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ENVIRONMENTAL DEGRADATION, POVERTY, AND SUSTAINABLE DEVELOPMENT: A CASE STUDY OF RURAL MEXICO AND THE COMMUNITY OF AYOTITLÁN

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of the requirements for the Master of Arts degree in
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ABSTRACT

This thesis was written by Darcy Tetreault. It is entitled "Environmental Degradation, Poverty, and Sustainable Development: A Case Study of Rural Mexico and the Community of Ayotitlán." It begins by exploring the theoretical issues surrounding sustainable development; this is followed by a study of rural Mexico that investigates links between immediate causes of environmental degradation and broader social, economic, and political conditions; and it ends with a case study of a marginalized indigenous community within rural Mexico: Ayotitlán. The findings of this research suggest that the model of development that is currently being pursued by the Mexican government is not sustainable (either ecologically or socially), and that, in order to overcome the country's serious environmental problems, major structural adjustments need to be made so as to give marginalized people more control over their local natural resources, and more say in national-level decision-making.

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LIST OF ACRONYMS

ACR – *Alianza Campesina Revolucionaria* (Revolutionary Peasant's Alliance)

AD – Another Development

CAM – *Consejo Agrarista Mexicano* (Mexican Agrarian Council)

CEDEMUN – *Centro Nacional de Desarrollo Municipal* (National Centre for Municipal Development)

CEPAL – *Comisión Ecconómica para Amércia Latina y el Caribe* (United Nations Economic Commission for Latin America)

CNC – *Confederación Nacional Campesina* (National Peasants' Confederation)

CNOC – *Coordinadora Nacional de Organizaciones Cafeteleras* (National Coordinator of Coffee Producers)

CNOP – *Confederación Nacional de Organizaciones Populares* (National Confederation of Popular Organizations)

CNPA – *Coordinadora Nacional Plan de Ayala* (National Coordinator Plan of Ayala)

CONAPO – *Consejo Nacional de Población* (National Population Council)

COPLAMAR – *Coordinación General del Plan Nacional de Zonas Deprimidas y Grupos Marginados* (National Plan for Depressed Areas and Marginalized Groups)

CTM – *Confederación de Trabajadores de México* (Mexican Confederation of Workers)

DAAC – *Departamento de Asuntos Agrarios y Colonización* (Department of Agrarian Affairs and Colonization)

FDN – *Frente Democrático Nacional* (National Democratic Front)

GATT – General Agreement on Tariffs and Trade

GNP – Gross National Product

GSD – Grassroots Sustainable Development

HSD – Hybrid Sustainable Development

IFE – *Instituto Federal Electoral* (Federal Electoral Institute)

IMECBIO – *Instituto Manantlán de Ecología y Conservación de la Biodiversidad* (The Manantlán Institute of Ecology and Conservation of Biodiversity)

IMF – International Monetary Fund

INEGI – *Instituto Nacional de Estadística, Geografía e Informática* (National Institute for Statistics, Geography, and Information)

INI – *Instituto Nacional Indigenista* (National Indigenous Institute)

ISI – Import-Substituting Industrialization

LGEEPA – *Ley General de Equilibrio Ecológico y Protección al Ambiente* (General Law of Ecological Equilibrium and Environmental Protection)

MAB – United Nations' Man and the Biosphere Program

MSD – Mainstream Sustainable Development

NAFTA – North American Free Trade Agreement

NGO – Non-Governmental Organization

OPEC – Organization of Petroleum Exporting Countries

PAN – *Partido Acción Nacional* (National Action Party)

PIDER – *Programa de Inversiónes para el Desarrollo Rural* (Investment Program for Rural Development

PNR – *Partido Nacional Revolucionaria* (National Revolutionary Party)

PRD – *Partido de la Revolución Democratica* (Democratic Revolution Party)

PRI – *Partido Revolucionario Institucional* (Institutional Revolutionary Party)

PROCAMPO – *Programa de Apoyos Directos al Campo* (Program for Direct Support for Rural Areas)

PROGRESA – *Programa para la Educación, la Salud y la Alimentación* (Program for Education, Health, and Food)

PRONASOL – *Programa Nacional de Solidaridad* (National Solidarity Program)

RBSM – *Reserva de la Biosfera Sierra de Manantlán* (Sierra of Manantlán Biosphere Reserve)

SAM – *Sistema Alimentario Mexicano* (Mexican Food System)

SEDESOL – *Secretaría de Desarrollo Social* (Ministry of Social Development)

SEDUE – *Secretaría de Desarrollo Urbano y Ecología* (Ministry of Urban Development and Ecology)

SEMARNAP – *Secretaría de Medio Ambiente, Recursos Naturales y Pesca* (The Ministry of the Environment, Natural Resources, and Fisheries)

SEMARNAT – *Secretaría de Medio Ambiente y Recursos Naturales* (The Ministry of the Environment and Natural Resources)

SRA – *Secretaría de la Reforma Agraria* (Ministry of Agrarian Reform)

SSS – *Sociedad de Solidaridad Social* (Society of Social Solidarity)

UACI – *Unidad de Aypoyo a Comunidades Indígenas* (The Organization of Support for Indigenous Communities)

UN – United Nations

UNCHE – United Nations Conference on the Human Environment

UNCTAD – United Nations Conference on Trade and Development

UNEP – United Nations Environment Program

UNESCO – United Nations Educational, Scientific and Cultural Organization

UNORCA – *Unión Nacional de Organizaciones Regionales Campesinas Autónomas* (National Union of Autonomous Regional Peasant Organizations)

UNRISD – United Nations Research Institute for Social Development

UPIM – *Unión de Pueblos Indígenas de Manantlán* (Union of Indigenous Communities of Manantlán)

WCED – World Commission on Environment and Development

WTO – World Trade Organization

CHAPTER 1

1.1 Introduction

Environmental degradation has become a colossal problem, posing one of the greatest challenges to humankind in the twenty-first century. Whether one considers deforestation, desertification, soil erosion, climate change, the destruction of the ozone layer, species extinction, loss of genetic biodiversity, the drawing down and contamination of ground water, oil spills, the collapse of fisheries, expanding landfills, litter, toxic wastes, the poisonous effects of pesticides and herbicides, or the depletion of non-renewable resources, it is clear that the earth cannot sustain current production and consumption patterns. Over the past thirty years, there has been much discussion about the main causes of environmental destruction, strategies have been formulated to overcome the crisis, and efforts have been made to implement them. However, thus far, these efforts have done little to curb the increasing rate of environmental destruction.

The diagnosis of the problem depends largely on one's perspective. From a mainstream perspective, the root cause of environmental degradation is the burgeoning population in developing countries and their inefficient use of natural resources. The poor in developing countries not only put pressure on the environment because of their sheer numbers, but also because they do not have access to environmentally friendly technology. From this perspective, the key to resolving environmental problems is to encourage worldwide economic growth so that its benefits can trickle down to the poor, raise their standard of living, lower their birth rate, and enable them to adopt 'environmentally sound technology'. This is essentially the sustainable development strategy that is outlined in the Bruntland Report and in Agenda 21, and that is now being pursued by international development agencies and governments around the world. This is *mainstream sustainable development* (MSD); its main ingredients are economic growth, better management of natural resources, and the dissemination of environmentally sound technology; so far, it has been unable to stop the growth of poverty and environmental degradation.

From an alternative (grassroots) perspective, the root causes of environmental degradation and poverty lie in the existing social, economic and political structures at all levels (local, national, and international). These structures facilitate the mining of natural resources by foreigners and local elites, the siphoning off of economic surpluses from Third World countries, the concentration of wealth in the hands of a few, and the impoverishment of hundreds of millions of people around the world. From this perspective, the major source of pressure on the world's natural resources does not come from the poor, but rather from the over-consumptive lifestyles of Northerners and Southern elites. The solution, therefore, is to radically change existing structures at all levels. No small task indeed! However, proponents of this approach argue that marginalized communities in the South can effect this change by adopting a multifaceted strategy that includes social activism, networking amongst grassroots organizations, gaining control over local natural resources, implementing small-scale development projects geared towards the needs of the community, becoming more self-sufficient on the community level, and using appropriate technology that stems from local traditional knowledge. These are the main building blocks of a strategy that we will call *grassroots sustainable development* (GSD).

This thesis explores the root causes of environmental degradation and poverty, and evaluates the effectiveness and potential of both MSD and GSD. It does this by, first, constructing a theoretical framework with which to analyse these issues; and, then by applying this theoretical framework to a two-tiered case study of rural Mexico. The first tier of this case study analyses rural Mexico as a whole; and the second examines the experience of one marginalized community within rural Mexico: Ayotitlán.

Mexico provides an illustrative example of environmental degradation, poverty, and sustainable development. The country's environmental problems are extreme in both their extent and severity; and, although Mexico is better off than most Third World countries in aggregate economic terms, there are still millions of Mexicans living in absolute poverty. In an effort to address these problems, the Mexican government has adopted the UN's model of MSD, and at the same time, many marginalized communities in rural Mexico have been pursuing endogenous versions of GSD.

In our study of rural Mexico, we will identify and quantify the country's most serious environmental problems, examine the immediate causes of these problems, and investigate links between these immediate causes and broader structural forces. The objective, here, is to investigate how international- and national-level economic, social, and political policies may have contributed to the development of poverty and environmental degradation. The next step is to examine the effectiveness of both MSD and GSD in practice. What is the manner in which these sustainable-development models have been implemented in the Mexican context? How successful have they been? And, how much potential do they hold for overcoming the country's social and environmental problems in the long run? These are some of the questions that this thesis seeks to address.

The second 'tier' of this thesis' case study deals with the experience of the community of Ayotitlán. This part of the study has been included in order to deepen our understanding of the complex processes that cause environmental degradation and poverty, and to further examine the effectiveness of both MSD and GSD in practice. Moreover, the 'community', as a unit of analysis, is especially appropriate for evaluating the effectiveness of GSD in practice, since the proponents of GSD argue that the community should be the principal agent and focus of development.

As we shall see, the experience of Ayotitlán is, in many ways, representative of national-level trends; although the community has been blessed with a wealth of natural resources and a high-degree of biodiversity, almost all of the inhabitants live in an extreme state of poverty. Furthermore, over the past few decades, the economic activity of both outsiders and locals has led to severe environmental damage within the community's territory. In an effort to address these problems, the Mexican government created a biosphere reserve in the area in 1987; and, since then, the community's grassroots organizations have been joined by a host of external agents (governmental and non-governmental alike), all of which promote one form or another of sustainable development.

In our examination of Ayotitlán, we will examine the local-level causes of environmental degradation and poverty and investigate links to national-level trends and

broader structural forces. In addition, we will analyse the sustainable development efforts of the various local-level actors, categorize them in accordance with the theoretical framework that will be constructed beforehand, and evaluate them in terms of their effectiveness and potential for overcoming local-level social and environmental problems.

The underlying objective of this entire exercise is to test the following two hypotheses:

1. that the root causes of both poverty and environmental degradation lie in the existing social, economic, and political structures at all levels (local, national, and international); and,
2. that the most effective way for marginalized communities such as Ayotitlán to improve their standard of living and overcome local environmental problems is to pursue an endogenous version of GSD.

These two hypotheses are complementary in the sense that the latter is based on the assumption that former is correct. Moreover, if the root causes of poverty and environmental degradation are indeed structural, then it follows that the extent to which GSD is capable of overcoming social and environmental problems at the local level depends largely on the extent to which it is capable of radically changing existing structures at all levels. This connection will be kept in mind throughout this inquiry.

1.2 Methodology

This thesis is the product of seventeen months of full-time research. This research passed through three distinct stages. In the first stage, from June to September of the year 2000, an extensive literature review was carried out. This literature review focused on two broad areas of knowledge: (1) the theoretical issues surrounding sustainable development; and, (2) the economic, social, and political structures of rural Mexico. A systematic library search was used to compile an extensive bibliography on these two subjects, and then the most important material in this bibliography was reviewed over a three-month period. As preliminary ideas began to take shape, additional material was

added, and material of secondary importance was left aside. Most of the literature that was examined at this stage of the research could be categorized as 'secondary-source'.

The second stage of this research was carried out from September 2000 to January 2001. This stage constituted the bulk of the 'field research' associated with this thesis, and it focused mostly on the case study of Ayotitlán. This part of the research was linked to the implementation of a small-scale recycling project, which served as a vehicle for participant observation. The principal objective of this recycling project was to find solutions for dealing with the growing problem of garbage in two of the villages in the community of Ayotitlán. For the most part, this project was carried out in a participatory manner, using a variety of techniques to collect information about the problem of garbage, including focus-group discussions, open interviews, and surveys. A more detailed description of the methodology used to carry out this project is provided at the end of this thesis, in Appendix A.

In addition to the participant observation linked to this recycling project, during this stage of the research, information about the community was collected through a variety of techniques, including open interviews, the recording of observations in a daily journal, and the analysis of both primary- and secondary-source documents. Most of the interviews that were carried out during this stage of the research took the form of 'guided conversations'; they were not recorded; instead, notes were taken either during the interviews or immediately thereafter. A wide range of community members were interviewed, including leaders of political organizations, 'natural' leaders, youth, men, women, and elders. In addition, statistical information about Ayotitlán was obtained from the National Institute for Statistics Geography and Information (INEGI); research papers on Ayotitlán's ecological and social conditions were made available by the Ministry of the Environment and Natural Resources (SEMARNAT) and by the Manantlán Institute of Ecology and Conservation of Biodiversity (IMECBIO); and, finally, invaluable insight into the social, economic, and political dynamics of the community was obtained from three main sources: (1) Rojas (ed.) (1996), an eight-year multidisciplinary study of Ayotitlán; (2) Robertson (work in progress), a master's thesis that examines the community through anthropological lenses; and, (3) Angulo (1996), a study that focuses largely on the community's productive activities.

The third and final stage of this research (from January to November of 2001) was the writing stage. During this stage, gaps in information were filled from a variety of sources. To begin with, many important studies and many statistics about rural Mexico were obtained from the United Nations Economic Commission for Latin America (CEPAL, in its better known Spanish acronym). Other statistical information was obtained from a variety of websites, including those of SEMARNAT, the National Population Council (CONAPO), and the National Centre for Municipal Development (CEDEMUN). And, a number of structured interviews were recorded with members of the community of Ayotitlán, and with knowledgeable outsiders.

Generally speaking, this research followed a deductive path: from theory to practice, and from general to particular. First, theoretical issues were studied; then, the structural forces acting on rural Mexico were investigated; and, lastly, the experience of Ayotitlán was examined. This dissertation is organized in the same deductive fashion. The following section describes its layout in more detail.

1.3 Chapter Outline

This thesis has three major chapters, an introduction, and a conclusion. This is the introduction; it includes a description of the methodology, and a chapter outline.

The first major chapter (Chapter Two) deals with the theoretical issues surrounding sustainable development. The purpose of this (second) chapter is to construct a theoretical framework that can be used to examine environmental degradation, poverty, and sustainable development in subsequent chapters. This is done by providing a brief review of the geneses of the two main (sustainable development) schools of thought (i.e. MSD and GSD), then, by outlining each school of thought's main characteristics, and, then, finally, by exploring the debate between the two of them. In addition, this chapter outlines a 'hybrid' sustainable development strategy, which borrows elements from both MSD and GSD.

The third chapter examines the structural conditions of rural Mexico. It begins by providing a general review of the economic, social, and political structures that have

acted on rural Mexico over the past 60 years, which is the period during which the environmental crisis manifested itself. It then sharpens its focus on rural Mexico by examining the country's agrarian structures and linking these structures to the immediate causes of environmental degradation. This chapter ends with an analysis of the sustainable development efforts of both the Mexican government and grassroots organizations.

The fourth chapter examines the experience of Ayotitlán. The purpose of this chapter is, once again, to investigate links between local-level processes and broader structural conditions. With this in mind, the chapter begins with an examination of how large-scale capitalist enterprises were able to gain access to the community's most valuable natural resources. As we shall see, these enterprises have been the main perpetrators of environmental destruction within the community's territory. However, they have not been the only ones; the local inhabitants of Ayotitlán have also contributed to the degradation of the local natural-resource base. This being the case, this chapter also seeks to examine the environmentally destructive practices of locals to see if it too can be linked to broader structural forces. The last part of this chapter analyses the community's sustainable development efforts through the theoretical lenses constructed in Chapter Two.

The last chapter of this thesis is the conclusion. Generally speaking, the findings of this thesis are supportive of its hypotheses, indicating that the underlying causes of environmental destruction and poverty are structural, and that the best way for marginalized communities to address local-level social and environmental problems is to pursue an endogenous version of GSD.

CHAPTER 2

THEORETICAL ISSUES SURROUNDING SUSTAINABLE DEVELOPMENT

2.1 Introduction

The term 'sustainable development' has been a buzzword in the field of international development ever since it appeared in the World Commission on Environment and Development's (1987) report "Our Common Future", commonly known as "the Bruntland report". Since then, the term has not only been used by international development institutions, bilateral donor agencies, and right-of-centre governments, but also by radical academics, progressive NGOs, and political activists. With such a diverse group of actors employing the term, it is not surprising that there has been so much debate about how it should be defined and achieved. This chapter delves into this debate in an effort to weigh the arguments of, separate, and describe the two main schools of thought associated with sustainable development, these being mainstream sustainable development (MSD) and grassroots sustainable development (GSD). The underlying objective of this exercise is to build a theoretical framework with which to analyse environmental degradation, poverty and sustainable development in the following chapters.

This chapter has been organized into four main sections. The first section is the introduction you have before you. The second provides an outline of the mainstream concept of sustainable development. It begins with a brief review of the modernization paradigm[1], which was the predecessor to contemporary mainstream development

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[1] Although the terms 'paradigm', 'school of thought', 'theory' and 'model' are often used interchangeably in the development literature, in this thesis they have more specific meanings. Patricia Maguire (1987: 10) defines a paradigm as "a constellation of theories, questions, methods, and procedures which share central values and themes." In line with this definition, in this thesis, a paradigm is understood to be a worldview that rests upon a foundation of assumptions that are often unquestioned and appear self-evident to those who share them. For example, one of the basic assumptions of the modernization/mainstream paradigm, which separates it from the others, is that individuals always act in an economically rational, self-interested

thinking. The intention, here, is not to go into an in-depth analysis of this paradigm, but rather to provide a context with which to begin our understanding of MSD. With the same intention, a sketch of the environmental movement is presented before outlining the main points of MSD as constructed in the Bruntland report and Agenda 21.

The third section focuses on the grassroots perspective. As we shall see, GSD is part of a paradigm known as Another Development, which is itself a child of Dependency theory and postmodernism. As such, this section begins with a brief outline of Dependency theory, postmodernism, and Another Development. This is followed by a description of the grassroots concept of sustainable development, and an exploration into the debate between the two main schools of thought. The issues that are central to this debate include: (1) whether or not the earth imposes finite limits on economic growth; (2) whether sustainable development is best achieved by specializing in production and integrating into the world economy, or by diversifying and becoming more self-reliant; (3) who should have control over natural resources; (4) what technology should be applied; and, (5) how marginalized groups should participate in the decision-making, implementation, and sharing of benefits vis-à-vis development.

The exploration of this debate is intended to bring into sharper focus our two archetypal schools of thought, and to set the stage for the last section of this chapter, which elaborates on this dichotomy by outlining three strategies for sustainable development at the community level. The first of these strategies is essentially a mainstream strategy, but one that borrows some ingredients from the grassroots model. We will refer to this strategy as 'hybrid sustainable development'. The other two strategies are both grassroots, but with different foci: one aims at achieving self-reliance through the implementation of small-scale development projects (self-reliant grassroots

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manner. The term 'school of thought' is used in this thesis to describe a paradigmatic view of a certain issue or concept. In this way, a 'school of thought' can be considered to be the part of a paradigm that applies to a specific issue. A Theory is an abstract and coherent analysis of a set of facts and their relation to each other. The purpose of constructing theories is to facilitate a deeper understanding of our reality and chart a course of action. Theories that share the same assumption can be grouped within the same paradigm. For example, Marxism, neo-Marxism, Dependency theory, Latin American structuralism, and World Systems theory, all share some basic assumptions and can therefore be considered to belong to the same paradigm. And, finally, a model is defined by Veltmeyer (no date: 3) as "a simplified theoretical

sustainable development), while the other focuses on changing political and economic structures through social activism and the formation of coalitions with other grassroots organizations (social-activist sustainable development). As we shall see in Chapters Three and Four, these three strategies often blend together in practice.

We will begin our exploration of the theoretical issues surrounding sustainable development by reviewing the background to MSD.

2.2 Mainstream Sustainable Development (MSD)

2.2.1 The Modernization Paradigm

Development, as a project of the United States, and to a lesser extent of the rest of the industrialized countries, began in the aftermath of the Second World War. Ostensibly, the project was undertaken for the altruistic reason of eradicating poverty in the Third World.[2] But in the context of the cold war, it was obvious that the development project was closely tied to US geopolitical interests in the South. In other words, the prospect of capitalist economic growth was offered to the South in order to counter the Soviet Union's proposal for socialist development. Whatever the motives were, the principal objective of the development project was clear: to promote economic growth in the South through a process of industrialization and modernization.

The models, theories, strategies, justifications, and mindset associated with early development efforts are what comprise the modernization paradigm, and they are the soil out of which eventually grew the mainstream concept of sustainable development.

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representation of reality that makes analysis possible and provides a framework of ideas for the construction of a theory." Thus, models are the building blocks of theories.

[2] In President Truman's inaugural address of January 1949, there is an oft-cited part that states that the United States "must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas. More than half the people of the world are living in conditions approaching misery. Their food is inadequate. They are victims of disease. Their economic life is primitive and stagnant. Their poverty is a handicap and a threat both to them and the more prosperous areas.[Etc.]" – President Truman cited in Rist, G. *The History of Development: From Western Origins to Global Faith,* London: Zed Books, 1997, p.71.

The main thrust of early development efforts was, once again, to promote economic growth in the South. Since it was assumed, at least in the beginning, that economic growth was the only necessary condition for transforming 'backward' societies into modern ones, economists dominated early development thinking. However, it was not long before it was discovered that development required more than just economic growth, and soon the works of sociologists, anthropologists, political scientists, and social psychologists contributed to the 'rounding out' of the paradigm. In spite of these contributions, though, the field of economics continued to dominate early development.

In tune with the mainstream economic thinking of the time, which was strongly influenced by the English economist Maynard Keynes, the best way for underdeveloped countries to realize economic growth was with the help of strategic state intervention. Third World governments were expected to accept aid, investment, and advice from First World countries, focus on import-substituting industrialization, direct resources towards key industries, and nurture these industries through protectionist policies (at least in the initial stages of development). This strategy, known as Keynesian economics, stood in contrast to classical economic theory, which had dominated mainstream thinking before the war, and which argued for free trade and export-led growth based on the principles of comparative advantage.

In the early postwar period, a number of Keynesian economic growth models were constructed by European and American economists to help Third World governments with their economic planning. The first generation of these models included, Rostow's stages-of-growth model, the Harrod-Domar model on savings and investment, and Rodan-Rodenstein's 'big-push' model.[3] These models envisioned economic growth as a series of stages along a unilinear path. According to these models, in the initial stages of growth, state intervention and strategic investment was needed to overcome the inertia associated with 'traditional' societies. Once a country's economy gained momentum, however, it would become self-sustaining and eventually enter into a blissful age of 'high

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[3] For a general description of these models see Martinussen (1997) or Todaro (1997).

mass consumption'.[4] The key to getting past the initial stages was the accumulation of capital stock through high rates of savings and investment (both domestic and foreign, state and private). Since it was generally believed that the entrepreneurial upper class had a higher propensity to save and invest, the concentration of wealth in the hands of a few (at least in the initial stages of development) was seen as a necessary condition for rapid economic growth, which was equated to progress and development. Eventually, the fruits of development would trickle down to the middle and working classes to raise their standards of living.[5]

These models had a Eurocentric vision of evolutionary economic progress that saw all countries eventually passing through the same stages of development that Europe and North America had passed through during the industrial revolution. Thus, according to this vision, Europe and North America were in front, forging the path down the linear path of development, while developing countries followed at various steps behind. What's more, it was thought that developing countries would pass through the various stages of development quickly, because they had the help of foreign aid and modern technology.

In the late 1950s, these linear-stages-of-growth models gave way to slightly more complex models of structural change, which also shared this Eurocentric vision. These models focussed on the mechanisms by which countries in the South could move away from subsistence agriculture towards an industrialized urban-based economy. Perhaps the best known of these models was Lewis' model. According to this model, the peasant agricultural sector was seen as overpopulated, and characterized by underemployment and low productivity. As such, this sector was considered to be a reservoir of labour and other resources for the more dynamic modern urban industrial sector. Surplus labour could be transferred to the modern urban industrial sector by offering wages that were

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[4] The "age of high mass consumption" is the often-cited fifth and final stage of economic development in W.W. Rostow's stages-of-growth model. The first four are: the traditional society, the pre-conditions for take-off into self-sustaining growth, and the take-off.

[5] This was stated most explicitly by Simon Kuznet, who believed that income inequality would necessarily worsen in the early stages of industrialization, only to improve in the later stages. This hypothesis was presented with the use of an "inverted-U" curve in which the peak of the curve represented the highest instance of income inequality.

slightly higher than the average subsistence-level wage in the rural sector. Since it was assumed that there was an almost unlimited supply of surplus labour in the agricultural sector, and since it was thought that it could be extracted without lowering agricultural output, Lewis believed that the average subsistence-level wage would stay constant as workers migrated to the cities. It followed that wages in the modern sector could be kept low and still attract labour from the agricultural sector. Thus, according to Lewis, if Third World countries directed their resources towards the modern urban industrial sector, kept wages low, and concentrated income in the hands of entrepreneurs, they would experience economic growth and 'develop'.

These linear-stages-of-growth and structural-change models are the backbone of the modernization paradigm. However, as mentioned above, the modernization paradigm included more than just economic theories; it also included theories about social and institutional change. The works of Parson, Holselitz, and Lipset, for example, focussed on the difference in values between traditional and Western societies. According to these sociologists the values, beliefs, attitudes, and social systems of traditional societies acted as a retarding force on economic development, and therefore needed to be replaced with more modern ones. John Brohman describes the gist of these theories:

> Development involved much more than simply initiating economic change; new values, norms, institutions, and organizations had to be introduced to transform the old social order. Elements of traditional societies that constitute obstacles to modernization had to be replaced. Modernization was viewed as a broad process that required changes in social values toward the modern 'ideal' of individualistic capitalism. The 'collective' traditional societies had to give way to the 'individual' values associated with the more complex division of labor and increased socioeconomic mobility of advanced capitalism. (1996: 20)

These theories shared the image of 'structural dualism' that was manifest in Lewis' model: a traditional society based on subsistence agriculture coexisting with a modern urban industrial sector. The traditional sector was characterized by 'collective' values and economically irrational behaviour, while the modern one exhibited the more 'desirable' values of individualism, consumerism, and entrepreneurship. These theories saw the modern urban industrial sector as a dynamic and progressive force that dragged

the traditional sector forward along the evolutionary path of development, eventually consuming it along the way. The urban commercial elites in developing countries were considered to be the vanguard of modernization, and as such, it was they who merited the attention and support of governments, foreign investors, and development 'experts' from the North.

Once again, the main thrust of the modernization paradigm was to promote economic growth in the South. And this it achieved, at least in the aggregate terms of GNP. In the 25 to 30-year period that followed World War II, the South experienced unprecedented GNP growth rates, a veritable 'golden age' in international capitalism. However, in the late 1960s and early 1970s, economic stagnation began to set in and disillusionment began to spread as it became clear that, in spite of having achieved this economic growth, mainstream development had failed to deliver on its most basic promise: the eradication of poverty. In fact, the opposite was true; the number of people living in absolute poverty had steadily risen in the postwar period, as it would continue to do in the years to come. In addition, there was a growing awareness that increased industrialization was destroying the natural environment. These conditions led many analysts to question some of the basic assumptions of mainstream development thinking and to formulate new strategies to overcome the crisis. It was in this context that two new paradigms emerged, Dependency theory and Another Development; and, at the same time, the modernization paradigm was transformed into today's mainstream development paradigm: neoliberalism.

