5. Environment Legislation

5.1 The Structure of Brazilian Environmental Legislation

Brazilian environmental legislation is structured on two levels -- Federal and State – each with its own attributes, as follows:

-Federal Level
- Constitution
- Law
- Decree-Law
- Resolution

-State Level
- Constitution
- Law
- Decree

5.1.1 The Hierarchical Aspect of Brazilian Legislation

The Constitution of the Federal Republic of Brazil is the highest law in the land. It sets standards and guidelines of a general nature, and thus all other legislation is subordinate to it. In accordance with this principle, the legislative hierarchy consists of Laws, Decree-Laws and Resolutions. Decree-Laws are those which have not been incorporated into the Federal Constitution, but once issued they remain in force throughout their period of validity unless they are expressly repealed.

5.1.2 Overview of Environmental Legislation

Legislation relating to the environment is presented in a manner appropriate to the Federal or State level, and with due consideration for the hierarchical aspect of Brazilian legislation. Thus, it is generally the case that State law makes specific, and renders appropriate, legislation arising in the Federal context.

5.2 Federal Legislation

5.2.1 The Federal Constitution

The authors of the Brazilian Constitutional, being fully aware of environmental issues, devoted a whole chapter of the Constitution to the environment. The chapter is contained under Article 225 which states as follows:

Article 225
All citizens have the right to an ecologically balanced environment, the use of which is shared by all and is essential to a healthy quality of life. The authorities and the collective therefore have a duty to safeguard it and to preserve it for present and future generations.

§1 To ensure the effectiveness of this right, public authorities have a duty:

I – to preserve and restore essential ecological processes and provide for the ecological management of species and ecosystems;

II – to preserve the diversity and integrity of the nation's genetic heritage, and to oversee those agencies responsible for the research and manipulation of genetic material;
III – to define, in every part of the Federation, territorial spaces and their components that are to be afforded special protection. The alteration and suppression of areas thus defined can only occur by legislative means, so as to safeguard against any utilisation that might compromise the integrity of the attributes that serve to justify their protection;
IV – to require, under law, that an environmental impact assessment be carried out prior to the realisation of any construction work or other activity which may cause significant environmental degradation. The findings of this assessment will then be duly publicised;
V – to control the production, sale and use of substances, techniques, and methods which may be hazardous to life, to the quality of life and to the environment;
VI – to promote environmental education at all levels of schooling, and public awareness for the preservation of the environment;
VII – to protect the flora and fauna, prohibiting by law those practices that put their ecological functions at risk, provoke the extinction of species, or subject animals to cruelty.

§2 Those who exploit mineral resources are legally obliged to restore degraded areas, using the technical solutions required by the government agency concerned.

§3 Perpetrators of conduct and activity considered harmful to the environment will be subject to penal and administrative sanctions, independently of their obligation to make good the damage they have caused.

§4 The Brazilian Amazon Forest, the Atlantic Forest, the Serra do Mar mountains, the Mato Grosso Pantanal and the Coastal Zone are national heritage sites, and their utilisation will only occur under the conditions set by the law, so as to ensure the preservation of these environments and of the natural resources that they contain.

§5 Unoccupied Federal lands, and those taken over by the States in response to the need to protect natural ecosystems, are not to be exploited.

§6 Power stations with nuclear reactors must have their localisation defined by Federal law, otherwise their construction will not be permitted.

It can be seen that in keeping with its role of setting the legislative foundations, the Federal Constitution restricted itself to giving a broad outline for legislative guidance, the pursuance of which is left to other subordinate types of legislation.

In addition to the chapter transcribed above, the same Constitution created other mechanisms for environmental protection which can be found described in the following articles:

Article 5
All people are equal before the law, without distinctions of any sort, guaranteeing to Brazilians and to foreigners resident in the country the inviolability of the right to life, liberty, equality, security and property on the following terms:

(...)
LXXIII – any citizen can legitimately take legal action to prevent harm being done to the public heritage or to the estate of any entity in which the State has an interest, to administrative morality, to the environment, and to the historic and cultural heritage, with the originator of the action being exempt from all legal costs unless proven to be acting in bad faith.

Article 23
It is the common duty of the Union, the States, the Federal District and the Municipalities:

(...)
VI – to protect the environment and to combat pollution in all its forms;
VII – to preserve the forests, the flora and fauna.

Article 24
It is the duty of the Union, the States and the Federal District to legislate coherently on:

(...)
VI – forests, hunting, fishing, nature conservation, conservation of the soil and of natural resources, environmental protection, and pollution control;

(...)
VIII – responsibility for harm done to the environment, to the consumer, to rights and to goods of artistic, aesthetic, historic, touristic and landscape value.

Article 129
The institutional functions of the Public Ministry are:
(...)
III – to set up judicial inquiries and bring action in the civil courts so as to protect the public and social heritage, the environment, and other interests whether diffuse or collective.

Article 170
The economic order, founded on the valorisation of human labour and on the freedom of initiative, aims to secure a dignified existence for all in keeping with the precepts of social justice, and observing the following principles:

(...)
VI – safeguarding the environment.

Article 200
The public health system, in addition to its other duties, is responsible under the law for:
(...)
VIII – collaborating with efforts to protect the environment, including that of the workplace.

5.2.2 Federal Laws

Law N° 4,504, dated 30/11/64. Deals with matters relating to the Land Statute and makes other stipulations.

This law regulates the rights and obligations pertaining to rural land-holdings, so as to bring about Agrarian Reform and the Promotion of Agricultural Policy. Its purpose is to perfect the nation's agrarian framework in accordance with the principles of social justice, the freedom of initiative and the valorisation of human labour in all agricultural and agro-industrial activities without harming, directly or indirectly, the equilibrium of rural life.

Law N° 4,771, dated 15/09/65 (with the alterations to Law N° 7,803, dated 18/07/89). This institutes the New Forest Code.

This determines the permanent preservation of forests and other forms of natural vegetation situated in areas defined in Articles 2 and 3, such as:

- those along rivers or other water courses with the width of the protected zone along the banks being determined by the breadth of the water course;
- those surrounding lagoons, lakes and man-made and natural reservoirs;
- those around springs;
- those on the tops of hillocks, hills, mountains and mountain ranges;
- those on slopes with gradients in exces of 45°;
- those in areas set aside to reduce erosion, to protect sites of televant beauty or of scientific and historic value, to protect species of flora and faun threatened with extinction and to ensure conditions conducive to public welfare.

It also prohibits the uncontrolled exploitation of the old growth forests in the Amazon basin. Exploitation of these forests can only occur when technical plans governing operations and management have been drawn up. Privately-owned forests which are not subject to a regime of limited utilisation, and which are exempt from the stipulations established in Articles 2 and 3, can be exploited.

On privately-owned lands, afforestation and reforestation projects with permanent protection status can be undertaken by the Federal authorities without need for disappropriation. The exploitation of forests and successional formations, whether under private or public ownership, can only be undertaken with the approval of IBAMA. Operational techniques governing extraction, replanting and management that are compatible with the area being exploited, must be adopted.

Law N° 5,197, dated 03/01/67. Deals with the Protection of Fauna and makes other stipulations.

This determines that forest fauna, including its nests, shelters and breeding areas, are State property. It prohibits the use, pursuit, destruction and hunting of forest animals.

Law N° 6,513, dated 20/12/77. Deals with the establishment of Special Areas and of Sites of Tourist Interest and makes other stipulations.

This considers tourist interests, Special Areas and the sites denominated by this law, as well as goods of cultural and natural value protected by specific legislation, such as those which are historically or artistically valuable; reserves and ecological stations; areas set aside for the protection of natural resources; cultural and ethnological manifestations; places of special landscape interest; localities and natural features which are suitable for relaxation and the practice of recreational, sporting and leisure activities; mineral springs, and localities which present special climatic conditions.

Law N° 6,662, dated 25/06/79. Sets out the National Irrigation Policy and makes other stipulations.

This seeks to ensure the rational use of water resources and soils for the implantation and development of irrigated agriculture. It establishes a series of basic postulates and allots responsibilities to the executive authority and to the Ministry of the Interior.

Law N° 6,902, dated 27/04/81. Deals with the establishment of Ecological Stations and Environmental Protection Areas (APAs) and makes other stipulations.

Ecological Stations will be set up and structured so as to permit comparative studies with areas located in the same region that have been occupied or modified by man. Thus, information that can be used in the planning and rational utilisation of resources will be obtained. The Law also lists activities that are forbidden within these areas, and the penalties for infringements.

Law N° 6,938, date 31/08/81. Deals with National Environmental Policy, its goals and the mechanisms for its formulation and implementation, and makes other stipulations.

This seeks to make the economic and social development of the country compatible with the preservation of environmental quality and ecological equilibrium. It sets out the requirement for licenses to be issued by the State environmental agency prior to the implantation and operation of establishments which use environmental resources and whose activities are actually or potentially polluting (Article 10).

It established the National Environmental Council – CONAMA – which has various duties, principally that of establishing norms, standards and criteria for the licensing of polluting or potentially polluting activities, and also that of setting criteria relating to the control of environmental quality with a view to ensuring the rational use of natural resources, especially water resources.

Law N° 7,347, dated 24/07/86. Sets out rules regarding court cases moved by the public authorities over responsibility for harm done to the environment, to consumer rights and to goods of artistic, aesthetic, historic, and touristic value, and makes other stipulations.

Without affecting law suits brought by private individuals, this law deals with legal action brought by the government over damage done to the environment, to consumer rights and to goods of artistic, aesthetic, historic, and touristic value. The action itself, and the forewarning of it, can be effected by the Public Ministry, by the Union, by the States and Municipalities or by an autonomous body, public agency, foundation, firm or association, provided that the conditions

stated in this law are fulfilled.

Law N° 7,653, dated 12/08/88. This alters the wording of Articles 18,27,33 and 34 of Law N° 5,197, dated 03/01/67, which deals with the protection of fauna and makes other stipulations.

The alterations concern the sanctions to be applied in case of the violation of the terms of Law N° 5,197/67, emphasising the penalty of 2 to 5 years imprisonment for anyone whose use of agrochemicals or any other chemical substance causes, directly or indirectly, the death of members of the icthyological fauna.

Law N° 7,802, dated 11/07/89. Deals with the research, experimentation, production, packaging, labelling, transportation, storage, sale, advertising, utilisation, importation, exportation, disposal of residues and packaging, registration, classification, control, inspection and fiscalisation of agrochemicals, their components and related matters, and makes other stipulations.

This law governs the suite of norms, standards and procedures relating to agrochemicals.

Law N° 7,803, dated 18/07/89.Alters the drafting of Law N° 4,771, dated 15/09/65 and revokes Laws N° 6,535, dated 15/06/78 and N° 7,511, dated 07/07/86.

Of the alterations made, the most important relate to the re-drafting of Articles 2, 16, 19, 22, 44, 45 and 46. Of these, the most significant is Article 44. Article 44 specifically states that a proportion of 50% of the area of each property in the Legal Amazon region must be kept as a legal reserve wherein no clear-cutting can occur. Also, this area must be properly noted and described in the property registration document held at the competent property registrar's office. The designation of this area cannot be altered under any circumstances.

Law N° 7,804, dated 18/07/89. Alters Law N° 6,938, dated 31/08/81, dealing with the National Environmental Policy, its aims and the mechanisms for its formulation and implementation, Law N° 7,735, dated22/02/89, Law N° 6,803, dated 02/06/80, and Law N° 6,902, dated 21/ 04/81, and makes other stipulations.

This makes legally binding the administrative changes relating, among other things, to the National Environment System – SISNAMA - , the Superior Council on the Environment – CSMA -, and the Brazilian Institute for the Environment and Renewable Natural Resources – IBAMA – which is an autonomous body with a special internal regime.

Law N° 8,171, dated 17/01/91. Deals with Agricultural Policy and makes other stipulations.

This defines the objectives and the competent institutions, makes provision for the resources and establishes the actions and instruments of policy relating to agricultural and livestock activities, agro-industries and the planning of fishing and forestry activities. It establishes the National Council on Agricultural Policy which is linked to the Ministry of Agriculture and Agrarian Reform.

5.2.3 Federal Decrees

Decree N° 24,643, dated 10/07/34. Establishes the Water Code.

Indicates legal standards of preservation and protection against water pollution that is capable of harming the health, security and well-being of the population, and of damaging the flora and fauna, and that detracts from the use of the water for social and economic purposes. When agricultural and industrial interests require it, the law allows exemption from such standards by means of express administrative authorisation which obliges the farmers or industrialists to take steps to improve water quality.

