

CHAPTER 4 DEVELOPMENT SCENARIO OF THE NORTHERN REGION

4.1 Background of the Development Scenario

The Study Area is subject to strict environmental rules imposed to the Legal Amazon region. On the other hand, it is considered as late development region in comparison with the rest of the Country, and is the target of the federal government measures aiming at the alleviation of social differences. This is thus a region that requires measures in order to improve the life quality of the local community through strengthen the industry.

On the other hand, due to its rich natural resources and to the recent implementation of the transportation system carried out by the federal government, it is becoming a privileged location region thus attractive for new investment that can cause a fast process of disordered development. In order to avoid such situation, the elaboration of a long term project becomes necessary, taking into consideration the environmental aspect and the economic growth, besides measures that aim to control the disordered development before the private sector investment starts without a proper planning.

(1) Problems and possibilities concerning to the Environmental Conservation and Economy Revitalization activities

The existing problems and possibilities to be solved and to attain apparently antagonistic objectives, i.e the fulfillment of environmental rules and the revitalization of the regional economy, can be summarized as follows;

- ◆ The current conservation area of the Study Area, which is part of the Amazônia Legal region, is of 6,866 km². However, in order to fulfill the environmental rules, it is necessary to increase the reservation area to 19,432.70 km² (56,8% of the Study Area) making absolutely necessary to implement measures for the recuperation of a large pasture area into environmental conservation areas (approximately 13 thousand km²).
- ◆ Most of the region producers are in a poverty condition thus without the measures to improve their economic conditions, it is practically impossible to implement conservationist measures. On the other hand, the transformation of the pasture area, utilized for extensive husbandry, into reservation areas, is costly even for the large-scale producers.
- ◆ The production system in the Study Area shall be oriented for the substitution of the current extensive husbandry activity by the intensive agriculture and cattle husbandry, allowing the increase of the producers' per capita income. Above all, it is expected that with the introduction of grains cultivation through the crops rotation system the creation of opportunities for the implementation of the intensive livestock husbandry becomes possible.
- ◆ Most of the region producers does not have a financial reserve nor have access to the agricultural credit system offered by the federal government. The implementation of technical and financial assistance systems for this sector would give support to the improvement of life quality of mini- and small-scale producers. At the same time, it would generate the increase of production volume and would make possible to carry out activities oriented to the fulfillment of the environmental rules.

(2) Community's expectation

The summary of the analysis of problems detected in the data collected through the carried out surveys (in workshops and interviews) is presented as follows:

