

**THE STUDY FOR IMPROVING RURAL PEOPLE’S LIVELIHOODS
THROUGH AGRICULTURAL ACTIVITIES
AND SOUND NATURAL RESOURCES MANAGEMENT
IN THE STATE OF AMAZONAS IN THE FEDERATIVE REPUBLIC OF BRAZIL**

MAIN REPORT

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List of Abbreviation

	<i>Portugues</i>	<i>English</i>
AAM	Associação Amazonense dos Municípios	Amazon Municipalities' Association
ACER	-	Guarana Extension Agency (Brazil Government)
AFEAM	Agência de Fomento do Estado do Amazonas	Foment Agency of the Amazon State
AMA	Apoio ao Monitoramento e Análise	Supporting for Monitoring and Analysis (PPG7 subprogram)
ANDEF	Associação Nacional de Defesa Vegetal	National Association of Vegetable Protection
APAE	Associação de Pais e Amigos dos Excepcionais	NGO
APIR	Associação dos Povos Indígenas de Roraima	Indigenous People's Association in Roraima
ASCOPE	Associação das Cooperativas do Amazonas	Agricultural Cooperative (Itacoatiara)
ASTRI	Associação de trabalhadores rurais de Iranduba	Rural Labors Association in Iranduba
ATER	Assistência Técnica e Extensão Rural	Technical Assistant/Rural Extension Program
BASA	Banco da Amazônia	Bank of Amazon
BB	Banco do Brasil	Bank of Brazil
BEA	Banco do Estado do Amazonas	Bank of Amazon State
BNB	Banco do Nordeste	Bank of Northeast
BNDES	Banco Nacional de Desenvolvimento Econômico e Social	National Bank of Economical and Social Development
CAMTA	Cooperativa Agrícola Mista de Tomé-Açu	Fruits Processing Association in Tomé-Açu
Cantina	-	Floating Store of ASCOPE (Itacoatiara)
Cartorio	-	System of Notary Public in Rural Area
CEASA	Centrais de Abastecimento do Amazonas	Amazon Food Supply Central
CEDR	Conselhos Estaduais de Desenvolvimento Rural	State Council of Rural Development
CEF	Caixa Econômica Federal	Federal Savings Bank (Dept.)
CEPLAC	Comissão Executiva do Plano da Lavoura Cacaueira	Executive Commission of the Cocoa Plantation Plan
CEPNOR	Centro de Pesquisas e Extensão Pesqueira do Norte do Brasil	Fishing Research and Extension Center in the North of Brazil
CIEAM	Centro da Indústria do Estado do Amazonas	Industry Center of the Amazon State
CITES	Convenção sobre o Comércio Internacional de Espécies Ameaçadas	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLT	Consolidação das Leis do Trabalho	Consolidation of the Labor Laws
CMDR	Conselho Municipal do Desenvolvimento Rural	Municipal Council of Rural Development
CNDR	Conselho Nacional de Desenvolvimento Rural	National Council of Rural Development
CNP	Confederação Nacional dos Pescadores	National Fishery Cooperative
CODEAGRO	Companhia de Desenvolvimento Agropecuário	Agropecuary Development Company
COIAB	Coordenação das Organizações Indígenas da Amazônia Brasileira	Indigenous Organization Coordination of the Brazilian Amazon
CONAMA	Conselho Nacional do Meio Ambiente	National Environment Council
CONTAG	Confederação Nacional dos Trabalhadores Agrícolas	National Confederation of the Agricultural Workers
CPF	Cadastro de Pessoas Físicas	Land Register (Certificate)
CPT	Comissão Pastoral da Terra	Pastoral da Terra Commission
CREA	Conselho Regional de Engenharia, Arquitetura e Agronomia	Regional Council of Engineering, Architecture and Agronomy
DECEX	Departamento de Operações de Comércio Exterior	Department of Operations of External Trade
DFA	Delegacia Federal da Agricultura	Department of Fishery and Aquaculture, MAA
DFID	Departamento para Desenvolvimento Internacional, UK (Department of International Development)	Department of International Development, UK

	<i>Portugues</i>	<i>English</i>
DNOS	Departamento Nacional de Obras e Saneamento	National Department of Works and Sanitation
DPA	Declaração de Produtor Antigo	Federal Delegation of Agriculture, MAA
DRT	Delegacia Regional do Trabalho	Regional Labor Office
EAFM	Escola Agrotecnica Federal de Manaus	Federal Agro-technical School in Manaus
EEZ	Exclusive Economic Zone	Exclusive Economic Zone
EIA	Estudo sobre Impacto Ambiental Taxa de Impacto Ambiental (TIA) Relatório de Impacto Ambiental (RIMA)	Environmental Impact Assessment
EMBRAPA	Empresa Brasileira de Pesquisa Agropecuária	Brazilian Agricultural Research Enterprise
FAO	Organização Internacional de Alimentos e Agricultura	Food and Agriculture Organization of the United Nations
FCO	Fundo Constitucional de Financiamento do Centro-Oeste	Constitutional Fund for Central-west Region
FEPESCA	Federação dos Pescadores	Fishermen Federation
FEPESCA/AM/RR	Federação dos Trabalhadores na Agricultura	Fishermen Federation – Amazon/Roraima
FETAGRI	Federação das Indústrias do Estado do Amazonas	Federation of Rural Labors
FIEAM	Financiadora de Estudos e Projetos	Industry Federation of the Amazon State
FMPES	Fundo de Apoio às Micro e Pequenas Empresas e Desenvolvimento Social do Estado do Amazonas	State Fund to Assist Farmers, Breeders and Small Industries
FNE	Fundo Constitucional de Financiamento do Nordeste	Constitutional Fund for North-east Region
FNO	Fundo Constitucional de Financiamento do Norte	Constitutional Fund for North Region
FPM	Fundo de Participação dos Municípios	Municipal Tax
FTI	Fundo de Fomento ao Turismo e Interiorização do Desenvolvimento do Estado do Amazonas	Fomentation Fund to Tourism and Interiorization Development of the State of Amazonas
FUA	(Fundação) Universidade do Amazonas	Amazon Federal University
FUNAI	Fundação Nacional do Índio	National Indian Foundation
FUNASA (FNS)	Fundação Nacional de Saúde	National Health Foundation
FVA	Fundação Vitoria Amazonica	Amazon Vitoria Foundation (NGO)
GDP	PIB (Produto Interno Bruto)	Gross Domestic Product
GIAC	Grupo Internacional de Ajuda Científica	International Group of the Scientific Assistance
GMP	BPM (Boas Práticas de Manufatura)	Good Manufacturing Practices
GTZ	Gesellschaft für Technische Zusammenarbeit	German Aid Agency
HACCP	APPCC (Análise de Perigo de Pontos de Críticos de Controle)	Hazard Analysis Critical Control Point
IBAMA	Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis	Brazilian Institute of Renewable Environment Resources
IBDF	Instituto Brasileiro de Desenvolvimento Florestal	Brazilian Institute of Forest Development
IBGE	Instituto Brasileiro de Geografia e Estatística	Brazilian Geography and Statistic Board
ICMS	Imposto Sobre Circulação de Mercadorias e Serviços	Tax on Circulation of Goods and Services
ICOTI	Instituto de Cooperação Técnica no Interior	Institute for Inter Municipalities Technical Cooperation
IDAM	Instituto de Desenvolvimento Agropecuário do Estado do Amazonas	Institute of Agricultural and Livestock Development of the State of Amazon
IEC	Informação, Educação e Comunicação	Information, Education and Communication
IEE	Avaliação Ambiental Inicial (AAI)	Initial Environmental Examination
INCRA	Instituto Nacional de Colonização e Reforma Agrária	National Institute of Colonization and Agrarian Reform
INPA	Instituto Nacional de Pesquisa da Amazônia	National Institute of Research of Amazon
INSS	Instituto Nacional do Seguro Social	National Institute of Social Service
IPA	Instituto de Permacultura da Amazônia	Institute of Permaculture of Amazon

IPAAM	Instituto de Proteção Ambiental do Amazonas	Institute of Environment Protection of Amazonas State
	<i>Portugues</i>	<i>English</i>
IPAB	Instituto de Permacultura Austro Brasileiro	Institute of Permaculture of the South Brazil
IPEAO	Instituto de Pesquisas Agropecuárias do Oeste	Institute of Agricultural Researches of the West
IPEAN	Instituto de Pesquisas e Experimentação Agropecuárias do Norte	Institute of Agricultural Researches of the North
IPM	MIP (Manejo Integrado de Pragas)	Integrated Pest Management
ITAL	Instituto de Tecnologia de Alimentos	Institute of Food (Victual) Technology
ITR	Imposto Territorial Rural	Rural Territorial Tax
IUCN	União para Conservação Mundial	International Union for Conservation of Nature and Natural Resource
JICA	Agência de Cooperação Internacional do Japão	Japan International Cooperation Agency
KfW	Kreditanstalt für Wiederaufbau	Germany's Leading Promotional Bank
LAA	Relações Exteriores da Amazônia Legal	Legal Amazon Affairs
LISA	Agricultura sustentável com reduzido nível de insumos	Low Input Sustainable Agriculture
MAA	Ministério da Agricultura e do Abastecimento	Ministry of Agriculture and Supply
MCT	Ministério da Ciência e Tecnologia	Ministry of Science and Technology
MDA	Ministério do Desenvolvimento Agrário	Ministry of Agrarian Development
MEC	Ministério da Educação e de Cultura	Ministry of Education and Culture
MMA	Ministério do Meio Ambiente, Recursos Hídricos e Amazônia Legal	Ministry of Environment, Hydro Resource and Legal Amazon
MOA	Ministério do Agricultura	Ministry of Agriculture
multirão	-	Mutual aid Works (in Community)
NPAR	Plano Nacional de Agricultura Reforma	National Agricultural Reformation Plan
NGO	ONG (Organização Não-Governamental)	Non Governmental Organization
NSFA	Nota Fiscal de Serviço Avulsa	Recipient for Detached Service
NUCEX	Núcleo de Informações de Comércio Exterior	Nucleus of Information of External Trade
PCM	Reuniões Participatórias da Comunidade	Project Cycle Management
PD/A	Projetos Demonstrativos	Demonstration Projects (PPG7 subprogram)
PGAI	Projeto de Gerência Ambiental Integrada	Integrated Environmental Management Project
PMDR	Plano Municipal de Desenvolvimento Rural	Municipal Plan for Rural Development
PPG7	Programa Piloto para a Proteção das Florestas Tropicais do Brasil	Pilot Program for the Protection of Tropical Rainforest of Brazil
PPTAL	Projeto Integrado de Proteção às Populações e às Terras Indígenas da Amazônia Legal	Integrated Project of Protection of Indigenous People and Land of the Amazonian Legal (PPG7 subprogram)
PROCERA	Programa Especial de Crédito para a Reforma Agrária	Credit Program for Reform of Agriculture
PRODAM	Processamento de dados Amazonas	Data Processing Agency of Amazonas
PRODEX	Programa de Apoio ao Desenvolvimento do Extrativismo	Support Program for Development of Extrativisms (PPG7 subprogram)
PROMANEJO	Projeto de Apoio ao Manejo Florestal Sustentável na Amazônia	Forest Resources Sustainable Management Project (PPG7 subprogram)
PRONAF	Programa Nacional de Fortalecimento da Agricultura Familiar	National Program for Family Agriculture Enhancement
PROTEGER	Mobilização e Capacitação em Prevenção de Incêndios Florestais	Mobilization and Training in Prevention of Forest Fires (PPG7 subprogram)
PROVARZEA	Projeto de Manejo dos Recursos Naturais da Várzea	Várzea Natural Resources Management Project (PPG7 subprogram)
PROVE	Programa De Verticalização Da Pequena Produção Rural	Program of Verticalization of the Small Rural