Although neoliberalism and modernization differ in some significant ways, they share some basic assumptions, and much of the former mindset is still present just under the surface of a modified discourse. Gone, for example, are the explicit recommendations that income should be concentrated in the hands of the capitalist class, and that traditional societies should discard their values in favour of Western ones. Instead, mainstream development now stresses (at least in rhetoric) the importance of meeting basic needs by 'targeting the poor', and globalization has replaced 'Westernization' as a theme that pretends to be more multicultural. Here to stay, however, both in rhetoric and in practice, is the importance placed on indefinite economic

growth. Maintaining high GNP growth rates is still the number one priority of mainstream development; only, now, instead of promoting Keynesian economics as a means for achieving this growth, proponents of neoliberalism have gone back to promoting (neo-)classical economic strategies – the elimination of trade barriers, export-led growth, specialization and integration into the world economy, privatization, etc. As we shall see, these policies are embedded in the mainstream concept of sustainable development.

2.2.2 The Environmental Movement

Another major influence on the mainstream concept of sustainable development has been the environmental movement, especially in the North. The environmental movement began in the United States in the early 1960s, and coalesced with the broader crisis in development in the late 1960s and early 1970s. As the environment continued to deteriorate throughout the 1980s and 1990s, the movement continued to gain momentum, eventually transforming itself into a global movement by recognizing the environmental dimension of many struggles for social justice in the South.

In the beginning, the Northern environmental movement was mostly radical, pointing the finger at big business and its accomplices in government, whose initial reaction was to simply deny, downplay, or justify environmental degradation (Foster, 1994; Hildyard, 1993).[6] However, as the movement grew larger, it became potentially politically destabilizing, and governments, corporations and international development institutions were forced to co-opt some of the less radical elements of the environmental

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[6] A good example of this is the Velsicol Corporation's reaction to the 1962 publication of Rachel Carson's book *Silent Spring*, which dealt with the detrimental effects of pesticide use in large-scale agriculture in the US, and which is considered to have had a major influence on starting the environmental movement in the North. The Velsicol Corporation wrote a letter to Carson's publishers accusing her of being in league with "sinister influences, whose attacks on the chemical industry have a dual purpose: (1) to create the false impression that all business is grasping and immoral, and, (2) to reduce the use of agricultural chemicals in this country and in the countries of western Europe so that our supply of food will be reduced to east-curtain parity." (Velsicol Corporation cited in Hildyard, 1993: 25).

discourse and weave them into their own discourses and policies, eventually giving rise to the mainstream concept of sustainable development.

Environmental issues have been on the mainstream agenda for 30 years now. On the one hand, this has brought about some positive reforms, particularly in the North. For example, environmentally sound technology has been developed to reduce industrial effluents and make them less toxic, vehicles have become more energy efficient and less polluting, littering has been reduced, recycling has become widespread, logging practices have become somewhat less destructive, and so on. On the other hand, the mainstream focus on reforms geared towards increasing environmental efficiency has drawn attention away from some of the more crucial and contentious environmental issues – such as limiting economic growth, redistributing wealth, and reducing material consumption in the North. In the same vein, the 'mainstreaming' of environmental issues has taken some of the wind out of the sails of the radical environmental movement by conflating environmental issues and giving the impression that 'we are on the right track'. In order to better understand how the environmental movement has influenced, and been influenced by, the mainstream concept of sustainable development, it is necessary to take a closer look at this movement.

The first step in this analysis is to make some generalizations about the environmental movement in the North and the one in the South. In the North, the environmental movement has been largely inspired by middle-class urbanites who are concerned with the overall health of the planet, and who want to protect the environment for its intrinsic beauty. These people have both 'local' and 'global' environmental concerns. On the local level, they are mainly concerned with having a clean environment and nearby wilderness in which to enjoy outdoor activities; on the global level, they are typically concerned with 'macro' issues such as saving the rainforests in Brazil, saving the whale, protecting the ozone layer, avoiding global warming, and so on.

Some academics have associated these concerns and desires with 'post-materialism'. According to Ronald Inglehart, the political scientist who coined the term, post-materialism is a phenomenon that appeared during the rapid economic growth and

concurrent expansion of mass consumerism in the post-World War II period. During this period, the material needs of many people in the North were satisfied, causing their desires and pursuits to shift from material goods (such as clothes, televisions, cars, stereos, etc.) to non-material 'goods' (such as clean air, unspoiled nature, free time, etc.) (Inglehart cited in Guha et al., 1997: xiv). Ironically, though, the rapid economic growth and industrialization that led to the satisfaction of these material needs also led to the acceleration of worldwide environmental degradation. Whether they know it or not, then, many environmentalist in the North, want their cake (unspoiled nature) and they want to eat it too (high material standards of living).

In the South, by contrast, environmentalists are concerned with protecting the environment, not so much for its (non-material) aesthetic value, but more for its (material) economic value. The environmental movement in the South revolves around local struggles over the control of natural resources. These struggles typically take place between peasants seeking to pursue their subsistence lifestyles and large-scale commercial enterprises in search of profits. Perhaps the two best-known examples of this type of struggle are the Chipko movement in India and the rubber-tappers movement in Brazil. Both of these movements were initiated by poor peasants trying to protect the forests they live in from being cut down by large-scale commercial logging enterprises. In both instances, the peasants were not so much interested in saving the forests for their intrinsic beauty (and much less to curb global warming), but rather to protect the subsistence livelihood that the forests provided them. Although these two movements have received a lot of attention, "their frequent citation should not", as Jessica Vivian points out, "obscure the fact that such struggles are in fact widespread" (Vivian, 1991: 14). As a matter of fact, as we will see in Chapter 4, this is exactly the type of struggle that took place in Ayotitlán until quite recently.

Generally speaking, then, whereas the Northern environmental movement is mostly concerned with protecting the environment for its natural beauty and for the overall health of the planet, the Southern environmental movement is mostly concerned with social justice and with protecting natural resources for their economic value. Now, it should be pointed out, here, that there are also some significant 'reflections' of the

Northern environmental movement in the South and vice versa. In other words, in the South, there are many urban middle- and upper-class environmentalists who have 'post-material' concerns; and, conversely, in the North, there are also many lower-class environmentalists with 'material' concerns (Guha, 1997). An example of the latter is the poorer people in the North who fight to prevent the locating of garbage dumps or heavily polluting industries in or around poor neighbourhoods.

In addition to these 'reflections', there are some class alliances in the environmental movement that make it even more complex. In the South, many middle-class urban intellectuals and activists collaborate with peasants in their struggles for control over natural resources; and, likewise, in the North, there are many middle-class social activists that collaborate with lower-class environmentalists in their struggles for social justice. Therefore, even though the generalizations outlined above hold true, there are some significant caveats to the environmental movement in both the North and the South that give it some degree of heterogeneity.

Now that we have a rough sketch of the environmental movement, the question is: How have the various dimensions of this movement affected, and been affected, by the mainstream concept of sustainable development? To begin with, the environmental movement in the North is indirectly responsible for the birth of the mainstream concept of sustainable development. As mentioned above, it was the popular protest associated with the environmental movement in the North that forced governments, corporations, and international development institutions to develop strategies for dealing with environmental problems, thereby giving rise to the mainstream concept of sustainable development. Not surprisingly, this concept was constructed in such a way as to reflect the interests of its architects and resonate with the middle-class urbanites behind the Northern environmental movement. This was done by searching for ways to overcome the environmental crisis without having to radically change existing economic and political structures, and without having to seriously compromise the high material standard of living of the middle-class and elites. Furthermore, the architects of MSD framed the environmental crisis in such a way that only the North, and in particular those who control capital, can effectively address the problem. This was done by focussing on

global environmental problems, which required *global* environmental management, *global* economic growth, and the application of expensive technology.

The environmental movement in the South also influenced the formulation of the mainstream concept, but to a much lesser extent. Its influence is evidenced by parts of the mainstream discourse that address the need for marginalized groups to 'participate' in sustainable development, and by the general tone of the mainstream discourse, which tries to downplay political differences, and tries to focus on 'common concerns', 'common challenges' and 'common endeavours' (WCED, 1987). These characteristics of MSD, and others, will be elaborated in the following section.

2.2.3 The Mainstream Concept of Sustainable Development.

The mainstream concept of sustainable development began to take shape in the early 1970s, during the time of widespread disillusionment with the modernization paradigm, and during the height of radical environmentalism in the North. The concept was christened in 1972 at the United Nations Conference on the Human Environment (UNCHE), whose declaration contained the basic building blocks of MSD: economic growth, technological innovation, the transfer of technology from North to South, better management of natural resources, protection of the natural environment, lower population growth rates, cooperation between states, and the formulation of environmental law (UNCHE, 1972). UNCHE also gave birth to the United Nations Environment Program (UNEP), whose purpose was to coordinate environmental programs within the UN system and promote international cooperation in the field of the environment (UNCHE, 1972). However, in the years following UNCHE, the UNEP generally fell short of its mandate, partly due to insufficient funding (Birnie, 1993).

In 1983, more than a decade after UNCHE, and in the context of increasing worldwide environmental degradation, the United Nations appointed the World Commission on Environment and Development (WCED) to formulate "a global agenda for change" and to propose "long-term environmental strategies for achieving sustainable

development by the year 2000 and beyond" (WCED, 1987: iv). The WCED published its report in 1987 under the title "Our Common Future", better known as 'the Bruntland report', named after the chairman of the WCED, Gro Harlem Bruntland, the prime minister of Norway. The Bruntland report provides the most comprehensive formulation of the concept of sustainable development to date, and it is still the most important reference point for this concept today.

Five years after the publication of the Bruntland report, the United Nations Conference on Environment and Development (UNCED), or 'the Earth Summit', was held in Rio de Janeiro. The Bruntland report was used as the basis for the elaboration of the conference's action plan, Agenda 21, which is also an important reference point for the mainstream concept of sustainable development.

Of course, there are countless other publications that have contributed to the construction of this concept, but for the purposes of this thesis, these two key documents will serve as the main points of reference.

A logical starting point for outlining MSD is to provide a definition. The Bruntland report defines sustainable development as follows:

> Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains two key concepts: the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs. (WCED, 1987: 43).

The two 'key concepts' included in this definition allude to the 'why' and the 'how' of MSD. Why do we need to pursue sustainable development? – Because of the needs of the poor. How are we going to pursue sustainable development? – By improving technology and social organization. What is not as immediately apparent in this definition, however, is the 'glue' that holds these two key concepts together, which is *economic growth.*

Economic growth is the sine qua non of MSD. This is made clear in both the Bruntland report and Agenda 21. The Bruntland report estimates that, "in order to have any impact on absolute poverty", per capita income growth rates in developing countries must be kept at or above 3 per cent, measured, of course, in terms of GNP per capita. It goes on to say that, "[g]iven current population growth rates, this would require overall national income growth of around 5 per cent a year in the developing economies of Asia, 5.5 per cent in Latin America, and 6 per cent in Africa and West Asia." But developing countries are not the only ones that need to achieve economic growth. According to the Bruntland report, developed countries need to have economic growth rates in the order of about 3 to 4 per cent, which is "the minimum that international financial institutions consider necessary if these countries are going to play a part in the world economy" (WCED, 1987: 50-51).

Although Agenda 21 is not specific about growth-rate targets, it is equally as emphatic as the Bruntland report about the need for a "dynamic and supportive international economic environment" (UNCED, 1992: 2.2). In fact, the introduction to Agenda 21 is dedicated solely to underlining both the need for economic growth and the merits of neo-classical economics.

Why does MSD place so much emphasis on the need for aggregate economic growth when it has done little or nothing in the past to reduce poverty, and when both common sense and scientific evidence suggest the it is itself the underlying cause of environmental degradation? The obvious answer is that the exponents of MSD seek to acquire the consensus of major power holders and to appease the interests of capital. The rationale provided, however, is that economic growth is a necessary condition for overcoming poverty, which MSD considers to be one of the main causes, if not *the* main cause, of environmental degradation. According to the WCED:

> [P]overty itself pollutes the environment, creating environmental stress in a different way. Those who are poor and hungry will often destroy their immediate environment in order to survive: They will cut down forests; their livestock will overgraze grasslands; they will overuse marginal land; and in growing numbers they will crowd into congested cities. The cumulative effect of these changes is so far-reaching as to make poverty itself a major scourge (WCED, 1987: 28).

As this quote suggests, MSD focuses more on the environmental destruction caused by poor people than it does on the destruction caused by large-scale industry and over-consumptive lifestyles in the North. Of course, there is a significant amount of environmental destruction caused by poor people; however, this destruction could hardly compare to that caused by the cumulative effect of the automotive industry, the petroleum industry, large-scale commercial logging, agribusiness, agrochemical suppliers, large-scale commercial ranching, hydroelectric dams, nuclear power stations, the military hardware industry, large-scale commercial fishing, and so on. In any case, whatever the relative amount of environmental destruction caused by the poor, the exponents of MSD have chosen to highlight this destruction in order to justify the need for pursuing economic growth.

This emphasis on the need for economic growth is not new. As outlined above, economic growth has been the main focus of mainstream development since the early postwar period. The only difference now is that sustainable development qualifies the need for economic growth with a caveat: in order for economic growth to alleviate poverty, its benefits need to be better distributed. However, when it comes to specifying mechanisms for redistributing income, both the Bruntland report and Agenda 21 have little or nothing to say, especially with respect to intra-national redistribution. With respect to international redistribution, the two documents only go so far as to recommend that Third World debt be revamped (not cancelled) in order to ease the burden of repayment, that developed countries strive to allocate 0.7 per cent of their GNP to official development assistance, and that direct foreign investment in Third World countries be encouraged. Obviously, redistribution is not really a component of MSD, which seeks for strategies that do not require significant changes to existing economic structures. Moreover, an emphasis on redistribution would be incongruent with the prevailing neoliberal paradigm, which frowns upon 'market distortions', subsidies and protective measures for disadvantaged groups, high taxes for transnational capital, high spending on social welfare programs, publicly-owned means of production, and so forth.

Leaving aside the justifications for pursuing economic growth and the shortcomings of these justifications, and moving on to how MSD proposes to realize economic growth

without further destroying the environment, as alluded to in the Bruntland report's definition of sustainable development, economic growth and sustainable development are to be achieved by improving the current state of technology and by adapting 'social organization'. In the case of MSD, the latter refers to better management of natural resources. These two strategies – improved technology and better management of natural resources – are supposed to make economic activity more environmentally efficient so that the earth can sustain "a new era of economic growth" (WCED, 1987:8). Whether or not this is possible in the long run, though, is a matter of debate. Many critics argue that the earth has absolute limits with respect to the rates at which it can supply natural resources and assimilate waste products, and that it is theoretically impossible for improvements in environmental efficiency to indefinitely keep pace with economic growth. The proponents of MSD, however, do not recognize absolute limits; they only recognize "limitations imposed by the present state of technology and social organization" (WCED, 1987: 8). This debate will be furthered explored below. For the time being, the important thing to note is the central role that technological innovation plays in the mainstream concept of sustainable development.

It is also important to note that most of the existing technology that MSD considers to be 'environmentally sound' has been developed in the North, and that most of the future environmentally sound technology is also expected to be developed in the North.[7] The Bruntland report, Agenda 21, and other publications that espouse MSD, emphasize the need to transfer this technology to the South. Not only does this imply that Western technology is generally considered to be superior to 'traditional' technology, an attitude that reflects remnants of the modernization paradigm and that is not, as we shall see, necessarily warranted, but it also implies that the South will have to increase its

[7] In Agenda 21, environmentally sound technologies are defined as technologies that "protect the environment, are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products, and handle residual wastes in a more acceptable manner than the technologies for which they were substitutes... they are not just individual technologies, but total systems which include know-how, procedures, goods and services, and equipment as well as organizational and managerial procedures" (UNCED, 1992: 34.1).

dependence on the North, and have to channel more financial resources to the North as well.[8]

In addition to the development and dissemination of environmentally sound technology, and closely related to it, is better management of natural resources, which is supposed to help increase the environmental efficiency of economic activity. In this context, the mechanisms proposed for better managing natural resources include: (1) the formulation of laws and regulations (national and international) vis-à-vis pollution control and access to natural resources; (2) the strengthening of environmental agencies in governments, and the strengthening of the UNEP; (3) the incorporation of environmental factors into economic models and economic decision making; (4) the compilation of environmental information and data; (5) the establishment of an environmental/economic accounting system that would parallel (not replace) traditional national accounting practices; and, (6) the establishment of additional protected areas (WCED, 1987; UNCED, 1992). Like the development and dissemination of environmentally sound technology, the implementation of these mechanisms will require enormous amounts of financial resources, which further justifies the need to pursue economic growth.

It should be acknowledged, here, that this strategy has had some degree of success in developed countries, especially with respect to pollution control. As mentioned above, compared to 20 or 30 years ago, there is less litter on the streets of major cities and along the highways of developed countries, more solid wastes are being recycled, cars have become more fuel efficient, gasoline has been made cleaner, industrial effluents have been reduced and made less toxic, etc. This observation has given impetus to the argument that developing countries should follow suit by investing in Western technology and adopting better managerial techniques. Perhaps this argument is most clearly put forth by an environmental-degradation model known as the environmental

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[8] Although there is much talk in the Bruntland report and Agenda 21 of facilitating the transfer of environmentally sound technology to the South by providing developing countries with concessional and preferential terms, when push comes to shove, priority is given to the protection of intellectual property rights (UNCED, 1992: sec.34; WCED, 1987:88).

Kuznets curve.[9] The hypothesis of the environmental-Kuznets-curve model is that environmental degradation will increase in the early stages of development and decrease in the latter stages (following the curve of an inverted-U). Recent trends within developed countries and comparisons between developed and developing countries are used to support this hypothesis. However, what the environmental Kuznets curve does not take into consideration is that developed countries not only draw on their *own* natural resources and pollute their *own* environment, but also those of Third World countries (Guha et al., 1997:46-52). This is done by, for example, importing raw materials from developing countries, exporting wastes to developing countries, relocating the heavily polluting economic activities of transnational corporations to developing countries, and polluting 'the commons'.[10] The visibly cleaner environments in developing countries, therefore, is not only a function of 'better' technology and 'better' managerial techniques, but also of their ability to 'export' their environmental degradation – a luxury that developing countries will never have.[11] Proponents of MSD would probably respond to this oversight by arguing that improvements in technology will eventually make economic activity so environmentally efficient that *no* country will need to export its

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[9] The environmental Kuznets curve takes its inspiration from the original Kuznets curve. The hypothesis of the original Kuznets curve was that if one were to graph income inequality versus income per capita he would find that income disparity would rise in the early stages of development and fall again in the latter stages, much like the shape of an inverted-U curve. In the 1960s, this hypothesis was used to justify income inequalities and encourage the pursuit of aggregate economic growth. Comparisons between developed countries and developing countries were used to provide "statistical evidence" for this hypothesis. However, the prevalence of high and often increasing income disparity in most developing countries today – including 'upper-middle-income' countries such as Mexico – has discredited this model for everyone except the most faithful adherents to laissez-faire economics. For a thorough description of the environmental Kuznets curve, and an argument in its favour, see Panayotou in Ahmed et al. (ed.) (1995).

[10] The carbon dioxide emissions of developed countries is an illustrative example of how developed countries pollute more than their share of the commons. Even though less than one quarter of the world's population lives in developed countries, they account for 75% of the world's carbon dioxide emissions. (Patternson and Grubb, 1992: 297).

[11] The ability of developed countries to 'export' their environmental degradation is demonstrated by William Rees' 'footprint analysis'. This analysis is used to estimate the amount of productive land needed to produce the material goods consumed by an average person of any given country or region. According to Rees, if we were to take all of the productive land on earth and divide it by the current world population, we would find that each person has approximately 1.5 hectares available to produce the goods he will consume. In other words, this is the maximum size of the ecological 'footprint' that each person can make on earth without taking up more than his share. However, according to Rees' calculations, the average ecological footprint of Europeans is 3 hectares/person and the average of North Americans is 4 to 5 person/person. (Rees cited in the New Internationalist, June 1999: 16).

environmental degradation. The validity of the environmental Kuznets curve, therefore, is ultimately tied to the limits-to-growth debate, which will be explored below.

If economic growth were to be considered the first dimension of the mainstream concept, and technological innovation and better management of natural resources the second, then the third would be 'ecumenism'. Ecumenism, in this context, refers to the global nature of the perspective, discourse, and prescriptions of MSD. This perspective is evidenced by the WCED's mandate to formulate " a *global* agenda for change" (italics added) (WCED, 1987: ix); and again by the opening sentence to the Bruntland report, which states that: "In the middle of the 20th century, we saw our planet from space for the first time" (WCED, 1987: 1). Indeed this *is* the gaze of the mainstream concept of sustainable development: a view of the entire planet at once! The prescriptions of MSD are also global; they are, once again, to stimulate *worldwide* economic growth, to disseminate Western technology *all over the world*, to compile environmental information and data *on every part of the earth*, to set up the UN system-wide Earthwatch to monitor the environmental problems of *the entire planet* (see http://www.unep.ch /earthw/assess.htm), and to solicit the cooperation of developed and developing countries alike in the management of *all of the earth's* natural resources.

It may seem that the ecumenical nature of the mainstream concept of sustainable development is obvious and not worth mentioning, especially to those of us who live in the Western world and are inundated with media that conveys this same perspective. After all, the environmental crisis *is* global, and as such it is only appropriate that the prescriptions also be global. However, as we shall see, ecumenism is one of the characteristics of the mainstream concept that distinguishes it from the grassroots concept; or, at least it distinguishes it from one of the paradigms that has contributed to the construction of the grassroots concept, this being postmodernism.

Several scholars with a postmodern bent have heavily criticized MSD because of its ecumenical nature.[12] According to these scholars, this discourse has an ulterior motive: to

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[12] See, for example, Escobar (1996), Gudynas in Sachs (ed.) (1993), Hildyard in Sachs (ed.) (1993), and Shiva (1994).

frame the environmental crisis in such a way that only the major power holders (transnational corporations, international institutions, and national governments) are capable of providing viable solutions. Framed in this way, the environmental crisis becomes an argument for keeping the major power holders in control and for maintaining the status quo. Nicolas Hildyard eloquently summarizes this line of criticism by outlining what he claims to be the six strategies that were used by the major power holders to 'capture the debate' within UNCED:

> *First*, there was a concerted effort on the part of government and industry to distance themselves from the destructiveness of 'past' policies. Constant references within the official documents to 'recent' satellite data, 'new' studies, 'latest statistics' and the like conveyed the impression that ecological degradation was a recent phenomenon – and one, moreover, that had primarily come to light through the diligence and foresight of *government* scientists, *international* institutions and *industrial* planners, thereby protecting the credibility and authority of those who bear prime responsibility for the activities that have created the current ecological crisis...
>
> *Second*, there was an attempt to deny the many conflicts of interests underlying the crisis. Neither the institutional framework of global society nor the material interests and values it reflects received any serious scrutiny. Instead, the ills under discussion were cast as having somehow 'happened' by themselves. No one would appear to have promoted the destruction, except by way of lack of knowledge, foresight or alternatives. No one was gaining power or profit from current policies; no one stood in the way of solutions. Instead, UNCED promoted a rosy-tinted view of a world where all humanity is united by a common interest in survival, and in which conflicts of class, race, culture and gender are characterized as of secondary importance to humanity's supposedly common goals...
>
> *Third*, by removing environmental problems from their local setting and accentuating the global nature of the environmental crisis, UNCED gave currency to the view that *all* humans share a common responsibility for environmental destruction, either because of the demands they are currently placing on the environment or because of the demands they are expected to exert in the future. Thus, instead of ozone depletion being blamed – as it should be – on local corporate interests (Dupont, for example) using their global reach to globalize sales of CFCs and other ozone-depleting chemicals regardless of the known environmental impact, responsibility for the ozone hole was pinned on the future demand for fridges in the Third World.
>
> *Fourth*, by portraying environmental degradation as a global problem requiring global solutions, UNCED gave added impetus to those multinational interests who would extend their

> global reach. By definition, only international institutions and national governments were up to the task in hand.
>
> *Fifth,* and closely allied to the above, there was an attempt to frame environmental problems in terms of 'solutions' which only the North (and its allies in the South) can provide...
>
> And *Sixth,* UNCED attempted to inspire environmentalist and industrialist alike with a 'crisis management mentality', in which the need for action was deemed more important than settling differences on what action should be taken, by whom, on whose say-so and with whose interests paramount. Few environmentalists would argue that environmental degradation has [not] reached critical proportions... But within UNCED the critical nature of such threats was used to justify giving those currently in power still more authority. (Hildyard in Sachs (ed.), 1993: 29-31)

Of course, not everyone involved in the UNCED-process agreed with the main thrust of the discourse and strategies that held sway at the conference. In fact, there is no doubt that some of the participants would have whole-heartedly agreed with the criticisms of Hildyard. Unfortunately, though, these participants did not have enough political or economic clout to significantly alter the direction of the debate. They were, however, able to influence it enough to extort some concessions for marginalized groups. Thus, the third chapter of Agenda 21 is dedicated to "empowering local and community groups", "increasing local control of resources", "developing integrated strategies and programmes for poverty-stricken areas", and attaining "greater involvement of NGOs and local levels of government as delivery mechanisms" (UNCED, 1992: ch. 3). As we shall see, some of these strategies are exactly the same as the ones proposed by the exponents of grassroots sustainable development (GSD). On one level, this is an indication that part of the grassroots discourse was co-opted in order to obfuscate the fundamental nature of MSD. However, on another level, this reflects a commitment to providing some concessions to marginalized groups.

This commitment has manifested itself in what could be called a 'hybrid sustainable-development strategy', which acts as a sort of sidekick to the main thrust of MSD. This strategy combines some elements of the mainstream concept of sustainable development, such as top-down decision-making and a technical approach to fixing environmental problems, with some elements of the grassroots concept, such as a

preference for small-scale projects, and an emphasis on 'participation'. It should be pointed out, though, that the concept of 'participation' means something quite different in the MSD context than it does in the GSD context. For the proponents of MSD, participation is understood to mean the integration of marginalized groups into a sustainable development process that is, for the most part, designed and implemented from above and from the outside. For the proponents of GSD, on the other hand, in order for participation to be 'authentic' it has to come from below and from the inside. This will become clearer in the following section. For the time being, the important thing to note is that there is a 'sidekick' strategy to the main thrust of MSD that is in some ways similar to GSD, but that can be distinguished from the latter by its top-down approach and emphasis on technical solutions, which come from the outside. As we shall see, in Chapter 4, there are several actors in the community of Ayotitlán that promote this form of sustainable development.

2.3 Grassroots Sustainable Development (GSD)

2.3.1 Introduction

As with the mainstream concept of sustainable development, the grassroots concept began to take shape in the late 1960s and early 1970s, during the time of widespread disillusionment with the modernization paradigm. As mentioned above, this disillusionment was caused by a growing realization that, in spite of having achieved high economic growth rates, development efforts in the post-war period had done little or nothing to improve the living conditions of the world's poor. The number of people living in absolute poverty had increased throughout the post-war period; the spread of industrialization and of Green-Revolution technology had caused extensive environmental damage; and by the late 1960s, economic stagnation had set in. It was in this context, in an attempt to explain past failures and in the search for development alternatives, that a myriad of new ideas, theories, concepts, models, strategies, and explanations emerged, including the concept of GSD.

In order to properly describe the concept of GSD, it is first necessary to review some of the trends in development thinking with which it emerged, and to contextualize it within these trends. This is the purpose of the following sub-sections; that is, to provide a brief review of the theoretical influences on GSD, before analyzing the concept itself.

