknowledgment of local people's land use in the forest

Contribution to Different Goals:

- Environmental conservation in logged-over forests
- Smooth rural development by the empowerment of the peoples in the local community

Figure 8.7.1 Kalimantan Community Forestry Development Scheme (Local HPH and Local HTI Scheme)



Source: JICA-SCRDP Kaltengbar

8.8 TRANS-KALIMANTAN HIGHWAY PROGRAM

8.8.1 Trans-Kalimantan Highway Southern Route: Tayan-Pangkalanbun

Title:

Trans-Kalimantan Highway Southern Route: Tayan-Pangkalanbun

Sector:

Road

Location:

West Kalimantan and Central Kalimantan

Time to be Implemented:

1999-2003: Review of Feasibility Studies and Alternative Route Study

2004-2008: Engineering Design and Construction Works

Institutions Responsible for Implementation:

- Directorate General of Highway (Bina Marga) of Ministry of Public Works
- Provincial Office of Public Works

Goals:

- To facilitate an orderly development pattern along the highway
- To connect major urban centers in Kalimantan
- To provide easy accessibility for local people in upland areas
- To encourage sustainable oil palm plantation development in upland areas

Rationale:

The development of the road sections of Trans-Kalimantan Highway Southern Route between Tayan and Pangkalanbun has been delayed although they have been designated as one of the most promising parts of the highway. There are some existing roads without pavement. However, since no road connection has been available in the areas for a long time, any substantial road traffic to justify the upgrading the roads cannot be expected soon. According to this kind of reasoning, the road section crossing the provincial boundary between West and Central Kalimantan is the least prospective in the upgrading of roads.

However, the situations surrounding road transport have changed greatly in the 1990s. The middle stream towns, Sanggau and Sintang, are connected to Pontianak by well paved roads. The new road connecting Pontianak and Tayan is under construction, resulting in reducing travel time between Pontianak and the middle stream areas. In the age of road development, further road development expanding the road network is considered to create more benefits than before.

The road sections between Tayan and Pangkalanbun of Trans-Kalimantan Highway can be justified for the following three reasons. First, the highway development will improve social conditions by increasing access to public facilities, jobs, and markets. Second, the highway expects to play a important function as a facilitator of the regional development. The highway construction will be completed within the two years between Pontianak and Tayan section which improve access to Nangatayap areas where the palm plantation developments are in progress. The areas will become a major economic centers for producing palm oil. Kumai has become a regional center of oil palm and its related industries with additional port facilities.

Therefore, road network could be economically justified those development potentials of the region. Third, the road development in the upland will relieve development pressures of the lowland peat swamp areas.

Asian Development Bank (ADB) financed a technical assistance project for feasibility study on Trans-Kalimantan Highway: Nangatayap and Kudangan section in 1995. The study revealed that the road development generates sufficient benefits of an economic internal rate of return beyond 15 %.

Contents of the Project:

Review of feasibility study, and alternative route study

In order to increase the benefits of Ketapang District from the Trans-Kalimantan Highway Project, it is necessary to consider the improvement of the access roads from Ketapang town to the highway running through upland areas.

At this stage of study, it is necessary to examine the needs of rehabilitation of the access roads from Ketapang town to the Trans-Kalimantan Highway running through upland areas.

Engineering design and Construction works

The project road are divided into four sections, which need a combination of new construction and upgrading works as shown below. The proposed highway has a 4.5 m-wide penetration macadam pavement with 2.75 m-wide earth shoulders. To complete Tayan and Sintang Runtu section of the highway, it takes US\$ 49.26 million at the 1995 price.

Trans-Kalimantan Southern Route: Tayan-Pangkalanbun Section Types of Construction and Costs

	Road Section		Distance	Construction Cost (US \$ Million)	Types of Construction	Remark/Source
	From	To				
1	Tayan	Nangatayap	207.7	13.0	Upgrading of Pavement	Bina Marga's Cost Estimate, excluding the road section between Aur Kuning and Sandai (36 km)
2	Nangatayap	Provincial Border	53.6	10.0	New Construction	ADB Study
3	Provincial Border	Kudangan	93.4	4.5	New Construction	ADB Study
4	Kudangan	Sintang Runtu	195.1	21.8	Upgrading of Pavement	Bina Marga's cost estimate
Total			549.8	49.3		