Decree-Law N° 852, dated 11/11/38. Upholds with modifications Decree N° 24,463, dated 10/07/34, and makes other stipulations.

Modifies the Decrees N° 24,463, dated 10/07/34 (Water Code), N° 24,673, dated 11/07/34, and N° 13, dated 15/01/35. It indicates that the waters of lakes, as far as they extend, are public property for common use, as are the waters of natural watercourses which are in some stretch navigable by any kind of vessel.

Decree N°88,821, dated 06/01/83. Approves the regulations governing the transportation by road of dangerous cargoes or products, and makes other stipulations.

This establishes rules for the transport of dangerous products, requiring documentation and special precautions in such operations. It counsels the avoidance of roads which pass through or near to densely populated areas, watershed protection areas, reservoirs and forest and ecological reserves.

Decree N° 89,336, dated 31/01/84. Deals with Ecological Reserves and Areas of Ecological Interest, and makes other stipulations.

This considers the Ecological Reserves mentioned in Article 18 of Law N° 6,938/81 "areas for permanent preservation", as are those which were established by other means.

Decree N° 89,496, dated 29/03/84. Regulates Law N° 6,662, dated 25/06/79, which deals with National Irrigation Policy, and makes other stipulations.

Regulates the basic postulates of the National Irrigation Policy, defining the different types of project, and the duties of the irrigator in public irrigation projects.

Decree N°95,733, dated 12/02/88. Deals with budgeting procedures for federal projects and constructions. It stipulates the allocation of earmarked resources to prevent, mitigate or compensate for the negative environmental, cultural and social impacts arising from the implementation of these same projects and constructions.

This determines that provision should be made in the budget of each project or construction for resource allocations corresponding to at least 1% of the total cost to prevent or make good the negative environmental, social and cultural effects of developments financed totally or partially by federal resources.

Decree N° 97,635, dated 10/04/89. Regulates Article 27 of the Forest Code dealing with the prevention and combat of forest fires, and makes other stipulations.

A forest fire is defined as any uncontrolled conflagration in any vegetation type. This decree determines that when local or regional characteristics justify the use of fire in controlled burn-offs for agro-pastoral or forestry purposes, this can be permitted. It details the standard precautions to be taken in these areas. It prohibits the use of uncontrolled fires in forests and other forms of vegetation, as well as any act or omission which could cause forest fires.

Decree N° 98,816, dated 11/01/90. Deals with the research, experimentation, production, packaging, labelling, transportation, storage, sale, advertising, utilisation, importation, exportation, disposal of residues and packaging, registration, classification, control, inspection and fiscalisation of agrochemicals, their components and related matters, and makes other stipulations.

This declares the Ministry of Agriculture to be the competent authority in matters concerning agrochemicals. It also defines the forms of registration for products and companies, and the infractions and corresponding penalties to which companies and users of agrochemicals may be subject.

Decree N° 99,724, dated 06/06/90. Regulates Law N° 6,902, dated 27/04/81, and Law N° 6,938, dated 31/08/91, which deal respectively with the establishment of Ecological Stations and Environmental Protection Areas, National Environmental Policy, and the classification, control inspection and fiscalisation of agrochemicals, their components and related matters.

This Decree determines that environmental zoning for Ecological Stations referred to in Law N° 6,902/81 should be carried out by IBAMA. It also determines that any activity within 10 km of an Ecological Station which might affect the biota therein, requires an appropriate licence issued by the CONAMA.

The Decrees creating the Environmental Protection Areas (APAs) issued by the President of the Republic will mention the objectives, prohibitions and restrictions on the use of environmental resources contained in these areas. This decree also regulates the alterations made to Law N° 6,938/81 by Law N° 7,804, dated 18/07/89, and Law N° 8,028, dated 12/04/90.

5.2.4 Federal Directives

Directive/IBDF N° 303, dated 29/05/68.

Sets out the official Brazilian list of animal and plant species in Brazil that are in danger of extinction. It prohibits the capture, collection, hunting, purchase, sale, trade, transportation and export of members of the listed species.

Directive/IBDF N° 3,481, dated 31/05/73.

Sets out the list of Brazilian species in danger of extinction.

Directive/GM N° 13, dated 15/01/75.

Establishes the classification of the inland waters in national territory.

Directive SUDENE N° 0001, dated 04/01/77. Deals with the observance of measures to protect the aquatic fauna in dam construction projects.

Article 5 states that the construction of dams should be accompanied by reafforestation around the reservoir with species that are suited to the conservation of the aquatic fauna, and by other programmes for the conservation of this fauna.

Directive/MINTER N° 124, dated 20/08/80. Presents a series of standards designed to prevent the occurrence of accidental water pollution, including accidents involving agrochemicals.

Determines that storage sites for toxic substances must be sited at least 200 metres from water sources and watercourses. Strict security standards must be observed during the construction and operation of these deposits. The directive stipulates that the State environmental agencies responsible for environmental control should inspect projects involving the treatment and/or disposal of sanitation effluent and the requisite safeguards when they are issuing installation licences, and supervising the start-up and operation of these same facilities.

Directive SNDA N° 009, dated 23/03/83. Deals with the aerial application of agrochemicals, setting down the technical-operational standards designed to guarantee the safety of the crew, and of people and goods on the ground, by reducing the risks arising from such applications.

Establishes that the aerial application of agrochemicals must observe a minimum distance of 500 metres from human settlements and from water sources used for public supply. It also establishes a minimum distance of 250 metres from springs, isolated dwellings, herds, flocks and crops which may be susceptible to damage. The crew must use the protective equipment supplied by the person responsible for adopting this method of agricultural control.

Directive IBDF N° 302-P/84. Regulates the exploitation of all types of forest, determining that, when it is in the public interest for vegetation to be cleared, the authorisation of the President of the IBDF must be obtained, and reforestation must be undertaken in accordance with the relevant legislation.

Determines that provisions must be made for the use of the woody material (other than the timber products) that is produced by the land clearance. Simply burning off the area so as to clear it, is prohibited, as is the use of chemical products in the exploitation and clearing of forests.

5.2.5 Federal Resolutions

CONAMA Resolution N° 004/85, dated 18/09/85. Establishes concepts and definitions relating to Ecological Reserves.

Determines that areas of permanently protected forest and other vegetation formations are considered to be Ecological Reserves, according to Article 18 of Law N° 6,938/81, established by the authorities in accordance with Article 1 of Decree N° 89,336/84. Under this resolution, the permanently preserved areas that are transformed into Ecological Reserves must be respected, and a zone 100 metres wide around reservoirs is also to be afforded permanent protection status.

CONAMA Resolution N° 001/86, dated 23/01/86. Establishes basic criteria and general guidelines for Environmental Impact Statements.

Determines the obligatory nature of Environmental Impact Assessments (EIAs) and Environmental Impact Statements (EISs). These must be submitted for the approval of the competent State authorities as part of the licensing process for developments that will modify the environment. It also establishes criteria and prerequisites for such assessments.

CONAMA Resolution N° 006/86, dated 24/01/86. Institutes and approves models for the publication of licensing applications.

Makes stipulations regarding the models for the publication of licensing applications in all their forms, including their concession and their renewal.

CONAMA Resolution N° 020/86, dated 18/06/86. Classifies the fresh, briny and saline waters in the national territory.

Deals with the classification of waters within Brazilian territory, setting parameters and limits on the discharge of effluent into the rivers thus classified. For discharge to occur, the site must be suitable, and the legal standards relating to effluent discharge must be observed, especially in cases involving effluents arising from the application of agrochemicals.

CONAMA Resolution N° 009/87, dated 03/12/87. Deals with the matter of public inquiries.

Aims to set out for interested parties the content of the Environmental Impact Statement being analysed, clearing up doubts about the studies that have been undertaken and generating relevant suggestions.

CONAMA Resolution N° 010/87, dated 03/12/87. Deals with compensation for environmental damages caused by large-scale projects.

Details the requirements for compensation for environmental damages caused by the destruction of forests or other ecosystems. It also stipulates that the licensing procedures governing large-scale projects require the entity or firm responsible for the development to set up an Ecological Station.

5.3 Tocantins State Environmental Legislation

5.3.1 The Constitution of the State of Tocantins

The legislators who drew up the Tocantins State Constitution showed the same level of concern for the environment as those working on the Federal Constitution. They also set aside an entire

chapter to outline the basic framework for environmental protection and conservation. This chapter is inserted under Title X, Articles 110-113, which state as follows:

Title X – On Environmental Protection

Article 110
All citizens have the right to an ecologically balanced environment, the use of which is shared by all and is essential to a healthy quality of life. The State and Municipal authorities and the collective are duty bound to safeguard it and to preserve it for present and future generations, observing the following:

I – the reconciliation of social and economic activities with the protection of the environment, striving to ensure rational resource use so as to preserve species, being fully aware of the biological and ecological characteristics that are important for the harmony and funcionality of ecosystems, and avoiding injuries to the health, security and well-being of the community;

II – the implantation in State territory of a system of areas designated for conservation, wherein any activity or form of use that compromises the areas' original and essential attributes is prohibited;

III – the protection of the flora and fauna, particularly those species in danger of extinction, by legal means, prohibiting those practices that subject animals to cruelty;

IV - the encouragement and promotion of the reforestation of degraded areas, especially for the purposes of protecting water resources, and soils that are prone to erosion, and also to maintain an acceptable level of vegetative cover;

V – guaranteed access to information regarding the sources and causes of pollution and environmental degradation;

VI – the promotion of administrative and judicial measures to determine and attribute responsibility for causing pollution or environmental degradation;

VII – their duty to promote the integration of civil associations, research centres, trade union organisations, and universities in efforts to guarantee and improve pollution control, including that in the workplace environment;

VIII – their duty to inspect and accompany the concessions and the rights for exploration and exploitation of water resources and minerals conceded by the Union in State territory;

IX – their duty to promote greater public awareness and educational improvements so as to incorporate the principles and objectives of environmental conservation.

§1 The law will establish policies to safeguard, restore and preserve the environment, and to control and eradicate pollution in its various forms, and is also able to specify agencies and criteria for the planning and implementation of such policies.

§2 The use of mercury or any other chemical or toxic substance which may impair the water

resources of the State and its Municipalities, in any labour activity and especially in gold extraction, is prohibited.

Article 111
The production and utilisation of chemical substances which contribute to the depletion of the protective atmospheric ozone layer is prohibited.
The State and the Municipalities will develop programmes to protect the ozone layer.

Article 112
The preservation of areas of natural vegetation and native fruit production especially the 'babaçu' and 'buriti' palms, 'pequi' and 'jatobá' trees, 'araticum' bushes, and other species that are indispensable to the survival of the native fauna and the human populations that make use of them, is mandatory.

Article 113
The installation of polluting industries and livestock units on the edges of water sources that serve as supplies for urban centres, or as a means of subsistence for local people, or for the leisure activities of the urban population, is forbidden.

5.3.2 Tocantins State Laws

Law N° 224, dated 26/12/90. Deals with agrochemicals and makes other stipulations.

Establishes standards regulating the production, packaging, transportation, storage, inspection, fiscalisation of trade, utilisation, and disposal of the residues and packaging of agrochemicals, their components and related matters.

Law N° 261/91. Deals with Tocantins State Environmental Policy and makes other stipulations.

The objective of this Law is to establish, in detail, the environmental policy of the State of Tocantins, specifying the form and the appropriateness of urban and rural socio-economic activities, with its guiding principle being the environmental equilibrium and the conservation of ecosystems. It also establishes the mandatory nature of Environmental Impact Assessments, and Environmental Impact Statements for projects which may cause significant environmental degradation, guaranteeing the realisation of related public inquiries.

Law N° 771, dated 07/07/95. Deals with the Forest Policy of Tocantins State and makes other stipulations.

This law recognises the forests and other vegetation types extant in the State of Tocantins as being advantageous to the environment and to the lands that they cover. As such, they are of common interest to all inhabitants of the State, with due regard for property rights within the limits of the legislation. It also establishes the criteria governing protected areas, legal reserves and conservation areas. It then gives guidelines on the exploitation of the native forests, land clearance, reforestation, etc.

5.3.3 Tocantins State Decrees

Decree N° 4,793, dated 05/11/91. Regulates Law N° 224/90.