GSD is part of a trend in development thinking known as Another Development, which is itself the product of two other trends: Dependency theory and postmodernism. If one were to use the analogy of a tree, Dependency theory and postmodernism would be like the roots of the tree, Another Development would be like the trunk, and GSD would be like one of the branches (see Figure 1 on the next page). We will begin our description of GSD by reviewing its theoretical roots.

2.3.2 Dependency theory

Dependency theory originated in the late 1960s from the debates between Latin American intellectuals on the problems associated with development and underdevelopment. Not only did it provide an effective criticism of the modernization paradigm, but it also provided an alternative perspective that was, and still is, instrumental in formulating alternative development strategies.

There are two intellectual currents that converged to give rise to Dependency theory: Latin American structuralism and Marxism. Latin American structuralism originated from the United Nations' Economic Commission for Latin America (CEPAL in its Spanish acronym), which was established in Santiago, Chili, in 1948. The person who is generally credited for having founded the structuralist school of thought is Raul Prebisch, who became the president of CEPAL in 1950.

In a paper published in 1950, entitled "The Economic Development of Latin America and its Principal Problems", Prebisch described the world economy as being made up of a centre and a periphery, in which the centre represented the rich industrialized countries and the periphery represented the developing countries. The central thesis of this paper was that underdevelopment in the periphery was largely a

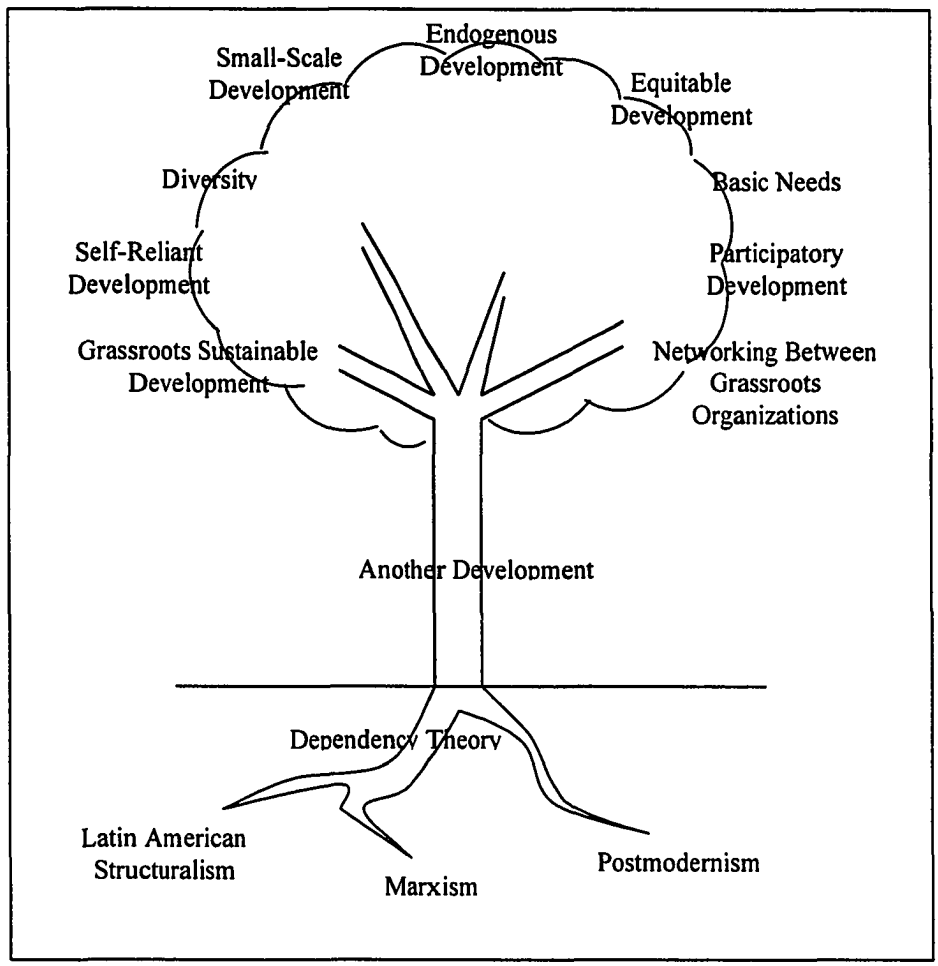

Figure 1. Theoretical Roots of Grassroots Sustainable Development

function of its unfavourable terms of trade with the centre. According to Prebisch, Latin America had experienced 'deteriorating terms of trade' vis-à-vis the centre from the mid-1870s to the mid-1930s. In other words, Latin American countries were having to export more and more primary products to the centre in exchange for the same unit of manufactured products, which ran contrary to what the neo-classical theory of economics would have predicted.[13] In order to avoid further deteriorating terms of trade, Prebisch

[13] According to neo-classical economic theory, if all countries specialize in the area of economic activity in which they have a comparative advantage it works to the mutual benefit of all. Technological progress in one area is supposed to benefit not only the country where it is realized, but all of its trading partners as well. However, according to Prebisch's study, this was not what was happening during the late-nineteenth

and the other economists at CEPAL recommended that Latin American countries strive for a greater degree of self-reliance, which was to be achieved primarily by implementing a policy of import-substituting industrialization (ISI).

Most of the policies recommended by CEPAL, including ISI, were the same as the ones that stemmed from the economic growth models of the modernization paradigm. In line with Keynesian economic theory, CEPAL recommended that governments: channel financial resources towards the modern urban industrial sector; provide infrastructural support, subsidies, and easy credit for targeted industries; protect fledgling industries by imposing tariffs on the industrial imports whose production was to be substituted; encourage foreign investment; and, continue exporting primary products to the centre in order to generate hard currency, which could be exchanged for the capital goods required for industrialization. Some of the assumptions were also the same as those of the modernization paradigm. For example, it was assumed that countries in the periphery should strive to become more like those in the centre, at least with respect to their patterns of production and consumption. And, it was also assumed that political and social benefits such as enhanced democracy and better standards of living for the working and middle classes would be the natural outcome of economic growth and industrialization.

Because of these similarities, some analysts consider Latin American structuralism to be part of the modernization paradigm (for example Hunt, 1989). And in many ways it is. However, in its analysis of development and underdevelopment, Latin American structuralism steps outside of the modernization paradigm in one important way: it points out that, because of deteriorating terms of trade and unequal exchange, the world economic system does not benefit the periphery nearly as much as it does the centre. This is perhaps the most distinguishing feature of Latin American structuralism, and its

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and early-twentieth centuries. At this time, Latin America was doing what was expected of it as part of the periphery; that is, specializing in the production of food and raw materials, while countries in the centre were specializing in the production of manufactured goods. During this time, major technological advances were realized in the centre, which should have, according to neo-classical theory, lowered the price of manufactured goods relative to primary goods. However, the opposite occurred: the ratio of prices of manufactured goods to those of primary goods actually increased. This meant that Latin America was having to export increasingly more primary products in order to continue importing the same amount of manufactured goods. In other words, Latin America was experiencing *deteriorating terms of trade*.

most important contribution to Dependency theory. It should also be mentioned that, in the late 1960s, when the ISI strategy stagnated and development entered into crisis, some of the economists working at CEPAL (such as Celso Furtado and Osvaldo Sunkel, for example) radicalized their approach, and in doing so became dependency writers.

Marxism was another major influence on Dependency theory. The basic method of Marxist class analysis is manifest in much of the dependency literature. And, the Marxist theory of imperialism served as an inspiration and a point of departure for the early dependency writers.

Marx himself had very little to say about capitalist development outside of Europe, and what he did say revealed a deterministic and universal view of history in which the less developed countries were destined to follow in the footsteps of the more advanced industrial ones. In a frequently cited passage from "Capital" Marx states that "the industrially more developed country shows the less developed one merely an image of its own future." Marx's view of capitalist development in the periphery, then, is best categorized as a forerunner to, and part of, the modernization paradigm. However, at the same time, his theoretical approach to class analysis served as a powerful tool for many of the dependency writers.

The work of the classical Marxists on the theory of imperialism has more direct bearing on Dependency theory than Marx's own work does. The theory of imperialism, like dependency theory, deals largely with the mechanisms of global accumulation of wealth.[14] One important difference, though, is that the theory of imperialism analyses these mechanisms from the perspective of the centre, while Dependency theory analyses them from the perspective of the periphery. The other important difference is that, although the theory of imperialism recognizes that economic surplus is extracted from the periphery, and that this extraction leads to "sporadic and uneven development" (Lenin,

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[14]Lenin, who is perhaps the most important of the early theorists of imperialism, claimed that capitalism in the late-nineteenth and early-twentieth century was characterized by the concentration of production and the existence of monopolies. Big banks had combined their capital with industrial capital to create "finance capital", which was then exported abroad to the "backward" countries and used to "dominate immense spheres of production" (Lenin, 1917).

1917), it still sees capitalism as an inevitable and progressive force in the periphery. Dependency theory, by contrast, sees capitalism as a force in the periphery that, at best, blocks development, and at worst leads to the 'development of underdevelopment'.[15]

Before moving on to a description of Dependency theory, it should be pointed out that Dependency theory is by no means a homogenous school of thought. In fact, because of the variety of theoretical approaches used by the various dependency writers, it is almost impossible to provide a general description without contradicting some of the individual contributions. However, a general description, with its inherent limitations, is what will have to be provided, since it is beyond the scope of this thesis to review individual contributions and explore the nuances between them. With this in mind, a 'typical' Dependency position can be outlined as follows: [16]

(1) The main obstacles to development in developing countries are not lack of capital or of Western technology, as modernization theory would have it, but rather the links these countries have with the centre, and their internal class structures.

(2) The periphery's links with the centre were established in the sixteenth and seventeenth century, during the age of mercantile capitalism. Since then, the periphery has been used as a source of raw materials and cheap labour, and an outlet for the centre's finance capital.

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[15] Paul Baran is the neo-Marxist theorist who is generally credited with being the first to have made the break with classical Marxism by suggesting that capitalism would never fulfill its historic mission in the periphery. Picking up from Lenin's analysis of monopoly capitalism, Baran further developed the concept of economic surplus and the mechanisms by which it was extracted from the periphery. In his analysis, Baran differentiated between "actual surplus" and "potential surplus", the former simply being the difference between what a country produces and consumes, and the latter being that which could be produced if it were not for "the waste and irrationality of monopoly capitalism with its heavy outlays on, *inter alia*, packaging and advertising on the one hand, and militarism on the other" (Baran cited in Hunt, 1989: 66). According to Baran, the actual economic surplus produced in the periphery is not reinvested in the country of its origin; instead, it is appropriated by the national bourgeoisie and by foreign enterprises, who retain a part of it and transfer the rest to the centre. Moreover, Baran observed that the capitalist activity in the periphery (whether domestically or foreign owned) tended to be monopolistic and non-dynamic, discouraging entrepreneurship and dominating access to the natural resources. Because of these factors, Baran concluded that capitalism had somehow stalled in the periphery, and that it was incapable of developing the periphery in the same way as it had developed the centre.

(3) The centre siphons off economic surplus from the periphery. This is done primarily through unequal terms of trade.

(4) Development and underdevelopment are two sides of the same coin. Development in the centre and in the small industrial enclaves of the periphery is only made possible by exploiting and 'underdeveloping' the majority of the periphery, which is different from leaving it undeveloped. Underdevelopment in the periphery occurs when capitalist systems of production supplant traditional systems of production – the former are designed to maximize profits, while the latter are designed to meet the needs of the local population. In the process of supplanting these traditional systems, natural resources are appropriated, overexploited, and destroyed, and traditional social and economic structures are dismantled, leaving the masses without livelihoods, unable to meet their basic needs.

(5) The bourgeoisie and foreign capitalists in developing countries act as conduits for the flow of economic surplus from the periphery to the centre, and at the same time they are able to accumulate wealth for themselves. Since members of the national bourgeoisie benefit from the existing structures, they cannot be expected to act as catalysts for change.

(6) Because of their position in the world economic system, the countries of the periphery cannot expect to pass through the same stages of economic development as the countries of the centre. The only way for them to move forward, then, is to cut ties with the centre, and embark on a path of socialist development. However, since the state apparatus is controlled by the national bourgeoisie, which benefits from the existing structures and is averse to change, a revolution is a necessary first step.

In summary, Dependency theory provides an alternative perspective – some would even say, an alternative paradigm – from which to view the development process in

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[16] The following points are a synthesis of three different summaries of Dependency theory: Blomstrom and

developing countries.[17] It questions some of the basic assumptions of the modernization paradigm, arguing that it is impossible for developing countries to follow through the same stages of development as the industrialized countries. And, it argues that the only way that developing countries are going to realize development that benefits the majority of the population is if they cut ties with the centre, become more self sufficient (on a national level), and implement 'socialist' policies. But, herein lies the weakness of Dependency theory. To what degree is it possible or desirable to be self-sufficient on a national level? And, what exactly is meant by 'socialist' policies? Do they mean that countries in the periphery should follow the path of the ex-Soviet Union, for example? As many critics have pointed out, Dependency theory is as vague and lacking in concrete alternative development strategies as it is clear and prolific in its criticisms of the modernization paradigm.

This is where Another Development comes in. Proponents of Another Development implicitly accept Dependency theory's criticisms of mainstream development, but instead of elaborating on these criticisms in order to further justify the need for alternative development strategies, they focuses on formulating concrete and viable alternative development strategies that take these criticisms into consideration and are in many ways consistent with the vague recommendations of the dependency writers. For example, proponents of Another Development promote increased self-reliance (mostly on the community level, but also on the national level), egalitarianism and popular participation in decision-making (which are underlying concepts of utopian socialism), and the transformation of local, national and international structures, which are considered to be the root cause of underdevelopment.

Hettne, 1984; Hunt, 1989; and Harrison, 1998.

[17] There is some uncertainty as to whether Dependency theory should be called a 'theory', a 'school of thought', a 'paradigm', or an 'approach' (Kay, 1989:190). For example, according to Gilbert Rist, "the dependency school produced a perfect paradigm. Beyond individual variations were a body of concepts and a common theoretical perspective which posed a radical challenge to the other dominant paradigm: that of modernization." (Rist, 1997: 118). However, according to Diana Hunt, "[g]iven the outstanding differences between these perspectives [of the various dependency writers], it scarcely makes sense to speak of a dependency paradigm." (Hunt, 1989: 217). Up until this point, we have used the term 'Dependency theory' and referred to it as a school of thought, which is the most common. But, we will consider this school of thought to be representative of a paradigm, which at various times has also been called neo-Marxism, world systems theory, and underdevelopment theory.

This brings us to the end of our sketch of Dependency theory. The next section outlines another major influence on Another Development and on GSD: postmodernism.

2.3.3 Postmodernism

The term postmodernism has been used in numerous contexts to refer to a variety of different concepts, paradigms, and trends. It was first used in the 1950s in the fields of art and architecture to refer to art that was different from, and being produced after, modern art, and to describe architectural designs that moved away from the "pragmatic, efficient, rationalist functionalism of modernist architecture" (Appleby et al., 1994: 201). Today, it is used in the fields of art, architecture, literature, all of the social sciences, and even fashion and pop culture.

In the context of international development, 'postmodernism' is used to refer to two interrelated concepts. First, it is used synonymously with the terms 'post-industrialism', 'post-capitalism', and 'post-Fordism' to refer to the latest phase in capitalist development, which is said to have begun in the 1970s and which is characterized by, inter alia, an increase in the internationalization of capital, a decrease in the power and importance of the nation-state, the establishment of a New World Order designed to facilitate capitalist development and international free trade, the international dispersion of assembly activities, a new international division of labour, a drop in the real value of wages, and an increase in unemployment and underemployment (Schuurman, 1993; Veltmeyer and Petras, 1998). Postmodernism, in this sense of the word, is only relevant to our discussion in the sense that it describes the historical context out of which emerged Another Development.

The second use of the term refers to a paradigmatic approach that cuts across all of the social sciences, and that criticizes modernity, discourse, 'meta-theories', and structuralism. This approach emerged during the 1960s, and was originated by a number of mostly French intellectuals, the two most prominent being Michel Foucault and

Jacques Derrida.[18] This is the postmodernism that has had the most influence on the conceptualization of Another Development, and that is the focus of our discussion.

At the heart of (this) postmodernism is a critique of the 'discourse of modernity'. What is the 'discourse of modernity'? To begin with, modernity is equated with the rational world-view of the Enlightenment era, which is said to have begun sometime in the eighteenth century. Since that time, Western society has been founded on a number of assumptions that, until recently, have gone unquestioned. These assumptions include: (1) that science and reason can be applied to discover objective, timeless, and universal 'truths' (or knowledge) about ourselves and the social and natural world we live in; (2) that the truths/knowledge produced by (both the exact and social) sciences can be used to realize human progress (economic, social and political); and, (3) that the discourses used to describe and disseminate truths/knowledge are objective representations of reality. These assumptions have served as the foundations for the social, legal, and economic structures upon which Western society rests, and they are implicit in the 'discourse of modernity' (i.e. the laws, news, theories, reports, narratives, etc.) that shape our world-view. Postmodernists seek to challenge these assumptions in order to demonstrate that the Western world-view is not as objective and timeless as it pretends to be, and that it is no more valid, or less valid, than the world-view of other (traditional) cultures.

The method that postmodernists use to challenge these assumptions is to 'deconstruct' the discourse of modernity. This is done in two ways. The first way, which was originated by Jacques Derrida, is based on a linguistic theory known as 'poststructuralism'.[19] Poststructuralism posits that there is no direct correspondence between signifiers (i.e. words) and the signified (i.e. what the word represents). Instead, every signifier conjures up an infinite number of signified images, and by extension,

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[18] The roots of this form of postmodernism can, to some extent, be traced back to Friedrich Nietzsche.

[19] The term 'poststructuralism' is associated with two unrelated theories. The first is a linguist theory that questions the structural integrity of language itself, and argues that it is impossible to find the central meaning of any text. And the second is a theory that aims to discredit 'structuralist' theories, such as, for example, Marx's theory of historical materialism, which uses a base/superstructure model to explain human progress. In the social sciences, the term 'poststructuralism' is often used synonymously with the term 'postmodernism'.

every discourse, or text, has an infinite number of interpretations.[20] Taken to an extreme, this position can be used to argue that it is impossible for any discourse to represent objective reality, whether it be modernist or otherwise.

The second method of deconstructing discourses/texts – which is much more relevant to our discussion – is to simply 'read between the lines' in order to expose the inconsistencies, omissions, arbitrary hierarchies, biases, and presuppositions that are inherent to all texts. By doing this, postmodernists seek to 'identify the author', to expose the political agenda that is hidden in all discourse, and to demonstrate that all discourse is merely a subjective interpretation of reality, including the discourse of modernity, which is supposedly based on scientific evidence.[21] In fact, postmodernists argue that the scientific procedures and 'facts' that underlie (and are made reference to in) the discourse of modernity, merely serve to emphasize the impression of objectivity and truth, to hide the author's political agenda (which he may or may not be aware of), to obscure his selecting and shaping of 'facts', and to mask his 'will to power'.

Postmodernists focus much of their critique on what they call the 'grand narratives' or 'meta-narratives' of modernity. Some examples of grand narratives are the heroic description of the industrial revolution, the epic story of democracy, the Marxist promise of the collapse of capitalism and the development of an utopian socialist society, and, last but not least, the development discourse of modernization. Postmodernists deconstruct these grand narratives in order to expose their hidden biases (Eurocentrism, masculinity, and modernity), their omissions (which are innumerable), and their political agenda (to shape world-views and to promote progress). According to postmodernists, there is no more truth to these narratives than there is to fictitious novels (Appleby et al., 1994). Grand narratives, therefore, are rejected by postmodernists in favour of a multiplicity of 'mini-narratives', whose stories explain small practices, and local events, rather than

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[20] To illustrate this point, Benn and Tompson point out that the word 'water', which is a signifier, could conjure up a variety of images, including a puddle, a glass of water, a lake, a river, rain droplets, a shower, the symbol H2O, and so forth (2001: http://educ.queensu.ca/~qbell/update/tint/postmodernism/postst.html).

[21] The above quote from Nicholas Hildyard (on pages 26 and 27) is a good example of this method of deconstruction.

large-scale universal or global concepts. According to Klages (1997) "[p]ostmodern "mini-narratives" are always situational, provisional, contingent, and temporary, making no claim to universality, truth, reason, or stability."

As this rudimentary sketch of postmodernism indicates, postmodernism is in many ways more of a criticism of other paradigms than a prescription for action. In fact, one of the major criticisms levelled against postmodernism is that it fosters political nihilism.[22] However, as the above quote from Klages suggests, some scholars have interpreted postmodernism otherwise. They see it as a rejection of all that is grand, universal, timeless, homogenous, objective, Eurocentric, and imperial, in favour of all that is small, relative, transient, heterogeneous, subjective, culturally diverse, and endogenous. Indeed, this is how several scholars working in the field of international development have come to interpret the movement (for example Gustava Esteva, Wolfagang Sachs, and Vandana Shiva).

It should be pointed out, here, though, that none of the originators of postmodernism – that is, none of the mostly French intellectuals who belong to the 'postmodern honour roll' – dealt directly with international development studies. In fact, it was not until the early 1990s that the discourse of development began to be deconstructed. [23] Therefore, the influence of postmodernism on the early formation of Another Development was more indirect. It came from the general intellectual climate that postmodernism created in the early 1970s, which infused the early theorists of Another Development with some degree of postmodern sensibility. This influence manifested itself in many of the strategies of Another Development. For example, instead of subscribing to the meta-theories and 'meta-strategies' of modernization or communism, proponents of Another Development began favouring diverse approaches to small-scale, local-specific development; instead of lauding modern values and Western technology, they began promoting cultural diversity and traditional technology; and,

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[22] It could be argued that the popularity of postmodernism in the 1970s indirectly led to the rise of neoliberalism by fostering political nihilism and splitting the left.

instead of promoting the prescriptions of development 'experts', they began recommending popular participation in the design of alternative development projects.

The influence of postmodernism on Another Development and on GSD will become self-evident in the following sections.

2.3.4 Another Development

Another Development (AD) emerged in the mid-1970s, slightly after the rise of Dependency theory and postmodernism. Its first major landmark was a symposium held in Cocoyoc, Mexico in 1974 (Patterns of Resource Use, Environment and Development Strategies), which was organized by the UNEP and the UN Conference on Trade and Development (UNCTAD). Consistent with Dependency theory, the general consensus at the conference was that problems of poverty and environmental degradation were rooted in economic and social structures and international relations (Hettne, 1990). In the conference's declaration it was stated that a process of growth that did not lead to the fulfilment of basic human needs was a travesty of development (Hettne, 1990: 152); and, in line with the Club of Rome's 1972 report "Limits to Growth", it was noted that "[e]nvironmental degradation and the rising pressure on resources raise the question whether the 'outer limits' of the planet's integrity may not be at risk" (Cocoyoc declaration cited in Brohman, 1996).

The second major landmark for AD was the 1975 publication of the Dag Hamarskjöld Foundation's report "What Now: Another Development", which was prepared for the Seventh Special Session of the UN General Assembly. This report was further elaborated in the journal "Development Dialogue", which became an important forum for discussing alternative approaches to development. Two other major reference points for the early formulation of AD are the Institute for World Order (New York), which publishes the journal "Alternatives", and the Centre for the Study of Developing

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[23] For a deconstructive analysis of the development discourse, see for example W. Sachs (ed) (1992, 1993), Escobar (1996), Rahnema et al. (eds.) (1997), Munck and O'Hearn (eds.) (1999).

Societies (New Delhi) (Brohman, 1996; Hettne; 1990). All of these institutions envisioned a similar approach to Another kind of Development.

Over the past two and a half decades, this approach has been elaborated on by innumerable contributors, resulting in a myriad of variations, permutations, and manipulations of the same theme. On one end of the spectrum are radical 'post-development' propositions, which have been heavily influenced by postmodernism, and which advocate the abandonment of the development project altogether in favour of self-generating utopian anarchy.[24] On the other end of the spectrum, are mainstream development schemes that have adopted/co-opted some of the strategies of AD, watered them down, and tried to implement them in a top-down fashion.[25] This section is not concerned with either of these two extremes. Instead it focuses on the forms of AD that fall in the middle of this spectrum. Some of the scholars and institutions that have made important contributions to this 'middle-of-the-spectrum' formulation of AD include David Korten (people-centred development), Robert Chambers (putting the last first), E.F. Schumacher and Manfred Max Neef (human-scale development), Marshall Wolfe and UNRISD (participatory development), Orlando Fals Borda and Albert Hirschman (collective action), the community development journal (community development), Sheldon Annis (direct to the poor), and David Barkin, Enrique Leff, and Michael Redcliff (grassroots sustainable development).

Even amongst these contributions there is a considerable amount of diversity with respect to priorities, emphasis, foci, and recommended strategies, which is not surprising since the proponents of Another Development do not believe in one single path to development (Veltmeyer, n.d.). However, in spite of this diversity, it is possible to identify some dominant themes. These dominant themes can be summarized in the following terms.

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[24] See, for example, some of the contributions to Rahnema et al. (eds.) (1999).

[25] The Mexican government has implemented a number of these schemes over the past 25 years, including PIDER, SAM, and SOLIDARIDAD. These programs will be briefly reviewed in the following chapter.

(1) Priority is given to meeting basic needs. According to the proponents of AD, the focus of development should be on meeting basic needs, as opposed to achieving aggregate economic growth. The concept of 'basic needs', in this case, is different from the one put forth by the World Bank, which only includes 'universal' and quantifiable needs such as food, clean water, clothes and shelter. For the proponents of Another Development, basic needs also include less tangible ones such as security, participation, identity, freedom, leisure and any other need that a community might define for itself. Moreover, it is recognized that these latter needs can differ across cultures and may change with time (Brohman, 1996; Hettne, 1990). (Note the postmodern undertones associated with these latter needs.)

The means proposed for meeting basic needs are also different from those proposed by the World Bank and other international development institutions.[26] Instead of relying on the state or the private sector to provide for the basic needs of the poor, proponents of AD propose an eclectic strategy that would allow communities to meet their own basic needs and become more self-reliant.

(2) Self-Reliance. In line with the recommendations of dependency theorists, proponents of AD propose a shift towards self-reliance on both the national and community level, but especially on the community level. Community-level self-reliance is to be achieved by orienting local productive activities towards the needs of the community (as opposed to the market), undertaking collective action (perhaps best achieved through the formation of cooperatives), strengthening local and regional markets, building upon existing traditional technologies, and forming local and regional centres for technical research and development. This strategy presupposes the need for communities to have a large degree of autonomy, and to have control over their local

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[26] In the 1970s, in an effort to co-opt some of the progressive proposals of Another Development, the World Bank proposed a "growth-with-equity" approach to meeting basic needs. This approach continued to give priority to achieving aggregate economic growth, it avoided structural changes, and it proposed that the state provide for the basic needs of the poor by channelling more funds towards social welfare programs. In the 1980s, in the context of massive cuts to government spending on social welfare programs, this strategy gave way to one of "structural adjustment with a human face", which "targeted" some of the poorest communities and elicited their 'participation' (i.e. consent and provision of labour) in the implementation of top-down projects. For an outline of these mainstream 'basic-needs' strategies see Veltmeyer (1996).

natural resources. Popular participation is required in order to ensure that this strategy leads to the fulfillment of the basic needs of all community members. National governments can provide an enabling environment by decentralizing political and economic power down to the community level, which is not necessarily the same as the municipal level. And, outsiders providing technical assistance can do so most effectively by first sitting down, asking, and learning from the poorest of the poor (Chambers, 1983).

(3) The community is seen as the principal agent of development. This may be inferred from the preceding point, but it warrants emphasis, since it contrasts with the assumptions of both Dependency theory and mainstream (or liberal) development theory. Dependency theory assumes that the state is the principal agent of development, which is why so many dependency writers saw revolution and seizing control of the state apparatus as a necessary precondition for moving forward. Mainstream development theory also views the state as the principal agent of development; or at least it did up until sometime in the 1970s, after which it began promoting the role of the market.