		Producers
PSA	Ptojeta de Saúde e Alegria	Health and Happiness Project
	<i>Portugues</i>	<i>English</i>
RECA	Reflorestamento Econômico Consorciado e Adensado	Economical Reforestation and Densification Project
RESEX	Projeto Resex - Reservas Extrativistas	Extractive Reserves (PPG7 subprogram)
RRAQS	Rápida Avaliação Rural e Pesquisa por Questionário	Rapid Rural Appraisal and Questionnaire Survey
S/W	Escopo do Trabalho	Scope of Work
SEBRAE	Serviço Brasileiro de Assistência a Micro e Pequena Empresa	Assistant Service for Micro and Small Enterprise
SECOOP	Programa de Revitalização das Cooperativas Agropecuárias	Program of Revitalization of the Agricultural Cooperatives
SEDEMA	Secretaria Municipal do Meio Ambiente de Manaus	Secretariat of Environment of Manaus
SEFAZ	Secretaria da Fazenda	State Secretary of Finance
SELAPI	Sistema Estadual de Licenciamento de Atividade Potencialmente Importante	State Licensing System for Activities involving Environmental Impact
SEMAF	Secretaria Municipal de Abastecimento, Mercados e Feiras.	Supply, Market and Fair Municipal Secretary
SEMEC	Secretaria Municipal de Educação e Cultura	Education and Culture Municipal Secretary
SENAC	Serviço Nacional de Aprendizagem Comercial	National Service of Commercial Learning
SENAI	Serviço Nacional de Aprendizagem Industrial	Industrial Service of Industrial Learning
SEPLAN/AM	Secretaria de Estado de Planejamento, Administração e Coordenação Geral	State Secretariat of Planning, Management and General Coordination of Amazon
SESAU	Secretaria da Saúde	Secretary of Health
SESC	Serviço Social do Comércio	Commerce Social Service
SESCOOP	Serviço Nacional de Aprendizagem do Cooperativismo	National Service of Training of Cooperatives
SETRAB	Secretaria do Bem Estar Social	Secretary of Social Welfare
SPRN	Sul-Programa de Políticas de Recursos Naturais	Natural Resources Policy Subprogram
STR	Sindicato de Trabalhadores Rurais	Rural Labor Syndicate
SUDAM	Superintendência de Desenvolvimento da Amazônia	Superintendence for the Development of Amazon
SUFRAMA	Superintendência da Zona Franca de Manaus	Superintendence for the Free Zone of Manaus
SUHAB	Superintendência de Urbanização e Habitação do Estado do Amazonas	Superintendence for the Inhabitation
TRE	Tribunal Regional Eleitoral	Electoral Regional tribunal
TRT	Tribunal Regional do Trabalho	Labor Regional Tribunal
UEA	Universidade Estadual do Amazonas	State University of the Amazon
UNDP	Programa de Desenvolvimento das Nações Unidas	United Nations Development Programme
WWF	Fundo Mundial para a Natureza	World Wide Fund for Nature
ZFM	Zona Franca de Manaus	Manaus Free Trade Zone

Currency

US \$ = United State Dollars, R\$ = Brazilian Real

US \$ 1.00 = R\$ 2.699 (31 October, 2001)

J ¥ = Japanese Yen

US \$ 1.00 = J¥ 122.441 (31 October, 2001)

R\$ 1.00 = J¥ 45.370 (31 October, 2001)

CHAPTER I INTRODUCTION

1.1 Authority

This is the Report on the Study for Improving Rural People's Livelihood through Agriculture Activities and Sound Natural Resources Management in the State of Amazonas in Brazil (the Study) prepared in accordance with the Scope of Work (S/W) agreed upon between the Government of the Brazil represented by the Institute of Agricultural and Livestock Development of the State of Amazonas (IDAM) and Japan International Cooperation Agency (JICA) dated January 15, 2000.

The report presents the results of all works performed in both Brazil and Japan through Phase-I and -II Study, focusing on the main activities in the former term for identification of status quo regarding natural and social matters, agriculture on target crops, the beneficiaries and their farming, fishing and extractive activities in the scheme area under participatory investigations covering natural, socio-economical and environmental aspects. In addition to these basic strategies on planning for improving rural people's livelihood has been drawn up. In the latter term, the major emphasis for the Studies are put on the following matters;

- Review of experience in the Amazonas such as researches, similar projects and related programs,
- Analysis on replicability from successful experience above as lesson learnt,
- Evaluation on potential production corresponding to potential demands for target crops and,
- Project design matrix and planning for improving rural people's livelihoods.

1.2 Progress of the Work

1.2.1 Phase-I First Fieldwork in Brazil

(1) Meeting on the Inception Report

Immediately after the JICA study team arrived at Manaus, the discussion on the Inception Report was held with the Institute of Agricultural and Livestock Development (IDAM) on 25 April 2000. The main issues discussed and agreed upon by both parties, IDAM and JICA Study Team, are mentioned in the Minutes of Meetings for Inception Report attached to this Report (Attachment-3).

(2) Progress of Fieldwork

The Study Team carried out field survey in the Study Area, and the major survey is shown below.

1) Data collection

- Past and on-going projects / programs relevant to the Study

- National / regional development plan
 - Environmental conservation
 - Target crops and fishery
 - Marketing
- 2) Identification of present conditions on natural environment, rural society and agricultural production regarding target crops and fishery.

The following aspects on the targets crops and fishery were identified by field reconnaissance, interview with farmers and information from related agencies;

- Production
- Post-harvest, processing,
- Distribution, marketing,
- Supporting service system
- Major constraints.

3) RRA and Questionnaire Survey

To learn about local community, RRA and Questionnaire Survey were carried out with cooperation of the local consultants sub-contracted. In addition, the Study Team had group discussion with leaders and members of associations for identification of their opinion and requirements for improving their livelihood.

(3) Discussion on the Progress Report I with IDAM (Attachment-4)

1.2.2 Phase-I Second Fieldwork in Brazil

(1) Meeting on the Fish Species to be studied in Aquaculture Sector

During the First Fieldwork study, IDAM and the JICA Study Team exchanged opinions on the fish species to be studied because the understanding of the both parties was slightly different as mentioned in the Progress Report I.

At the start of the Second Fieldwork study, those two parties held a sincere discussion regarding the study approach of the aquaculture sector, and agreed each other as shown in the minutes of meeting on September 27, 2000 (Attachment-5).

As indicated in the minutes, tambaqui that is an existing aquaculture species shall be investigated together with the four new species from the aspect of introducing them as an alternative livelihood for the beneficiaries of the Study. Therefore, the priority fish species to be studies are now five, namely pirarucu, surubim, matrincha, jaraqui and tambaqui.

(2) Progress of Fieldwork

The Study Team carried out the second fieldwork in the Study Area, and the major survey and study are:

1) Identification of beneficiaries under PRONAF classification and their agricultural

practices and extractive activities,

- 2) Execution of PCM at CMDR Workshops in the Scheme Area,
- 3) Supplementary survey of the present conditions of production, processing, distribution and marketing on the target crops, fishery and aquaculture.
- 4) Supplementary survey of the present conditions of farmer organizations, capacity and activities of the supporting and research agencies related,
- 5) Supplementary survey of the present conditions of environment regarding natural resources management and,
- 6) IEE.
- 7) Logical framework approach and analytic observations.
- 8) As the result of the above survey, preparing the Progress Report II.
- 9) Discussion on the Progress Report II with IDAM (Attachment-6).

1.2.3 Phase-I Office Work in Japan

The Study Team carried out office works in Japan, from 11th January, 2001 to 9th February, 2001. In this term the Team analyzed collected data, considered the main component of this project and prepared the Interim Report.

1.2.4 Phase-II Third Field Work in Brazil

(1) Meeting on the Interim Report

At the commencement of the third field work, the meeting was convened to explain and discuss the Interim Report. The main issues were agreed upon in principle by the Brazilian side and the strategies for planning proposed by the JICA Study Team were highly appreciated. These are mentioned in the Minutes of Meeting for Interim Report attached to this report (Attachment-7).

(2) Field Work

The Study Team carried out the third field work in the study area, and the major surveys and studies are;

- 1) Identification of on-going and/or future regional development projects in the study area,
- 2) Review of experience in the Amazonas as such research, similar projects and related programs,
- 3) Analysis on replicability from successful experience above as lesson learnt,
- 4) Supplementary survey of prospective potential demands,
- 5) Evaluation on potential production corresponding to potential demands for target crops,
- 6) Project Design Matrix and Basic Plan
- 7) As the result of the above survey, preparing the Progress Report III
- 8) Discussion on the Progress Report III with IDAM and other agencies concerned

(Attachment-8).

1.2.5 Phase-II Office Work in Japan

The Study Team carried out office works in Japan, from 1st September, 2001 to 30th September, 2001. In this term, the Team prepared this Draft Final Report based on analysis of all studies performed during Phase-I, II.

1.2.6 Phase-II Forth Field Work in Brazil

In the third field work, the meeting was convened to explain and discuss on the Draft Final Report. The main issues were agreed upon in principle by the Brazilian side, and the strategies for planning proposed by the JICA Study Team were highly appreciated. These are mentioned in the Minutes of Meeting for Draft Final Report attached to this report (Attachment-9).

1.2.7 Phase-II Office Work in Japan

The Study Team carried out office works in Japan. In this term, the Team prepared this Final Report.

1.3 Acknowledgement

The JICA Study Team would like to express in the sincerest acknowledgement to IDAM and other agencies concerned for their kind assistance and cooperation. The Team also express its heart felt gratitude to the counterpart experts as well as the personnel and officials concerned who attended to and gave their valuable time for field guidance to the Study Team during the fieldwork in the study area. Special thanks are extended to all of them.

CHAPTER II BACKGROUND OF THE STUDY

2.1 Background of the Study

The Government of Brazil announced her public investment plan over a period of years in 1995, and set three goals in the agricultural sector, (i) to modernize the transportation infrastructures to bring down the export costs, (ii) to expand the arable land area, and (iii) to provide educational training in environmental protection for farmers. The State Government of Amazonas, the area for the Study, set the third development program concept, which has been promoting rural infrastructure construction, agricultural financing and extension of cultivation techniques.

The economy of the Amazonas centers on the industries related to the Manaus Free Port, and the agricultural and the livestock sectors remain underdeveloped. Since the roads and water transportation are underdeveloped, only areas around Manaus prevail in commercial agricultural production. Agriculture in the other areas mainly remains in the stage of self-sufficiency with hunting and gathering activities. Inhabitants in these areas engage in farming, combining agriculture, forestry and fisheries. More specifically, they engage in a wide range of activities including the collection of forest products from the tropical rain forest, fishing from the main stream and tributaries of the Amazon River and the cultivation of food crops on the flood plain or the slash-and-burn lands.

The State of Amazonas plans to positively promote agricultural development on the ground that agricultural development is indispensable to the growth of the regional economy, in prospect of the abolition of the tax exemption benefit for the free ports in 2013. However, disorderly land development would cause soil erosion, resulting in environmental deterioration. Accordingly, it is urgently necessary for the State to work out the integrated regional agriculture and livestock plan, considering meeting environmental conservation. Based on this, the Government of Brazil requested the Government Japan to provide technical assistance for the Study in October 1998. The Government of Japan dispatched the Preliminary Study Team twice to discuss with the Government of Brazil and both sides agreed on the Scope of Work (S/W) in January 2000.

2.2 Objectives

The objectives of the Study are;

- To formulate a plan for income generation and provision of employment opportunity through creating agricultural system under rational natural resources use, which will contribute to natural environmental conservation and,
- To conduct a technology transfer to Brazilian counterpart personnel through on-the-job training in the course of the Study.

2.3 Study Area and Beneficiaries

Three municipalities; MAUES, ITACOATIARA and IRANDUBA, located in the northeast and the southeast of Amazonas (approx. 51,000 km²) are selected as the Study Area.

Beneficial population of the Study is principally classified into two types; 1) family farmers relying on agricultural production with limited land scale, which is defined as family farming by the “Programa Nacional de Fortalecimento da Agricultura Familiar (PRONAF)”. 2) People whose livelihoods rely on extractive activities exploiting natural resources including forest products and aquatic produce.

2.4 Counterpart Agency (IDAM)

2.4.1 Outline and Major Function

In 1996 in compliance with the structural changes of the Government, IDAM was established by incorporating agencies relating to extension services, procurement of agricultural input and financial assistance. IDAM is the state organization responsible for the development of agricultural sector of the state of Amazonas, and in this vein responsible for preparing the 4-year Development Plan incorporating PRONAF and the Third Cycle Program. IDAM, as its mandate has to coordinate, implement, and verify the viability and improvement of agriculture in the State of Amazonas.