Issued almost one year after the publication of the Law which it regulates, Decree N° 4,793/91 regulates Law N° 224/90 (the State law governing agrochemicals), giving guidelines on the applicability of the standards detailed therein.

Decree N° 10,459, dated 08/06/94. Regulates Law N° 261, dated 20/02/91.

This Decree regulates the applicability of Law N° 261/91 which deals with the Environmental Policy of Tocantins State, stating in detail the interpretations of State environmental policy that should be adopted.

5.4 Specific Environmental Legislation

5.4.1 Areas of Permanent Preservation

Areas afforded "Permanent Preservation" status may be established by the Federal Union, States and Municipalities. At the Federal level they are regulated by the Forest Code (Law N° 4,771/65, Articles 1, 2, and 3, Law N° 6,938/81 – governing National Environmental Policy, Decree N° 89,336/84 and CONAMA Resolution N° 004/85, as outlined below:

Law N° 4,771, dated 15/09/65 --The Forest Code.

Article 1
The forests and other vegetation types extant in national territory are recognised as being advantageous to the lands that they cover and are goods of common interest to all inhabitants of the country, with due regard for property rights within the limits of the general legislation and the additional limits established by this law.

Actions or omissions that are contrary to the dispositions of this Code governing the utilisation and exploitation of forests are considered injurious use of property (Article 302, XI,b, of the Civil Code).

Article 2
The status of permanent protection is conferred by the effect of this Law upon forests and other forms of natural vegetation situated:

a) along the banks of rivers or other watercourses in a zone beginning at the high-water mark whose minimum width is:
   1) 30 metres for watercourses less than 10 metres wide;
   2) 50 metres for watercourses between 10 and 50 metres wide;
   3) 100 metres for watercourses between 50 and 200 metres wide;
   4) 200 metres for watercourses between 200 and 600 metres wide;
   5) 500 metres for watercourses whose width exceeds 600 metres.
b) around lagoons, lakes and natural or man-made reservoirs;

c) around springs, and water holes, even intermittent ones, whatever their topographical situation, within a radius of at least 50 metres;
d) on the tops of hillocks, hills, mountains and mountain ranges;
e) on slopes or on parts of slopes where the gradient exceeds 45°;
f) in the strip of land bordering the ocean where the vegetation serves to hold dunes in place, and stabilise marshes;
g) on the edges of tablelands and on plateau borders from the point where the relief breaks, in a strip never less than 100 metres across measured horizontally;
h) at altitudes in excess of 1,800 metres, whatever the vegetation type.

Article 3
When declared accordingly by action of the competent authority, the status of permanent protection is also conferred on the forests and other forms of natural vegetation required to:

a) reduce soil erosion;
b) stabilise sand dunes;
c) form protective strips along highways and railways;
d) assist in the defence of natural territory, at the discretion of the military authorities;
e) protect sites of exceptional beauty, or of scientific or historic value;
f) provide refuge for endangered species of flora and fauna;
g) maintain the environment required for the welfare of forest-dwelling populations;
h) ensure the well-being of the public.

Paragraph 1 – The total or partial suppression of forests' permanently preserved status can only occur with the prior authorisation of the Federal executive authority once it is deemed that the carrying out of construction work, plans, activities or projects is necessary for public benefit or social interest.

Law N° 6,938/81 – Law on National Environmental Policy.

Under this Law, the forests and other forms of natural vegetation with permanent preservation status set out in Article 2 of Law N° 4,771/65, and the sites used by migratory birds that are protected under arrangements, agreements and treaties signed by Brazil with other nations, are transformed into ecological reserves or stations under the responsibility of the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA).

Decree N° 89,336/84. Deals with Ecological Reserves and Areas of Relevant Ecological Interest.

Article 1
The areas with permanent preservation status mentioned in Article 18, of Law N° 6,938/81, and those that have been established by public authorities are considered Ecological Reserves.

CONAMA Resolution N° 004/85. Outlines the determinations in Decree N° 89,336/84.

Article 58 in particular, should be noted.

Article 58
The areas and the vegetation with permanent preservation status can only be utilised or suppressed once a special licence is issued for developments that are proven to be in the best interests of society, according to the judgement of the competent authorities who can impose technical conditions on the granting of the licence.
In order to effect the dispositions of this Article, the presentation and approval of Environmental Impact Assessments and their accompanying and duly publicised Statements will be required according to the terms and criteria established herein.

5.4.2 Legal Reserves

Legal Reserves occur only in private property, and are thus distinguished from the other forms of designation applied to vegetation under Articles 2 and 3 of the Forest Code, since the latter occur in both public and private lands.

Unlike Areas of Permanent Preservation, Legal Reserves are privately-owned areas that are subject to legal restrictions on property rights through the prohibition of clear-cutting and the inalterability of the Reserve designation. They are regulated at the Federal level by the legislation set out below.

Law N° 4,771/95 (The Forest Code) with drafting given in Law N° 7,803/89 and Provisory Measure N° 1,511-7/97. Regulates material relating to the Legal Reserves, in Articles 16 and 44.

Article 16
Privately-owned forests, not being subject to limited-use regimes and being exempt from the permanent preservation status outlined in Articles 2 and 3 of this same Law, can be exploited provided the following restrictions are observed:

a) in the centre of the Western region, the Southern region, and in the southern part of the Central Western region, the felling of native forests, be they old-growth or regenerate, will only be permitted provided that a minimum of 20% of the property area remains wooded, according to the judgement of the competent authority;

b) in the regions cited above, in areas that have already been cleared and delimited by the competent authority, the felling of old-growth forests is prohibited when this is done to clear the land for crops or pastures, only being permitted when it is for the purpose of timber extraction. In uncultivated areas that are subject to clearance activities, old-growth forests can only be cleared for the installation of new agricultural properties if forests are left standing on at least 30% of the property area.

c) In the Southern region, areas currently covered by forest formations in which the Brazilian pine Araucária angustifolia occurs, cannot be deforested to the point of permanent elimination. Only the rational exploitation of these areas will be permitted, using the methods prescribed, and guaranteeing the permanence of stands in conditions favouring their development and production;

d) In the North-Eastern region, and in the north of the Western region, including the states of

Maranhão and Piauí, the felling of trees and the logging of forests will only be permitted if the technical standards set by act of the public authority in Article 15 are observed.

Paragraph 1 – In the rural land holdings, referred to in item (a) of this article, which have an area of between 20 and 50 ha, the computation of the minimum percentage limit will include, in addition to all kinds of forest cover, clumps of standard-size trees, whether they be fruit trees, ornamentals or timber species.

Paragraph 2 – The extent of the legal reserve, which is taken as referring to the area of at least 20% of each property wherein no clear-cutting is allowed, should be noted in the property registration document, held at the competent property registrar's office. The alteration of its boundaries, for whatever reason, in the processes of transferral or division of the property, is prohibited.

Paragraph 3 – The legal reserve of 20% is fully and legally applicable to cerrado areas.

The Legal Reserves covered by old-growth forests in the Amazon basin have their dimensions determined by Article 44 of the Forest Code which states:

Article 44
In the Northern region and the northern part of the Central Western region, logging and clear-cutting will only be permitted if at least 50% of the tree cover on each property is left standing.

Paragraph 1 – The extent of the "legal reserve", being the area of at least 50% of each property wherein clear-cutting is forbidden, will be duly noted in the property registration document, held at the competent property registrar's office. Any alteration of its boundaries, for whatever reason, in the processes of transferral or division of the property, is prohibited.

Paragraph 2 – On properties where the tree cover is of forest type, at least 80% of the property thus covered must be exempted from clear-cutting.

Paragraph 3 – With reference to the heading of this Article, the Northern region and the northern part of the Central Western region are taken to include the states of Acre, Pará, Amazonas, Roraima, Rondônia, Amapá and Mato Grosso, as well as the regions situated north of latitude 13°S in the states of Tocantins and Goiás, and to the west of longitude 44°W in the state of Maranhão.

According to the quality of the vegetation cover, there are two types of Legal Reserve:

a) those in *cerrado* areas, regulated by 3) of the Forest Code, and

b) those in old-growth forest areas, regulated by Articles 44 and 16 (items a,b,c,e,d, 1) and 2)) of the same Code.

Decree N° 1,282/94. Regulates Articles 15, 19, 20 and 21 of the Forest Code, in accordance with the requirements set out in Article 15.

Article 1
The logging of old-growth forests in the Amazon basin dealt with under article 15 of the Forest Code, and of other forms of natural arboreal vegetation, will only be permitted under a sustainable forest management regime, following the general principles and technical basis set out in this Decree.

Paragraph 1 – For the purposes of this Decree, the term "Amazon basin" refers to the area that includes the states of Acre, Pará, Amazonas, Roraima, Rondônia, Amapá and Mato Grosso, as well as the regions situated north of latitude 13°S in the states of Tocantins and Goiás, and to the west of longitude 44°W in the state of Maranhão.

Article 7
The logging and clear-cutting of forests and other forms of arboreal vegetation in the Amazon basin will only be allowed in the areas selected for alternative land use by the Agro-Ecological Zoning programme.

By "alternative land use" is meant uses relating to the establishment of colonisation projects for population settlement, and projects for cattle ranching, industrial development, forestry, the generation and transmission of energy, mineral extraction, and transportation.

Article 8
The provisions relating to logging and clear-cutting, set out in Article 7 of this Decree, oblige landowners to maintain at least 50% of his/her property as a Legal Reserve.

Paragraph 2 – The mandatory area of the Legal Reserve mentioned in the previous paragraph can be fixed above 50% at IBAMA's discretion, being based on the results of the Agro-Ecological Zoning programme.

Paragraph 3 – Logging and clear-cutting will only be permitted if, on completing a preliminary survey, the competent authority issues the relevant authorisation.

Article 17
In the allotment of rural landholdings, the area set aside to comply with the percentage limits given in item (a) of the preceding Article can be located in a single holding held in joint ownership by those acquiring the allotments.

The area of the Legal Reserve is designed to have tree cover (Article 16, a). The fact that such cover does not exist does not exempt the landowner from the duty of setting up the Legal reserve. The law on Agricultural Policy (N° 8,171/91) establishes the obligation of the landowner to re-establish the Legal Reserve on his/her property by planting each year at least one thirtieth of the total required Reserve area (Article 19). In such reforestation projects, the utilisation of native species should be given priority.

5.4.3 The "Legal Amazon" Region

With the passing of Law N° 55,173, dated 27/10/66 which revoked Law N° 1,806, dated 06/01/53, the limits of the region known as Legal Amazon are defined, and they take in the area covered by the States of Acre, Pará, Amazonas, the ex-territories of Amapá and Roraima, and

the areas of Mato Grosso north of latitude 16°, Goiás north of latitude 13°, and the State of Maranhão west of longitude 44°. Currently, the Legal Amazon region includes the States of Rondônia and Tocantins, this latter arising from the division of the State of Goiás.

5.4.4 Agrochemicals

In matters pertaining to agrochemicals the legal stipulations are contained in Law N° 7,809/89 at the Federal level, and in Law N° 224/90 at the State level, and their respective regulatory decrees. In the case of projects occurring within the State of Tocantins, it is this latter which should apply, but the Federal legislation can also be applied whenever no provisions are made at State level, or whenever these contradict those made at Federal level.

Law N° 7,802/89. Details the statutory norms for the manufacture, use and fiscalisation of agrochemicals, and other rules, among which the following are particularly significant.

Article 1
The research, experimentation, production, packaging, labelling, transportation, storage, trade, advertising, utilisation, import, export, disposal of residues and packaging, registration, classification, control, inspection and fiscalisation of agrochemicals, their components and related matters will be governed by this Law.

Article 2
For the purposes of this Law, consideration is given to:

I – agrochemicals and similar materials, defined as:

a) the products and agents of physical, chemical or biological processes that are designed for use in the production, the storage and processing of agricultural produce, on pastures, in the protection of native and planted forests and other ecosystems, and also in urban, water and industrial environments with the objective of altering the composition of the flora or fauna so as to safeguard them from the action of living organisms that are considered harmful;
b) substances and products used as defoliants, drying agents, and growth promoters or regulators.

II – agrochemical components: the active agents, technical products, their raw materials, the inert ingredients and additives used in the manufacture of agrochemicals and similar materials.

Article 3
Agrochemicals, their components and related materials as defined under Article 2 of this law, can only be produced, exported, imported, traded and utilised if they have been previously registered with the appropriate Federal agency, according to the guidelines and requirements of the Federal agencies responsible for health, environment and agricultural matters.