(4) Ingenuity, endogenous development, and diversity. There is no single path to development, no blueprint for success. Each community needs to build upon its own strengths and work within its own limitations. Although communities can learn from each other, and outside NGOs can help, ultimately it is the community itself that needs to find its own solutions. As such, proponents of AD advocate diverse approaches to development, both within and between communities.

(5) Small-scale (or human-scale) development. Proponents of AD prefer small-scale development projects to large-scale ones. The latter are capital intensive and labour non-intensive, they depend on Western technology, they need to be designed and implemented by the state and/or by large-scale private companies, and they tend to be highly environmentally destructive. By contrast, small-scale projects use less-expensive technology that can often be produced locally, they tend to be more adaptable to local environmental and cultural conditions, and they tend to be more labour-intensive, which is a boon in the South because of the problems of unemployment and underemployment. Whereas Schumacher, who was the first to outline a strategy for small-scale

development, envisioned the proliferation of smaller (or more-appropriate) Western industrial technology, some of the latter contributors emphasized the need to revitalize and build upon traditional technology, especially in the area of agriculture (see for example Altieri, 1987; and Wilken, 1987).

(6) Participatory development. Broad-based popular participation is the sine qua non of AD. However, the emphasis on the need for participation is not unique to AD. The World Bank and other proponents of mainstream development have, for over 20 years now, also stressed the importance of participation in the development process. There are, however, important differences in the way that the concept is interpreted.

For the proponents of mainstream development, participation is seen as an ingredient that can be added to the development process in order to help meet the (quantifiable) basic needs of the poor. From this perspective, the goal is to integrate previously excluded groups (i.e. the poor, women, and indigenous people) into a development process that is initiated from above and from the outside.

For the proponents of AD, on the other hand, in order for participation to be 'authentic', it must come from below and from within. It includes not only participating in the design and implementation of development, but also in the sharing of the benefits derived from development. As such, it implies a struggle for the redistribution of both power and material wealth.[27] In other words, authentic participation is synonymous with *empowerment*. It involves "heightening the participants' awareness of values, issues, and the possibility of making choices, influencing the content of development, generating new ways of doing things, and also safeguarding the participants' right to an equitable share in the fruits of development" (Wolfe, 1982: 86).

(7) Collective Action. How should marginalized people participate? The answer is: through collective action. Collective action can take many forms, including the

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[27] For this reason, UNRISD defines authentic participation as "the organized efforts to increase control over resources and regulative institutions on the part of groups and movements of those hitherto excluded from such control" (Pearse and Stiefel, 1979:8).

formation of cooperatives, the collective undertaking of small-scale development projects, the invasion of land, protests, the resurrection of traditional indigenous forms of government, and so on. Orlando Fals Borda (1986) and Albert Hirschman (1984) provide numerous case studies of marginalized people who have successfully undertaken collection action.

(8) Equity and Equality. An increase in equity and equality goes hand in hand with popular participation – in order to have increased equity and equality there is a need for popular participation, and visa versa. Moreover, by better distributing wealth and power it is easier to meet the basic needs of everyone without imposing on the limits of the natural environment.

(9) Networking between grassroots organizations in order to effect structural change. Although the focus of AD is on the community, there is an awareness that national- and international-level structures often militate against development in marginalized communities. As such, proponents of AD recommend that grassroots organizations network amongst themselves in order to protect themselves against these structural forces, and to change them. Strategic networks of grassroots organizations can do this in three ways: (1) they can stand up for the interests of individual communities that are threatened by the interests of governments and transnational corporations, as in the case of the Chipko movement in India and the rubber tapper's movement in Brazil; (2) they can pressure governments to adopt policies that create a climate that is conducive to community development; and, (3) they can create 'umbrella' structures amongst themselves that provide some essential services to the smaller constituent organizations (Anis, 1988; Korten, 1990, 1993).

(10) Ecologically sustainable development. In order for communities to be self-sufficient, to survive and be healthy, they need to be able to draw on their local natural resources indefinitely. Long-term ecological sustainability, therefore, is an important component of AD. The key to achieving it is to have each community manage its own natural resources, its own way. The argument is that locals are more capable of managing their natural resources than outsiders since they are more familiar with the

ecosystems they live in, and since their traditional systems of resource management tend to be better adapted to local cultural and ecological conditions (Altieri, 1995; Blauert and Guidi, 1992; Ghai and Vivian, 1992; Wilken, 1987). Moreover, locals are more inclined to manage their local environments well since they have the most at stake in the event of ecosystem collapse.

These ten 'dominant themes' of AD are also the dominant themes of GSD. In fact, GSD is essentially the same as AD – it is AD that stresses the environmental logic of these themes. The following section will elaborate on this.

2.3.5 The Concept of Grassroots Sustainable Development (GSD)

As mentioned above, GSD is a branch of AD that places extra emphasis on environmental issues. The concept emerged in the early 1970s, alongside and intertwined with AD, Dependency theory, and postmodernism. One of the earliest exponents of GSD was Ignacy Sachs, who, in 1974, proffered the following definition:

> [GSD] is a style of development that, in each ecoregion, calls for specific solutions to the particular problems of the region in the light of cultural as well as ecological data and long-term as well as immediate needs. Accordingly, it operates with criteria of progress that are related to each particular case, and adaptation to the environment plays an important role. (Sachs cited in Hettne, 1990:186).[28]

As evidenced by this definition, GSD involves diverse approaches to overcoming local-specific environmental challenges. As part of the AD paradigm, it also involves local autonomy, popular participation, equity and equality, basic needs, self-reliance, human-scale approaches, endogenous solutions, community development, networking between grassroots organizations, and building upon traditional technology. GSD puts an environmental spin on all of these themes, demonstrates their complementarity, and argues that, together, they constitute a more viable strategy for overcoming the problems of poverty and environmental degradation in marginalized communities.

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[28] Sachs actually refers to the concept as 'ecodevelopment', not 'grassroots sustainable development'.

Underlying this strategy are assumptions about the causes of environmental degradation and poverty and about the possibilities for further economic growth that are radically different from those associated with MSD. These assumptions are explicit in some of the GSD literature, and implicit in the rest of it. This section will begin by reviewing the arguments associated with these assumptions, before elaborating on the 'environmental logic' of the strategies proposed by the proponents of AD/GSD.

2.3.5.1 The Causes of Poverty and Environmental Degradation

In contrast to MSD, which treats poverty as the main cause of environmental degradation, and sees increased economic growth as the cure, GSD sees the causes of both poverty and environmental degradation to be the existing economic, political and social structures at all levels, which concentrate the fruits of economic growth in the hands of a few. From GSD perspective, excessive economic growth in one area can only be made possible by extracting the economic surplus from another, leaving behind both poverty and environmental degradation in the process. This is, of course, the thesis of Dependency theory, and although the dependency writers themselves paid scant attention to environmental matters, it was not hard for the proponents of GSD to extend the Dependency-theory argument to include the environment.

In line with this argument, and in particular with the way that it was constructed by André Gunder Frank, the proponents of GSD argue that systematic environmental destruction in Latin America began in the sixteenth century, when Latin America was drawn into the global capitalist system (Barkin, 1998; Faber 1993; Foster, 1994; Galleano, 1973, Leff, 1995).[29] At that time, European (capitalist) systems of production began replacing indigenous ones. The latter were oriented towards meeting the needs of the local population, and were characterized by their diversity and compatibility with

[29] There is evidence that suggests that environmental destruction contributed to the collapse of at least one of the ancient Mayan civilizations in southern Mexico and Central America. Even if this is the case, it is clear that, in the pre-colonial period, ecosystem collapse was infrequent and limited to very small areas; in other words, it was not systematic. For the most part, pre-Columbian societies lived in harmony with

local ecosystems; the latter were oriented towards meeting the demands of the market, and were characterized by their homogeneity (for example, monocropping) and their tendency to destroy local ecosystems (Altieri 1995; Barkin, 1998; Faber 1993; Foster, 1994; Galleano, 1973, Leff, 1995).[30] Indigenous labour was exploited, and traders and colonizers acted as conduits for the flow of precious metals, furs, agricultural products, tropical hardwoods, and so on, to the countries of Europe.

Because of the state of (Western) technology at that time, and because of the relatively low demographic pressure, the natural environment was, for the most part, able to withstand the transformations imposed on it by the early capitalist system.[31] However, this began to change in the late eighteenth century with the beginning of the industrial revolution, which increased the scale and intensity of production and brought about ecologically destructive social transformations such as urbanization, increased income disparity (between centre and periphery, and between capital and labour),[32] a population explosion,[33] and mass consumption of energy and material goods in the North.[34]

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nature and endured the hardships associated with her capriciousness (Faber, 1993; Foster, 1994; Galleano, 1973).

[30] Eduardo Galleano (1973: 74-75) provides a poignant description of this phenomenon in Brazil: "Sugar... destroyed the Northeast... This region of tropical forests was turned into a region of savannas. Naturally fitted to produce food, it became a place of hunger. Where everything had bloomed exuberantly, the destructive and all-dominating latifundio left sterile rock, washed-out soil, eroded lands. At first there had been orange and mango plantations, but these were left to their fate, or reduced to small orchards surrounding the sugarmill-owner's house, reserved exclusively for the family of the white planter. Fire was used to clear land for canefields, devastating the fauna along with the flora: deer, wild boar, tapir, rabbit, pacas, and armadillo disappeared. All was sacrificed on the altar of the sugarcane monoculture."

[31] Faber, for example, points out that in Central America during the first two hundreds years or so of the colonial era, the overall amount of deforestation caused by the production of cash crops was "minimal...[because] the reversion of former Indian agricultural lands to second-growth forests and subnatural landscape [caused by the decimation of the Indian population] was clearly far greater than the amount of woodlands cleared for these crops" (1993: 19).

[32] Two hundred years ago the income ratio between the centre and the periphery was 1.5:1, in 1960 it was 20:1, in 1980 it was 46:1, and in 1989 it had gone up to 60:1 (World Bank statistic cited in Schuurman, 1993).

[33] Foster (1993) associates the population explosion in the South with the 'development of underdevelopment'. He points out that, in the North, there was a population explosion in the early stages of the industrial revolution, but as the North developed, the standard of living of the majority of the population in the North increased, causing the population growth rate to drop to almost zero. In the South, by contrast, development was blocked because of the continual siphoning off of economic surplus to the North, and because of the intransigence of the internal social and political structures of the countries in the South. Consequently, the standard of living of the majority of the population in the South remained low, and as a result, the population growth rates stayed high.

In the post-World War II period, environmental destruction was further accelerated by the spread of industrialization and Green-Revolution technology, which was facilitated by the economic and political structures (both global and national) that were in place at that time. On the global level, the cold war acted as a catalyst for the proliferation of industrialization everywhere – both the US and the Soviet Union pushed their technology and development models onto the countries over which they exerted hegemony. On the national level, governments set up economic structures to channel resources towards the heavily polluting modern urban industrial sector. At the same time, state resources that were allocated to the agricultural sector were used to disseminate highly destructive Green-Revolution technology (herbicides, pesticides, fertilizers, hybrid seeds, irrigation, and mechanization). Not only did this have a devastating impact on the environment, but it also led to the further polarization of wealth in the countryside, since almost all of the states' resources were directed to large-scale commercial farms, leaving peasants to fend for themselves in an economic environment that militated against them. Furthermore, when peasants were able to gain access to some Green-Revolution technology, the consequences were often more devastating than they were in the commercial sector, partly because of the peasant's lack of training and expertise, and partly because of the poor quality of much of their land to begin with.

In the early 1980s, structural adjustment along the lines of neo-classical economics placed even more demands on the environment (Barkin, 1998; Carruthers and Goldrich, 1992; Daly, 1996; Ekins, 1989; Jardel, 1995; Mumme, 1992; Snook, 1997). Highly indebted Third World countries were put under pressure to intensify the exploitation of their natural resources and to further increase their level of industrial activity in order to meet debt payments. Moreover, cuts in social welfare spending and the removal of protective barriers for disadvantaged groups led to an increase in poverty[35], which in turn

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[34] In the early 1980s, developed countries (26% of the world population) consumed 80% of the world's commercial energy, 79% of its steel, 86% of its other metals, and 85% of its paper (WCED, 1987:33).

[35] From 1985 to 1995, the number of people in the world living in absolute poverty (i.e. the number living on less than one US$ per day) rose from 1.051 billion to 1.405 billion (World bank statistics cited in Todaro, 1997: 151-152). Although there is some controversy as to whether or not the *relative* number of people living in absolute poverty also increased during this period, the overwhelming majority of analysts confirm that it too rose during the 1980s and early 1990s. In any case, in Mexico, there is no doubt that there was a substantial increase in absolute poverty both in absolute and relative terms: CEPAL (2000)

led to an increase in the need for the poor to overexploit the meagre natural resources that they had at their disposal.

All this to say that, according to the proponents of GSD, environmental degradation and widespread poverty are not problems that simply came out of the blue, as much of the MSD literature would have one believe; rather, they stem from the economic, social and political structures that give overriding priority to the accumulation of wealth for a small percentage of the population.

2.3.5.2 Limits to Growth

MSD and GSD also have divergent assumptions regarding the importance of aggregate economic growth and the viability of sustaining it indefinitely. As mentioned above, achieving high economic growth rates (measured in terms of GNP) is of cardinal importance to MSD. What's more, proponents of MSD argue that there are no absolute limits to the amount of economic activity that the earth can sustain, only temporary limits imposed by the current state of technology.[36] They propose indefinite economic growth, made possible by continually improving technology and increasing the environmental efficiency of economic activity. The proponents of GSD, by contrast, do not consider aggregate economic growth a necessary condition for development – for them, the important thing is not the *quantity* of economic activity, but rather the *quality* (For example: Is it participative? Does it meet basic needs? Is it ecologically sustainable?). Moreover, from a GSD perspective, indefinite economic growth is impossible, improvements in environmental efficiency can help make room for more economic growth up to a point, but it is impossible for these improvements to keep pace with an economy that is growing at an exponential rate.

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estimates that, between 1984 and 1996, the percentage of Mexicans living in poverty rose from 34% to 43%, and the percentage of those living in extreme poverty rose from 11% to 16% (CEPAL, 2000).

[36] In this context, the Bruntland report predicts and condones a five- to ten-fold increase in world industrial output over the next few decades (WCED, 1987: 213).

The argument that there are limits to growth has two components. First and foremost, there is a considerable amount of empirical evidence that suggests that, despite efforts to improve the efficiency of economic activity over the past 30 years, on a global level environmental degradation continues unabated.[37] Secondly, there is the theoretical argument. This argument is perhaps most clearly put forth with the help of an equation that relates environmental impact (I) to the product of three variables: population (P), consumption per capita (C), and the environmental efficiency of economic activity, which is a function of technology (T): I=PCT. Paul Ekins uses this equation to illustrate the impossibility of overcoming the environmental crisis through increases in environmental efficiency alone:

> The contemporary concern with sustainability indicates that current levels of I are unsustainable. With regard to energy consumption and climate change, the Intergovernmental Panel on Climate Change (IPCC) calculates that carbon dioxide emissions will quickly have to fall by a minimum of 60% to halt global warming. Three other greenhouse gases – N_2O, CFC-11, CFC-12 – also need cuts of more than 70%. With regard to other environmental problems, the Dutch National Environmental Policy Plan argues for cuts in emissions of 80-90% for SO_2, NO_x, NH_3 and waste-dumping, 80% for hydrocarbons and 100% for CFCs. Thus with regard to I overall, it seems conservative to suggest that sustainability demands that it should fall by at least 50%. With regard to population, the UN's latest projections indicate a global figure of 10 billion by about 2050 about twice today's level. With regard to consumption, what is considered a moderate economic growth rate of 2-3% results in a quadrupling of output over 50 years. Thus, where subscript $_1$ indicates the quantity now and subscript $_2$ indicates the quantity in 50 years' time, we have: $I_2 = ½ X I_1$ (for sustainability); $P_2 = 2P_1$ (by assumption); and $C_2 = 4C_1$ (by assumption). For the Ehrlich equation to hold, this means that $T_2 = 1/16\ T_1$. *In other words, the environmental impact of each unit of consumption would need to fall by 93% over the next 50 years to meet the rather conservative definition of sustainability that has been adopted.* (italics added.) (Ekins in Sachs (ed.), 1993: 92-93)

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[37] This was confirmed last year by the UNEP's Global Environmental Outlook report (GEO-2000), which concluded that "despite progress on several fronts, from a global perspective, the environment has continued to degrade over the past decade." To illustrate this, the report points to the example of natural forest cover, which is decreasing at a cumulative rate of 5.8 million hectares per year (www.unep.org/geo2000/ov-e/0007.htm).

One might argue that it is not impossible to increase efficiency by 93%, and theoretically this is true. But there are two important caveats that need to be kept in mind. First, MSD proposes indefinite economic growth, so even in the year 2050 we would still have to keep improving the efficiency of our economic activity. And, Second, every unit of increase in efficiency is exponentially more difficult to achieve than the one before. Take vehicles, for example. It took two or three decades and immeasurable human and financial resources to improve the fuel efficiency of cars so that they could go approximately twice as far on the same amount of fuel.[38] This increase in efficiency was achieved by making cars smaller, lighter, and more aerodynamic, and by improving car engines so that they could get more work out of the same unit of fuel. However, there is a limit to how small we can make cars (i.e. we can not make them smaller than human beings), to how light we can make them, to how aerodynamic we can make them, and to how efficient we can make their engines.[39] In other words, there are finite limits to the levels of efficiency that cars can have. And this same argument can be extended to any industrial process.

Some proponents of MSD might argue that the economy can continue to grow in spite of the limits to efficiency that are inherent to all industrial processes by continuing to shift an ever greater share of economic growth towards the information and service industries, which they consider to be environmentally benign. However, as Sachs points out "these sectors can only grow on top of the industrial sector and in close symbiosis with it. The size of the service sector in relation to production has its limits, just as its dependence on resources can be considerable, for such as tourism, hospitals, or data

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[38] These gains were, of course, greatly outweighed by the relentless increase in the number of vehicles on the road.

[39] There is a theoretical limit to the efficiency of all heat engines (i.e. devices such as car engines, nuclear power plants, and coal-burning electrical plants that convert thermal energy to mechanical or electrical energy). This theoretical limit is called the Carnot efficiency and it is a function of the temperature difference between the inside of a heat engine and the temperature of the environment in which it operates, Thy higher the temperature difference in a heat engine, the greater its efficiency. Since it is impossible to have an infinite temperature difference, it is impossible to have 100% efficiency. In fact, taking into consideration the melting temperature of materials (metals and ceramics alike) and the coldest environment in which a heat engine might operate, the maximum Carnot efficiency that a heat engine can theoretically achieve is somewhere in the neighbourhood of 30%. In other words, in practice, it is impossible to use even 30% of the heat created by burning gasoline to move a car, and it becomes exponentially more difficult to improve the efficiency of a car engine as one approaches this theoretical limit.

processing. Even commodities without any nature content, for example, patents, blueprints, or money, derive their value from the command over a resource base which they provide" (1993: 16). In the same vein, Daly argues that "information does not exist apart from physical brains, books, and computers, and, further, that brains require the support of bodies, books require library buildings, computers run on electricity, etc." (1996:42). In other words, the information and service industries are inextricably linked to the more resource-intensive industries and, therefore, they do not provide a means for realizing indefinite economic growth.

In conclusion, the argument for limits to growth is convincing.

2.3.5.3 Diversity and Self-Reliance vs. Specialization and Integration into the World Economy

Another point of contention between MSD and GSD has to do with the orientation of production. According to the proponents of MSD, communities should specialize in production and integrate into the world economy. The reasoning for this can be found in neo-classical economic theory, which argues that the most effective way for realizing worldwide economic growth (which, again, is considered to be a necessary condition for overcoming poverty and environmental degradation) is to eliminate trade barriers and have every country (and by extension, every community) specialize in the production of commodities with which they have a comparative advantage.

Proponents of GSD might concede that this is an effective strategy for realizing high, worldwide, aggregate, economic growth rates, at least in the short term, but they would argue that the benefits of this growth tend to accrue to only a small percentage of the world's population, that it leads to the development of underdevelopment in the periphery, that it causes widespread ecological destruction, and that it can not be sustained indefinitely. With respect to the environmental destructiveness of this strategy, their argument includes the following points: (1) a world economic system oriented towards high economic growth rates, and characterized by specialization in production

and free trade, concentrates income in the hands of a few and allows them to grossly over consume; (2) international competition encourages all producers to lower their environmental standards or to move their production to where environmental regulations are more lax;[40] (3) separation of production and consumption makes it less likely that consumers know or care about the environmental damage caused in the production of their goods; (4) transporting goods over long distances consumes large amounts of energy; and, (5) specialized production methods (for example, monocropping, large-scale cattle ranching, commercial hog production, shrimp production, and clear-cutting) tend to be highly environmentally destructive (Barkin, 1998; Daly, 1996; Ekins, 1989).

To circumvent these problems, the proponents of GSD recommend that communities diversify their production and orient it towards the needs of their communities. In the case of agriculture, diversified production not only tends to be more ecologically sustainable, especially in tropical and semi-tropical areas (Leff, 1995), but it also adds to the variety and healthfulness of local diets. What's more, this strategy leads to a greater degree of self-reliance, which makes communities less vulnerable to the vicissitudes of the world market, and more capable of charting their own course of action. In the words of the 1974 Cocoyoc Declaration "Self-reliance means self-confidence, reliance primarily on one's own resources, human and natural, and [it means] the capacity of autonomous goal-setting and decision-making. It excludes dependence on outside influences and powers that can be converted into political pressure" (cited in Ekins, 1989: 188).

It should be pointed out, that by recommending a shift towards self-reliance, proponents of GSD are not promoting autarky (on the regional, national, or community level). Most proponents of GSD realize that a certain degree of trade and interdependence can bring benefits to marginalized communities. The key is to find the

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[40] In the words of Herman Daly: "Firms in a competitive environment all have an incentive to externalize costs – to the extent that they can get away with it. Within nations there are laws and institutions that prohibit many cost externalizations. Internationally there are few such laws, and their degree of enforcement, vary greatly among nations. Since lower standards mean lowers costs and prices, international competition tends to be standards-lowering (i.e., cost externalizing), and thereby destroys community life based on those higher standards." (1996: 146-147).

right balance. This point is made clear by Korten, who recommends the following policies:

> Give priority in allocating local resources to the production of goods and services to meet the basic needs of the local population. The goal is to create a national and ultimately an international economy comprised of interlinking self-reliant local economic units that have a degree of insulation from the shocks of national and international systems and a stake in conserving their local environmental resources.
>
> Allocate a portion of surplus local productive capacity (beyond what is required to meet local basic needs) to produce goods and services for export to national or international markets. Exports should feature products with a high value-added relative to their content of physical resources. The goal here is to achieve optimal gains for the local community from "external" trade while conserving physical resources to the future benefit of the community (1990: 69).

2.3.5.4 Popular Participation, Small-Scale Projects, and Environmental Action

In the context of GSD, participation can take two forms: (1) the carrying out of small-scale development projects designed to meet the basic needs of the community in an ecologically sustainable manner; and, (2) the undertaking of environmental action that seeks social justice.

When communities collectively undertake small-scale development projects, their principal motive is usually to improve their material standard of living. Typically, these projects include planting orchards, planting communal gardens, establishing nurseries, forming productive cooperatives, practicing traditional agricultural, enhancing traditional agriculture with low-cost locally adapted alternative technology, building small-scale irrigation schemes, building terraces to arrest erosion, establishing community health clinics that make use of traditional medicine, and so on. There is a considerable amount of evidence that suggests that these types of projects are more likely to succeed when they are initiated from the bottom-up (Anta-Fonesca et al., 1997; Blauert and Guidi, 1992; Bray, 1991; 1995; Fals Borda, 1984; Ghai and Vivian (eds.), 1992; Hirschman, 1984; Sachs (ed.), 1993). Bottom up projects – that is, projects that are initiated,

designed and implement by the community members themselves – invariably reflect the needs and priorities of the community (as defined by the community), they are usually better adapted to the local environment, and they improve the confidence and organizational capacity of the poor.

In the context of GSD, participation can also take the form of environmental activism. Examples of environmental activism include blocking logging roads, destroying the equipment and productive facilities of unwelcome outsiders, peaceful non-cooperation, protest marches, lobbying, demanding control over the exploitation of local natural resources, invading the land of large privately owned commercial farms and ranches, demanding local autonomy, and supporting, participating in, and being part of broader social movements that seek structural change on the national and/or international level (for example, the Zapatista movement in Mexico). These activities are what constitute the environmental movement in the South. Their main objective is not to protect the environment per se, rather it is to realize a better standard of living for those who are poor, marginalized and oppressed, and to give them a greater voice in the decision-making that affects their lives. Protecting, controlling, and responsibly exploiting natural resources, therefore, is simply a means to this end.

In practice, these two forms of participation often go hand in hand, giving rise to and building upon each other. In other words, the carrying out of small-scale development projects builds confidence and organizational capacity, and often inspires the participants to engage in environmental action that seeks social justice. And, conversely, participating in environmental action often brings people together and motivates them to organize small-scale development projects in order to meet the immediate needs of the community. This phenomenon is sometimes referred to as "the principle of conservation and mutation of social energy", dubbed as such by Albert Hirschman, whose various case studies of grassroots collective action attest to its ubiquitousness (Hirschman, 1984). In fact, as we shall see in Chapter 4, this phenomenon has manifested itself to some degree in the community of Ayotitlán.

In summary, participation in the context of GSD is both a means to an end (this end being the meeting of basic needs and the changing of social, political and economic structures), and it is an end in itself (that is, participation is itself a basic need).

2.3.5.5 Technology, Traditional Systems of Resource Management, and Diversity

From a GSD perspective, importing and relying on technology from the North is problematic. It is expensive, it fosters dependence, and it is often incompatible with local cultures and ecosystems. Agricultural technology from the North is designed for the North, where temperate ecosystems are generally more resilient than tropical or semi-tropical ones (Leff, 1995), and where capital is more abundant than labour. When this technology is imposed on the South, it often ends up having socially and ecologically destructive consequences. The importation of Green-Revolution technology in the post-World War II period made this painfully evident. Its negative consequences include: (1) a decline in genetic biodiversity; (2) widespread soil erosion; (3) loss of soil fertility; (4) lowering of water tables and depletion of lakes due to irrigation; (5) salinization of land due to irrigation; (6) high energy costs resulting from the use of fossil fuels; (7) increased problems of pest management; (8) health problems associated with herbicides and pesticides; (9) polarization of income in the rural sector; (10) deterioration of local diets as diversified subsistence agriculture is replaced by specialized commercial agriculture; and, (11) increased urbanization and unemployment as large agribusinesses displace family farms, and as capital-intensive technologies displace labour-intensive ones.

GSD seeks to overcome these problems by developing technologies[41] in the South that are more attuned to local environmental and social conditions. This is often done by reviving traditional technologies (i.e. agricultural techniques and resource management systems that are intertwined with traditional social systems and cultural norms) and building upon them with alternative technologies that are simple, low-cost, and adaptable to local contexts. Popular participation is central to this process since locals are the

repositories of traditional knowledge, the end-users of this technology, and the most familiar with local ecosystems, their own social systems, and their own needs. However, even when participation is 'authentic' and 'bottom up' it usually involves some technical assistance from outside researchers (Blauert and Guidi, 1992; Bray, 1991, 1995; Bray et al (eds.), 1997; Esteva and Reyes, 1998; Fals Borda, 1984; Hirschman, 1984; Sanchez and Almeida, 1992).

Over the past 20 years or so, there has been a considerable amount of interest in traditional agricultural technology, and for good reason.[42] As Wilken points out, some of the traditional agricultural practices that are still in use today "have been in use for centuries, even millennia, and have been the means by which their farmer/practitioners survived and even prospered" (1987: 9). In other words, many traditional agricultural practices have a proven record of being ecologically sustainable, and some have even been able to support dense rural populations over long periods of time (Wilken, 1987).

