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for the MBA programme

Government Environmental Policy in Brazil

by Brian Harrigan

July 17th, 1995

presented to Professor Nasir Islam

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Abstract

Brazil is not a homogeneous mix of peoples or ecological traits and its regions are in fact characterized by widely divergent cultures, beliefs, perceptions and attitudes reflected in a wide array of social and political structures.

Inextricably enmeshed in the country's societal canvas, natural resources ownership, use and disposal patterns have also evolved at varying rates and intensities historically and regionally.

Despite these inherent difficulties in arriving at meaningful conclusions regarding issues which effectively cut across all social spheres and thus all government policies, this thesis nonetheless posits that there are underlying characteristics which form the foundation of the Brazilian governments' environmental policies, and that fundamental trends have emerged from this policy process.

Part 1 attempts to hone the meanings of both the *environment* and *policy*, and presents the elements which form the environmental policy framework, and provides the blueprint from which Brazil's environmental mapping is traced.

Part 2 underlines Brazil's diversity alluded to previously, and which must constantly be contrasted with the admittedly simplifying policy instruments developed in Part 1 in order to more accurately reflect the country's diverse realities. Brazil's less than brilliant environmental reputation is also briefly described.

Part 3 and, particularly, Part 4 form the nucleus of the thesis, and describe Brazil's historical formation viewed through its effect on the environmental policy framework elements, namely long and short-term forces, "environmental players", and the constituent parts of the policy process including: Agenda setting and policy formulation, and policy legitimization, implementation and evaluation. Nearly five hundred years of social, political and economic evolution and their effects on the environmental framework are sectioned into five periods, with relevant elements affecting Brazil's environmental policy arena concluding each historical section, and with particular analytical emphasis starting from the onset of the military regime in 1964.

Finally, Part 5 is a retrospective overview which pulls together the analysis of the previous parts, and unfold Brazil's environmental policy map, identifying the clear characteristics and trends which have surfaced within the country's environmental evolution, thus reaching the thesis' objectives.

Abbreviations and Acronyms

CEB	Communidade Eclesiástico Básico (Basic Christian Communities)
CETESB	Companhia de Technologia de Saneamento Ambiental (Environmental Sanitation Technology Company - São Paulo)
CONAMA	Conselho Nacional de Meio Ambiente (National Environmental Council)
EIA	Environmental Impact Assessment
FUNAI	Fundacão Nacional do Indio (National Indian Foundation)
IBAMA	Instituto Brasileiro do Meio Ambiente e Recursos Naturais Renovaeis (Brazilian Institute for the Environment and Renewable Natural Resources)
IBDF	Instituto Brasileiro do Desenvolvimento Florestal (Brazilian Institute of Forestry Development)
IDB	Inter-American Development Bank
INCRA	Instituto National de Colonizacão e Reforma Agraria (National Colonization and Agrarian Reform Institute)
NEP	National Environmental Policy
SEMA	Secretaria Especial do Meio Ambiente, Ministerio do Interior (Special Environmental Secretariat, Ministry of the Interior)
SEMAM	Secretaria do Meio Ambiente, Presidencia da Republica (Environmental Secretariat, Presidency of the Republic)
SISNAMA	Sistema National do Meio Ambiente (National Environmental System)
SUDAM	Superintendencia do Desenvolvimento da Amazônia (Superintendency for the Development of the Amazon)

PART 1 - The Environment - concepts, policy, and objectives*

A) Introduction

Mankind's relationship with nature has never been one of passive co-evolution. At once awed, humbled and inspired by its elements, we have also attempted to harness, tame or otherwise dominate both living and inanimate resources by channeling their energies to satisfy our needs and wants.

Given small populations and limited technology, our environmental imprints were at first local in scope and readily assimilable through natural processes, and what were perceived as ecological "errors" could easily be solved by simply moving on to other unpurturbed locations. As demographic and technological advances rose in certain global areas and social organization became more complex, environmental effects occurred at an increased pace, became more widespread, and often left ecologically irremediable impacts which could no longer be discounted since mobility was effectively limited to territorial borders -- for most.

European "discoveries" of foreign lands spoke of untouched, vast, resource-rich areas, with little or no mention of local cultures or values, thus setting in motion a cycle of colonialism which shaped and transformed economic, social and environmental dynamics within many countries now known as the "South".

The following years brought with them stunning increases in the breadth of agricultural, health, institutional and economic scales for industrializing nations while the others often could not or were prevented from participating in the concomitant increases in welfare.

The resulting economic polarization, leading to so-called "developed" and "underdeveloped" country segregation, produced in its wake contrasting environmental consequences. Industrialized nations soon discovered that their natural resource *sources* were being depleted at unsustainable rates while the developmental legacy of pollution severely strained the capacity of ecological *sinks* . Environmental issues, and the complex web of links which threaded through the political, economic and social canvas of their societies suddenly became important.

Various groups rose to challenge the established patterns of growth, closely correlated to economic expansion, and demanded a political and social refocusing

---

* Although I have attempted to cite or reference all sources used in constructing this thesis, the reader is presented a caveat in that certain combinations of words or sentences may have inadvertently been used in the text without due reference to their author. Given the panoply of sources from which I have drawn in writing the thesis, it is perhaps inevitable that this may occur in rare instances.

which would also incorporate environmental criteria.[1] Governments responded by designing policies aimed at protecting, preserving or otherwise alleviating the human impact upon natural resources; not always identified as such, these *environmental policies* engendered a panoply of laws, regulations and standards created mainly to lessen the effects of the harsh by-products of industrialization - pollution of air, water and soil, and to assuage the politically disruptive swell of concern expressed by socially, and progressively also economically, influential groups.

Developing countries[2] on the other hand evolved on the most part through production systems based on agricultural and resource commodities, both to satisfy the local needs of rapidly expanding populations and to fuel the industrial complexes of developed nations. These modes of production led to asymmetric economic and political systems within these countries with wealth and power concentration unbalances which in turn created social patterns often characterized by instability.

Environmental constraints generally did not consciously enter into the plans of the people or the policies of governments since the production systems, based on a low degree of technological sophistication, did not entail large ecological burdens, while the main aims of the State were to increase wealth, equated then and largely still equated today, with economic growth.

On the world scale, the combined effect of political, economic and technological ideologies and energies channeled towards growth has been spectacular: the global economy is five times greater today than in 1950 (as measured in constant GDP dollars), while international trade has expanded twelve fold. Meanwhile, the world population has doubled.[3] The effects on the environment have been no less spectacular, albeit not what one would consider heartening : water, air and soil contamination and deterioration through faulty agricultural and sanitation practices and abusive consumption patterns (for example: soil desertification, salinization and erosion; coastal, irrigation and drinking water pollution through effluent discharges, pesticide, herbicide and fertilizer use; particulate, noxious gas and noise pollution of the air). Also troubling

---

[1] These groups included not only so-called "environmental groups" such as the Sierra Club, Audubon Society and other similar British and European organizations, but also grass-roots movements in major North-American and European cities which linked other social grievances (health, poverty, education) with environmental concerns as well.

[2] In this thesis, "developing", "underdeveloped", "Third World" and "South" are used interchangeably while "developed", "industrialized", "First World" and "North" are also synonymous.

[3] World Bank (1992).

is the loss of biological diversity (biodiversity) through flora and fauna extinction or encroachment (for example from overfishing, deforestation, poaching and a move towards agroforestry monoculture).

This onslaught produced additional constraints on socio-political and economic systems unequally among nations and created conflicts over resource availability, use and waste disposal on a global scale. New language appeared to describe concern over the evolving picture of environmental health, first within the scientific community, followed by rapid propagation throughout society at large; terms such as "ecological carrying capacity", "sustainability", "environmental policies" and more recently, "ozone depletion", "biodiversity" and "global warming" have surfaced - terms which carry a message of planetary, and not only national, responsibility.

Earth has become seen as a complex interweaving of living and non-living entities, with convoluted and unknown interdependent linkages and humans as but a component, albeit a disconcertingly destabilizing one, of the *environment*. But while we all live in the same "boat", some share drastically different, and unequal, conditions in it. The concerns of developing countries are often quite unlike those of First World countries and can create unmitigated resentment and friction between respective national representatives. This was evident for example at the 1972 United Nations Conference on the Human Environment in Stockholm, the first clear symbol of the increasing international awareness and concern over environmental issues. Although initially envisaged by First World countries as an opportunity to debate over parameters, standards and other technical dimensions of environmental quality, developing countries, led by the Brazilian delegation, chose to emphasize instead that ecological relationships are actually surrogates for social relations.[4] In other words, environmental quality and sustainability were clearly linked to development, especially economic development. If in advanced countries it was appropriate to view development as a cause of environmental problems, in the context of Third World countries, development becomes essentially a cure for their major environmental problems.[5] And so was created the concept of the "pollution of poverty" in developing nations and of the "pollution of affluence" in industrialized nations.

Furthermore, since First World countries were disproportionately responsible for global pollution and resource depletion, they should certainly not try to interfere with the developing nations' sovereign right to use resources and expand populations on

---

[4] Guimarães (1991).

[5] Founex report excerpt taken from Guimarães (1991).

their territory, and if industrialized countries wished others to conserve resources for their benefit, they would have to provide financial incentives for doing so, as well as the technological tools to carry it out.

The perceptual schemas of developing nations with respect to the environment/development nexus are powerfully expressed through Tyler Miller's following analogy :

> Let me briefly summarize the state of our passengers and our life-support system. There are over 5 billion passengers on board, distributed throughout 170 countries that occupy various sections of the ship. Under one fifth of you occupy the good and luxurious quarters in the tourist and first-class sections. You used about 80 percent of all supplies available this past year.
>
> I am saddened to say that things have not really improved this year for over 80 percent of you traveling in the hold of the ship. Over one third of you are suffering from hunger, malnutrition, or both, and three-fourth of you have inadequate water and shelter. With limited supplies and recycling capacity of our craft, many of you are now wondering whether you will ever move from the hold to the tourist and first-class sections. Even more important, many of you are asking why you had to travel in the ship's hold in the first place. (...)
>
> But the overpopulation of the hold, serious though it is, may be less of a threat to our life-support system than the overpopulation in the tourist and first-class sections. Both consumption and pollution rise sharply with even a slight increase in the wealthier populations. Each tourist and first-class passenger has about 25 times more impact on our life-support system as each passenger traveling in the hold.[6]

And so the concept of development (often, if not uniquely equated with economic growth) as a necessary condition for environmental stewardship, as well as sovereignty over natural resources, have been important factors for shaping and guiding the State policies of developing nations - particularly those of Brazil.

B) Environment and Environmental Policies

Thus far, the terms "environment" and "environmental policies" have been used loosely, with no clear context on which to anchor meaning. The inherent difficulties in dealing with environmental issues lie in the multitude of perceptions and socially-laden messages incorporated into individual definitions as well as contextual misuse and tacit, often erroneous, assumptions we make in communicating with one another about them.

---

[6] Miller (1979), p.1

a) Environment

It is conceptually easier, although by no means simple, to begin defining *environment* by adding qualifiers to it in order to narrow the scope and sharpen understanding. As observed in the previous section for example, environmental problems for First World countries have often been linked essentially to pollution issues - which can be solved through the use of "appropriate" technology, de-linking as a result the problems from social constraints - while developing nations emphasized the shortsightedness of dissociating these problems from those of development. This led to the concept of "sustainable development" as a bridge between North and South for addressing the development/environment paradox and as a means by which environmental problems could be solved. This concept is officially adhered to by most countries today although defined and expressed through widely diverging views.[7]

The World Bank circumvents this difficulty by defining environmental *concerns* (instead of problems) as "broadly those pertaining to the natural and social conditions surrounding all organisms, particularly mankind, and including future generations"[8] - a broad definition, subject to equally lateral interpretations.

A more helpful approach may be to describe the damaging effects of environmental degradation (or problems), thus understanding the concept of "environment" from our perceptions of its deterioration or absence of quality.

I) Values to people:

i) Human welfare is reduced by ill health and premature mortality caused by degradation of air and water quality and by other environmental risks.

ii) Impaired health may lower human productivity, and environmental degradation reduces the productivity of many resources used directly by people.

iii) Reduced amenity. Environmental assets are often valued by people who never enjoy them directly but who cherish the thought that they exist and the prospect that future generations will enjoy them too.

---

[7] This concept shall be examined in greater detail in section VI of Part 3.

[8] Redwood (1993), p.40.

II) Intrinsic value:

> Many people believe that other living things in the natural world have "intrinsic" value separate from their value to human beings.[9]

Obscuring the matter, most authors, scientists, activists, the media, the various government organs and others within the spheres of discussions with respect to environmental issues use words such as "ecology, nature and environment" or "conservation, protection and preservation" interchangeably and often within the same document or discussion.

Clearly however, whether one's environmental philosophy leans towards frontier economics/cornucopian, deep ecology/ecocentric or environmental protection and ecodevelopment[10], each group or culture will view the environment differently, and the social element cannot be dissociated from any abstract definition of "environment" or "nature".

b) Policy and the Environment

i) Policy

Policy making can be understood as a process to transform societal demands into political choices. Complementing this view, public policy: "is a course of governmental action or inaction in response to social problems, and it is expressed in goals articulated by political leaders, formal statutes, rules and regulations, and the practices of administrative agencies charged with implementing programs. Policy states an intent to achieve certain goals through a conscious choice of means and usually within some

---

[9] World Bank (1992).

[10] These concepts range from the idea of progress as expressed in and equivalent to material advancement of "economic man" and with environmental conflicts reconcilable through management (Frontier economics/Cornucopian) to the polar opposite of Frontier economics with emphasis on ethical, social and spiritual aspects downplayed in the dominant economic world view (Deep Ecology/Ecocentric). Limits, self-reliance, self-sufficiency, small-scale production, low-impact technology, recycling, zero population and economic growth are all key words in the ecocentric vocabulary. Environmental protection and ecodevelopment are intermediate concepts - more closely related to "sustainable development". (Colby, 1989).

specified period (...). It must take place through constitutional process, it requires the sanction of law, and it is binding on all members of society."[11]

Although structurally correct, such definitions trace a deceiving image of a process which is in fact more akin to chaos than to an orderly and rational progression of intents, actions and ideas. The analytical approach to the policy process which entails a richer, more balanced view of reality is one which accepts that : " a wide variety of factors, from the availability of sufficient resources to the structure of intergovernmental relations, from the commitment of lower level officials to reporting mechanisms within the bureaucracy, from the political leverage of opponents of the policy to accidents of luck, timing and seemingly unrelated events - can and do frequently intervene between the statement of policy goals and their actual achievement in society".[12]

This thesis will attempt to incorporate this truism in order to produce meaningful insights and identify the underlying patterns and trends of the environmental policy process in Brazil.

ii) Environmental Policy

As we have seen, both "environment" and "policy" are terms which lend themselves poorly to defining them precisely or establishing their scope. Furthermore, as the meaning of these concepts tends to change from one culture to another and evolves over time, clearly identifying a meaningful and all-encompassing description of environmental policy becomes futile and burdensome.[13] For example, for years Brazil's environmental policy could best be described as "pollution abatement measures" while today's policies are probably more closely linked to the relatively imprecise "sustainable development" concept.

A clear distinction must also be made between environmental policies and *policies which have an impact on the environment* . Indeed, in recent years, recognition that virtually every activity has some impact on the environment has meant that every field

---

[11] Vig and Kraft (1990), p.5.

[12] Grindle (1980), p.3.

[13] Although some have tried. Brañes defines environmental policies as those which aim to "regulate human conduct having a considerable potential influence on the processes of interaction between the systems of living organisms and the systems of their environment, by generating effects that can be expected to significantly modify the existence of those organisms" (Brañes, p.12). The scope of this definition renders it unsuitable for the purposes of this thesis.

of policy has had its environmental component, even if it is not dominated by environmental concerns.[14] In fact, it is often the compartmentalization of environmental issues through sectoral design, even in countries that have a so-called "National Environmental Policy" framework (such as in Brazil) which leads to negative unforeseen environmental effects. In other words, policies which are intentionally designed to address issues related to a given field, say fiscal policy, can provoke much stronger constraints to bear on the environment than targeted environmental policies could.

The following two cases, occurring in a Brazilian setting, illustrate the unforeseen yet powerfully influential effects which can result from seemingly unrelated policies.

Case 1 - Fishing in Southern Bahia[15], [16]

Common property regimes - informal cooperative arrangements where resources are shared according to certain rules - rely on continuing self-imposed restraints enforced by group members, which can easily be eroded. Long-standing cooperative fishing agreements in southern Bahia were undermined when subsidies from the government fisheries agency encouraged outsiders and some fishermen within the group to use nylon nets instead of traditional equipment in order to increase yields. Because Brazilian law does not recognize exclusive rights to coastal fishing areas, any registered fishing vessel could legally enter the local fishing grounds, making it impossible for the cooperative to exclude outsiders. Small-scale fishing zones were thus also exploited by large industrial fishing boats and led to rapid depletion of fish stocks. The environmental and social consequences greatly destabilized the lives of small-scale fishermen and actually led to progressively lower fish yields in the region.

[14] United Nations Environment Program (1992).

[15] Based on information from World Bank (1992) and CIMA (1991).

[16] Bahia is a state on the Northeast coast of Brazil.

Case 2 - The National Alcohol Program[17]

The largest alternative transportation fuels program in the world today is Brazil's National Alcohol Program, otherwise known as Proálcool. Over 4,3 million vehicles (one-third of the total fleet and over 40 percent of automobiles) now run on hydrous or "neat" ethanol.[18]

Launched by the government in 1975, the officially stated goals of the program were to achieve energy independence (from foreign oil), to reduce income inequality among regions in Brazil by producing new market demand for manioc grown on small farms, to generate national income by creating jobs on heretofore uncultivated lands, and to generate technological and other economic benefits from expanding capital goods production.

Various factors and players acted as catalysts for the program and have affected its development:

a) The sugar- cane industry in Brazil (growers and millers) has important social and economic links deeply rooted in society and has historically wielded strong political leverage at the national and state levels for the past 400 years. World sugar-cane prices have always fluctuated greatly, and ethanol was seen as an effective method for stabilizing production, first in the 1930s and again by the mid-70s when sugar prices began to plummet. Large tracts of land were transformed to satisfy both commodity and fuel demand while agricultural methods and technology were improved.

b) Petrobrás, the State-owned fuel monopoly, is responsible for ethanol pricing and volume policy. Distillers and distributors are thus dependent on Petrobrás for success or failure in their operations, and have generally been well rewarded by Proálcool, except in the past 5 years, when inflationary pressures distorted the cost and price structures. Government subsidies assisted in the rapid growth and private investments in ethanol production and distribution facilities.

c) In the late 1970s, the politically powerful automobile industry (mostly foreign-owned) was experiencing a slump in sales and was looking for new markets. In return for strong government incentives to consumers to purchase ethanol-powered cars, the industry committed itself to invest in large-scale production of these new models.

[17] Based on Trindade (1991) and Mills (1988).

[18] The other main vehicle fuels in Brazil are diesel, followed by what is known as gasoline C, a blend of gasoline and up to 22 percent anhydrous ethanol by volume.

Process and product innovation resulted in automobiles which can run on gasoline or ethanol fuels.

In recent years, large cutbacks in government subsidies and incentives, increasing world sugar prices, a strong export-driven automobile industry and low world oil prices have created wide fluctuations in both demand for, and production of, ethanol (with the ironic result that Brazil was required to import methanol, a similar fuel to ethanol, in the early 1990s to satisfy local fuel demand).

In order to reinforce the sagging rationale for pursuing Proálcool, the government and business interests have begun extolling ethanol's positive environmental characteristics: it produces less harmful carbon emissions than gasoline[19], avoids the use of polluting additives in gasoline, improves engine antiknock power, and the liquid by-product effluent of ethanol production (vinasse) can be returned to sugar-cane fields as a biofertilizer or eventually used to generate electricity.

However, ethanol production has also led to intensive sugar-cane monoculture, displacing traditional food crops - and so the social structures underlying their use - as well as requiring increasing concentrations of fertilizer and reducing pest resistance, and the discharging of vinasse into water courses still occurs in large areas of the Northeast, causing severe environmental deterioration.

These examples demonstrate the complex interlocking nature of government policies and how direct and indirect environmental impacts can reinforce, hinder or even negate policy intent. Also apparent is the fact that to gain fuller understanding of the often obscure causal nature of the policy process, one cannot obviate the need for an assessment of the socio-political, economic and technological context in which it operates and to realize that policy trade-offs will often occur in dealing with environment-related options.

It is this apparent interconnectivity among all policies and their effect on the environment which leads Guimarães to propose that the expression "environmental policies" is inaccurate and seriously misleading if all policy effects are not properly taken into account. Since the environment cuts across all other sectors of public activities and because a thorough analysis of environmental policies would require the study of all public policies, one could hardly expect to arrive at any meaningful conclusions.[20] What the author means by environmental policies however are what this

[19] Sugar-cane ethanol is the *only* commercial transportation fuel that has a zero net contribution of carbon dioxide to the atmosphere. (Trindade, 1991, p.283).
[20] Guimarães (1991).

thesis has identified as "policies which have an impact on the environment" or *incidental* policies.

Although it is critical for governments to attempt to map out the protracted links between non-environmental policies and their environmental effects, this paper's aim has less ambitious objectives: among others, to identify the underlying patterns and trends of Brazil's environmental policies and to examine the impact of non-environmental policies on the environmental policy *process* only if necessary to enhance understanding. In the case of Brazil, environmental policies are thus defined as:

> Those whose explicit aim is to conserve, protect, preserve, restore or enhance the management of natural resources in Brazil.[21]

The mechanisms needed to analyze these policies are described in the following section.

C) The Policy Process: Agendas and Cycles

Although the policy process is often a "messy" one, characterized by a "complex network of alliances, obligations, rivalries and, of course, by a lot of confusion, incompetence and ambition" [22], a framework is needed to delimit the area within which this thesis shall attempt to draw the essential patterns which govern the environmental policy process. In a world of *bounded rationality* , this step is necessary to give meaningful direction to the analysis of complex systems.[23]

There are several models available for analyzing how issues get on the political agenda and move through the government policy process. These theoretical frameworks are helpful in understanding both long-term policy trends and short-term cycles of action and response. The following structure is an amalgamation of various models [24], known generally as agenda setting and the policy cycle. In its simplest form, the policy process can be described as follows (see Figure 1, next page):

---

[21] Natural resources include air, water, soils and subsoil resources, as well as all fauna and flora.

[22] Guimarães (1991), p.175.

[23] Herbert Simon coined the term to express the limited capacity of the human mind compared to the scope of the problems it needs to address. "The capacity of the human mind for formulating and solving complex problems is very small compared with the size of the problems whose solution is required for objectively rational behaviour in the real world - even for a reasonable approximation to such objective rationality". (Simon, page 246).

[24] Including elements taken from Vig and Kraft (1990) and Brañes (1991).

i) Agenda setting: How do new problems emerge as political issues demanding the government's attention, and why do some problems fail to achieve such recognition ?
ii) Policy formulation: The actual design and drafting of policy goals and strategies for achieving them.
iii) Policy legitimization: Mobilization of political support and formal enactment by law or other means.
iv) Policy implementation: Provision of institutional resources and detailed administration of policy.
v) Policy evaluation: Measurement of results in relation to goals and costs.
vi) Policy termination or revision: Modification of goals or means.

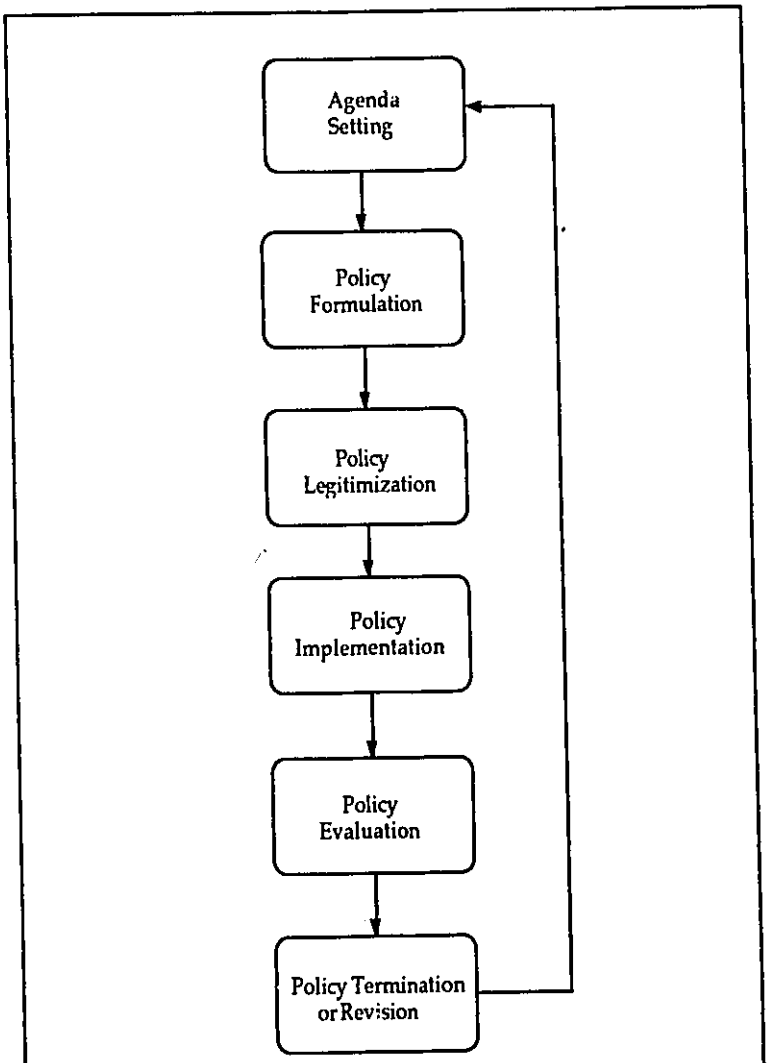

Figure 1 - The Policy Process , simplified form

D) Analytical Structure for the Environmental Policy Framework

Although deceivingly simple, the preceding model can also be simply deceiving. Figure 2, on page 15, illustrates a more complete and accurate approximation to the environmental policy process in Brazil which will guide the orientation and scope of this thesis:

a) There are **long-term forces** that influence the policy process and without which understanding, even partial, of the dynamic characteristics of the environmental policy is impossible. These forces are the political, economic, technological and social environments within which society operates, and are shaped by historical antecedents.

b) **Short-term forces** also act upon the policy process (for example, environmental accidents, political and economic cycles or singularities such as elections, summits or inflation patterns, technological breakthroughs and socially destabilizing events such as assassinations, etc.). These forces particularly affect agenda prioritization and the speed at which the various elements of the policy process occur.

c) Long and short-term forces bear on the policy process through the various **"environmental players"** and these groups drive the process as well. These include federal, state and municipal governments; private business; labour, indigenous, grass-roots, NGO, advocacy and political groups as well as the Church, military, media and financial institutions - all national or international organizations.

The full description of these three elements (long and short-term forces and environmental players) are the main tools required for a meaningful analysis of the environmental policy process and make up the policy framework. Incorporating these elements, answers sought shall address the following issues (although these should not be considered as the only relevant ones; others shall be raised throughout the thesis) :

1) Agenda setting: How and why have environmental policies reached the agenda ?

2) Policy formulation: Who are the key players and what are the forces which shape policy goals and strategies ?

3) Policy legitimization: How does political support occur and what legal mechanisms have been created for the application of laws, regulations and technical standards ? This legislation includes "global" and "sectoral" elements only. Although fundamental for a thorough evaluation of the overall state of the environment, "incidental" or non-environmental policy shall be included in the analysis but to complement the view of environmental policy dynamics.

4) Policy implementation: Who is responsible for implementation (government institutions or other groups), what accountability mechanisms have been put in place, what are the costs and who is likely to bear them, who finances and what methods are used, and what infrastructure has been created ?

5) Policy evaluation and revision: Is legislation observed ? (efficacy) and is the policy appropriate to meet the need it was intended to cover ? (efficiency). Who monitors the system and what evaluation criteria are used ? How or is the resulting information fed back into the policy formulation, legitimization or implementation processes ? How effective is this flow of information ?

The scope of this thesis is further delimited as follows:

- Brazilian government includes federal, state and municipal levels. The analysis shall include all levels when appropriate.

- The emphasis is on national environmental policies. Regional or international treaties and agreements on environmental issues shall not be directly included in the analysis.

- This thesis shall not attempt to fully explore why particular environmental issues do not reach the agenda setting stage or if those that do are truly the most appropriate. These points are addressed but in cases where their inclusion clarifies elements of the proposed policy framework.

- A detailed examination of policy legislation shall not be attempted unless it clearly aids in extracting underlying characteristics of the policy process.

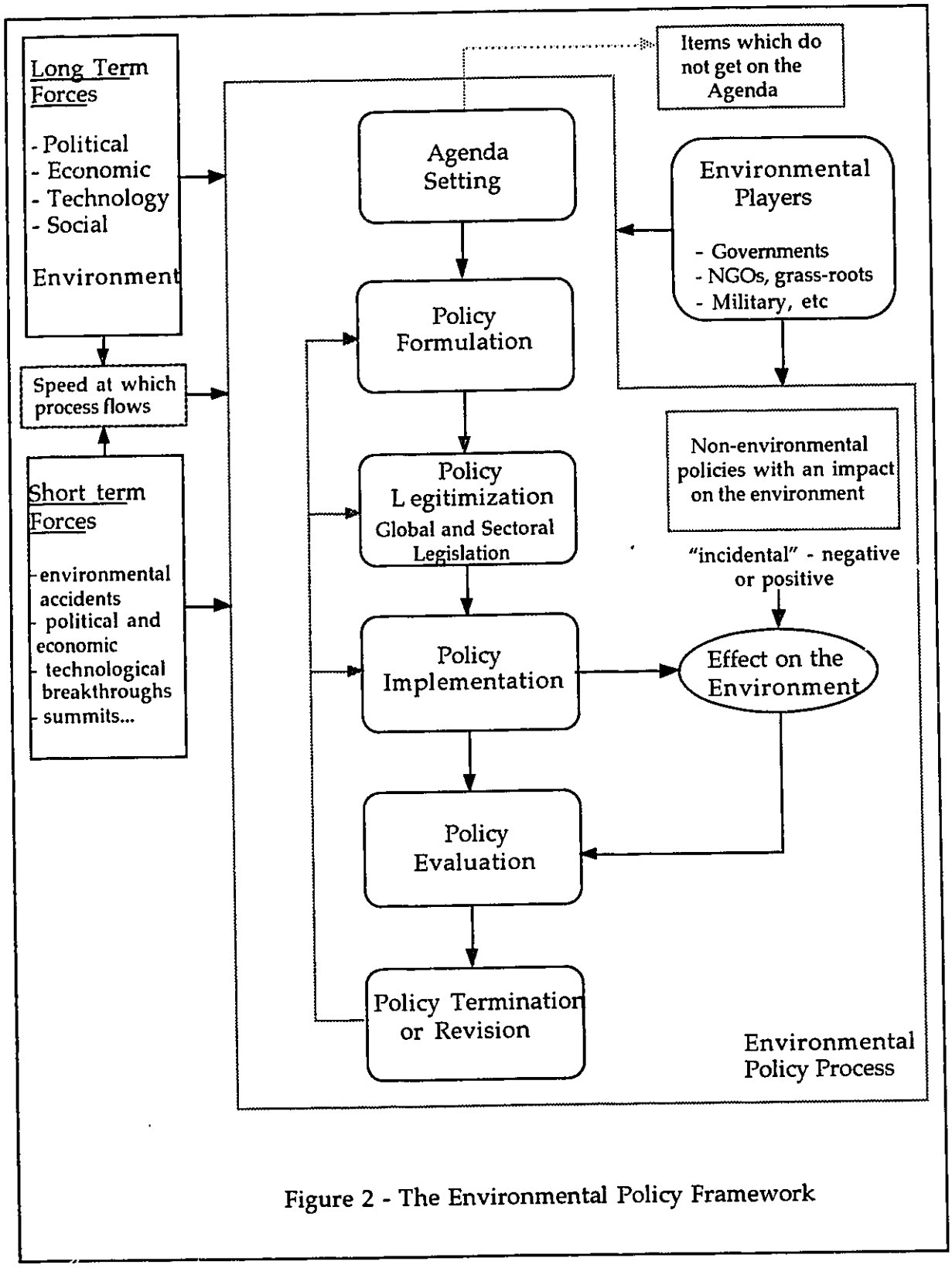

Figure 2 - The Environmental Policy Framework

This thesis will thus seek to answer the following questions:

I) What long-term forces which impact upon the environmental policy process have evolved and emerged over Brazil's history and how do they shape policies today ?