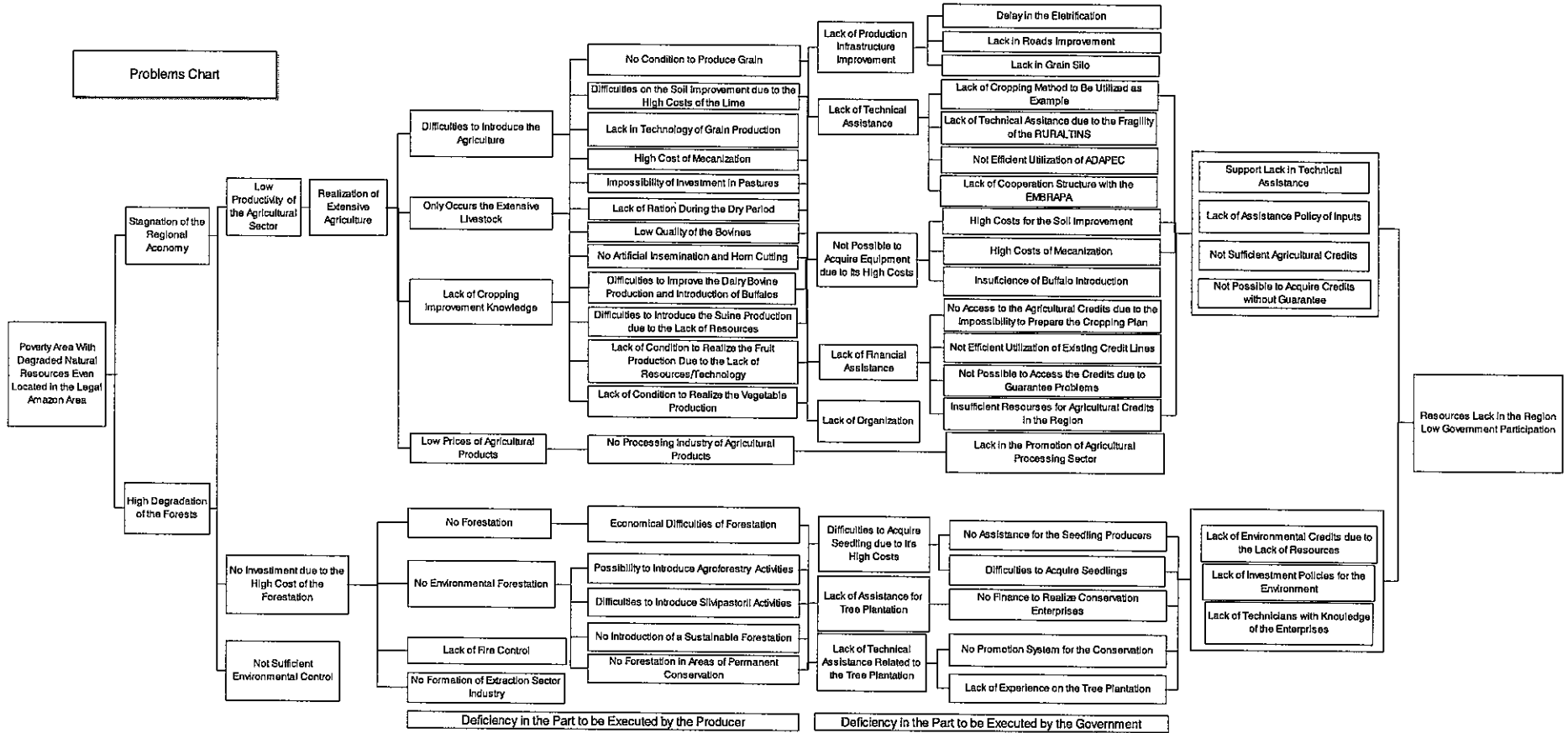
- ◆ As problems we can mention the lack of technical knowledge regarding to cultivation and to agricultural management, as for agriculture, besides the low productivity caused by the difficult access to funds for cultivation, lack of guarantee what hinders the access to agricultural credit, lack of associational formation, among others.
- ◆ As for the livestock husbandry sector, the mentioned problems were the precariousness of the necessary facilities for the introduction of the intensive system, such as installation of fences and corrals and the lack of funds for so. We observe that there is a higher awareness about the need to introduce diversified species, such as bubaline and swine.
- ◆ In the financial sector, there is a significant discrepancy between the large-scale producers, who have access to agricultural credit, and the mini- and small-scale producers, who do not have access to this credit. In the case of large-scale producers, the problem resides in the high cost of funds procurement caused by the lack of mortgage capacity and by the high interest rates policy of the federal government. On the other hand, for the mini- and small-scale producers, the problem is directly related to the lack of access to the agricultural credit itself. In order to carry out the activities, the procurement of funds is a vital factor, making necessary to solve the guarantee issue and the problem of the implementation of a low interest rates financing system.
- ◆ In the infrastructure sector, the mentioned problem was the lack of roads in the Study Area. However, the community acknowledges that the main roads have been recently implemented, creating the expectation of the introduction of new industries with the objective of efficiently utilize this transportation network.
- ◆ In the case of mini- and small-scale producers, there is a general consensus about the need of organization in order to purchase the production inputs, to procure necessary funds for so, and to commercialize their products.
- ◆ As for the environmental aspect, many of the participants raise the issue of forest fires, the environmental related problems, and the lack of activity of the environmentalist groups. Besides, the difficulty in fulfilling the environmental rules and the dissatisfaction with the strictness of the environmental rules concerning to the legal reservation areas were also mentioned.

(3) Federal Government aims

The Brazilian government goes on with the policy of minimum possible interference, only limited to act in strictly necessary cases. Besides, each organism is obliged to be responsible for its own budget.

The problems resume are shown bellow.