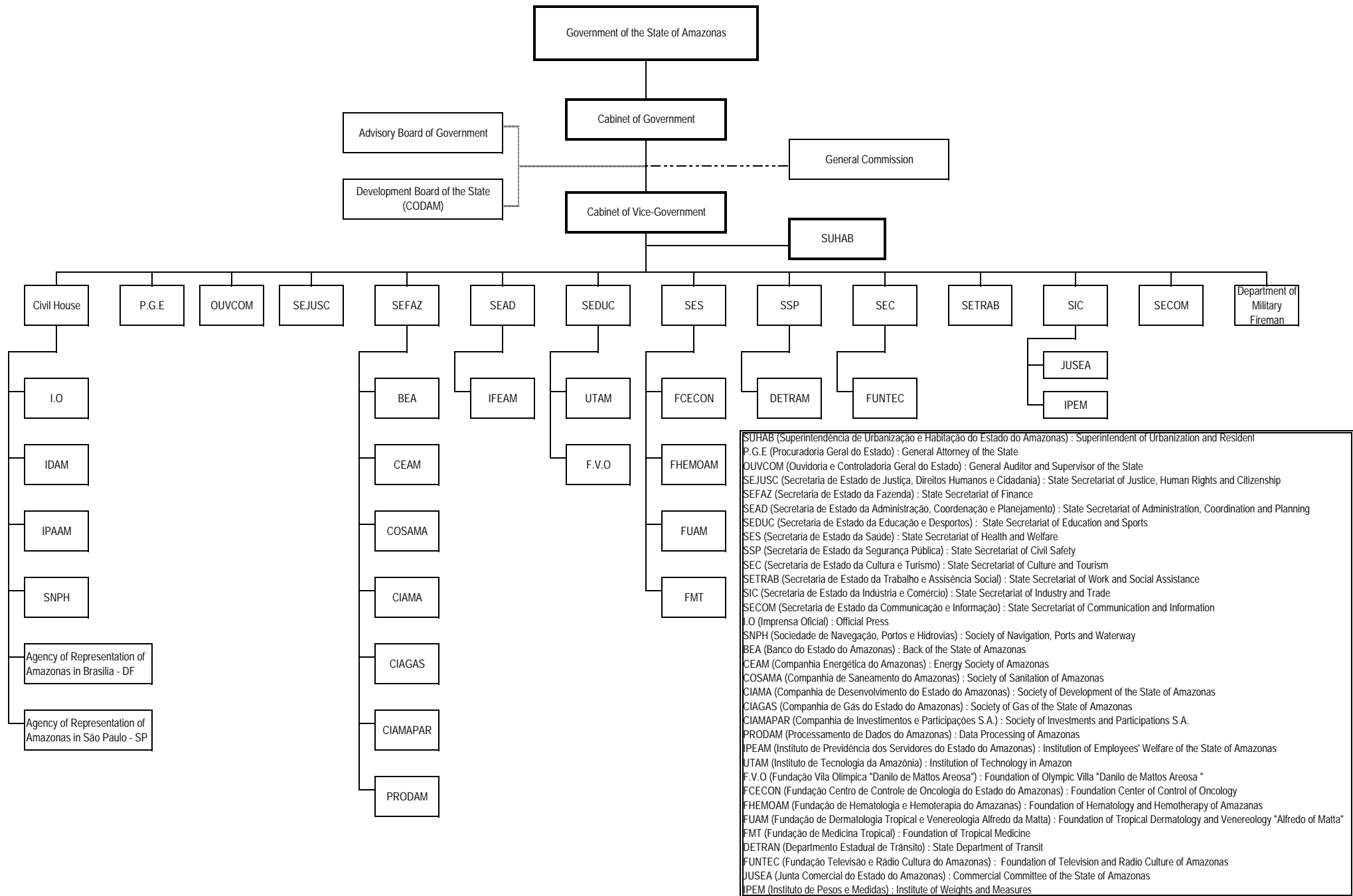
The 4-year Plan covers the year 1999 to 2002, and consists of 14 sub programs such as vegetable production, animal production, flower production, fishery promotion, seed and seedling supply, promotion of agro-industry, training, rural credit, marketing and standardization of agricultural products. Figure 2.4.1-1 shows the IDAM’s Location in government organizations of the State of Amazonas.

Table 2.4.1-1 Target of Major Items in the 4-Year Development Plan

	Unit	1999	2000	2001	2002
Supported Producers	Person	38,000	385,000	39,000	40,000
Supported Communities		1,100	1,150	1,200	1,250
Rural Credit	Contract	32,000	36,800	39,800	41,900
Seminar Attendance of Production	Person	4,500	4,800	5,200	5,500
Cultivated Area (Supported)	ha	55,000	58,000	60,000	62,000
Fruits Plantation Area (Supported)	ha	12,000	13,000	14,000	15,000
Cash Crop Plantation area (Supported)	ha	10,000	11,000	12,000	13,000
Vegetable Cultivation Area (Supported)	ha	2,650	2,750	2,850	2,950

Source: IDAM 4-Year Development Plan

Figure 2.4.1-1 Organization Structure of the State Government of Amazonas



SUHAB (Superintendência de Urbanização e Habitação do Estado do Amazonas) : Superintendent of Urbanization and Resident
 P.G.E (Procuradoria Geral do Estado) : General Attorney of the State
 OUVCOM (Ouvidoria e Controladoria Geral do Estado) : General Auditor and Supervisor of the State
 SEJUSC (Secretaria de Estado de Justiça, Direitos Humanos e Cidadania) : State Secretariat of Justice, Human Rights and Citizenship
 SEFAZ (Secretaria de Estado da Fazenda) : State Secretariat of Finance
 SEAD (Secretaria de Estado da Administração, Coordenação e Planejamento) : State Secretariat of Administration, Coordination and Planning
 SEDUC (Secretaria de Estado da Educação e Desportos) : State Secretariat of Education and Sports
 SES (Secretaria de Estado da Saúde) : State Secretariat of Health and Welfare
 SSP (Secretaria de Estado da Segurança Pública) : State Secretariat of Civil Safety
 SEC (Secretaria de Estado da Cultura e Turismo) : State Secretariat of Culture and Tourism
 SETRAB (Secretaria de Estado da Trabalho e Assistência Social) : State Secretariat of Work and Social Assistance
 SIC (Secretaria de Estado da Indústria e Comércio) : State Secretariat of Industry and Trade
 SECOM (Secretaria de Estado da Comunicação e Informação) : State Secretariat of Communication and Information
 I.O (Imprensa Oficial) : Official Press
 SNPH (Sociedade de Navegação, Portos e Hidrovias) : Society of Navigation, Ports and Waterway
 BEA (Banco do Estado do Amazonas) : Bank of the State of Amazonas
 CEAM (Companhia Energética do Amazonas) : Energy Society of Amazonas
 COSAMA (Companhia de Saneamento do Amazonas) : Society of Sanitation of Amazonas
 CIAMA (Companhia de Desenvolvimento do Estado do Amazonas) : Society of Development of the State of Amazonas
 CIAGAS (Companhia de Gás do Estado do Amazonas) : Society of Gas of the State of Amazonas
 CIAMAPAR (Companhia de Investimentos e Participações S.A.) : Society of Investments and Participations S.A.
 PRODAM (Processamento de Dados do Amazonas) : Data Processing of Amazonas
 IPEAM (Instituto de Previdência dos Servidores do Estado do Amazonas) : Institution of Employees' Welfare of the State of Amazonas
 UTAM (Instituto de Tecnologia da Amazônia) : Institution of Technology in Amazon
 F.V.O (Fundação Vila Olímpica "Danilo de Mattos Areosa") : Foundation of Olympic Villa "Danilo de Mattos Areosa"
 FCECON (Fundação Centro de Controle de Oncologia do Estado do Amazonas) : Foundation Center of Control of Oncology
 FHEMOAM (Fundação de Hematologia e Hemoterapia do Amazonas) : Foundation of Hematology and Hemotherapy of Amazonas
 FUAM (Fundação de Dermatologia Tropical e Venereologia Alfredo da Matta) : Foundation of Tropical Dermatology and Venereology "Alfredo de Matta"
 FMT (Fundação de Medicina Tropical) : Foundation of Tropical Medicine
 DETRAM (Departamento Estadual de Trânsito) : State Department of Transit
 FUNTEC (Fundação Televisão e Rádio Cultura do Amazonas) : Foundation of Television and Radio Culture of Amazonas
 JUSEA (Junta Comercial do Estado do Amazonas) : Commercial Committee of the State of Amazonas
 IPEM (Instituto de Pesos e Medidas) : Institute of Weights and Measures

2.4.2 Organization

The headquarter of IDAM is located in Manaus and technical department consists of 3 sections with total of 14 technical subsections. Three sections are 1) Coordination for Planning, 2) Coordination for Technical Assistance Program and Rural Extension, 3) Pest and Disease Control for Agriculture. There are currently 29 local offices which operate for implementation of the action program in the 4-year program.

Table 2.4.2-1 IDAM Branch Office

No.	Location	Supporting Area
1	Apui	Apui, Novo Aripuanã - parte
2	Autazes	Autazes
3	Barreirinha	Barreirinha
4	Boa Vista do Ramos	Boa Vista do Ramos
5	Boca do Acre	Boca do Acre, Pauini
6	Borba	Borba
7	Carauari	Carauari, Itamarati - parte
8	Careiro da Várzea	Careiro da Várzea
9	Careiro Castanho	Careiro Castanho, Manaquiri - parte
10	Coari	Coari
11	Eirunepé	Eirunepé, Itamarati - parte
12	Envira	Envira
13	Guajará	Guajará, Ipixuna
14	Humaitá	Humaitá, Manicoré - parte, Canutama - parte
15	Iranduba	Iranduba, Manaquiri - parte
16	Itacoatiara	Itacoatiara, Urucurituba
17	Lábrea	Lábrea, Canutama - parte, Tapauá
18	Manacapuru	Manacapuru, Caapiranga, Novo Airão, Anamã
19	Manaus	Manaus
20	Manicoré	Manicoré, Novo Aripuanã - parte
21	Maués	Maués
22	Nhamunda	Nhamundá
23	Parintins	Parintins
24	Presidente Figueiredo	Presidente Figueiredo
25	Rio Preto da Eva	Rio Preto da Eva
26	Silves	Silves, Itapiranga - parte
27	Tabatinga	Tabatinga, Atalaia do Norte, Benjamin Constant
28	Tefé	Tefé, Alvarães, Uarini, Japurá, Maraã - parte
29	Urucará	Urucará, São Sebastião do Uatumã, Itapiranga - parte

Source: IDAM Plan, Program and Project Management, IDAM Proposal for Agriculture Development in 1999-2002

CHAPTER III NATIONAL AND REGIONAL SOCIO-ECONOMY

3.1 National Socio-Economy

3.1.1 Land and Population

Brazil is located in north-east of the South American continent occupying almost half of the area 8.5 million square kilometers, between the zones of equator and the Tropic of Capricorn. Brazil is divided into 5 regions according to the geographical and administrative purposes, North, Northeast, Central West, Southeast and South.

Geological characteristics include the rain forest region of Amazon, low mountains and rocky plateaus along the coast, and a woodland savannah known as the Campo Cerrado that occupies much of the interior south of the Amazon.

The rain forest of Amazon spread approximately 3.5 million square kilometers over several countries, 45% of which is in the Brazilian territory. The river Amazon with its branches extends to the total of 6,280 kilometers.

Climate of Brazil is tropical with average temperatures ranging from 16 to 28 degrees centigrade. Rainfall exceeds 1,000 millimeters a year except in the generally arid northeast region.

Land use: About one third of the country, which amounts to more than 300 million hectares is classed as agricultural, within which 70 million hectares are for crops and the rest of 230 for livestock herding. Forest area is decreasing because of the rapid increase of the crop land area.

Table 3.1.1-1 Land Use (National)

	1981 (mil ha)	
Total Land Area	845.7	100%
Total Farmland	73.3	9%
Cultivated area	61.6	7%
Fruit plantation	11.7	1%
Pasture land	162	19%
Forest land	572.6	68%
Others	37.8	4%

Source: FAO Production Yearbook, Detail estimated by FAO

The population of Brazil is spread unevenly over the country with 80% concentrated in the southeast (45%) and northeast (35%). Total estimated population is 150 million and the rate of growth is 2.49 % a year. The urban concentration is rapidly advancing with 31% of urban concentration in 1940 has reached 78% in 1996.

3.1.2 National Economy

Economic Growth in Brazil: Brazil has had a fast-growing economy for many years, and the rate of economic growth accelerated after World War II with annual industrial growth of over 6 % until 1973. But the growth in agricultural sector was only about 4%.