II) What have been the short-term forces and how have they influenced environmental policy evolution ?

III) Who have been, and are now, the key environmental players and what influence have they had, and now have, on environmental policy ?

IV) What are the underlying patterns or characteristics of the various policy elements (agenda setting, formulation, legitimization, implementation and evaluation) which have been shaped by historical factors and have revealed themselves to be consistently present to this day ?

V) What, if any, fundamental trends have become apparent in Brazil's environmental policies?

In addition, lest the preceding outline instills one with the illusion of a purely rational, methodical approach to environmental policy analysis in Brazil, and to compensate for the obvious gaps which will result from such broad coverage, various cases will be interspersed within the text in order to describe some of the very complex situations which face Brazilian environmental policy players, and to convey the message that it is futile to try and understand, let alone solve unique problems without a proper societal mapping of the territory.

Environmental policies, and more importantly as we have seen, policies which affect the environment, are complex and interwoven into often inextricable links with one another. Attempts to understand or sketch their main attributes are critical however in order to learn from our mistakes or successes and strive to improve our admittedly dismal environmental track record thus far.

The coming generation presents unprecedented challenges and opportunities. Between 1995 and 2030, as the world's population grows by 3,6 billion, food production will need to double, and industrial output and energy use will probably triple worldwide and increase fivefold in developing countries. This growth brings with it the

risk of appalling environmental damage. Alternatively, it could bring with it better environmental protection, cleaner air and water, and the virtual elimination of acute poverty. Policy choices will make the difference.[25]

PART 2 - The Brazilian Context

A) Brazil - the environmental villain ?

Within the past two decades, as various groups or organizations have precipitated an "environmental awakening", at first mostly in industrialized countries then spreading via formal and informal links globally, consumers, scientists, politicians and opinion leaders have been decrying the seemingly predatory environmental practices espoused by economic growth models and their negative effect on Earth's life-support systems.

Few countries have born the wrath of these attacks more acutely than Brazil. Accused of abetting, if not promoting, the wanton destruction of a "world heritage" , the Amazon forest, and its associated irreparable damage to biodiversity, water resources and global air quality, not to mention the inept treatment of "defenders of the rain forest" [26] and the handling of clashes between these groups and ranchers, gold miners or other landowners.

Furthermore, urban centers such as Rio de Janeiro or São Paulo are described as violent and filthy with many inhabitants living in unsanitary, polluted, drug-infested slums (or *favelas*), leading dismal lives of abject poverty - with little or no mention of the often 80 to 90 percent *other* part of the population which does not live in such oppressive conditions. Media environmental catalysts such as graphic images of burning rain forests, international celebrities giving concerts to "save the Amazon", the 1988 shooting of a leading grass-roots union leader, Chico Mendes, and the media scrutiny surrounding the 1992 Rio Earth Summit have all contributed to creating the image of a global environmental pariah.

Faced with such scathing accusations, Brazilian governments have responded by angrily denouncing the "meddling" of other countries in their internal affairs,

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[25] World Bank (1992).

[26] A term meant to represent Amazonian indigenous groups, riverside dwellers and "extractivists" such as the *seringueiros* (rubber tappers).

expressing surprise at international reaction since the country has "always maintained a position of love of nature"[27], and more recently by expressing a desire to solve the country's environmental problems through international assistance (technical and financial).

Brazil's true environmental status can of course not be inferred but through the notoriously simplifying lens of most media sources or by the statements of political leaders. The true image can only begin to be described more accurately by using different angles of illumination produced by various sources of information and analysis. An examination of Brazil's environmental policy is one such source, and of primary importance.

B) Brazil - key concepts and facts

In order to more fully appreciate the environmental policy system in Brazil, certain basic structural characteristics should be underlined at this point. Brazil is a nation of contrasts - geographically, economically and socially. These broad discrepancies between regions make any normative analysis difficult, including an objective look at environmental policies.

i) Geography

Brazil is the fifth largest country in the world in land area and occupies nearly half of the South American continent. The country is divided into 5 regions, 26 states and 1 federal district around Brasília [28] (see the map in Appendix 1). The region known as the Brazilian Amazon is defined as "Legal Amazônia", an area equivalent to nearly 60 percent of the national territory.

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[27] Brazilian president José Sarney, "Brazil blasts critics over environment" , Calgary Herald, March 1, 1989, page A15.

[28] The regions and states are:
North: Amazonas, Acre, Pará, Rondônia, Roraima and Amapá.
Northeast: Maranhão, Piauí, Ceará, Paraíba, Rio Grande do Norte, Pernambuco, Alagoas, Sergipe and Bahia.
Central-West: Mato Grosso, Mato Grosso do Sul, Goiás and Federal District.
Southeast: Minas Gerais, Espírito Santo, São Paulo and Rio de Janeiro.
South: Paraná, Santa Catarina, and Rio Grande do Sul.

Fauna, flora, soils and coastal conditions differ greatly among regions and create some of the richest, most complex ecosystems in the world, and thus markedly different resource characteristics and use patterns.

ii) Demographics

With over 150 million inhabitants, Brazil is the sixth largest country in population. Two trends characterize the demographic evolution since the 1960s: rapidly decreasing fertility rates and growing urbanization, initially due mainly to migrations from rural regions, to urban natural growth patterns today.[29] Urban growth (even in frontier regions like Amazônia with an over 50 percent urbanization rate) has created environmental problems due to shortages of adequate infrastructure for the population (sanitation, waste disposal, education and health for example) as well as industrial concentrations leading to pollution. Population densities are also unequal among regions with nearly 30 percent living in the Northeast and over 40 percent in the Southeast. [30]

iii) Economic factors

By examining Brazil's GDP indicators and the level of sophistication in its industrial output (including appliances, aircraft, automobiles and computers) and range of services over the past 50 years (engineering, financial, health, education, telecommunications and transportation for example) , Brazil now ranks as a "newly industrialized" or "upper middle income country". Between 1940 and 1980, output grew at an average of 7 percent, slowing down considerably during the 1980s, and now ranks 10th in the world. And as technological and organizational advances occurred, agricultural production became more specialized and shifted from goods produced for local consumption to high-yield monocultures destined for export.

Despite the growth in performance indicators, the majority of Brazilians have not partaken equally in the benefits of economic expansion nor have the regions shared proportionately either. As the relatively wealthy southern regions gained, other regions

[29] The urbanization rate in the 1960s hovered around 50 percent. It is over 75 percent today.

[30] Companhia Brasileira de Metalurgia e Mineração (1994).

stagnated or regressed economically.[31] In fact, during the period of greatest economic growth, between 1960 and 1980, the wealthiest 10 percent of the labour force succeeded in increasing its share of income from 40 to 50 percent, while the poorest 50 percent saw its share dwindle from a modest 17 percent to only 12 percent in 1980.[32]

This unequal distribution of wealth is also evident in land distribution figures. Since the 1940s, technical modernization, land speculation and a shift towards monocultures has favoured the concentration of land ownership and the incorporation of small properties into medium and large-sized farms. Today, 4 percent of landowners own 81 percent of the farmland, while 70 percent of rural households are landless.[33] Land tenure and agrarian reform issues have thus been socio-economic and political concerns, and sources of conflict, in Brazil since at least the 1940s.

iv) Organization of government (see Figure 3 on the following page)

Designed as a federal structure, Brazilian government is divided into three tiers: federal, state and municipal. Powers are shared, although the central government's authority over regions has always been a dominant feature throughout the country's governance evolution.

At the national level, the government physiology has not changed since the 1930s, although effective governing power has not always been distributed equally among its constituents, often polarized towards the presidency/executive element.

Legislative powers are contained in the National Congress, made up of the House of Representatives (or Chamber of Deputies) and the Federal Senate.[34] The first branch is determined by a system of proportional representation, and the second branch consists of three representatives from each state and the Federal District.

The executive body is headed by a president, presiding over the Cabinet as well as the National Defense Council.

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[31] For example, the Northeast region's share of GDP in 1993 was 13,8 % although its demographic proportion was 28,9 %. (Companhia Brasileira de Metalurgia e Mineração, 1994).

[32] CIMA (1991).

[33] New Internationalist, May 1991, page 22.

[34] Although the executive can also legislate by decree or other processes.

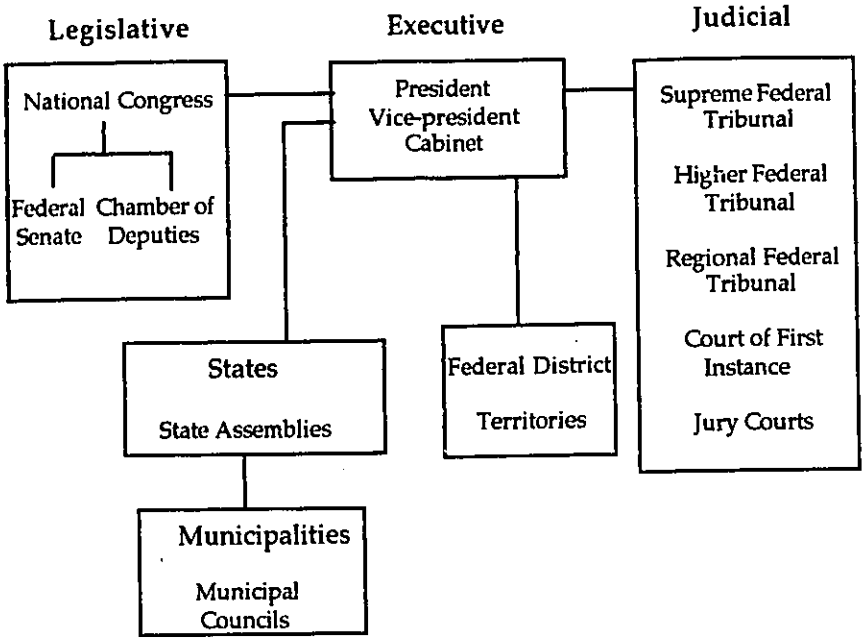

Figure 3 - Organization of Brazilian Government

The framework of the state and municipal (or local) governments closely parallel that of the federal government. Governors are directly elected (although appointed during the military regime) and have broad powers analogous to those of the president. All powers not explicitly or implicitly forbidden to them by the Constitution are reserved to the states, and each state has its own Constitution and court system. State legislation may supplement federal legislation but not conflict with it.

The chief administrative division of a state is the *municipio* , each of which is headed by a mayor, elected by popular vote or appointed by the state governor.

Although governing authority has evolved throughout Brazil's history, states have generally been responsible for health, education and overall state infrastructure while municipalities have had authority over urban zoning, development and infrastructure. There have nonetheless been many overlapping, shared (and at times contradictory) jurisdictional responsibilities throughout the federal system, all accompanied by greatly varying degrees of general administration and enforcement authority. States and municipalities have evolved at differing economic and political paces, are characterized by heterogeneous social values and concerns, and have adapted differently to the same federal legislative constraints.

What these admittedly selective and limited snapshots of Brazil reveal must be emphasized: Brazil has been shaped by social, political and technico-economic currents of widely divergent natures throughout its regions and, coupled with high degrees of ecological diversity, have led to fundamental differences among the various groups throughout the country as to ethics, beliefs, values, concerns and hopes. Overlayed atop this basic fact, certain underlying elements which describe the dynamics and characteristics of environmental policy in Brazil can nonetheless be revealed. The following sections begin this task.

PART 3 - Historical Formation

History is an evolving process which humans have arbitrarily tied to "historically significant" dates or periods, usually contingent on the exploits or unique events deemed relevant by writers whose relative perspectives are usually not entirely devoid of objectivity. The evolution of what we would nowadays call environmental issues or policies does not usually fit neatly within the time-frames chosen by historians. " In the absence, however, of an ecopolitical periodization of Brazilian history, (...), it will not do much harm to adhere to strictly political and institutional criteria." [35]

This periodization begins with the landing of Portuguese explorers on Brazil's Northeast coast in 1500, although it should be kept in mind that this "discovery" had been preempted by competing indigenous cultures some 5000 years previously and who probably numbered between 5 and 10 million at the time.[36]

I) The Colonial Period (1500-1822) [37]

The initial agreement to divide a land which Europeans had not yet seen[38], the discovery of the Northeast coast of Brazil in 1500 and ensuing territorial penetration

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[35] Guimarães (1991), p.85.

[36] New Internationalist, May 1991, page 35.

[37] Sections I, II, III and IV in Part 3 are based largely on Guimarães (1991), and to a lesser degree on de Onis (1992) and Théry (1989).

[38] The treaty of Tordesillas, signed in 1494 between Spain and Portugal, effectively granted Portugal hegemony over the eastern part of South America.

and demarcation battles (both military and political) between Spain, Portugal and other European countries with little interest in foreign agreements, led Portugal to aggressively lay claim to the vast Brazilian lands.

Disappointed by the apparent absence of gold, silver or other precious metals or iron, the Portuguese nonetheless began extracting the abundant *pau Brasil* redwood tree (which produced a fine red dye for European tanners and weavers) with such vigor that the tree is now an endangered species, rarely seen outside botanical gardens.[39] This example symbolizes the extractive and agricultural patterns which dominated the Portuguese Colonial period.

In order to promote the occupation of, and revenue from, the new lands (and to guarantee its possession against foreign interests), the Portuguese Crown divided the territory into fifteen captaincies but few *donatários* (those who received land from the king) even bothered to take possession of their land, much less to work it.[40] Those who did however exploited their lands through intensive monoculture or resource extraction by using slave labour, first by raiding indigenous settlements and then by importing slaves from the African coast.

Following the cycles of European tastes, foreign trade competition and chance discoveries, various extractive resources (brazilwood, chestnut and cocoa and gold, diamond and iron mines) and production crops (sugar, cotton, tobacco, coffee) created various poles of wealth accumulation within the country and engendered the associated pattern of social and political dominance this wealth provided.

This style of development led to the establishment of land use and appropriation patterns based on the presence of large rural properties and controlled by few owners, thus sowing the seeds of social stratification and agricultural practices still present today, and which "socially locks peasants and rural workers into a cycle of poverty, with low wages, indebtedness, and servitude" and ecologically "perpetuates the irrational use of land through shifting cultivation and slash-and-burn techniques that lead to the abandonment of fields after two or three years of cultivation." [41]

This period also witnessed the gradual rise and eventual solidification of a comprehensive Brazilian central government structure with a Constitution, laws, rules and regulations prepared in Portugal and transplanted in the burgeoning colony (this

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[39] de Onis (1992).

[40] Guimarães (1991), p.86.

[41] Guimarães (1991), p.88.

institutional structure effectively remained in place until the 1930s). The locus of power came to rest clearly within the hands of the landed aristocracy, the Church, and the emerging and politically powerful bureaucracy.

Following the "opening up" of the Brazilian territory to foreign immigration, business ventures and technology, biological, geological and anthropological scientific missions from Europe explored the fascinating opportunities offered by the wide array of fauna and flora, especially in the Amazon region. Tales of tropical stores of untold diversity and richness fueled the imaginations of readers and political leaders alike.

Ironically, as scholars "discovered" and documented the often complex cultural legacy of indigenous groups, smallpox, measles and other European diseases - for which natives had no immunity or natural remedies - as well as enslavement and genetic integration had effectively reduced these groups to approximately 200 000 individuals, a 90 percent reduction from pre-colonial contacts.[42] Indigenous peoples had for the most part been seen as lazy and inefficient workers, quite inappropriate for the exploitation of natural resources.

Finally, the creation of the Rio de Janeiro Botanical Gardens and of the National Museum, heavily dedicated to the natural sciences, combined with the scientific writings of naturalists, contributed to the emergence of an initial conservatism in Brazil, although these had been created for, and used by, a very small minority of urban elite.

"Historically relevant" environmental factors for this period are thus:

- ◊ The establishment of a powerful central administration and of a politically and economically dominant elite. The main objectives of these groups were to ensure national security and generate wealth, both for the Crown and local groups.

- ◊ The aggressive and predatory use and appropriation patterns developed for the management of natural resources.

- ◊ The dominance of large rural holdings within the hands of few landowners and the social servitude patterns it produced.

- ◊ The lack of interest or respect for indigenous cultures and blatant disregard for their ecological habits or values.

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[42] de Onis (1992). The present number of "pure" indigenous peoples in Brazil is approximately 220 000.

◊ True "environmental policy" was limited to specimen conservation efforts created by and, aimed towards, the urban elite.

II) The Empire (1822-1889)

The latent administrative power resulting from the arrival of the Portuguese court in Rio de Janeiro in 1808, driven from Lisbon by Napoleon's armies, and the hostile political and economic power skirmishes between the Brazilian landed aristocracy and the Portuguese commercial bourgeoisie led to secession and independence from Portugal and to the creation of the Brazilian Empire in 1822.

Independence brought with it administrative radiation as the State consolidated its influence throughout the country and promoted the expansion of an already enlarged and powerful bureaucracy. Sharing effective governance of the country were the rich proprietor classes [43] and the emerging National Guard. The regional authority of the latter helped create two permanent features of Brazilian politics: regionalism and coronelism. [44] Acting as governance brokers between the central State authority and the interests of regions, the *coronel* wielded high political leverage, spilling over and closely correlated to economic and social dominance. The characteristics of such arrangements included reciprocal favours, appointments, concessions and co-optation in order to advance the interests of powerful bureaucrats, politicians and the local elite aided and promoted by various groups sharing the stage at different times and with varying degrees of influence (the Church, military, local industrialists or foreign multinationals for example).

This type of political physiology has been termed "patrimonialism" and constitutes, according to many observers of the political formation of Brazil, one of the key foundations on which the governance structure was erected and stands on to this day (see Box 1, next page).

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[43] Including the sugar producers of the Northeast, the coffee planters of the Southeast and rubber barons centered in Manaus and Belém.

[44] Guimarães (1991).

Box 1 - Patrimonialism in Brazil

The patrimonial order is characterized by the clear understanding of participants within its system that the central State must ultimately control the inner workings of the country, although the effective policy-making can be shared by public functionaries, clergy, military, large landowners or whoever else is called upon and permitted to operate by the State, as long as the hierarchical social system is demarcated along "upper" and "lower" strata.

Within this framework, the State possesses the capacity to control society coercively, but prefers to utilize techniques of persuasion, tradition and co-optation. Regulation of many issues is left to local initiative (coronelism in this period), with the understanding that local initiative, regardless of its diversity, will be supportive of the general system of power previously established.[45] Although the interests of the State and citizens may converge, the patrimonial order suggests that this is not necessary and is in fact a fortunate occurrence if it does.

To ensure longevity, the patrimonial system must be flexible, resilient and adaptable to the various social, political or economic strains which at times propagate within regions or the country as a whole and may be described as paternalistic, authoritarian, interventionist or populist in different contexts, co-evolving at a rate which will preserve its integrity.

Within the Empire period, private manufacturing processes began to take root in parallel with the abolition of slavery in 1888, brought about by international coercion, the rising cost of slaves and lower unskilled labour demands created by mechanization, and the associated influx of large-scale European immigration.[46]

Although a small-scale rubber trade had begun in the early 18th century, it was not until the invention of rubber products for the automotive and bicycle tire industry (by vulcanization) that rubber became a major commodity and a "boom" was created in the Amazon region. Gathering rubber became a frenzy all over Amazonia and attracted some 150 000 labourers, many of whom were migrants from impoverished Northeast Brazil. As rubber trees existed nowhere else in the world, international rubber houses

[45] Roett (1992).

[46] Between 1884 and 1903, over 1,7 million immigrants arrived in Brazil, a significant proportion of the population at the time. (Guimarães, 1991, p.90).

financed rubber extraction activities (but not the value-added transformation process). Once there, the *seringueiros* (rubber tappers) were ensnared in debt bondage to the estate owners, who sold basic necessities to them at grossly inflated prices - thus perpetuating the paternalistic traits of the country's political system at the local level. The wealth of trade reverted mostly to Manaus and Belém, then important and rich urban centers, as US interests in the region coerced Brazil to allow access to Amazon waterways and provide routs to these port cities - political pressure which would shape government perception of the interventionist plots of foreign countries, especially the US, and their "meddling" in internal affairs. The trade collapsed during the First World War with the development of British rubber plantations in Asia, from plants smuggled out of the Amazon.[47] Descendants of these first rubber tappers would capture world attention in the 1980s and 1990s as these "defenders of the rain forest", led by Chico Mendes, presented their view of sustainable development amid media focus, local violence, and international outcries.

What we would today term "environmental issues" (natural resources use, pollution control, conservation) were gradually addressed by government with the creation in 1823 of the State Secretariat of Imperial Affairs, later to become the Ministry of the Interior. Its range of responsibilities included public health, sanitation, water quality, forest resources, agriculture and mining. The staff was also charged with overseeing manufacturing plants in regard to occupational safety, noise and harmful emissions. Over time, the Secretariat broke off into sectoral groups (such as the Ministry of Agriculture, Commerce and Public Works in 1861), thus distributing responsibilities among more groups and enlarging the administrative structure.

Driven by a desire to prevent the occurrence of "anything that may alter or deprave the salubrity of the atmosphere"[48] and responding to crisis situations related to sanitation in urban centers, the State drafted wide-ranging laws, regulations and technical standards to control the production and use of items related mostly to public health, effectively consolidating its authority over private business.

1877 also saw the social and economic unrest created by a severe drought in the Northeast, but one of many within an environmental cycle which produces mild

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[47] This example would resurface some 75 years later at the Rio Earth Summit in 1992, as Third World countries argued for restitution of *ex-situ* genetic material by First World countries within the framework of the convention on Biological Diversity. The North managed to exclude existing ex-situ collections from the Convention. (Nogueira and Surkin, 1992).

[48] Guimarães (1991), p.92.

droughts every three years and severe ones every dozen or so. These periodic tragedies have had important environmental repercussions: family migration to other, less harsh regions, such as the Amazonian rubber plantations or the industrial meccas of São Paulo, Rio de Janeiro, or other expanding urban centers, gradual desertification of Northeast soil and decreasing crop yields. The State reacts now as it did in 1877 by providing emergency funds to start water projects in droughts, only to drop them in moister times. Furthermore, "emergency funds are decanted through the leaky plumbing of federal, state and local institutions, only to evaporate before they reach the people who most need assistance".[49] The powerful coronels controlled water access, and were thus able to exploit the political potential of the "drought industry". Government reaction to this problem was to become an oft-used template for future environmental policy: react to crises (drought), draft legislation (water conservation measures) without consulting local populations, but fail to enforce the rules and educate key players through institutions unclear on State objectives and which lack motivation to carry out responsibilities. Effectiveness is further reduced by the absence of accountability mechanisms and eventually leads to policy failure. In this case, failure to address the environmental problem also leads to environmental constraints in other regions of the country.

The key factors relevant to understanding the environmental policy process for this period are thus:

◊ The expansion and enhanced control of administrative duties within the hands of the central government, regulating and coordinating all matters private and public.

◊ Regional or local powers are granted to "coronels", who acquire control of economic and political resources, leading to social stratification - a pattern which would continue in the following years.

◊ Patrimonialism becomes the dominant feature of Brazilian politics, which would greatly shape the policy and governance process evolution.

[49] The Economist , Volume 327, April 3, 1993, page 43.

- ◊ The first true environmental legislation surfaces as regulations and technical standards are drafted, related mostly to the control of "health problems" in urban centers.

- ◊ Environment-related institutions, first centralized then sectorally divided, become responsible for the enforcement of legislation.

- ◊ Environmental policy is limited to "command-and-control" type policies (as opposed to incentive-based systems), an institutionally resource-intensive system of control and enforcement.

- ◊ Government handling of the Northeast droughts illustrates one of the environmental policy patterns which would be perpetuated in the following years.

- ◊ Environmental problems, and the associated policies designed to address them, cannot be reduced to issues of proper technical formulation or implementation; the challenges faced by effective environmental policies are fundamentally political.

III) The First Republic (1889-1930)

A bloodless coup organized by the republican opposition and the former slave owners angered by abolition led to the establishment of a republic.

Within the framework of the patrimonial order and faced with a growing internal market and favourable external trade conditions, the national bourgeoisie (for example southern coffee owners) came to dominate the political stage, although the military exercised control as well. Government bureaucracy expanded to fill the needs required by the creation of 20 states and growing organizational complexities resulting from an increasing industrial base and urban populations.

Though agrarian activities, dominated by large landowners, accounted for the livelihood of the majority of the population, increasing manufacturing activities within cities and the establishment of a multi-layered bureaucracy gave rise to the emergence of a new social actor, the urban wage worker. Attracted to these growth centers, rural workers also arrived in large numbers and contributed to the proliferation of favelas (squatter's settlements). Unable or unwilling to handle the ensuing problems associated with this growth, local authorities were soon faced with rapidly deteriorating sanitary

conditions within the cities and, in the absence of adequate urban zoning regulations, the proliferation of severely polluting industries.

Granted jurisdictional authority within their regions, many of which were perceived as "backwards" or "underdeveloped" by their respective governors, the states promoted and sought out activities which would expand local economic wealth (including attracting foreign business interests) and political leverage at the federal level, also closely linked with economic stature. Within this context, governments assigned a very low priority to environmental quality as industrial and agricultural output was placed ahead of any negative environmental by-product, the cost, so it seemed, for progress.

Despite the low status afforded environmental issues, the federal government nonetheless enacted legislation regulating hunting (1893), protecting birds (1902), created the Forestry Service and the Service for the Protection of Indians (SPI), the first government effort aimed at establishing new, peaceful contacts with indigenous groups and demarcating Indian lands. [50] Furthermore, certain large cities such as Rio de Janeiro attempted to establish sanitary policies for their regions due to lack of support or interest from federal and state governments.

The relevant factors involved in the formation of Brazilian environmental policy for this period are thus:

- ◊ The creation of a federative structure with delegated responsibilities granted the states, and the associated increase in size and power of the bureaucracy.

- ◊ The rapid growth of urban centers, especially in the Southeast, and the emergence of the urban wage worker, rural migration patterns towards the cities, industrial expansion and concentration within the cities and the concomitant deterioration of "commons" resources (air,water,soil) within the urban areas. This occurred despite the existence of previously created environmental legislation regulating these areas. Certain large cities (such as Rio de Janeiro) nonetheless attempted to enforce some regulations through the establishment of sanitary policies. Industry-related pollution was not controlled due to lack of political mobilization and appropriate, accountable institutions for doing so.

[50] Guimarães (1991).

◊ The relatively autonomous states promoted and encouraged rapid economic development and did not legislate or follow environmental policies since these were perceived as detrimental to the progress and wealth creation of their jurisdiction. Federal institutions encouraged this behaviour within the framework of a patrimonial order.

◊ The federal government enacted legislation designed to preserve and protect some flora and fauna, although it is improbable that these could be enforced effectively given the span of territorial coverage necessary and lack of supporting legislation at the state level.

◊ Federal efforts were aimed at establishing links with indigenous groups and demarcating their territories - the ownership of which remained with the State, also responsible for protecting these lands, but whose natural resource management rested within indigenous hands. These would form the nucleus of bitterly contested ownership rights among various groups (states, private landowners and miners for example) in the years ahead.

IV) Modernization, Populism, and the Democratic Experiment[51] (1930-1964)

A swell of dissatisfaction with the political hegemony of the oligarchies that controlled the government - the large landowners, coffee producers and export-oriented commercial interests - led to a military-executed coup in 1930.

Economic growth and diversity rose dramatically over the following three decades as industrial production increased 683 percent between 1930 and 1961 and the GNP increased 232 percent between 1940 and 1961.[52] Fueled by a desire to shield the country from foreign economic intervention and dependence, and unable to purchase desired manufactured items abroad (due to the 1930s depression and resource rationing during World War II), Brazil undertook a coordinated effort of import substitution through industrialization well into the 1950s.

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[51] The expression is borrowed from Guimarães (1991).

[52] Roett (1992).

Although initially willing to share economic stewardship with private industrial and agricultural companies and foreign multinationals, the State increasingly invested and intervened in the economy, leading among other effects to the proliferation of public organizations whose main aim was to protect Brazil's natural resources from foreign control. Among these were the National Department of Mineral Production (DNPM, 1934), the Vale do Rio Doce Company (CVRD, iron ore exploration, 1945), Petrobrás (The Brazil Oil Company, 1953)[53] and Electrobrás (electricity generating and distribution facilities, 1962). Administered by federal government appointees (often as a sinecure for loyal services) and young growth-oriented professionals, these State-run organizations were to become the main economic instruments for executing what the governments perceived as the modernizing imperative for Brazil's rise to political and economic security from devious foreign interests.

Designed as agents of economic growth and directed by career-oriented staff well attuned to the political necessities of obedience to the State in promoting this growth, public companies did not assign much weight to environmental factors (as no incentives or accountability mechanisms existed to address these constraints) and would nonetheless have faced what was to become a difficult paradox: that of being both "poacher" and "gamekeeper" for the management of natural resources.

To properly orient and control the rise of their fledgling goals for the emergence of a powerful nation, planning activities came to receive strong government support. The first of these was a five-year plan (Plano SALTE) designed in 1948 and intended to direct government resources into the priority sectors of health, transportation, food and energy, but it encountered several problems. Planned as a "top-down" approach for coordinating government activities in several productive and social sectors, the strategies were in fact contradictory, uncoordinated and failed to incorporate sound financial planning to meet their objectives. The inability of the central government to forego control of all planning, and to incorporate social and economic objectives gathered at the local level, would prove to be a main obstacle to the effective operation of policies - including environmental policies.