Article 4
Individuals or firms that provide services involving the application of agrochemicals, their components and related matters, or those who produce import, export or trade in them, are obliged to ensure their registration with the competent Federal agencies that are active in the health, environment and agricultural sectors.

Individuals or firms are said to provide the above-mentioned services when they carry out work involving the prevention, destruction and control of living organisms that are considered harmful, by applying agrochemicals, their components and related materials.

Article 10
It is the duty of the States and of the Federal District, under the terms of Articles 23 and 24 of the Federal Constitution, to legislate on the use, production, consumption, trade, and storage of agrochemicals, their components and related materials, and also to monitor the use, production, transportation, consumption, trade, and storage of agrochemicals, their components and related materials, throughout their territory.

Article 11
It is the duty of the Municipality to provide supplementary legislation on the use and storage of agrochemicals, their components and related materials.

Article 12
The Federal Union, acting through the competent agencies, will provide the support necessary for the control and supervision of agrochemicals to any member of the Federation which does not have the means to do so.

Article 13
The sale of agrochemicals and related materials will be effected by means of a proper and fully informative dispensing system, overseen by legally trained professionals, apart from the exceptional cases that have been provided for elsewhere in this Law.

Law N° 224, dated 26/12/90. Deals with agrochemicals and makes other stipulations.

This State law accords with the determination given in Article 10 of Law N° 7,802/89 (the Federal law on agrochemicals), which follows the dispositions of Articles 23 and 24 of the Federal Constitution that attribute competence in legislating on these matters to the States. The Law establishes the legal standards, given in Articles 1-7, governing the production, packaging, transportation, storage, inspection, trade fiscalisation, use and final disposal of the residues and packaging of agrochemicals, their components and related materials. Among its guidelines, the following can be noted:

Article 9
The actions of inspection and fiscalisation will assume a permanent character, and will become a routine activity for the agencies responsible for agriculture, health and the environment.

Article 12
The following entities can legitimately request the cancellation or removal of items from the register of agrochemicals, their components and related materials, on the grounds that they are harmful to the environment, and to human and animal health:

I – an entity that is representative of professions working in the sector;
II – political parties that have representatives in the Tocantins State Legislative Assembly;
III – entities formed in a legal manner to defend interests relating to the protection of consumers, the environment and natural resources.

Article 14
The administrative, civil and penal responsibility for damage done to human or animal health and to the environment when the dispositions of this Law, its regulations and complementary legislation have not been observed, can be attributed to:

a) those who are proven to have falsely, carelessly or unduly provided information regarding the product and its use;
b) the user or service provider, when disobeying the instructions of the supplier;
c) the trader, when selling without the due instructions;
d) the firm responsible for a registered product, that deceitfully, culpably or incorrectly provides information on the product;
e) the producer of merchandise that is not in accord with the specifications set out in the product's registration document, on the label, directions, pamphlet or advertising;
f) the employer, when omitting to supply or maintain suitable equipment for the health and safety of those working in the production, distribution and application of the products;
g) the farmer, share-cropper, tenant and owner who uses agrochemicals in areas where, for various reasons, their use is prohibited;
h) the user or carrier who disposes of packaging in ways contrary to the existing legislation and the product's instructions, or who washes equipment that has been utilised and still bears remains of the product, close to sources of water supply, or in them.

Article 15
The employer, the technician responsible, or the service provider who is proven to have failed to take the necessary measures to protect health and the environment will be subject to a fine of between 50 and 1,000 times the Maximum Reference Value, without immunity from private prosecution or restrictions on allowable liberties.

Decree N° 98,816/90. Regulates Law N° 7,802/89 and establishes some definitions relating to agrochemicals as outlined below.

This Decree determines that the registration of firms and service providers, which enables the establishment or the company providing services to operate, is the exclusive privilege of the competent authorities at State and municipal levels, and those of the Federal District, and gives permission for.

Article 29
In order to obtain the registration document from the competent authorities in the State, the Federal District of the Municipality, those who provide services involving the application of agrochemicals, their components and related materials, or those who produce, import, export or trade in them, must present, along with other documents, forms requesting registration which show at the very least, the information set out in Annex 1 of this document.

Paragraph 1 - For the purposes of this ruling, co-operatives are considered on a par with commercial companies.

Paragraph 2 - No establishment that operates with products covered by this Law can function without the effective assistance and responsibility of a legally trained technician.

Paragraph 3 - Each establishment requires its own specific and independent registration, even when there is more than one in the same locality, belonging to the same company.

Article 32
Those who trade in, import, export or provide services involving agrochemicals, their components and related materials, are obliged to have and to keep ready for the supervisory agency, the registration book or alternative control system containing:

(...)
III – in the case of those who provide services involving the application of agrochemicals and related materials:

a) a detailed inventory of existing stock;
b) two copies of the trade name of the products and the quantities applied, along with their respective list of ingredients and instructions for use, with one copy remaining in the possession of the contractor;
c) instructions for use, which should state at least:
   01 -the user's name and address;
   02 -the crop and the area treated (for phytosanitary agrochemicals);
   03 -the site of application and the address;
   04 -the trade name of the product used;
   05 -the quantity of the commercial product used;
   06 -the manner of application;
   07 -the date of service provision;
   08 -the risks the product presents to humans, the environment and domestic animals;
   09 -the precautions necessary;
   10 -the identity and signature of the person who applied the agrochemicals;
   11 -the identity and signature of the technician responsible; and
   12 -the user's signature.

The Classification of Agrochemicals
This refers to the classification of agrochemicals and similar materials in groups according to their utilisation, way of acting, and toxic properties relative to humans, living organisms and the environment. With reference to the classification of toxicity for humans, the following scale will be observed:

Class I -- extremely toxic;
Class II -- highly toxic;
Class III -- moderately toxic;
Class IV -- slightly toxic.

Agrochemicals are defined as:
Chemical products that are designed for use in the production, storage and processing of agricultural produce, on pastures, in the protection of native and planted forests and other ecosystems, and also in urban, water and industrial environments with the objective of altering the composition of the flora or fauna so as to safeguard them from the action of living organisms that are considered harmful, as well as substances and products used as defoliants, drying agents, and growth promoters or regulators.

Regarding the disposal of agrochemical residues and packaging, the ruling states that the re-use of agrochemical packaging and related materials, by the user, trader, distributor, co-operatives and service providers is prohibited. However, the federal registering agency can authorise the re-use of agrochemical packaging, its components and related materials by the company that produces it, with the consent of the other federal agencies concerned.

Article 46
The disposal of agrochemical packaging and residues, and the like, must be done in accordance with the technical recommendations given in the instructions, relating to the product's incineration, burial and other means of disposal, and following the requirements of the health, agriculture and environmental sectors.
Article 94 contains the procedures pertaining to infractions of this legislation.

Article 94
The administrative procedure at the State level and in the Federal District will be instituted through supervisory activities regarding the use, consumption, trade, storage and inland transportation of agrochemicals, their components and the like, in conformity with the specific state legislation.

Decree N° 4,793, dated 05/11/91. Regulates Law N° 224/90 which deals with agrochemicals.

Issued almost one year after the publication of the law that it regulates, the purpose of Decree N° 4,793/91 is to establish the applicability and implementation of the dispositions made in Law 224/90. It pronounces on fiscalisation and inspection; infractions and their respective sanctions; administrative procedure; the application of fines and cancellation of registrations and other matters.

5.4.5 Legislation Governing Irrigation Programmes

Irrigation Programmes in Brazil have their foundations, objectives and basic rules set out in Law N° 6,662, dated 25/06/79, which deals with the National Irrigation Policy and makes other stipulations.

Article 1
The goal of the National Irrigation Policy is the rational use of water and soil resources for the implantation and development of irrigated agriculture, bearing in mind the following basic postulates:

I – the pre-eminence of the social function and public utility of water use and irrigated soils;
II –the promotion of agricultural and livestock activities, with priority being given to regions that are subject to adverse climatic conditions;
III – the promotion of conditions which may increase agricultural yields and productivity;
IV – action by the public authorities to direct or support the elaboration, financing, execution, operation, fiscalisation and monitoring of irrigation projects.

Article 2
The use of waters and soils for irrigation purposes, is governed by the dispositions of this Law

and, where appropriate, by the legislation governing water resources.
The regime governing the use of water and soils for irrigation purposes, will comply with the following principles:

I – the rational use of waters and irrigable soils, with priority being given to utilisation that affords the greatest socio-economic benefit;

II – plans are to be drawn up for the utilisation of water resources and the soils of each hydrographic unit, allowing for integration with other sectoral plans, so as to ensure the multiple use of these resources and adequate distribution;

III – the adoption of special standards to establish priorities of water use, so as to attend to areas subject to peculiar climatic phenomena;

IV – the definition of the duties of concessionaires and water users, so as to ensure the rational use of irrigation in accordance with the public and social interest;

V – observance of the safeguards against endemic rural diseases, and the salinisation of soils, as well as of those to protect the environment and good water quality.

Article 8
For the purposes of this Law, public and private irrigation projects are considered alike.

Paragraph 1 – Public projects are those whose irrigation infrastructure is planned, installed and operated, directly or indirectly, by the government.

Paragraph 2 – Private projects are those whose irrigation infrastructure is planned, installed and operated by private individuals, acting with or without incentives from the government.

Paragraph 3 – Private projects that seek to benefit from government incentives, have to be analysed and approved by the Ministry of the Interior.

Article 11
The government will help finance, or will establish other incentives for irrigation projects that are proposed on the initiative of private companies, co-operatives and isolated rural producers, provided that these same projects have been approved by the Ministry of the Interior.

Article 25
For the purposes of this Law, the term "irrigator" refers to the individual or firm that seeks, through a certain irrigation project, to exploit an agricultural holding of which the person (or persons) concerned is the owner, the mortgage holder, or the concessionaire.

Paragraph 1 – The duties of the irrigator are:

I – to adopt the measures and practices of water use, soil utilisation and conservation recommended by the administration;

II – to obey the legal standards, regulations and administrative decisions relating to the situation

and the activities of the irrigator;

III – to honour the contracts for the commercialisation of products drawn up by the co-operatives or associations in which he/she participates;

IV – to exploit, correctly and completely, the area for which he/she is responsible;

V – to allow the fiscalisation of activities by the administration, and to supply it with the information requested;

VI – to facilitate work which is necessary or useful for the maintenance, expansion or modification of the irrigation installations;

VII – to honour the obligations assumed under the contract by which he/she came to be invested with the rights of possession and/or exploitation of the holding.

Still with relation to Brazil's National Irrigation Policy, Decrees N° 90,309/84 and N° 90,991/85 were issued, re-drafting Article 14 and Article 16, paragraph 3, respectively, of Decree N° 89,496/84. And subsequently Decree N° 93,484/86, which alters these same Articles once again.

Decree N° 92,395/86.

This institutes the National Irrigation Programme - PRONI – and attributes its execution to the Minister of State Extraordinaire. It was created so as to cover the remainder of the country, with an expected duration of 3 years from the date of the publication of this Decree.

5.4.6 Environmental Impact Assessments and Environmental Impact Statements

The performance of an Environmental Impact Assessment (EIA) and the submission of the Environmental Impact Statement (EIS) are essential requirements for the realisation of projects that can cause significant environmental impacts. EIAs and EISs are conducted in order to minimise damage done to the environment. They have the additional purposes of analysing and proposing mitigatory measures, with the participation of the society affected by the project, and of studying the viability of the project and the way it is to be carried out; that is, to arrive at a value judgement on the project which can be favourable or unfavourable.

There are some basic differences between the EIA and the EIS although both serve the same ends. The EIA involves a review of relevant scientific and legal literature, field work, laboratory analyses, the definition of the geographic area that will be directly affected by the impacts, etc. It is an assessment, expressed in technical language, that precedes the EIS, and is its indispensable foundation.

The EIS documents all the activities carried out in the EIA. It presents the findings of the EIA in a manner that is accurate and objective, and that is readily comprehensible to the lay public since the EIS must be made available for public scrutiny, whether or not a Public Enquiry is to be held. Both the EIA and the EIS are drawn up by a multi-disciplinary team, consisting of technicians who have no connection, directly or indirectly, with the proponent of the scheme being assessed,

or with officials from the government agency responsible for the licensing process; thus the assessments should be impartial. The authors are technically responsible for the results they present, and can be found responsible under civil and criminal law, in the event of negligence being proven.