Brazil has suffered from inflation since the beginning of the century, and the problem became considerably worse after World War II. The annual rate of inflation reached 90% in 1964, when the military took over the government. With the implementation

of a stabilization program in 1964-67, inflation started to decline. By the end of 1973, when inflation was about 15%, the first oil shock reversed the decline in inflation. The acceleration of inflation can be a result of both oil crisis and expansion policy in monetary and fiscal control. With the second oil shock in 1979, inflation accelerated and reached to monthly rate of 110% in 1980 and the even higher level of 200% in 1983.

With the new government in 1990, new measures to control inflation with concepts of liberalization and internationalization of the Brazilian economy. In 1992 the problems of accumulated debt was ameliorated and the economy began to improve.

3.1.3 The Agricultural Sector

Agriculture's share in GDP has been declining when the prices of commodities are calculated by sectors. As is seen in the table below the share of Agriculture is now less than 8%. Please note, however, that there are considerable amount of production which is consumed by local farming families without being apparent in the statistics of Agricultural sector.

Table 3.1.3-1 Sector Composition in GDP (Adjusted)

	1995	1996	1997
Agriculture (w/ Livestock)	8.5%	7.6%	7.6%
Industry	34.5%	33.9%	33.3%
Commercial	57.0%	58.5%	59.1%

Source : Sistema de contas nacionais

Although the share of agricultural sector is small in GDP, export amount of agriculture and its related products takes place more than 30% which is significantly large in the total amount of export. The data here includes plantation crops such as coffee and guarana as Agricultural products, Alcohol and vinegar as processed food from agricultural products, cotton and silk as Industrial output from Agricultural crop.

Table 3.1.3-2 Export Amount by Sector (Summarized)

	(mil US\$)			
	1996	1997	1998	1998(%)
Total Export Amount	47,747	52,990	51,120	100%
Agriculture & Related Products	15,678	17,772	16,378	32%
Agricultural products (w/ Livestock)	6,404	8,816	8,215	16%
Processed Food from Agricultural production	8,855	8,587	7,839	15%
Industrial output from Agricultural crop	419	369	324	1%
Forestry Related Items (lumber, pulp)	3,069	3,240	3,141	6%
Industrial products & Other services	29,000	31,979	31,601	62%

Source: IBGE

3.2 Regional Socio-economy

3.2.1 Population

Population of the state of Amazonas increased rapidly after 1970's. The growth rate was being high since 1940. Following two exhibits show the trend of Amazonas State in the North region in Brazil.

Table 3.2.1-1 Population over the Past Century in Amazonas State

	1872	1890	1900	1920	1940	1950	1960	1970	1980	1991	2000
Amazonas	58	148	250	363	438	514	721	961	1,449	2,103	2,813
Other North Region	275	328	445	1,076	1,190	1,535	2,209	3,227	5,318	8,154	10,080
North	333	476	695	1,439	1,628	2,049	2,930	4,188	6,767	10,257	12,894
North-east	4,639	6,002	6,750	11,246	14,434	17,973	22,429	28,675	35,419	42,470	47,693
South-east	4,017	6,104	7,824	13,655	18,346	22,548	31,063	40,332	52,581	62,661	72,297
South	721	1,431	1,796	3,537	5,735	7,841	11,892	16,684	19,380	22,117	25,090
Central-west	221	320	373	759	1,093	1,533	2,678	4,630	7,004	9,412	11,617
Total Brazil	9,930	14,334	17,438	30,636	41,236	51,944	70,992	94,509	121,151	146,917	169,591

Source: IBGE National Statistics 2000 (with modifications)

Table 3.2.1-2 Population Increase as 1940 set as 100

	1940	1950	1960	1970	1980	1991	2000
Amazonas	100	117	165	219	331	480	642
Other North region	100	129	186	271	447	685	847
North	100	126	180	257	416	630	792
Total Brazil	100	125	155	199	245	294	330

* Population in 1940 was set as 100

Increase of population is considered as a result of the Manaus Free Trade Zone (ZFM). Many rural people went to ZFM and the rate of urbanization is very high at 70% of people living in urban district. The ratio of urban population increased rapidly since 1970 when the ZFM begin to operate.

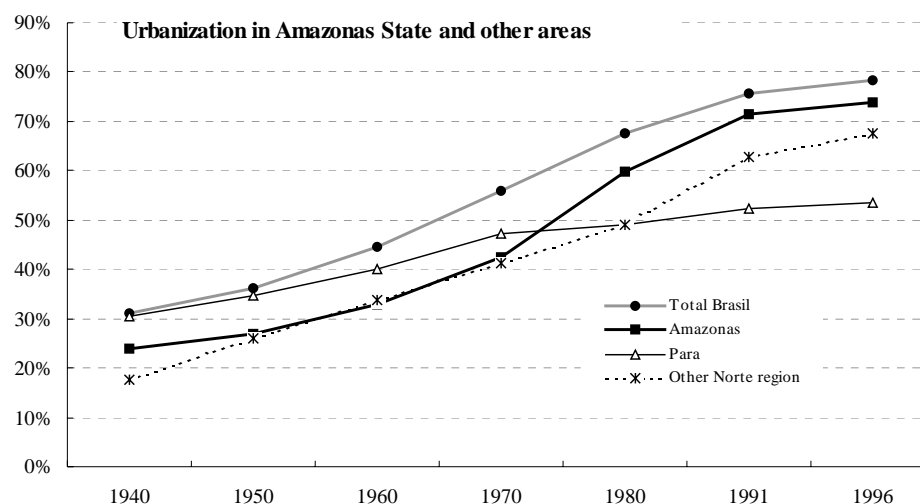


Figure 3.2.1-1 Urbanization in the State of Amazonas and Other States

Migration of people to and from the state of Amazonas takes place heavily with the neighboring state of Para from which people come in more than going out. Total balance of migration between the state of Para and Amazonas is nearly 8,000 people inflow in the 5 years between 1991 and 1996. Largest migration out of the state of Amazonas is to the state of Roraima to which more than 3,500 people moved out during the same period.

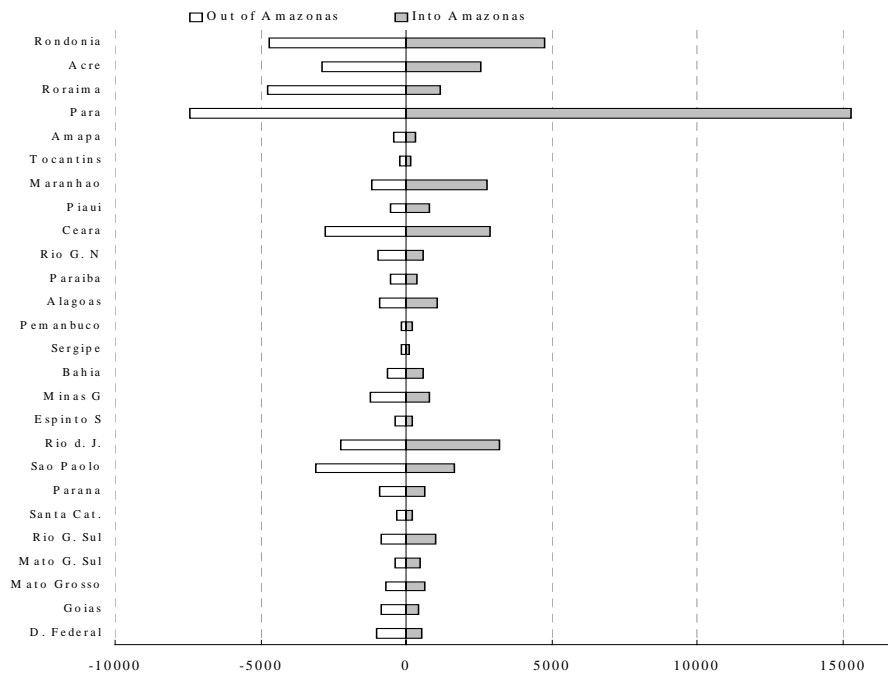


Figure 3.2.1-2 Migration of People Moving to and from the State of Amazonas

3.2.2 Industry and Agriculture

Industry in the state of Amazonas until 1970's developed with traditional primary items such as lumber and rubber and jute. Most of them are small and medium scale industries and 60% of them are located in Manaus.

After the enactment of Free Trade Zone (Zona Franca de Manaus, ZFM) in 1967, major industry in the State of Amazonas is characterized by the product from companies from this ZFM such as electronics and automobile. Because of the special tax reduction for trading in the ZFM, nearly 3006 companies are operating

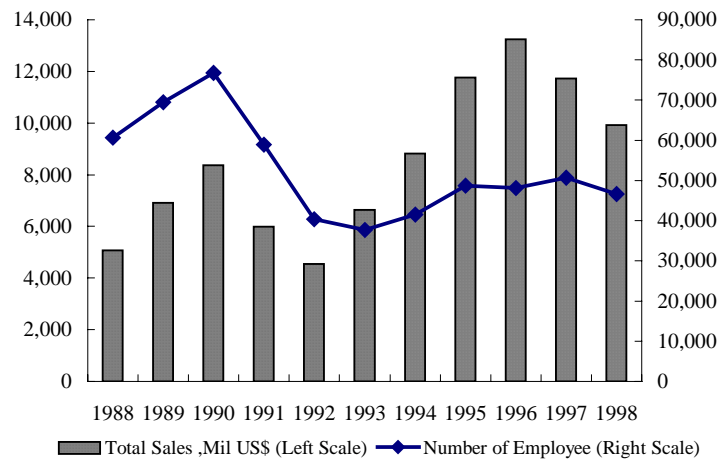


Figure 3.2.2-1 Total Sales and Number of Employee in the ZFM

in 1998 and marked the total sales of nearly 10 billion US\$ every year. The employee used to count 76 thousand people in 1990, but recently the number of employee is decreasing and only a little more than 40 thousand people are employed.

Agriculture in the state of Amazonas used to produce rubber and jute as major plantation crop. Recent effort is made to increase guarana and palmito (Palm shoot) production, but the production is not easily expand.

As for export items, Amazonas state is characterized by the large production of

forestry products mostly lumber and pulp. Official statistics only disclose the export amount of palmito as agricultural product to be exported, but considering the concentrated liquid for soft drink such as Coca-Cola is using guarana as major ingredients, the data indicating the account these agricultural product amounts to 13 % of total export sales.

Table 3.2.2-1 Major Export from the State of Amazonas (Summarized)

	1996	1997	1997(%)
Total Export Amount	143.9	193.5	100%
Agriculture & Related Products	3.9	25.1	13%
Palmito	0.0	0.1	0%
Concentrate of Guarana related drink(Coca-Cola etc)	3.9	25.0	13%
Forestry Related Items (lumber, pulp)	30.8	46.9	24%
Fish and aquaculture related items	3.8	3.3	2%
Industrial products, Mine & Others	105.3	118.2	61%

Source : Secretaria do Comercio Exterior

Agriculture in the state of Amazonas is operated in a very low level of fertilizer utilization. Comparison with major farming states illustrates the not so large and natural not very fertilized farming.

Table 3.2.2-2 Consumption of Fertilizer in 1997

	Nitrogen	Phosphate	Potassium	Bruta	Total	% to total
Brazil Total	1,305,598	1,942,725	224,2486	13,844,94	19,335,750	
Amazonas	360	650	471	3,794	5,275	0.03%
Minas Gerais	233,903	239,109	299,272	2,029,070	2,801,354	14.5%
Sao Paulo	363,159	342,301	503,738	3,166,238	4,375,436	22.6%
Palana	167,879	317,459	322,165	1,957,673	2,765,176	14.3%

Source: ANDA Associaçao Nacional para Difusao de Adubos

3.3 Government Program for Agricultural Support

3.3.1 Financial Support to Farmers – PRONAF and other programs

There are several credit programs for farmers in order to promote their crop production. There are three main fund sources listed below.