Shortly after, a key planning institution came into being, the National Bank for Economic Development (BNDE, 1952). The BNDE, the effective government-sponsored financial resource allocation agency (and so also an important determinant of patterns of natural resource use, or conservation, measures) would also be a key training ground for who would be primary "environmental players" for the following two decades - the

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[53] Guimarães (1991).

técnicos . Specialized, highly-trained technicians operating both in private and public spheres, their views on the necessity of rational, scientific planning would come to dominate the general State policy-making apparatus and would lead, some contend, to the tight compartmentalization of problems through excessive sectorialism and the philosophy that social issues could be solved through the judicious use of technical solutions (economic, industrial, technological).[54] The primacy of this view of policy development would lead to serious environmental repercussions.

Industrial development became the core feature of Juscelino Kubitschek's (1956-1961) plan for "fifty years of progress in five" and led to the plan of Economic Development or Program of Goals as it became known (Programa de Metas) for the period 1957-1960. Shifting the emphasis from an expansion plan modeled on industrialization through import substitution to one of associated dependent development (with the integration of strong industrial export capabilities), infrastructure building and education programs, the Program of Goals was promoted as the "solution to all the problems of underdevelopment"[55] - a recurring theme which would be used to justify the following government's National Plans.

Indeed, following the establishment of Brasília, a newly built city, as the national capital in 1956, the emergence of a strong industrial base and the political momentum offered by an expansionist and nationalist bureaucracy, the government felt that the time seemed appropriate for propelling Brazil into the ranks of industrialized nations. Efforts were made to integrate the national territory through the massive construction of highways (promoted of course by contracting firms seeking post-Brasília income), including the "opening up" of the Amazon, which stimulated the colonization and land speculation of these "virgin territories" and provided access routs to mining companies already operating in Amapá (very large manganese deposits) and Pará (high-grade iron and bauxite).[56] Técnico-designed hydroelectric and coal projects increased the energy output required by explosive industrialization, financed in large part by US-dominated lending institutions such as the World Bank, the Inter-American Development Bank and a host of private banks.

In its main purposes, the plan was a stunning success - industrial production grew at nearly 8 percent between 1957 and 1961, while the real income of industrial workers

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[54] Roett (1992).

[55] Guimarães (1991), p.179.

[56] de Onis (1992).

nearly doubled.[57] New industrial sectors were established (such as automobiles) while others were modernized under the tutelage of private and public organizations.

Throughout this period however, and in the years preceding this rapid expansion, the majority of the population, rural smallholders and the low-paid, marginalized urban workers, did not share equally in the economic growth, nor did all regions benefit to the same degree. The apparent poverty of inhabitants in the Amazon region, as well as the State's desire to tap the economic potential of newly discovered mining and forestry resources led to the creation of the Superintendency for Economic Valorization of the Amazon (SPVEA) in 1953, later to become the Superintendency for the Development of the Amazon (SUDAM), a government organ later blamed for sacrificing social and environmental concerns in the name of economic growth for few local elites by condoning, or even promoting, predatory natural resource extractive practices, in direct conflict with environmental agencies.

The socially (and environmentally) devastating conditions existing in the Northeast, exacerbated by cyclical droughts, and the rise of politically destabilizing popular mobilizations of peasant leagues (Ligas Camponesas) demanding agrarian reform and backed by the socially influential National Conference of Brazilian Bishops (CNBB - the voice of authority within the Brazilian Catholic Church), also led to the creation of the Superintendency for the Development of the Northeast (SUDENE) in 1959. The existence of such an institution indicated a growing awareness among government policy-makers that environmental, social and economic factors were all enmeshed, and that the problems of the Northeast (in this case) could not be limited to "water scarcity" issues alone. This led to a recurring refrain within policy circles for years to come: that development, expressed in the idea of economic growth, had to precede any attempt to alleviate social or environmental problems. In fact, "economic growth could not be sacrificed in the name of a better environment" and "development itself would generate the resources needed for environmental renovation later on".[58]

Despite the evident developmental thrust of government planning agencies, political leaders and within the various bureaucratic echelons, important environmental initiatives took place on the legislative and institutional fronts. Several Codes were promulgated, including the Waters, Mining and Forestry Codes (1934), the Fishing Code (1938) and the Hunting Code (1943).[59] Designed partly to protect Brazil's natural

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[57] Roett (1992).

[58] Guimarães (1991), p.179.

[59] Guimarães (1991).

resources from foreign intervention, these Codes nonetheless indicated the government's awareness of natural resource deterioration which was taking place within the country, due partly to aggressive extraction activities. Enforcement was irregular however, if not non-existent, given the absence of parallel regulatory agencies at the state level, necessary political and economic incentives in order to enforce what were, after all, "impediments" to the rapid economic growth philosophy espoused by the State and the fact that many of the natural resources were "managed" by an increasing number of government-owned companies mandated to promote expansion above all.

In 1940 the National Department of Public Work and Sanitation (DNOS) was created, followed by the establishment of equivalent agencies at the municipal level. The dismal sanitary and industrial pollution problems in Brazilian cities had been obvious since the 1900s, especially in the large urban centers, and were being worsened through rapid rural exodus towards cities, explosive proliferation of industries and the absence of urban planning objectives . Rising political militancy of upper and middle class citizens combined with the inescapable fact that top government echelons, including state governors, all lived in cities whose "protective enclosures" were also being ecologically degraded, precipitated the formation of the São Paulo Intermunicipal Commission for Water and Air Pollution Control (CCPAA) and the Rio de Janeiro Sanitary Engineering Institute (IES), both in 1962.[60] Funded by relatively wealthy state governments, wielding political clout at the federal level, and organized around the resolution of politically disruptive issues, these state and municipal institutions became effective environmental agents of control and change in the following years, despite conflicting objectives occasionally ordained by other state and federal institutions. The CCPAA became the embryo of what is now considered one of the most effective environmental protection agencies in the Third World[61], the São Paulo State Company of Environmental Sanitation Technology (CETESB) and the IES would become the Rio de Janeiro State Foundation of Environmental Engineering (FEEMA).

Lacking financial and political support at both state and federal levels , and located within politically remote jurisdictions (Manaus for example) or already "covered" by other government agencies (Recife in the Northeast for example), other rapidly expanding cities, faced with environmental problems of similar urgency, did not form

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[60] Findley (1988).

[61] Oliveira and Leitman (1994).

environmental committees or agencies or create comprehensive local policies for dealing with rising social and economic problems resulting from environmental deterioration.

Promoted by scientists and naturalists, and perceived as economically innocuous by politicians, conservation measures were also implemented before 1964 with the creation of 19 national parks and biological reserves and roughly 11 state parks and biological reserves, representing close to 0,25 percent of Brazil's total area, though still one of the lowest indices of any nation of the world at the time.[62]

Finally, this period witnessed the emergence of grass-roots and nongovernmental organizations with clear natural resource conservation and protection aims, while other groups pursued environmental objectives which were contingent on attaining economic and/or social development primarily and beforehand. Although moderately successful in establishing communication channels with municipal governments, these groups had virtually no influence on the policy processes occurring at the state or national level. All of the traditional elements within the policy cycle (agenda setting, formulation, implementation, etc.) were concentrated in the hands of the State players, the politicians, bureaucrats and técnicos, and provided little room for the formation of strong channels among interest groups and "common society" for the articulation and representation of interests. This applied especially to environmental policies, by nature controversial and conflictive since they imply the demarcation between "public" and "private" natural resource ownership rights, and with the potential of upsetting social echelons of power. Consequently, the environmental demands of interest groups and common citizens could result in the disruptive reordering of the patrimonial system, and they were thus excluded from participating in the policy game.

By 1964, Brazil had propelled itself from a mainly agricultural, rural and small-scale industrial society with limited infrastructure capacities, to a rapidly urbanizing nation, with sophisticated, large-scale industry capable of meeting the needs of an expanding population and progressively export-driven economy, with dramatic increases in energy and transportation infrastructure capabilities. The social effects were more troubling however as government-run development agencies, such as SUDENE, became perceived as ineffective and led to renewed and stronger calls for agrarian reform, while increasingly militant labour groups and urban organizations demanded a voice in government social issue decisions.

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[62] Guimarães (1991).

Responding to the legitimate concerns of these groups, unable to resolve the financial burdens resulting from the massive foreign borrowings of his predecessors and proposing a radical refocusing of how Brazilians related to their natural resource base (through improved technology, conservation measures, and what would be referred to as "sustainable development" today), the Brazilian leader João Goulart (!961-1964) was perceived as a dangerous political liability in the eyes of the patrimonial elite.

The key elements affecting the environmental policy arena within this period and which created repercussions shaping the environmental policy process today are:

◊ The dominance of the State in promoting economic development at the national and regional levels through the creation of government-run companies and institutions (such as the BNDE, SUDAM and SUDENE).

◊ The quasi-total policy priority given economic growth by top government officials, with the associated "rules of the game" to advance within the bureaucracy and receive concessions from the State. This philosophy and political reality would compromise the ability of State companies to properly "manage" natural resources, being both "poacher" and "gamekeeper" simultaneously.

◊ National planning activities became formalized and resulted in the creation of powerful planning agencies (such as the BNDE and Council of Development), and progressively came to be dominated by *técnicos* , who favoured a rational, scientific approach to managing the country, and felt that social problems could be solved through the judicious use of technical, especially economic, solutions.
This behaviour was well matched to the government's philosophy that environmental progress could not be achieved without economic (most of the time, industrial) development and that it was the State's moral duty to promote this growth above and beyond any environmental "impediments".

◊ Many national legislative and institutional initiatives linked to the environment nonetheless emerged during this period (including natural resource Codes and the creation of parks and biological reserves at both state and federal levels), but with limited effectiveness due to the absence of equivalent state legislation and institutions, inappropriate political incentives and conflicting interests within State-owned enterprises.

◊ The municipalities (and later at the State level) of São Paulo and Rio de Janeiro launched environmental programs aimed at addressing escalating sanitation and industrial pollution problems within the cities. Enhanced by comprehensive regulations, a strong institutional framework, financial support and political leverage, these programs signaled local government's awareness of the growing urgency of attempting to solve these constraints, although they would be weakened by conflicting state and federal government prerogatives. In need of similar environmental policies to stem the flow of social problems arising within their jurisdictions, other rapidly growing urban centers lacked the political and financial "critical mass" to undertake programs perceived by local elites as secondary to the "under-development" of their regions.

◊ Grass-root and non-governmental organizations arose during this period, coalescing around issues related mostly to social concerns (health, education, distribution of wealth) but with some devoted to the conservation of natural resources. Together with rural workers demanding agrarian reform , these groups were systematically excluded from the policy process, partly hindered by a lack of political organization, but mostly due to their latent power to disrupt the established patrimonial order.

V) Under Military Government : The Economic Imperative (1964-1980)

A) The early patterns emerge (1964-1969)

i) The governance structure

The government under João Goulart (1961-1964) had never rested on a solid political foundation. Perceived as a real threat to public order, and claiming the presence of Communist undercurrents in his behaviour, opponents ejected Goulart from office in 1964, paving the way for a military regime which spanned twenty-one years.

Within this period, Brazil would undergo profound changes in all aspects of its features, resulting in stunning economic growth and diversification, political restructuring which would transform the governance mechanisms, and social development with undeniable gains (in life expectancy for example) coexisting with devastating regression (in income distribution for example). And despite institutional and legislative innovations at all government levels, environmental policy would be

characterized as weak, disjointed and for the most part, ineffective in stemming the inevitable environmental assault resulting from the overriding priority accorded economic growth.

Calling for the maintenance of internal security through well-organized and well-maintained armed forces, a revision of political institutions and procedures, and central planning for economic and social development, the upper military echelons quickly set about the task of implementing "order".

It banned all existing political parties and expelled undesirable political individuals from the country (mostly on charges of corruption) starting in 1965. Deemed important to show the world that Brazil was still a functioning democracy, two political parties were created, the deeply conservative and pro-government ARENA and the opposition Brazilian Democratic Movement (MDB), formed as a heterogeneous amalgamation of old political parties.[63]

After two directly elected state governors, identified as opposed to the regime, won elections in 1965, the electoral laws were rewritten to provide for the indirect election of state governors, appointed by the federal government. Furthermore, the mayors of large municipalities classified as "strategic" (including all state capitals), would also be appointed in turn by the governors. The qualifications sought for these positions were administrative experience, non-partisanship, and willing acceptance of the policies of the central government. [64] Remaining in place until 1982, this electoral subservience effectively emasculated the political autonomy of the regions and strongly encouraged compliant behaviour from regions interested in obtaining federal funding and limited interference in their internal affairs.

Congress was at first allowed a ceremonial role in policy, but even this was foreclosed whenever Congressmen proposed or deliberated upon policy conflictive with the Executive's philosophy or desires. Closed down twice during military rule, Congress would fulfill but a shadow of its historical role of regional representation, more or less "rubber stamping" proposals submitted by a dominant central government, and regaining legislative might but in the early 1980s.

Thus armed with virtually unlimited powers, political leaders embarked on a plan of action designed to "get on" with modernization, further reinforce national security and legitimize its rule through economic development. The main thrust of development was to be provided by massive industrial expansion, heavily driven by State initiative

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[63] Fleisher (1990).

[64] Roett (1992).

through its national companies, and financed by increasingly value-added exports and international capital through lending institutions and multinational investments.

Young, professionally trained employees drawn equally from powerful military institutions (such as the National War College) or civilian think-tanks (such as the Institute of Advanced Brazilian Studies) would come to dominate the bureaucratic mass needed to operate a highly centralized government and would orient the State's development strategies along economic growth axes. Political leaders allied themselves with these "technobureaucrats" in the hope of transforming Brazil into a world "leader" - irrespective of the lack of clear meaning or social consequences associated with this new status.

Despite social differences and personal motivations which did not always coincide, most actors within the governance structure throughout the military period would display similar characteristics: a belief that the country could only progress through economic expansion, even at a social cost; that this expansion must be industry-driven and that proper infrastructure would have to be provided for this, and importantly, most were career-driven individuals who understood that rewards were granted for industrial policy initiatives. This emphasis on careers would create a fragmented institutional structure since officials sought weak alliances with many individuals as opposed to strong alliances with few for the simple reason that appointments to key positions could come from sources within shifting locations. The military tried to erase these clientelism and patronage styles of previous governments by creating formal institutional structures, but met with failure since there were no provisions which would commit people to the new, rationalized procedures and organizations. Thus "where individuals stood on a particular policy depended less on where they were sitting than on where they had been and where they were going".[65] This bureaucratic mobility made for generally weak institutions and prevented institutional channels from forming, as opposed to personal ties.

These aforementioned political traits would affect the environmental policy process in three ways. Firstly, policies geared towards industrial/economic expansion were strongly favoured over "development impeding" policies since the latter went against the philosophical grain of leaders and were thus not rewarded. Secondly, in the highly fragmented Brazilian institutional system, as complex projects required coordination among competing officials and agencies with overlapping, competing or contradictory policy jurisdictions and logrolling and personal exchange became essential, politically

[65] Schneider (1991), op. cit., p.7.

"favourable" institutions became dominant as politically "deviant" institutions (such as those dealing with environmental policies) had much less ability to exchange or trade favours. Thirdly, the fragmented nature of the institutional network did not permit the strong coalition-building required for proposing, formulating and implementing politically unsavoury environmental policies which would be opposed by most officials throughout the bureaucracy.

For these reasons, environmental agencies or institutions within the federal (and later state or municipal) government would be at great disadvantage in establishing environmental policies or influencing other, more powerful, policy sectors since these policies were by their very nature perceived as obstacles to economic development and granted low political, financial and human resources. Lacking motivation to achieve their unrewarded environmental objectives and perceived as political liabilities for associating with them, institutions dealing with environmental issues would face uphill policy battles.

ii) The Amazon

Long perceived as a vast, unpopulated area holding resources of great, and unexploited value, the Amazon region would soon be perceived by military strategists as a key source of national prosperity and a panacea to increasingly obvious and politically destabilizing social pressures in other regions.

The rate and degree to which this "opening up" of a region still shrouded in misconceptions with respect to its image of an inexhaustible source of mineral and hydrological riches, unpopulated and virgin territory of dense vegetation (and so prime agricultural land so it seemed), and lasciviously coveted by foreign nations, would set the stage for environmental consequences on a global scale and remedial policies in the 1980s and 1990s in response to national and international forces. In fact, the area was neither unpopulated (at least 2 million indigenous, riverbank and forest dwellers lived in the region), virgin (past ecological disasters still left deep traces in parts of the Amazon)[66], and was characterized by very fragile soils and complex ecosystem cause and effect relationships. The presence of foreign interests for the region was less clear,

[66] In the late 1920s for example, Henry Ford purchased and cleared thousands of hectares in the Brazilian Amazon in order to produce natural rubber for automobile production. Ignorance of local ecology resulted in failed plantations due to tropical plant diseases. The company pulled out shortly after, leaving behind a trail of destroyed forest and millions of dollars.

although many Brazilians today still feel that foreign countries have designs on the Amazon.

Armed with a newly created regional development agency, SUDAM (Superintendency for the Development of the Amazon, 1966), whose main aim was to promote economic growth and integration of the region with fiscal incentives, and spearheaded by the geostrategic opportunities offered by the freshly paved Belém - Brasília highway, "Operação Amazônica" (Operation Amazon) was launched in 1966.

A 1968 document produced by The Superior War College, an influential policy advisor, called for "a national policy of planned and methodical occupation of the region to impose, on the full extent of the territory, the characteristics of our civilization and integrate it forever into our national structure"[67], reinforcing the central government's aim that "Amazon occupation would proceed as though it were a strategically-conducted war".[68] The anthropocentric dominance of this philosophy clearly established that the Amazon's resources - soils, water, timber and present occupants, including some 200 indigenous groups numbering over 200,000 - were but tools to be used, or discarded, in advancing the State's objectives. The overt message to environment-related sectoral agencies such as the Ministries of Forests, Mines and Water would also clearly orient the formulation, interpretation and implementation of their particular environmental policies towards more predatory resource management practices than one would ordinarily expect from these agencies.

The environmental legislation drafted or existing during this period dealt mostly with laws aimed at preserving fauna and flora (such as the law on the Protection of Wildlife, 1967) and with regulating the use of other resources (such as the 1965 Forest Code), but were of marginal importance to agencies formally assigned with their administration or became significantly altered by the possible interpretations reward-conscious bureaucrats could read into them. Systematically segregated to the bottom of the policy priorities agenda, afforded low budgets, staff and political strengths, and well-versed in the key objectives sought by the appointment disbursement system, environment-related federal agencies, the environmental arms of State-owned companies and the embryonic state and municipal environmental agencies in the Southeast would all naturally face great difficulty in implementing and evaluating environmental policies.

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[67] From de Onis (1990), page 57.

[68] Brazil's president, Humberto Castelo Branco in 1964. From Hecht (1985).

By the end of the 1960s, industrial expansion was rapidly advancing within Brazil through increased agricultural mechanization and agro-specialization geared to export markets, State dominated implantation of heavy industry (such as in mineral extraction and energy) and increasingly sophisticated industrial production within urban centers (such as chemicals, automobiles and other durable goods). Financially lubricated by government fiscal incentives and foreign loans, the industrial machine was gaining momentum.

Politically stabilized at the cost of freedom of expression and societal representation, the government could implement its policies virtually unopposed and according to its agenda, staffed by a group of culturally similar technobureaucrats who shared common beliefs for the appropriate place the country should occupy on the world stage. The coming decade would be strongly shaped by these initial starting conditions.

B) The Brazilian miracle and the environment (1969-1979)

The 1970s witnessed the economic awakening of the "Brazilian giant"[69] as successive governments strove to achieve world recognition and provide legitimacy to a socially and politically constraining regime.

The country invested heavily in industry, energy and infrastructure projects through the proliferation of State-owned enterprises, generous fiscal incentives, subsidies and grants to Brazilian and foreign private interests, financed in large part by foreign lending institutions (including the World Bank, IDB and private North American and European banks) and stimulated by low real interest rates. Between 1969 and 1973 the GDP would rise by an average 11,5 percent/year while the rest of the decade provided a still elevated 8 percent/year average rise.[70] The average income of most Brazilians would also increase steadily during the 1970s, catalyzed largely through high industrial growth in urban centers, while the country hoisted itself to 10th largest economy in the world, from 40th in the early 1960s. The Brazilian "economic miracle" in fact appeared to be an unmitigated political success for a State seeking justification for its socially - and environmentally - repressive rational.

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[69] An expression taken from Brazil's national anthem.

[70] Roett (1992).

i) Amazon - the operation intensifies

Following a trip to the drought-stricken, impoverished Northeast in 1970, an apparently shaken president Médici promised to take action to alleviate the suffering of this politically liable region. With little or no previous study of feasibility, the National Integration Plan (PIN) was thus launched. Designed ostensibly to provide "land without people for people without land"[71], the Amazon territory would be "integrated" into the national body through accelerated programs of colonization dependent on the large-scale provision of adequate infrastructure. And so began construction of the Transamazon highway (Transamazônica), which was to run almost 5100 kms from the Northeast to the Peruvian road network, and a North-South link from Cuiabá to Santarém. To facilitate migration to, and occupation of, Amazonian lands, the National Institute of Colonization and Agrarian Reform (INCRA) was created to recruit settlers, distribute lands, and oversee the settlement of colonists. The State envisioned settling 100,000 peasant families by 1974, each receiving 100 hectare earmarked plots on either side of the highway, and land-use education . Adequate infrastructure (schools, hospitals, etc.) would soon follow.

Many government motives would shape the process of Amazonian "conquest" in the coming years, often creating policies which interfered with one another due to their diverse and conflictive goals, and inadvertently unleashed a series of consequences which would have tragic environmental effects and form the nucleus of government attention to environmental policies in the late 1980s and 1990s.

Amazonian integration would thus serve the State's many aims, technocratically rationalized as a set of logical steps towards solving diverse political, economic and social problems, namely:

I) Political:
- Prestige and legitimacy to the military government, seen as a great builder of development with the national interest in mind.
- National security over a large portion of its land mass[72], perceived as coveted by others.

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[71] In the early 1970s many students, especially in large urban centers in the Southeast, wore T-shirts emblazoned with this expression, patriotically proclaiming colonization of the Amazon to be socially just and necessary.

[72] The Brazilian Amazon covers approximately 60 percent of the country's territory.

- Integration would allow greater control over a region far removed from the federal capital, with states or territories perceived as too independent from central authority.
- The issue of land reform could be suppressed or displaced again, thus satisfying politically influential large landowners.

II) Economic:
- Amazônia envisioned as a new source of national wealth through agriculture (projected to be administered by small, independent farmers and a number of large-scale ranchers) and extraction/exploitation of natural resources.
- Allowed the regional development of lands perceived as "backwards" or "undeveloped".
- Would satisfy politically influential capitalists (especially from the Southeast) who wanted access to resources.[73]

III) Social:
- The lands were seen as under-populated or "empty" and would thus provide room for migrants seeking land, especially from the Northeast, where social and environmental problems were blamed on overpopulation and/or lack of land.
- Mass migrations to Southeast cities, already incapable of addressing the needs of present populations, would be alleviated by redirection to the Amazon.

In an indirect way then, the government additionally perceived the integration of the Amazon as a form of environmental policy since it would stem the growth of sanitation and pollution problems in the cities and permit the more rational use of soils now exploited unsustainably in the Northeast and Southeast. Such reasoning, which failed to include the socially disruptive components of demographic and industrial exodus to an ecologically fragile region whose links with all living forms, including humans, were ill-defined and poorly understood would entail environmental crises which future environmental agencies or sectors would find overwhelming.

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[73] Including major construction companies to work on large mining, hydroelectric or road building and housing projects.

The failure of early colonization programs[74], combined with the growing persuasiveness of large private interests, and the dominant status of development-minded SUDAM over resource management- oriented INCRA, led to a radical shift in government instruments for achieving their main Amazonian policy goals. Furthermore, despite modest formal colonization results, small landless peasants were nonetheless fueling a rising spontaneous migration to Amazonian lands along public highways and private roads built by logging or mining firms and large ranchers, resulting in many conflicts, often violent, between landowners and *posseiros* [75]. Blamed by the government for practicing "slash-and-burn" agriculture as they moved from one area to the next in cycle with the rapid deterioration of nutrients in the soil, colonization efforts aimed at small-scale peasants were suddenly discouraged, displaced by heavily publicized efforts to attract Brazilian and foreign industrial companies and large ranching complexes, combined with the implantation of large-scale, State-run mineral extractive sites.

Lavish fiscal incentives such as the virtual exemption of agricultural income from taxation, regional development credits and minimal land taxes for "productive" (cleared) lands[76] would attract and promote large-scale deforestation of immense tracts of land by few large investors for tax write-offs and speculation purposes, meanwhile ostracizing smallholders from the "benefits of development".

The Minister of Planning, head of the most powerful policy development institution in Brazil, would state in 1973 that "the necessity to avoid a predatory occupation with a consequent process of deforestation, and to promote the maintenance of *ecological*

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[74] By 1974, only 5724 families had officially settled in the region, due mostly to the less risky attraction of industrial employment opportunities in Southeast cities and the lack of promised government infrastructure along the Transamazônica. (Schlecht, 1990).

[75] The Brazilian right known as *direito de posse* has been formally recognized since 1850, and goes back to settling land disputes in colonial times. This right states that a squatter (or *posseiro*), who lives on unclaimed public land and has used it "effectively" (i.e. has cleared it), has a right to at least 100 hectares. If the posseiro fulfills the condition of living on and effectively using the land for more than 5 years, he has the right to acquire the title. Land can also be acquired by squatting on private land for a time without being challenged by the owner. Since most landless peasants cannot afford to have the land surveyed and registered, their *direito de posse* is rarely carried out to full legal ownership. On the other hand, land which is purchased has legal status as evidenced by an ownership certificate. Although they are not always licitly obtained, these certificates permit the owner (almost always large owners) to forcefully remove any squatters on their land, aided by the judiciary if need be. Numerous, violent conflicts often erupt as landless peasants are removed from land which they feel belongs to them, or invade land "rightfully" owned by others.

[76] Binswanger (1988).

equilibrium, leads us to invite large enterprises to assume the task of developing the region".[77] This in effect would largely be the extent of "environmental policy" in the region during the 1970s (in this case to "preserve" or "protect" or "efficiently manage" the region's resources from the predatory practices of *small* landowners or squatters). It is commonly accepted today that most deforestation, and the associated devastating effect on local ecosystems - unable to adapt to such rapid, or unsustainable development - was due (and is still largely due) to the pasture clearing practices of large ranchers, and not the clearing practices of small land tenants.

To provide the necessary infrastructure and support the development of large projects which were being carried out by private initiative, massive hydroelectric projects were undertaken or designed (Tucuruí, Balbina, Samuel), more roads built or paved (despite rising oil prices)[78] and a very large-scale development project designed to rapidly develop the Northeast Amazon region by providing health and educational facilities, agricultural development and modern industries centered on one of the largest mineral extracting complexes in the world. Budgeted at $ 60 billion, the Grande Carajás Project symbolized the government's belief that all problems could be solved at once through central authority and rational planning, with ensuing "development at low environmental cost"[79].

By the late 1970s, the government had in fact "integrated" the Amazon territory through aggressive economic policies, but had also succeeded in reproducing the social dysfunction found elsewhere in the country, including skewed land ownership - with concomitant clashes between groups - and growing urban centers characterized by inadequate sanitation and health facilities, and sprawling favelas.

Meanwhile, despite modest attempts at delimiting indigenous reserves and national parks, either through the Federal Indian Agency (FUNAI) or The Brazilian Institute for Forestry Development (IBDF), clashes occurred at regular frequency between large and small landowners, squatters, indigenous groups, *seringueiros* (rubber tappers) and *garimpeiros* over territories whose ownership was at best questionable [80] . Staffed by

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[77] Taken from Cleary (1991).

[78] Between 1965 and 1975, the road network in the Amazon region would grow from 1780 to 9000 kms (Mahar, 1978 from de Onis , 1991).

[79] The Carajás Project continues today, albeit at a smaller scale, but still large in absolute terms. The deforestation associated with fueling charcoal processing plants for pig iron production has been widespread, despite government regulations requiring reforestation.

[80] *Garimpeiros* have numbered between 100,000 and 500,000 individuals at any given time throughout the Amazon region. Nomadic miners with limited technological extractive capabilities, they live in camps

career-oriented individuals whose motivations caused accelerated development of resources and under-staffed, under-financed and under-paid, and operating in regions whose social, judicial and governing systems were clearly oriented towards rapid economic wealth building, the sectoral agencies responsible for enforcement, education and general administration of environmental policies either could not or would not carry out their duties.

In reaction to growing international awareness and pressure, and to attempt remedial action to politically alarming developments, the federal government later tried to implement environmental policies for the Amazon region, pushed through the policy process with little or no analysis. Some of these included a stipulation that 50 percent of each rural property remain under forest (1976 Forest Code), that industries which used forest products (lumber mills, coal plants) *should* afforest what they have removed, and that the delimitation of Indian and forest reserves be maintained.[81] Lacking political and administrative support, poorly funded, and conflicting occasionally with existing policies (tax incentives and credits which promoted deforestation for example), these initiatives all failed.

The links which bound the Amazonian environment, its inhabitants, and those who wished to benefit from its rapid exploitation were patently not sustainable.

ii) Pollution abatement - the main environmental concern

The 1972 United Nations Conference on the Human Environment, held in Stockholm, represented the most comprehensive attempt at addressing the environmental concerns of developing and industrialized countries ever held until then. The environment was suddenly thrust to the foreground of politics and would lead to the common agreement that the environment and development need not, and certainly could not, according to developing countries, be in conflict. Developing countries, led by Brazil, expressed resentment over suggestions that their development efforts should

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with a legal and economic dimension characterized by violence, alcohol, prostitution and, for the lucky few, instant fortune. Nonetheless guaranteed certain rights according to Brazilian law, garimpeiros are not part of the formal economy, yet can greatly affect the supply/demand for certain metals and minerals exchanged on world markets (such as copper, gold, tin and diamonds). Their extractive practices typically leave devastating environmental consequences, from deforestation and landscape alterations to more insidious and far-reaching effects such as mercury poisoning of streams and rivers, a dangerous by-product of the gold extraction process, and the cultural and ecological disruption of indigenous groups whose land they may invade.

[81] Wesche and Small (1992).

be impaired by restrictions to which already industrialized countries had not been subjected at similar stages in their own development.[82]

Initially concerned but with the disturbing effects of pollution, thus approaching environmental concerns from a technical perspective, First World countries rapidly found themselves confronted with arguments from developing nations (and strongly expressed by Brazil) to the effect that:

a) Development should not be sacrificed in the name of a cleaner environment.

b) National sovereignty would not be surrendered on the basis of the neo-colonial environmental interests of industrialized nations, and that national resources were to be in no way "shared" on an international scale (in this case, Brazil was referring quite clearly to its Amazon region).

c) Population growth and absolute numbers alone were not responsible for environmental degradation, and that the relatively low population First World countries must first learn to curb their own consumption before calling for a halt to demographic growth patterns in developing countries (the Brazilian Roman Catholic Church also influenced the orientation of this position).

d) Since industrialized nations were responsible for most "transborder" environmental effects, and if they clung to a notion of pristine ecological areas set aside for their benefit, they should pay for clean-up efforts and help the developing nation resource management projects by supplying advanced environmental technology.[83]

The main thrust of these arguments seemed to be that economic development was the answer to, and not the cause of, environmental problems in poorer countries,

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[82] Findley (1988).