Traditional agricultural systems distinguish themselves from modern/industrial ones in several ways. First, the most obvious difference is that they do not employ petroleum-fuelled machinery, chemical fertilizers, herbicides, pesticides, and mechanized irrigation systems. Second, they are usually small in scale, making optimal use of land and environmental resources. Third, they are self-sufficient on a regional level; that is, the region where they exist supplies most of their inputs and absorbs most of their produce. Fourth, they are labour intensive. Fifth, they are designed to optimize production in the long term, rather than maximize it in the short term. And, sixth, they are characterized by spatial and temporal diversity; that is, within a given plot, at a given time, there are a variety of crops planted together, and over time these crop mixtures are rotated with others (Altieri, 1995; Wilken, 1987). This last characteristic has several advantages, including: better resistance to pests and diseases;[43] more diverse and nutritional diets; increased insurance against the failure of any single crop; maximum crop yields under

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[41] It is important to keep in mind that technology includes more than just equipment and inputs, it also includes procedures and social organizations.

[42] See, for example, Altieri (1995), Altieri and Hetch (eds.) (1990), Clay (1988), and Wilken (1987).

'low-level' technology;[44] and in-situ conservation of genetic biodiversity (Altieri, 1995; Wilken, 1987).

In spite of these advantages, however, critics have asserted that traditional agricultural systems are unviable in this day and age because of their apparently low productivity and inefficiency. However, the supporters of traditional technology argue that much of this criticism is unfounded. For example, Altieri contends that "most productivity comparisons between Green-Revolution and traditional-agriculture systems have been biased and unfair, as they ignore the fact that traditional farmers value total farming system production and not just yields of one commodity as it is the case in a Green-Revolution system" (1995: 197). To add to this, Wilken points out that "[e]ven on a straight production basis, the situation is not clear. Although, traditional agriculture generally fares poorly in comparison with modern systems, some of the world's highest yields come from traditionally managed small farms" (1987, 265). He goes on to suggest that the labour-intensiveness of traditional agriculture – which is what critics often point to when they argue that it is inefficient – is actually an advantage in labour-abundant societies (1987: 269).

In any case, it would be unreasonable to suggest that traditional agriculture – which is oriented towards subsistence production – could or should completely replace modern industrial systems, which are needed to supply large urban centres with food. Moreover, it is not a case of having to choose between the two; the appropriateness of any given technology depends on the social and environmental conditions under which it is applied. What the proponents of GSD propose is that, given the social and environmental conditions that exist in most marginalized rural communities in the Third World, (enhanced) traditional agricultural technologies are usually the most appropriate option. These technologies allow locals to participate in and direct their own course of development, they do not require expensive inputs, they provide employment, they lend

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[43] Diseases and pests may not spread as quickly because of increased numbers of natural enemies and because different crops have different levels of susceptibility to pests and pathogens (Altieri, 1995).

[44] Intercropping often provides higher total yields per hectare than monocropping, even when yields of individual crops are reduced (Altieri, 1995).

themselves to self-sufficiency, they provide better diets, and they tend to be ecologically and socially sustainable.[45]

Of course, communities are not always in a position to revive traditional agricultural practices. In some cases, communities lose their traditional knowledge as they become more integrated with Western society; in other cases, changes in production systems, social structures, and demographics make traditional technologies unviable or irrelevant (Vivian in Ghai and Vivian (eds.), 1992). When this happens, there is a need for communities to discover new and innovative solutions for overcoming local-specific social and environmental challenges. According to the proponents of GSD, some helpful guidelines for these communities would be to focus on small-scale projects that are oriented towards the needs of the community, to undertake projects collectively, to diversify production, and to strive for self-sufficiency.

2.3.5.6 Local Control over Local Natural Resources and The Dynamics of the Commons

In order to successfully practice GSD, communities need to have control over their natural resources. When governments, outside entrepreneurs, or local strongmen (*caciques* in the Latin American context) control local natural resources, popular participation is stifled, it is difficult to orient production towards meeting the basic needs of community members, and the poor are often forced to overexploit whatever resources they can get their hands on. As such, gaining control over local natural resources is a prerequisite for GSD, and often one of the objectives of grassroots environmental action.

Until quite recently, it was commonly believed that community-controlled natural resources were inherently less productive and more susceptible to environmental degradation than privately controlled ones. This belief was popularized by the metaphor

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[45] Although traditional technologies are often better adapted to local ecosystems, as Bellon points out, "sustainable agroecosystem management is not necessarily an inherent condition of traditional agricultural systems, nor is it lacking form agricultural systems that have modernized" (1995:270).

of 'the tragedy of the commons',[46] which depicted commonly owned properties as free-for-alls, in which there were no regulations to prevent each user from trying to maximize his exploitation, leading to the inevitable degradation of the resource base. This myth has since been debunked by a study conducted by Bromley and Cernea (1989), which made a distinction between open-access systems and common property regimes – the former being, in fact, free-for-alls subject to overexploitation, and the latter being "structured ownership arrangements within which management rules are developed, group size is known and enforced, incentives exist for co-owners to follow the accepted institutional arrangements, and sanctions work to insure compliance" (1989: iii). Moreover, Bromley and Cernea's study, and others that followed, found that the environmental degradation that had been attributed to the absence of structure in common-property regimes, was in fact due to the erosion of previously existing traditional structures, caused by modernizing forces[47] (Bromley and Cernea, 1989; Vivian, 1992).

As a corollary to the misconception about the dynamics of environmental degradation in commonly owned properties, the metaphor of 'the tragedy of the commons' also popularized the notion that environmental degradation could be arrested by privatizing natural resources. Again, Bromley and Cernea's study did much to dispel this myth by pointing out that "private property regimes [only] *appear* to be stable and adaptive because they have the social and legal sanction to exclude excess population, and effectively to resist – through the power of the state – unwanted intrusions. These powers have been eroded for common property regimes." (1989: 13). Furthermore, as Vivian points out, all things being equal (which they are not),[48] environmental

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[46] This metaphor originated from G. Hardin's 1968 publication, "The tragedy of the commons".

[47] Bromley and Cernea explain: "Resource degradation in the developing countries, while incorrectly attributed intrinsically to "common property systems", actually originates in the dissolution of local-level institutional arrangements whose very purpose was to give rise to resource use patterns that were sustainable. The dissolution of community based institutional arrangements often arose from a combination of interference by powerful rulers at some remove form the village and by colonial administrations, and the rise of the nation state. The dissolution of common property institutions has also been a result of the socio-economic differentiation and growing stratification processes within communities that initially were much more homogenous" (1989: 7-8).

[48] In most situations, the best quality land has been privatized, leaving the poorer land, which is more susceptible to environmental degradation, to be administered by common property regimes (Bromley and Cernea, 1987).

degradation is more likely to occur on privately owned property since private owners have "short time preferences", as well as the "ability to abandon degraded lands once maximum resources have been extracted" (1992: 61-62).

In conclusion, there is a strong argument that locals are in the best position to (collectively) manage their own natural resources; not only because they have the most incentive to practice husbandry, but also because they are the most familiar with local ecosystems.

2.3.5.7 Obstacles to GSD

Despite the many advantages to GSD, there are some formidable obstacles. These obstacles are both internal and external to the community. To begin with, contrary to what is implied in much of the GSD literature, many marginalized communities are rife with internal conflicts. Political power is often concentrated in the hands of the local elite, who collaborate with and are supported by local governments, outside investors, and some state-sponsored development agencies. Local elites control access to much of the community's natural resources, they often take more than their share of the funds made available by governments and/or foreign donors, and they are sometimes able to control the distribution of the rest of these funds (Gow and Vassant, 1983; Schönwälder, 1997). Popular organizations that seek to pursue GSD can run up against strong opposition from these local power-holders. Those who participate in environmental action not only run the risk of being denied access to natural resources and outside assistance, but they may even put their lives at risk.[49]

The external obstacles are equally as formidable. These obstacles stem from the structural forces that bring about the need for GSD in the first place. The flooding of national markets with cheap basic grains that are produced abroad on large modern industrial farms, the lack of research and technical assistance directed towards peasant

farming, the pressure from outside of the community to gain access to local natural resources, the lack of opportunity to participate in decision-making, and the materialistic lure of Western society all serve to undermine efforts to practice GSD. As Noam Chomsky points out, peasants also respond to market incentives, and current structures give them much more incentive to cultivate drugs, to poach, to practice illegal logging, and to emigrate to urban centres or to First World countries in search of employment than to practice GSD.[50] Although part of the strategy of GSD is to change these structures through social activism and networking between popular organizations, it is yet to been seen whether or not this is can be done.

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[49] There are countless examples of violence being perpetrated against poor people who organized themselves in an effort to defend their right to control their local natural resources. For some examples in the Mexican context, see Blauert and Guidi (1992), http://www.ezln.org, and Rojas (1996).

[50] Noam Chomsky speaking at the University of Guadalajara, January 26, 2001.

2.4 Summary of Differences Between MSD and GSD

	Mainstream Sustainable Development	**Grassroots Sustainable Development**
Main cause(s) of environmental degradation	Poverty	Economic, political and social structures that give overriding priority to the accumulation of wealth for a small percentage of the world's population
Main components of strategy	Economic growth, the dissemination of 'environmentally sound technology', and better management of natural resources	Popular participation, self-reliance, local control over local natural resources, meeting basic needs, diversity, small-scale projects, endogenous solutions, and environmental action
Sine qua non of strategy	Economic growth	Popular participation
Principal agents of sustainable development	Governments, international development institutions, those who control capital	Communities, popular organizations, NGOs
Preferred technology	Western	Traditional and/or small-scale locally adapted technology
Orientation of production	Specialized and oriented towards the world market	Diversified and oriented towards the needs of the community
Limits to Growth	Only temporary limits imposed by the current state of technology	Absolute limits imposed by nature
Focus	Global	Local

2.5 Three Ideal-Type Community-Development Models

Now that we have constructed our two archetypal schools of thought, and outlined the differences between them, it is time to elaborate on this dichotomy by outlining three ideal-type strategies for sustainable development at the community level.

The first of these strategies is what we will call 'hybrid sustainable development' (HSD). This is the 'sidekick' to MSD that was briefly described above. It combines some elements of MSD, such as top-down planning, and an emphasis on technical solutions, with some elements of GSD, such as a preference for small-scale locally adapted technology, and an emphasis on the need for some kind of participation. This strategy is most intensely applied in regions that have a high degree of biodiversity, and especially where 'biosphere reserves', like the one in our case study, have been created.[51]

The principal objective of HSD is conservation; sustainable development in marginalized communities is also an important objective, but it is secondary – it is seen as a means for effectively conserving the natural environment. Past experience has shown the proponents of HSD that in order to convince local inhabitants to participate and collaborate in top-down conservation efforts they must be presented with viable alternatives for improving their standard of living (Vivian, 1992; Western and Wright (eds.), 1994; WCED, 1987). For this reason, HSD seeks to provide technical alternatives to the current productive activities of marginalized communities that are considered to be ecologically unsustainable. These technical alternatives are conceived outside of the community – usually in ecological research institutions – and presented to the community by 'change agents' (i.e. governmental agencies and NGOs) that are working in the community to promote sustainable development (Castillo and Toledo, 2000). Typically,

[51] Biosphere reserves are protected areas which are internationally recognized within the framework of UNESCO's Man and the Biosphere (MAB) Programme, which was launched in the early 1970s. According to UNESCO, the objectives of these reserves are: (1) to help conserve landscapes, ecosystems, and biodiversity (both species and genetic); (2) to support academic research and educational activities related to conservation and development; and, (3) to promote economic and human development that is socially and ecologically sustainable. Biosphere reserves consist of a core area, a buffer zone and a transitional area. The core area is dedicated exclusively to conservation and research, and human settlements are forbidden; the buffer zone is typically where marginalized communities exist and where 'hybrid sustainable development' is pursued; and the transition zone is the surrounding area, which is monitored because of the impact it has on the environmental conditions in the first two areas (UNESCO, 2001: http://www.unesco.org /mab/nutshell. htm).

technical alternatives include small-scale projects such as the building of terraces, agroforestry, ecotourism, the provision of solar power, the constructing of latrines that produce compost, the establishment of tree nurseries, and the promotion of organic-farming techniques (i.e. techniques for controlling weeds, pests and diseases that do not use herbicides and pesticides). Local inhabitants are encouraged to participate in these projects by demonstrating, often through pilot projects, that they work, by providing free materials, and sometimes by offering a small wage for their labour.

The characteristic that distinguishes HSD from the other two ideal-type community-development models is that it is predominately top-down. Projects and programs are designed outside of the community, community leaders are asked whether or not they want to accept the projects, and then community members are encouraged to participate by offering them some sort of benefit. Although the rhetoric of HSD stresses the importance of popular participation in the design of resource management schemes, in practice, decisions are made beforehand by outside authorities and local inhabitants are only consulted afterwards to legitimize these decisions (Jardel, 1995).

The other two ideal-type community-development models are self-reliant GSD and social-activist GSD. These two models represent the two main foci of GSD. Self-reliant GSD seeks to improve the standard of living of marginalized communities through the implementation of small-scale development projects that are ecologically sustainable and that are geared towards meeting the basic needs of the local population. The main difference between these projects and the ones associated with HSD is that (self-reliant) GSD projects are endogenous; that is, even though they may make use of some outside technical advice, they are, for the most part, conceived, designed, implemented and managed by the community members themselves. The principal objective of GSD projects is to meet the basic needs of the poor, including their need to authentically participate in the development process. The conservation of the natural environment is simply a means to this end.

Social-activist GSD consists of the activities associated with the environmental movement in the South. As mentioned earlier, these activities include everything from protest marches and peaceful non-cooperation to armed insurrection. These activities

may be carried out by a single community, which seeks to gain control over its local natural resources, or by a worldwide network of popular organizations, which seeks to change economic, political, and social structures that are inimical to the poor. As with self-reliant GSD, the principal motive of social-activist GSD is not to protect the environment per se, but rather to improve the living conditions of poor and marginalized peoples. As mentioned above, these two strategies – social activism and the carrying out of endogenous small-scale development projects – often give rise to and build upon each other.

In practice, all three of these ideal-type development strategies blend together. The same community members or community-based organizations might participate in all three strategies at different times, or even simultaneously. And, the same can be said for outside actors – in some instances, they may act as promoters of top-down development projects, and at other times they may provide support for endogenous projects or environmental action.

Now that we have finished constructing a theoretical framework, it is time to move on to the first 'layer' of our case study, which deals with the structural forces acting on all of rural Mexico.

CHAPTER 3

THE STRUCTURAL CONDITIONS OF RURAL MEXICO

3.1 Introduction

As is the case with most, if not all, developing countries, Mexico's environmental problems are extreme in both their extent and severity. It has been estimated that somewhere between 71 to 98 percent of Mexico's territory suffers from some form of ecological deterioration (SEMARNAP, 1999),[52] and 60% of it is severely affected (Mexican Government, 1997). Sixty-six percent of Mexico's forests have already been cut down (Mumme, 1992), and deforestation continues at a rate of somewhere between 370 and 1500 million hectares per year (SEMARNAP, 1999).[53] Eighty-five percent of the country has been subject to wind erosion, 60% has experienced hydraulic erosion, 15% has been chemically degraded, and 3.1% suffers from salinization, resulting in a total loss of 150,000 to 200,000 hectares of arable land each year (Ortiz et al. cited in SENARNAP, 1999). Over 60,000 tonnes of solid wastes are generated every day, much of which is clandestinely dumped in gullies and alongside roads; and another 28,800 tonnes of *toxic* waste are generated each day, of which 75 to 88 percent is disposed of inappropriately (Borderlines, 1998).[54] Sixty percent of the country's rivers are seriously

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[52] Most estimates are around 80 percent.

[53] SEMARNAP (1999) presents estimates of the rate of deforestation for 11 different sources. These estimates range from 370 to 1500 million hectares per year, but most fall between 600 to 700 ha/yr. There are a couple of reasons why there is so much discrepancy. Firstly, the rate of deforestation depends on one's definition of deforestation. One definition sees deforestation as the conversion of any forest ecosystem – whether it be old-growth forest, secondary-growth forest, agroforestry land, or forestry plantations – to a non-forest ecosystem, such as grasslands or other treeless agricultural systems. A broader definition includes the loss of biodiversity in old-growth forests; that is, it includes territory where old-growth forests have been thinned or converted into secondary-growth forests. Another reason for the discrepancy lies in the inherent difficulties of evaluating deforestation. Most studies are done using aerial photographs or satellite images. Because of the rapid succession rate in the tropics – cleared land can become dominated by second-growth forest within 10 or 15 years – it is sometimes difficult to distinguish between forest ecosystems and non-forest ecosystems using these photographs/images. And, it is even more difficult to distinguish between old-growth forests that have experienced a decline in biodiversity and those that have not (Gomez et al., 1993).

[54] Since the signing of NAFTA, there has been a dramatic increase in the number of foreign-owned *maquiladores* (industrial plants) in Mexico, and a concomitant increase in the amount of toxic wastes that

contaminated (Mumme, 1992). And, the over-exploitation of natural resources has caused at least 242 species to become endangered (UNCED, 1992), and untold others to disappear.

Underlying and associated with these problems are problems of poverty and inequality. Although Mexico is considered to have "medium human development" (UNDP, 2000),[55] there is widespread poverty and much inequality between the rich and the poor, between urban and rural areas, between prosperous regions and depressed ones, and between indigenous and non-indigenous peoples. For example, the richest 20% of the population receives 16.2 times more income than the poorest 20% (UNDP, 2000). While there are 13 billionaires in Mexico (Forbes, 2001), 38% of the population lives in poverty, and 13% in extreme poverty (CEPAL, 2000). In rural areas the statistics are even worse: 49% of the population lives in poverty, and 24% in extreme poverty (CEPAL, 2000). Moreover, in rural areas 20.4% of households do not have electricity, 38.7% do not have running water, and 67.4% lack sewage, compared to urban areas where the figures are 1.5%, 7.2% and 8.2% respectively (CONAPO, 1997). As an indication of regional disparities, in the Federal District (the most well-off state), the average per capita income is 21,036 US$ per year; while in Chiapas and Oaxaca (the poorest states) the average per capita income is less than 3, 800 US$ per year (CONAPO, 2001). With regards to inequalities between indigenous and non-indigenous people, it has been estimated that almost one-third of the Mexicans who live in extreme poverty are indigenous, even though indigenous people only make up 10 to 15 percent of the population (Fox, 1994b: 169).

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are being generated. In 1992, it was estimated that 14,500 tonnes of toxic wastes per day were being generated (UNCED, 1992); this went up to 21,900 tonnes/day in 1996, and then up to 28,800 tonnes/day in 1997 (Nacional Institute of Ecology cited in Borderlines, 1998). Although foreign-owned industries have, since 1983, been obliged by law to return toxic wastes to their country of origin, in reality there is little compliance with the law. For example, Sanchez discovered that, in 1987, only 20 out of the over 1000 foreign-owned maquiladores had shipped back their wastes (Sanchez cited in Goldrich and Carruthers, 1992). And, although the tougher enforcement laws associated with NAFTA improved the situation somewhat – in 1996, 29.3 % of foreign-owned companies reported shipping back their solid wastes (Borderlines, 1998) – the situation is still far from acceptable, with over 65% of the toxic wastes generated by foreign-owned companies unaccounted for, and between 75% and 88% not being disposed of properly (Borderlines, 1998).

[55] In the 2000 HDI Report, Mexico is reported to have a life expectancy of 72.3 years, a literacy rate of 90.8%, and a combined level of gross enrolment in schools of 70%, which gives it an HDI rating of 0.784, and puts it in 55th place overall.

What are the structural conditions that have given rise to these environmental and social problems? How has the Mexican government responded to them? And, how have grassroots organizations responded? These are the questions that this chapter seeks to address.

By addressing these questions, this chapter seeks to meet the following objectives: (1) to test the hypothesis – put forward by the proponents of GSD – that the causes of both environmental degradation and poverty are structural (social, economic and political); (2) to describe the sustainable development strategies that are currently being pursued by the Mexican government, as well as those that are being pursued by community-based grassroots organizations; (3) to evaluate, to the extent possible within the limitations of this study, the potential that each of these strategies holds for overcoming the problems of poverty and environmental degradation in rural Mexico; and, (4) to set the stage for the next chapter, by describing the national and international context in which the community of Ayotitlán must chart its course.

This chapter is organized into five main sections, not including the introduction and conclusion. The sections are organized in such a way so as to move from general to specific, in ever-tighter concentric circles. The first section deals with the socio-economic context of the past 60 years, the period during which the environmental crisis manifested itself. The purpose of this section is to demonstrate that, at least since 1940, the Mexican government's number-one priority has been to achieve economic growth; and that, in line with this priority, the interests of capital (both foreign and domestic) have taken precedence over the interests of the majority of the population, especially in times of crisis. It is important to remember, here, that economic growth is the centrepiece of the MSD strategy.

The next section deals with the political context. The purpose of this section is to examine the degree to which marginalized peoples have been able to participate in the decision-making that affects their lives, keeping in mind that 'participation' is the centrepiece of the GSD strategy. As we shall see, until quite recently, all decision-making and intra-elite power struggles have taken place within the folds of a highly integrated corporatist structure, which centralized power in the hands of the president,

and which precluded popular participation in decision-making at all levels. Over the last 20 to 30 years, however, pressure from both inside and outside of this structure has led to changes along the lines of decentralization and Western liberal democracy,[56] which has presented a mixed bag of opportunities and limitations for marginalized communities.

In the next section we begin to sharpen our focus on *rural* Mexico and on the more immediate causes of environmental degradation. This section deals with the agrarian structures that were put into place in the first half of the twentieth century, the recent changes that have been made to these structures, the Government's rural development policies, and the relationship between these structures and policies on the one hand, and poverty and environmental degradation on the other.

And, finally, the last two sections deal with the practice of sustainable development. First, we look at the Government's response to the environmental crisis, and then we look at the grassroots' response. As we shall see, the Mexican government has responded by adopting the MSD model, and by applying HSD in a few select micro-regions, most notably where biosphere reserves have been created. The grassroots' response has been to pressure the Government for concessions and fundamental change, and to implement small-scale development projects that are geared towards the needs of the community – a response that corresponds with GSD.

By examining the structural conditions of rural Mexico, this chapter indicates that the root causes of environmental degradation and poverty are, in fact, rooted in the existing social, economic, and political structures (local, national, and international). It follows that, in order to overcome these problems, these structures must undergo fundamental change. Many grassroots organizations in Mexico are striving to do this, whether or not they are able to is yet to be seen.

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[56] Following Sachikonye (1995), Western liberal democracy is defined as a political system characterized by multi-partyism, clean (but not necessarily fair) elections, the provision of some checks and balances by the legislature and judiciary, freedom of the press, and a rhetorical emphasis on human rights.

3.2 The Socio-Economic Context

After 1940, Mexico embarked on a program of rapid capitalist development that led to 30 years of uninterrupted economic growth – often referred to as "the Mexican miracle". During this period, inflation was kept low and economic growth averaged 6 percent per year. This was achieved by adopting a strategy of import substituting industrialization (ISI). In line with this strategy, resources were directed primarily towards the heavily polluting modern urban industrial sector; targeted industries were provided with infrastructural support, subsidies, low taxes and easy credit; high tariffs were imposed on industrial imports whose production was to be substituted; foreign investment was encouraged; and, in the agricultural sector, resources were directed almost exclusively towards large privately owned commercial farms, whose production was geared towards international markets.

As was expected, this strategy not only led to high economic growth rates, but also to accelerated urbanization and increased income disparity. In 1940, approximately 70% of Mexico's population (19.7 million) lived in rural areas; by 1970 this figure had dropped to 47% (of a total population of 48.2 million); and today only about 25% of Mexico's population (97.4 million) lives in rural areas (INEGI, 2001).[57] With respect to income disparity, Cornelius and Craig point out that "there is convincing evidence that Mexico had a higher overall concentration of income in 1975 than in 1910, before the outbreak of the Mexican revolution" (1988: 3). They go on to say that the real income of the poorest 20% of the population fell sharply between 1950 and 1975. Again, this was to be expected. In line with the dominant thinking of the time (i.e. the modernization paradigm), an increase in income disparity was thought to be inevitable in the early stages of industrialization and modernization; and in some ways it was even desirable, since it was thought to accelerate the process. If the fruits of economic growth did not trickle down to the poor by themselves, then they could be redistributed later, once a sufficient amount of wealth had been generated. Although, on a general level, this has proven not to be the case, it must be acknowledge that *some* benefits of modernization

[57] Although the relative number of people living in rural Mexico has decreased dramatically over the past 60 years, the absolute number has continued to increase, albeit very slowly.

did trickle down to the poor. From 1940 to 1980, the relative number of people in Mexico living in absolute poverty declined, and social indicators (on a national level) such as illiteracy, infant mortality rate, and life expectancy improved (Cornelius and Craig, 1988).[58]

Regardless of the merits and demerits of ISI, by the late-1960s, the strategy had exhausted itself. Over-protected industries had become too inefficient; unemployment and underemployment had increased, partly because of the rapid increase in population,[59] and partly because of the replacement of labour-intensive technology with (imported) capital-intensive technology; skewed income distribution meant that much of the population was too poor to buy manufactured goods, and that small internal markets were quickly saturated; a worldwide recession had reduced export earnings, reducing the availability of foreign currency; rising inflation had caused the exchange rate to be devalued, making it more expensive to import capital goods; and, perhaps most importantly, the neglect of the peasant sector had resulted in a loss of food self-sufficiency and in the need to spend scarce foreign exchange on importing large quantities of basic grains (Barkin, 1987).

In an attempt to correct some of these imbalances, and to stimulate further economic growth, populist president Luis Echeverría (1970 to 1976) began to invest heavily in the public sector. The general idea was to provide the poorer segments of the population with employment opportunities and development programs, without having to make any major changes to the existing political/economic structures. Thus, from 1970 to 1976, the number of state-owned enterprises increased from 84 to 845 (Cornelius and Craig, 1988); and, in 1973, the Investment Program for Rural Development (PIDER) was established, whose objectives were to increase production in the peasant sector, create

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[58] From 1960 to 1980, illiteracy dropped from 35% to 15%, infant mortality was reduced from 78 to 70 per 1000 live births, and average life expectancy increased from 55 to 64 years (Cornelius and Craig, 1988: 48).

[59] In the postwar period, Mexico's population was growing at a rate of about 3.2% per year, doubling every twenty years or so. In the mid- to late-1960s, fertility rates began to fall, apparently because of increased levels of education and standards of levels in some sectors of the population. However, it was not until 1974, when a nation-wide family-planning campaign was undertaken, that the population growth rate dropped significantly, to about 1.8% per year (CONAPO, 2000).

employment opportunities in rural areas, and improve the overall social well-being of the rural poor (Garibay, 1991).

The Echeverría administration initially tried to finance these programs by increasing internal revenues through tax reform. At the time, Mexico's rate of taxation and its ability to collect taxes were amongst the lowest in the world (Cornelius and Craig, 1988). However, when tax reform was attempted, resistance from the private sector and its allies in government proved to be too strong, and Echeverría was forced to seek additional funding from international banks.

During the mid- to late-1970s, it was easy for Third World countries to obtain loans from international banks. At that time, banks were overflowing with 'petro-dollars', which had been generated by the OPEC countries, after having hiked up the price of oil in 1973-74. In an effort to protect their share of the market, international banks aggressively pursued new clients in the Third World, making loans available at negative real interest rates. Mexico, along with most other Third World countries, saw these loans as an easy way to overcome, or at least postpone, the social and economic problems that had accumulated in the post-war period. Thus, during Echeverría's term in office, Mexico's foreign debt (owed by both the Government and the private sector) increased from US$ 12.1 billion to US$ 30.5 billion (Cornelius and Craig, 1988).

In 1976, Mexico began to experience another economic recession, and incoming president José López Portillo (1976-1982) promised to reduce public expenditures and restore fiscal discipline. However, shortly after he assumed power, huge oil reserves were discovered in Mexico's territory, making it seem as though the country was on the cusp of prosperity. As such, heavy borrowing was resumed in order to finance the development of the petroleum industry, amongst other things.