- PRONAF:
Federal Government Fund handled by BB (Banco de Brasil) as a sub program of National Program of Development (PRONAF)

Table 3.3.1-1 Credited Amount to the State of Amazonas
(,000RS)

	PRONAF (Banco do Brasil)	FNO (BASA)	FMPEs (BEA &AFEAM)	Total
1995	-	7.612	12.697	20.309
1996	545	17,567	8,858	26.970
1997	1,025	5,476	19,193	25.693
1998	282	2,526	9,752	12.561
1999	654	4,520	8,520	13.694
Total	2,505	37,701	59,021	99,227

Source: IDAM, Mr. Dalmo, Director of Credit

- FNO:
Federal Fund for development aid to North region, which is handled by BASA (Banco do Amazonia)

- **FMPES:**

State Fund to assist farmers, breeders and small industries which is handled by BEA (Banco Estado do Amazonas)

The size of the total fund amounts to 11.5 million R\$ for the State of Amazonas for the year 2000, and IDAM promotes approximately 70 % to 75 % of loan projects. The credited amount to local farmers in the State of Amazonas in the past 5 years is recorded in the following table. The total amount of credit is in the trend of declining in recent years mainly because of the decrease of federal fund. Table 3.3.1-2 shows the budget of the State of Amazonas in 1995 and 2002.

Table 3.3.1-2 Budget of the State of Amazonas (Year 1995, 2002)

Item	Year 1995 (R\$)	Year 2002 (R\$)	Rate of Increase (1995 - 2002)
Legislature	25,678,814	98,757,940	284.59
Judicature	32,295,123	98,622,235	205.38
Administration	124,471,005	331,588,769	166.40
National Defense and Public Security	19,756,797	247,765,885	1154.08
Agriculture	49,308,681	47,361,969	-3.95
Education and Culture	169,486,121	570,769,050	236.76
Habitation	13,874,451	36,332,781	161.87
Industry (goods and service)	6,674,631	6,236,526	-6.56
Health and Sanitation	220,023,083	588,894,863	167.65
Social Welfare	75,967,895	83,968,000	10.53
Transport	30,388,703	99,600,000	227.75

Source: IDAM: 1995, 2001

(1) **PRONAF**

PRONAF intends to improve local livelihood utilizing available land and creating employment by delivering credit. The program consists of four major subprograms.

- 1) Improvement of local family capacity to produce
- 2) Credit to rural farmers (Sub PRONAF)
- 3) Improvement and Definitions of Public Policies
- 4) Improvement of Rural Infrastructure by Public Investment

Category 4) above is a donation to local government for development of infrastructure, and category 2) is a loan to farmers for improvement of production and agriculture-related small industries.

Donation to local government is delivered to 15 selected municipalities and constructed infrastructures such as school, heal-care center, drinking water, road and boat for improvement of transportation for rural farmers to nearest towns.

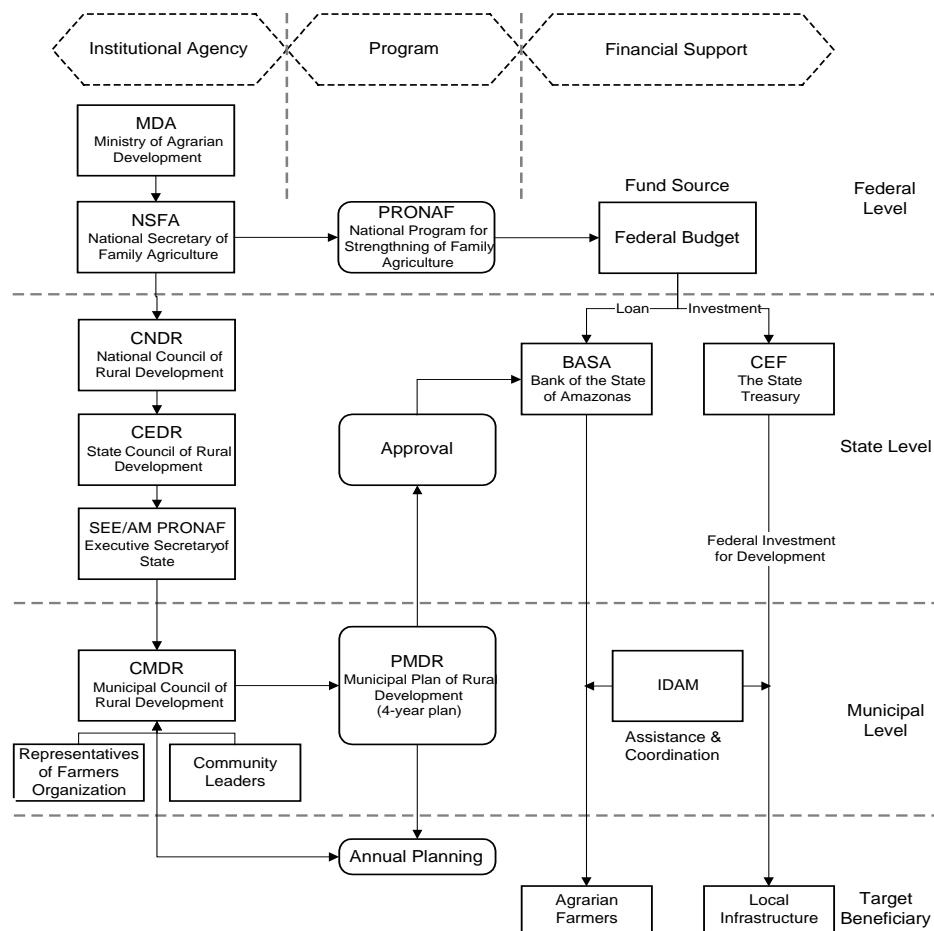


Figure. 3.3.1-1 Structure and fund flow of the PRONAF

(2) FNO

FNO started in 1988 as a development fund for Northern region of Brazil utilizing 0.6 % of federal income tax revenue and commodity tax revenue as fund source. Similarly FNE as development fund for North-East (NordEste) region utilized 1.8 %, and FCO for Central-West (Centro-Oeste) utilized 0.6% of federal income tax as fund source. As a result total of 3% of the federal tax revenue is utilized for the development of these three regions.

For implementation of FNO program, BASA (Banco do Amazonia) is handling total of 112 million R\$ in 1999, in which 67 million R\$ went to agriculture including livestock industry and 45 million R\$ went to small industry including agricultural processing.

(3) FMPES

FMPES is a program which utilized the state fund for the support of small farmers livelihood and small industry. Individual farmers are able to apply for the program with individual guarantees. IDAM is involved in promoting the disbursement of loans by helping and informing farmers to apply for the program.

When the loan is disbursed, IDAM is supposed to provide technical service and

receive 2% of loaned amount as assistance fee. When the farmers pay back the loan IDAM is also authorized to collect payment from farmers.

(4) Credit to farmers in 3 municipalities

Amount of credit line provided to farmers in 3 municipalities amounts to 3.7 million R\$ to Iranduba for 671 beneficiaries, 9.1 million to Itacoatiara for 1,808 beneficiaries, and 6.7 million to Maues for 1,340 beneficiaries. Average size of credit to one farmer is 5,000 R\$.

It should be noted that the amount here indicate the contract amount, but not actual disbursed amount. Credit-Line indicates upper limit of loan scheme. Loans are arranged to be delivered in several installment schedule, and document requirement for the second disbursement is sometimes difficult to meet for farmers in local area. As a result there are a lot of farmers listed under loan program and received only the first disbursement but not any more.

Table 3.3.1-3 Credit-Line provided to 3 Municipalities

(amount in thousand R\$)

Year	Iranduba			Itacoatiara			Maues		
	State Fund (FMPES)	Federal Fund (FNO, PRONAF)	Total	State Fund (FMPES)	Federal Fund (FNO, PRONAF)	Total	State Fund (FMPES)	Federal Fund (FNO, PRONAF)	Total
1995	40	0	40	112	1,458	1,571	487	2,043	2,530
1996	833	852	1,686	1,130	3,492	4,622	448	2,059	2,506
1997	422	81	502	348	209	557	542	168	710
1998	287	0	287	498	125	623	334	0	334
1999	1,000	228	1,228	743	1,077	1,820	695	10	705
Total	2,581	1,161	3,743	2,832	6,360	9,193	2,507	4,280	6,786

Source : IDAM, Mr. Dalmo, Director of Credit

Table 3.3.1-4 Credit Beneficiaries in 3 Municipalities

Year	Iranduba			Itacoatiara			Maues		
	State Fund (FMPES)	Federal Fund (FNO, PRONAF)	Total	State Fund (FMPES)	Federal Fund (FNO, PRONAF)	Total	State Fund (FMPES)	Federal Fund (FNO, PRONAF)	Total
1995	4	0	4	152	124	276	186	261	447
1996	223	116	339	557	331	888	99	253	352
1997	77	14	91	200	36	236	189	108	297
1998	55	0	55	154	11	165	121	0	121
1999	173	9	182	131	112	243	117	6	123
Total	532	139	671	1,194	614	1,808	712	628	1,340

Source : IDAM, Mr. Dalmo, Director of Credit

(5) Problems in Financial Support

There are some deviations of activities from contracted loan project. As a result farmers are not able to receive any further disbursement of loans as planned. It should be properly understood that the conditions of cultivating land and estimation of work will be able to be performed within the loan amount. The failure to receive financial support as scheduled may be derived from farmers lack of understanding but the program operator should also be responsible for the lack of proper care and arrangement.

IDAM sometimes, delays the visit to project site and verify the progress because of

the lack of proper transportation. Delay of IDAM verification causes delay of disbursement of loan to farmers in the loan scheme. Limited human resources and limited source of fund of IDAM to operate technical support is also a problem for the proper supervising and successful guidance to farmers.

At the time of setting up loan projects, farmers and IDAM officers should understand the condition of site and future market of the project crop. Otherwise even when the crop is successfully harvested, farmers do not have any means to change their crop into money for the repayment to the bank. Many farmers find it difficult to market their product because the market is very small and cannot absorb rapid growth of the increase of product during the season.

3.3.2 Social Security to Rural Labors

A producer, partner, share cropper and rural tenant, fisherman, as well as their respective spouse and children of 16 (sixteen) years old if they can prove they work with the respective family group and practice the activities individually or in system of family economy, with or without casual assistance of the others are eligible for pensions. For men the age limit is 60 (sixty) years old and for women, 55 (fifty-five). Age limits do not apply to rural workers. Membership in a family group or a union does make eligible benefits.

(1) Family group eligibility

Family group is composed of spouse or companion and child over 16 years old and dependents. Child is determined by whether the child is registered under INSS, stepchild, over 16 years old and under 21 years old, and over 16 years old and under 21 years old that don't have own sustenance. Married children may be considered part of the family group if they are practicing rural activities with their parents. In such cases, however, there must be proof of contract of partnership and guaranty of the conditions of insurance.

Members declaring themselves eligible for pensions by family group status cannot have other sources of income, wither from paid activity (informal producer labor group that is paid) or from retirement of any other system of welfare (e.g. Military pension). If the father (or mother) dies, and a child is dependent and over 16 (sixteen) years old and remains in rural activity he is still included in pension calculations. If children are under 21 years old and engaged in paid labor activities, then there is loss of pension amount for the member of the family group applying for pension, unless the youth is practicing the rural activity individually (like a member of a paid producer group that does not work on his family's plantation).

(2) Union membership eligibility

A rural worker that has the position of syndicate (union) leader does not lose his right to pension while he is in that position. Information required for declaration of labor

union membership (rural worker union, fishermen labor union or colony of fishermen) are the following. There must be proof of period of activity to be acceptable:

- Personal identification and qualification of the petitioner: name, date of birth, affiliation, CPF (Social Security), elector I.D., Professional I.D., work book and social welfare - CTPS, and Syndicate registry;
- Category of rural producer (if owner, squatter, partner, share cropper, lease holder, etc.) or small scale fishermen, as well as the system of work (if individual or family economy);
- Period of practicing in the rural activity;
- Address of the residence and place of work;
- Principal cattle raising products produced and/or commercialized by the family unit or main products of the fishing, in relation to the small scale fishermen;
- Cattle Raising and fishing activities developed by the petitioner;
- Documentary sources, of which the entity was based, to emit the declaration, and the photocopies must be attached, authenticated at the public notary or by the Post of INSS, prohibited the retaining of original documents;
- The name of the entity, C.G.C., name of the president, director or emitter legal representative of the declaration, signature and impress;
- Emission date of the declaration.

(3) Documents required if not a member of a rural workers union, fishermen labor union and fishermen's colony

A beneficiary can present two declarations signed by administration authorities or law officials, that know the beneficiary more than 5 years. These authorities must be either a judge, justice of the peace, head of a police department, commander of a military unit, or the local representative of the office of rural extension (now IDAM).