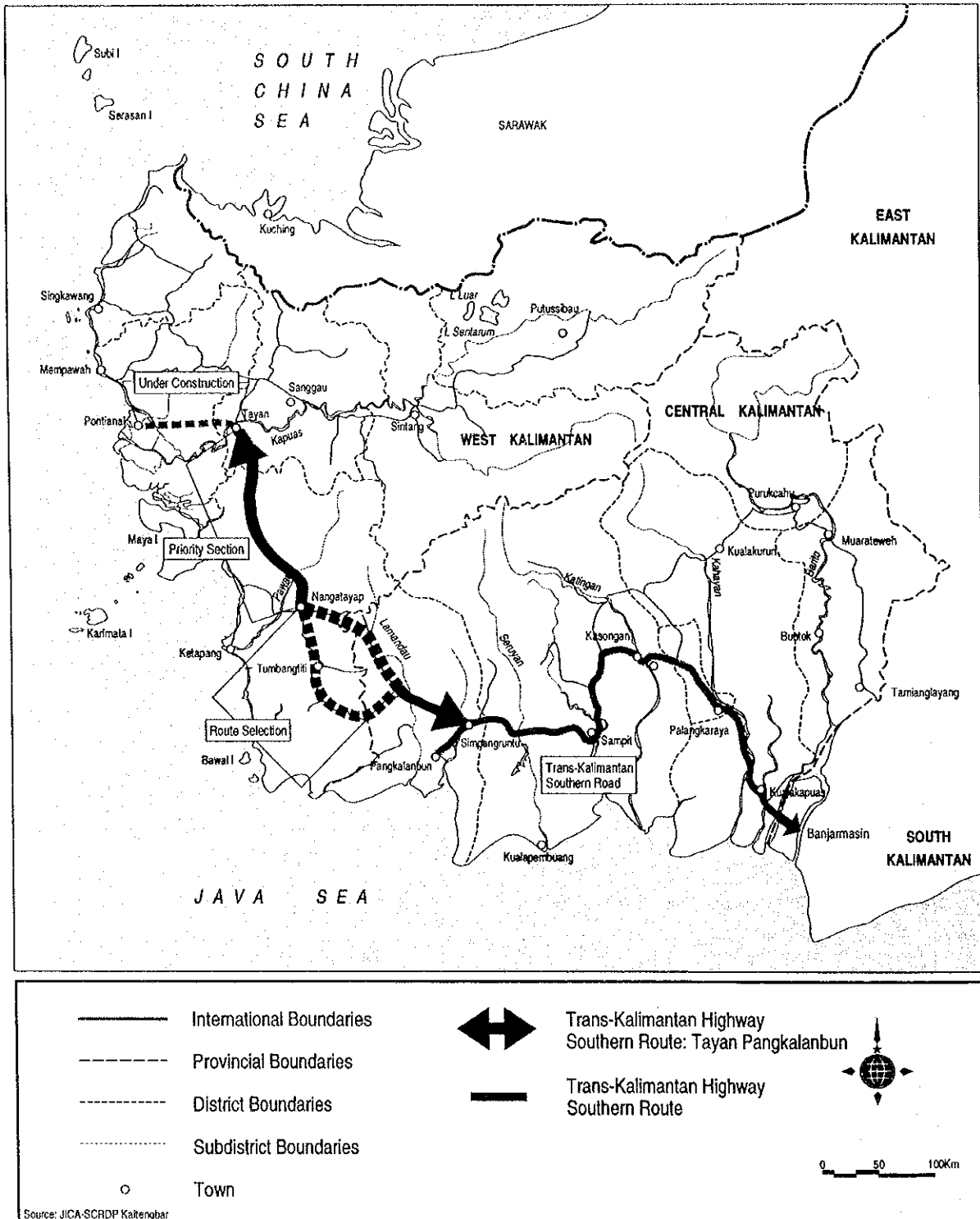
Related Plans, Programs and Projects:

- The Upland Ecological Development Corridor (recommended by JICA SCRDP-Kaltengbar)
- The Trans-Kalimantan Highway Program

Important Policy Conditions:

- The government needs to introduce an alternative principle to road development in Eastern Indonesia other than economic feasibility based on traffic demands.