From 1978 to 1981, the economy was booming. Oil production rose at 19.4% per year and oil exports at 52.7% per year, causing the GDP to increase by between 8% and 9% per year (Ros and Rodríguez, 1987). Corruption and public expenditures ran rampant, as did borrowing from international banks. The Government spent huge amounts of money on mostly large-scale development projects such as mining, construction, electricity generation, and manufacturing. It was during this period, too,

that the "Mexican Food System" (SAM) was initiated, a rural development program that was enormously successful in terms of increasing basic-grain production.

However, things started to fall apart around the beginning of 1981. A world oil glut and a campaign to reduce energy consumption in the North combined to drive down the price of oil, causing Mexico's oil revenues to plummet. At the same time, a recession in the United States reduced the demand for Mexico's other (non-petroleum) exports. In addition, fears of a currency devaluation and better investment opportunities abroad caused approximately US$ 22 billion of capital flight to leave the country in the last three years of Lopez Portillo's term in office. And, finally, and perhaps most importantly in terms of short term causes, Mexico's debt service payments skyrocketed in 1981-1982 when the United States dramatically increased its interest rates in an effort to rescue its weakening economy.[60] By 1982, Mexico was paying US$ 15.8 billion per year to service its US$ 82 billion debt (Cornelius and Craig, 1988), a cost it could not afford to bear.

In August of that year, the Mexican government was forced to declare a 90-day moratorium on its debt payments, sending the economy spiralling downwards into its worst economic crisis of the century. Cornelius and Craig succinctly describe the situation as follows:

> ... a virtually bankrupt government, running an unprecedented budget deficit; a financial system severely shaken by the recent nationalization of all private banks; a central bank with its reserves wiped out; investment paralyzed by the flight in the preceding year of more than $23 billion in private capital to other countries; a crushing foreign debt of more than $82 billion, and funds insufficient even to pay the interest due on these loans; a currency that had been devalued by more than 80 percent against the dollar in less than a year; inflation running at more than 100 percent; an economic growth rate of minus 0.2 percent. With a year of even greater economic contraction ahead; more than 20 million people – over half the nation's work force – either unemployed or drastically underemployed; a population stunned by the abrupt turn of economic events and deeply distrustful of public authorities (1988: 1).

Faced with this situation, incoming president Miguel de la Madrid (1982-1988) turned to the IMF to get help restructuring Mexico's debt, and to secure a minimally sufficient supply of credit. In return, the Mexican government was obliged to accept

IMF-designed structural adjustment programs (SAPs).[61] This well-known policy package included a major currency devaluation, a sharp reduction of tariffs and of other barriers to trade and investment, the privatization of hundreds of state-owned enterprises and the closing down of others,[62] drastic cuts to social welfare spending (including education and health), the reduction or elimination of general subsidies (including subsidies for basic staples and public transportation), and a drastic reduction of real wages.

The overarching objective of these adjustments was to re-establish macroeconomic stability, and to enable Mexico to continue to pay interest on its foreign debt. Macroeconomic stability proved to be elusive for most of the 1980s, though. Inflation ran high, reaching triple figures at times; capital continued to flee the country;[63] a world recession reduced export earnings; the peso continued to slide;[64] and the debt continued to grow. However, in spite of these conditions the country did manage to meet its commitment to international bankers by providing them with tens of billions of dollars of interest each year.

The social costs of meeting this commitment, however, were high. Unemployment and underemployment reached their highest levels ever (Rodriguez, 1997), and those who remained employed saw their real wages drop by 42% between 1982 and 1988 (Lustig, 1995). Although peasants were able to insulate themselves to some extent by producing subsistence crops, they too suffered. Rural development programs were drastically cut back, and the wage-component of their incomes plummeted (Ros and Rodríguez, 1987).

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[60] It has been estimated that from 1981 to 1982 the average real interest on Third World debt went from negative 6% to +14.6% (Reisen cited in Thorpe, date?).

[61] Some liberal economists (Nicola Phillips, for example) emphasize that the Mexican government had been moving toward neoliberal policies before the crisis came to a head. Supposedly, this emphasis is designed to downplay the role of the international financial community, the IMF in particular, and to suggest that Mexico's political elite adopted neoliberal reform not because they had to, but rather because they had come to realize that it was the *only* realistic option for the country, which is probably true to the extent that it was the only realistic way for elites to retain power, and to protect the economic interests of both domestic and foreign investors.

[62] According to Cypher, many of these enterprises were sold well below their market value, and only some of them were operating inefficiently and at a loss (cited in Goldrich and Carruthers, 1992).

[63] It has been estimated that US$ 36 billion flew from the country between 1977 and 1987 (Lustig, 1995).

[64] In 1982, the peso was worth 26 to the dollar; by 1988 it had fallen to over 1000 (Rodríguez, 1997).

As a result, in the period from 1984 to 1989, absolute poverty in rural areas increased from 20% to 23% (see Table 3.1 at the end of this section).

In the same period, by contrast, the income of the wealthiest 10% of Mexico's population increased in both absolute and relative terms.[65] This was due, in part, to their ability to send assets abroad, and thereby benefit from devaluations, and, in part, to the implementation of neoliberal policies (privatization, market deregulation, trade liberalization, and wage reduction) – policies which favour capital.

Macroeconomic stability was finally restored near the end of de la Madrid's term in office (1982-1988). This was done by implementing another wave of tough economic policies. For example, the controlled exchange rate was devalued again, and the prices of government goods, especially those aimed at the middle class, were substantially increased (Rodríguez, 1997). This set the stage for de la Madrid's Economic Solidarity Pact (PSE) between the Government, Mexican business, organized labour, and the National Peasant's Confederation (CNC). The principle objective of the PSE was to bring inflation under control, which it did.[66]

During the following *sexenio*,[67] president Carlos Salinas de Gortari (1988-1994) sought to consolidate the shift towards neoliberalism in order to maintain macroeconomic stability, and to re-initiate economic growth. Thus, in an effort to attract foreign investment, restrictions on foreign ownership were removed, treasury bonds were issued, and shares were made available on several profitable public companies. Banks were privatized again, after over a decade of public ownership; changes were made to the agrarian law in order to pave the way for the privatization of the *ejido*;[68] and the debt was restructured and reduced by US$10 billion via the Brady Plan. The culmination of this liberalization process was the signing of NAFTA in 1993, which acted as a sort of

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[65] In absolute terms, the average income of the top decile increased by 3.4% between 1984 and 1989 (Alarcón cited in Laurell and Wences, 1994), and in relative terms by 15% (from 33% to 38% of the national income) (Lustig, 1995).

[66] By the end of de la Madrid's term in office, inflation was reduced to below 15% per year, and by 1993 it had been reduced to 8% per year (Griffth-Jones, 1996).

[67] The term '*sexenio*' refers to a six-year presidential term in Mexico.

'external lock' on the process by making it much harder for successive governments to change course (Griffth-Jones, 1996).

In order to 'combat' increasing poverty, immediately upon entering office, Salinas initiated a high-profile, all-encompassing, social-welfare program: the National Solidarity Program (PRONASOL), also known as 'Solidarity'. With the financial support of the World Bank, this program sought to 'target the poor' and to elicit their participation in the choosing and implementation of mostly small-scale development projects. Some examples of PRONASOL projects include the building and repairing of schools, the establishment of local health clinics, the building of roads and bridges, the electrification of communities, the protection of natural resources, and the enhancement and creation of productive activities.

Because of the "bewildering array of subprograms" associated with PRONASOL (Cornelius et al., 1994: 3), it is hard to make generalizations about the Program, whose results varied depending on a number of factors.[69] Some PRONASOL supporters claim that the Program was overwhelmingly successful. They point to the number of projects that were undertaken, to the infrastructure that was built, to the number of 'Solidarity committees' that were created by the poor in order to receive funds,[70] and to the relatively high level of social spending (compared to the previous *sexenio*) that was associated with the program. Its critics, however, point to the hidden electoral agenda in the allocation of spending;[71] to the lack of follow-through after projects were implemented (in terms of operation and maintenance); to the tendency for Solidarity committees to dissolve upon

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[68] An *ejido* is a land-tenure system that was created in the aftermath of the 1910-1917 Mexican revolution. *Ejidos* are collectively owned and, at least in theory, collectively managed by the community. The *ejido*, as an institution, is examined in more depth below, in Section 3.4.

[69] For a complete list of all of the subprograms associated with PRONASOL see Bailey and Boone, "A summary of Program Elements", in Cornelius et al. (eds.), 1994.

[70] According to government documentation, during the period that PRONASOL was in operation, approximately 340,000 Solidarity Committees were created (Barajas, 1997).

[71] It has been clearly demonstrated – by, inter alia, Bruhn (1996) and Molinar and Weldon (1994) – that electoral considerations were a major determinant for the allocation of PRONASOL resources. Put succinctly, there was a disproportionate amount of resources deployed to areas where there was strong left-of-centre electoral opposition, especially around the time of elections.

project completion;[72] and, to the relatively low level of social spending compared to the magnitude of poverty in Mexico, and compared to the drop in real income brought about by accompanying austerity measures and neoliberal reforms.[73] Although its effectiveness at combating poverty has been heavily debated, national-level statistics do indicate a decrease in poverty during the period that PRONASOL was in effect (from 1988 to1994). However, it should be emphasized that, during this period, poverty indicators did not improve up to pre-crisis levels, and in the *sexenio* that followed, they began to worsen again (see Table 3.1 at the end of this section).

Going back to the neoliberal reforms that were undertaken during Salinas' term, in macroeconomic terms, they initially appeared (to some) to be spectacularly successful. In 1993, the public sector reported a surplus of almost 1% of the GDP, compared to a deficit of 11% in 1988 (Griffth-Jones, 1996); inflation was brought down to single figures; foreign investment poured into the country; exports increased at 5.5% per year; and, the economy grew at a moderate rate of more than 3% per year. Indeed, the IMF and the rest of the international financial community showcased Mexico in the early-1990s as a model of neoliberal success.

The 'success', however, proved to be short-lived. In December of 1994, just after President Ernesto Zedillo assumed power, a relatively small devaluation of the peso triggered a massive withdrawal of foreign investment, sending the Mexican economy spiralling downwards into another crisis, indicating that the macroeconomic stability of the early-1990s had been built on unstable ground.[74]

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[72] Even high-level PRONASOL officials admitted that as many as 60 percent of the Solidarity Committees dissolved immediately upon project completion (Fox, 1994a).

[73] Half of Mexico's population lives in poverty, yet PRONASOL's 1992 budget represented only 0.69 percent of the GNP. Put another way, in 1992, PRONASOL amounted to approximately US$ 0.14 per day for each person living in poverty (Laurell and Wences, 1994: 387). Moreover, in an attempt to quantify the small degree to which PRONAOSL compensated for the drastic drop in real income that was brought about by the debt crisis and neoliberal reforms, Laurell and Wences calculated that, in 1992, the program's funds were equivalent to a mere 5.7 percent of the country's total wage loss (1994, 388).

[74] The cause of this crisis has been the subject of a considerable amount of debate. Some Marxist economists simply point out that periodic crises are an inherent feature of the international capitalist system. Most liberal economists include the following factors in their explanation: (1) a growing current account deficit, which was due to a lack of private savings, and which was compensated only by short-term speculative investment in the stock market and in government bonds; (2) an overvalued exchange rate, kept artificially high in order to control inflation; (3) falling foreign reserves, beginning in February of 1994 and

Within 2 or 3 months, inflation rose to 52%, the value of the currency was halved, and interest rates jumped up to more than 60%, making it almost impossible to prevent massive defaulting (Manning, 1996; Rodríguez, 1997). Tens of thousands of business were forced to close, real wages declined by another 25%, and two million people lost their jobs, bringing the total number of unemployed up to 10 million (equal to one third of the nation's workforce) (Manning, 1996). To make matters even worse, another round of austerity measures was announced, including increased sales taxes, and higher prices for gasoline and electricity (Todaro, 1996).

In macroeconomic terms, things were brought under control fairly quickly. This was largely due to the US$52 billion bailout package that was put together by the United States, the IMF, the World Bank, and few other countries. This money helped to stop the haemorrhage of capital withdrawal, and to restore some level of investor confidence. Thus, by 1997, foreign investment had resumed, inflation had been brought under control (under 15% per year), the exchange rate had stabilized, interest rates had been reduced, and the economy was growing at over 5% per year.

In fact, Zedillo's fiscal discipline and steadfast adherence to the neoliberal model in the face of economic crisis garnered much praise from the international financial community. From 1995 to 2000, the Mexican economy grew at an average rate of over 5% annually, exports doubled, and foreign investment tripled (Business Week, several articles).

However, in spite of these economic achievements, the social situation in Mexico failed to improve. In fact, between 1994 and 1998, income disparity worsened, and both poverty and extreme poverty increased (see Tables 3.1 and 3.2).

This is not surprising. In the context of 20 years of austerity measures, wage suppression, and neoliberal reforms, the amount of money spent on social programs during Zedillo's term in office was remarkably small. For example, in 1998, all programs designed to fight absolute poverty added up to only 38 billion pesos, which is equivalent to just 1% of the GDP, or to just 5.8% of the money that the Government

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reaching extremely low levels by December; and, (4) the issuing of government bonds that were extremely vulnerable to massive withdrawal since they were short term, dollar denominated, and largely in the hands

allocated to the cost of private-bank bailouts for that year (Alternative Report cited in Sandoval-Terán, n.d.).[75] Furthermore, Zedillo's main poverty-alleviation program – Program for Education, Health and Food (PROGRESA) – was, and is, geared more towards treating the symptoms of poverty, than towards addressing its causes.[76]

Moreover, although the benefits of NAFTA were supposed to trickle down to the poor, especially in terms of more better-paid jobs, so far, this has not been the case. It is true that Mexico's official rate of open unemployment fell between 1995 and 2000 (Globe and Mail, 2000),[77] but this was accompanied by a 47.6% drop in real wages, which is equivalent to more than half the drop in salaries over the past 23 years (Alternative Report cited in Sandoval-Terán, n.d). Although some new jobs have been created in the export-oriented manufacturing sector, and although they pay somewhat better than most, their number is relatively small in the context of the massive layoffs generated by the last 20 years of privatization (Sandoval-Terán, n.d.).

Furthermore, as was expected, NAFTA has had a devastating impact on the peasant sector. The overwhelming majority of peasants in Mexico produce corn;[78] the lead-up to NAFTA, and NAFTA itself, has caused the domestic price of corn to fall precipitously. For example, between 1996 and 1999, the real price of corn dropped 45.5% (*Consejo Nacional Agropecuario* cited in Dussel-Peters, 2000). To be sure, the real (domestic) price of corn began falling in the 1980s, when the Mexican government began lowering support prices for producers; but then it fell even faster in the 1990s, mostly because of NAFTA, but also because of a drop in the international price of corn (Dussel-Peters, 2000). As a result of this tendency, over the past decade, Mexican peasants who produce for the market have seen their corn revenues halved (at least); and those who produce for

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of foreigners

[75] In all, the government's highly controversial bailout of private banks after the 1994 economic crisis is costing Mexican taxpayers US$ 100 billion (The Economist, 09/09/2000).

[76] PROGRESA seeks to provide the poor with food supplements, medical services, and cash handouts.

[77] With a high percentage of the population underemployed and/or working in the so-called informal sector, where remuneration is generally very low, the official rates of unemployment in Mexico are highly misleading. Even the government's own statistical research centre, the INEGI, estimates that, in 1996, forty-seven percent of all workers were underemployed, and that only 25 percent had secure and adequately-paying jobs (INEGI cited in Veltmeyer, 1999b: 187).

[78] Alain de Janvry and Gordillo de Anda (1995) report that 80% of *ejidatarios* are corn producers.

auto-consumption now have even less incentive than ever to increase their production or to invest in more ecologically sustainable technology (Jardel, 1995).[79] Meanwhile, the Program for Direct Support of Rural Areas (PROCAMPO), which was initiated by the Mexican government back in 1993 in order to cushion the blow of NAFTA on peasant producers, has proven to be extremely inadequate and ineffective. Not only has the small subsidy been devoured by inflation,[80] but there have also been widespread bureaucratic problems associated with registering with the program (Gutiérrez, n.d.). Moreover, because of the virtual disappearance of credit and marketing support, and because of the high cost of agricultural inputs, only a relatively small percentage of corn producers (the richest 20%) have been able to either intensify their production in order to compete on the world market, or to switch to crops in which Mexico has a 'comparative advantage' (Dussel-Peters, 2000). Many of those who have been left behind have found it more profitable to rent or sell their land to larger producers, and to engage in more profitable economic activities such as emigrating in search of employment, cultivating drugs, illegally cutting down trees, etc. Thus, the net result of NAFTA-related changes in the rural sector has been a reduction in the number of rural producers, a polarization of wealth and income (Dussel-Peters, 2000: 61), decreased employment opportunities, and an increase in both poverty and extreme poverty in the rural sector (see Table 3.2).

Mexico's new president, Vicente Fox, has repeatedly expressed his commitment to free trade, export-led growth, foreign investment, and neoliberalism in general. In line with these commitments, he has promised to privatize the last of Mexico's major state-owned enterprises (the oil and electricity industries), to pursue free trade with more countries, and to impose new taxes on food, medicine, and books, amongst other things. In addition, last March he blocked a proposal (which had already been approved by the Senate) to direct state resources towards the peasant sector and to renegotiate parts of

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[79] In their 1995 publication, Alain de Janvry and Gordillo de Anda argued that the looming fall in the producer price for corn would not directly affect a large percentage of *ejidatarios* since they do not produce for the market. In their study of corn production in three Mexican states (Michoacán, Sinaloa, and Veracruz), they found that approximately half of the peasant producers did not produce for the market; and, because of this, they concluded that the negative effects of NAFTA on these producers would be limited to reduced employment opportunities and lower wages (1995).

NAFTA that have proven to be inimical to the rural poor.[81] These policies will almost certainly reinforce the socio-economic trends of the past 20 years.

In summary, over the past 60 years, and especially over the past 20 years, the Mexican government has given overriding priority to the needs of capital. The theoretical justification for this is that economic growth is supposedly needed to overcome poverty and, more recently, environmental degradation. In this way, the Mexican government has adhered to the MSD model. The trends of the past 20 years that have resulted from this include: (1) for the economy to grow in the long run, in spite of periodic crises; (2) for an ever larger part of the economy to be controlled by foreign investors; (3) for the number of Mexican billionaires to increase; (4) for income disparity to gradually worsen over time (see Table 3.2); (5) for poverty and extreme poverty to worsen during times of economic crisis, and not to recuperate up to pre-crisis levels during times of economic stability, resulting in a gradual worsening over time (see Table 3.1); and, (6) for the environment to continue to deteriorate.

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[80] In 1993, when PROCAMPO was introduced, producers received a lump payment equivalent of $US 100 for every hectare of basic-food crops they planted; however, the real value of this payment has since dropped to $US 61 per hectare (Salcedo, 1999).

[81] The proposed Rural Development Law was put together over the course of two years by peasants, agrarian organizations, academics, and legislators, and was approved by the Senate in December 2000. It included the following proposals: (1) that 10% of the federal budget be designated for integrated rural development; (2) that low-rate credit be made available to peasants; (3) that an official organization be established to provide marketing support; (4) that technical training be provided; (5) that subsidies be provided to producers; (6) that food imports be regulated; and, (7) that international agreements be re-evaluated, and if they are found to be harmful to peasant agriculture, that they be renegotiated. In March 2001, president Vicente Fox rejected the proposal, transmogrified it, and sent it back to Congress (La Jornada, 17/3/2001: p. 37).

Table 3.1 Poverty and Extreme Poverty in Mexico

	Percentage of Households Living in Poverty[a]		Percentage of Households Living in Extreme Poverty[b]	
Year	All of Mexico	Rural Mexico	All of Mexico	Rural Mexico
1977	32	--	10	--
1984	34	45	11	20
1989	39	49	14	23
1994	36	47	12	20
1996	43	53	16	25
1998	38	49	13	24

Sources: CEPAL. (2000). *Panorama Social de América Latina, 1999-2000: Anexo estadístico*, http://www.cepal.org (accessed: May 24, 2001); and, CEPAL. (2000). *Anuario estadístico de América Latina y el Caribe 2000: Desarrollo social y bienestar*, http://www.cepal.org (accessed: May 24, 2001).

a. A household is considered to be living in poverty if its incomes amount to less than two times the cost of the basic food basket.

b. A household is considered to be living in extreme poverty if its incomes amount to less than the cost of a basic food basket.

Table 3.2 Income Distribution in Mexico, 1984-1998

Segment of Population	1984	1989	1994	1996	1998
Poorest 60% (Deciles 1 to 6)	28.6	26.1	25.4	26.9	25.5
Middle 30% (Deciles 7 to 9)	38.6	36.0	36.2	36.5	36.4
Richest 10% (Decile 10)	32.8	37.9	38.4	36.6	38.1
Gini Coefficient	0.429	0.469	0.477	0.456	0.476

Source: INEGI cited in *La Jornada*, Friday, April 28, 2000.

3.3 The Political Context

3.3.1 Introduction

In December of 2000, the Institutional Revolutionary Party (PRI) ceded national-level political control after having ruled Mexico uninterruptedly for 71 years. Originally called the National Revolutionary Party (PNR), this institution was created in 1929 in order to consolidate political power amongst various interest groups (often referred to as 'the revolutionary family'), and to counteract the power of *caciques* (regional strongmen). Over the years, the PRI became so intertwined with the state that the two essentially became one and the same. The resulting political system was remarkably stable, especially in the context of Latin America, where military coups and revolutionary wars were commonplace. In spite of this stability, however, and perhaps contributing to it as well, Mexico's political system has been marked by a number of generally negative features, including centralism, clientelism, and a large degree of authoritarianism.

Merits and demerits aside, this system began to show cracks in the late-1960s, as both reformists from within and social movements from below began to exert pressure for change (Fox, 1992, 1994a, 1994b,1996). By the 1980s, the PRI-government was forced to create major political openings in order to shore up its legitimacy and to hold on to as much power as possible. Once this process got underway, though, it was difficult to stop. The result has been a major shift towards decentralization and Western liberal democracy. The question is: To what degree have these changes allowed marginalized people in Mexico to effectively participate in the decision-making that affects their lives? In order to address this question, we first need to briefly describe the political system that was in place during the post-World War II period.

3.3.2 Mexico's Political System in the Post-World War II Period.

The political system that was in place during the post-World War II period was built in the aftermath of the 1910-1917 Mexican revolution, and later consolidated during the *sexenio* of populist president Lazaro Cárdenas (1934-1940). The main characteristics of this system can be summarized in the following terms:

(1) Corporatism: During the *sexenio* of Lazaro Cárdenas, the PRI-government was divided into three sectors: the peasant sector, the labour sector, and the 'popular' sector, the latter representing, *inter alia*, private land-owners, small merchants, and most government employees. Each of these sectors was then 'filled' by one state-sanctioned mass organization: in the peasant sector, it was the National Peasant's Confederation (CNC); in the labour sector, the Mexican Confederation of Workers (CTM); and in the popular sector, the National Confederation of Popular Organizations (CNOP). In addition, within each sector, there were a number of other smaller (state-sanctioned) organizations that were overshadowed by the principal organization.

The original intention for creating this structure was to provide peasants and urban workers with a mechanism to press their claims on the state. In the years that followed, however, national-level political leaders who were more committed to the needs of capital (both domestic and international) used the state's corporatist structure to control and limit the demands of workers and peasants, and to stifle their capacity to form autonomous organizations (Cornelius and Craig, 1988; Pare, 1990; Rollo, 1986).

By contrast, other powerful interest groups – namely, foreign and domestic entrepreneurs, the military, and the Catholic church – were not formally represented within the state's corporatist structure. As Cornelius and Craig (1988) point out, these groups did not need the PRI-structure to make their preferences known; they were able to deal directly with the governmental elite, often at the cabinet or presidential level.

(2) Centralism: Centralism was perhaps the most conspicuous characteristic of Mexico's political system during the post-World War II period. Political power was centralized in the PRI, in the capital, and especially in the hands of the president. Until the year 2000, every president came from the PRI; and, until the late-1980s, every governor, and the overwhelming majority of municipal presidents also came from the PRI. Presidential 'candidates' were chosen by the incumbent president behind closed doors, perhaps in consultation with other top-level PRI leaders, the selection was then made public, and then elections were held in order to maintain the facade of democracy. The President directly appointed governors, and they in turn appointed municipal presidents, choices that were also ratified at a later date by staged elections. Most

citizens who participated in these elections did so not because they harboured the illusion that their votes could influence the outcome, but rather because they considered it to be their civic duty, or because they wished to avoid problems in future dealings with public agencies (Cornelius and Craig, 1988).[82]

The centralization of power in the executive branch of the federal government and the extraordinary constitutional and 'metaconstitutional' powers of the president have prompted some observers to describe the Mexican system as 'presidentialist'. Until very recently, the president of Mexico has had the power to amend the constitution, to act as chief legislator, to act as the ultimate authority in electoral and judicial matters, and to dismiss governors, municipal presidents, and legislators. Moreover, since both houses of congress were (until 1989) completely dominated by representatives of the PRI (who were in turn dominated by the president), the ratification of the president's policy choices by both houses of congress was practically automatic.

Centralism and *presidentialismo* also permeated intergovernmental relations. Although the 1917 constitution gave paramountcy to the states and municipalities, in practice, power resided in the federal government. This is evidenced by a couple of features. Firstly, as mentioned above, presidents essentially handpicked governors, who in turn handpicked municipal presidents. Thus, the leaders of state- and municipal-level governments owed their allegiance not to their constituents, but rather to their patrons above; and, those who did not govern accordingly, or proved to be inept, were summarily removed from office. Secondly, at least until the mid-1990s, each successive layer of government had substantially fewer financial resources at its disposal than the one above. Indeed, the federal government controlled at least 85% of public revenues, leaving the state governments with less than 12%, and allowing for only 3% to trickle down to the municipal governments (Cornelius and Craig, 1988). In short, decision-making power was highly centralized.

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[82] Each time a citizen voted, his 'voter's registration card' was punched. Many Mexicans believed that, in order to have access to many state services (for example, public schools, social security benefits, passports, etc.), one had to show proof of having voted. Although there was no formal requirement to do so, in practice the voter's credential was often demanded (Cornelius and Craig, 1988: 46).

(3) Clientelism: The corporatist and centralist nature of Mexico's political system led to widespread clientelism. In fact, clientelism pervaded every part of the PRI-government structure. To begin with, amongst the political elite, there were vertical chains of patron-client relationships that extended all the way up to the president. Cornelius and Craig explain:

> The entire system can be viewed as consisting of interlocking chains of "patron-client" relationships, in which the "patrons" – persons having higher political status – provide benefits (protection, support in struggles with political opponents, chances for upward political or economic mobility) to their "clients" – persons having lesser political status. In exchange, the "clients" provide loyalty, deference, and sometimes useful services like voter mobilization and political control to their patrons within the official party of government bureaucracy... these interweaving chains of clientage relationships come together at the apex of the national authority structure – the presidency. For all those who hold office during a sexenio, the president is the supreme patron (1988: 21-22).

Clientelism also manifested itself in the way that public revenues were shared amongst the three levels of government. Since a substantial part of public revenues was spent on large-scale development projects, and since these projects were distributed at the discretion of the president, governors were forced to vie for his favour in order to receive their share, or more. This pattern was then duplicated on the state-municipal level. The result was a very uneven distribution of public expenditures, which greatly contributed to the development of regional inequalities.[83]

Clientelism was also exhibited by the PRI's corporatist structure. This structure was used to channel benefits – such as land, low-cost food, employment opportunities, irrigation systems, etc. – towards the constituents of the various state-sanctioned organizations (CNC, CTM, CNOP, and all of the other smaller ones). In exchange, the leaders and constituents of these organizations were expected to show their political loyalty to the regime. In terms of maintaining political stability, this system worked well.