3.3.3 The State Government Policy - The Program "Third Cycle"

(1) Outline

The Program "Third Cycle" has a principal objective to promote the development of each municipality in the State of Amazonas. The program consists of several sub-programs which are grouped under the title of Agro-Alimentar Program, which is directed to develop agricultural related industry inside each municipality. The program started in 1994 and involved participation of private sector.

(2) Agriculture and Food Program supported by Sub-Programs

The general objective of the program is to reduce the imbalances among sectors and between urban and rural. It is intended to stop the immigration of people from rural area to urban district by creating new employment opportunities in each municipality, and provide education and health-care for the better quality of life in rural area. Careful and comprehensive development effort should be made by preserving forest potentiality in each areas.

The program encourages the primary industry for local people to produce goods in response to market needs. It is expected that diversification of products will best utilize the potentiality of the State of Amazonas. The program concerns the feasibility of each project in order to make each industry sustainable. The participation of private sector is a key issue for the success of the program.

Table 3.3.2-1 Investment Budget under the Third Cycle Program

unit: R\$				
Municipality	Agriculture	Agro-Industry	Infrastructure	Total
Carauari	798,000	152,800	0	950,800
Envira	724,000	45,000	0	769,000
Eirunepe	843,700	0	0	843,700
Guajara	828,500	0	0	828,500
Ipixuna	1,026,000	0	0	1,026,000
Itamarati	541,050	0	0	541,050
Subtotal Jurua	4,761,250	197,800	0	4,959,050
Beruri	401,832	0	960,000	1,361,832
Boca do Acre	748,502	398,000	0	1,146,502
Canutama	467,010	99,400	80,000	646,410
Labrea	859,781	90,300	300,000	1,250,081
Pauini	437,605	0	290,000	727,605
Tapaua	793,339	90,300	180,000	1,063,639
Subtotal Purus	3,708,069	678,000	1,810,000	6,196,069
Autazes	1,006,175	463,000	1,046,350	2,515,525
Careiro	881,900	90,000	400,000	1,371,900
Careiro da Varzea	403,771	318,000	635,000	1,356,771
Irاندوبا	621,641	0	795,000	1,416,641
Manaquiri	452,491	0	415,000	867,491
Rio Preto da Eva	643,115	0	850,000	1,493,115
Subtotal Outros	4,009,093	871,000	4,141,350	9,021,443

Source: Extraído do plano original do CIAMA

There are sub-programs with following topics

- Family sustainability in terms of education and health-care
- Sustainable development of agriculture
- Animal sanitation for livestock industry
- Vegetable cultivation in Varzea zone where farmers should be guaranteed to market their products to Manaus.
- Construction of Agro-industrial infrastructure such as storage for agricultural products and transportation equipment for marketing
- Commercial activity and marketing to create direct connection between producer and market. SEBRAE and IDAM should help create establish these conditions.
- Data banking for information concerning production, natural resources, marketing, finances by creating partnership with private enterprises and organizations.

(3) Program Implementation

Investments for sub-programs were to be determined based on the following considerations.

1. Clarity of definition: Clarity of the project frame
2. Cost-benefit balance: Assurance to sustainability
3. Assurance of result: Good promise to success

4. Action plan availability: Practicability of the project

There are discussions that the program is not carried with proper considerations but the budget was set up in the following plan in 1994.

(4) Issues in the program

There are some progress such as agricultural production and road construction around Manaus BR-319 and BR-174, but several points should be noted concerning the validity of the Program.

The program intended a chain reaction starting with the government investment to rural infrastructure, then stimulating private enterprises to work with local low income farmers for the increase of agricultural production.

Participation of private enterprises was one of the key points in the program, and the government intended to encourage private sector. The question is “Was the government truthful and successful in encouraging the activities of private participation.”

In short, implementation is always a difficult issue because it involves money. Also participation is another difficult issue because it involves both communication effort and mediation of benefit between and among stakeholders. Target beneficiaries of people in the rural area were not easy to be informed of the program even though the program appears to carry a significant political message. It will take a long time and enduring efforts to make the political dream of rural development come true.

CHAPTER IV BASIC APPROACH

4.1 Adoption of Participatory Approach

Since the commencement of the first field work, the Study Team has processed participatory investigations by execution of interviews with beneficial farmers, RRA and Questionnaire Survey.

In addition to these survey, the Study Team has promoted participatory approach based mainly on Project Cycle Management (PCM) method in the second field work.

4.1.1 Identification of Beneficiaries

According to the Scope of Work (S/W), beneficial population of the study is defined as the following two types;

- I) Family farmers relying on agricultural production with limited land scale (from 25 ha to 100 ha), which is defined as family farming by PRONAF,
- II) People whose livelihoods rely on extractive activities exploiting natural resources including forest products and aquatic produce.

(1) View of IDAM

In addition to the above, IDAM would supplement the definition with the following conditions;

Beneficial population would be limited to the people within the lands assisted by IDAM at present and in the foreseeable future, because farmers in the outside of the IDAM service area could not be defined as family farmers under PRONAF and besides, IDAM will not be able to provide any supporting services for them in the scheme.

(2) Beneficiaries

As IDAM supporting services would be essential to attain the final goal (mentioned in Chapter 4.4), beneficial population satisfying with I) and II) above would be limited preferably within the IDAM service area.

Beneficiaries identified in the scheme area are shown in Table 4.1.1-1.

Table 4.1.1-1 Beneficiaries and Farming in the Scheme Area

Discrimination	ITACOATIARA		IRANDUBA		MAUES	
	<i>Municipality</i>	<i>IDAM assisted</i>	<i>Municipality</i>	<i>IDAM assisted</i>	<i>Municipality</i>	<i>IDAM assisted</i>
Rural Population	21,591		18,138		17,819	
Medium and Large Size Producers (C*+D* : PRONAF)		37		45		11
Family Farmers (B* : PRONAF)		2,688		790		401
Established Producers (A* : PRONAF)						15
Rural Communities	255	93	65	11	168	13
Producer Groups		30				13
Associations		122		16		13
Cooperatives		1				1
Rural Families				138		
Cassava Producer / Planted Area (ha)	1,800/5,500	265/360	325/350	194/245	632/576	56/94
Guaraná Producer / Planted Area (ha)	80/120	46/69	24/74	24/74	2.627/6,124	627/1,124
Corn Producer / Planted Area (ha)	750/620	750/620	642/282	192/258	98/150	98/150
Pupunha Producer / Planted Area (ha)	350/500	196/210	62/178	42/52	10/20.	10/20.
Cupuaçu Producer / Planted Area (ha)	700/1,900	495/1,010			213/213	213/213
Banana Producer / Planted Area (ha)	260/450	126/130	41/70	17/29	74/113	74/113
Passion Fruit Producer / Planted Area (ha)	97/45	97/45	103/71	89/71	30/30	7/7.
Pineapple Producer / Planted Area (ha)	400/650	240/285			9/4.5	
Papaya Producer / Planted Area (ha)			108/205	75/140	1/0.5	
Orange Producer / Planted Area (ha)	45/45	24/45	74/120	30/29	220/130	20/20
Watermelon Producer / Planted Area (ha)			185/137	111/101	50/100	
Cabbage Producer / Planted Area (ha)			48/43	34/32		
Sweet Pepper Producer / Planted Area (ha)			69/42	47/28		
Pumpkin Producer / Planted Area (ha)			54/40	43/30		
Spring Onion Producer / Planted Area (ha)			91/22	58/14		
Lettuce Producer / Planted Area (ha)			82/26	52/21.5		
Green Cabbage Producer / Planted Area (ha)			57/9	26/3.5		
Coriander Producer / Planted Area (ha)			118/64	64/24.2		
Cucumber Producer / Planted Area (ha)			108/69	101/69		
Tomato Producer / Planted Area (ha)			53/9			
Spring Bean Producer / Planted Area (ha)			90/26	90/13		
Egg Plant Producer / Planted Area (ha)			48/18	48/12		
Family Farmers (Estimated by IDAM) **		239		269		473
Beneficiaries		2,964		1,104		885

* A,B,C,D : Farmers are classified by PRONAF Criteria

** Farmers within additional IDAM Service Area extendable in future

Source : IDAM: Coordination for technical Assistance, Program and Rural Extension Division

4.1.2 Classification of Beneficiaries under PRONAF

Beneficiaries of PRONAF are the rural producers (agriculturists) who can be included in the groups, specified below and summarized as Table 4.1.2-1, confirmed by a declaration of qualification for the program:

(1) Group A:

Family agriculturists settled by the National Program of Agrarian Reform, that didn't contract investment operations up to the individual limits permitted by the Social Credit Program of the Agrarian Reform (PROCERA).

(2) Group B:

Family agriculturists and rural workers that:

- I- explore a part of land in the condition of owner, squatter, leaseholder, partner or concessionaire of the National Program of Agrarian Reform;
- II- reside on the property, in urban agglomerations or close rural areas;
- III- don't have available, at any moment, an area superior to four "módulos fiscais", specified in accordance with the law;
- IV- get their family income from the exploit of the establishment (land), which can be, or not, farmer activities;
- V- have the work of the family as a base of the exploit of the establishment (land);
- VI- have a yearly family income (gross revenue) of R\$ 1,500.00, excluding any rural pension;

(3) Group C:

Family agriculturists and rural workers that:

- I- explore a piece of land in the condition of owner, squatter, leaseholder, partner or concessionaire of the National Program of Agrarian Reform;
- II- reside on the property, in urban agglomerations or close rural areas;
- III- don't have available, at any moment, an area superior to four "módulos fiscais", specified in accordance with the law;
- IV- get at least 80% of their family income (gross revenue) from the exploit of the establishment (land), which can be, or not, farmer activities;
- V- have the work of the family as a predominant part of the exploit of the establishment (land), that work only eventually as employees, in accordance with the seasonal demands of farmers activities;
- VI- have a yearly family income (gross revenue) of more than R\$ 1,500.00 up to R\$ 8,000.00;

(4) Group D:

Family agriculturists and rural workers that:

- I- explore a part of land in the condition of owner, squatter, leaseholder, partner or concessionaire of the National Program of Agrarian Reform;
- II- reside on the property, in urban agglomerations or close rural areas;
- III- don't have available, at any moment, an area superior to four "módulos fiscais", specified in accordance with the law;
- IV- get at least 80% of their family income (gross revenue) from the exploit of the establishment (land), which can be, or not, farmer activities;
- V- have the work of the family as a predominant part of the exploit of the establishment (land), can have up to two permanent employees, with the possibility of eventual assistance from third parties, when the nature of the seasonal activity demands it;
- VI- have a yearly family income (gross revenue) of more than R\$ 8,000.00 up to R\$ 27,500.00;

Beneficiaries also are those that fit into group B, C and D in accordance with their revenue and characteristics of labor employed (used):

(1) Fishermen that:

I- are dedicated to fishing, for commercial purpose, are dedicated to the activity as an autonomous, as a means of personal production or together with other fishermen under the some condition;

II- have and assume contracts of delivery that guaranties the aquisition of the fish by cooperation, fisher colonies and fish factories;

(2) Extractors that are dedicated to exploring plants in an ecological sustainable ways;

(3) Aquiculturists that:

I- dedicated themselves to cultivate organisms that have in the water their normal and most frequent habitat;

II- explore an area not bigger than 2 ha of water surface or occupy up to 500 m³ of water, this when the exploit is effective in tanks with nets;

For effects of fitting into group C and D, 50% of the gross revenue should be from activities of poultry raising, fish breeding, milk-cattle raising, goats, fruit and vegetable planting, sheep breeding, breeding of silkworms and pigs.

The declaration of aptitude for PRONAF should be given:

(1) to the beneficiary that belongs to group A, through the Institute of Colonization and Agrarian Reform (INCRA);

(2) to all other beneficiaries, through authorized agents from the office of the Extraordinary Minister of Agrarian Politics.

Table 4.1.2-1 PRONAF Classification of Beneficiaries

Groups	Land Tenure	Income source	Hand Labor	Family Income
A	INCRA	N/A	N/A	N/A
B	INCRA or Other	100 % from Land	Family	R\$ 1,500
C	INCRA or Other	At least 80% from Land	Family plus seasonal provisional labor	R\$ 1,500-8,000
D	INCRA or Other	At least 80% from Land	Family +up to 2 permanent employees +occasional labor	R\$ 8,000-27,500

Source: IDAM

4.1.3 Rapid Rural Appraisal and Questionnaire Survey

(1) Objectives

The prime purpose of these studies is as follows:

- RRA

To understand the human, natural and social resources at community level. Identify the problems and constraints that farmers and extractivists face, and their aspirations for agricultural development in the study area.