Problems Chart



4.2 Definition of the development scenario objectives

The objectives of the development scenario for the Study Area shall be defined according to the following description:

Revitalization of the regional economy

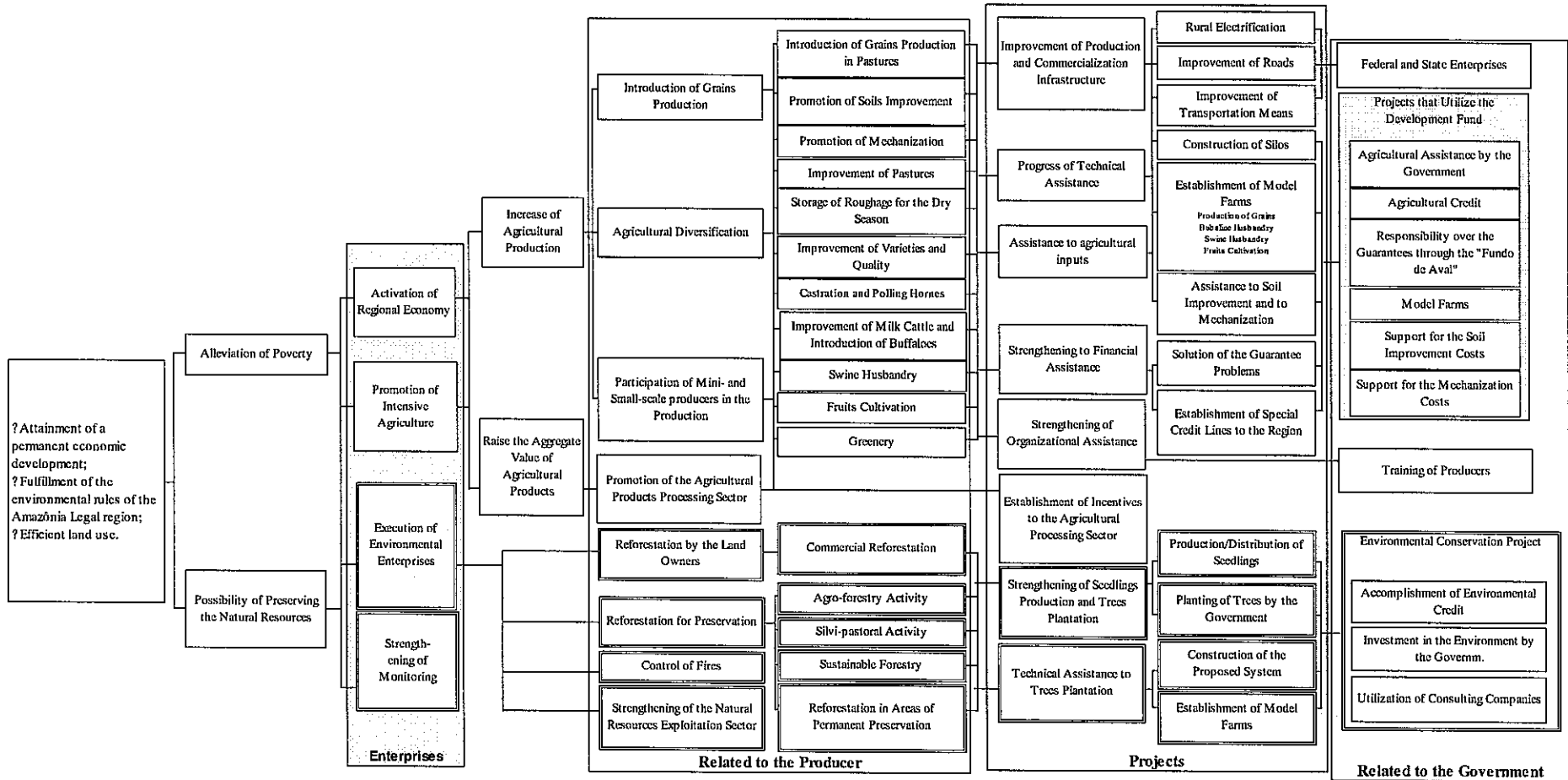
In order to revitalize the regional economy of the Study Area, the increase of land productivity is necessary in what concerns to the agricultural activity, the predominant activity in the region, gradually substituting the agricultural management system, from the current extensive system to the intensive system. The introduction of appropriate measures to the conditions of each property is vital.