[83] These main positions, expressed and advanced by the Brazilian delegation, were strongly supported by Third World countries at the Conference. Ironically, these arguments would resurface almost intact twenty years later at the 1992 United Nations "Earth Summit" in Rio de Janeiro.

although the more fundamental question of how the fruits of this development should be shared by society (presumably by all, especially the poorer classes) was conveniently bypassed by Brazil.[84]

The main positions of Brazilian representatives at the Conference thus faithfully reproduced the central government's very pro-development, pro-growth approach to resource management, while reiterating its need to secure the country's resources from foreign intervention in matters related to the environment.

In a diplomatic "tour de force", the countries present at the Conference were able to agree in principle to these main elements, to the surprise and satisfaction of developing nations, including Brazil. Thus freed for a time from what it considered unwarranted interference by developed nations in its internal affairs, the Brazilian government could once again set about "developing" the country.

In the aftermath of the Conference, with the political stimulus imparted environmental issues, and in accordance with one of its recommendations, a 1973 presidential decree created the Special Secretariat of the Environment (SEMA), which was to be a "true" environmental agency. The Secretariat was to be "oriented towards conservation of the environment and rational use of natural resources"[85] and fall under the jurisdiction of the Ministry of the Interior, a notoriously pro-development agency, typically responsible for promoting industrialization, large infrastructure projects and strongly concerned about shielding the nation's resources from foreign covetousness. Officially, SEMA was authorized to:[86]

a) monitor environmental changes;
b) advise other agencies charged with conserving the environment;
c) promote the establishment of norms and standards related to the preservation of the environment, especially water resources, that assure human well-being and economic and social development;
d) achieve directly or collaborate with specialized agencies in the enforcement of the norms and standards established;
e) promote the training of technicians and specialists in matters related to environmental protection;

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[84] This was the challenge perceived to be addressed, and solved, through the concept of "sustainable development" a decade later.

[85] Taken from CIMA (1991).

[86] From Decreto No. 73.030 of Oct. 30, 1973.

f) act with financial agents for the provision of financing to public and private entities to facilitate the recovery of natural resources affected by predatory or polluting processes;
g) cooperate with agencies specializing in the preservation of endangered animal or plant species, and in the maintenance of stocks of genetic material;
h) keep current the Report on Polluting Agents and Harmful Substances; and
i) promote aggressively, through programs on a national scale, the education and understanding of Brazilians concerning the proper use of natural resources, taking into account the protection of the environment.

Thus expressed, these responsibilities appeared to clearly indicate that Brazil's environmental problems could be sectoralized and dissociated from the "messy" links environmental issues usually seemed to be caught up in. This ability to "sanitize" natural resource use problems to questions of a mainly technical nature, and dealing mostly with pollution abatement, gave the impression that all societal problems could once again be solved by a rational, methodical approach.

Staffed with technical personnel (thus of low career-promoting potential to others), housed within a Ministry which did not wish to see "economic interference" produced by comprehensive environmental policies, and allocated a very small budget, SEMA would face the impossible task of coordinating the environmental efforts of other federal agencies that dealt with environmental-related policies (estimated at least at eighteen agencies within nine Ministries[87]), advising state and municipal environmental agencies with wildly divergent degrees of sophistication, as well as carrying out its other specified duties.

Despite its main stated duty as manager of "the rational use of natural resources", SEMA would come to be known as a technical agency specialized in pollution abatement, and would develop, in conjunction with certain state-level agencies, a complex body of regulatory law directed mainly at air and water pollution.[88] As

[87] Guimarães (1991).

[88] The more controversial (and problematic) areas of environmental issues, such as those pertaining to resource use in the Amazon or agricultural land-use problems resulting from unsustainable soil deteriorating practices due to monoculture production in the Northeast and Southeast, would simply not

mentioned, this technocratic orientation, designed by the central government, would effectively de-link the "messy" social and political implications from environmental issues, rendering them relatively innocuous, presented and dealt with in a technical light.[89]

iii) State agencies and the federal government[90]

The 1967 Constitution formally attributed states all powers to intervene in the economic and social order not explicitly or implicitly denied them by the Constitution; furthermore, municipalities had the power necessary to assure their autonomy and proper administration of matters of particular interest to them.

As it was previously made apparent however, states and municipalities had little effective political autonomy during this period and were required to tread carefully when designing policies not clearly supportive of the federal government's policy aims. Nonetheless, in the wake of the creation of SEMA, two state environmental agencies were formed in the 1970s, one of which (CETESB) would eventually be perceived as one of the most innovative and well run environmental agencies in the developing world.[91]

The sate of São Paulo would create the State Company for Basic Sanitation and Water Pollution Control (CETESB) in 1973, a title which indicated but a portion of its evolving mandate, which would come to cover the control of the water quality and operation of drinking, sewage and industrial waste water, to establish standards and emission limitations governing pollution of air, water and soil, to monitor and license new and existing industrial pollution sources and to fine or recommend temporary/permanent shutdown of environmental regulation violators. CETESB would function as both paid consultant to industry and as regulator. Some of its funds were to come from the budgets of other state agencies added to appropriations by the state legislature. Well funded and staffed, and with a clear mandate from the state, CETESB's environmental performance would nonetheless be questionable during the 1970s.

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be addressed through environmental policies developed by SEMA or others during this period. Politically intractable, they would be left for future resolution, usually in periods of crises.

[89] This view of environmental problems strangely resembled that held by developing nations, and had been vehemently denounced as short-sighted by Brazil at the Stockholm Conference in 1972.

[90] The information in this section is based largely on Findley (1988).

[91] The structural embryos of these agencies had been formed however in 1962 (see section IV in this Part).

Created in 1975 as a counterpart to CETESB by the government of Rio de Janeiro, the State Foundation of Environmental Engineering (FEEMA), which operated under the State Commission of Environmental Control (CECA), encompassed similar functions to those of CETESB, with particular emphasis on water pollution, the most serious problem facing the state,[92] and the licensing of all public and private enterprises whose operations could entail negative environmental consequences.[93]

Shortly after 1975, pollution control agencies were also established in the states of Bahia, Minas Gerais and Rio Grande do Sul, but would not form environmental groups of any real policy-making or implementing strength.

Throughout the 1970s (and early 1980s), CETESB and FEEMA would establish very thorough pollution abatement policies, based largely on US-style regulations, but were required however to follow those addressed by federal regulations (created by SEMA or other agencies). This would lead to large voids in Brazil's regulatory programs, as all new environmental legislation could only be initiated at the federal level, even if local environmental concerns could be more appropriately defined and solved at the state or municipal levels.[94] Considering SEMA's overextended resources and minimal political clout, many environmental policies which affected or crossed within the jurisdictions of other agencies would either not reach the policy agenda or be dealt with in a very narrow, sectoral manner, inevitably meeting with failure.[95]

Another factor which limited the states' ability to enforce certain regulations or effectively control polluting emissions arose from federal laws which prevented or

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[92] These water problems were due to toxic effluents produced by heavy industry concentration lining the Paraíba do Sul River, the sole source of public water supplies for more than 80 percent of the state's residents, and organic sewer wastes which flowed directly into Guanabara Bay, around which much of the city's population was (and still is) concentrated. Still prevalent today, and affecting over 4 million people, water pollution is a major concern in Rio de Janeiro.

[93] Very innovative for their time (but unfortunately rarely enforced), these procedures are now referred to as "environmental impact assessments".

[94] For example, despite the fact that federal laws and regulations pertaining to pesticide use were sketchy, outdated and inadequate to protect public health and environmental quality, the Supreme Court of Brazil invalidated key portions of comprehensive (and environmentally less harmful) pesticide laws in the state of Rio Grande do Sul since the Court held that the state had exceeded its authority under the federal Constitution. The state's standards, although clearly superior, were judged to be in conflict with federal law, and thus illegal.

[95] This would be the case for example of state-owned sewage plants and automobile emission standards, both with undefined legal statuses.

seriously impeded them from shutting down plants given the "necessity of not impairing unduly the nation's economic and social development"[96]. Only in cases of "grave and imminent risk to human lives and to economic resources" were state governors authorized to adopt emergency measures to deactivate pollution problems by shutting down offenders. Given this warning, and unwilling to impede the economic wishes of central authorities (as well as their own), the states would only very rarely venture this far, and removed in so doing a major enforcement tool of the state environmental agencies. In the case of industries "of great concern for development and national security"[97] and typically the greatest polluters (cement, fertilizers, pesticides, paper, chemical and petrochemical products, steel, nonferrous metals, military and transportation equipment and any State-owned company), such industries could not be closed by state or municipal authorities under any circumstances.

In addition to the reduced enforcement impact that local governments possessed due to federal environmental authority, CETESB and FEEMA's environmental policies, as expressed by rather thorough pollution abatement legislation, would be afflicted by inadequate implementation. Some problems were:

1) Opposition to the "polluter pays" principle

Most top officials in the state and federal governments, including environmental agencies, believed that it was economically unfair and politically unacceptable to require existing plants (except those owned by foreign multinationals) to spend large sums to reduce pollution unless they were publicly subsidized or unless public health or safety was at a well-publicized and extreme risk.[98] In fact, it is doubtful that CETESB, now recognized as a "model" environmental agency, would have been willing to press existing state polluters in the absence of World Bank loans (in the late 1970s and early 1980s) which allowed the government to make long-term, low-interest loans to finance control measures. This opposition to the "polluter pays" principle would carry over within Brazil at all government levels

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[96] This presidential directive would be given to SEMA to guide its establishment of criteria, norms and standards for correcting the damages of industrial pollution.

[97] Presidential decree, 1977.

[98] The case of Cubatão, "the most polluted city on Earth", is a case in point. Its case shall be presented in the next section.

into the 1980s, when the government could no longer afford to finance companies due to a debt crisis.

2) Emissions were negotiated

FEEMA and CETESB both approached polluters on a case-by-case basis, depending on the nature of the emissions, the economic and technical capabilities of the polluter, the local ambient environmental quality, the number and intensity of local complaints and the political influence available to particular owners. This resulted in substantially different emission and equipment standards for similar facilities, with foreign multinationals typically singled out for more thorough enforcement treatment. This type of legislative flexibility made policy evaluation nearly impossible and rendered the system susceptible to corruption.

3) "Command-and-control" enforcement and minimal fines

The enforcement tools for federal or state environmental regulations and rules included fines, denial of tax incentives or preferential financing from the government and suspension of operations (in extreme cases only - and with federal consent). All of these require large administrative resources and were of limited effectiveness in reducing the causes of pollution at the source since they called for extensive "policing" activities. Although both CETESB and FEEMA (and later SEMA) required approved operating licenses before environment-altering production began in a plant, many operated without them, and the agencies often chose to forego the requirement.
In addition, prior to the mid- 1980s, pollution fines were very small and not burdensome to offenders. Faced with the risk of minimal charges, the majority of polluters often simply went on with their business.

4) Responding to emergencies

Federal and state environmental regulatory authorities often were motivated to act swiftly and effectively to abate pollution but for well-publicized environmental emergencies involving serious and immediate threat to the public. Case 3, on the following page, illustrates this point all too clearly.

Case 3 - The Paraibuna Metals Spill[99]

In early May 1982, heavy rains caused a break to form in the dike surrounding a settling pond containing between 30,000 and 40,000 tons of toxic heavy metals on land owned by the Paraibuna Metals Company, a private corporation partly owned by the Brazilian National Development Bank.[100]

The leak found its way into the Paraíba do Sul River and within 48 hours had contaminated the water supplies of some 370,000 Minas Gerais residents, killed many fish and produced solid waste disposal problems since public water supplies had been shut off.

Reaction was swift. After consulting with his state's environmental agency, SEMA and FEEMA[101], the governor of Minas Gerais ordered the plant closed for fifteen days, the longest shutdown the state could require under federal environmental law. After initially refusing to close, the company was forced to accept compliance with nine specific technical requirements recommended by SEMA and FEEMA, pressured by adjoining state governors, threatened by legal action filed by the mayors of cities whose water was affected, and SEMA's announcement that a Presidential decree would force the plant to remain closed until it complied with the technical requirements.

In late May, FEEMA announced that water from the Paraíba do Sul was safe to drink again, though fish consumption was still prohibited. A controversial statement by the vice-president of the Brazilian Medical Association who said that the river's water would be unfit for human consumption for twenty years and that affected communities should obtain their supplies from a completely different and remote source produced the well-publicized response by the governor of Rio de Janeiro, who took a bath in the Paraíba do Sul, and drank a glass of water from the municipal system.

The government of Minas Gerais announced that it would not fine or legally pursue the company because the harshest statutory penalty - plant closure - had been imposed already.

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[99] Condensed from Findley (1988), pages 32 - 35.

[100] Brazil's second largest zinc company, the plant was less than three years old. The toxic metals had accumulated during this period, with none yet disposed of.

[101] FEEMA was also involved since the Paraíba do Sul is an important waterway in the state of Rio de Janeiro.

Although existing environmental legislation and institutions were well suited to helping defuse this environmental crisis, federal and state government agencies were essentially limited to reacting to problems, without addressing their underlying cause and could not do otherwise in a policy sphere which only allowed them to formulate and implement technical standards and procedures, with no influence on the much greater environmentally disruptive economic policies ubiquitous within the system.

Further, without the political leverage made available by personal attention to problems by governors, the President or other top ranking officials, enforcement of existing policies and the coordination required to avoid policy interference from other agencies were severely hampered. This case also shows that health-impeding disruptions to the public, the emergency mobilization of political players, costly economic consequences and environmental harm to natural resources could all have been avoided if existing environmental regulations had been applied by the agencies before the accident occurred, in this case a legal operating license, contingent on an environmental impact study.

iv) Planning activities

A strong belief in the necessity for central control and coordination, the educational and social backgrounds of technobureaucrats, and leaders' vision that the social and economic development of the country would be achieved through State-led initiatives resulted in a proclivity for generating federal "National Plans" in the 1970s and 1980s.

The first societal project, the First Development Plan (I PND), was formulated by the Médici government in 1969 and called for heavy State investment in industry, energy and infrastructure, with an emphasis on *grandeza* (greatness) in projects. Reflecting an awareness of the possibility of negative ecological fallouts from such aggressive economic expansion, the government actually incorporated environmental issues into the plan, still commonly defined as pollution in official discourses, for sanitation and water supply quality.[102]

Never taken seriously however, and crowded out by bureaucrats in the rush to interpret the development blueprint from an economic perspective, most of these environmental recommendations never proceeded beyond the agenda stage of the policy process.

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[102] Guimarães (1991).

The Second Development Plan (II PND, for 1974-79) was an extrapolation of I PND, with greater emphasis on the necessity of import substitution measures and the rapid expansion of infrastructure. Reacting to the perceived vulnerability of Brazilian security to skewed oil dependence from foreign sources, the government called for the State-led creation of massive energy projects centered on hydroelectric, coal, alcohol and nuclear programs.[103] Resulting from a wave of bureaucratic compunction, the II PND included an entire chapter dedicated to urban development, pollution control and preservation of the environment. Characterized by unclear objectives and vague recommendations, and in conflict with other parts of the plan calling for economic integration at all costs, the environmental policies were again given very low priority and withered at the policy agenda stage, never progressing to the other stages, except in the case of pollution laws, regulations and standards developed by SEMA.

Of critical importance in the policy process since it set the tone for future legislation, planning occurred within a closed circle of elite politicians, in institutions such as the Ministry of Planning and General Coordination or later the Planning Secretariat, traditionally occupied by the most powerful members of Cabinet.[104] Always presented as a "fait accompli", the policies rarely incorporated an environmental dimension, relegating them mostly to technical spheres, leaving the agencies or Ministries dealing with environmental issues scrambling to minimize the negative interference or contradictions resulting from the overwhelmingly pro-economic growth policies.[105]

Finally, each PND was accompanied by a Basic Plan for Scientific and Technological Development, which was geared mostly towards maximizing the economic returns to the country (for example within the high-growth computer and military arms industries), yet also led to the proliferation of SEMA-run environmental research centers and independent University research facilities. These would also be faced with

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[103] In the mid-1970s, Brazil's energy consumption was fueled mainly by oil (80 percent). Provoked by the 1973 oil crisis, and in need of stable energy sources, the government sought to diversify its modes of supply.

[104] Under Geisel (1974-1979) for example, critical State policy was controlled by three groups: the Economic Development Council, the Social Development Council and the National Security Council, all coordinated (and mostly staffed) by members of the Planning Secretariat. (Roett, 1992)

[105] For example, the II PND simply announced that the second largest dam in Brazil, Tucuruí in the Amazon, would be operational by 1981, with no consultation of the indigenous groups or other local inhabitants it would displace and insignificant efforts at environmental impact assessment. The dam would nonetheless eventually produce much needed electricity for the region's inhabitants and industries, and help increase their standard of living, but also cause a national and international uproar as to the lack of environmental accountability displayed by the government.

budget and human resource constraints, and politically isolated in institutes whose work the public, and most politicians, ignored, did not understand or cared about.

The end of the 1970s also witnessed political turmoil disruptive to a coordinated governance of the country. The opposition MDB was gaining strength and being elected at all government levels, previous rapid industrialization had paved the way for the emergence of powerful groups that came to dominate the economic scenarios of the military regime (the "financial and industrial bourgeoisie with multinational interests"[106]), and the general population would no longer accept the socially repressive cost being paid for an economic progress which inherently polarized income groups and was quickly losing steam following an international economic downturn.

The result was a political *abertura* ("opening" or "liberalization") which brought the dissolution of ARENA and the MDB in 1977 and permitted broad-based political participation and formation. This would precipitate the birth and crystallization of numerous parties with sometimes overlapping and shifting platforms and philosophies, including the PMDB, founded by moderates in the government-opposed MDB and the socially active "voice of the common man" PT (workers party), the first independent labour party. Both formed in 1980, these parties symbolized a radical shift towards repressed societal concerns, and the freedom of expression necessary to voice them.[107]

Still under military political dominion, some groups nonetheless began to wonder whether the degree of economic growth had indeed been worth the social, and environmental, disruptions which remained as its legacy.

PART 4 - Environmental Policies - the "Awakening" (1980-1995)

The 1980s and 1990s can be characterized as the era of the emergence of a latent environmental consciousness on a global scale, while the social structures within Brazil would begin to throw away the shackles of military strictures as the country strove to maintain its painfully sought and earned international recognition as a world power.

Despite the opportunities for progress in dealing with the country's escalating environmental problems in a period of "environmental awakening", Brazil's

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[106] Roett (1992).

[107] In 1978 for example, formal censorship was eliminated in the press and, to a lesser degree, in television and radio. Congress and the Judiciary also began regaining autonomy.

governments would follow an environmental policy pattern shaped by past historical influences and constrained by the present challenges of a nation buffeted by destabilizing forces.

The present and following parts form the principal components in the quest for revealing the underlying characteristics and fundamental trends of Brazil's environmental policy process.

I) A Period of Upheaval (1980-1985)

By the early 1980s, Brazil's economy had become the 8th largest in the world. What most analysts would describe as Brazil's "lost decade" began under severe economic duress. On the one hand, the refusal of international governments to accommodate the 1979 oil shock, the decision by then president Figueiredo (1979-1985) to push on with outdated development programs initiated in the previous decade and to proceed with monetary expansion, and the prevalence of automatic wage and price indexation all led to staggering inflation.[108]

Meanwhile, a debt crisis would emerge within the country as world recession entailed reduced exports, and massive previous borrowings, high real interest rates, public deficits, flight of capital and reduced willingness of foreign banks to finance the country all created additional constraints on the government's solvency. A heavy dependence on State-controlled industry and services had also produced its share of fiscal problems as State corporations represented 30 percent of Brazil's GDP and more than 60 percent of the foreign debt, much of which had been borrowed with only vague central government approval or knowledge.[109] Brazil's debt servicing problems (the largest debt of any developing country) would continue throughout the 1980s and include protracted negotiations with creditors, leading to reduced fiscal autonomy under IMF (International Monetary Fund) and foreign bank stipulations in 1983 and 1984.

The economic quagmire would also be paralleled by political confusion as the federal government allowed state and municipal direct elections in 1982 and politicians often joined groups "disregarding ideology, party platform or accountability to one's

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108 From a moderately elevated 40 percent/year in 1978, inflation would rise in leaps throughout the early 1980s, reaching 235 percent/year in 1985 (Graham, 1990).

109 Roett (1992). By the mid-1980s, there existed some 560 State-owned companies in Brazil.

constituents"[110] in the ensuing political jockeying for position. This fragmentation would also translate into institutional fragility with technobureaucrats increasingly perceived as no longer skillful enough or too numerous to ably steer the State ship, and Ministries or agencies unsure of the direction of political winds. Fighting for shares of a shrinking budgetary pie from a bankrupt State, the institutional atmosphere was not conducive to cooperation, with politically weak groups, such as environmental sectors or agencies, facing even greater challenges in carrying out their policies.

i) Environmental legislation is established

Within this turbulent economic and political activity, important environmental legislation would emerge in the early 1980s and give Brazil one of the most progressive and thorough environmental legislation frameworks in the world and orient the policy process to this day.

a) Industrial zoning law of 1980

The first important environmental law enacted by Congress, enjoying newly found legislative status, was designed to ensure that urban industrial facilities were properly classified and located according to their potential pollution and accidental emission threats. Certain facilities would thus require relocation while others may need to install pollution control equipment. New and existing plants could only build, receive funding or fiscal incentives from government organs, and operate contingent upon federal, state or municipal licensing approval granted by SEMA or state environmental agencies.[111]

Although the licensing system was already in use in certain states (by CETESB in São Paulo and FEEMA in Rio de Janeiro), this was the first time that federal legislation made it mandatory throughout the country's urban centers.

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[110] Kinzo (1993), page 147.

[111] The federal government would not forego control of "critical" industries though. Under the 1981 National Environmental Policy Law, licensing of petrochemical, chlorochemical and nuclear plants became an exclusive function of the federal government, after consulting with state or municipal authorities. (Findley, 1988).

b) The National Environmental Policy Law of 1981

After more than two years of negotiations with SEMA, various Ministries, state officials and private interests, in 1981 President Figueiredo proposed to Congress a law to establish a national environmental policy. Three months later Congress enacted, and the President approved, a much strengthened law No. 6.938, the National Environmental Policy.

Ambitious in scope and with comprehensive objectives, its formal mission was "the preservation, improvement and recovery of environmental quality favorable to life, with due protection of socio-economic development, national security interests, and the dignity of human life"[112], the latter elements being themes which had been strongly promoted at the Stockholm Conference in 1972. The law called for government action at federal, state and municipal levels within the framework of a National Environment System (SISNAMA) through the development of the following tools:[113]

a) Creation of environmental quality standards developed by SEMA, and expanded or made more restrictive by states or municipalities.

b) Ecological-economic zoning of critical areas "to provide technical-scientific grounding for the development of plans aimed at territorial organization".[114]

c) Environmental Impact Assessments (EIA) which were to precede all "activities modifying the environment" (including for example large government infrastructure projects or forest clearings above 100 hectares).

d) Creation of ecological reserves and stations, and protected areas which are of ecological interest by federal, state and municipal governments.

e) A national environmental information system.

f) Control and zoning of polluting activities (In addition to the 1980 Industrial Zoning Law) and

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[112] Article 2 of Law No. 6.938 (Findley, 1988).

[113] Based in part on Brañes (1991). These points are not exhaustive.

[114] CIMA (1991), page 73.

g) Imposition of liability upon polluters and despoilers to repair or compensate for the damage they cause.

The environmental management structure of the system (SISNAMA) would be formed as follows (see Figure 4, next page):

I) A "paramount organ" or senior body, the National Environmental Council (CONAMA), designed to advise, study and propose government policy guidelines for the environment, besides deliberating on rules and standards compatible with the preservation of the environment.

II) A "central organ", SEMA, that is to promote, direct and evaluate the implementation of the national policy.

III) "Sectoral organs", entities that are directly or indirectly integrated into the federal administration and that are wholly or partially engaged in the protection of environmental quality or in controlling the use of environmental resources (for example, the Ministries of Fisheries, Water, Mining, Agriculture or Indigenous Affairs).

IV) "Regional organs", state entities that are responsible for control and supervision of activities capable of degrading the environment (for example, CETESB and FEEMA) and

V) "Local organs", municipal entities responsible for control and superintendence of such activities within their jurisdiction.

Finally, states are to establish environmental standards that supplement and complement those established by CONAMA (and guided by SEMA). Municipalities may do the same as long as they observe both federal and state standards.

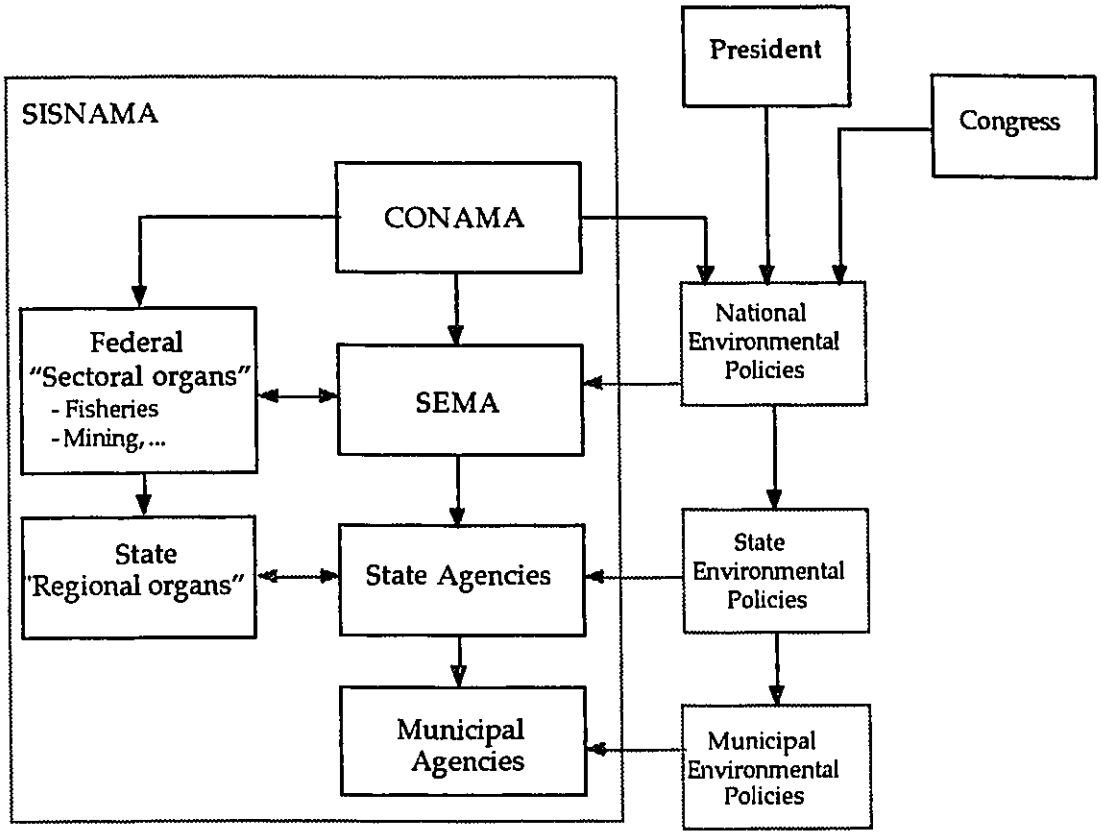

Figure 4 - National Environmental Policy Structure (1981-1989)

In order to ensure "adequate representation" from all policy circles, and to project an image of democratic decision-making within government, CONAMA's membership would include:

- representatives of state governments.
- the presidents of the National Confederations of Industry, Agriculture and Commerce and of the Confederations of Workers.
- the presidents of the Brazilian Association of Sanitary Engineers and of the Brazilian Foundation for the Conservation of Nature.[115]

[115] A professionally staffed national organization, the Brazilian Foundation for the Conservation of Nature, founded in 1958, conducts research and educational lobbying activities related to the preservation of natural areas. (Findley, 1988).

- two representatives of "associations legally constituted for the defense of natural resources and to combat pollution" (typically, officially sanctioned environmental NGOs) to be named by the President.

Responding to political "concerns", a presidential decree soon expanded the group to include the Minister of Urban Development and Environment, to be presiding officer, and representatives of the Ministries of Justice, the Navy, Foreign Relations, Transportation, Education, Agriculture, Labor, Health, Industry and Commerce, Mines and Energy, Planning, Agrarian Reform, Science and Technology, Culture, Interior, the General Staff of the Armed Forces and Finance.[116]

The inclusion of so many top-ranking officials, spanning all levels and priorities along the policy spectrum, would tend from the beginning to exclude the less politically leveraged groups from effective representation, make consensus nearly impossible and push the policy balance towards economic development since many of the agencies and interest groups represented in CONAMA favoured this approach.

It would in fact take two years to implement legislation giving CONAMA formal status, and an additional year to organize the first and only meeting in 1984. The Council convened three times in 1985, amid much controversy surrounding its composition and working.[117]

The detailed, if politically unwieldy, National Environmental Policy (NEP) blueprint was in fact a planner's dream. An important step towards addressing, integrating and accounting for the social and economic cause and effect links with the environment, the NEP would soon run into operational difficulties however:

1) Regional differences

Actual enforcement of environmental laws, regulations or standards was theoretically often left with the states and municipalities, with SEMA authorized to intervene in the absence of enforcement at these levels. By the mid-1980s, all states and many municipalities did in fact have at least one specialized agency with executive powers to implement policy decisions.

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116 Findley (1988).

117 Guimarães (1991).

Very few however had developed sufficient technical, political and financial capabilities to enforce policies effectively.[118] In addition, hampered by uncooperative sectoral agencies, and a very pro-development culture among state leaders, inhabitants and often the "enforcers" themselves, many environmental policies would remain but legislative documents unexpressed in the lives of most.

Unable to fill the policy enforcement voids due to a shortage of resources or will, SEMA would choose to focus on creating environmental standards, notwithstanding the fact that few could or would apply them.

2) Unfavourable climate

Buffeted by political and economic forces, the governance structure in Brazil was in crisis, further compromised by increasingly vocal, and disruptive, demonstrations by workers, bureaucrats and social groups all calling for *Diretas Já* (Direct Elections Now) to restore civilian government.

Cascading throughout the country, the streams of change did not encourage the impartial and efficient operation of the judicial, administrative and legislative structures. This lack of stability would also affect environmental policies, occasionally surfacing in emergency situations, but more often submerged or displaced by what were perceived as more fundamental priorities.

3) Lack of accountability

The NEP would signal the beginning of a movement towards the "polluter pays" principle by clearly making polluters responsible for their damaging actions. The law would remain silent however on governments' responsibilities on setting timetables for reaching the policy objectives, in effectively trying to fulfill their duties and penalties for failing to do so (or conversely, rewards for succeeding in doing so).