It is worth noting that the completion of the EIA/EIS where necessary, is an indispensable condition for a licence to be granted to the project under consideration. Although at the Federal level, the legal provisions directing and setting out the necessity, requirement and applicability of EIAs and EISs predate the Federal Constitution, the first provision is incorporated into the Constitution, in Paragraph 1, item IV of Article 225, which states:

Article 225
§1, IV – to require under the law the performance of an environmental impact assessment, that will be made public, prior to the realisation of any development or activity that might cause significant environmental degradation.

The other provisions, also at Federal level, were formulated in the CONAMA Resolution N° 001/86, which is transcribed in its entirety below.

CONAMA Resolution N° 001, dated 23/01/86.

This resolution establishes the definitions, responsibilities, basic criteria and general guidelines for the use and implementation of an Environmental Impact Assessment.

Article 1
For the purposes of this resolution, environmental impact shall refer to any alteration in the physical, chemical and biological properties of the environment, caused by any kind of material or energy resulting from human activities that, directly or indirectly, affects:

I – the health, safety and well-being of the population;
II – social and economic activities;
III – the biota;
IV – the aesthetic and hygienic condition of the environment;
V – the quality of environmental resources.

Article 2
Permission to undertake activities that will bring about modifications in the environment will depend on the elaboration of an Environmental Impact Assessment and its respective Environmental Impact Statement which are to be submitted for the approval of the competent State authority, and of the Special Secretariat for the Environment (SEMA) in certain instances. Developments requiring Environmental Impact Assessments and Statements include:

I – highways with 2 or more lanes;

II - railways;

III - ports and terminals for minerals, petroleum and chemical products;

IV – airports, as defined in item I, Article 48 of the Decree-Law N° 32, dated 18/11/66;

V – oil, gas and mineral pipelines and ducts, and collection and discharge networks for sewage effluent;

VI – electric power lines over 230 KV;

VII – hydraulic installations for the exploitation of water resources, such as: dams built for hydro-electric purposes, exceeding 10 MW, or for sanitation or irrigation works; canals for navigation, drainage or irrigation; the straightening of watercourses, the opening of sandbanks and the widening of river mouths; dredging operations and the construction of dykes;

VIII – the extraction of fossil fuels (petroleum, natural gas, coal);

IX – mineral extraction operations, including those defined as Class II in the Mining Code;

X – landfill sites, and sites for the processing and disposal of toxic or dangerous residues;

XI – electric power stations whose capacity exceeds 10MW, whatever their primary energy source;

XII – industrial and agro-industrial units and estates (for petrochemicals steel making, chemical factories, alcohol distilleries, coal mines etc);

XIII – industrial districts and Exclusive Industrial Zones;

XIV – the commercial exploitation of timber or firewood in areas of more than 100 ha, and also in smaller areas when such activities may cause significant impacts because of the extent or the environmental importance of the area they affect;

XV – urban projects involving more than 100 ha, or in areas that are considered to be environmentally sensitive according to the criteria of SEMA and the competent municipal and state authorities;

XVI – all activities that make use of charcoal, its derivatives and like products in quantities exceeding 10 tonnes per day;

XVII – livestock projects that will involve more than 1,000 ha, and also in smaller areas when such projects may cause significant impacts because of the extent or the environmental importance of the area they affect.

Article 3
Permission to undertake activities that, by law, come under federal jurisdiction, will depend on the elaboration of an Environmental Impact Assessment and its respective Environmental Impact Statement which are to be submitted for SEMA's approval;

Article 4
The competent environmental agencies and the sectoral agencies of the National Environment

System –SISNAMA- should ensure that licensing processes are compatible with the planning and implementation stages of projects that alter the environment, respecting the criteria and guidelines established by this Resolution, and being based on the nature, scope and characteristics of each project.

Article 5
The Environmental Impact Assessment (EIA), whilst having due regard for the legislation, especially those principles and objectives expressed in the Law on National Environmental Policy, will follow these general guidelines:

I -- consider all technological and locational alternatives to the project as proposed, and weigh them up against the hypothesis of the non-realisation of the project;

II – systematically identify and evaluate the environmental impacts generated in the implementation and operational phases of the project;

III – define the geographical area that will be directly or indirectly impacted, which will be denominated the project's zone of influence, bearing in mind in all cases, the hydrographic basin in which it is located;

IV – consider government plans and programmes that are proposed for, or operating in the project's zone of influence, and their compatibility with the project.

Once the need for an EIA has been established, the competent State authority or SEMA or, where appropriate, the municipal authority, shall determine any additional terms of reference that, owing to the characteristics of the project or of the local environment, may be deemed necessary, including the deadlines for the conclusion and analysis of the studies.

Article 6
The EIA will include at least the following technical procedures:

I – an environmental diagnosis of the project's zone of influence, a complete description and analysis of the environmental resources therein and their interactions, so as to characterise the environmental conditions in the area prior to the establishment of the project considering:

a) the physical environment: the subsoil, waters, air and climate, drawing attention to its mineral resources, topography, types and capabilities of the soils, bodies of water, hydrological regime, ocean currents, and atmospheric currents;
b) the biological environment and the natural ecosystems: the flora and fauna, noting species that serve as indicators of environmental quality, those that are rare or endangered and those that are of scientific or economic value, and any areas with permanent preservation status;
c) the socio-economic environment: the use and occupation of the land, water use, and the local economy, noting archaeological, historical and cultural sites and monuments, the forms of dependence between the local community and the environmental resources, and the potential for future utilisation of these resources.

II – analyses of the environmental impacts of the project and its alternatives, by identifying

probable impacts, forecasting their magnitude and interpreting their importance, distinguishing between positive and negative (beneficial and adverse), direct and indirect, temporary or permanent, immediate and medium- or long-term, impacts; their degree of reversibility; their cumulative and synergistic properties, and the distribution of their social costs and benefits;

III – the definition of measures designed to mitigate the negative impacts, among them the control apparatus needed, and the run-off treatment systems, evaluating the effectiveness of each one;

IV – the elaboration of a programme designed to monitor the positive and negative impacts, indicating the parameters and factors to be taken into account.

Once the need for an EIA has been established, the competent State authority or SEMA or, when appropriate the municipal authority, will give additional instructions as and where necessary on account of the characteristics of the project or of the local environment.

Article 7
The EIA will be carried out by a skilled multi-disciplinary team, which is neither directly or indirectly dependent on the proponent of the scheme being assessed, and which will be technically responsible for the findings it presents.

Article 8
All costs and expenses relating to the undertaking of the EIA such as: the collection of data and information, field work and on-site inspections, laboratory analyses, technical and scientific studies, impact monitoring, the writing of the EIS and the provision of at least 5 copies of it, will be met by the proponent of the project.

Article 9
The Environmental Impact Statement (EIS) will reflect the conclusions of the EIA, and will contain at least:

I – the objectives and justifications for the project, and its relation and compatibility with sectoral policies, plans and government programmes;

II – a description of the project and its technological and locational alternatives, specifying for each one of these: the zone of influence in the construction and operational stages, the raw materials and labour, the energy sources, the operational processes and techniques, probable effluents, emissions, residues and energy losses, and the direct and indirect employment created;

III – a synthesis of the results of studies for the environmental diagnosis of the project's zone of influence;

IV – a description of the probable environmental impacts arising from the establishment and operation of the project, considering the alternatives, and the incidence of the impacts over time, and indicating the technical and scientific methods used to identify, quantify and interpret these impacts;

V – a characterisation of the future environmental quality of the project's zone of influence,

comparing the different scenarios presented by the various possible alternative projects, as well as that which would prevail if no action were taken;

VI – a description of the expected effect of the measures designed to mitigate the project's negative impacts, mentioning those impacts which are unavoidable, and the degree of alteration expected;

VII – an impact monitoring programme;

VIII – recommendations regarding the most favourable alternative (general conclusions and comments).

The EIS must be presented in an objective and comprehensible manner. The information must be expressed in accessible language, illustrated by maps, graphs, diagrams and other means of visual communication so as to make the advantages and disadvantages of the project, and all the environmental consequences of its implementation, readily understandable.

Article 10
The competent State agency or SEMA or, where appropriate the municipal authority, will have a definite time period within which to draw its conclusions about the EIS. This period will begin on the date of the submission of the EIA and its respective EIS to the competent State authority, or to SEMA.

Article 11
With due respect for the confidential industrial information it may contain, as requested and demonstrated by the party concerned, the EIS will be available for public scrutiny. The copies will remain available for interested parties to consult in the documentation centres or libraries of the SEMA and of the competent State environmental agency, even during the period of technical analysis.

Paragraph 1 – Public agencies which have professed an interest in, or which have a direct relation with the project, will receive a copy of the EIS for their information and comment.

Paragraph 2 – Once the need for an EIA and the presentation of an EIS has been determined, the competent State authority, or the SEMA or, where appropriate the municipal authority, will set a time limit for the receipt of comments on the EIA/EIS from public agencies and other interested parties and, whenever it is deemed necessary, it will organise the holding of a Public Enquiry to provide information/clarification about the project and its environmental impacts and to allow discussion of the EIS.

Article 12
This resolution applies from the date of its publication.

Another form of preserving and protecting the environment when it is in some way degraded by development projects is given in the CONAMA Resolution N° 010, dated 02/12/87, which makes the establishment of an Ecological Station by the project's proponent a pre-requisite for the granting of licenses. The financial outlay required for such measures must necessarily be recorded in the EIA/EIS, and cannot be less than 0.5% of the total cost of the project as a whole. The

maintenance of this Ecological Station is also the responsibility of the project's proponent. The resolution reads as follows.

CONAMA Resolution N° 010, dated 02/12/87.

Article 1
In order to compensate for the environmental damage done through the destruction of forests and other ecosystems, the licensing of large-scale projects, as defined by the licensing authority on the basis of the EIS, will always have as one of its pre-requisites, the establishment of an Ecological Station by the firm or organisation responsible for the project, preferably in the vicinity of the affected area.

Article 2
The value of the area to be thus utilised and of the improvements to be made for the ends mentioned in the preceding Article, will be proportional to the environmental damage that must be compensated for, and shall not be less than 0.5% of the total projected costs for the establishment of the project.

Article 3
The extent, boundaries, constructions to be carried out, and other characteristics of the Ecological Resort that is to be established, will be detailed in the license documentation by the licensing authority.

Article 4
The EIS will present proposals for the Ecological Station, indicating possible alternatives, that would answer the requirements set out in this Resolution.

Article 5
The organisation or firm responsible for the project shall assume responsibility for the maintenance of the Ecological Station, either directly or by agreement with a capable government agency.

Article 6
The environmental licensing agency will supervise the establishment and operation of the Ecological Stations provided for by this Resolution.

Article 7
This Resolution applies from the date of its publication.

At the state level, this provision is contained in article 14 of Law N° 261, dated 20/02/91, governing the Environmental Policy of Tocantins State.

Law N° 261,

Article 14
Prior to the realisation of a development or activity that may cause pollution or significant environmental degradation, and EIA must be carried out by a multi-disciplinary team that is independent of the licence applicant and of the public licensing agency. The provision of adequate information is mandatory as is the subsequent Public Enquiry, announced by edict in the State-

and privately-owned press at least 15 days in advance.

Decree N° 10,459, dated 08/06/94, regulates the above-mentioned Law in Article 17 which states

Article 17
The establishment of a development or activity that may cause significant environmental degradation will depend on the prior approval of the EIA and its respective EIS, which shall be made available to the public, with the guarantee of a Public Enquiry.

The purpose of the analysis of the EIA/EIS is to grant, or defer the granting of, the required licence, and also to study plans, programmes and projects at all levels, so as to make them compatible with the preservation, conservation and protection of the environment. To this end, the EIA/EIS should cover the area possibly affected by the project or plans, including the hydrographic basin, considering all feasible technological and locational alternatives, and explaining the reasons for the choice that has been made.

5.4.7 Public Enquiries

The Public Enquiry is the formal means for society at large to participate in the environmental impact evaluation process, and its purpose is to set out for interested parties the project that is proposed and its environmental impacts, and to discuss the EIS. In the meeting, the community is informed in detail of the contents of the EIS, and is led to understand the positive and negative aspects of the proposed project, and the reaction of the affected community to the proposals is gauged.

In some States Public Enquiries are obligatory, examples being the States of Tocantins, Goiás, Mato Grosso, Mato Grosso do Sul, Pernambuco and São Paulo. In other States of the Federation, the holding of a Public Enquiry will depend on the reaction of interested parties, but if requested, an Enquiry must be held.