- ◆ In regard to the medium- and large-scale producer, the recuperation of the pasture shall be pursued with the introduction of grains cultivation in areas of extensive cattle husbandry in order to prepare the basis for the implementation of intensive cattle husbandry.
- ◆ Furthermore, the improvement of the technological level of the cattle husbandry activity shall be pursued, increasing the land productivity through the intensification of the cattle husbandry management. The increase of income through the agricultural activities carried out by medium- and large-scale producers shall also be pursued with the introduction of grains cultivation and intensive cattle husbandry.
- ◆ As for the mini- and small-scale producer, the integrated administration is recommended aiming at the intensive utilization of land, pursuing the improvement of agricultural management by the producers, besides promoting the formation of production nucleuses with the objective of allowing the access to technology and to the market.
- ◆ Implementation of efficient infrastructure aiming at the strengthening of the producers' competitive capacity as well as the strengthening of the supporting structure to research and technological diffusion.

Preservation of natural resources

- ◆ With the implementation of the efficient land use (intensive agriculture and cattle husbandry activities), the increase of productivity is expected, with the consequent reduction of the area destined to agricultural activities and increase of the legal reservation areas, thus fulfilling the environmental rules.
- ◆ Introduction of silviculture activities, reforestation in reservation areas, silvi-pastoral activities, as well as preventive measures against the forest fires.

The development scenario shall be defined in conformity with the short, medium and long terms strategies. The short term strategy corresponds to the preparation stage of the basis for the attainment of objectives; at medium term, the activities shall be developed; and at long term, the objectives established for the development scenario shall be attained.



4.3 Strategy for the attainment of the development scenario objectives

4.3.1 Development scenario at short, medium and long terms

The long term scenario shall have as objective the permanent economic development possibility as well as the fulfillment of the environmental rules.

In order to concretize the long term scenario, the development shall be oriented in order to make the industrial growth compatible with the environment. For the purpose of revitalizing the economy, the livestock husbandry activities efficiency shall be increased, as well as increase the productivity of mini- and small-scale producers who compose most of the population.

Considering the above mentioned, the specific scenario for each period was defined as follows:

Scenarios at Short, Médium and Long Terms

Period	Specific Scenarios
Short Term (until 2005)	<ul style="list-style-type: none"> ➤ Definition of a concise land use plan. ➤ Introduction of an agricultural administration system based on compatible crops in appropriate land, this in turn based on the land use plan. ➤ Introduction of grains cultivation. ➤ Inicie actions of intensive livestock. ➤ Introduction of demonstration farms. ➤ Introduction of agricultural administration through the production nucleus. ➤ Start of the bubaline and swine breeding. ➤ Introduction of the conservationist activity. ➤ Implementation of infrastructure in deficient areas. ➤ Implementation of the support and research systems.
Medium Term (until 2010)	<ul style="list-style-type: none"> ➤ Development of grains cultivation, implementation of activities for the recuperation of pasture land, increase of grains and meat cattle production. ➤ Stabilization of the bubaline and swine breeding activity, starting the preparation of the basis for the capital formation on the part of the mini-scale producers. ➤ Start of development of the agricultural system through the production nucleus based on the associations, with the increase of grains, fruits, greenery and livestock production. ➤ Widespread divulgence of the reforestation activity, with the substantial increase of the reservation area.
Long Term (until 2015)	<ul style="list-style-type: none"> ➤ Objectives concerning to the fulfillment of the environmental rules related to the Amazônia Legal region are practically attained. ➤ Reduction of the cultivable area (pasture under the extensive husbandry system), with the expansion of the reservation area. ➤ Introduction of the intensive agriculture and livestock husbandry system, at the same time when the Study Area becomes a grains and meat cattle production area. ➤ Implementation of the conservationist activity, at the same time when the wood production development shall be promoted. ➤ As the result of these activities, activities oriented to the sustainable development shall be implemented.