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[118] Except for a handful of states from the Southeast (Rio de Janeiro, São Paulo, Minas Gerais, Paraná and Santa Catarina), most states and municipalities would remain politically, economically (and geographically) remote from the ideological blueprint traced out in Brasília, well into the 1990s.

4) Threat of corruption

With very low pay, the absence of accountability mechanisms, an uncooperative judiciary and personal threats of violence (especially in the "frontier" areas of the North), staff within environmental agencies often viewed co-optation with perpetrators to be in their best interest. Ranging from active participation in illegal activities (e.g. monetary payoffs) to more passive forms (e.g. ignoring violations or enforcing laws selectively), individuals could often adopt divergent work behaviour.

5) Unsupportive institutions

Requiring a radical shift in culture and a change in the economic "rules of the game" in the use and perception of natural resources, the NEP would meet with indifference or open hostility from groups whose behaviour it was intended to modify. With much of its legislation still not formally enacted, due mostly to the policy-impeding complexity of the decision channels within CONAMA, and lax enforcement of that which was, many Brazilian institutions would proceed with "business as usual". Compliance occurred irregularly, with institutional cooperation but in instances which threatened their organizational integrity, such as the withdrawal of multilateral development bank loans if environmental parameters were not met.

The following case illustrates the environmental dynamics, and difficulties, which confronted "environmental players" during the 1980s, and whose consequences would orient federal and state policies (especially in the Amazon) into the 1990s.

Case 4 - Polonoroeste[119]

The government's Amazonian development policy had shifted twice during the 1970s, from a main emphasis on rural colonization to promoting large-scale projects, with no real effort made at checking whether the land was suitable, the colonists adaptable, or the schemes in any way viable in the long run.

In 1981, the government formally launched a program of major investments in the agricultural frontier areas of Rondônia and western Mato Grosso. This was in response to earlier state and federal attempts to promote agricultural development of areas identified as having fertile soils for cultivation, and which had led to a flood of uncontrolled migration to the region, with increasingly destructive environmental consequences.

The Northwest Region Integrated Development Program, or Polonoroeste, officially sought to absorb the human influx in a sustainable manner by expanding infrastructure and increasing agricultural productivity, rural incomes and social welfare.

Designed in collaboration with the World Bank, which would finance a third of the projected $ 1,6 billion cost, the program's centerpiece called for the paving of the BR-364 highway from the south of Brazil to the Amazon, a dirt road which had become nearly impassable. Around this would be grafted environmental protection objectives including colonization plots earmarked for perennial tree plantations (such as coffee and cocoa), the establishment and maintenance of national parks, forest reserves and ecological stations, and comprehensive ecological regional research and zoning programs.

Prodded by government propaganda, facing severe reductions in economic activity within urban centers, and with land prices beyond the reach of all but the wealthy, urban and rural workers or landless peasants would soon migrate in droves to the new frontier, followed closely, and sometimes preceded by, land speculators and ranching, mining or forestry interests.

The following development frenzy would increase Rondônia's deforested area from 3 percent in 1980 to over 24 percent in 1985,[120] lead to the invasion of protected areas, including indigenous reserves, by garimpeiros, loggers and squatters, produce mercury

[119] Adapted from Redwood (1993), Cowell (1990) and de Onis (1992).

[120] Cleary (1991).

poisoning of streams and rivers and result in chronic sanitation, waste and industrial pollution problems in growing urban centers whose administrators could not handle the influx.[121]

The program's environmental protection plans would in most part fail miserably due to:

- The federal government's desire for central control of a project more appropriately executed by local authorities, and for which it did not have the financial or institutional strength to guide.

- Environmental policy-conflicting government policies such as fiscal incentives, subsidized credits and infrastructure investments not financed by the project itself, helping to increase the profitability of logging, ranching, mining and prospecting activities.

- Sharp government cutbacks in the availability of subsidized credits for the planting of perennial crops.

- The absence of state-level environmental agencies to ensure the coordination and enforcement of policies.

- The inability of authorities to make agro-ecological zoning results known to settlers, such as the location of poor soils, due to lack of resources, motivation or concern.[122]

As a result of mounting pressure from international NGOs and ecological groups in the US, Congressional hearings regarding the management of its funds, and a comprehensive internal review, the World Bank suspended disbursements on all its

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121 Granted statehood in 1982, Rondônia's governor would initially welcome "all Brazilians to come and make Rondônia great". By 1986, he would be lamenting the destruction caused by Polonoroeste and calling for a halt to migrations to the state. No one seemed to dispute the need for, and benefits from, the paving of the BR-364. What was lacking, it was said, were adequate plans for the social and environmental effects its creation would bring.

122 In a few cases in fact, institutions sent settlers to areas clearly identified as inappropriate by others. For example, INCRA, the national colonization institute, was giving landless families free blocks of forest of between 50 to 100 hectares in certain areas as part of Polonoroeste, clearly surveyed and marked out. Meanwhile FUNAI, the government Indian Agency, had "interdicted" the area, having declared it the territory of an unknown and warlike tribe. Settlers and indigenous peoples alike would be killed in the ensuing clashes and reprisal attacks. (Adapted from Cowell, 1990).

loans for Polonoroeste in March 1985, just as a new civilian-led federal administration was taking office in Brazil.[123]

Bank funding was resumed in August 1985, under conditions of clear improvements in the program's environmental and Amerindian protection performance. This would result in the creation of state environmental protection agencies in both Mato Grosso and Rondônia, increased efforts at afforestation, and environmental enforcement, monitoring and protection activities.

Forced to action by crises and threats, the government had again failed to act upon pre-established environmental policies.

ii) Social unrest and the environment

The industrial transformation of Brazil which began in the late 1960s had generated significant direct and indirect benefits to the population as a whole. By the early 1980s, life expectancy had increased by ten years, the proportion of above-minimum wage earners had gone from one-third to two-thirds and the GNP had quintupled.[124]

This spectacular growth within such a short period had also generated greater economic inequity[125], a skewed distribution of social services to those in least need of them, and health-impairing environmental effects throughout the country. During the 1980s, diminishing government services due to the debt crisis, a stagnated economy, and rampant inflation which corroded the savings of many would all provide momentum and intensity to the social claims of the population.

Harassed and repressed during the 1970s, the Brazilian Catholic Church would nonetheless provide impetus to the formation and political articulation of landless peasants, the urban poor and Indigenous groups. Through the creation of Basic Christian Communities (CEBs), grass-roots groups emerged and urged members to

[123] It is at these hearings that one of Brazil's best-known environmental critics, José Lutzenberger, would make his views known regarding what he considered the "irresponsible and destructive" behaviour of his government's policies in the Amazon. In 1991 he would be named Environmental Secretary of Brazil by President Collor de Melo, the highest environmental position in the country.

[124] Guimarães (1991).

[125] Between 1970 and 1980, the richest 10 percent of the population had increased its share of national wealth from 40 to 50 percent while the poorest 50 percent had seen its share drop from 17 to 13 percent.

defend their political rights and become agents of social change. Inextricably linked to these issues, environmental concerns would also emerge, expressed for example in calls for land reform, the demarcation of Indigenous lands or safer industrial working conditions.

Rural workers unions began to form around these CEB clusters and would spawn a number of associated groups concerned with the protection or preservation of natural resources, such as the Rubber Tappers Union, a 200,000-strong association whose discordant voices would be united under Chico Mendes and whose particular agrarian reform demands could be expressed in the form of "extractive reserves", protected areas for the *seringueiros*.

Ecological movements would also slowly take root throughout this period, the vast majority of which could not really be termed "NGO" since they generally lacked formal organization, funding and political skills. Two types of groups emerged, the "conservationists/preservationists" who aimed their efforts at specific polluters or at preserving what were perceived as ecologically-sensitive areas. Mostly urban, university-bred and politically confrontational, these groups were fragmented, small, and would try to persuade municipal officials, with limited effect. The other group rejected the idea and aims which had produced the "economic miracle" and retreated to rural areas, seeking to form small-scale opposition to certain government programs, including perceived environmental destruction.

Unable to channel their claims for ecological reform towards the appropriate policy levers, and uncoordinated and atomized in their approach, both groups had little effect on the policy process, but would form the nucleus of powerful environmental players in the years ahead, strengthened by politically-effective and active international NGOs.

Finally, the restoration of direct elections and the associated emergence of political parties with platforms shaped by newly-released societal concerns would also produce the emergence of "green" candidates, mostly from the leftist PMDB and PT, and lead to their election in Congress or within municipal governments (in Rio de Janeiro and São Paulo for example).[126] Covering all forms of environmental philosophies, from pro-growth "environmental capitalists" to pro-preservation "environmental fundamentalists", and with divergent views of appropriate policies, strongly dependent

[126] Future Congressman Fabio Feldman for example would unite São Paulo environmental movements in their fight against nuclear power facilities in the late 1970s. Ultimately unsuccessful in their bid to prevent the operation of the West-German made Angra I reactor, they would nonetheless influence the creation of increasingly stringent environmental criteria for the construction and operation of nuclear facilities.

on their constituents concerns, these candidates would have but localized influence on the policy process.

The analysis of the preceding historical period, spanning the military regime, attempted to describe many of the long and short-term forces, environmental players and the various elements of the policy process in fairly great detail since critical underlying characteristics of the environmental policy structure in place today were cast during this period of great transformation in Brazil.

The following points highlight the elements most susceptible to helping understand and describe the evaluation of environmental policies in the country.

Long-term forces

- ◊ Economic policies dominated this period and clearly made any other policies subservient, with the latter preferably reinforcing their aims. For this reason, environmental policies, perceived as "development impeding", would receive low priority by decision-makers.

- ◊ Technobureaucrats would dominate the government administrative structure and did not place great value on environmental policies or institutions. Lacking political support at all top levels and perceived as career-enhancing liabilities, environmental institutions would become politically isolated and weak, never hoping to influence a decision-making structure which created strategies having great influence on the effectiveness of the environmental policies which they sought to administer.

- ◊ All important policy decisions were made by a closed circle of elites within the federal Cabinet, with minimal participation of outside interests.

- ◊ The Amazon region was perceived as a land to conquer, protect from foreigners and "integrate". At first small-scale colonization, and then large-scale developments would be promoted as means by which the government could solve social problems in other regions while achieving its economic and security objectives. The pro-development attitude of the government would also strongly shape the policies of environmental sectoral agencies in the region (such as

Forests, Mines and Water), orienting their culture towards resource exploitation (versus management).

◊ The World Bank and other lending institutions would begin to influence the environmental policy process by economic, and later political leverage, by making loans contingent upon the formulation and implementation of environmental policies.

◊ Accustomed to State control and intervention, most citizens would simply assume that the State was responsible for ensuring environmental stewardship, and should assume the costs of compliance. Widespread opposition to the "polluter pays" principle for example would affect the policy implementation stage.

◊ Political liberalization would engender a flurry of party formation with candidates shifting alliances regularly. This polymorphism would bring certain "green" issues to the political fore, but they would be local in scope and could not be subsumed within a common approach to environmental policies.

Short-term forces

◊ In periods of economic constraints, environmental policies received minimal or no support, considered of very low priority, illustrated for example in the elimination of subsidies for perennial tree crops in the Polonoroeste project, an essential component of the program if environmental objectives were to be successful.

◊ Environmental policies were often implemented but in cases of "grave and imminent risk to human lives and economic resources" emergencies or threatened by factors which would affect other government policies, such as the suspension of foreign bank disbursements (the Paraíba Metals spill and Polonoroeste cases illustrate these points).

◊ At the 1972 Stockholm Conference, Brazilian delegates would voice their opinion on the future orientation of environmental policy within their borders, namely that: a) Development should not be sacrificed in the name of a cleaner

environment; b) National resources were in no way "shared" with other countries and c) First-World countries should help fund the development projects of Third-World countries by transferring advanced environment-enhancing technology and pay for environmental preservation or clean-ups. These positions supported and emphasized the political and economic objectives which underpinned most environmental policy issues in Brazil, and would resurface periodically in official discourse into the 1990s.

Within the environmental policy elements,

A) Agenda Setting and Policy Formulation

◊ Federal planning activities would incorporate unclear environmental objectives and vague recommendations within National Plans, which were often in conflict with other parts of the plans calling for economic integration at all costs. Failing clear articulation of the means for achieving objectives and lacking true political support, most of these "global" environmental policies would not enter the ensuing policy process steps.

◊ Environmental policy objectives would generally be focused on solving technical problems, oriented mostly towards pollution abatement, and strongly impart a technical bent to institutions such as SEMA and state agencies such as CETESB and FEEMA. Thus "sanitized", environmental problems would be de-linked from their political and social dimensions.

◊ The government would perceive the colonization of the Amazon as a form of "environmental policy", although by no means the most important objective sought, since it would alleviate soil-depleting activities in other parts of the country and sanitation and pollution problems in large urban centers. Large-scale farming and ranching would also be seen as "promoting the maintenance of ecological equilibrium".

◊ Natural resource management was perceived essentially as but the "preservation of samples of Brazilian ecosystems."[127]

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[127] Guimarães (1991).

◊ A potentially powerful "paramount organ", CONAMA, was created in 1981, designed to advise, study and propose government policy guidelines for the environment. Virtually unable to reach consensus, dominated by a few key Ministries, thus preventing the effective representation of weaker political groups, and oriented towards economic development priorities, the environmental policy formulation process under CONAMA would be criticized.

B) Policy Legitimization

◊ Brazil would develop a wide and detailed array of environmental legislation at first dealing mostly with pollution laws, regulations and standards (at all government levels), and then become more wide-ranging with the adoption of the National Environmental Policy in 1981.

◊ At the state and municipal levels however, environmental legislation was required to follow that of the federal government, in the absence of which they could not develop their own. Furthermore, state and local governments could not significantly modify (or improve) federal legislation deemed inappropriate since they would be contravening Constitutional laws. Nonetheless, key state agencies such as CETESB and FEEMA would develop environmental legislation considered by many as the most advanced of all developing nations.

◊ Federal and state parks, forests and indigenous reserves and ecological stations would be created throughout the country (but few formally demarcated, and less protected).

C) Policy Implementation

"True" environmental organs were established at the federal level (SEMA and then CONAMA) and in all states and many municipalities by the mid-1980s. Implementation of most environmental policies would be severely handicapped however due to:

- ◊ Great divergence between regions as to environmental institutions' technical, political and financial capabilities, with Southeastern states typically more advanced than in other regions.

- ◊ A "pro-development" culture among state leader, inhabitants and often "enforcers" which inherently opposed legislation perceived as inappropriate in addressing their needs.

- ◊ The lack of accountability of environmental organs for failing to enforce legislation, at all government levels.

- ◊ The presence or risk of corruption, especially in frontier areas plagued by violence and politically isolated, with collusion between very low paid environmental officials and offenders.

- ◊ Uneven and unequal enforcement of legislation, for example at the municipal level where emissions were negotiated and regulations selectively applied. Enterprises thus remained uncertain about the environmental standards that they were expected to meet and unhappy about perceived differences in treatment between themselves and competitors. This would encourage enterprises to look for ways of avoiding penalties rather than reducing pollution.

- ◊ A general lack of cooperation or even open hostility from non-environmental and sectoral institutions, which often regarded environmental issues as economically and politically unattractive.

- ◊ An over-reliance on "command-and-control" enforcement tools such as fines and warnings which use up limited institutional resources and aim at remedying problems as opposed to solving their underlying causes.

- ◊ Serious pollution offenders such as State companies and others deemed essential to the "economic and security" interests of the country could not be shut down by states due to non-compliance with environmental laws. Treading in politically-sensitive areas, SEMA would rarely interfere in these matters as well. An important enforcement tool was thus lacking at the state and local levels.

- ◊ Politically isolated, SEMA would also be unable to carry out its duties given its minimal budgets and human resources, with technical staff unaccustomed and unskilled at increasing their political leverage.

- ◊ The general population, and many politicians, were often not aware of environmental legislation or of the government's policies in this area. Unclear, ignorant or unmoved as to the environmental consequences of their actions, many proceeded with "business as usual".

- ◊ Failure to integrate socio-economic components into development goals in the Amazon (such as the deforestation-enhancing absence of adequate infrastructure) led to disastrous environmental effects, negating any supposed environmental policies in the region.

- ◊ Financing options would be unequal throughout the country with minimal monetary amounts distributed to most state agencies (reflecting a chronic absence of a stable revenue base), very little to SEMA (as opposed to the scope of its duties), and relatively well-funded CETESB and FEEMA, which could also rely on sources from other state agencies and private sources as a result of consulting work.

- ◊ Aside from the inherently environmentally-constraining dominance of economic policies, other government policies ("incidental") would interfere with the effective implementation of environmental policies, such as fiscal incentives, low cost credit and minimal taxes for "effectively used" land (meaning "deforested") to large-scale ranchers and farmers.

- ◊ SEMA would nonetheless successfully implement or coordinate the creation of federal institutes and university centers specialized in environmental research, the results from which would play a role in shaping future policy.

D) Policy Evaluation

Formally charged with evaluating the effectiveness of environmental policies and proposing changes if necessary, SEMA and state organs such as CETESB would in general lack the resources and political power to influence the policy process beyond their roles in establishing pollution standards and the like. Furthermore,

given the limited ability of state or local officials to change or improve federal legislation, and the convoluted links which existed within SISNAMA, many officials simply did not grant much priority or credence to what they considered a futile attempt to modify existing environmental policies.

Finally, environment-oriented Church-led groups, grass-roots organizations and leftist political parties would begin to form coalitions during the 1970s and 1980s, although their concerns would remain local in scope and expressed discordantly. With minimal impact on the policy process in this period, they would form the vanguard of powerful social movements which would influence policies in the new democracy.

II) Environmental Repositioning (1985-1995)

A) "Shifting gears" under pressure (1985-1989)

By the mid-1980s, Brazil's economic health was in jeopardy, its political system, transformed by the gradual opening of modes of representation, was fractious and in a state of chaos, and societal voices from all quarters were rising in unison against an order which had lost its credibility.

Amid the disarray, an electoral college would select Brazil's first civilian president in twenty-one years, Tancredo Neves. Unable to assume office due to illness, Neves was replaced by his running-mate, José Sarney, who, unprepared for the presidency and little interested in it, assumed office with great trepidation in April 1985.[128]

Despite the heady expectations of a society all too eager to employ newfound political and social tools as means to express repressed desires and objectives, the country's macroeconomic situation throughout the 1980s (and the 1990s) would dampen the government's ability to deal with other non-economic issues.

Explosive inflation, ranging from 200 to 1800 percent a year between 1985 and 1989, would wreak damage on the Brazilian system by distorting relative prices, causing government revenues to fall due to great devaluation of money between tax collection and landing in the government's hands, precipitating capital flight, drying up foreign investment inflows and importantly, widen the income gap between rich and poor by

[128] Roett (1992).

rapidly corroding the value of possessions (unshielded from inflation for the uncreditworthy poor majority).[129] Abetted by a system patterned on automatic indexation and monetary expansion, inflation would also greatly hamper the effectiveness of most government policies, including environmental policies.

The country's debt problems would also become the source of policy obstacles and would eventually lead Brazil to declare moratoriums on its foreign debt payments in 1987 and 1989, resulting in debt rescheduling negotiations, and would affect the loan willingness of foreign banks in the future. Other factors would worsen the debt problem including: following the 1988 Constitution, states and municipalities were granted a greater share of public revenues without clearly transferring obligations for executing health, education, environmental or other duties, or with budgetary guidelines; spending units at the federal level were also granted excessive autonomy; and revenue and expenditure reports were subject to much "creative accounting" since budgets were not indexed to inflation. The resulting government accounting system made it impossible to verify true program costs, did not encourage accountability and thus became vulnerable to corruption and political favouring, in addition to deepening the debt crisis.

The Sarney government would attempt to curb inflation and alleviate debt problems through a series of stabilization plans by using devaluation and wage and price freezes combined with efforts to reduce civil servant positions[130] and carry out privatization of State-run companies. Despite early successes at reducing inflation, the plans would all fail to restore economic stability and alienate politicians, white and blue collar worker unions and other social actors within Brazil, irritated at the elitist and closed manner in which all of the economic plans had been designed as "surprise attacks".

On the political front, the proliferation of parties made possible by a liberalizing trend evident since the early 1980s had created a fragmented and unstable political system based on shifting alliances among candidates seeking a stake in shaping the new governance structure. To this day, this polymorphism in party allegiance and rapidity at which it can occur in federal and state assemblies as well as in municipal councils has

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[129] By 1989, the top 10 percent of the population would control 53,2 percent of the county's wealth (up from 46,6 percent in 1981) while the poorer half would see their share shrink to 10,9 percent. (World Bank, 1992).

[130] Considered by some as "vast, ill-paid , centralized and inefficient, providing a variety of unequal and discriminatory benefits" (Guimarães de Castro, 1993), the government bureaucracy numbered over 1,5 million civil servants. In his 1989 "Summer Plan", Sarney proposed to dismiss up to 60,000 workers. Aggressively opposed by large unions, the failure of this program precipitated the end of his presidency.

made for a representative subsystem which tends more towards blocking than making and implementing decisions[131] and creates a system in which the connection between party candidates and voters is very weak.[132]

Under these circumstances, political logrolling and the exchange of favours becomes indispensable in order to design and implement policies, while lobbying individuals, as opposed to groups or parties, becomes the only effective method with which other politicians or interest groups can hope to influence the policy process. Such a system can also lead to important divergence in ideology between the executive and legislative branches of government, and produces a decision-making structure in which the Executive attempts to plow its policies into the legislative body via authoritarian decrees, or must wheedle and plead with Congress in order to advance legislative proposals.

i) Environmental policies - a low priority at first

Amid macroeconomic and political strictures, and the resulting discarding and low priority afforded policies still perceived as economically impeding and troublesome, a few government initiatives would nonetheless be taken regarding environmental issues.

a) Recognizing the conflictive nature of having the SISNAMA (environmental system) components (CONAMA, SEMA, and other ministries) formally directed by the notoriously development-oriented Ministry of the Interior, a 1985 presidential decree created a new Ministry of Urban Development and Environment, with the new minister to preside over CONAMA, and with SEMA to remain an autonomous entity. The Ministry was given primary authority over federal policy in the areas of housing, basic sanitation, urban development and the environment.

Ironically, the new Ministry proved to be very pro-economic growth in its housing and urban development outlooks, negating or conflicting with many pollution abatement or natural protection policies which had been developed by SEMA,

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131 Kinzo (1993).

132 A possible exception may be the Workers Party (PT), closely linked with trade unions and neighborhood associations (through the efforts of the Catholic Church) and meant to represent the "rank and file". A left-wing party torn between meeting the needs of various social groups and trying to establish political unity, it nonetheless gained political representation in key government positions during the 1980s, and came in second , under Luiz Inácio Lula da Silva ("Lula") in the federal 1989 and 1994 elections. The PT, as other "social" parties, would also come to embrace certain environmental issues in the course of their efforts to gain social development.

enshrined in the 1981 National Environmental Policy (NEP), or being proposed by CONAMA. Indeed, little more than a year after the restructuring, Paulo Nogueira Neto, who had headed SEMA since its creation and was regarded as the strongest and most effective environmental spokesman in the federal government, resigned in protest over what he called attempts by the Ministry to curtail SEMA's independence.[133] His departure would greatly weaken an already politically feeble organization, and provoke the creation of a destabilizing managerial pattern which would see seven officials seated at its helm over the next five years, most of whom usually left SEMA in frustration, alluding to a "lack of political will to deal with the environment".[134]

b) A 1985 law reinforced an article within the 1981 NEP which allowed the *Ministério Público* [135] to bring public civil action to enforce "responsibility for damages caused to the environment" by using the judicial system to force polluters to compensate for or repair these damages. Law 7.347, enacted by the national Congress and signed by Sarney in 1985, also authorized public civil actions by private associations (such as NGOs) in addition to the Ministério Público.[136]

The few environmental groups that existed then however were not accustomed to using the courts; their practice was to complain to the state attorneys and ask them to take legal action. Furthermore, private individuals and groups generally viewed (and many still view) protection of diffuse or collective interests (such as the environment) as the job of the government, a social trait inherited from years of centralized, paternalistic treatment from the State.

Environmental groups nonetheless gained an important instrument for increasing their political leverage in having environmental laws or regulations enforced, an advantage which would grow as NGOs and other interest groups became more focused in their demands, professionally staffed and legally knowledgeable, combined with the legal strength of the Ministério Público, a relatively well-funded, nonpolitical group of career lawyers with substantial investigative powers and a strong commitment to the public interest.

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[133] Findley (1988).

[134] Guimarães (1991).

[135] Each state in Brazil, as well as the federal government, has a Ministério Público, which includes the attorney general's office and all district or state attorneys.

[136] Findley (1988).

c) Despite complex and awkward organizational mechanisms and a lack of just representation among all members, CONAMA would nonetheless adopt a resolution in 1986 which further reinforced Brazil's already advanced environmental legislation. Designed to protect or ensure effective management of natural resources, criteria governing the preparation of environmental impact studies (EIAs) required that such studies be prepared and submitted for approval by SEMA and appropriate state environmental agencies prior to the licensing of "activities modifying the environment".[137] The EIAs must discuss, at a minimum, the likely direct and indirect environmental effects of proposed projects, the geographic limits of the project and their effects, all technological alternatives to the projects and the environmental effects of those alternatives, and possible mitigation measures, including pollution control equipment. Socio-economic, physical and biological effects are to be considered. All studies are to be done by multidisciplinary teams not dependent directly or indirectly on the proponents of the projects, although the latter must pay all costs related to the situation.[138]

In other words, CONAMA had created one of the most thorough and "environmentally friendly" legislation packages in the world, comparable or superior to those of the US Environmental Protection Agency or other European agencies, and designed to address and solve many of the environmental problems experienced in the past *before* they occurred.

In contrast to this ambitious new policy, the harsh and "messy" environmental reality would be less glorious in the years ahead. Implementation would be impeded by:

- The lack of state and municipal laws regulating the EIAs, and so the near total burden of EIA administration would fall upon the shoulders of a resource-poor and overworked SEMA (and later IBAMA), resulting in a huge backlog of proposed projects. These same agencies would also find it nearly impossible to enforce the requirements on all new projects, or fine or prosecute offenders, since many projects were easily undertaken and operated without their knowledge.

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137 These activities include highways, railroads, seaport and terminals for chemical, mineral or petroleum products, airports, pipelines and sewers, electric generating plants and high-tension power lines, dams, mines, disposal sites for toxic or hazardous wastes, industrial complexes, and lumbering areas exceeding 100 hectares or of smaller areas considered by SEMA or by relevant state and local agencies to be of special ecological interest. (based on Findley, 1988 and CIMA, 1991).

138 Findley (1988).

- The resulting decision of many groups to forge ahead with backlogged projects due to financial imperatives, despite the presence of environmentally objectionable proposed practices which had not been reviewed.

- The fact that many projects would be under the guidance or direct authority of State agencies or companies , whose leaders often wielded considerable political authority, and who could thus escape from meeting many of the more constraining EIA criteria.

- Ineffective or nonexistent channels by which interest groups or those most affected by the proposed projects could make concerns known and evaluate and propose revisions to the EIAs.

- Many state governors, city mayors and politically powerful interest groups or individuals were opposed to submitting what were perceived as costly reports which would only delay and reduce the economic viability of important development projects for their regions, especially in periods of high debt and inflation.

Preoccupied with macroeconomic parameters wildly out of control, and grappling with a political system which required the expenditure and exchange of favours and constant cajoling, the Sarney government would soon be faced with what had seemed but trifling social trends, but which would rapidly propel environmental policies towards the top of the government's agenda.

ii) Shifting gears[139], the Constitution and the Amazon

The Sarney government's first Amazon policy was a refinement and continuation of the military-inspired "Operation Amazon" model. Two policies, designed and coordinated by the National Security Council, came to symbolize the geo and socio-strategic military orientation the State wished to pursue initially. The first, known as "Calha Norte", or the Northern Watersheds project, consisted of a program to build a series of forward bases along Brazil's sparsely populated northern international border and would give the military a coordinating role for the delivery of all government

[139] The expression is borrowed from Wesche and Smali (1992).

services and agencies operating within the *faixa de fronteira* - a 150 kilometer strip back from the border.[140]

The other was a new demarcation policy of indigenous lands, administered by the Indian Agency, FUNAI, which sought to reduce or open up traditional indigenous areas in exchange for a wider range of government services to its inhabitants. This policy, as formulated by the National Security Council, which approved all indigenous land claims, implicitly involved a bargain.

Although they would be perceived at first as security policy issues, these policies would in time be transformed into "environmental issues", as indigenous groups, state governors, garimpeiros, ranchers and military personnel would fight for the dominance of their respective development plans, all involving environmental tradeoffs of radically different, sometimes opposed, and often violent natures.

Amazonian policy for the Sarney government would at first thus fundamentally remain a security issue over which the military retained its control. A series of forces had been growing within and without the country however, and combined with structural characteristics of the Brazilian system and short-term triggering events, would precipitate a radical shift in the environmental policy orientation of government, aimed especially at the Amazon "problems".

a) The environmental movement

Throughout the 1980s, a number of groups would form or coalesce within Brazil around what can be labeled "environmental issues", although the groups themselves did not always identify the issues as such. Under the guise of issues dealing with land reform, social development, poverty alleviation and indigenous or other "oppressed peoples" rights, lurked environmental undercurrents which would eventually surface as it became more politically effective to link less "trendy" issues with the environmental preoccupations of politicians and the media. Other groups clearly identified themselves as environmental organizations, though the means by which they expected to achieve their ends differed in scope and intensity.

An abridged description of these social environmental players follows.

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[140] Wesche and Small (1992).

1) Nongovernmental organizations (NGOs)

The term "NGO" is used today to designate all groups of individuals that are formally constituted for the purpose of attaining certain social objectives, but which do not form part of government.[141]

Typically repressed during the military regime, which viewed social movements as politically destabilizing, the number and type of these groups exploded in the 1980s as various communication channels became unblocked and permitted them to voice their concerns. As mentioned, although a number of NGOs work within the field of "environmental protection", many deal but indirectly with issues generally associated with the environment, their main objectives usually identified under other social expressions. NGOs also differ greatly in their human, financial and material resources, their relations with authorities and in their views of the environmental problems they are attempting to solve since they mirror the ideas of different social groups.

Most NGOs which deal with the environment in Brazil are small, community-based associations which are run by the members themselves, and rely on limited amounts of primarily local resources. Often associated with Church-led organizations, their main goals are to solve local environmental problems, such as sanitation or industrial pollution concerns within their region, and target local politicians in trying to advance their cause. Either urban or rural, they exert little influence on the policy process at the national level, although they may at times be successful in obtaining more effective enforcement of existing environmental guidelines.