The legal provision that governs Public Enquiries is included, firstly, in the Federal Constitution, Article 225, §1, IV – the same Article that regulates the EIA/EIS - which states as follows:

Article 225
§ IV – to require, under law, an environmental impact assessment prior to the establishment of any development or activity that may cause significant environmental degradation, the findings of which assessment shall be duly publicised.

The other provisions, also at the Federal level, are made in the CONAMA Resolutions N° 001, dated 23/01/86, cited above, and N° 009, dated 03/12/87, which is transcribed in its entirety below.

CONAMA Resolution N° 009/87.

Article 1
The Public Enquiry referred to in the CONAMA Resolution N° 001/86 purports to set out for interested parties the features of the project in question and the relevant EIS, clearing up doubts

and recording the criticisms and suggestions made by those present.

Article 2
The Environmental Agency will hold a Public Enquiry whenever it deems necessary, or when one is requested by a civil entity, by the Public Ministry, or by 50 towns or more.

Paragraph 1 – The Environmental Agency will state, in an edict published in the local press, the starting date for the period in which requests for the holding of a Public Enquiry can be made. This period will be for a minimum of 45 days, starting from the date the agency receives the EIS.

Paragraph 2 – Should a request for a Public Enquiry be made, and the State agency not hold one, the issuance of the project's licence will be rendered invalid.

Paragraph 3 – Following the period mentioned above, invitations to the Public Enquiry shall be issued by the licensing authority, in registered correspondence with the party or parties who requested the Enquiry, and by announcements published in then local press.

Paragraph 4 – The Public Enquiry must be held in a place that is accessible to interested parties.

Paragraph 5 – Because of the geographic localisation of interested parties and the complexity of the issue, more than one Public Enquiry can be held on the same project and its EIS.

Article 3
The Public Enquiry will be chaired by a representative of the licensing authority who, following the exposition of the project's purpose and its EIS, will start the discussion between the interested parties.

Article 4
At the end of each Public Enquiry, the minutes of the meeting will be drawn up.
All written and signed documents that were submitted to the officer presiding over the Enquiry during the session will be attached to the minutes of the meeting.

Article 5
Along with the EIS, the minutes of the Public Enquiry(ies) and their attachments will provide the basis for the analysis and final report of the licensing authority regarding the granting of the licence,

Article 6
This Resolution applies from the date of its publication.

At the State level, the requirement for Public Enquiries is set out in Article 14 of Law N° 261/91 – the Law governing the Environmental Policy of Tocantins State, and in Articles 17, 24 and 30 of the Decree N° 10,459/94 which regulated the aforementioned Law, the relevant Articles of which are transcribed below.

Law N° 261/91

Article 14
Prior to the establishment of a development or activity which may cause pollution or significant environmental degradation, an EIA must be carried out by a multi-disciplinary team which is independent of the licence applicant and of the licensing authority. The provision of adequate information is mandatory, as is the subsequent Public Enquiry, announced by edict in the State- and privately-owned press at least 15 days in advance.

Decree N° 10,459/94.

Article 17
The establishment of a development or activity that may cause significant environmental degradation will depend on the prior approval of the EIA and its respective EIS, which shall be made available to the public, with the guarantee of a Public Enquiry.

The purpose of the analysis of the EIA/EIS is to grant, or defer the granting of, the required licence, and also to study plans, programmes and projects at all levels, so as to make them compatible with the preservation, conservation and protection of the environment. To this end, the EIA/EIS should cover the area possibly affected by the project or plans, including the hydrographic basin, considering all feasible technological and locational alternatives, and explaining the reasons for the choice that has been made.

Article 24
The Public Enquiries provided for in Article 14, will be organised by NATURATINS or by COMATINS, and can be requested by civil entities, or by agencies of the State or Municipal Government, the Federal or State Public Ministry, and members of the Legislative.

Article 25
Public Enquiries should be held in the State capital or in the administrative centres of municipalities that may be affected by the consequences of the activity or development. They shall be announced in the official government newspaper (the Diário Oficial do Estado) and/or in a widely-read newspaper, and the announcement should contain information regarding the project in question and its environmental impacts, and state the place and time of the Public Enquiry.

Article 26
Government officials representing the licensing agency, specialists from each discipline of the team that prepared the EIS and the licence applicant or his/her legal representative.

Article 27
Minutes of the meeting will be taken, summarising all contributions and other relevant matters. At the Public Enquiry votes will not be taken as to the merits of the EIS.

Article 28
Once the need for an EIA and the presentation of an EIS has been determined, NATURATINS will set a time limit for the receipt of comments on the EIA/EIS from public agencies and other interested parties. The EIS will be available for public scrutiny, even during the period of technical analysis, and the public agencies that have declared an interest in the project, or that have a direct connection with it, will receive a copy of the EIS for their information and technical comments.

The term fixed by NATURATINS for the submission of suggestions and comments on the EIA/ EIS will be made known to the public by announcements published in the Diário Oficial do Estado newspaper, and/or in a widely-read newspaper.

Article 29
NATURATINS or COMATINS can only deliver their verdict on the EIS when the Public Enquiry phase is over.

Article 30
The agency responsible for environmental licensing will analyse the comments made at the Public Enquiry, noting the relevance of each, and raising other environmental and judicial issues that are of interest.

ANNEX IV

SOCIAL CONDITIONS

ANNEX IV

SOCIAL CONDITIONS

1 Introduction

This Annex IV presents social conditions, especially on the rural society, based on the results of socio-economic survey carried out for the Master Plan Study in the whole area of the State of Tocantins.

In order to grasp the social conditions in the Study area, the rural socio-economic survey was carried out through, (i) direct observation, interview with the village leaders, farmers and concerned officials in the study area, (ii) the farm survey at farm level through questionnaires for 200 families in all the municipalities of the State, and the socio-economic survey at the municipality level through questionnaires for 37 municipalities, and (iii) data review including the data obtained from the relevant authorities and organizations and reports on rural survey in the State. The survey has also been done on the indigenous groups in the State.

This Annex consists of identification of the rural society, living conditions, and vocational education of agriculture in the State of Tocantins.

2 General

The State of Tocantins is the most recently established state in Brazil, accomplishing independence from the state of Goiás in 1989. The extension of the state is 278,421 km^2, which represents 3.3% of the national territory. The Tocantins State consists of 10 regions with 139 municipalities comprehending the whole area of the State of Tocantins.

The area is dominated by pasture and upland and lowland rice fields. Most farmlands are used for upland crops while in some areas upland and lowland rice is grown. As staple crop, the upland rice is produced by familiar agriculture practices through the traditional slash and burn farming. The remaining land, except for the mountain and forest areas and lowland rice production areas which are situated along the Araguaia river, is used for homesteads, roads, grazing cattle, and upland crops.

The major roads in the State such as the National road BR-153 (Belém-Brasília), State road TO-010, TO-050, TO-080, TO-164, TO-255, which are paved by asphalt, and TO-336, are passable and can be used for transportation throughout the year, and such state roads are linked with the National road BR-153. The secondary roads (earth road) in the State, are of poor quality and not suitable for sedans. Four wheel drive vehicles and motorcycles can pass but during rainy season it is difficult even for this type of traffic. The Araguaína city, alongside the National road BR-153, plays an important role of the commercial and industrial center of the northern part of the State. The Gurupí city, also alongside of the National road BR-153, performs the major role in the South region of the State.

3 Population

3.1 Population Trends

According to the Census 1996 (preliminary data), the total population of the State of Tocantins is 1,049,823 inhabitants, which accounts for 0.66% of the total population of the country (estimated in 1995). Hence, the state of featured by scare population density equivalent to one-fifth of the national average. Although the population growth in Tocantins had been relatively dull (nearly 2.0% per annum, which was almost the same as the national average) for the period 1980-91, it has become burgeoning recently with an annual rate of 3.3% since 1992, which is far higher than the national average of 1.4% of the same period.

Population trends in urban and rural areas express prominent changes; sharp decrease of rural population (18%), and marked increase of urban population (35%). The decrease of rural population can be verified in all the regions of the State. In particular, the decreasing rates in South and Center-West regions are remarkably high, 38% and 29% respectively. The main cause of this phenomenon is an outflow from rural zone to urban zone. The population tendencies by region are shown in the Table IV-1.3.

3.2 Population Structure

The demographic structure in the State, according to the Census 1996, is tabulated in the Table IV-1.1 to 4. The average household size is 4.38. The population density of the State is 3.77 per square kilometer. However, the East and Southeast regions are highly depopulated with densities of 0.81 and 1.20, respectively.

3.3 Economically Active Population

The economically active population (EAP) with ages older than 10 years old, by a sampled household survey in 1995 which was carried out by IBGE, is shown in the Table IV-1.5. The number of persons who were engaged in economic activities within the survey week was 445,778, and unemployed persons represented 16,349 (3.7%). Persons who were engaged in agricultural activities represented 43.2% of the EAP, followed by financing services (17%) and commerce (11%).

4 State Administration

4.1 Administrative Jurisdiction

Administrative division of the State of Tocantins consists of 139 municipalities, and the state is divided into 10 regions by the SEPLAN, as follows:

Region	Number of Municipality
Extreme North	25
North	13
Northeast	10
Northwest	17
East	08
Center-West	14
Central	14
Southeast	20
Southwest	06
South	12
Total	139

The details of the administrative division are tabulated in the Table IV-1.1.

4.2 Administrative and Assembly Systems

The administration of the State is the responsibility of the State Governor who is publicly elected. The State Government consists of 10 Secretariats, 10 Governmental organizations, and 11 Agencies and Foundations. Each Secretariat conducts its administrative guidelines through their regional offices (some Secretariats utilize different regional divisions, other than that of SEPLAN), and the smallest unit of the administrative organization is the municipal office. The administrative system of the State is directly connected with the Federal Government and is in duty to conduct smoothly the public policies.

At the State level, the State Assembly is the legislative authority, and the members of the Assembly are also publicly elected. The number of deputies are determined by the number of population. The number of assemblyman composing the Tocantins State Assembly is 24.

5 Social Structure

5.1 Poverty Assessment

According to the calculations for the assessment of poverty levels, utilized in the PCS (Solidarity Community Program) of the Federal Government, the State of Tocantins presents a poverty index of 41.723. The lowest poverty index in the State is the index of the Paraíso do Tocantins municipality; the areas which showed higher poverty index are

concentrated at the Extreme North region, where 8, out of 25 municipalities, appear within the first 10 higher poverty indexes. (see Table IV-2.1)

The state statistics reported that 50% of household heads in the state receive income below the country's minimum wage. The index of household head's income (minimum wage = 1.00) in the state is lower than the Country average (3.42) corresponding to 2.15, the indexes in the urban and rural zones being 2.84 and 1.18, respectively. This data shows the high poverty level observed in the rural zone.

5.2 Indigenous Groups

The indigenous population of the state is, approximately, 5,273 inhabitants and they are divided into six groups as shown in the Table IV-2.2.

- Characteristics of the Indigenous Groups

(1) Karajá, Javaés and Xambioá

The Karajá family comprehends the Karajás, Javaés and Xambioás, and their settlements are located at the Araguaia river and the Javaés river margins, in the Bananal Island, in the case of the first two groups, and at the north, downstream the Araguaia river, in the case of the last group. The number of their settlements is 6, 7 and 1, respectively. The reservation area extends over 1,395,000 ha (Karajás), 160,784 ha (Javaés), and 3,265 ha (Xambioá). Their linguistic stocks belong to the Macro-Jê group.

The family system is matrilineal kinship. For these groups' way of life in their societies, the marriage is to obtain an alliance between a father and a future bridegroom, and the marriage between close relatives is a dislike for the community as an incestuous case. The social organization and culture is based on male dominance in the ownership of production means, patriarchal residence patterns and patrilineal decent and inheritance patterns.

The religious orientation is based on animism worship, but at present the more active religion between these groups is Christianity such as Baptist, Adventist, Catholic and Congregation of Christ. Festivals of these groups are principally "Indian's Day", Heto-Hoka and Ijasso.

Regarding health services, the State Secretariat of Health is conducting vaccination programs to these groups, and distributes medicines. However, in some settlements which are difficult to access through road in the rainy season, there is a lack of medicine and health assistance. Main diseases in the period are Conjunctivitis, Grippes and Verminosis.