4.3.2 Development Strategy

(1) Measures to be implemented in order to attain the expected scenario

The measures to be implemented in order to attain the expected scenario correspond to the substitution of producers activities who shall start to perform intensive agriculture and livestock husbandry activities, and to the implementation, within the governmental sphere, of necessary conditions to make viable the producers participation in conservationist activities, searching for the sustainable agricultural development in accordance with the environmental conservation of the Amazônia Legal region. The measures to be implemented in order to

attain the specific scenarios shall be oriented according to the following strategies:

General objectives	Specific objectives	Contents of producers' activities	Measures to be implemented
Revitalization of regional economy	<ul style="list-style-type: none"> • Increase of agricultural productivity (introduction of intensive agriculture and livestock husbandry) 	<ul style="list-style-type: none"> • Introduction of grains cultivation for the transformation of pasture land into agricultural land. • Promotion of the intensive livestock husbandry activity. • Promotion of agricultural diversification oriented to the small-scale producers. • Growth of the agricultural processing industry. 	<ul style="list-style-type: none"> • Implementation of productive infrastructure. • Strengthening of the technical assistance measures. • Strengthening of the assistance measures regarding to inputs and equipment. • Strengthening of financial assistance measures. • Strengthening of assistance measures to the organization of associations.
Preservation of natural resources	<ul style="list-style-type: none"> • Implementation of the conservationist activity (reforestation) 	<ul style="list-style-type: none"> • Promotion of reforestation by the land owners. • Increase of the reforestation activity in the legal reservation area. • Prevention against the forest fires. • Promotion of the natural resources exploitation activity. 	<ul style="list-style-type: none"> • Implementation of the seedlings distribution system. • Measures oriented to the financial assistance. • Measures oriented to the technical assistance. • Reforestation policy.

(2) Specific objectives at short, medium and long terms to be attained by the producers.

In order to attain the final objectives, a Land Use Plan shall be defined at the long term. This land use plan shall be oriented for the promotion of improvements in the agricultural administration system, focusing on the intensive agricultural management system to replace the current extensive system, transforming the production activities at present being carried out in areas without agricultural aptitude into conservationist activities, aiming at the improvement of the agricultural management system as well as having an eye on the environmental conservation issue. The objectives to be attained by the producers at short, medium and long terms shall be defined as follows:

a. Objectives to be attained at the long term (2015)

The objectives to be attained at the long term are as follows:

Objectives to be attained at the long term (2015)

Activities	Objectives
Agriculture and Livestock Husbandry	<ul style="list-style-type: none"> ➢ Increase of the meat cattle productivity in four times in relation to the current level (75kg/ha). ➢ Implementation of grains cultivation in 28% of the extensive husbandry area, reaching 430 thousand ha. ➢ Transformation of most of the farmers into producers, with the introduction of the intensive cultivation system (current proportion: 16.7%). ➢ Increase of the agricultural producer income reaching a minimum of approximately 3 minimum wages. ➢ Formation of specialities in the region.
Processing of agricultural products	<ul style="list-style-type: none"> ➢ Formation of an agricultural products processing industry capable of revitalizing the regional industry.
Environmental Conservation	<ul style="list-style-type: none"> ➢ Transformation of 50% of the property of each producer, what corresponds to the reservation area, into areas destined to agro-forestry and silvi-pastoral activities. ➢ Development of reforestation activities in areas appropriate for so, starting the wood production. ➢ Increase the current reservation area (19.1%) to more than half of the region's area.

b. Objectives to be attained at medium term

In order the long term objectives can be attained, the following objectives shall be attained at the medium term:

Objectives to be attained at the medium term (2010)

Activities	Objectives
General	<ul style="list-style-type: none"> ➤ Acknowledgement of the Land Use Plan in each municipal district by most of the land owners. ➤ Maturation of the agricultural management system based on compatible crops in appropriate land.
Agriculture and Livestock Husbandry	<ul style="list-style-type: none"> ➤ Definition of appropriate technology to the agricultural diversification system. ➤ Attainment of half of the final targets related to grains cultivation. ➤ Revitalization of the associations activities. ➤ Establishment of the production technology by the producers. ➤ Development of the agricultural administration through the production nucleus. ➤ Acknowledgement of the importance of forming specialities in the region.
Processing of agricultural products	<ul style="list-style-type: none"> ➤ Effective start of the agricultural products processing industry activities.
Conservationist	<ul style="list-style-type: none"> ➤ Implementation of the conservationist activity in the legal reservation area. ➤ Accomplishment of approximately half of the targets established for the reforestation, silvi-pastoral and agro-forestry activities.