Fewer in number but considerably more influential on the environmental policy process, "modern" NGOs began forming in the mid- 1980s with professional, highly trained, mostly urban-bred staff, and with clearly targeted, specialized programs aimed at key officials at different government levels. Dealing mostly in well delimited areas such as air and water quality, environmental education or natural resource management, they are usually less confrontational with government bodies, but can be quite vocal and demonstrative in the media. Some are affiliated with international NGOs (such as Greenpeace or Friends of the Earth) and can count on sufficient financial, managerial and political resources to reach their objectives. Funds are obtained through First World organizations, Brazilian society, membership dues or by

[141] Brañes (1991).

contracts with Brazilian government organizations, which have begun to channel more policy implementation tasks to these groups.[142]

During the Sarney regime, these groups were particularly successful in raising the profile of "oppressed" groups such as indigenous peoples or seringueiros and indirectly exerting political pressure on the government through well-timed media denunciations of the "destruction of the Amazon" or the "genocide of forest-dwellers", and by pressuring international lending institutions, such as the World Bank, to review or suspend their development loan engagements with Brazil.

2) Other groups

- The "peoples of the forest"

Throughout the 1980s and 1990s, violent encounters continued unabated in the Amazonian "frontier" areas as a large array of groups fought for territorial rights or claims to land whose ownership was often unclear or which held resources coveted by others. Clashes flared as posseiros, squatters, ranchers, large and small farmers, garimpeiros, indigenous groups, land speculators and seringueiros among others attempted to defend, lay claim to or otherwise "develop" what they considered rightfully theirs or at least wrongfully not theirs also. Hundreds died in the ensuing conflicts, with little or no involvement from local, state or federal police or the judiciary.

In addition, with land reform issues still far from resolved and opposed by influential political players, and rampant inflation creating a rush to purchase land as a financial hedge, many groups claiming historical, yet officially unrecognized, ownership of their territory began forming coalitions to represent their political, and environmental interests.

Forged out of the regroupment of Rural Workers Unions, and headed by the president of the Xapurí local in Acre, Chico Mendes, the National Council of Rubber Tappers was formed in the mid-1980s, and gradually recognized the powerful advantage of linking what they considered land reform for seringueiros to the concept of "sustainable development" and environmental issues which were emerging internationally. Thus was formed the concept of "extractive reserves" to act as a bridge between private and public property and the use of natural resources, whereby the inhabitants, seringueiros in this case, would receive non-exchangeable ownership of

142 From Viola (1992). Examples of these "modern" Brazilian NGOs are FUNATURA and S.O.S Mata Atlantica.

forested areas, where forest products such as natural rubber, oil-bearing fruits, gums, resins, wax and nuts could be extracted and marketed.

Soon a nationally and internationally known figure, Chico Mendes would also effectively lobby the Inter-American Development Bank (IDB) in Washington in 1986 to halt financing of the asphalt capping of an extension to the notorious BR-364 which was to pass through Acre, since the historical territories of rubber tappers would be invaded and destroyed, he conjectured. In 1987, the IDB suspended a $77 million loan pending the incorporation of environmental protection measures in the region.

The Brazilian government responded by creating forest reserves in Acre, two of which would be "extractive reserves" for seringueiros.

Meanwhile, indigenous issues in Brazil had also begun to attract world attention through the efforts of national and international NGOs, Church movements, and through groups such as the Union of Indigenous Peoples, representing the over 200 indigenous groups in Brazil. Initially portrayed as "people" or "culture" issues, the perceived plight of indigenous groups was soon linked by the media to that of the noble "custodian of the rain forest" fighting development forces which sought to exploit, or at the very least, ignore their rights and destroy their habitats. Although these claims were not entirely untrue, the Brazilian government had nonetheless been setting aside indigenous reserves since the 1930s, despite the fact that most were not demarcated by the 1980s, or their borders protected to any degree. Thus joined in the environmental policy sphere, indigenous land claims had been elevated in the government's policy priority list due mostly to international pressure.

In order to keep the interests of these groups before the national and international press, and to harness forces which animated their organizations, The National Council of Rubber Tappers and Union of Indigenous Peoples formed an alliance under the rubric "the Alliance of the Forest People". Notwithstanding the fact that these groups had also been involved in numerous land and resource conflicts with one another for over a century, this alliance would form a powerful image in the minds of a mostly First World audience, eager to embrace what appeared to be an ecologically sustainable and harmonious relationship with nature. This resulted in an increase of funds channeled towards NGOs dealing with their "plight" and heightened demands from world governments asking Brazil to move towards solving their socio-environmental problems, to the despair and anger of Brazil's governments and many citizens, who regarded this as unwarranted outside interference.

- The Roman Catholic Church[143]

Given its size (between 80 and 90 percent of Brazilians are Catholic) and historical influence on Brazilian society, the Roman Catholic Church today wields considerable influence on the social spheres within the country, and by extension directly and indirectly affects the political and policy process.

Often persecuted during the military regime for promoting social activism through its support or coordination of various groups such as Basic Christian Communities (CEBs), Indigenous Missionary Council (CIMI) or rural workers unions, the Church has emphasized the need for social reform or the increase of human welfare as opposed to environmental preservation.

Though it is not apathetic to environmental causes or unsympathetic to environmentalists' calls for reform, the Church has made a conscious decision to emphasize the provision of human need over environmental protection, per se, known officially as its "preferential option for the poor". Certainly aware of the environmental problems in Brazil, as well as the necessity of safeguarding the Creator's world (in the words of the pope), it is also clearly attuned to the very real need for providing basic goods and services to the population, especially the "downtrodden" in Brazilian society.

The Church has nonetheless spoken out very strongly on environmental abuse, especially as it affects the native population, and it has called on occasion for more effective means of resource management. In these cases however, the environment is "defended" but as a means to advancing social well-being, although the resulting political debate much follows the lines of less anthropocentric environmentalist arguments calling for the preservation or protection of the environment.

Regardless of motivation, the Church's calls for the enhancement of human welfare, inextricably linked with political and environmental issues in a country which was, and still is, faced with mounting ecological problems, could but orient government policy in attempting to define more equitable and ethical environmental policies throughout the Sarney, and subsequent, political regimes.

- Political groups

A certain number of "green coalitions" would crystallize within the political arena in the 1980s, although few candidates would run on a platform built uniquely on

[143] Based largely on Hewitt (1992).

environmental issues.[144] Synchronized with the rise in public awareness and concern for the environment, these groups would create a political legitimacy to "green" concerns which had been lacking in the past, and act as a countervailing force of mostly federal power against the regional elites' development aspirations, concentrated in the Southeast, but also increasingly in the Amazon region.

The splintered nature of party ideology and shifting alliances among groups did not lend themselves well to the establishment of a united movement centered about the advancement of environmental policies, but certain "social" parties could be more readily identified with them such as the Green Party, established in 1986 in Rio de Janeiro (and shortly after in Santa Catarina) or the Worker's Party (PT), which was concerned less with environmental preservation than to the advancement of social welfare through the improvement of environmental conditions and management, if need be.

The presence of key political leaders oriented towards environmental concerns within Congress, as state governors or municipal mayors, could have a large impact on the effectiveness of environmental policies at all government levels. The following case is illuminating in this regard (in addition to illustrating a host of other environmental policy related issues).

Case 5 - Cubatão[145]

Located between Brazil's largest port, Santos, and largest city, São Paulo, the city of Cubatão was designed during the military regime as a showcase for the industrial prowess of the nation, built around major multinational and State-owned companies producing cement, steel, fertilizers and petrochemicals, built when there were no applicable environmental or land laws and regulations.

Situated on marshy and poorly drained soils and with inadequate air circulation due to the proximity of mountains, the city had earned the title as "the most polluted place on earth" by the early 1980s, with its inhabitants afflicted by chronic health problems, and with no fauna or vegetation within its vicinity. Long neglected by CETESB, the state environmental agency, due to the politically sensitive nature of the situation, and

[144] An exception to this would be São Paulo Congressman Fabio Feldman, who would be instrumental in designing an environmental chapter in the 1988 Constitution.

[145] This case is based on information drawn from: World Bank (1992), Findley (1988), Keck (1994) and the Globe and Mail (Toronto), November 6, 1990, p.A13.

ignored by a resource-poor SEMA, the city was an ecological "time-bomb", despite the existence of stringent environmental regulations, which were being flouted, and could have improved or alleviated most environmental damage.

Upon taking office in 1983, the state governor of São Paulo had decided to make the clean-up of Cubatão a top priority of his administration. He reinforced the technical and planning capabilities of CETESB, whose staff was encouraged to work closely with local officials to solve the pollution problems.

In 1984, an atmospheric inversion and mounting levels of particulates spurred the governor to decree an unprecedented state of emergency in Cubatão. CETESB promptly shut down nine industries and ordered an evacuation. When atmospheric conditions improved, the state of emergency was downgraded to a state of alert (the eighth that month), and people were allowed to return to their homes.

A few months later, a pipe at a fertilizer plant ruptured, releasing massive amounts of ammonia gas. Six thousand residents were evacuated, and many hospitalized. The fertilizer plant was fined (by SEMA), but the state governor protested that the penalty was too small.

As a result of mounting public pressure, due largely to greater knowledge of the environmental pollution and health links made possible through a series of articles in the national press, recurring political pressure at the federal and state levels, and the presence of readily targeted pollution sources, action was finally taken starting in 1986.

CETESB began fining pollution offenders on a daily basis, became more aggressive in using temporary plant closures to deal with recalcitrant polluters, forced the worst offenders to install pollution-control equipment (aided by loans from the World Bank) and the Ministério Público of the state of São Paulo initiated public civil actions seeking restoration of damaged wetlands, waterways and hillsides.

By 1990, air pollutants had been reduced by 70 percent and the city was making a comeback after a nearly six-year, $500 million clean-up effort. CETESB announced that Cubatão was "off the critical list, but it will always be sick". Ironically, one of the worst polluters is a steel mill owned by the state of São Paulo, whose owners have been able to exert political pressure on the (new) governor to escape the stringent environmental regulations.

In this case, an environmentally-motivated governor, the clear existence of environmental offenders and the tools with which to enforce regulations, the presence of legally powerful state institutions and the lubricating effect of financial resources catalyzed by well publicized environmental crises, provoking public outcries, all

contributed to imparting policy-implementation momentum to a largely inertial system. Still oriented towards economic maximization however, the industrial structure of Cubatão, symbolizing much of the Brazilian reality, openly resists the enforcement of "command-and-control" measures, with the result that they are not applied impartially to all enterprises, public and private.

3) The 1988 Constitution

The democratic impetus provided by the first non-military government in years also imparted a flurry of political activity surrounding the drafting of a new Constitution, to be operational by 1988. A Congressional Constituent Assembly was formed to examine and propose the key elements which should be included in the new societal blueprint, and granted considerable input from many sources within Brazilian society who were permitted for the first time to submit revisions to the constitutional text.

The result was a radically altered document which addressed the concerns of many interest groups, at the cost of a cohesive and straightforward document which could guide and inspire the legislative and executives processes within the country. On the one hand, social groups were successful in formulating amendments, and gained in the areas of labour, women and indigenous rights and issues, while on the other, it also gave every economic interest group in the country a chance to entrench its own privileges, including a much watered-down chapter on agrarian reform, which had been vehemently opposed by the landed elite, and was a major blow to the "progressive forces" in the Assembly, including the PT, which had placed land reform at the top of their constitutional agenda.[146]

The Constitution also expanded the executive, legislative and budgetary powers of states and municipalities by allowing them much greater revenue generating ability, but would remain vague on how these new-found powers were to be utilized, and within which jurisdictional areas. This lack of a coordinating mechanism between government levels would create a large degree of overlap among the various governing organs, as well as voids in the various policy elements, including environmental policies.

The organizing abilities of Congressman Fabio Feldman would also pull together a "green coalition" within the Constituent Assembly, whose aims were to include the first constitutional chapter in Brazil dealing exclusively with the environment. Supported by a large number of deputies who voted for the chapter (partly since it seemed at the time

[146] Wesche and Small (1992).

to be an essentially costless act[147]), and riding a surge in public interest in environmental issues, Article 225 of the Constitution makes mandatory on public authorities:[148]

a) Preservation and restoration of essential ecological processes and the management of species and ecosystems.

b) Preservation of the country's genetic endowment.

c) Definition of ecologically sensitive areas to be protected by law.

d) Control of the production, marketing, and use of technologies, methods and substances that represent a risk to human life, the quality of life, or the environment.

e) Promotion of environmental education and public awareness of the need for environmental preservation, and

f) Protection of flora and fauna and legal prohibition of practices that endanger their ecological function, provoke species extinction, or submit wildlife to cruelty.

The Constitution also identified the Amazon forest, the Serra do Mar mountains, the Pantanal, and the coastline as "national endowments" whose use would be regulated to ensure their preservation.

Furthermore, the Constitution recognized indigenous peoples' right to their traditional lands and culture, as well as to the resources within their territories. It was also the State's responsibility to "demarcate, protect, and make others respect all their possessions", and any resource exploitation on their lands could only take place with the explicit authorization of Congress. These last points would be systematically ignored, abused or not enforced in the following years, for lack of institutional resources or will, and the clear refutation of their intent or meaning by small but powerful segments of society (including state governors, military generals and a motley assortment of groups in the Amazon).

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147 Keck (1994).

148 The following is taken from the 1988 Brazilian Constitution Chapter VI, Article 225, "Environment".

Hailed by environmentalists within Brazil and in other countries, and considered by the United Nations as one of the most advanced constitutional texts dedicated to environmental issues in the world, this chapter would come to symbolize the main dilemma involved in Brazilian environmental policies: Exceedingly coherent, complete and progressive legislative texts, laws, regulations and standards would, or could, simply not be implemented due to a lack of awareness or will, insufficient human, financial and material resources for the environmentally responsible authorities, and a vastly unequal distribution of institutional capabilities throughout the country. Further impeded by a generally unsympathetic legal, political and economic system in which important policy decisions were made for the most part removed from the public eye, many environmental policies, now also supported and guided by a comprehensive constitutional chapter from 1988 onwards, could not be translated as effective, operational realities in the lives of Brazilians more concerned with day-to-day activities (or survival) than with barely known or culturally foreign ideas involving harmonious relationships with an objective "environment".

b) Fiscal constraints

The debt and inflation crisis which was gripping the country in the 1980s would create budgetary tightening throughout Brazil, as drastically lower growth rates, and a reduced inflow of private and foreign investment sharply curtailed government expenditures on what appeared as uneconomical or risky public endeavors. For example, four major infrastructure projects were completed during the Sarney government: the Tucuruí, Balbina and Samuel hydroelectric dams, and the Carajás mining/railway complex (all of which raised public outcries over perceived environmental abuses), but no new projects were begun.

Projects or programs which had seemed economically viable in the past were scrutinized more closely by central planners in Brasília, and resulted in the elimination of agricultural subsidies and fiscal incentives for cattle ranching in the Amazon. As well, two of the more important subsidies which encouraged deforestation - below market agricultural credit and the plantation reforestation incentives programs - were both eliminated in 1987 as part of the government's deficit-cutting plans.[149] The removal of these economic subsidies and incentives could of course not halt deforestation

[149] Wesche and Small (1992).

practices, which ran counter to environmental policies, but would at least reduce their conflicting influence in impairing the effectiveness of these policies.

- The World Bank

The International Bank for Reconstruction and Development, or World Bank, the unusual combination of commercial bank and development institution, had been coming under repeated attacks from environmental groups, the US Congress and donor nations during the 1980s as a result of what many considered questionable loans which promoted environmental degradation or at least did not give enough credence to the importance of including environmental criteria as conditions to their loans.

In response to these criticisms, and as a result of an internal evaluation which gauged the Bank's effectiveness in reaching stated project objectives (and which found the process to be deficient), the Bank create a new environmental department and four regional units in 1987. It was decided that loans were to be screened more thoroughly for their environmental impact and that NGOs were to be more actively consulted in both donor and borrowing countries.[150]

The World Bank's effect on the Brazilian environmental policy process had been important in the past (the country had received nearly 10 percent of the Bank's total lending in the past 30 years[151]), as environmental institutional capabilities and operating mechanisms had been strengthened and guided by World Bank staff (such as CETESB, SEMA, and a few other state agencies). The new and stricter environmental guidelines required by the World Bank as *sine qua non* loan conditions would soon frustrate or infuriate the Brazilian government however, in great need of these loans in the absence of other foreign sources, but which viewed the "green conditionality" attached to the loans as excessive meddling in the country's environmental policies, and a modern form of "ecological colonialism".[152]

Although acknowledging that it cannot enforce a country's environmental policies, the Bank will not grant loans for projects which it considers have not been appropriately

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150 Worldwatch Institute (1994).

151 Redwood (1993).

152 The United States was particularly targeted as a "meddler". Voting power on the World Bank's board of directors is related to the level of a donor country's financial contribution. As of 1993, this proportion was US: 17 percent; Japan: 7 percent and Germany: 5 percent. (Worldwatch Institute, 1994).

analyzed in terms of environmental impacts, or whose environmental requirements cannot be properly observed or enforced once the project is completed.

These loans are additionally critical for cash-strapped countries, for once they are approved, the World Bank's "seal of approval" usually opens the spigot for other bilateral and multilateral funds, as well as for private bank loans.[153] The loss of this multiplicative effect usually provides incentive for borrowing countries to attempt to satisfy the Bank's environmental conditionalities.

In early 1989, following intense negotiations between the World Bank and the Brazilian government for a $500 million loan for power development (the "Second Power Sector"), including several Amazon dams (already sensitive environmental and political areas), the Bank's executive board rejected the loan due partly to disagreements over the inclusion of nuclear development, but mostly because of deficient environmental impact study procedures (which, it may be recalled, had been elaborated in great detail by CONAMA in 1986) on the part of the major project beneficiary, Electronorte.[154] International environmental NGOs had also protested loudly against any Bank loans which would "destroy the Amazon". An infuriated Sarney did not minimize tensions by stating that "the World Bank is meddling in our internal political affairs(...). We Brazilians run things in Brazil, and we don't accept interference".[155] A common theme throughout Brazilian history, a financially hobbled government would nonetheless adopt a more pragmatic position a few months hence.

c) The rise of public awareness

During the 1980s, a series of circumstances and events would emerge and transform the collective image of Brazil in the minds of a wide audience, from that of an "exotic" destination, the land of coffee, Brazil nuts, carnivals and soccer (provided mostly by simplifying media reports) to that of the place where "all those trees are burning".[156]

With mounting scientific awareness of the link between carbon emissions and the threat of "global warming" would come images of burning Amazonian forests with

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153 Worldwatch Institute (1994).

154 The state-owned Amazonian electricity development company also had over $25 billion in debt, over a quarter of Brazil's total. (Montreal Gazette, Dec. 24, 1988, p.B5, "Brazil moves to harness the Amazon").

155 Quoted from de Onis (1992), page 174.

156 Cleary (1991).

billowing clouds of smoke. In the media rush to cover this newfound "tragedy" - despite the fact that deforestation had been proceeding for years - elements of truth would intermingle with conjecture, lack of information and exaggeration.

Presenting the Amazon as the embodiment of nature, descriptions would emerge and alienate a government and population already weary of the perceived ill motives foreigners had for the region and would see the ensuing media and political treatment as the unfair singling out of their country as an "ecological villain".

Adept at using media sources as political leverage, international environmental groups would denounce the destruction of the "lungs of the earth", all to make room for cattle ranches exporting beef to feed the "Burger Kings" of the world - both false and inflammatory suggestions.[157] Indigenous groups and seringueiros would be portrayed as "defenders of the rain forest" and attract worldwide attention through well-publicized concerts and summits, raising money and awareness for their plight, and news conferences and talk-show interviews surrounding First World visits by Brazilian indigenous leaders.[158] Heightened international awareness would also create a rapid increase in contributions to environmental NGOs, many of whom subsequently began "Amazon watch" campaigns, despite limited or no experience in dealing with the social and economic constraints faced by Amazon inhabitants, including the nearly 60 percent who lived in urban centers. And the late 1988 shooting death of Chico Mendes at the hands of a gunman hired by ranchers, who had never accepted the appropriation of their lands for government-created extractive reserves, would provoke an international outcry, the intensity of which would clearly surprise Brazilian leaders.

Scientists and environmentalists alike argued over rates of deforestation and their effect on the environment, although the 1988 release of satellite images and data of the region , pieced together by INPE, the Brazilian Space Research Institute, would have the impact of a "veritable atomic bomb" on public opinion, both inside and outside Brazil, since the new deforestation estimates were more than triple previous official estimates.[159]

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157 The Amazon region in fact generates as much carbon dioxide as oxygen, due mainly to biological breakdown in its waterways, and Brazil is a net *importer* of beef.

158 Rock star "Sting" for example would give concerts and news conferences to generate funds for the demarcation and protection of the Xingú Indigenous Reserve, amid controversy as Brazilian grass-roots organizations would complain about their lack of involvement.

159 The INPE estimated that 200,000 km^2 of Legal Amazonia had been burned in 1987, of which 80,000 km^2 represented newly cleared forest (Wesche and Small, 1992). And exceptionally dry season and landowner fears of agrarian reform measures (who cleared land to secure their claims) contributed to this.

In newspaper and television coverage of the Brazilian Amazon, statements about deforestation would fall (and often still do) into two main categories: "this year, an area the size of X was destroyed" and "at present rates, the Amazon forest will disappear by the year Y". Often confusing global deforestation with Amazonian deforestation, neglecting the fact that almost all deforestation follows highways, and that the economic situation in Brazil precludes road building on anything like the scale of the 1970s and early 1980s, and omitting to mention that a significant number of fires occurred in Amazonian savanna and wetlands (and not rain forest), many Brazilians perceived these kinds of statements as confirmation that international interest in the Amazon is both uninformed and malicious.[160]

The Brazilian government would further feel provoked in 1989 when, following a state visit to the US by president Sarney, the US Secretary of State would suggest that Brazil consider "debt-for-nature swaps", whereby a county's foreign debt is reduced in exchange for setting aside and using an ecological fund to improve that country's environmental policies. Despite the fact that these transactions usually involve very small amounts relative to a country's financial debt, the political backlash of this suggestion would be swift. Amazon pact countries led by Sarney would again denounce the proposal as outside "interference" in Brazil's internal affairs, amid allegations by the future head of Brazil's Environmental Secretariat that "the government has no credibility in environmental matters".[161]

iii) The government responds

Financially isolated, faced with an onslaught of attacks on its environmental performance from groups both inside and outside the country, and perturbed by the economic and social conflicts apparent throughout the Amazon region, in 1989 the

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Deforestation rates would largely decrease in the following years, due in part to a change in government fiscal, credit and incentive measures, and more aggressive enforcement of forestry regulations. In 1990, 1991 and 1993, INPE would revise its deforestation estimates downward by over 50 percent, as a result of "better imaging and interpretive capabilities". The point here is that regardless of actual figures, well-timed media leaks, backed by publicly little understood and thus powerfully persuasive technical results, could alter the public perception of environmental problems, cleansing them of the more important but rather complex social issues associated with these "problems".

160 The preceding paragraph is based on Cleary (1991). In August 1989, during serious forest fires in France, two of Brazil's quality newspapers, *A Folha de São Paulo* and *Jornal do Brasil*, could not resist noting that "at present rates, all French forests will have burned down in five weeks" (Cleary).

161 The Montreal Gazette, March 1, 1989, p.D16.

Sarney administration announced an environmental management program called *Nossa Natureza* or "Our Nature". Prepared by a team of federal bureaucrats pulled from a wide array of government agencies under the direction of the National Security Council, still one of the most powerful policy-setting bodies in government,[162] and with little input from politicians or environmental groups, the program would come a long way toward meeting international concerns for the environment, and signal government's willingness to adopt a more cooperative approach in addressing these concerns. Sarney would nonetheless take the occasion to denounce international ecologists for "a crude campaign that affects our products, our people and our institutions, creating problems for the stability of our government".[163]

A complex package of 54 separate administrative decrees, draft laws and interministerial memoranda, the program included:[164]

- The suspension of all fiscal incentives for cattle ranching administered by SUDAM.
- The initiation of an agro-ecological zoning project for the Amazon which would divide the area into 28 subunits in order to allocate Brazil's future development projects rationally.
- The creation of six new national parks.
- Banning the export of round logs.
- Restricting the legal use of fire to clear land.
- The licensing of chain saws.
- New laws controlling all phases of pesticide use in Brazil.
- The registration of producers, tradesmen and importers of metallic mercury.
- The promotion of environmental education and public consciousness regarding conservation of the Amazonian environment.

In addition, the weak and competing SEMA, and pro-development Forestry Institute (IBDF), Natural rubber and Fisheries agencies were merged into a new Institute of Environment and Natural Resources (IBAMA), whose official tasks would include the administration of the national forestry services and national conservation units, the

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162 The 1988 Constitution would grant the Security Council, inherently military in outlook, a mandate to "propose criteria for the preservation and exploitation of all types of natural resources".

163 de Onis (1992), page 175.

164 From information drawn from Wesche and Small (1992), Valadares (1991) and de Onis (1992).

regulation of the production and trade of natural rubber and fish products, policing the extremely lucrative clandestine traffic in wild animal species, as well as all technical and enforcement duties previously held by SEMA.[165]

Finally, "Our Nature" also signaled an official recognition by the Brazilian government that past policies in the Amazon had been economically and socially disorganized and destructive, had not fully taken into account the needs of its inhabitants, and that future endeavors in the region would require a carefully crafted strategy more finely attuned to social and environmental realities.

A clear statement of intent on the part of government to move toward solving the environmental challenges in the country - and the Amazon in particular - the program would nonetheless run into early implementation difficulties:

1) Despite an early flurry of institutional activity, coordinated by IBAMA's new head, aimed at enforcing environmental forestry regulations and which witnessed the levying of record fines by newly inspired officers, IBAMA would soon discover its dearth of resources given the scope of its duties. Afforded a staff ten times smaller than that of the Rio de Janeiro botanical gardens,[166] and unable to upgrade or purchase equipment, IBAMA would be spread thinly in trying to implement environmental policies.

2) The expected immediate inflow of international funds to support the environmental effort did not materialize, leading to bitter criticism of the dishonesty in the international "green" campaign against Brazil. Combined with a lack of funds in government, the various policy elements would not gain momentum, thus impeding implementation.

3) Facing complaints of political and economic mismanagement, the Sarney government was not popular as it neared the end of its mandate, and "Our Nature" did not have broad political support at the federal level. As well, the cold reception for the program evident among certain Amazonian state governors, who perceived its elements to be ill-suited to the development objectives they had for their regions, would make for difficult implementation of

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[165] CIMA (1991).

[166] Guimarães (1991).

policies generally opposed by political leaders as well as the population at large.[167]

4) IBAMA's internal structure would be wrought in conflict as the pro-development tendencies of the forestry, rubber and fisheries sectors fought for a place among the more protectionist orientations of SEMA. Unable to resolve these differences and define a commonly-shared mission, IBAMA staff would form coalitions which would hinder the effectiveness of the organization in reaching its broadly defined environmental objectives.

The Sarney government's final environmental initiative would come a few days before it left office in 1989. After months of internal lobbying by Acre rubber tappers and support from Brazilian and international NGOs, the government made the dramatic announcement that 1,6 million hectares in new extractive reserves in Acre would be decreed, to be named the Chico Mendes Extractive Reserve. It would now be up to the rubber tappers to prove that the extractive reserves they had fought for could work, a task made much more difficult, given the open hostility reserved for the plan, and the loss of revenue it represented for the regional landed elite.[168]

This last ecological act would symbolize the environmental policy process during the Sarney regime: innovative legislative advances formulated largely in response to financial and political constraints which shaped their structure, but which lacked effective implementing mechanisms and resources, further hindered by the unfavourable reception of those whose behaviour it was meant to alter. The government's Amazon development policy had shifted however from forward to neutral.

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167 This opposition could be intense. An aggressive enforcement campaign to slow deforestation in Acre, during which record fines would be levied and environmental impact studies required before forest clearing (both backed by federal and state environmental legislation) would endanger the state head of IBAMA in Acre, whose life would be threatened many times. In a region which had seen hundreds die over land and natural resource disputes in recent years, these threats were not idle.

168 Wesche and Small (1992). Two years later however, and claiming a lack of resources, IBAMA had not begun demarcation of the reserve, the only true legal protection of ownership rights possible for these types of land under the Brazilian judicial system.

B) "At peace with nature" under Collor de Melo (1989-1992)[169]

By late 1989, Brazilian foreign debt had reached new heights, inflation hovered near an extraordinary 2000 percent per year, and the country had elected a young, energetic president, promising to lead Brazil into a new era of international openness, in trade and investment, cooperation and hopefully, prosperity.

Sensing the opportunity offered by what Sarney had named the rain forest "mania", and a new desire by First World countries to restore environmental health to what many perceived as a "battered" world, Fernando Collor de Melo saw the importance of linking the environmental issue with Brazil's foreign relations. An economic system in grave disrepair could indeed benefit from large-scale international financial and scientific cooperation, and the new president would use environmental leverage to gain this advantage.

Collor wasted little time. Speaking to a joint session of Congress immediately after his inauguration, the president would outline one of the most radical packages of economic reforms in modern Brazilian history, aimed at cutting debt through re-negotiations with creditors, privatization plans and deregulation, and to restore creditor confidence.

In a move without precedent however, the second item on the agenda was the Amazon (for which the codeword in Brazilian political discourse often means "the environment"):

> (...) The protection of the environment, and the alarm over the ecological drama of the planet, is not for us an artificial illusion (...). The urgency which my government will give to that issue reflects the growing concern of society, and particularly of Brazilian youth.[170]

Over the next two and a half years, Collor would propose, order or oversee a flurry of institutional restructuring and environmental decrees and laws as part of a clear strategy for attracting international financial aid for environmental protection or remediation, and attempt to transform Brazil's image of "an environmental hooligan"

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169 Claiming an affinity for the values of "the John Lennon generation" to which he belonged, president Collor de Melo would propose during his mandate that all espouse a more pacific relationship with the environment.

170 From Cleary (1991), page 117.

into that of a responsible custodian of the environment, worthy of international support.[171]

i) Marketing the environment

Catering to the needs of First World governments eager to see "positive action on the environment", responding to continuing pressure for change from environmental groups within and without the country, and instilled with an unknown degree of personal conviction in the worthiness of such actions, Collor would precipitate key changes within the environmental policy structure during his shortened mandate. Controversial in the best of times, some of these policy alterations would create resistance from powerful interest groups in Brazil, opposed in principle to their underlying premises, their opposition heightened by the speed at which they occurred.

1) Institutional changes

With Brazil in what they perceived as a more cooperative mood, the World Bank concluded a $ 137 million loan in 1990 for a national environmental program which included financing for the creation of a new environmental organ with a greater influence on overall State policy. Collor rapidly established an Environmental Secretariat which would have direct links with the presidential office, and coordinate the activities of IBAMA, CONAMA, and all sectoral agencies which dealt with environmental issues.

Officially authorized with the "planning, coordinating, supervising and controlling activities related to the National Environmental Policy and to the preservation, conservation and rational use of renewable natural resources",[172] the new Secretariat (SEMAM) was supposed to enhance the effectiveness and increase the profile of environmental policies within the country.

New environmental departments were created in all of the major government ministries to ensure policy coordination, and IBAMA, now under a new research director, and finally shifted from the tutelage of the Ministry of the Interior, was instructed to further establish its presence within each state through regional offices.

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171 de Onis (1992).