The principal economic activity of the Karajá family is exclusively fishing, followed by farming for self-sustenance, hunting and sale of handicrafts. Fishing for subsistence depends on family work, exclusively men's daily work. Commercial fishing by indigenous people is a financial source. They collect tubercles, roots, jenipapo, cashew

and mangaba and cultivate sweet potato, cassava, banana, cotton, pepper, tobacco and medical plants. Nowadays, they plant rice and feijão beans for self-consumption utilizing the slash-and-burn cultivation system.

At present, these groups are facing many difficulties in surviving and getting aliments. The main reasons for these problems are: decrease of their settlement's territories, the constant presence of tourists, fishers and cattle raisers. In addition, the influence from the outer world has caused damages and the loss of their original culture, propitiating the acquisition of civilized habits.

(2) Apinajé

The Apinajé indigenous group forms 7 settlements in forests bordering brooks which are tributaries of the Tocantins river, and the reservation area is 141,904 ha which is located at the Tocantinópolis, Maurilândia, Itaguatins and Cachoeirinha municipalities in the Extreme North region. In this reservation area there is a predominance of Cerrado vegetation, sandy soil, and topography presenting plain and undulation features. Population of this group is 714 inhabitants. The linguistic stock is Macro-Jê, and they speak Apinajé dialect - Timbira.

The family system is matrilineal kinship, and there is blood relationship within marriage, especially, within the group, and also with other indigenous group. The social organization is based on male dominance likewise the Karajás family. Traditionally, they form hierarchy in their communities, composed of the Cacique (chief), Vice (substitute for chief), Promoter (women), Pajé (shaman), and Counselors. The religious orientation is traditional animistic shamanism, but the missionaries of the Assembly Church of God act in their settlements. Religious festivals and traditional and cultural manifestations center on the farming cycle; Potatoes festival, Maize festival, Fighting of buffaloes, and the 1st rainfall festival.

This group has been considerably acculturated, or assimilated to the outer world.

Gender-based division of labor is as follows:

- Male: preparation of farmland (boring, clearing, burning), hunting and fishing, firewood cutting, etc.
- Female: housekeeping, cooking, child care, washing, scratching of cassava, collection of fruits, home vegetable gardening, collection of firewood, fetching of water, processing of cassava, etc.
- Joint works with male and female: farming works (burning, planting, weeding, harvesting, collection of fruits, pressing of cassava, etc.)

Economic activities of the group is mainly agriculture. They cultivate rice, cassava, maize, feijão beans, pumpkins, sweet potatoes, broad beans, yam, banana, sweet cassava, cabaça, peanuts and tobacco, through the traditional slash and burn system. Individually carried out, hunting is for home-consumption.

In this group reservation area, the occurrence of land possession conflict is eminent, imposing a bad influence over the relationship between the indigenous people and the outer people. The area is occupied by small landowners, big landholders and temporary invaders who steal hunting, fishing, woods and fruits.

(3) Krahô

The reservation area of the Krahô group is located at the municipalities of Goiatins and the Itacajá in the Northeast region, and extends over 302,533 ha. Number of settlement is 13 with 1,198 inhabitants. Their linguistic stock is Macro-Jê, Krahô dialect - Timbira. However, young men and some adult men and women speak good Portuguese.

The family system of the group is matrilineal kinship and is based on male dominance in the ownership likewise other groups. The traditional organization of their communities is composed of the Cacique (chief), Vice (substitute for chief), Counselor, and Prefeito (who distributes aliments in the community, example: meat). All the decisions are taken after the discussion and consultation within the community, following the major opinion and principally elders. The culture of the Krahô is a dualistic culture in which two halves get together to form the whole. Sun and earth or sun and moon are the sacred elements of life's guide. The settlement forms a circle with a symbolic central plaza and houses. The religious orientation is traditional animistic shamanism, and they have various festivals throughout the year; Potatoes festival, Marriage festival and Indigenous group day. Their acculturation and assimilation process is small in comparison with other groups owing to their strong feeling of identity.

The main economic activity of the group is agriculture which utilizes the slash-and- burn system (shifting rotation in each five years). However, the Krahô's land is formed of tablelands and sandy and unproductive fields, so that suitable land for agriculture is small. They plant cassava, sweet cassava, rice, maize, feijão beans, sweet potatoes, pumpkins, yam, peanuts, sugar cane, garlic, banana, watermelon, and broad beans, and are hunting and fishing individually and/or in group. Their life style is a nomad one, hunting, fishing and collecting fruits from the forests.

(4) Xerente

The reservation area of the Xerente is located at the Tocantínia municipality in the Central region, and extends over 162,542 ha. Population of the group is 1,095 inhabitants, and they form 33 settlements. The Xerente belongs to the Xavantes family. The linguistic stock is Jê, Akwe dialect -T imbira, but they speak different dialects from the Apinajé and the Krahô. The family system of the group is patrilineal kinship. At present, the Xerentes get married to other indigenous groups people, and also to non indigenous people. The way of life and thought of this group is relatively different from the other groups due to their comparatively high assimilation by the outer people. The principal religion of the group is Christianity, representing the churches: Baptist, Catholic and Christian of Brasil. Traditional festivals in the settlements are Corrida de Tora, dancing, singing and confraternization.

The group production is carried out through farming practices of familiar subsistence and of community subsistence. The main farm products are rice, cassava, maize, sweet potatoes, feijão beans, broad beans, yam, and banana. In most settlements orange, mango, tangerine, lemon, papaya and coconuts are planted. In the settlement of Salto, there are two projects by FAET: the construction of 6 popular houses and 250 ha of farmland for rice production.

Gender-based division of labor is as follows:

- Children: water fetching, cleaning of the settlement
- Female: child care, handicraft, helping of husband's farm works
- Male: farm work, wood handicraft, hunting, fishing, selling of handicraft and cassava's flour, collecting of bee honey and bacaba

5.3 Farmer's Community and Organization

5.3.1 Farmer's Community

As mentioned in section 2, agriculture and livestock is the economic foundation of the State of Tocantins. However, rural population of the State accounts for only 28%. The disparities in the basic human needs between urban and rural areas, and lack of employment opportunities generate crucial problems among rural communities in the state. On this account, it causes the migration of rural people to urban zones. Farmers migrated from the rural zones obtain their income from the labor markets of large-scale farms and other activities.

In the rural zone, farmers form scattered housing type, living in their own farmland. Therefore, these conditions make it difficult to access roads, schools and health posts. In the rainy season, most of the farmers who live in remote areas are isolated from the urban zone due to bad road conditions. These farmers perform familiar agriculture by slash and burn cultivation. In particular there are many landless farmers, petty farmers and small-scale farmers in the Extreme North region, i.e., Bico do Papagaio region, therefore, severe social problems caused by poverty can be widely observed. Such farmers are also distributed over the entire state.

As for the agrarian reform, INCRA is implementing several settlements for landless rural workers, for whom it offers a special credit (PROCERA) for each family, divided into three items: housing, alimentation and investment. There are 119 INCRA's settlements in the whole state. (see Table IV-2.3). Recently, Lumiar Project supported by INCRA, which is a technical assistance and rural extension project for the settlers, was created. At the state level, there is the NPA (Nucleus of Agricultural Production) project which has three implanted projects namely No.1, 2 and 3, located in the municipalities of Araguaína, Nova Olinda and Miracema do Tocantins, respectively. This project includes from supply of technical assistance and rural extension until the distribution of land, according to the NPA.

On the other hand, there is a NGO which is carrying out the active support to small farmers' associations and small farmers in the State. The NGO is the "APA-To" (Association of Alternatives for the Small Agriculture in the State of Tocantins), founded in 1992, by the initiative of the Land Pastoral Commission (CPT) agents, which has an objective to render feasible alternatives for the familiar agriculture in Tocantins, based on the diagnosis and definition of these alternatives carried out by the small farmers themselves, through their organizations (associations, syndicates, settlement commissions), specially in the newly legalized agrarian reform areas. In this work, the APA-To stimulates self-organization processes in order to assure durable transformations and to avoid new dependencies. The APA-To keeps a close relationship with the Program of Familiar Agriculture and Rural Development of the University of Tocantins (UNITINS). The activities APA-To is carrying out are based on the Project of Qualification of Familiar Farmers' Organizations which consists of three projects: Bico do Papagaio, Paraíso, and Peixe.

5.3.2 Farmers' Organization

Through the PNFC (New Frontier Project of Cooperativism) prepared by the Ministry of Agriculture (MA) and supported by UNDP, MA is promoting the creation of small-scale farmers associations aiming at stabilizing the familiar agriculture and at creating advantages in rural communities. The association has an important role in the viability of rural communities, through the improvement of rural life conditions and the sustainability of familiar agriculture, facilitating the access to agricultural credit and technical assistance to small-scale farmers. SAG and RURALTINS are playing important roles in the organization of associations of the rural zone. There are already 345 associations with about 18,400 members established in the entire State (see Tables IV-2.4).

On the other hand, such small farmers are also organized in regional syndicates and a central organization called "FETAET", which acts in the political field concerning to land and social issues.

Medium-scale farmers are also organized in rural syndicates at the municipality level, and have a central organization called "FAET", which is conducting the improvement of agricultural conditions such as rural extension and farmer's movement.
(see Tables IV-2.5).

There are also agricultural cooperatives established in the State. There are large-scale producers cooperatives, as COOPERJAVA, which produces irrigated rice in the Southwest region. This cooperative operates agroindustry and agribusiness. However, most of the cooperatives are stagnated on their activities because of severe condition of agricultural financing, and some cooperatives are in dissolution.

6 Women's Role in Agriculture

Generally, rural women in the State of Tocantins are actively involved in some stage of agricultural production. In addition, domestic activities, i.e., housekeeping, and child care, are an essential part of women's work. According to the gender survey in the field, gender-based division of work varies among regions. In particular rural women of the Extreme North and North regions are involved in all stages of agricultural production. From the surveyed data, the daily working hours of women in the farm field ranges from three to four hours. Rural women have to shoulder many tasks that have remained since olden times. These include feeding the pigs and poultry, taking care of the home vegetable gardens, checking the fruit trees and collecting firewood from the forest or fields. For farmers, this work becomes much more time-consuming depending on the frequency of trips from house to field and on the location of water.
(see Tables IV-3.1 to 4)

Domestic activities are essential to household maintenance. These activities also include food preparation, fetching water, firewood collection, washing cloths, and looking after their children. These non productive activities constrain the improvement of working conditions and the status of women in rural zone.

As a result of the survey carried out in the Extreme North region, it was inferred that the farming activities of rural women are seeding, weeding, harvesting, drying and selecting, and these tasks have the same working loads as men. Furthermore, in the case of a day without farm work, rural women and girls spent much of the daytime (more than 7 hours) in collecting Babaçú coconuts and breaking their husk. Most activities related to capital acquisition and maintenance are the responsibility of men. The source of wealth controlled by women are few and more related to household consumption. Although the income obtained by selling Babaçú coconuts can be controlled by women, they use it for home consumption.

In this region, the Regional Association of Rural Women's Workers in the Bico do Papagaio (ASMUBIP) was established by rural women, in 1992, aiming at improving the social status of rural women through activities such as the babaçú coconut project, comprehending the purchase and selling of living necessities, rural women against male chauvinism in rural communities as gender movement, and environmental preservation. The association is managed by the women themselves with the support of NGOs. At present, the association formulates the new project "Project of Rational Utilization of Babaçú By-Products and Community Development". The objectives of the project are (i) to improve the administrative equipment, (ii) to reinforce and increase the rotational fund, (iii) to diversify the production, and (iv) to render feasible the organization work and the formation of nucleus. The association is looking for financial cooperation of the International Organizations and NGOs.

On the other hand, RURALTINS is carrying out social assistance program such as courses in home economics, handicraft, vegetable gardens, home industry, domestic animal rearing, nutrition, basic health care, for rural women in collaboration with the PACS's

staff. However, the implementation of these programs doesn't have a wide reach due to the lack of personnel and financial resources.

7 Education

7.1 Basic Education

Basic education services are the responsibility of the State Secretariat of Education and Culture (SEDUC) under the guidelines of the Ministry of Education. The SEDUC has established 10 regional offices (the administrative zones differ from the SEPLAN regional division) which supervise the 1st grade (8 years, primary course 4 years, secondary course 4 years) and the 2nd grade (3 years) schools. The regional offices are situated at the municipalities of Arraias, Araguaína, Araguatins, Dianópolis, Guaraí, Gurupí, Miracema, Palmas, Paraíso, Porto Nacional, and Tocantinópolis.