c. Objectives to be attained at the short term

The short term objectives are those which shall be attained during the preparation period for the basis for the activities implementation, when the Land Use Plan shall be defined, and the agricultural administration system destined for each area, according to the mentioned plan, shall be consolidated. In this period, the groups for the activities promotion shall be created as well as the land use plans established for each municipal district, besides the creation of Model Farms, the definition of the reforestation program and the start of the conservationist activities. The objectives to be attained for each activity are described as follows:

Objectives to be attained at the short term (2005)

Activities	Objectives
General	<ul style="list-style-type: none"> ➤ Creation of groups for the promotion of activities. ➤ Start of the procurement of necessary funds.
Agriculture and Livestock Husbandry	<ul style="list-style-type: none"> ➤ Creation of Model Fields of the agricultural diversification system. ➤ Start of introduction of the agricultural diversification system.
Processing of agricultural products	<ul style="list-style-type: none"> ➤ Establishment of the agricultural products processing Program.
Conservationist	<ul style="list-style-type: none"> ➤ Establishment of the reforestation program in each municipal district. ➤ Start of the conservationist and reforestation activity. ➤ Organization of associations and definition of cultivation models for each of them. ➤ Management of the agricultural administration system through the production nucleus.

d. Positioning of the Program Alternative Proposals

This Program has as basic objective the promotion of rationalization through the introduction of the intensive administration system and of the agricultural activity diversification which is appropriate to the producer as well as to the region, aiming at the revitalization of the regional economy. This is in conformity with the general plans that guide the Development Program of the Northern Region, considered a priority area for development by the State government, or with the Pluri-annual Plan of the Federal Government that considers this region as integrant part of the exportation corridor formation program, based on the exports strengthening program, as well as with the program for the promotion of agricultural diversification aiming at the creation of a sustainable agriculture. The relationship between this Program and the

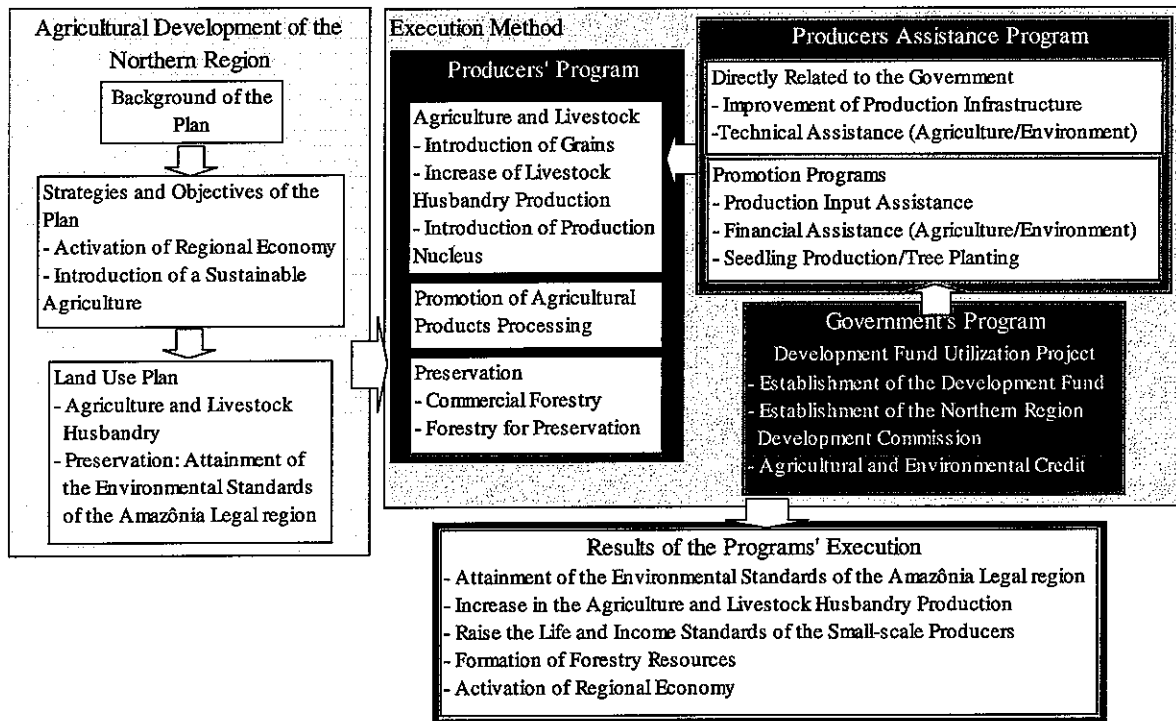
other programs at state and federal levels is presented as follows.