172 CIMA (1991), page 61.

IBAMA's budget was immediately doubled (to $156 million) and there was talk of increasing enforcement staff from 6,000 to 14,000 officers.[173]

In a move which government officials considered highly irregular and designed to further "tidy up" Brazil's tarnished image, Collor appointed the outspoken environmental activist (and staunch critic of Brazil's past development policies) José Lutzenberger, to head SEMAM, the highest ministerial position in the country dealing with these issues, thus gaining instant credibility in the eyes of some of Brazil's harshest environmental critics.

Waxing mystical at times, a proponent of "deep ecology" who perceived human intervention in nature as a necessary evil but ultimately destructive, with no experience or interest in government administration, and minimal scientific credentials, Lutzenberger would attract the enmity of bureaucrats, politicians and subordinates. Openly hostile of any administrative structure and suspicious of his colleagues motives, he would ironically weaken the effectiveness of the latent policy-making abilities and power of SEMAM and CONAMA, and alienate the implementing arm of environmental policies, IBAMA.

Thus apparently solidified, the county's environmental institutional structure, if not staff, appeared suited for the important role it had been called to play (see Figure 5, next page).

[173] The Montreal Gazette, November 26, 1990, p.B1.

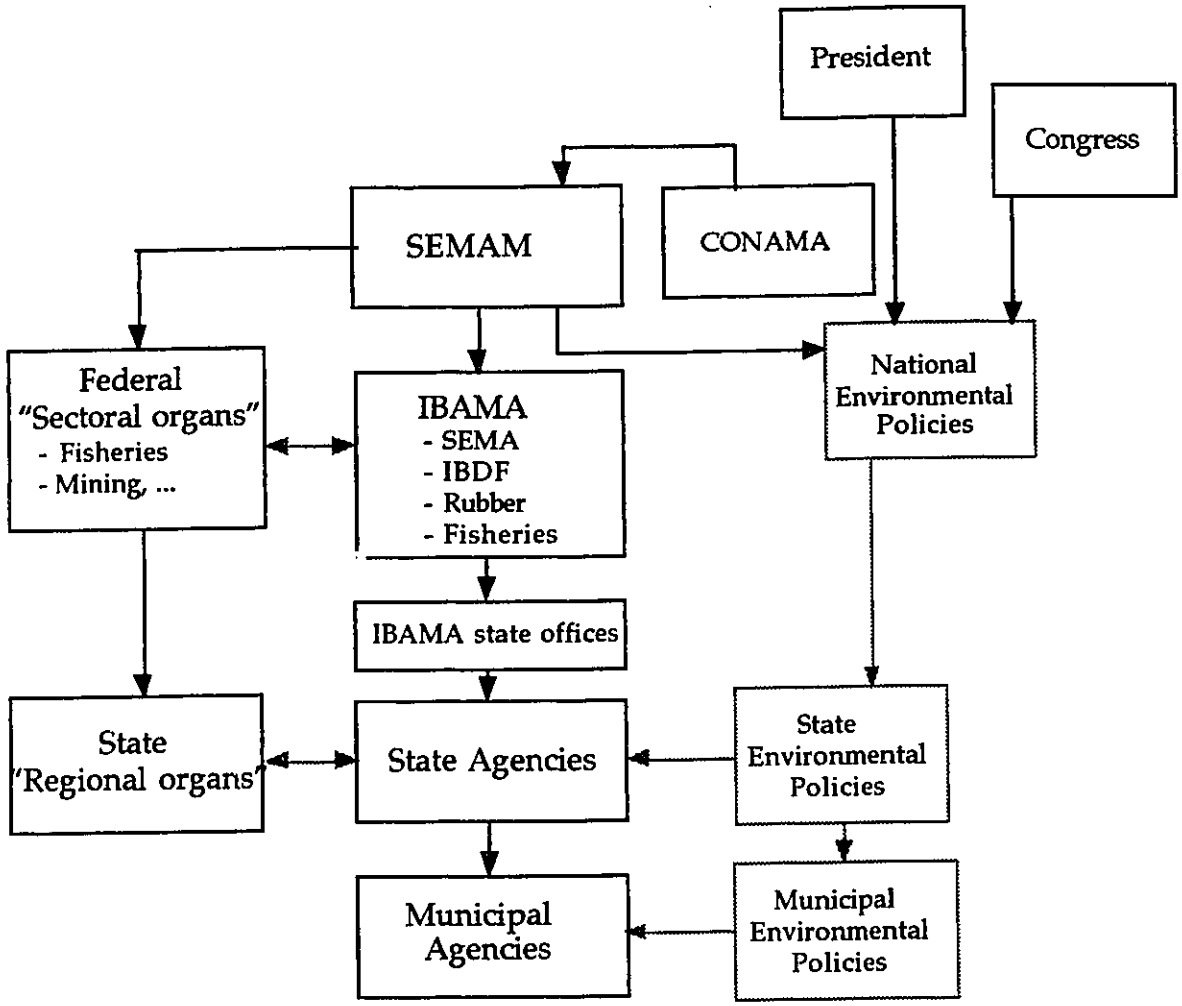

Figure 5 - National Environmental Policy Structure (1990-1995)

2) Direct Action

- Indigenous lands

The following description of events is revealing of "environmental" action Collor would take during his mandate.

In the late 1980s, a gold rush occurred in the northern territory of Roraima as nearly 40,000 garimpeiros swarmed into the area to stake claims. Enjoying a strong political

presence in the territory, the garimpeiros were nonetheless mining illegally using heavy equipment and without environmental impact reports, required by the 1986 CONAMA drafted law.[174] The matter may have rested there had the miners not also been invading indigenous territories which had been identified as Yanomani tribal land, an until then remote group of peoples who had experienced minimal contact with other Brazilians. In clear violation with the 1988 Constitution which required Congressional authorization for any extractive activities on indigenous lands, Roraima's governor (head of a soon to be state in dire need of revenues) would simply declare the article "not applicable" in this case.

In response to political pressures outside Brazil, and in line with the environmental image he wished to project, Collor would call for the army to forcefully remove all miners in a highly publicized $4 million operation, which would also include dynamiting miners' illegal airstrips. He would also fire the governor of Roraima and pledged to move towards land demarcation of Yanomani territory.

Defiant miners returned over the next two years and would provoke Collor, embarrassed after a state visit to Washington in which he was criticized for a lack of effort in environmental matters. Seeking foreign financial assistance for his programs, and hoping to restore confidence in the government's ability to handle environmental problems in light of the upcoming United Nations "Earth Summit" in Rio de Janeiro, Collor fired the Indian Agency's director and ordered his replacement to act.[175] A costly full-scale effort to drive out the miners would prove futile and anger a military uneager to execute what it considered unwarranted operations.

In late 1991, Collor would officially create the Yanomani Indigenous Park, an enormous area covering one-quarter of Roraima, and one percent of the total Brazilian land mass. Seventy-one other indigenous reserves would also be created by decree, effectively doubling the total area set aside for indigenous groups established until then.[176] Hailed as a triumph by environmental groups and anthropologists, the decision was forcefully opposed by the military, which considered the move geo-strategically dangerous, and by Roraima's new state governor and 300,000 non-Indians, who considered the subsoil resources in the reserve essential for the state's economic life.

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[174] Under Brazilian law, garimpeiros have a right to extract minerals if they work individually and use "artisan" tools. This was clearly not the case in Roraima.

[175] Demoralized and under-staffed, FUNAI's budget had been cut by 75 percent under Collor's economic stabilization plans. (de Onis, 1992).

[176] Montreal Gazette, November 19, 1991, p.A10. "Brazil's president reserves part of the Amazon for Indians".

Due to a lack of funds, neither FUNAI or IBAMA would be able to demarcate or protect the newly created territories in the following years, despite a Constitutional clause requiring them to do so by 1993.

- Forestry initiatives

There would follow a series of presidential decrees aimed at correcting what Collor correctly surmised to be major stumbling blocks towards more harmonious relations with First World governments, many of which still perceived Brazil's environmental problems as the result of abusive resource extraction in the Amazon - especially forestry resources.

- A new Research Center for Tropical Forests would be created for the purpose of examining sustainable development practices in the Amazon. Poorly funded and politically segregated, the Center would satisfy the needs of a highly specialized research community, and few others. Nonetheless, it signaled a move towards a more proactive approach to dealing with past environmental failures in the region.
- An innovative forestry law, the "integrated forestry-industry plan" (PIFI) was to be enforced more aggressively. It required large wood industries to show that 80 percent of the lumber they used was coming from "renewable sources" and prepare extensive extraction and reforestation plans. Every mature tree that was cut was supposed to be replaced by six seedlings of the same species, or the equivalent in a royalty payment to a national reforestation fund to be administered by IBAMA.

  However, the system proved very difficult to administer. Designed as a centralized operation, without the cooperation or technical assistance of nurseries, private wood industries, local universities or state forestry institutes, a large backlog of plans submitted for approval would rapidly accumulate, awaiting review from an under-staffed and internally disorganized IBAMA.[177]
- The government would propose an ambitious "National Program for Forest Conservation and Development", supposed to be the cornerstone for Amazon forest management, calling for the creation of 34 national parks, 62

[177] For example, there were over 600 PIFI plans awaiting approval in Mato Grosso in 1992. (de Onis, 1992).

ecological/extractive reserves and the planting of millions of trees.[178] SEMAM's head, Lutzenberger, went along with reforestation, but sidestepped making a decision on the plan because it involved timber cutting in the Amazon rain forest, which he considered an "aggression". The plan now in limbo, angered key staff would leave IBAMA. An expensive program requiring over $3 billion in investments, Collor would also be unsuccessful in obtaining critical foreign financial assistance.

- Reduced to less than 3 percent of its original forest cover, Collor would decree that "the cutting and exploitation of native vegetation in the Atlantic Forest are, for an indeterminate period, hereby prohibited".[179] Outraged businessmen would later try to block implementation of the policy, while IBAMA would not have the resources to police the Forest's boundaries or enforce penalties.

3) International appeals

In a clear reversal of the policies advanced by the previous government, Collor actively sought cooperative assistance for his environmental initiatives from foreign industrialized nations. In a dramatic shift in position for example, a financially strapped Collor would approve a $100 million "debt-for-nature swap" involving the creation of a special fund to administer environmental projects in the Amazon, a decision perceived as treasonous by the military and nationalist forces within the country.

A bold new program called the "Pilot Project for the Preservation of the Amazon" would also be drafted, reformulated and eventually tentatively approved through the cooperative efforts of representatives from the World Bank, the European Community, G-7 countries and Brazil. Designed to meet the global environmental concerns of the First World, which focused mainly on halting deforestation, putting off climate change, and conserving biodiversity, it would also serve Brazil's interests in developing a new strategy for sustainable economic growth in Amazonia. Presented as a unique opportunity for all countries to cooperate in attempting to link development, the economy and the environment, and serve as a template for future worldwide rain forest management, the project called for a series of innovative environmental initiatives including:[180]

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[178] de Onis (1992).

[179] Montreal Gazette, November 26, 1990, p.B1.

[180] Adapted from de Onis (1992).

- Creation and administration of conservation units, with primary emphasis on prompt demarcation of indigenous reserves.
- Territorial organization of the entire Amazon region through ecological-economic zoning as a legal and technical basis for licensing resource utilization, including land and water.
- Upgrading monitoring and surveillance through remote sensing and special environmental police, in combination with local communities.
- Scientific research, with emphasis on strengthening Amazon institutions and maintaining scientists in the region.
- Budget support and personnel training for a national system of federal, state, and municipal environmental offices.
- Funding for "demonstration projects", including some proposed by environmental NGOs and grassroots community organizations.

The Brazilian government's official Amazon development policy, clearly equated within international political circles as "environmental policy", had emphatically moved from "neutral" to "reverse" in attempting to halt environmental damage in the region.

The project would be costly however, estimated at $1,25 billion over five years, and First World countries balked at making such a large commitment. With Brazil mired in a severe debt crisis, and with few foreign loans forthcoming, his leadership abilities questioned by powerful, unfriendly political and economic forces within the country, and eager to consolidate support for his program before the United Nations "Earth Summit", an angry Collor would express disgust at the apparent lack of will to fund a project which the project's financiers claimed would help to "save the planet" when the promised loans failed to materialize by early 1992.

Finally, after rounding up the necessary votes in the UN, Brazil became the host of the 1992 United Nations Conference on the Environment and Development (UNCED), better known as "ECO-92" or the "Earth Summit". The Conference would be attended by hundreds of heads of State and thousands in the associated technical, social and diplomatic coterie, an indication of the new political importance accorded environmental matters, and would put the media spotlight on the perceived environmental "black sheep" among nations. In his mind, "perhaps the most important international meeting to be held this century"[181], it would show the world how Brazil had succeeded in moving towards "cleaning up its environmental act".

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[181] Brazilian Mission to the United Nations (1990).

ii) The peace is broken

In a little over two years, Collor had attempted to impart dynamism to an environmental policy process shaped by years of radically different approaches, and which had appeared closed on itself and largely ineffective due to poor administration, lack of resources and unenforced policies. Environmental policies had been placed near the top of the government's agenda, and expressed themselves mostly in Amazon-centered, First World oriented, preservationist-leaning strategies aimed at restoring the respect and financial support of foreign nations.

Collor 's environmental initiatives' integrity would be severely challenged however:

- Faced with mounting criticism and hostility from Congressmen opposed to "rubber stamping" his decrees and still bitter about charges of corruption and ineptitude leveled against them during the presidential campaign, Congress would attempt to block or slow many legislative environmental proposals submitted for review.
- Opposition candidates would win the governorship of a large share of states early in Collor's mandate, including key Southeast and Northern (Amazon) states. Unwilling to adopt or back certain federal environmental policies, many regions would fight or simply ignore the new guidelines.
- There were sharp differences in opinion within Cabinet and throughout the Ministries and other government organs regarding the benefits of the newfound primacy of environmental issues in setting policy. Accustomed to a policy structure, and associated reward system, which was inherently geared towards economic development, many politicians and bureaucrats felt uneasy with, or opposed the new "rules of the game".
- With inflation and debt figures at record heights, a financial, business and labour community in open warfare with Collor, and in the absence of the anticipated foreign capital influx into the "new Brazil", the budgets of most environmental agencies and programs were cut deeply. Again under-paid, under-staffed and lacking basic hardware, environmental organs such as SEMAM, IBAMA and state agencies could not enforce the otherwise thorough and detailed policies prescribed by the government.
- The issue of how the Environmental Secretariat, SEMAM, and its operational or implementation arm, IBAMA, were to relate with one another would not be resolved. Geographically and politically removed from Brasília, IBAMA's

regional offices would essentially carry out duties deemed best suited for their region, consulting little, or not at all, with SEMAM. The result was uncoordinated and uneven implementation of national environmental policies, with no formal evaluation and feedback structure on the effectiveness of these policies.

- Collor would fire both SEMAM's head, Lutzenberger, and IBAMA's chief administrator a few months before ECO-92 as the result of irreconcilable differences between the groups.[182] The organizational wounds between groups clearly meant to cooperate would use up precious human resources made unavailable for the environmental management of the government's policies.

ECO-92 would mask the dangerous political undercurrents within which Collor was attempting to navigate. Accused and convicted on charges of corruption by an unsympathetic Congress, and the highly unpopular author of abortive and authoritarian economic stabilization plans, Collor would be impeached in late 1992.

iii) Regional divergences

By the early 1990s, all Brazilian states, and some municipalities, had created at least embryonic environmental agencies and policy structures. Though all local policies were to follow the main federal guidelines, considerable discretion was permitted in the interpretation of those rules, and the vigor with which they were applied varied greatly between regions.

Certain states had enshrined environmental issues in their respective Constitutions, operated relatively well-staffed and funded regulatory units, and had drafted innovative complementary environmental legislation, all occasionally at the behest and with the support of the World Bank.[183]

Most states and municipalities however had not developed advanced environmental policies, further shielded from direct obligation to do so by the 1988 Constitution, which

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182 Lutzenberger, by now shunned by nearly all politicians and bureaucrats, who considered him either "crazy" or terribly inept, would accuse IBAMA's head as running an agency which was "just another branch of the logging industry". Lutzenberger, also critical of the government's sincerity in its environmental policies, would be relieved to abandon his hated "mountain of bureaucracy" job. (Globe & Mail (Toronto), March 23,1992, p.A9 and Vancouver Sun, March 23, 1992, p.A11).

183 The World Bank would assist CETESB for example with sanitation and other environmental infrastructure projects, including the clean-up of Cubatão.

did not clearly describe regional responsibilities, including those pertaining to the environment.

The degree of institutional and legislative environmental maturity within regions was (and is) closely correlated to the revenue-generating capabilities of their governments, the commitment and ideology of governors and other senior public administrators, the beliefs, needs and wants of their inhabitants, and the historical development philosophy which had shaped their institutions and guided their cultures.

1) The Amazon states

The rain forest "mania" which had engendered the rapid proliferation of environmental initiatives and legislation during the late 1980s and 1990s, produced and maintained in large part by a central government responding to external constraints, would elicit varied and often diametrically opposed reactions or adaptations from Brazil's Amazon states.

Keenly aware that multilateral and federal funds for development projects in their regions were contingent on environmental "cooperation", certain state governors would nonetheless openly challenge the central government's policies, almost always supported by a population of recent arrivals or established gentry, who felt that "man was the beginning and end of everything" and governed by leaders whose "loyalties were with the working people, not with the alligators".[184] In 1992 for example, Amazonas' governor would call for the cancellation of all forest and indigenous reserves in the state (nearly 16 percent of that state's territory) and draft an "Amazon Code" which demanded that all environmental matters be transferred to the states from the federal government.[185]

Other Amazon states would adopt less confrontational stances both with the federal government and in their approach to resolving conflicts revolving about the ownership and use of natural resources within their borders. Rondônia (which had witnessed the environmental destruction resulting from the Polonoroeste project) and Acre (the birthplace of the extractive reserve movement) would enshrine environmental chapters within their Constitutions, create relatively autonomous environmental agencies, require environmental impact assessments of projects susceptible of altering environmental processes, and attempt to allocate resource uses according to the

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[184] Amazonas' governor Gilberto Mestrinho speaking in 1991. (from de Onis, 1992).

[185] Toronto Star, March 7, 1992, p.D6.

ecological-economic zoning requirements called for by federal law.[186] By the early 1990s for example, nearly 50 percent of Acre's forests would be set aside as state and national parks, ecological stations and extractive or indigenous reserves.[187]

As is typical throughout most of Brazil however, a lack of environmental agency resources, an uncooperative judiciary, and the beliefs, expectations and needs of a citizenry often leading a hand-to-mouth existence, would hinder the effectiveness of the states' environmental policies. Minimal institutional staff training, environmental education programs or formal policy evaluations, and a system in which environmental politics constantly shifted the prioritization of policies also reduced the chances of successful policy implementation.

2) Urban centers

While the eyes of the world, and many government environmental policies, were directed towards the Amazon forests, most of Brazil's inhabitants were more concerned with their daily lives within the country's burgeoning cities.

Resulting from a rural exodus towards the perceived employment and infrastructure advantages of cities, and the rapid growth of their native inhabitants, urban dwellers now exceed three-quarters of the Brazilian population.

The strain on municipal and state services has been tremendous as new arrivals swell the ranks of favelas (shantytowns) , often situated and expanding in a haphazard manner in ecologically vulnerable areas such as wetlands and hillsides, in addition to the pressures exerted by growing urban cores and expanding suburbs unsuited and not designed for such numbers.

Commensurate with the urban growth, environmental problems such as polluted water sources from industrial effluents or toxic metals and untreated sewage, polluted air from industrial or automobile emissions and the accumulation of solid wastes have

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186 The 1981 National Environmental Policy, the "Our Nature" program and a decree issued by president Collor all called for "the development of plans aimed at territorial organization" whereby regions are subdivided into areas according to their ecological and socio-economic features. At least three types of areas are to be identified : "production areas", "areas that are inappropriate for productive uses in the short term" and "special areas" of an ecologically sensitive nature (CIMA,1991).

187 de Onis (1992).

all created a deterioration in the quality of life and the long-term viability of urban ecosystems.[188]

Not indifferent to these growing negative environmental effects, states and municipalities have attempted to address these problems with differing intensity and effectiveness. Granted more legislative, executive and budgetary freedom in the 1988 Constitution, the states, and municipalities within them, often face grave coordination problems between sectoral agencies and municipal governments unclear on their public responsibilities. As observed previously, with respect to local environmental policies, authorities often:

- Have a limited capacity to enforce regulations;
- Enforce laws unevenly and selectively;
- Use a narrow range of policy instruments;
- Operate with a complex set of environmental laws and regulations; and
- Have poor intergovernmental and interministerial coordination.

As well, a lack of cost recovery programs for environmental services and limited public participation in the design and implementation of environmental interventions have prevented the convergence of environmental policy goals and actual results.[189]

There have been some environmental success stories however, as demonstrated in the following case.

Case 6 - Curitiba[190]

Brazil's tenth largest city with a population of over 1,6 million, Curitiba, the state capital of the southern state of Paraná, has been labeled Brazil's "environmental capital"

[188] In late 1991 for example, the president of Brazil's Association of Sanitary and Environmental Engineers would describe the state of the country's sanitation services as "absolutely tragic". With 75 million people living without adequate sewage systems, 60 million with no garbage collection and over 50 million who do not have access to clean water (from a population of 150 million), Brazil's urban dwellers were vulnerable to a host of health-impairing parasitic and pollution problems. (Halifax Chronicle Herald, December 3, 1991, p. A10.).

[189] Oliveira and Leitmann (1994).

[190] With information drawn from: World Bank (1992), The Montreal Gazette, October 17, 1991, p.A4, and Safety & Health, v.149, April 1994, pp. 44-48.

and hailed as a model of sound environmental management by international urban planners, the World Bank and the United Nations Environment Program.

Backed by an energetic mayor, a committed municipal government, an informed and involved public and revenues from a relatively wealthy state, Curitiba embarked on an "ecological restructuring" in the late 1980s. Public transportation is now used by 80 percent of the population, recycling practiced by 90 percent, green spaces have been expanded, and industrial location and product mix are carefully chosen to minimize pollution. Favela dwellers (over 15 percent of the population) have also been involved in the policy process through innovative programs such as exchanging sorted garbage for coupons which provide access to transit services or as credit for food purchases.

The former mayor of the city, now state governor of Paraná, attributed the program's success to a search for "simple, common-sense solutions instead of dreaming up grandiose plans".

Brazil's most troublesome and difficult urban environmental problem, adequate sanitation services, is still however a key challenge for Curitiba, due largely to inadequate coordination between municipal and state environmental authorities.

The challenges facing urban policy makers in the years ahead are great, and the growing realization that environmental policies must also be factored into the complex equation of maintaining or increasing societal welfare by designing carefully crafted programs is met with the harsh realities of the day-to-day existence of most city dwellers who often prefer the concrete gains arising from economic growth to the abstract concept of the benefits of a cleaner environment.

C) On the road from Rio - recent developments

i) Sustainable development

Although many of the issues discussed twenty years previously in Stockholm would resurface intact, one of the most noteworthy elements to emerge from the 1992 "Earth Summit" in Rio de Janeiro was that all nations would agree on the benefits of pursuing environmental policies modeled on the concept of "sustainable development".

The notion stemmed from an attempt to come to terms conceptually with the accusations by developing country leaders in the 1970s and 1980s (and vociferously

advanced by them at the 1972 Stockholm Conference), that environmentalists cared more about the survival of wildlife than about that of people.[191]

Sustainable development would reach a wider audience as the centerpiece of *Our Common Future*, the report of the World Commission on Environment and Development headed by Norwegian prime minister Gro Harlem Brundtland. In it, the issues of the qualitative improvement in human welfare were addressed, with particular emphasis on the links between economic and social progress, equity and the environment. Simply defined as "(...) development that meets the needs of the present without compromising the ability of future generations to meet their own needs"[192], the Commission wished to provide the intent, rather than a working definition, of sustainable development.

The result has been the creation of a "landfill site" for every environmental idea now circulating[193], with meanings differing widely from one group, and government, to the next. Espoused for example by Brazil's government as the core building block for its environmental policies,[194] the concept has failed to be clearly articulated at the political level, with the ensuing confusion apparent as government officials attempt to define its hazy boundaries. Furthermore, calling for the equitable distribution of resources based on a respect for environmental processes, sustainable development raises the issue about what kind of equity - that *between* nations or *within* a country. A strong proponent of the former interpretation, Brazil has not performed well on the latter, and thus calls into question the future effectiveness of environmental policies patterned according to an ill-understood and poorly defined concept.

ii) Back to neutral

The disgraced Collor would be replaced by an interim president, Itamar Franco. The pre- ECO-92 environmental euphoria in Brazil was soon replaced with the more prosaic problems of maintaining order in a country still warring with debt and inflation, and in which the president would be forced to dole out favours to nineteen parties within Congress, reflecting the splintered nature of the legislative structure, in order to move government policies.

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191 Keck (1994).

192 World Commission on Environment and Development, page 43.

193 Nogueira and Surkin (1992).

194 Brazilian Mission to the United Nations (1994)

With most political energies channeled towards upcoming presidential elections in late 1994, few environmental initiatives would be proposed or executed, the environment having again become a low priority on the government's agenda. A few noteworthy environmental issues would nonetheless emerge:

1) Despite much lower than anticipated financial and technical support from First World countries, the political impetus resulting from the "Pilot Project for the Preservation of the Amazon" would enable the formation of a large number of micro-level environmental projects in the Amazon region. Often designed and coordinated by local and international NGOs, foreign development agencies and universities, these small-scale projects aim to increase the scientific understanding of ecological processes and the involvement of locals in the implementation of programs, and evaluate the effectiveness of government environmental policies, although formal feedback channels are still primitive.

2) Extractive reserves, symbolized by the rubber tappers movement, face serious viability problems. A general lack of coordination among groups unaccustomed to organizing production activities, the remoteness of markets, lack of credit, competition from southern rubber plantations and continuing violence as ranchers and others fail to recognize the legality of demarcated borders all threaten the integrity of a new socio-environmental concept based on a less intrusive relationship between humans and the environment.

3) Indigenous groups continue to face hostility from a Brazilian population generally unsympathetic to their cause and more preoccupied with their own economic or national security interests. By late 1994 for example, the government was reconsidering its policy towards the 9,4 million hectare Yanomani Indigenous Reservation in the face of pressure from both military and commercial (especially gold miners) interests, while less than 40 percent of the indigenous lands had been officially demarcated.[195] A highlight of Collor's

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195 (Latin America Regional Reports, Brazil Report, February 9, 1995. "Second thoughts about Yanomani").
Failing the provision of sufficient funds, and with an adverse political environment, the Yanomani reserve had not been "regularized" in 1995. The result of a long, mostly bureaucratic, process, regularization is the final step in the legalization of indigenous lands. Land titles become official but after a process in which they are 1) identified, 2) interdicted, 3) delimited, 4) demarcated and confirmed, and 5) regularized. (Davis and Wali, 1994).

environmental protection policy, indigenous land issues today remain controversial.

4) Franco would announce the creation of a "National Amazon Council", headed by IBAMA's director and the governors of the seven Amazon states, with a mandate to "follow new economic-ecological zoning guidelines and be approved by the Environment Ministry" (SEMAM).[196] As part of a plan to build small-scale development projects in the Amazon (as opposed to economically and environmentally costly larger projects), the program met with immediate opposition from certain Amazonian state governors who called for a more aggressive developmental approach with large-scale projects, a common historical theme.

Finally, in late 1994, a new president was elected, calling for greater consideration for "paying the social debt" left by his predecessors. Ex-finance minister Fernando Henrique Cardoso, immensely popular within Brazil due to his inflation-slashing stabilization plans, has announced that his government will emphasize social programs including health, education and agricultural reforms.

Closely meshed with, and obviously disassociable from these concerns, it remains to be seen how environmental issues will be tied to future government policies.

PART 5 - The environmental policy framework in Brazil - a retrospective overview

The evolution of the environmental policy process in Brazil, and its interaction with the social, political and economic media in which it has been immersed, cannot be described as one of a simple and static nature. This is not to say that other Brazilian government policies, or those of foreign governments, are less complex, but since environmental policies deal with issues regarding the allocation and use of natural resources which do not always have clear distinctions between public and private ownership, they tend to be more controversial, involve many actors, and are divisive.

[196] The Montreal Gazette, December 4, 1993, p.A19.

Furthermore, as these policies cut across nearly all sectors of public administration, environmental policies cannot leave State and private actors indifferent.

Despite the obvious difficulty in arriving at meaningful conclusions when dealing with a policy framework with touches on such a broad array of issues, there are nonetheless a number of underlying environmental policy characteristics and fundamental trends which emerge from the preceding analysis, along with the key short and long-term forces and actors which shaped and directed its convoluted evolution.

The following pages thus attempt to map out the environmental policy framework which has emerged in Brazil through a description of its constituent components, with a distinction made between underlying characteristics and fundamental trends. The diagram which describes the overall policy framework, and outlined in Part 1, is also included on the following page.

A) **Long-term Forces** which have shaped the environmental policy process

i) Underlying characteristics

1) Environmental policies have rarely been situated atop the government's policy agenda, either because they were perceived as "development impeding" in periods of State-led economic expansion, or as "unnecessary expenses" in periods of economic stagnation or crisis. An exception to this occurred under the Collor administration, when environmental policies gained new-found importance. In all cases however, these policies have been clearly subservient to, or instruments for, economic development.

   Given the low priority afforded environmental policies, and the governance reward system based on economic expansion or cost-cutting, institutions mandated to enforce them have found themselves to be politically unpopular and weak, with insufficient human, financial and material resources, given the scope of their duties.