The total number of 1st grade schools in the State is 2,848 schools; 2,778 public and 70 private schools. The number of teachers and pupils is 13,323 and 303,337, respectively. At the 1st grade school, the average number of pupils is 108 per school and 23 pupils per teacher. (see Table IV-4.1)

In the rural area, the school facilities are poor and scanty. The facilities constructed with bricks and/or concrete are few. Most of them have thatch roof, clay walls and earth floor. Concerning to the school curriculum, most of the 1st grade schools have only the primary course and teaching is carried by the same teacher, in the same classroom, for the four series altogether. Moreover, rural teachers have low qualification.

There are 171 second grade schools: 152 public and 19 private schools. The number of teachers and students is 4,119 and 31,663, respectively.

7.2 Vocational Education

7.2.1 Vocational Education at Second Grade Schools

The vocational education at the 2nd grade (high school) level is the responsibility of the SEDUC. According to the Law No. 9,394, "Guidelines and Basis for National Education", promulgated on December, 1996, the present vocational educational institutions will be reformed and the basic high school education (2nd grade level) will be gradually separated from the vocational one. It means that, the student graduated in the basic high school can afterwards go to vocational school and, at the end, receive a professional qualification (license).

There are 5 (five) 2nd grade agricultural schools in the State; 1 federal school in Araguatins, 2 state schools in Pedro Afonso and Gurupí, 1 municipal school in Fátima (closed in 1997), 2 private schools in Natividade (UNITINS) and Canuanã (BRADESCO). Among the existing 2nd grade agricultural schools in the State, several differences were found as for the level of educational contents, teachers qualification, and

availability of educational equipment and materials. All of them, however, in a higher or lower level, have difficulties. (see Table IV-4.1 and 3)

7.2.2 Professional Education

Vocational education services for professionals are carried out under the PLANFOR (National Plan of Professional Education) of the Ministry of Labor. The PLANFOR, is one of the 42 priority projects of the present federal government in the Pluriannual Plan "Brazil in Action". The objectives of the PLANFOR are to mobilize and to articulate the vocational education capacity available in the country in order to quality, from 1999 on, at least 20% of the economically active population (EAP) which means about 15 million workers. Nowadays, the demand served is about 3.5 million, i.e., only 5% of the EAP.

One of the implementation strategies is through the State Qualification Plans, coordinated by the State Secretariat of Labor and Social Action - SETAS -, guided and supervised by the Municipal and State Employment Commissions, financed by the FAT (Workers Support Fund), through agreements between the SETAS of each State and the Ministry of Labor. Another strategy is the establishment of covenants, technical cooperation terms, intention protocols with all country professional education network, covering, at least, seven big groups of agencies:

- municipal, state and federal technical education systems;
- public and private universities;
- the so called S system (SENAI/SESI, SENAC/SESC, SENAR, SENAT/SEST, SEBRAE);
- labor unions;
- companies, schools and foundations;
- non governmental organizations; and
- free professional education.

The plans are divided into two types of activities: special projects and qualification and re-qualification projects. The special projects are studies, researches and conceptual and methodological events supporting the qualification and re-qualification projects. The other one is composed of courses and training in several fields, aiming the employability of the trainees.

The plans for 1996/1998 will be implemented with the following characteristics:

- minimum goal of 750,000 trainees and total investment of around R$330 millions in resources from FAT + State's budget;
- the amount of R$20 millions, included in the above amount, for special projects; researches, educational material and, mainly, evaluation and follow up of the State Plans.

The global goals of the PLANFOR are shown in the following table.

(in thousand of trainees)

Year	State Qualification Plans /other covenants	Vocational Education Network*	Total	% of Economically Active Population
1996	750	4,250	5,000	7%
1997	1,800	6,200	8,000	11%
1998	2,500	8,500	11,000	15%
1999	3,000	12,000	15,000	20%

Note: * Including the municipal, state and federal schools system; S system, companies, schools and foundations, labor unions, NGOs, universities, free professional education.

In 1996, the program under the PLANFOR has carried out 103 courses in 52 municipalities in the state, and had the participation of 7,187 students. The budget summed up around R$1,980,000, out of which R$1,800,000 is from FAT and the other 10% is the state counterpart. The courses were carried out in collaboration with SECAD, SENAR, RURALTINS, SENAC, ULBRA (Luteran University of Brasil) and SEBRAE. The UNITINS has cooperated in the field of special projects.

In the agricultural sector, RURALTINS and SENAR (National Service of Rural Education), and sometimes SEBRAE are performing the rural training courses and activities. RURALTINS is the public institution responsible for technical assistance and agricultural extension services in the State and it is linked with the SAG. It has 62 offices all over the State (54 local offices, 7 regional offices and 1 central office in Palmas). It staff is composed of 307 persons in all regions of the State.

The training for RURALTINS's staff in 1995/1996 was implemented as indicated in the Tables IV-4.4. The training for small-scale farmers in the same period carried out by RURALTINS was also implemented as shown in the Tables IV-4.5. The SENAR has conducted the training courses for medium-scale farmers and farm workers of medium- and large-scale farms, and the courses are shown in the Table IV-4.6.

7.3 Higher Education

There are 2 universities established in the State; UNITINS and ULBRA. In addition, there are also 2 colleges; the FAFICH (Human Science and Philosophy College) in Gurupí and the FAPED (Pedagogy College) in Paraíso do Tocantins.

UNITINS was founded in 1990 as a state university and was transformed into a private right foundation in 1996. However, most of the managing costs depend on the subsidy of the State Government. The 15 faculties of the UNITINS are distributed among the major cities in the regions, in accordance with the state policy of decentralization. The organization of UNITINS is divided into three centers: Central unit (Palmas), North center (Araguaína), and South center (Gurupí).

- Central unit: Environmental engineering, Accounting Science, Architecture and Urbanism, Engineering, Economics, Social Communication, and Law in Palmas; Pedagogy, and Literature in Guaraí;

Data process engineering, and Food process engineering in Paraíso do Tocantins;
Administration, and Mathematics in Miracema; and
History, Geography, Literature, and Biology in Porto Nacional.

- North center: History, Geography, Literature, Mathematics, and Veterinarian medicine in Araguaína;

Pedagogy in Tocantinópolis; and
Law in Colinas do Tocantins.

- South center: Agronomy in Gurupí;

Pedagogy, and Mathematics in Arraias; and
Agrotechny (2nd grade school of agriculture and livestock) in Natividade.

The faculties related to agriculture and livestock are establishes at Araguaína (Veterinarian Medicine), North region, Gurupí (Agronomy), South region, and Paraíso do Tocantins (Food Process Engineering), Central region. The total number of students is 3,321 students as for 1995. There are 6 master courses offered by UNITINS, among which courses in agronomy and livestock fields are also included. The Gurupí (Faculty of Agronomy) and Araguaína (Veterinarian medicine) Campuses are the responsible for agriculture and livestock research in the State. (see Table IV-4.4)

ULBRA is a private university which is based in Palmas and has 5 faculties. Among them, there is a course of agricultural engineering.

7.4 Education for Indigenous Groups

As mentioned in 5.2, six indigenous groups are living in rural and remote areas of the State. Each of them have their own culture and language.

In 1991, the State Government signed an agreement with Goiás Federal University and FUNAI (National Foundation for the Assistance of the Indios) aiming at the promotion of the indigenous groups education. As the first step for the attainment of this goal, a study was elaborated concluding that their education should be carried out using both their own Language and the Portuguese as well, utilizing elements of their own culture. For this purpose, the training of indigenous teachers was carried out, belonging to the community where they would teach and speak the same language as their students. In 1994, this project evolved to become the Indigenous Education Division, within the State SEDUC.

Classes are carried out inside the indigenous settlements, and have very simple facilities. Most of the teachers are members of the community, from time to time receiving training from the teachers of Goiás Federal University, according to the agreement signed in 1991. In this training, they produce their own textbooks to teach to read and write and also some books where they tell the traditions of the group, their eating habits, ceremonies, etc. The text books are written sometimes in Portuguese or in their own Language. The education provided is composed of the first four years of the 1st Grade school. The first two years are bilingual and the other two are given only in Portuguese. Sometimes, there is a transition

year for the adaptation to the Portuguese language. According to some teachers, when the bilingual education started there was an increase of interest by the parents. Nowadays, almost 100% of the children go to school.

In 1997, the situation of the Indigenous education in the State is the following: there is 56 schools distributed in the same number of tribes attending 2,078 pupils.
(see Table IV-4.2)

8 Health

8. 1 Health Services

The health services in the State of Tocantins is the responsibility of the Secretariat of Health (SES) under the guidelines and in accordance with the SUS of the Ministry of Health. The administration is conducted through three regional offices: Northern regional office in Araguaína, Southern regional office in Gurupí and Central regional office in Palmas. The regional offices are responsible for the supervision of hospitals, medical services and public health services.

The details of the health and medical institutions and professional staff in the State are tabulated in the Tables IV-5.1 and 2.

The data of the Secretariat of Health shows the present situation of health as follows:

	1	2	3	4	5	6
Tocantins	10,690	2.83	5.27	3.69	1.77	4.2
North region	110,292	3.56	6.02	3.17	2.81	2.1
Brazil	2,472,325	5.77	13.09	8.41	4.23	3.2

Source: SES-TO/DDAS 1997
Note: 1. Birth (1994), 2. Death rate per 1,000 inhab. (1994), 3. M. doctors per 10,000 inhab. (1996), 4. Dentists per 10,000 inhab. (1996), 5. Nurses per 10,000 inhab. (1996), 6. Beds per 1,000 inhab. (1996)

In order to promote home health control and prevention against diseases, the State SES is carrying out health campaigns and the PACS (Community Health Agent Program) to the population through the Municipal Health Secretariat. Through community health agents, the PACS aims at improving the capacity of health care for the population, transmitting the information and knowledge, and at contributing for a construction and consolidation of the local health systems. An agent is responsible for 100 to 250 families, working together with a RURALTINS's social assistance staff in the rural areas. (see Tables IV-5.3).

The socio-economic data of the State SES is as follows:

	1	2	4	5
Tocantins	31.40	30.10	0.10	382
North region	22.01	38.16	6.20	1,120
Brazil	20.43	75.40	44.00	1,980

Source: SES-TO/DDAS 1997

Note: 1. Illiteracy rate - 15 years and over (1991), 2. Percent of dwelling with adequate water supply (1991), 3. Percent of dwellings with adequate sanitary drains (1991), 4. Income per capita (US$) (1994)

8.2 Main Diseases

According to the SINAN (Information System of Diseases and Injuries), the Acute Diarrhea diseases are diffused in the whole state and it was recorded 9,766 patients at 66 municipalities in 1996 (up to October). The Visceral and Tegmental Leishmaniosis is also diffused in the entire State. The Visceral Leishmaniosis is found in 0.45 per 10,000 inhabitants in 1996 (up to October). The distribution of Malaria by species in 1995 is as follows: 1,768 (Falciparum), 1,898 (Vivax), and 50 (F + V). The Chagas disease (parasitic disease) is spreading among farmers in the rural areas, and 3.4% of the total population of the State have a Chagas parasite. In 1995, the Dengue disease had infested 78 municipalities, and 3,296 patients were confirmed.

In rural areas, there are many patients of Tuberculosis, Hansen's disease, and Hepatitis caused by poverty, malnutrition and poor sanitary conditions. There are also some meningitis cases.

8.3 Preventive Medicine and Health Education

The State SES is implementing the inoculations against Tuberculosis, Yellow Fever, Hepatitis B, Polio, Measles, Neonatal Tetanus, and Rubeola, sterilization against malaria, and blood tests to detect the Visceral and Tegmental Leishmaniosis, in order to prevent these epidemic and infectious diseases. Furthermore, the State SES prepares and provides the serum against poisonous snakes. Patients of Tuberculosis and Hansen's disease receive medicines free of charge by the National Programs of Tuberculosis Control and Hansen's disease Control. An Oral Hygiene Program is also being carried out at four municipalities, as a model, providing fluorine tablets to the population.

The State is the responsible for the health educational activities, and the following related activities are being developed.

- Elaboration and implementation of the School Health Project
- Elaboration of the Technical Norm of Health Education

A school health program in the 1st and 2nd grade schools is being promoted by the State SES, and voluntary assistant training is carried out among the pupils.