- ◆ The Pluri-annual plan aims at strengthening the Brazilian competitiveness in the international market, while this Program searches for the strengthening of the competitiveness within the national and international spheres concerning to the agricultural sector.
- ◆ In the Pluri-annual Plan, the Multi-modal Transportation Program of the Araguaia and Tocantins rivers as well as the North-South Railway was implemented as a manner to strengthen the transportation system, while this Program aims at making possible the optimization of the facilities utilization based on the activities to be carried out by the federal government.
- ◆ The federal government is strongly precognizing the reduction of regional differences, and the Study Area was indicated as a priority area. In case the revitalization of the regional economy becomes possible as a result of this program, then it means that there was a significant contribution in the reduction of the regional differences.
- ◆ In the environmental sector, measures that aim at the preservation of the Amazon natural resources shall be implemented, as well as its effective use considering that these objectives are actually not being pursued. With this program, the promotion of natural resources preservation is intended to be promoted, implementing its appropriate utilization. The success of this program largely depends on the policy precognized by the federal government for the environmental sector.
- ◆ The State government also promotes the cultivation of compatible crops in appropriate land, in conformity with the measures established by the federal government, which is perfectly in accordance with the basic guidelines of the present Study.

4.4 Development Scenario of the Northern Region

The ultimate objective of the Program is the fulfillment of the environmental rules concerning to the Amazônia Legal region (legal reservation of 80% for the Amazon forest region and 35% for the Cerrado) through measures that aim at the rational and effective use of the land resources, with the introduction of the intensive agricultural activity in an area corresponding to 37 thousand km², encompassing the 38 municipal districts of the northern region. At the same time, the revitalization of the regional economy shall be implemented, introducing the sustainable agricultural activity in order to make compatible the activities oriented to environmental conservation with the long term economic development. The northern region development scenario is presented as follows:

Development Scenario of the Northern Region Agricultural Sector



Elaboration of Land Use Plan that aims at fulfilling the established rules for the Amazônia Legal region, and based on this plan, promoting activities directly related to the producers, as well as promoting the revitalization of investment on the part of the producers through the implementation of support measures such as governmental programs and the supporting programs to the policies to be adopted.

With the execution of these activities, the average income of mini- and small-scale producers is expected to be raised from the current approximate 0.5 minimum wage to the level of 3 to 10 minimum wages; as for the medium- and large-scale producers, the livestock production volume is expected to be increased in 5 to 10 times in relation to the present production, and at the same time, with the introduction of grains cultivation, the possibility of intensive land use and the fulfillment of the environmental rules concerning to the Amazônia Legal region are also expected.

The basic guidelines to be implemented in the program elaboration are as follows:

Guidelines for the land use

- ◆ Organization of necessary information regarding to land use through the GIS method; definition of a Land Use Plan aiming at the optimization of the land use and elaboration of investment programs in facilities based on this Plan.
- ◆ The Land Use Plan shall be elaborated in such a way to fulfill, at the long term, the environmental rules concerning to the reservation areas of the Amazônia Legal region. The objectives shall be attained along 30 years according to the regulation of the environmental rules for the recuperation of areas. In the Study Area, the area that needs to be recuperated in the period of 30 years corresponds to 12,566.00 km². However, it shall be borne in mind that the target for the year 2015

is the implementation of conservationist activities in 3,754 km²

- ◆ The land use shall be conducted in conformity with the Land Use Plan, dividing the land into areas destined to productive activities such as agriculture, livestock husbandry and reforestation, and the legal reservation areas. As for the areas destined to productive activities, measures shall be introduced in order to transform the referred areas, where currently the extensive system prevails, into productive areas through the intensive system.