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[83] Political leaders at all levels of government were more inclined to spend their share of public revenues in their respective capitals, where they resided, and where they owed more political favours. Thus, for example, by the mid-1980s, the region in and around Mexico City, accounted for almost half of the total federal government expenditures, even though it contained only about one-third of the country's population (Cornelius and Craig, 1988). And, on the state level, some governors spent up to 80% of the federal funds they received for the entire state in the state-capital, passing on virtually nothing to some of the smaller municipalities (Rodriguez, 1997). This pattern was then repeated on the municipal level.

Not only did it provide a means for distributing benefits and co-opting potential adversaries, but it also separated common interest groups. For example, unionized workers were separated from non-unionized workers; and, peasants with land were separated from those without, and both were separated from poor small-scale private landowners. This not only limited the ability of these groups to bargain collectively, but it also fostered competition amongst them. Thus, instead of having to deal with broad-based collective demands, the state was faced with relatively small localized requests that could be dealt with on a case-by-case basis.

Individual patrons within the state apparatus served a similar purpose. Because of the typically sluggish response received through official corporate channels, groups and individuals seeking concessions from the state often circumvented these channels and sought to satisfy their needs through personal contacts. Patrons who helped deliver on these needs received all due credit, and those who did not took all of the blame. This served the state well by helping to fragment popular demands, and limit their number. In addition, since hopes and frustrations were pinned on individual patrons, as opposed to the system as a whole, this system helped to take pressure off of the government to perform well (Cornelius and Craig, 1988; Rodriguez, 1997).

(4) *Caciquism* at the local level in rural Mexico: In most of rural Mexico, both during and after the postwar period, *caciques* (local strongmen) dominated local government, business, and natural resources, sometimes by means of intimidation and violence. A *cacique* could be a powerful businessman, a wealthy rancher, a large-scale commercial farmer, a powerful bureaucrat, a local politician, etc. *Caciques* that did not hold a local political office, were often able to control the people who did. On the local level, *caciques* acted as patrons; on the state and national level, they acted as clients. *Caciques* helped maintain political stability; and they helped in the process of wealth accumulation by acting like local satellites.

(5) Low-levels of participation in decision-making: During the postwar period, Mexico's political system exhibited low-levels of participation in decision-making. At the national level, a small circle of top-level political elites decided upon all public policy before making their decisions public. Of course, the perceived interests of various

interest groups – especially the more powerful ones, such as foreign and domestic capital – were taken into consideration early in the decision-making process. However, in terms of actual input from the general public, there was little or none. Along these lines, Grindle noted in the late-1970s that "policy making... is the exclusive prerogative of a small elite and is characterized by limited informational inputs, behind-the-scene bargaining and accommodation, and low levels of public discussion and debate" (cited in Rodriguez, 1997: 35-36). Indeed, even local-level decisions – such as the provision of electricity, the number of schools and clinics in a community, and the construction of roads and bridges – were made by officials in Mexico City, who were generally unaware of local needs and well insulated from local pressure (Fagen and Tuohy cited in Rodríguez, 1997). The limited amount of decision-making that took place on the local level was dominated by *caciques*. The only popular input that ever came into play, then, was in the form of protest, after decisions had been made.

3.3.3 Changes to Mexico's Political System since the Late-1960s

The political system described above began to show cracks in the late-1960s; and by the early-1980s, it began to undergo a series of renovations. These renovations, however, were undertaken in a piecemeal fashion; so that even as late as the mid-1990s, the characteristics described above were still dominant (Fox, 1994; Rodriguez, 1997). In fact, even today, with a different political party at the national helm, there are still remnants of the old system.[84] Nevertheless, over the past three decades, Mexico's political system has changed in some significant ways, and the purpose of this sub-section is to outline these changes.

The roots of these changes can be traced back to the late-1960s, when reformists (from within the PRI) and a student's movement began pressuring the state for democratic reform. Even though the reformists were marginalized by the more authoritarian elements of the PRI, and even though the student's movement brutally

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[84] For example, state-sanctioned mass organizations such as the CNC still exist, although much of their power has been eroded; the PRI is still in power in the majority of state and municipal governments;

crushed, some of the social energy generated by these efforts managed to survive, eventually resurfacing in the following decades in the form of social movements that demanded democratic reforms and better distribution of resources. Moreover, after the bloody repression of the students' movement, the regime was suddenly faced with a legitimacy crisis (in the eyes of both Mexicans and the international community), which only grew worse in the 1980s in the face of economic hardship. In this context, the state had to find ways to restore its legitimacy, and to contain and control the social unrest that had been unleashed. A combination of democratization and decentralization proved to be the best available strategy. Tactically pursued, this strategy allowed the Mexican government to push through neoliberal reforms, and to neutralize the Left (Manning, 1996; Markov, 1997; Rodriguez, 1997). Part of the strategy, too, was to retain as much power as possible in the PRI (Rodriguez, 1997); however, this last objective turned out to be elusive.

But Mexico was not the only country to pursue democratization and decentralization during the 1980s and 1990s; in fact, most other Latin American countries went through a similar processes. Therefore, one has to also look outside of the country for a more thorough explanation. In this connection, Markov (1997) provides some insightful hypotheses. According to him, the 'redemocratization' of Latin America is linked to both the decline of communism and the 'rolling back of the state'. Because of the collapse of the Soviet Union, the Left has found itself in ideological disarray, allowing the Western media to successfully convey the idea that socialism was a failed experiment whose time has come and gone. This, combined with the ever-present threat of capital flight and economic crisis, has made it much more difficult for Left-wing political parties to win national-level elections.[85] But perhaps even more importantly, over the course of the last 15 or 20 years, the state itself has become less powerful and significant. Much of its power has been ceded to international institutions such as the IMF, the WTO, and (in the case of Mexico) NAFTA; and privatization has shifted a large amount of decision-making power to the private sector. In this context, a shift towards Western liberal

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clientelistic relations between state and some sectors of the population still prevail in some regions; and popular participation in decision-making is mostly limited to localized issues.

democracy and decentralization does not seriously threaten the privileged position of domestic elites or their international allies. And this, according to Markov, is the reason for the wave of 'democratization' in Latin America.

But before speculating any further on the causes and motives behind the political changes in Mexico, let's briefly review the changes themselves.

3.3.3.1 Electoral and Legislative Reform, and the Rise of the PAN

As mentioned above, before the 1970s, the electoral process was mostly a facade that was stage-managed by the PRI. The only political party that was 'allowed' to show any significant electoral opposition was the right-of-centre National Action Party (PAN), whose share of the national vote never exceeded 20%. Leftist political parties were either outlawed, or affiliated with and subordinated by the PRI. When opposition parties did win the majority of votes in state and municipal elections – which in all probability happened on occasion (Cornelius and Craig, 1988; Fox and Hernandez, 1992, Middlebrook, 1986) – the Government simply resorted to fraud to nullify the results. In fact, even when PRI candidates won with a clear majority, the Government still used fraud in order to 'enhance' the results.[86] The only real purpose of having elections and opposition parties, then, was to help stabilize the regime by providing a government-controlled outlet for the protest vote and for dissident political leaders (Cornelius and Craig, 1988).

Some steps were taken towards changing this during the legitimacy crisis of the 1970s. In an attempt to breath some life into opposition parties and to reverse the trend of increasing abstention, electoral reforms were undertaken in 1972, 1973 and 1977. The 1972 reforms made it easier for opposition parties to be eligible for proportional

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[85] According to Markov, the Left is also at a disadvantage in elections because, generally speaking, it has fewer financial resources and less access to the media than the Right.

[86] The reason for this lies in the internal competition amongst PRI elites. Winning a larger share of the vote was one of the factors that determined pecking order within the PRI structure (Cornelius and Craig, 1988).

representation in the Congress,[87] and the 1973 reforms reduced the minimum membership requirement for party registration. The 1977 reforms were even more significant: they allowed for a broader range of political parties to be officially registered, including the Mexican Communist Party; they expanded party access to mass communications; and, they set aside a quarter of all the seats in the lower house of Congress to be divided amongst opposition parties on the basis of proportional representation (Middlebrook, 1986). Although this last measure helped opposition parties 'get their foot in the door', it did not threaten the PRI's dominance of Congress. As Rodriguez points out, the purpose of all of these reforms was not to weaken the authority of the PRI, but rather "to strengthen the PRI by encouraging a more credible (but carefully constrained) opposition" (1997: 50).

However, the moderate electoral reforms of the 1970s were simply not enough to compensate for the system's waning credibility. The Left had, for all intents and purposes, abandoned electoral politics in favour of working with the poor to build grassroots organizations (Fox and Hernandez, 1992). And the Right "could not be bought off with more so-called reforms that did not compel officials at all levels of the system – to respect election results" (Cornelius and Craig, 1988: 36). In short, voters from across the political spectrum had become either too bored or too disgruntled to participate in fraudulent and predictable elections. And, as a result, by the late-1970s, abstention levels rose to an all-time high (Middlebrook, 1986).

The debt crisis of the early-1980s only served to exacerbate the legitimacy crisis. With no real say in who would run the government, or in how it would be run, Mexico's poor and working classes (i.e. the majority of the population) were forced to watch their standards of living decline precipitously as political elites made decisions that were clearly not in their best interests.

In 1983, in an effort to restore some semblance of legitimacy, president de la Madrid began a policy of recognizing opposition-party victories at the municipal level.

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[87] Electoral reform actually began in 1963. At this time, a system of proportional representation was established whereby parties that obtained a minimum of 2.5% of the national vote were guaranteed 5 congressional seats, and an additional seat for every additional half percent of the vote obtained, up to a

As a consequence, in the first ten months of his term in office, anti-PRI votes brought the PAN to power in seven major cities, including five state capitals. This unprecedented string of opposition victories sent a shock wave through the entire political system, provoking a sharp backlash from PRI hardliners who felt threatened by the changes. Under intense internal pressure, de la Madrid was forced to abruptly abandon the new policy, and to return to the Government's "time-worn practice of intimidation, vote rigging, and ballot stuffing to contrive victories" (Rodriguez, 1997: 54). During the rest of de la Madrid's term in office, only one more city was allowed to fall into opposition hands, in spite of widespread public protest and international condemnation of electoral fraud.

In 1986, the Government announced more electoral reforms. Aside from promising cleaner elections, the number of seats in Congress was increased, and the opposition's representation was raised to a minimum of 30 percent. However, like previous reforms, these did not pose a serious threat to the ruling party's dominance of Congress.

Around the same time, a dissident movement for democratic reform began to take shape within the PRI itself. This movement – known as the *Corriente Democratico* (Democratic Current) – was led by several prominent party members, including Pordirio Munoz-Ledo (a former labour secretary, education secretary, president of the PRI, and ambassador to the UN), and Cuauhtémoc Cárdenas (the former governor of Michoacán, and the son of past-president Lazaro Cárdenas). Initially, the movement was intent on reforming the PRI itself. Members of the Democratic Current wanted to put an end to the practice of appointing PRI candidates (at all levels), and to open up the candidate-selection process to popular input. However, members of the Democratic Current ended up being marginalized by the more authoritarian elements of the PRI, causing the former to leave the PRI and to form a new left-of-centre national-level political party: the National Democratic Front (FDN).

In the 1988 elections, the FDN did so well that some analysts claim that they actually won the majority of votes. Others say that the PRI did in fact win, but that the

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maximum of twenty. In 1972, the total vote threshold dropped from 2.5% to 1.5%, and the 20-seat limit was raised to 25 (Middlebrook, 1986).

results had to be 'enhanced' in order to give incoming president Carlos Salinas a 51% majority.[88] In any case, there seems to be little doubt that at least some degree of fraud was committed.[89]

This being the case, upon entering office, Salinas was faced with a dubious mandate to govern, making it all the more difficult to push through his plans to shift the neoliberal project into a higher gear. In this context, Salinas needed to find strategies that would help ease social tension and restore some degree of political legitimacy. Allowing opposition parties to increase their representation was one way to do this. Thus, in 1989, opposition parties were allowed to acquire enough strength in the lower house of Congress to finally have some say in the policy-making process.[90] And, in the same year, the first state-level opposition (PAN) victory was recognized in Baja California. This was followed by PAN victories in the states of Chihuahua (1992), Jalisco (1995), Guanajuato (1995), and then again in Baja California (1995). At the municipal level, recognition of opposition victories became commonplace. Indeed, by 1994, no less than 238 municipalities (out of a total of 2,392) were being governed by opposition parties, and an additional 400 or so smaller municipalities in Oaxaca were being governed by indigenous bodies of government.

However, in this 'democratization' process, not all opposition parties were treated equally. The PRI-government was more apt to recognize right-of-centre (PAN) victories, than left-of-centre (PRD) ones.[91] Thus, for example, in 1992, while the Government readily acknowledged the PAN's victory in Chihuahua, it refused to accept the PRD's victory in Michoacán, even in the face of vehement and widely publicized accusations of

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[88] According to the official results, the PRI received 51 percent of the vote, the FDN 31 percent, and the PAN 17 percent.

[89] The main basis for this accusation lies in the disproportionate number of PRI votes in rural areas. Although the PRI was expected to receive a large percentage of the votes in rural areas because of the clientelistic relationship it had fostered with peasants over the years (i.e. land had been redistributed in exchange for political loyalty), in 1988, the incredibly high percentage of rural votes claimed by the PRI in some rural areas made the absence of fraud seem extremely unlikely. This conclusion was confirmed by many (published) eyewitness reports of fraud (Pare, 1990).

[90] By 1989, opposition parties had acquired close to 50% of the seats in the lower house of Congress. Since, constitutional amendments required a 66% majority, the PRI had to seek coalition partners in order to make changes to the constitution.

fraud. In this connection, several political analysts have argued that Salinas intentionally marginalized and repressed the Left, while showing implicit support for the Right (see for example, Manning, 1996). However, to the same extent that this is true, it is also true that the Left was (and is) relatively poorly organized at the national level, largely because it is split on the issue of whether or not to pursue electoral politics.[92]

Ironically, while Salinas strategically marginalized the left, he also pursued electoral reforms that were designed to make elections cleaner and fairer, or at least give this impression. Along these lines, the Federal Electoral Institute (IFE) was created in 1989 as an independent body that could organize and monitor elections fairly. And, in 1993, Congress passed the Federal Code for Electoral Procedures and Institutions, which gave opposition parties greater access to media during their campaigns, imposed campaign spending limits, insured that voter registration lists be verified by an independent body, and made it easier for opposition parties to increase their representation in Senate. At the same time, several national-level NGOs emerged to help monitor elections and denounce irregularities.

These changes helped make the 1994 presidential elections (which brought Zedillo to power) the cleanest to date. To be sure, there were still allegations of fraud and reports of irregularities, but they were relatively minor compared to previous elections.[93] Most critics contend that the PRI's 'cheating' occurred before the day of the election, through slanted media coverage, unfair access to campaign finance, and the use of state resources for partisan electoral purposes. For example, even though the Government promised not to do so, PROCAMPO cheques were delivered to peasants just a few weeks or days before the election day. Hence, the final verdict on the 1994 presidential elections was that they were fairly clean, but not fair.

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[91] The Democratic Revolution Party (PRD) is the successor of the FDN, the party that was created by Cuauhtémoc Cárdenas and other dissident PRI leaders in the late-1980s.

[92] The Zapatistas, for example, have steadfastly refused to be swept into the game of electoral politics. Instead, they advocate the creation of alternative governing bodies that are democratically elected at the community level.

[93] See Fox (1995) for a good summary of the electoral violations of the 1994 presidential elections.

When Zedillo took over, one of his top priorities was to consolidate and advance the 'democratization' process. During his term in office, amendments were made to the nation's constitution and to its electoral laws. These changes granted greater autonomy to the IFE, limited private campaign financing, and redistributed government campaign resources to give opposition parties more resources. In addition, the PRI itself was reformed by opening up the candidate selection process to the public. During Zedillo's presidential term, the PRI lost its majority in Congress; and, most importantly, at the end of his term, the PRI lost the presidency to PAN-candidate Vicente Fox.

Today, not only is the federal government controlled by a party other than the PRI, but 13 of the 31 states are as well. In addition, 1127 of Mexico's 2427 municipalities are now in the hands of non-PRI governments (CEDEMUN, 2001).

In summary, there is no doubt that multi-partyism is a now a reality in Mexico. The Mexican government's move towards Western liberal democracy – defined as a system characterized by multi-partyism, clean but not necessarily fair elections, checks and balances provided by the legislature and judiciary, and freedom of the press (Sachikonye, 1995) – was the result of a legitimacy crisis. Electoral and legislative reforms were pursued because they were seen as a means of shoring up political legitimacy and pushing through neoliberal economic reforms. Although Mexicans can now choose between two political parties (at the national level), both parties more or less have the same agenda (i.e. neoliberalism), and the real decision-making power still lies in the hands of capital (domestic and foreign), perhaps now more than ever.

3.3.3.2 Decentralization

As outlined above, during the postwar period, Mexico's political system was highly centralized in Mexico City, in the PRI, and most importantly in the presidency. However, since the early-1970s, decentralization has been an major part of the Government's discourse, and successive administrations have made some efforts to decentralize decision-making authority and economic resources along three axes: (1) away from the PRI and the presidency by means of electoral and legislative reform (horizontal decentralization); (2) away from the capital and (other major urban centres)

by means of regional development programs (spatial deconcentration); and, (3) away from the federal government by handing down economic resources and decision-making power to states, municipalities, and community groups (vertical decentralization). This sub-section briefly examines decentralization along all three of these axes, paying special attention to the third, which is the most important in terms of sustainable development and 'participation'.

(1) Horizontal Decentralization: As we saw in the previous sub-section, the electoral and legislative reforms that began in the 1970s led to a wave of opposition victories at the municipal level in the 1980s, followed by a wave of opposition victories at the state level in the 1990s, and culminating in the PAN's victory at the national level in the year 2000. These victories can be seen as a form of decentralization in the sense that they took political power away from the PRI-structure, and away from the presidency. As stated earlier, before these opposition victories began, all governors were appointed by the president, and all municipal presidents were in turn appointed by the governor. This led to a situation where governors owed their allegiance to the president, and municipal presidents owed theirs to the governor, and decisions were made accordingly. This situation began to change once opposition parties began taking over state and municipal governments. Wherever opposition parties gained control, government decision-making was no longer subject to the informal approval of the PRI hierarchy. Moreover, it was much more difficult to remove opposition leaders for 'insubordination', something which happened regularly to PRI governors, even as late as the early-1990s. In short, sub-national governments controlled by opposition parties enjoyed a much greater degree of autonomy.

The increase in opposition-party representation in Congress had a similar effect; that is, it decentralized power away from the PRI and the presidency. Ever since 1989, when opposition parties first gained control of over one-third of the seats in the Lower House of Congress, the ruling party has been forced to seek coalition partners in order to make amendments to the Constitution. Even though this was relatively easy to do in the beginning, it became progressively more difficult as opposition parties increased their representation. Today, presidential whims do not automatically become national policy;

instead, they are subject to the approval of Congress, which is no longer dominated by just one party.

Similarly, on the state level, increased opposition-party representation in at least some state-legislatures has provided some checks and balances for some governors (Ward and Rodriguez, 1999).

On the municipal level, almost all of the research to date has focused on the large urban municipalities, showing trends towards technocratic governance, and an increasing role for the *cabildo* (city/town council), especially were opposition parties have taken over (Ward, 1995). However, it is unlikely that the same trends apply to rural municipalities, many of which are still dominated by *caciques*.[94]

(2) Spatial Deconcentration: By the late-1960s, it had become apparent that the ISI strategy had caused a number of social, economic and environmental problems, including regional disparities and excessive urbanization. During the 1970s and 1980s, various programs and policies were put in place to: (1) promote economic development in regions that had hitherto been neglected; and, (2) to counteract the tendency for people and (highly polluting) industry to converge on Mexico City, and to a lesser extent on other major urban centres.

The first of these programs were implemented by the Echeverría administration in the early-1970s. These programs included one that sought to create 'development poles' (*polos de desarrollo*) in smaller urban centres, and another that was designed to increase agricultural production and improve the standard of living in marginalized rural communities (PIDER).

During Lopez Portillo's *sexenio*, the number of programs of this type proliferated, largely because of the spending spree brought on by the discovery of oil reserves. In the area of rural development, not only was PIDER continued, but two other programs were

[94] In the southern states of Oaxaca and Chiapas, there is also a significant number of small rural municipalities that are governed by traditional indigenous forms of governance. They are referred to as '*usos y costumbres*' (ways and customs) in Oaxaca, and '*derecho indigena*' (indigenous rights) in Chiapas.

initiated: COPLAMAR and SAM.[95] In addition, the National Urban Development Plan was formulated in an effort to curb urbanization and to reorganize the Capital's urban structure; the Program for Incentives for Territorial Deconcentration of Industrial Activities was designed to reduce the amount of industrial activity in Mexico City and other large metropolitan areas; and, the Program to Deconcentrate Federal Government was established to relocate civil servants away from Mexico City (Rodriguez, 1997).

In spite of the large amounts of money that were poured into some these programs (especially the rural development ones), they appear to have been largely unsuccessful in terms of diverting economic resources and people away from Mexico City.[96] In Victoria Rodriguez's in-depth study of decentralization in Mexico she concludes that "[a]ltogether, the Echeverría and López Portillo administrations' programs for regional development and industrial decentralization had almost no impact on the development of states and municipalities, as industry still tended to locate in the valley of Mexico" (1997: 68).

During de la Madrid's *sexenio*, the policy of decentralization gained prominence, largely because – from a neoliberal perspective – it was consistent with efforts to 'streamline' the state, and provide better and more efficient public goods and services. Therefore, while the debt crisis led to the disappearance or emasculation of some decentralization programs, it gave impetus to others. For instance, as part of de la Madrid's Program to Decentralize the Federal Government, sixty-two thousand civil servants were relocated away from Mexico City (Rodriguez, 1997). However, unlike his predecessors, de la Madrid did not focus on programs of this type; that is, on programs that sought to 'spatially' deconcentrate. Instead, he focused on devolving economic resources and responsibilities to states and municipalities (i.e. vertical decentralization), which will be dealt with below.

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[95] COPLAMAR, the National Plan for Depressed Zones and Marginal Groups, was a presidential agency designed to channel oil revenue and funds from international development agencies into the poorest areas of Mexico. At first, COPLAMAR overlapped and competed with Echeverría's PIDER, a common occurrence in successive administrations in Mexico. SAM, the Mexican Food System, was a subsidy program designed to increase agricultural production in marginalized rural areas.

[96] During the 1970s and 1980s, urban population growth rates did decrease, but this was mostly due to declining birth rates and the birth control campaign of the National Population Council (CONAPO), not to the government's decentralization policies (Rodriguez, 1997).

During Salinas' term, decentralization was intertwined with PRONASOL, which decentralized – and, paradoxically, centralized – economic resources and political power in several ways. In terms of spatial deconcentration, PRONASOL tried to do its bit by excluding the Federal District from the program (from 1990 onwards), and by focussing on marginalized rural communities. However, in practice, the program only served to offset the Government's bias for investing in the Federal District, and to a lesser extent in the wealthier states. This is because of the relatively small size of PRONASOL's budget compared to total federal investment: even at its height, PRONASOL's budget only represented 15 percent of total federal investment, or less than 1 percent of the GNP (Laruell and Wences, 1996: 387). While PRONASOL tended to be channelled towards the poorer and medium-income states, the rest of the federal government's investments (85 percent) tended to be directed towards the more-productive wealthier states.[97] Therefore, although PRONASOL may have helped deconcentrate economic resources to some extent, it fell well short of seriously addressing the problem of regional disparity.

Finally, in the context of spatial deconcentration, it should be mentioned that NAFTA did more than anything else to promote industrial activity outside of Mexico City. Since NAFTA came into effect in 1994, there has been a burgeoning of *maquiladoras* along the US border, accompanied of course by a concomitant increase in toxic wastes.

(3) Vertical Decentralization: Vertical decentralization refers to the devolution of political power and economic resources to lower levels of government (state, municipal, and sub-municipal), and in some cases to grassroots groups. In the context of sustainable development, this type of decentralization is especially important since it pretends to provide marginalized peoples with greater opportunities to participate in the decision-making that affects their lives. In this connection, decentralization down to the *local* level (municipal and sub-municipal) is the most germane. According to the proponents of decentralization – who, incidentally, come from across the political spectrum – local political structures are more amenable to popular participation; therefore, they should

[97] Between 1988 and 1992, the average annual per capita federal investment in the poorer states remained less than half that of the wealthier states, and the Federal District continued to receive the largest share of total federal investment (Rodriguez, 1997).

have more decision-making power and more economic resources allocated to them. The problem, however, is that many local political structures – whether they be municipal governments or sub-municipal governments, such as *ejidos* – are dominated by *caciques*, who often end up capturing the lion's share of development funds delivered by federal and state governments, and by international development agencies. As we shall see in the next chapter, this appears to be the case in Ayotitlán.

According to some analysts, another potential problem with decentralization down to the local level is that it tends to limit political action to the local level as well, effectively undermining people's capacity to organize themselves for more fundamental change (see for example Veltmeyer, 1997a). Not everyone agrees. Others contend that the local level is the best place for grassroots organizations to engage in power struggles, and the first step towards realizing significant change on the national and international level. Whatever the case may be, as we are about to see, there has been relatively little vertical decentralization in Mexico, and most of it has been captured by the state-level governments.

In Mexico, there was some vertical decentralization down to the state level during the 1970s; [98] but vertical decentralization down to the local level did not begin until the early-1980s. In 1983, the de la Madrid administration took the first major step towards decentralizing down to the local level by making changes to Article 115 of the Constitution. These changes were meant to strengthen municipal governments and give them a greater degree of autonomy. Amongst other things, the changes granted

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[98] Federal-to-state level decentralization began to take shape in the 1970s with the development of a planning structure designed to coordinate the two levels of government. This structure was comprised of two mechanisms: Promotion Committees for Economic Development (COPRODEs), and Single Coordinating Agreements (CUCs). COPRODEs were introduced in some of the poorer states in the early-1970s, and were gradually extended to the rest of the states by 1975. COPRODEs not only helped coordinate the activities of the federal and state governments, they also allowed the states to have a greater say in development plans in their respective territories (Villanueva, 1996). CUCs were introduced later, by Lopez Portillo. They were single-year agreements between the federal government and individual states that were designed to "link multiyear planning processes to annual budgeting, by coordinating the financing of projects by the federal and state governments" (Bailey, 1994: 108). Together, the COPRODEs and CUCs formed a structure that allowed state governments to participate in an integrated planning process, even though ultimate authority remained in the hands of the federal government. Today, the COPRODEs are called Planning Committees for State Development (COPLADEs) and the CUCs Social Development Agreements (CDSs). Although the current structure is still dominated by the federal government, there has

municipalities the right to manage their own finances, design their own rules and laws of governance, implement their own urban development plans, control the use of land, and participate in the creation and administration of ecological reserves. It also spelled out the municipalities' obligations vis-à-vis the provision of public services. Most importantly, though, it sought to make municipalities more financially independent by granting them the right to all revenues collected from property taxes and from the provision of public services.

However, as several analysts have pointed out, only a handful of municipalities – mostly urban ones – have actually been in a position to take advantage of the 1983 reform. Rural municipalities in particular do not have the technical capacity to handle their new responsibilities, or to significantly increase their internal revenue. These municipalities continue to rely heavily on the financial resources provided to them by the federal government, which in many cases is only enough to cover their administrative costs (Rodriguez, 1997; Ward, 1998).