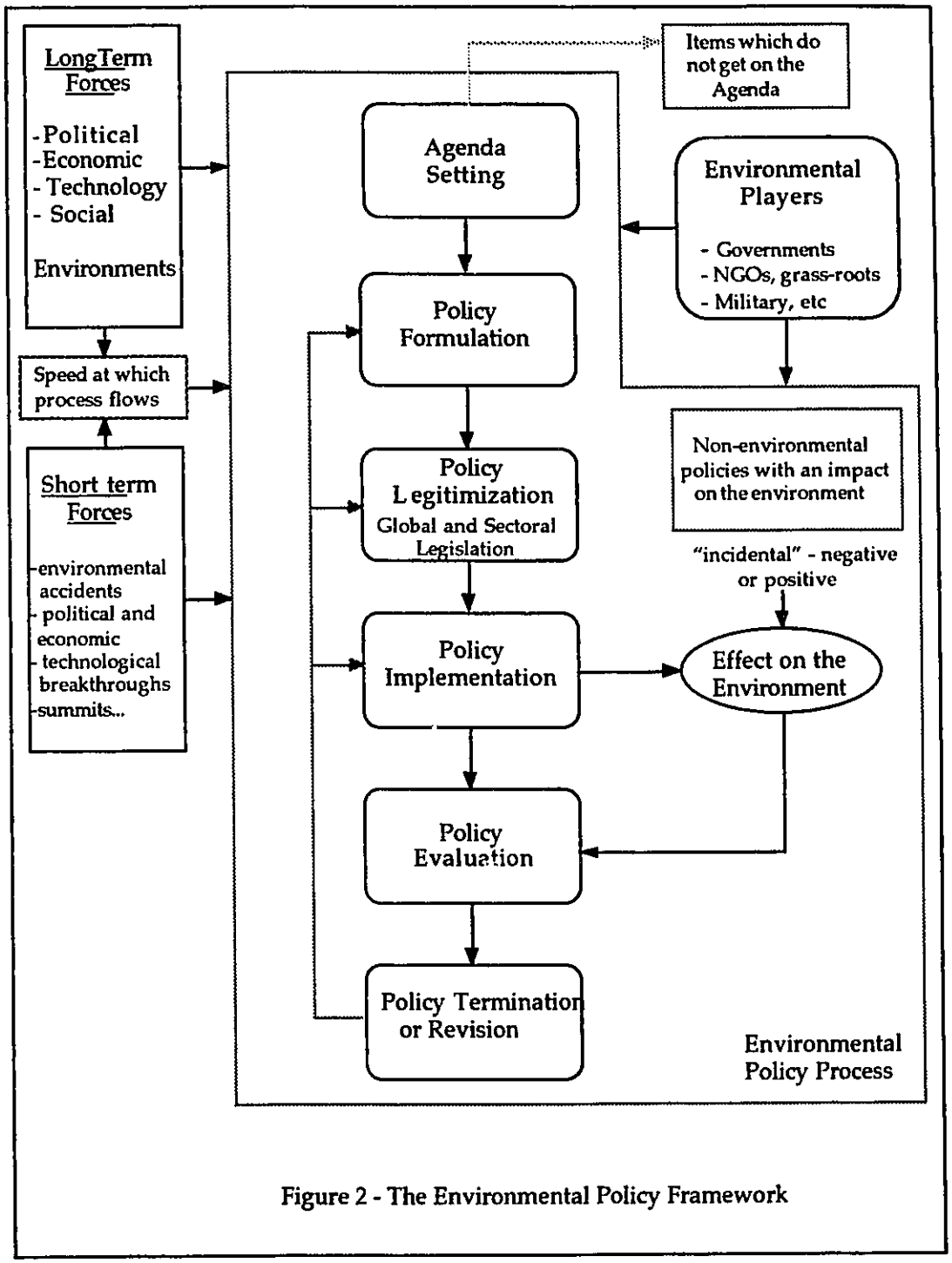

Figure 2 - The Environmental Policy Framework

2) The Brazilian political system can be characterized as one of *patrimonialism* , with the central government largely in control of the inner working of the country, and with a clear hierarchical social system demarcated along "upper" and "lower" strata. The system operates on the political exchange of favours, appointments and co-optation,

made easier through the existence of a very large bureaucratic order and State-controlled organizations. This type of system greatly reduces the political strength of federal institutions charged with the implementation of environmental policies since the latter do not possess sufficient "exchange value" to elicit cooperation from other groups, who can easily scuttle the effectiveness of environmental policies by pursuing other policies which are in their interest.

3) The patterns of natural resource use and ownership throughout Brazil's history have created poles of wealth held within the hands of a few very large owners. This has produced great conflicts between groups, symbolized by the struggles between large ranchers or farmers and landless squatters, *posseiros*, rubber tappers or others claiming a right to land, the situation worsened as land is made dear by inflation-hedging speculators.
   This has also created a large exodus towards urban centers, including cities in the Amazon region, and put additional strains on municipal governments already grappling with sanitation, pollution and solid wastes problems, thus weakening the effectiveness of local environmental policies.
   Skewed land ownership has also accelerated deforestation, as large ranchers create pastures in an attempt to compensate for lower acreage yields, and small-scale farmers and others clear new areas in the hope settling on more fertile soils, most of which have already been claimed.

4) The Brazilian government has almost always been weary of the perceived foreign designs, covetousness or "interference" and "meddling" in the environmental affairs of the country, especially in the Amazon region. The State has reiterated time and again its sovereignty over the country's natural resources, and has taken measures to ensure that things remain this way; for example through concrete steps such as Amazon economic, political, social and geo-strategic "integration" or in official "warnings" such as in Stockholm, Rio de Janeiro or other occasions.
   This pattern of thinking has thus created a form of nationalism in the Amazon region which is openly hostile to what are perceived as foreign "environmental ideas" aimed at preserving or regulating the use of natural resources.

5) The Amazon region has consistently been perceived as an emporium of wealth, sometimes ecological, mostly economic, and whose "conquest" would satisfy the geo-strategic, economic and social needs of Brazil's inhabitants.

Regardless of the truths or deceptions hidden behind the multi-faceted perceptions surrounding the Amazon, the historical interactions between groups in the region - grappling with the use, or abuse, of natural resources - have shaped the perceptions of political and economic leaders in the country, and the cultural make-up of the Amazon's non-native dwellers, most of whom consider economic development as the most important factor in their lives, as opposed to the less tangible environmental benefits of living "in harmony" with their surroundings.

ii) Trends

1) The patterns of natural resource ownership and use in the Amazon region have been shifting towards more ecologically-sound practices as a result of increased scientific awareness of environmental processes, the emergence of joint foreign-Brazilian social and scientific assistance programs aimed at sustainable development, the decreased influx of migrants to the region - now more informed about past environmental disasters , the virtual elimination of government subsidies or incentives which encouraged deforestation and a halt to large-scale development projects, including road-building, which has stemmed the human influx to the Amazon. The federal government has also expressed a desire to adopt less environmentally-intrusive development patterns through the introduction of a number of environmental policies for the Amazon, and formally recognized the mistakes of the past in attempting to "develop" the territory.

2) Technological and scientific advances resulting from research in Brazil, a better understanding of ecological processes within the international scientific community , and advanced remote-sensing techniques have theoretically made environmental policy decision-makers better equipped to design and implement effective strategies, or to adjust those already in place. There is a danger however of using these newly-emerging tools to further "sanitize" or disassociate environmental policies from the complex links they form with society, a past policy characteristic which has made implementation rather unsuccessful.

B) **Short-term Forces**

i) Underlying characteristics

1) Economic crises have typically moved environmental policies towards the bottom of the government's agenda, and made implementation of existing ones very difficult due to cutbacks in already low environmental institution funding, and have made illicit logging, mining, land speculation and poaching lucrative options. These crises have further reduced the likelihood that individuals or organizations (including State-owned) will invest in pollution-control equipment, carry out costly environmental impact assessments, or curtail production activities in order to meet emission, reforestation, or other environmental standards.

2) Environmental policies are often implemented, and sometimes created, but in cases of "grave and imminent risk to human lives and economic resources" (illustrated for example in the cases of the Paraíba Metals spill and Cubatão, or during severe droughts in the Northeast), or, by extension, when the country's financial and trade flows are threatened by outside forces (and can precipitate the formation of a flurry of environmental policies and institutional changes - such as the creation of extractive or indigenous reserves - or the host of new policy initiatives produced under Collor). When the emergencies are over, environmental policies, and the institutions which deal with them, revert to their previous politically or organizationally weak forms, and are sometimes again forgotten altogether.

3) The election of a new state governor, city mayor or other top regional official can drastically change the way in which environmental policies are dealt with. As the modern embodiment of "coronels", these key administrators shape the scope, depth and speed at which the environmental policy process operates in their regions, and can support, expand, hinder or halt federal policies, since the latter are often weakly implemented. Examples such as Curitiba, Cubatão or Amazonas and Acre reveal the critical influence regional leaders can have on the policy process.

ii) Trends

The national and international media have progressively become the lenses through which many now perceive the various elements operating within societies, including environmental issues. Notoriously distorting, or failing to include a relatively complete picture of complex situations, media sources nonetheless now possess the ability to rapidly mold the opinions of many, from humble peasants to national leaders, and thus force a reframing of problems, with direct or indirect impacts on the policy process. Environmental policy designers must thus now take this latent power to transform opinions into account, since negative perceptions can reduce the effectiveness of these and other policies as well.

C) **Environmental Players**

i) Underlying characteristics

1) The federal government has been by far the dominant player within the environmental policy framework, effectively controlling nearly all aspects of public and private life. This central authority has exerted its control more sharply in certain periods than in others (such as during military rule), and has shaped all facets of Brazil's institutional structure.
This reliance on central control has affected the environmental policy process through:

a) The proliferation of State-owned organizations, which are consistently shielded from the "interference" of production impeding impact assessments or pollution control requirements, and whose politically powerful administrators wield considerable influence in maintaining the status-quo.

b) The fact that the management of almost all major regional development projects, including those incorporating the delivery of environmental policies (such as Polonoroeste or Grande Carajás projects), would not be handed over to the groups "closest to the ground", thus removing decision-making control from those best suited for ensuring successful policy execution.

c) It has given small, powerful groups of federal administrators the ability to wield enormous control over the country's policy decisions, since this power has not been balanced elsewhere within the governance structure. For this reason, environmental policies have typically been formed and emerged under the guidance of a closed group of political elites, far removed from the public eye, with very little consultation with those whose lives they affect most. Designed by urban-bred and based individuals, and thus with an abstract concept of the "environment", these policies have tended to be innovative and technically "perfect", but have lacked the local social "grounding" necessary to make them successful.

d) Since the State owns a large portion of the country's natural resources, and that its environmental management has typically meant "preservation" by enclosing regions within national parks, ecological stations, and indigenous or extractive reserves, it has been impossible to demarcate, let alone protect them, especially when the surrounding populations or state administrators forcefully oppose their existence.

2) The state and local governance structures have usually been politically and economically subservient to central authority, although the social patterns which characterize their populations have evolved differently.
Regionalism has always been a key feature of Brazilian society though, and led to the emergence of powerful local political "brokers", perhaps *coronels*, wealthy industrialists or governors, who acted as administrative links between their region and the central government. On the one hand, this has allowed the State to retain overall control of the country's administration, but has also granted these individuals great discretion in interpreting the State's policies.
Furthermore, many regions have typically considered themselves "underdeveloped" or "backwards", and have equated the increased welfare of their constituents with economic growth, abetted by a federal policy system which has given this top priority, though the fruits of this growth have clearly not been shared equitably . It is thus not surprising that state governors or municipal administrators, who have often perceived environmental policies as being detrimental to their development, and with a dearth of public funds, have generally opposed, ignored, or selectively enforced them.

3) The public. Accustomed to the prevalent State presence in many private matters, their lack of involvement in policy decision-making, and the paternalistic attitude adopted by their governments, most Brazilians feel that it is the State's duty to administer, regulate and enforce many matters affecting their lives. Paradoxically, the existence of a multitude of complex laws and regulations for virtually every societal branch has also meant that Brazilians have grown accustomed to by-passing them. If in addition, the policies are enforced unequally and inconsistently, do not appear to provide concrete benefits, are not known or poorly understood and are opposed by political leaders, as environmental policies often have been, they are much less likely to be observed.

4) Brazil's government bureaucracy has swelled to unwieldy proportions over the years, and is characterized by a high rate of internal mobility and convoluted appointment-based, clientelist links among its members. Consistently rewarded in the past for developing and executing the economic expansion wishes of the politically powerful, most resist the fundamental refocusing necessary if environmental benefit/cost calculations are to take their place with more typical "rational" economic costing schemes. These "pro-development" tendencies are still firmly ingrained within the cultures of most government organs (including certain environmental agencies such as IBAMA), and thus create environmental policy implementation difficulties.

5) The military has been involved in establishing and prioritizing environmental policies throughout Brazil's history, although the latter have naturally usually been linked to advancing the military elites' main interests, namely maintaining the country's security and social order.
Professionally-trained, rationally-minded, and perceiving themselves as essential stabilizing forces for maintaining administrative order, military personnel (with the assistance of technobureaucrats for over twenty years) have sought the tight compartmentalization of duties and tasks in order to increase their efficiency. Adequate for advancing industrial policies, this mode of planning produces technically "perfect" environmental policies, but which also lack firm grounding in social reality, and are thus prone to failure.
An integral component of CONAMA, and with key advisors in the federal Cabinet, top military officials remain important policy players

6) Other groups. Effectively ostracized from participating in the national policy process, or allowed a token role in voicing concerns within politically overpowering groups (such as CONAMA), the general public, NGOs or specific groups most affected by the environmental policies, have typically been marginal environmental players, sometimes successful in their attempts to require the enforcement of policies at a local level. Nonetheless, they have almost always been dependent on the support of outside political levers, either from international NGOs, government organs such as the Ministério Público or "green" political representatives motivated to adopt their cause.

ii) Trends

1) Foreign financial institutions, and especially multilateral development agencies, such as the World Bank, have gained a strong influence in shaping Brazil's environmental policy physiology, implementation mechanisms, and speed at which the process occurs. Since loans are now contingent on a clear demonstration of proper environmental institutional structure, and the ability to carry out contractual requirements before, during and after projects, financially burdened countries such as Brazil have strong incentives for following guidelines.

2) Groups such as rubber tappers, indigenous movements or others wishing to promote their causes have started linking what were perceived as "social" grievances in the past (such as land reform, cultural preservation or survival, economic inequity, etc.) to "environmental " issues, as these are now considered by First World NGOs, politicians, and the general population as having greater intrinsic value for satisfying their needs.

3) Although they still lack formal, established channels for participating in the formulation of environmental policies, many Brazilian NGOs, especially the professionally-staffed, issue-targeted groups experienced in navigating the political and media realms, have started participating in the implementation of environmental policies, for example in small-scale projects in the Amazon, and supported by international NGOs, lending institutions (such as the World Bank) or local universities.

4) International NGOs now possess the means to indirectly influence Brazil's entire environmental policy process by lobbying lending institutions to increase the "green conditionality" of loans, or halt loan disbursements for projects which are not satisfying environmental criteria, and lobby governments to impose trade sanctions or otherwise exert pressure on environmentally "deviant" countries.

5) Given the splintered and atomized nature of the Brazilian political system, it is very difficult for "green" politicians to form strong coalitions for any sustained period of time since environmental issues are not politically valuable when the concerns of most turn to economic issues (which has been the major political focus for most of Brazil's history), and so have poor exchange potential in a system which operates on logrolling and reciprocal favours.
   Despite the emergence of candidates whose political platform is built at least partly on environmental issues, a clear trend nowadays, it is unlikely that they can have much effect on the federal environmental policy process (except in unusual circumstances such as under Collor), but they can play an important role at the local level.

The Environmental Policy Process

D) Agenda Setting and Policy Formulation

i) Underlying characteristics

1) Environmental policies have often entered the government's Agenda as a result of emergencies precipitated by short-term forces (droughts, extreme pollution or sanitation problems or accidents) and economic or political imperatives (such as withheld foreign loans, trade sanctions and political liabilities due to negative media coverage).

2) The great majority of environmental policies dealing with resource management have focused on setting aside or preserving samples of Brazil's ecosystems (for example national and state forests, ecological stations and indigenous or extractive reserves), rather than adopting forms of what are today referred to as "sustainable development" practices.

3) A closed circle of powerful individuals within the governing elite have typically been responsible for the formulation of environmental policies, with little or no consultation with outside interests. Alternating between the urban elite (in the Colonial Period), members of Congress, members of key government Ministries, the upper echelons of the military and of course the president, policies have regularly emerged as "fait accompli", to the consternation of the public, regional leaders, and often the environmental organs themselves, left scrambling to adopt the newly ordained guidelines.

4) Policies have often been formulated without due consideration for, or knowledge of, conflicting policies which existed elsewhere within the governance structure. Sometimes called for in the same National Plan, these "incidental" policies (such as economic incentives, industrial expansion plans within sensitive ecological areas and without environmental assessments, etc.) could impede, annul or even worsen planned or existing environmental policies.

5) Since the central (and certain state) government has historically adopted the position that environmental problems can be solved through technical solutions (and in direct opposition with the views conveyed to First World countries in Stockholm), and since the staff within environmental institutions such as SEMA, CETESB and FEEMA have been technically and scientifically proficient, a large number of technical environmental laws, regulations and standards have been created and oriented towards pollution abatement.
Without minimizing the importance of having such policies, especially in urban centers, these laws have tended to overlook the administrative, political and social spheres within which they have been forced to operate, and have thus been inadequate in meeting the goals they were supposed to reach.

ii) Trends

1) The federal government has progressively strengthened the environmental policy formulation abilities (and independence) of government organs, which have grown considerably in latent political power. Institutional capabilities have been enhanced from the policy-weak SEMA, to the more robust but structurally unwieldy CONAMA, to an Environmental Secretariat (SEMAM) with direct links to the president. Unfortunately, these organs have not been able to capitalize on these

historically unique powers, due mostly to internal fractiousness, and so have not been effective environmental policy formulation and legislative bodies.

2) As part of an international environmental "bandwagon effect", the sustainable development concept has emerged as the Brazilian government's environmental policy template, although the concept's meaning and methods for achieving its lofty goals have not been sufficiently narrowed to allow environmental bureaucrats to aim for common objectives in designing the various policies.

3) As part of the terms for obtaining development loans, multilateral lending institutions such as the World Bank and the IDB have been assisting recipient countries, including Brazil, to formulate environmental policies, closely patterned with those required under their "green conditionality" clauses. In dire need of foreign loans, and because World Bank loans for example also increase the flow of funds from other sources, the Brazilian government has been collaborating in designing projects which satisfy the environmental criteria of donor countries, and will likely continue to do so, considering its vulnerable financial position.

E) Policy Legitimization

i) Underlying characteristics

1) Political support for environmental policies in Brazil has usually occurred if they were deemed politically costless (for example in the creation of National parks or with the inclusion of an environmental chapter in the 1988 Constitution), or if the policy initiators were politically credit-worthy, and could be counted on for future logrolling activities. Many policies however have by-passed the legislative process altogether as the result of presidential decrees (in creating extractive and indigenous reserves, with key elements of the National Environmental Policy, or as with almost all of Collor's environmental proposals, fully aware as he was that Congress would oppose many of them). The cost for the ease with which these decrees have been passed has been the abandonment , reformulation or harsh opposition to these policies after their proponent is no longer in power.

2) The Brazilian government has been able to create one of the most advanced environmental legislative structures in the world, with broad-scoped, detailed and innovative laws, regulations, standards and Constitutional texts aimed at preserving, protecting and managing natural resources, with due consideration for the respect and welfare of all living organisms.
Although there are some gaps and weaknesses within the legislative framework as a result of voids left by government overlap and lack of effort in establishing certain environmental parameters, the municipal, state and especially federal governments have definitely created "environmentally friendly" legislation.
Federal policies such as the National Environmental Policy, CONAMA's environmental impact law, the "Our Nature" program, The Pilot Project for the Protection of the Amazon, the environmental chapter in the 1988 Constitution, and the panoply of federal and certain state pollution and preservation laws and regulations all contribute to the maturity of the environmental legislative system.

3) The elevated degree of legislative sophistication at the federal level is generally not paralleled at the state or municipal levels (except for example in São Paulo or Rio de Janeiro) for a variety of reasons, including a lack of revenues or political support and an unfavourable social setting, in which the general population does not place high priority on issues which do not appear to produce immediate benefits.

ii) Trends

1) In response to pressures from environmental movements at home and abroad, fiscal constraints (including "green conditionality" loans) and the rise of public awareness, almost all of Brazil's recent environmental policies have dealt with the Amazon. In the ensuing legislative repositioning, many within the country have risen to challenge policies which they consider nearly treasonous or ill-suited for satisfying the more mundane needs of day-to-day survival.
Meanwhile, the majority of Brazilians, the urban dwellers, have been rather bemused by, or detached from, this flurry of policies which seem far removed from their daily preoccupations.

2) Many of the government's fiscal and other economic incentives which have interfered with environmental policies in the past are progressively being

dismantled, less as a result of careful policy evaluation, and more in response to a lack of funds and an orientation towards ending economically unsound policies.

F) Policy Implementation

i) Underlying characteristics

a) Institutional structure:

1) "True" environmental organs (such as SEMA) have typically come under the tutelage of pro-development Ministries, have been amalgamated with historically economically aggressive institutions (such as the IBDF within IBAMA), or have had key members pulled from growth-oriented sectors of government (such as CONAMA). This lack of autonomy from ideologically opposed groups, or the dichotomy within institutions pulled apart due to widely diverging policy views, have prevented environmental organs from carrying out their duties.

2) Staffed by technically advanced individuals unwilling, unable or uninterested in establishing links with other government organs, environmental institutions have not been successful in coordinating the activities of groups dealing with environmental issues ("sectoral organs"), and have rarely been granted a voice in the design or implementation of other government policies which have severely deleterious impacts on their own. The job of these agencies has thus often been one of minimizing the negative effects of other policies, rather than implementing their own.

3) Federal environmental institutions have also typically had very limited human, financial and material resources, given the scope of their duties (the rare exception was for SEMAM and IBAMA in the early part of Collor's abbreviated mandate), and have thus chosen to implement policies selectively, since it has been impossible to administer them all.

4) State and municipal environmental institutions have varied enormously in their level of sophistication, commitment, and political authority. Certain states, and some municipalities, have developed advanced institutional capabilities (CETESB and FEEMA for example), while others have had insignificant or severely dysfunctional

environmental policy structures. Implementation is further hampered in the absence of local political support (and often clear opposition), an uncooperative judicial system, and a population enamored by more concrete material gains.

b) Enforcement

5) Laws and regulations have been enforced selectively and unevenly at all government levels, depending on who the polluter or resource abuser is (State-run companies are rarely singled out for example), under what circumstances the environmental offense occurred, and the enforcement capabilities of resource-poor agencies. This inconsistency in enforcing policies has reduced the willingness of resource users to abide by the law, since most have lost respect for the policy's aims, and can in fact contribute to increasing environmental infractions.

6) Federal and state agencies have clearly not been capable of enforcing environmental policies which require a high degree of institutional resource capacity, such as evaluating environmental impact reports, demarcating or protecting reserves which cover very large areas, reducing lucrative poaching activities or carrying out typical "command-and-control" enforcement such as handing out fines, verifying emission or discharge rates and other such institutionally resource-intensive tasks.

7) Environmental enforcement officers have had strong incentives to apply regulations selectively or collude with offenders, given the circumstances under which they have generally operated, including low pay, threats of violence, an uncooperative judicial system or ideological disagreement with the policies they are meant to enforce.

c) Other factors

8) The much vaunted environmental education programs proposed by the government in numerous laws, decrees and the 1988 Constitution have generally failed to reach the "ground level" as the general population, and many politicians, ignore the existence of environmental legislation or overall government policies, and so are either not aware of, do not understand or do not care about the rationale behind these policies. Thus unmoved towards embracing, or at least grudgingly accepting, issues which appear foreign to them, many individuals go about "business as

usual", and environmental institutions lose critical allies for helping to move in the direction of successful policy implementation.

ii) Trends

1) As the environmental policy institutional framework has become more sophisticated, and theoretically better prepared for coordinating successful policy cycles (moving from SEMA, to SEMA / CONAMA, then CONAMA / IBAMA, and finally SEMAM / CONAMA / IBAMA), the various institutional arms have had great difficulty in working and communicating with one another. This has produced a fractured system characterized by group polarization and a defective federal policy process. Lacking guidance and leadership at the federal level, it is improbable that most states will grow strong environmental institutional structures.

2) Financing sources for the implementation of environmental policies has shifted progressively towards multilateral lending institutions (such as the World Bank) and First World governments for larger-scale projects, and NGOs (who may also supply human resources) or private and public foreign development institutions for smaller-scale projects. This "opening up" to foreign assistance has come about, and will likely continue, from a need for financial assistance from cash-strapped governments in Brazil, "soft" loan conditions which increasingly require NGO or local group involvement in delivering policies, and a foreign policy geared towards establishing harmonious links with international trading partners.

3) Urban centers will increasingly face difficulties in implementing environmental policies due to a shortage of resources for dealing with the size and growth patterns of their populations, the prevalence of an economic growth philosophy among administrators, citizens and industry, and poor intergovernmental and interministerial coordination at the state and federal levels, in addition to the aforementioned implementation problems experienced by all Brazilian environmental organs.

E) Policy Evaluation

i) Underlying characteristics

1) From the preceding analysis, it is obvious that Brazil's environmental policy process has problems of *efficacy* (if the legislation is observed) and of *efficiency* (if the policies are appropriate to meet the needs they were intended to cover). Nonetheless, the organs formally charged with evaluating the effectiveness of environmental policies, such as SEMA and then CONAMA, IBAMA and SEMAM, have generally had great difficulty in agreeing on policy change priorities, in convincing political leaders that the policies were somehow defective, or in gathering the necessary political support to reformulate new policies and modify deficient existing ones.

2) Spending units at the federal level have typically been granted a large degree of autonomy, rampant inflation since the 1970s has often strongly distorted relative prices, and the overall government accounting system is in grave disrepair. It is thus understandable that nearly all government environmental organs have not created cost evaluation (or recovery) systems associated with the various programs they administer. This has resulted in the near-total absence in the knowledge or tracking of program costs, and it has thus become impossible to evaluate the economic rationale, or the comparative cost/benefit ratios of the different policies.
   It is doubtful however that precise accounting techniques alone would be helpful in evaluating programs which by their very nature often have unquantifiable benefits associated with them, and when there are no attempts made by the policy formulators to define them with any degree of detail. In general, environmental agencies or sectoral organs are assigned a set of duties, backed by very detailed and wide-ranging legislation, allocated a minimal budget, and asked to implement them using a narrow set of enforcement tools. Formal evaluation of the effectiveness of these ill-fated policies is not carried out, and so revisions to existing policies are usually made when their political liabilities have become too large.

3) Formal evaluation has also been made difficult as a result of the large number of sectoral environmental agencies, and the profusion of perceptions regarding what constitutes successful or adequate policy operation, in the absence of clearly defined evaluation criteria.

ii) Trends

1) The effectiveness of environmental policies has increasingly been scrutinized by parties outside the government structure (such as the World Bank), who have developed rigorous screening procedures for detecting policy process components which are prone to failure, due to weaknesses within their institutional structure, or which fail to give due consideration to the social, political or economic factors and situations with which the projects are meant to integrate.
Smaller-scale environmental projects within Brazil are increasingly being administered by local or national NGOs, and the greater flexibility which these organizations possess permit them to rapidly attempt to adjust or correct policies which do not appear to be working optimally.

Despite promising trends within an environmental policy framework which is still largely shackled and prevented from performing in line with its advanced and lofty designs, the importance or incorporating environmental considerations into all government policies has been but a recent and somewhat incongruous arrival onto a political scene patterned on solving what have always appeared to be more pressing purely "economic" or "social" problems, although the environment could never quite be dissociated from these.

And though the preceding analysis has not painted an inspiring picture of a policy process characterized by a great deal of confusion, missed opportunities, political "games", abortive implementation mechanisms and a profound lack of interest on the part of the system's key protagonists, it should be noted that Brazil is not alone in possessing inadequate environmental stewardship structures, for most nations still cannot claim to operate truly effective environmental policies, even in this age of "ecological awakening".

One need not delve deeply within the policy spheres which demarcate most countries' environmental guidelines to notice striking similarities with many of the problems which plague Brazil's environment, and the man-made institutional and political constructs created to deal with them; the scale may differ, and the afflictions

may be burrowed less deeply within the social canvas, but their fundamental structure remains closely related.

Brazil is a nation of contrasts, and one may hope that the shadowed legacy of past relations between its peoples and their environment can be transformed into a catalyst for attempting to build tighter and more secure long-term linkages between forces which must eventually coexist if the welfare of all living organisms is to rise. Hope springs eternal.

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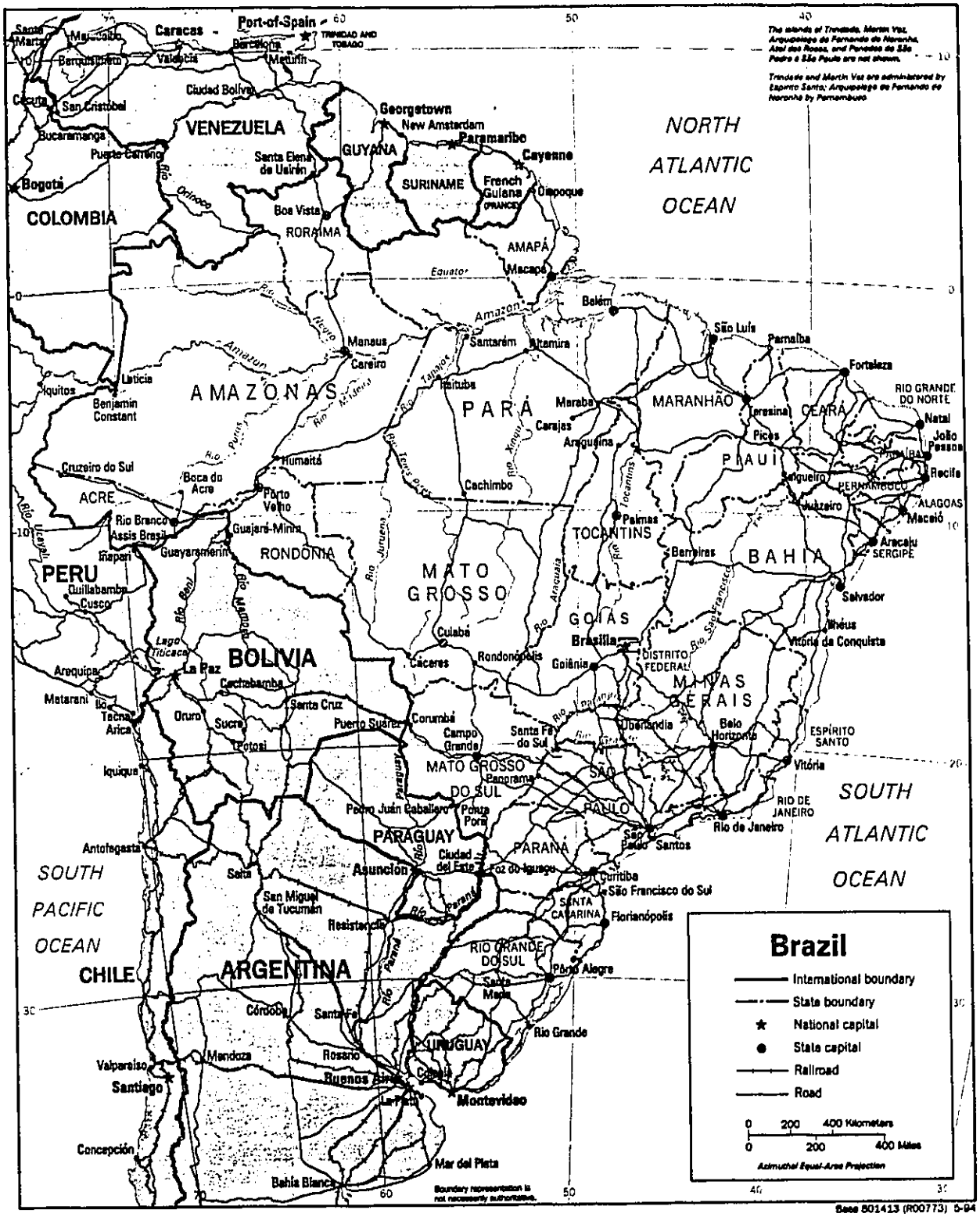
Appendix 1



Appendix 1 - Map of Brazil