Guidelines for the activities development by the producers

- ◆ The production of strategic agricultural products is recommended, namely: grains such as soybean, maize, rice, as well as meat derived products (bovine, bubaline and swine), dairy products and fruits. The producers shall implement improvements in the agricultural management through the development of these products.
- ◆ The producers shall be classified into two categories: the medium- and large-scale producer who has considerable financial resources; and the mini- and small-scale producer who lacks financial and technological resources. The recommendations to be followed as for the agricultural administration system shall be appropriate for each category.
- ◆ As for the medium- and large scale producer, an agricultural administration emphasizing the strengthening of grains and meat cattle production shall be recommended. As specific measures, the introduction of grains cultivation in the extensive husbandry area is recommended, with the consequent increase of the supporting capacity of the cultivated pasture land. The intensive husbandry system is also recommended aiming at the strengthening of the administrative structure through the integrated management between agriculture and livestock husbandry, as well as measures oriented to the increase of aggregate value to their products.
- ◆ For the mini- and small- scale producers, the diversified agricultural administration is recommended, with emphasis in the increase of the properties' profitability through the integration of agricultural activities, milking cattle breeding (including bubaline) and the breeding of swine. However, for those producers in this category, the implementation of associations system is recommended with measures that allow the procurement of cultivation and cattle husbandry technologies, advantages in the commercialization of their products and in the acquisition of production inputs and in the procurement of funds.
- ◆ In order to fulfill the environmental rules applied to the legal reservation areas, the intensive system in the agricultural activities shall be promoted, as well as the reforestation and environmental conservation activities. For this purpose, financing lines shall be established for the environment conservation in such a way to allow the participation of producers in conservationist activities. The necessary reforestation activities to fulfill the environmental rules for the reservation areas in the Amazônia Legal region shall be implemented through these environmental credit lines.

Guidelines for the implementation of Governmental Programs

- ◆ Strengthening of the research sector for the support to the agricultural activities in order to assure the smooth progress of each productive activity development. The strengthening measure shall follow the creation of Model Fields appropriate for the development of each activity to be implemented.
- ◆ Activities of the commercialization sector shall be implemented in order to assure to the producers their participation in the market with competitiveness. The main commercialization sectors to be implemented are those related to the strategic agricultural products.
- ◆ Implementation of production infrastructure within the governmental sphere in what concerns to the activities that can not be carried out at the producers level. This measure shall allow the producers to implement the intensive agricultural administration system.
- ◆ The implementation of conservationist activities shall be conducted at the governmental level considering that their promotion at the producers level generates financial difficulties, among

other problems

Guidelines for the implementation of the Supporting Program

- ◆ This is a program oriented to the environmental development and conservation of a large area, thus demanding high investment. Therefore, a development fund emphasizing the procurement of funds shall be created and through this fund the investment program shall be carried out based on the land use plan.
- ◆ For the implementation of this program, the procurement of funds shall be carried out at the same time when the investments shall be implemented based on the land use plan and on its control. Furthermore, a Development Commission oriented to the good transference of funds to the producers shall be created, thus promoting the utilization of these funds and their monitoring; modifications in the project to be in accordance with the updated tendencies shall also be promoted.
- ◆ The promotion of concerning activities shall be conducted in a differentiated manner. In the case of the medium- and large-scale producers, at the short term, the supporting system oriented to basic production equipment and to the agricultural credit policy shall be consolidated; at medium and long terms, the governmental intervention shall be left aside, and the agricultural activities shall be developed with the financial support of the private sector companies. As for the mini- and small-scale producers, at the short time, assistance oriented to the production equipment, supply of bubaline animals, promotion of swine breeding, expansion of associations formation shall be implemented with the objective of increasing the financial and technological capacity of producers; at medium and long terms, ways shall be pursued to expand the agricultural credit system and to strongly promote the intensive agriculture, through the development of agricultural administration systems with emphasis in the improvement of these systems, based on the breeding of bubaline and swine.
- ◆ The assistance in the field of production inputs, what constitutes an important strategic factor, shall be restrained to the lowest levels as possible, only to fulfill the basic needs. As for the agricultural credit, a financial line shall be created in order to allow the active development of the agricultural production.
- ◆ As measures oriented for the promotion of the conservationist activity, the free distribution of seedlings shall be promoted at the short term and, at the medium term, the creation of financing lines that are not only oriented to the environmental conservation activities but that can be also utilized by the production sector in order to offer a complementary supporting system aiming at the revitalization of the agricultural production, besides promoting the participation of producers in the activities concerning to the conservationist policy shall be carried out.