- Questionnaire Survey

The Questionnaire Survey, to be applied simultaneously with the overall RRA should provide primarily quantitative, but also qualitative information, on the agro and socio- economic conditions at individual household level.

(2) Scope and Focus

At the level of each Municipality three communities were to be chosen by the JICA Study Team and at the level of each of the three(3) communities a total of thirty (30) questionnaires were to be applied, totaling ninety (90) per municipality, and two hundred and seventy (270) for the study area as a whole.

Table 4.1.3-1 List of Areas and Communities Researched

Municipality	Locality	Community	Eco-system	Distance form Town
Maues	Medio Apoquitaua	Ponta Alegre	Floodplain / Dry Land	1-2 hrs motor boat
	Igarape do Limao	N.S.Nazare	Floodplain / Dry Land	1 hr motor boat
	Pupunhal	Bom Jesus do Pupunhal	Floodplain / Dry Land	1 hr motor boat
Itacoatiara	Lago do Engenho	Sagrado Coracao de Jesus	Floodplain / Dry Land	3 hrs motor boat
	Lago do Araca	S. Joao do Araca	Floodplain / Dry Land	3 hrs motor boat
	Colonia Rondon	Santo Antonio	Dry Land	40 min vehicle
Iranduba	Ilha Jacurutu	S. Francisco/ Sao Jose	Floodplain	30 min motor boat
	Costa do Iranduba	Divino Espirito Santo / S. Francisco	Floodplain	40-60 min vehicle / 0.5 - 1 hr motor boat
	Jandira	N.S. Nazare / Vila Cavalcante	Floodplain	1 hr vehicle / 40 min motor boat

Source: RRA Survey by JICA Study Team, 2000

(3) Time Frame and Schedule

The Survey ran from June 5 through to July 17, 2000.

June 5 - 10	Team Induction and Training
June 10 - July 6	Fieldwork
June 24 - July 13	Data processing
July 7 - 17	Report writing

4.1.4 CMDR Workshops and Execution of PCM

(1) Introduction

Three participatory workshops were held with male and female farmers and members of the Council of Municipal Rural Development (CMDR) to obtain farmer ideas and opinions on how to improve family rural livelihoods. Workshop dates were November 10, 2000 (Itacoatiara), November 16, 2000 (Iranduba), and November 18, 2000 (Maués).

IDAM and JICA formed management teams to implement workshop activities. The IDAM Chief of Planning, or her representative, and JICA Team Leader explained the study purpose to participants. The JICA community team member clarified workshop structure and process, and the IDAM municipal staff and JICA technical experts facilitated participatory exercises. In Maués, the JICA community expert worked with the IDAM workshop coordinator on material preparations, workshop logistics,

and social and gender participant requirements. In Maués, the IDAM/JICA team was able to gain greater insight into women’s perspective on livelihood issues, a local IDAM female technician played an active role in proceedings, and social, institutional, and economic problems were raised that represented the social differentiation of the people of Maués municipality.

(2) Workshop Objectives

Workshop objectives enabled community stakeholders to:

- (i) identify their livelihood problems;
- (ii) prioritize these problems;
- (iii) suggest and develop strategies to improve their livelihoods; and
- (iv) collect participant perspectives on the existing situation of IDAM technical assistance and a CMDR.

(3) Workshop Inputs and Structure

The workshop participatory methodology included: open sharing of problems (about 10 minutes per president or member of farmer / community association), individual ranking of priority problems (using counters), small group discussions on problem solutions, and large group feedback on identified solutions (by small group leaders).

In Iranduba and Maués all three exercises were carried out. Time restrictions inhibited two activities in Itacoatiara. Different counting methods were used for simple priority ranking exercises, depending on the number of participants and number of problems identified. In Itacoatiara, two counters were provided (one pink, one white). The pink counter was used to identify the most important problem and the white the next important problem. In Iranduba, one counter was used. In Maués, six counters were used (3 for the most important problem, 2 for the second most important problem, and 1 for the third most important problem). Summaries of priority problems identified by communities is presented in section 4.1.

(4) Socio-economic and Gender Characteristics of Participants

(a) Number and Gender of Workshop Participants

The total number of workshop participants was 87. Most local participants were men (70). A detailed list of participants is provided for Maués and names of communities present for Iranduba and Itacoatiara as shown in Table 4.1.4-1.

Table 4.1.4-1 Farmer Association and Municipal Council of Rural Development Workshops

Location	Date	No. of Community Participants			No. of Study Team		Total
		Males	Females	Total	IDAM	JICA	
Irاندuba	16/nov/00	23	1	24	3	6	33
Itacoatiara	10/nov/00	23	3	26	4	4	34
Maués	18/nov/00	24	13	37	7	4	48
Total		70	17	87	-	-	-

Source: CMDR workshops by the Study Team. (Nov.2000)

(b) Socio-economic Characteristics of Workshop Participants

The extent of participation from riverine communities, firm ground or terra firme communities, and municipality officials and urban residents varied by municipality. The varied social and gender differentiation of participants likely impacted on the type of priority problems identified :

(i) Iranduba Municipality

- 16 participants from farmers organizations located in flood prone or vareza areas, mainly from Costa de Iranduba, Costa de Jandira, and nearby Iranduba communities;
- 3 participants from firm ground (terra firme) communities;
- 3 municipal officials (Secretary of Production, Secretary of Social Welfare, Mayor's Assistant);
- 1 Iranduba town resident;
- 5 members of the CMDR (includes the municipal officials, IDAM, farmer representative);
- 3 participants were from diagnostic study communities (Dvino Espirito Santo, Sao Francisco, and Caldeirao). None came from the diagnostic communities on Ihla de Jacurutu (Sao Francisco and Sao Jose).

(ii) Itacoatiara Municipality

- 21 out of 25 invited different farmers and community organizations from vareza and terra firme areas
- No CMDR members because a CMDR does not exist;
- 1 counselor (he came to represent his community, Sacrado Coracao, not as a political official)
- 1 president of woodworkers association engaged in reforestation activities;
- 1 cooperative member of ASCOPE, the successful cooperative located in Sagrado Coracao;
- 6 members from the three communities of the diagnostic study, Sagrado Coracao, Santo -Antonio, and Sao Joao do Araca;
- 1 female Iranduba associate representing the President of her distant community organization, Primavera.

(iii) Maués Municipality

- 13 females, most from Mother's Clubs;
- 10 male members associated with Colonia dos Pescadores, a fishermen's association with more than 400 members from town and riverine communities;
- President of the wood workers association;
- President of the local cooperative, ASCAPALA;
- 1 Antarctica (private sector) extension officer;

- Head of EMBRAPA local office (part time);
- 6 representatives from diagnostic communities (Ponto Alegre, Bom Jesus, S.N. de Nazere)
- 6 members of the Council of PRONAF
- 5 male Presidents or rural producers who heard a radio announcement about meeting
- 3 female Presidents or rural producers who heard a radio announcements about meeting.

(5) Workshop Results

A wide range of issues were elaborated up on by men and women, especially in Maués where 57 problems were identified. Problem solutions were sound and practical. They seldom, however, were based upon understanding of project costs nor management constraints. As a first step in a process of problem analysis with communities, community leaders confirmed they appreciate and are willing to be actively involved in developing solutions to their livelihood problems. IDAM local staffs also appreciated the ease with which stakeholders analyze their problems using participatory methods. Details of participant analyses are found in section 4.1.

4.1.5 Interviews with Beneficiaries

Interviews were conducted in Iranduba, Itacoatiara, and in Maués in all three diagnostic sites and with farmers from nearby localities. Most interviews were community focus group discussions. Farmer interviews also included field farmer interviews.

Each team member focused their discussions on their specific topic of study. IDAM counterpart staff accompanied JICA team members, with two exceptions: a community interview to Sao Joao do Araca, a two hour speed boat ride in Itacoatiara, and in interviews with community members during a vehicle breakdown en route to Itacoatiara. The rural community team member and the vegetable production team member conducted interviews together in Iranduba; on one occasion, the Tropical Fruits expert conducted interviews together in Itacoatiara.

(1) Topics covered in Socio-economic Analysis

The community expert used a variety of participatory methods to obtain responses to a broad range of questions. The main topics covered included:

- Farmers who are the poorest or at most risk (target beneficiaries);
- gender roles in production, household, community life; community organization;
- social rules, regulations, practices regarding land use and management, forest extractive practices, accessing social and farmer services;
- community definitions and perceptions about ways to strengthen community organizations, farmer organizations, women's associations;

- exchange relations within communities, between communities, municipal administration, EMPRABA, and IDAM;
- best practices from farmer organizations and community associations for improving production, marketing, income, savings, empowerment, advocacy and networking strategies;
- effective systems for transfer of technology and socio-cultural and economic conditions facilitating them;
- male and female farmers perceptions on their life situations and livelihoods and needed social subsidies from federal, state, and non-governmental organizations;
- policies and institutions outside their community that affects their quality of life and incomes (eg. land tenure, tax policies, churches, urban service center development strategies); and
- farmer attitudes and ideas how to get their needed technical assistance from IDAM.

(2) Number of Beneficiary Interviews by Municipality and Community

The following provides an approximation of field interviews made by the community expert. Interviews mainly took place in community meetings, and in selective interviews with male and female beneficiaries, local government officers, EMBRAPA staff, and NGO activists. Various group exercises were done to test out analytical capacities of members; capacity of groups to work together (including giving a group task to complete for two weeks), leadership and management skills of farmer association or community leaders, and gender sensitivity of male and female community members as well as IDAM staff.

Table 4.1.5-1 Beneficiary Interviews by Municipality and Community

Location	Total	Communities/Others
Iranduba	88	<i>Communities:</i> S.N.de Nazere(2), Sao Jose (Ihla de Jaracutu(18+19=37), Sao Franciso(21), Divino Espirito Santo(15), Sao Sabastiao(13)
	4	<i>Others:</i> Embrapa (1), Municipality Officials (3)
Itacoatiara	21	<i>Communities:</i> Santa Rita-Rondon (6), Sao Joao do Araca (15)
	6	<i>Others:</i> Workworkers Association (3), Business persons (3)
Maués	73	<i>Communities:</i> Ponto Allege(33), S.N. Nazere(40)
	5	<i>Others:</i> Embrapa (1), Church Pastoral Programs(2), Amerinda (2)
Total	197	<i>Communities:</i> 182; <i>Others:</i> 15

Source: JICA Study Team, 2000

4.1.6 Meetings with Mayors' Office

(1) Iranduba

(a) Introduction

JICA study team held a meeting with Mayor, Mr. Jose Maria Muniz. The vice mayor/agriculture secretary, Mr. Fernando and head of IDAM Iranduba office, Mr. Jaganhara also attended the meeting. After briefing the objectives of meeting and scope of the study, the study team open the meeting to get information regarding agricultural development strategy of Iranduba and the progress of relevant projects which are on going or under promotion.

(b) General Impressions of the Mayor

Aquaculture Project

Aquaculture seems to have great potential as an alternative livelihood in Iranduba. The mayor's office is now asking IDAM conceptualization and coordination of aquaculture project. As for capability of project implementation, municipal office can provide supportive staff, and IDAM will assign fishery engineers for training and extension work, when the project is approved. We can also ask other institutions such as EMBRAPA, INPA and FUA for technical supports. The Mayor expects to procure necessary fund from AFEAN (State Government fund) and/or BASA (Federal Government).

Agriculture Development

The municipality has agricultural development plan of construction of plastic house in terra firme for stable vegetable production. The project is now on going, and 520 of plastic house now are cultivated or under construction.

The municipality gives priority to small farmers in varsea. It is true that majority of small farmers in varsea don't have documents on land title, so they can not ask credit to the bank. Mayors office supports these small farmers by issuing a kind of certificate of land title.

Marketing

In the marketing flow of agriculture products, the middle man plays an important role. However, it is a fact that the middle man is squeezing profits out of the farmer. Mayors office recognize that marketing improvement is one of the priority project in order to realize of fair transactions. The new marketing improvement project which including construction of new producers market were explained. This project is due to be performed as the joint venture project of IDAM and AFEAM, and the project proposal now is under evaluation.