Figure 8.8.1 Trans-Kalimantan Highway Southern Route: Tayan-Pangkalanbun



8.8.2 Trans-Kalimantan Highway Southern Route: Tayan Bridge

Title:

Trans-Kalimantan Highway Southern Route: Tayan Bridge

Sector:

Road

Location:

- Tayan Subdistrict, Sanggau District, West Kalimantan

Time to be Implemented:

2004 ~ 2008: Engineering Design and Construction Works

Institutions Responsible for Implementation:

- Directorate General of Highway (Bina Marga) of Ministry of Public Works

Goals:

- To integrate Ketapang District with the Kapuas river basin, especially with Pontianak
- To complete the connection of the Trans-Kalimantan Highway Southern Route
- To improve the service level of the Trans-Kalimantan Highway Southern Route
- To induce economic activities in the southern part of the Kapuas river

Rationale:

The Southern Route of the Trans-Kalimantan Highway has the highest priority among the three routes of the Trans-Kalimantan Highway. The Southern Route starts from Pontianak to Tayan, extending to the south, through the district of Ketapang to the district of Kotawaringin Barat, Central Kalimantan. With the completion of the Southern Route, Pontianak could be a major regional urban center, which have a wide coverage including not only the Kapuas river basin but also the district of Ketapang.

Although the roads extending into the upper stream areas of the Kapuas river basin have been well established, the roads from the Kapuas river basin toward the south, Ketapang district, have not yet been well prepared. In particular, there is no bridge to connect the existing national road (part of the Southern Route of the Trans-Kalimantan Highway) with Ketapang district, the southern part of the province of West Kalimantan.

Tayan is the subdistrict town which is located in the middle stream area of the Kapuas river. The national highway between Pontianak and Tayan is under construction by ADB loan. After the completion of this road and a bridge crossing the Kapuas river, Tayan will be a strategically important town in terms of both road and river transportation.

Tayan bridge is crucial for the Trans-Kalimantan Highway Southern Route to provide easy crossing for road users. The bridge could enhance the integration of areas within the province of West Kalimantan.

Contents of the Project:

- Feasibility Study
- Engineering design of Tayan Bridge
- Terminal planning study both for road and river transport
- Urban planning study for Tayan town
- Construction works of Tayan Bridge

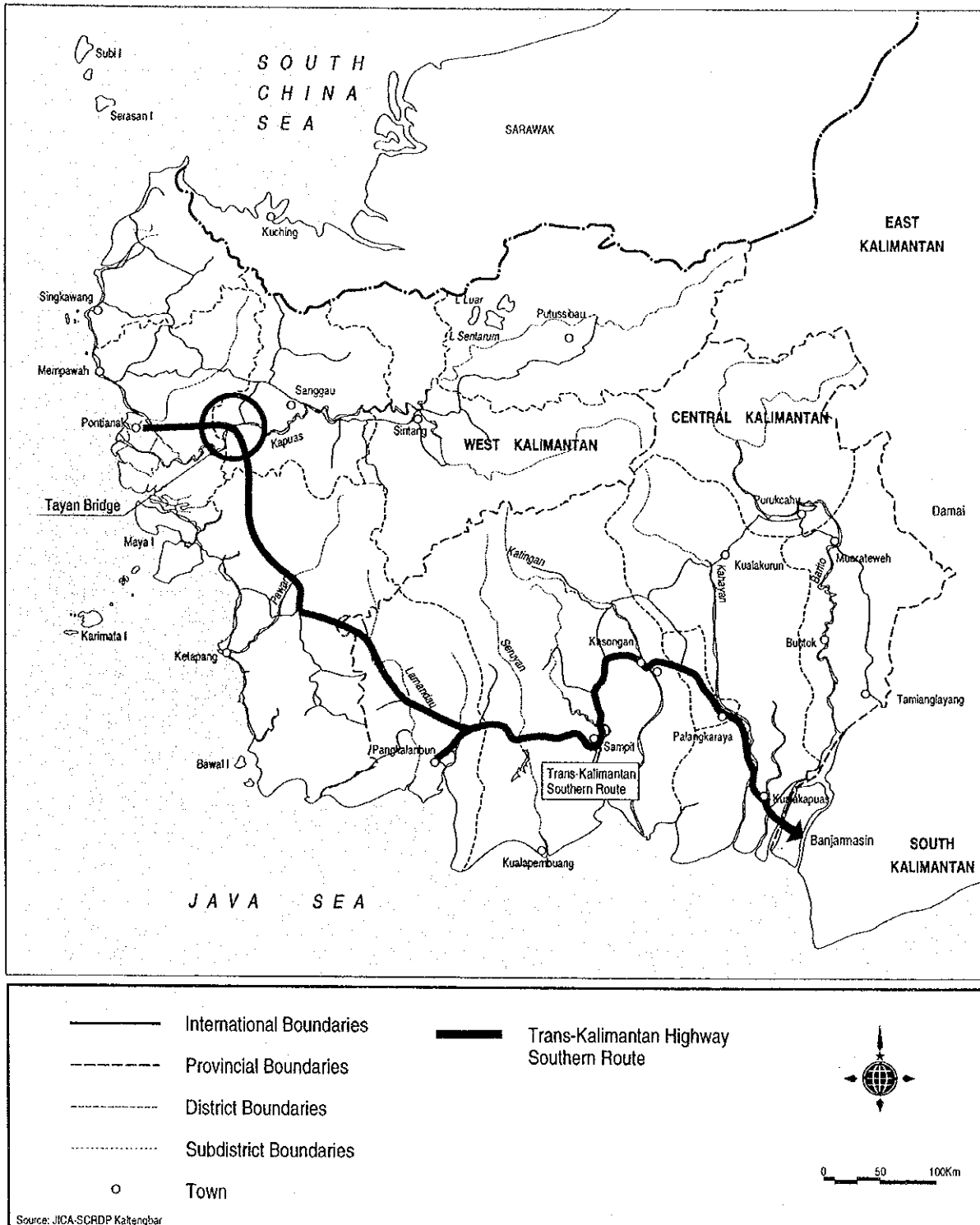
Related Plans, Programs and Projects:

- Pontianak-Tayan Road under construction with ADB Loan
- The Trans-Kalimantan Highway Southern Route
- KAPET Sanggau

Important Policy Conditions:

- The government should understand the importance of public budgets for improving roads in underdeveloped areas, such as Eastern Indonesia.

Figure 8.8.2 Trans-Kalimantan Highway Southern Route: Tayan Bridge



8.8.3 Trans-Kalimantan Highway Southern Route: Improvement of Banjarmasin-Palangkaraya-Pangkalanbun

Title:

Trans-Kalimantan Highway Southern Route: Improvement of Banjarmasin-Palangkaraya-Pangkalanbun

Sector:

Road

Location:

- Central Kalimantan

Time to be Implemented:

- 1999-2003: Rehabilitation Works of Banjarmasin-Palangkaraya-Pangkalanbun
- 2004-2013: Further Improvement Works of Banjarmasin-Palangkaraya-Pangkalanbun

Institutions Responsible for Implementation:

- Directorate General of Highway (Bina Marga) of Ministry of Public Works

Goals:

- To increase the level of integration of Banjarmasin and Central Kalimantan
- To increase the level of integration between adjacent river basins of Central Kalimantan
- To improve the service level of the Trans-Kalimantan Highway Southern Route

Rationale:

The Southern Route of the Trans-Kalimantan Highway has the highest priority among the three routes of the Trans-Kalimantan Highway. The Southern Route connects regional-level urban centers, such as Pontianak, Banjarmasin, Balikpapan and Samarinda.

The road construction between Banjarmasin and Palangkaraya including two bridges was completed last year, but some of the sections are still in poor conditions. The road construction between Palangkaraya and Pangkalanbun via Sampit was also completed, but some of the sections are not at the level of all-weather roads. In order to realize the full benefit from the construction, it is necessary to make continuous efforts at rehabilitate the road sections. Moreover, in the future, it will be necessary to upgrade the level of roads, which enable high mobility in the region.

Contents of the Project:

- Rehabilitation Works of Banjarmasin-Palangkaraya-Pangkalanbun
- Engineering Design for upgrading Banjarmasin-Palangkaraya section
- Construction works for upgrading Banjarmasin-Palangkaraya section

Related Plans, Programs and Projects:

- Pontianak-Tayan Road under construction with ADB Loan
- KAPET Sanggau

Figure 8.8.3 Trans-Kalimantan Highway Southern Route: Improvement of Banjarmasin-Palangkaraya-Pangkalanbun