(c) Outline of the Rural Development Project in Iranduba

The Summary report which mentioned outline of agricultural development in iranduba were submitted by Vice-Mayor/Agriculture Secretary. The agricultural related project for small farmers are summarized below:

The small scale farmer assist activity in Iranduba

Rural Credit:

- Increase in efficiency of administrative work and curtailment of delay of credit provision
- Registration and selection of farmers
- Formulation of Association (Farmers organization for credit)

Marketing

- Maintenance of Fairs and Market facilities
- Formulation of organization for marketing of agriculture products

Transportation for distribution of agriculture products (Terra Firme and Varzea)

- Maintenance of 2 trucks
- Maintenance and Rental of 2 boats

Agricultural Mechanization

- Acquisition of 36 tractors through the 3rd cycle for Varzea communities

Others

- Distribution of Agricultural Implements (Machete, Board Sward, Cart, Farinha House)
- Distribution of Seeds (Corn, Beans, Papaya, Passion fruits, Watermelon)
- Distribution of diverse fruit tree seedlings
- Maintenance of rural roads
- Rural electrification
- Elaboration of Projects for the programs (PRONAF, PRODAM, 3rd Cycle, PAGRI, etc.)
- Implementation of Artesian wells
- Training for farmers
- Contract with IDAM and EMBRAPA

(2) Itacoatiara

Opinions of the Mayor's office were obtained through interviews with the Agricultural Secretary, Mr. Sergio Colares Carvalho, and with the Secretary of Social Assistance, Ms. Elizabeth.

(a) Highlights of recent activities

- The Mayor's office has agreed to a four-year agricultural development plan prepared by the Secretary of Production. The plan covers all seven micro-regions. These are Itacoatiara area, Arari area, Novo Remanso area, AM-010 (Itacoatiara-Manaus) highway area, Vicinal Roads area, Canacari area, and Cerpa area. The Secretary has hired 8 staff, of whom 4 are agricultural technicians and 2 are women. The office now includes a small research library, computer, and the beginning of a database program to help identify farmer associations. Other initiatives taken since January 2001 include
- Development of an agricultural calendar for each of the seven micro-regions of Itacoatiara and plan of work on production for the municipality according to it.
- Research agreements or conventions for technical assistance signed with EMPRABA, IDAM, SEBRAE, IBAMA, CEPLAC, INPA, INPAAM and SESCOOP. With CEPLAC, the Mayor's office has agreed to introduce agro

forestry schemes at 103 sites and recruited 2 technicians for this activity to work with CEPLAC.

- Signed convention with IDAM and assigned 2 agricultural technicians to work with IDAM.
- Financial and technical support to aftosa campaign, including supplying kits and providing vaccinations, including from the Mayor's staff.
- Set up of informal agribusiness chamber of commerce in the Secretary of Production's office
- Reorganization, reequipping and reopening of fruit pulp processing plant whose initial capital was from Third Cycle funds but has been closed down for a number of years.
- Packaging and distribution of 2400 kg of rice and 2400 kg of corn seed to farmers. Seed was obtained under Third Cycle. Plastic sacks (100,000 sacks of 1 kg) have been requested from IDAM President.
- Submission of Third Cycle requests for rice and soybean production promotion. This includes requests for 2 Chinese tractors for farmers growing rice and soybeans and rice and corn rotations, and 1 Chinese tractor, 1 vehicle, refrigerator, and dryer for Secretariat.

(b) Important sub-sectors to be encouraged

1. Tropical fruit and agroforestry
2. Orchard culture
3. Livestock raising (cattle, horse, sheep, goat, swine and chickens)
4. Aquaculture and fishery
5. Improvement of basic infrastructure for marketing crops and fishes
6. Upland rice and soybeans
7. Farmer association development

(c) Current vision of Mayor's office for assisting small rural producers

The Mayor's office would like to provide greater attention to small producers than in the recent past. Their new program orientation includes reintroducing rural extension by promoting association development and addressing both producer and consumer needs of small producer families. It also is increasing agricultural technical support to small farmers. They would like to have more agricultural technicians directly working from the mayor's office. A third area of assistance is helping farmers get legal documents, especially birth certificates and documents which would allow farmers' associations to become for-profit associations. They recognize that most farmer association documents are non-profit associations, thereby making it difficult for them to get into agribusiness. A fourth area of assistance they would like to develop is aquaculture, but they stated they need more technical information in this area to proceed further.

The Secretary of Social Assistance stated that the Mayor's office is preparing a

proposal to set up a floating cartorio service to assist rural producer families access legal documents. The service is to improve access to birth certificates and enable farmers to get other documents from a Catorio (notary public) as needed. In May 2001, they made a pilot test of the service effectiveness at a military base and more than 500 certificates were provided in 5 days.

The Mayor's office plans to continue and strengthen its support to farmers associations, such as ASCOPE, on marketing crop related issues. It also plans on helping farmers with price negotiations on fertilizers and lime, since their prices have had major increase in recent years. The Mayor's office highly expects participation from IDAM and other government institutions and welcomes technical support in many areas. It is especially interested in support for aquaculture development.

We are proposing the following projects for financing to AFEAM and BASA:

1. Provision of 100 small tractors in order to improve farm activity
2. Improvement of farm roads for smooth marketing of agro-crops and fishes
3. Establishment of a starch processing plant using cassava, soybean and rice
4. Vaccination and blood collection campaigns for livestock
5. Introduction of net cage culture system
6. Rehabilitation of fish refrigerating facilities for fishermen's colonia (Z-13)

We also propose a social subsidy to the municipality to establish a floating cartorio service to reach distant communities along lakes and rivers and a mobile van cartorio service to reach distant communities accessible by secondary or vicinal road. Faced with high out-migration of rural youth to Itacoatiara town, we propose a youth leader's training program and agribusiness training through activities aimed at strengthening farmer associations.

(3) Maues

(a) Introduction

A meeting was held with Mayor Sidney Ricardo de Oliveira Leite to get his general impressions about the priorities for agricultural production in Maues and the possible role of the JICA project. Later, a follow up meeting was held with the Municipal Secretary of Rural Production, Mr. Eugenio Borges, in order to evaluate the details of the Mayor's agricultural plan.

(b) General Impressions of the Mayor

The Mayor's top priority in agriculture is the restructuring of the Municipal agricultural extension service into a system which functions well and attends many of the more remote communities. Additionally, he insists that growth in the area of agriculture, livestock and fisheries must be done with a high degree of environmental sustainability. Other priority areas of interest to the Mayor include:

1. Improvement of agricultural processing activities
2. Introduction of low cost tractors to many communities
3. Creation of nurseries for tree crops such as tropical fruits and guarana
4. Recuperation of existing guarana farms which are in decline
5. Introduction of high quality animal breeds
6. Reinforcement of fishery and aquaculture activities
7. Improve productivity of existing cassava processing activities
8. Increased production of basic grains (corn, beans, rice)
9. Creation of new agro-industries
10. Facilitation of transport and distribution of agricultural products
11. Improvement in the quality of life of rural dwellers through improvement of housing, means to associate, and basic social services (energy, health, education)

With respect to the important area of guarana production, the Mayor outlined his priorities as follows:

1. There is an urgent need to improve productivity through the use of more simple, farmer-friendly technologies. Current technologies being offered to the farmer are not succeeding because they are too difficult to adapt.
2. The cost of improved guarana seedlings is too high. Costs should be lowered by creation of community nurseries of non-Embrapa materials.
3. Economic studies are needed to determine whether or not the more complicated technologies being promoted by Embrapa and IDAM are economically viable.
4. Expansion of new guarana areas should be discouraged; recuperation of existing areas in decline should be encouraged.

With regard to the possibility of agricultural assistance from JICA, the Mayor suggested the following areas of focus:

1. Develop a series of low-cost, simple technologies that will improve current levels of guarana and tropical fruits production by 20-30%.
2. Facilitate access to external markets for Maues agricultural products, especially guarana, fruits, and fish.
3. Diversify guarana farmers through the encouragement of SAF (sustainable agro-forestry) techniques which include new emphasis on mixed cropping with fruit, nut, and wood-bearing trees.
4. Development of a central guarana cooperative should be a long term goal, and it should be a “mixed” cooperative which also receives and processes fruit and cassava.
5. Improvement in area of cassava processing - techniques are needed to give higher yields, higher quality, and generation of new processed products besides farinha.

(c) Details of the Mayor’s 11-Point Agricultural Plan

The Mayor’s Agricultural Plan has 11 key components. Details of the components describing the overall restructuring of the extension service, and the guarana

components are described below. Aspects of the other programs are summarized in a table at the end of this Section.

Project for the Establishment of “Technical Assistance Poles” in the Rural Communities

The Mayor has established “Technical Assistance Poles” in the following rural communities:

1. *Maues*, 2. *Menino Deus do Limao*, 3. *Santo Antonio do Mucaja*, 4. *Marau*, 5. *Sao Joao*, 6. *Sao Pedro (Castanhal de Baixo)*, 7. *Bom Jesus do Canela*, 8. *Liberdade*, 9. *Nossa Sra. Lourdes*, 10. *Osorio da Fonseca*, 11. *Sao Pedro (Lago Grande)*

The basis of this “Polar” extension service is the requirement that a municipal agricultural technician and 1 municipal health worker must reside in each of the rural poles. Each pole will service anywhere from 10-20 neighboring communities. The Mayor’s Office will provide an office and housing for the municipal technicians. The following table outlines the resources that will be made available to the “Polar” project:

Table 4.1.6-1 Basic Resources for Municipal Agricultural Extension Project

Item	Annual Cost (R\$)
10 aluminum canoes of 6m, with 15 hp motor	66,600
2 covered aluminum canoes, with 40 hp motor	30,520
Construction of housing and offices in 10 communities	200,000
Basic technician tools (backpack sprayers, tools, knives, boots)	15,000
Short wave radio communication equipment	31,180
Fuel, oil, maintenance	45,600

Source: Maues Mayor’s Office, 2001

Project for the Recuperation of Guarana Farms

This project is designed to increase overall guarana productivity in Maues through the selective replacement of dead and dying trees with improved guarana clones. A Municipal Guarana Nursery will be established in the center of Maues to provide low cost “traditional” seedlings to the farmers. In addition, some “improved” clones will be purchased from the AmBev nursery. Municipal technicians and farmer leaders will receive special training in guarana production. The basic resources necessary for this project are described below:

Table 4.1.6-2 Basic Resources for Municipal Guarana Recuperation Project

Item	Annual Cost (R\$)
50,000 improved clones purchased per yr	75,000
50,000 seedlings grown in municipal nursery	-
Construction of municipal nursery (70x100 m)	63,964
Training for technicians and farmers	23,000

Source: Maues Mayor’s Office, 2001

Program for the Expansion of Guarana Production

The objective of this project is to expand the productive areas of guarana in Maues through new plantings in 450 ha of capoeira areas, using simple technology packages that are easy for the farmers to adopt. Mechanized preparation of land is expected to occur in 50% of these areas. The increased production of guarana will provide more needed raw material for local guarana processing industries.

Table 4.1.6-3 Basic Resources for Municipal Guarana Expansion Project

Item	Cost (R\$)
Purchase of 50,000 improved clones per yr	75,000
Production of 150,000 traditional seedlings per yr	75,000
Mechanization costs for 200 ha per yr	106,000

Source: Maues Mayor's Office, 2001

Summary of Municipal Guarana Programs

The following table presents a summary of Mayor's Agricultural Programs for the period of 2001 – 2005. Included are the approximate costs of each program, the expected income to be realized, and the number of employment opportunities created. Funding for these programs is expected to come from the Municipal Budget, SUFRAMA, and other sources that were not described.

Table 4.1.6-4 Components of Municipal Agricultural Plan with Basic Budget and Outputs, 2001

Project Name	Annual Income Expected (R\$)	Employment Generation	Total Cost (R\$) 2001-2005
Establishment of Municipal Poles	-	25 technician	525,700
Introduction of Mechanized Agriculture	-	15 drivers	1,002,553
Guarana Recovery	1,050,000	875 families	461,964
Guarana Expansion	1,350,000	675 families	768,000
Cassava Improvement and Expansion	2,000,000	2000 families	633,730
Tropical Fruits Expansion	2,500,000	600 families	621,010
Construction of Low Cost Rural Housing	-	4000 families	580,000
Basic Grains Production	-	-	154,100
Poultry Production	960,000	400 families	46,300
Sheep Production	200,000	100 families	300,000
Cattle and Dairy Production	400,000	30 families	291,000
TOTAL	8,460,000		5,384,357

Source: Maues Mayor's Office, 2001