During Salinas' term in office, two decentralizing trends were initiated to partially alleviate this problem: (1) in 1990, the federal government's revenue-sharing formula was revamped, providing poor rural municipalities with more financial resources; and, (2) in 1989, PRONASOL was launched, providing many locally based organizations with a small amount of money with which to implement small-scale development projects. Beginning with the revenue sharing formula, prior to 1990, it was heavily skewed in favour of the wealthier states, providing them with a far greater per-capita share of total federal revenue. This meant that the municipalities in the wealthier states also received a greater per-capita share of federal revenue. The changes that took effect in 1990 reduced this bias by incorporating an 'equitable-share' factor into the revenue-sharing formula.[99] In essence, these changes represented a redistribution, or 'deconcentration', of economic resources, as opposed to a vertical decentralization. However, in 1995, more changes were made to the revenue-sharing system, which saw the percentage of federally

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been a tendency over the years to transfer more and more decision-making power down to the state level. This is especially true since Zedillo became president.

collected revenue earmarked for sub-national governments – called *participaciones* – increase from 18.5 percent of the total amount to 20 percent; in effect, vertically decentralizing a small amount of economic resources to all sub-national governments.[100]

Before moving on, it is important to underscore two points. First, the federal government still controls over 70 percent of the total national revenue.[101] In other words, economic resources are still highly centralized in the hands of the federal government. Granted, the states and municipalities now have greater revenue-raising capabilities than they did 15 or 20 years ago, but their internal revenue still represents a relatively small share of their total revenue. For example, for an average rural municipality, internal revenue only accounts for 20 percent of its total income, meaning that it has to rely on the revenue-sharing funds that it receives from higher levels of government for the other 80 percent (Rodriguez, 1997:128). Secondly, it needs to be mentioned that the changes that were made to the revenue-sharing formula in 1990 and 1995 have not always translated into more financial resources for poor rural municipalities. State-level governments have often proved too adept at capturing the lion's share of these *participaciones*; and, on the state level, they are often distributed unevenly, in favour of the larger municipalities.

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[99] Prior to 1990, the three wealthiest states received, on average, three times the amount per capita (of federally collected revenue) than the six poorest states. As a result of the changes that were made in 1990, this ratio was reduced to 2:1 (World Bank statistic cited in Fox and Aranda, 1996).

[100] Mexico's revenue-sharing system is quite complex. The following explanation is intended to help clarify the points made in this section. The federally collected public revenue that is redistributed to sub-national governments is called *participaciones*. Prior to 1990, *participaciones* were distributed to the states based on the amount of taxes collected in each state, which meant that the richer states received considerably more than the poorer ones. Changes were made to this system in 1990, and then again in 1995. Between 1990 and 1995, the states (as a group) received 18.5 percent of the federally collected revenue. In other words, all of the *participaciones* added up to 18.5 percent. This money was then divided up between the states according to a formula in which 45 percent was calculated based on the state's population, 45 percent according to the collection of taxes, and 10 percent based on 'equitable share'. Thus, the changes that were made in 1990 had a redistributive effect. The changes that were made in 1995 increased the total amount of *participaciones* from 18.5 percent to 20 percent. The only other point that needs to be kept in mind is that, since 1990, each state has been required to pass on 22.1 percent of its *participaciones* to its respective municipalities.

[101] Based on the percentage of federal income allocated to the states through *participaciones* (20%), the federal government still controls 80% of the total national revenue. However, this figure appears to have dropped somewhat since 1996, when Zedillo decentralized two-thirds of the social and regional development funds (formally administered by the federal government under PRONASOL) to the state governments. Under PRONASOL, these funds represented 15 percent of the 80 percent of federally collected revenue that was not transferred to subnational governments (Rodriguez, 1997). Since two-thirds of these funds are now controlled by state-level governments (Kaufman and Trejo, 1996; Rodriguez, 1997), then the federal government is now left controlling approximately 72 percent of the total national revenue.

According to one study, between 1987 and 1993, only one out of seven states consistently passed on the required percentage of *participaciones* to municipal governments (22.1 percent); the rest passed on less, some significantly less (Rodriguez, 1997). Moreover, in 1995, only 12 states had formal laws governing the distribution of *participaciones* amongst municipalities, meaning that most state governments had the discretionary power to allocate these resources as they saw fit, inevitably leading to skewed distribution in favour of the larger municipalities (Rodriguez, 1997). These caveats notwithstanding, the changes made to the revenue-sharing system in 1990 and 1995 represent a decentralization of at least some financial resources down to the local level.

The other decentralizing trend that Salinas initiated was PRONASOL. PRONASOL vertically decentralized in two ways: (1) it decentralized administrative responsibility to the states and municipalities; and, (2) it decentralized small amounts of decision-making power and financial resources down to the local level, often to grassroots organizations. Of the two, the latter is more important in terms of sustainable development; however, the first one is also relevant, and it too needs to be examined, if for no other reason than to sort out and clarify issues.

Beginning with the first one, then, during the first two years of operation, PRONASOL was run right out of the president's office, bypassing state and municipal governments and delivering resources directly to grassroots organizations – or 'Solidarity Committees' as they were referred to within the program. This led many analysts to conclude that the net effect of PRONASOL was to centralize power in the hands of the presidency. But, after the first two years of operation, administrative responsibility began being transferred down to state and municipal governments. By 1994, ninety-five percent of PRONASOL's resources were being administered by state governments, of which 50 percent was to be passed on to municipal governments (Fox, 1995).

However, as Bailey (1994) points out, the transfer of *administrative responsibility* is something very different than the transfer of *decision-making authority*. Even after state and municipal governments were given responsibility to administer PRONASOL projects, the federal government still kept a tight hold on the purse strings. After all, it was the federal government that set out the program's guidelines, requisites and

bureaucratic procedures, and it was they who ultimately decided which projects would be funded.[102]

However, as mentioned above, PRONASOL had another dimension that did in fact decentralize some degree of decision-making power and financial resources down to the local level. The PRONASOL sub-program that was most effective at doing this was the Municipal Funds Program. The stated objectives of the Municipal Funds Program were: (1) to make funds available to municipal governments in order that they may strengthen their service-delivery capacity; and, (2) to encourage popular 'participation' in decision-making (Rodriguez, 1997).

Generally speaking, the program worked as follows: PRONASOL officials would approach the municipalities that had been selected for inclusion in the Municipal Funds Program in order to explain the program; then, municipal governments would solicit requests for projects from community groups; next, community groups would choose from a set menu of possible small-scale development projects, such as school repairs, road construction, ecological conservation projects, basketball courts, and so on; federal government officials would then decide which projects would be approved; and finally, Solidarity Committees would be established before projects got underway (Bailey, 1994). Each Solidarity Committee was obliged to contribute at least 20 percent of the total cost of its project – usually this came in the form of labour. Project budgets were very small, and in many cases, the projects chosen were not the top local priority (Fox and Aranda, 1996). However, as Fox observes "[a]lthough most Municipal Fund Grants were too small to construct, for example, decent drinking water systems, basketball courts were seen as better than nothing" (1995: 13).

As this synopsis indicates, the Municipal Funds Program operated within a paradigm that understood 'participation' to mean the consultation of intended

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[102] It wasn't until Zedillo took office that some power was decentralized along these lines, and then only down to the state level. Immediately upon entering office, Zedillo dismantled PRONASOL, but he continued to use the same channel (*ramo* 0026) to deliver regional social development funds to the states and municipalities. Under Zedillo, two-thirds of the funds formerly administered under PRONASOL were directly transferred to state governments (Kaufman and Trejo, 1996). In other words, the states were not just given the responsibility to administer these funds, they were given genuine decision-making authority. However, in this new set up, the municipalities continued to have only administrative responsibility.

beneficiaries, and their integration into projects that were, for the most part, conceived from above, and ultimately required approval from above. Thus, with reference to the theoretical framework constructed in the previous chapter, the Municipal Funds program falls squarely into the category of HSD.

How successful was the program? By all accounts, Municipal Funds projects had a small, but positive, impact on poor rural communities. In spite of the program's shortcomings, the fact that at least some funds were made available, and the fact that the intended beneficiaries were at least consulted, was seen by many project participants as a major step forward (Fox and Aranda, 1996).

Did *caciques* capture the lion's share of the Municipal Funds grants that were provided? On this issue, it is hard to draw conclusions – there wasn't a lot of research in this area. However, according to Fox, "at least in Oaxaca, most Solidarity Committees that made Municipal Fund project decisions were in practice based on the previously existing structures of sub-municipal government. In other words, the 'municipal agents', or sub-municipal leaders, were key actors" (1995:14). While there are many exceptions, in most rural areas, 'municipal agents' and 'sub-municipal leaders' are either *caciques* themselves, or puppets of *caciques*. Therefore, Fox's observation suggests that *caciques* were in fact in a position to capture many of the resources that were made available through the Program, at least in Oaxaca. This would certainly be consistent with the experience of past rural development programs in Mexico, including the more progressive ones, like the COPLAMAR Village Food Program, for example.[103] And, it would also be consistent with the current situation in Ayotitlán, where *caciques* are in a position to capture a large part of the development funds that are being made available to the community.

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[103] The COPLAMAR Village Food Program was a progressive sub-program of COPLAMAR that was designed to provide subsidized food to marginalized rural communities. One of the objectives of the program was to encourage intended beneficiaries to participate in the distribution of the food, and in the monitoring of the program. It was thought that this would help prevent *caciques* from capturing the benefits of the program, which it did, in many cases. However, in the majority of the cases, *caciques* were still able to capture most of the program's benefits. For a detailed case study of this program, see Fox, 1992.

In summary, of the three axes outlined at the beginning of this subsection (horizontal decentralization, spatial deconcentration, and vertical decentralization), significant progress has only been made along one: horizontal decentralization, or decentralization of power away from the PRI through increased opposition-party representation in all levels of government. Little progress has been made towards deconcentrating economic activity and resources away from the major urban centres and towards poor rural areas (i.e. spatial deconcentration); and, similarly, little progress has been made towards decentralizing economic resources and real decision-making power down to the local level (i.e. vertical decentralization). The federal government still controls the lion's share of the total national revenue, and municipalities remain dependent on the revenue-sharing funds they receive from higher levels of government. Programs such as PRONASOL's Municipal Funds program have a small, but positive, impact on poor rural communities, even though 'participation' is largely relegated to consultation and provision of labour, and even though *caciques* appear to be in a position to capture a significant portion of the programs' resources. In conclusion, Mexico's political system has advanced little in terms of decentralization, and the advances that have been made have done little by way of allowing marginalized people to genuinely participate in the decision-making that affects their lives.

3.3.4 The Thickening of Civil Society

At the beginning of this section on Mexico's political context, the question was posed: To what degree have the changes to Mexico's political system over the past 30 years allowed marginalized people to effectively participate in the decision-making that affects their lives? What we have seen so far is that top-down efforts to democratize and decentralize the system have provided few opportunities for the poor to 'authentically' participate through official political channels, or in the national/international economy. However, in the context of these changes, marginalized people have found other ways to participate. Over the past thirty years, there has been a dramatic increase in the number and size of autonomous grassroots organizations in Mexico. These organizations form in the cracks of existing structures, they seek to widen those cracks in order to bring down

the existing structures, or at least to reform them, and at the same time they seek to build alternative structures, which are more equitable and more amenable to popular participation. The proliferation of these organizations, and the networking they do amongst themselves, has been referred to as 'the thickening of civil society', which is the subject of this subsection. The purpose of this subsection, then, is to briefly describe the changes to Mexico's political landscape that have come from below (focussing on the rural sector), to connect these changes to the ones that have come from above, and to demonstrate that the 'thickening of civil society' is the same as the practice of Another Development (AD).

During the postwar period, most social demands in Mexico were channelled through the corporatist structures described at the beginning of this section. These structures acted as an interface between the ruling party and its social base, providing the latter with material concessions in exchange for political loyalty. Outside of these structures, the possibilities for marginalized people to organize themselves beyond the village level were extremely limited.

This began to change after the 1968 student massacre, which created a crack in Mexico's political system, providing a political space for the formation of autonomous grassroots organizations. After the massacre, many activists gave up on trying to reform the system and went out to the slums and villages to work with the poor at building grassroots organizations (Fox and Hernandez, 1992). In line with the AD paradigm, which was emerging at that time, many of the newly formed organizations started small-scale development projects designed to meet the basic needs of the local population. At the same time, and also in line with AD, some activists used Freirian techniques such as 'participatory action research' to help 'conscientisize' the local population about their social reality, something that often led to protest actions such as land invasions, the occupation of government offices, protest rallies, and the like. [104]

These types of actions provoked diverse responses from the Echeverría administration. Generally speaking, the administration was sympathetic to the peasant

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[104] See Fals Borda (1986) for case studies of grassroots mobilization in Mexico (and elsewhere) during the 1970s.

sector, and its populist discourse undoubtedly helped encourage the social movement. In addition, some of the Government's policies – such as PIDER, and the re-initiation of land redistribution – even served as an incentive for the formation of autonomous organizations, and tended to spur on confrontational action. On the same note, the Government often used diplomacy – as opposed to violent repression – to deal with the various forms of protest, co-opting leaders, and providing partial concessions. However, at the same time, the Echeverría administration was not above resorting to violent repression, and on several occasions the army was brought in to forcibly evict peasants who had occupied privately owned land, for example.[105]

When Lopez Portillo took over the presidency in 1976, the official discourse changed in favour of the agrarian bourgeoisie; land redistribution was brought to an end; much of the land that had been redistributed under Echeverría was given back to wealthy landowners; reformists were purged from influential positions; and, violent repression became more ubiquitous.[106] This new political environment produced an ebb in the rural social movement.[107] Grassroots organizations were forced to take a step back, re-organize, and re-adapt their strategies. Up until that point, these organizations had been relatively isolated from each other, focussing mainly on local issues, such as meeting basic needs, and demanding access to land, water, and other local natural resources. However, by the late-1970s, a new strategy began to emerge: autonomous grassroots organizations began to group together under regional- and even national-level umbrella organizations (*coordinadores*), which helped to articulate their strategies and demands.

In the peasant sector, the first major umbrella organizations was the National *Coordinadora* Plan de Ayala (CNPA). The CNPA focussed mainly on land rights, which reflected the interests of its constituents, many of whom were landless peasants. Some of the CNPA's demands included: the legal recognition of indigenous land claims, the redistribution of private land exceeding the legal limit, and community control of natural

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[105] See Rollo (1986) for an in-depth study of the agrarian conflict of the mid-1970s.

[106] Once Lopez Portillo took office, repressions became more selective and fell upon peasant leaders. Two-hundred-forty-two peasant leaders were assassinated in 1977, nearly three times the number from the previous year (Rollo, 1976).

resources. But, while the CNPA was effective at building horizontal linkages between grassroots organizations, it made little headway in garnering concessions from the Government. As the 1980s progressed, it became increasingly clear that the state was not willing to budge on the issue of land rights, and the CNPA was unable to make the strategic shift to the more promising area of production and marking issues. Nor was it able to shift from an exclusive emphasis on confrontational opposition (*contestación*) to include the construction of positive policy alternatives *(proposición)* (Fox and Hernandez, 1992). As a result, somewhere in the mid- to late-1980s, the CNPA lost its role as the leading umbrella organization in the peasant sector to the more pragmatic National Union of Autonomous Regional Peasant Organizations (UNORCA).

UNORCA occupied somewhat of a political grey area in the sense that it not only included autonomous grassroots organizations, but nominally official ones as well. In any case, from the mid-1980s onward, it became the principle vehicle for articulating the interests, strategies, demands, and propositions of rural civil society. The two main objectives of UNORCA were to obtain higher crop support prices, and to convince the Government to allow peasants to participate in agricultural policy-making (Pare, 1990). In an effort to realize these objectives, UNORCA members constructed positive policy alternatives and used them in their negotiations with the Government.

However, when Salinas became president in the 1988, UNORCA's policy alternatives were completely ignored, as were the interests of the peasant sector in general. Over the course of his *sexenio*, Salinas imposed sweeping pro-market reforms in the rural sector, including the elimination or reduction of subsidies, the elimination of guaranteed prices for most grains, the tearing down of protective trade barriers, and the reform of Article 27, which allowed for the privatization of the *ejido*. These reforms devastated the peasant sector and took the wind out of the sails of UNORCA and other autonomous umbrella organizations at the regional level. The result was another ebb in the thickening of civil society.

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[107] The number of peasant protest-actions dropped from 328 in 1976 to 256 in 1977. And, it wasn't until the early-1980s that protest actions rose back up to the 1976-level (Auado López et al., cited in Fox, 1992).

Before moving on to the 1990s, there is one other important development of the 1980s that needs to be examined. In the early-1980s, as solidarity amongst grassroots organizations grew, and as their strength increased accordingly, some grassroots organizations began to set their sights on taking over the municipality. These groups realized that as long as *caciques* and PRI yes-men controlled the municipality's resources, their own resources and opportunities would be extremely limited. With the electoral reforms of the 1970s, and with the 1983 reform of Article 115 of the Constitution, some elements of civil society began looking towards electoral politics at the municipal level as an avenue for moving forward and realizing significant change. To be sure, civil society was divided on the issue. Many considered the entire political system to be incorrigibly corrupt, a path leading towards co-option and compromise. Nevertheless, many grassroots groups did get involved in electoral politics in one way or another, and some were successful. One of the first and best-known cases was the Coalition of Workers, Peasants and Students of the Isthmus of Oaxaca (COCEI), which took over the municipal government in Juchitán, Oaxaca, in 1981. The COCEI demonstrated that it was possible for grassroots organizations to win municipal elections under their own banner. Ironically, though, most grassroots groups fought for municipal control under the banner of the PRI, or by assuming the banner of one of the other major parties. Fox and Hernandez explain:

> Although closeted behind closed doors, conflict around the selection of official candidates was often quite real. What sometimes appeared to be merely factional conflict within the ruling party reflected genuine community conflicts, including struggles against local *caciques*. When losing factions were unable to express themselves through compensatory mechanisms, they would seek refuge under the banner of one of the existing "opposition" parties, whichever one had some local reputation or offered access to a line on the ballot... (1992: 171)

Since at least the early-1980s, grassroots groups have also been struggling for control of sub-municipal governments: *ejidos* and *comunidades*.[108] Although these struggles have received far less attention than municipal-level ones, for many grassroots groups, winning elections at the sub-municipal level represents the first step in gaining access to resources, overcoming *caciques* within the community, and opening up the

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[108] *Comunidades* are very similar to *ejidos*. For a short description of both, see section 3.4.1 below.

decision-making process to popular participation. As we shall see in the next chapter, in Ayotitlán, this is an area in which grassroots groups and traditional *caciques* have locked horns, creating strong divisions within the community.

Continuing on from the ebb in the thickening of civil society that occurred in the early-1990s, which was largely caused by the structural changes initiated by Salinas, it was at this conjuncture that the Zapatistas decided it was time to take up arms. According to the Zapatistas themselves, the deepening of neoliberal reforms and the apparent futility of electoral politics (at least in Chiapas) left them with no other choice but to take desperate action. On January 1, 1994, the same day that NAFTA came into effect, approximately 1,200 soldiers, mainly members of indigenous groups, occupied four municipalities in the state of Chiapas. After less than two weeks of armed conflict, the Government was forced to declare a unilateral cease-fire, and to enter into negotiations with the rebels, not so much because of the Zapatista's military strength, but rather because of the support they received from solidarity groups from around the world, which vociferously condemned the Mexican government's violent response. To be sure, the Zapatistas were not the first guerrilla group to appear on the contemporary Mexican scene; since the 1960s several armed groups had been active in the poorer southern states of the country, particularly in Guerrero. But, with just a few days of armed struggle, the Zapatista's were able to do more to alter Mexico's social and political landscape than all other armed groups combined in their decades of struggle (Veltmeyer, 1999b).

Since their dramatic appearance in 1994, until this day, the Zapatistas have been on the leading edge of civil society's struggle against neoliberalism, for social justice, and for authentic democracy. Although the Zapatistas have emphasized the indigenous dimension of their own struggle, over the past seven years, they have entered into strategic alliance with autonomous organizations representing just about every sector of Mexican civil society, including unionized workers, mestizo peasants, small- and medium-sized agricultural producers, environmental groups, women's groups, students groups, etc. In addition, they have successfully networked with myriad international solidarity groups. An important part of their strategy, therefore, has been to help mobilize and unite all sectors of civil society in an effort to radically change social, economic, and political structures on the national (and even on the international) level.

At the same time, the Zapatistas' most fundamental demand has been for the legal recognition of autonomy in Mexico's indigenous communities, including local control over local natural resources. Thus, in terms of the theoretical framework that was constructed in the previous chapter, the main characteristics of the Zapatistas' strategy – collective action, networking with other grassroots organizations, seeking autonomy and control over natural resources, seeking to meet basic needs, etc. – all correspond with the various dimensions of AD and GSD.

Not surprisingly, the Mexican government has done everything in its power to crush the Zapatista movement. Its tactics have included negotiation, co-option, stalling, backing away from agreements, using government controlled media to either ignore or discredit their struggle, military pressure, and violent repression. So far nothing has worked. In a brilliant game of political chess, the Zapatistas have countered with an array of tactics, including: a series of 'declarations from the Lacandona jungle', which denounce neoliberalism, and demand "dignity, democracy, liberty, and justice"; the posting of an internet site, which includes everything from Marco's poetic essays to daily reports of human rights violations; the constant presence of international observers and solidarity workers in the conflict zone; land invasions and declarations of local autonomy; three national-level indigenous conferences (*Congreso Nacional Indígena*); two international conferences 'against neoliberalism', one in Mexico and one in Europe; negotiations with the Government; termination of negotiations with the Government after the 1997 massacre of 41 people in the village of Acteal;[109] re-initiation of negotiations with the Fox administration, conditioned on the demilitarization of the conflict zone, amongst other things; termination of negotiations with the Fox administration after it caricaturized 'la ley COCOPA', an agreement to which both parties had formerly agreed to, which grants indigenous communities the autonomy they seek; and, finally, the widely publicized 'Zapa-tour', which attracted tens of thousands of supporters in various parts of the country. One strategy the Zapatistas have so far been careful to avoid, though, is to

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[109] From 1994 until the first part of 2001, the government maintained a high military presence in Chiapas. The frequent human rights violations perpetrated by the army and paramilitary forces were regularly reported in left-wing newspapers, most notably *La Jornada*. The violence culminated in 1997, when paramilitary forces murdered 45 indigenous peasants (21 women, 15 children, and 9 men) while they were

get involved in electoral politics, a strategy that has been the demise of many radical organizations in Mexico in the past (Veltmeyer, 1999b). To be sure, *Zapatismo* has waned and waxed over the past seven years, but it is still very much alive today, and the last chapters of its story have yet to be written.

In summary, since the 1970s, civil society in rural Mexico has grown progressively thicker. The thickening has not been steady or linear; rather, it has been characterized by ebbs and flows, and by shifting strategies, which are designed to adapt to changes from above. During the 1970s, most grassroots organizations were isolated from each other, and their demands focussed on localized issues, mostly land rights. During the 1980s, umbrella groups formed, the focus shifted from land rights to production and marketing issues, and confrontational protest was complemented with the construction of positive policy alternatives. Also during the 1980s, many grassroots organizations got involved with electoral politics at the municipal and sub-municipal level. And, finally, in the 1990s, the Zapatistas took centre-stage, forming alliances with various segments of civil society, and using a multifaceted strategy to negotiate with the Government and push forward their agenda. It remains to be seen how far civil society can go in terms of radically changing existing structures.

3.3.5 Summary

In this section we examined Mexico's political landscape, with a focus on rural Mexico. We began by describing the political system that was in place during the postwar period, followed by a description of the changes that have been made over the past thirty years. The objective was to determine the degree to which marginalized people have been able to genuinely participate in the decision-making that affects their lives, which is – according to the proponents of GSD – a condition sine qua non for overcoming poverty and environmental degradation.

What we saw was that, in the postwar period, marginalized people had virtually no say in the decision-making process. In a system characterized by corporatism,

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praying, and while nearby army units listened to the gunshots and screams. At this point, the government had been stalling in the negotiation process for almost four years.

centralism, clientelism, and *caciquismo*, all decisions were made by a handful of political elites, who took into consideration the preferences of the strongest interest groups, in particular national and international capital. Even local-level decisions were made by federal officials, who were far removed from local realities, and well insulated from public pressure. The PRI-government's corporate structure provided some of the rural poor with some concessions in exchange for their political loyalty; but, at the same time, it compartmentlized the rural population (*ejidatarios*, landless peasants, and small private producers), which served to divide common interest groups and to stifle their capacity for autonomous organization.

Today, many of the characteristics of the postwar system are still dominant. However, there have been some significant changes, all of which can be traced back to the late-1960s, when the Government entered into a legitimacy crisis. Since that time, there has been a considerable amount of pressure to reform the political system, coming from both inside and outside of the Government. In an effort to shore up legitimacy and retain as much power as possible, the Government haltingly embarked on a path towards Western liberal democracy and decentralization, neither of which got into full swing until the 1980s. Around the same time, most other Latin American countries underwent similar changes. In this connection, the rolling back of the state is of critical importance. Over the past 20 years or so, the nation state's power has largely been diluted, due to privatization, the increased mobility of capital, and binding international agreements. In this context, national and international capital did not feel threatened by changes along the lines of Western liberal democracy and decentralization. Moreover, these changes helped governments push through neoliberal reforms by helping to quell social unrest and by helping to restore some semblance of political legitimacy. Not surprisingly, these changes have not provided many opportunities for marginalized people to genuinely participate in the decision-making that affects their lives.

However, in the context of the Mexican government's legitimacy crisis, and the top-down changes that stemmed from it, marginalized people have found other ways to participate. Since the 1970s, there has been a dramatic increase in the number, size, and power of autonomous grassroots organizations. In line with AD and GSD, these organizations have simultaneously pursued two different courses of action: on the one

hand, many have tried to improve the living conditions in marginalized communities by implementing small-scale development projects geared towards meeting the basic needs of the local population; on the other, they have networked amongst themselves and adopted shifting strategies in an effort to bring about structural change. Where this will lead, is yet to be seen.

In the next section, we will look at Mexico's agrarian structure. As with the first two sections of this chapter, this section seeks to examine the structural conditions under which the environmental crisis unfolded and to provide a context for our study of Ayotitlán. In line with the general tendency of this thesis to go from general to specific, we will now sharpen our focus on *rural* Mexico, and on the problems of environmental degradation and poverty.

3.4 The Agrarian Structure

3.4.1. Land-Tenure Systems and Land Distribution

Mexico's land-tenure system is a product of the 1910-1917 revolution, often referred to as 'the first great social revolution of the twentieth century'. One of the main causes of the revolution was the agrarian capitalist development that preceded it, which concentrated land in the hands of a few, and left hundreds of thousands of peasants landless. When the fighting commenced, many of these peasants banded behind leaders such as Emiliano Zapata in their quest for 'land, liberty and justice'. Although Zapata was eventually assassinated, the peasants' demands ended up being enshrined in Article 27 of the 1917 constitution, which granted the state the power to appropriate land from large private holdings in order to redistribute it to landless peasants. The most important institution that was created to accommodate this redistribution was called the *ejido*. Although land reform did not really get underway until Lazaro Cardenas became president in 1934, and although it was only half-heartedly pursued by Cardenas' successors, today *ejidos* represent over half of Mexico's territory.

Ejidos make up the largest portion of Mexico's 'social sector'. The other institution that belongs to the social sector is the *comunidad*, which is actually a very similar land-

tenure system. In Mexico, there are 27,592 *ejidos* and 2,340 *comunidades,* and together they account for 103 million hectares of land (SEMARNAP, 1999; SRA, 2001). The main difference between the two institutions is that the latter is reserved mostly for indigenous communities that have land claims that date back to pre-revolutionary times. Both are collective land-ownership institutions, with the same external representation, and governed by an internal structure that is essentially the same. All *ejidos* and *comunidades* are automatically incorporated into the CNC, which represents the social-sector in the corporatist structure described above. The internal structure of *ejidos* and *comunidades* is comprised of an Assembly, a *Comisariado*, and a Council of Vigilance. Of the three, the Assembly is the most important – it is made up of all legally recognized members of the community (i.e. *ejidatarios* or *comuneros*),[110] and it has final say on all decision-making that falls under the jurisdiction of the *ejido/comunidad.* The *Comisariado* heads the Assembly, and the Council of Vigilance oversees the actions of the *Comisariado.*[111] The natural resources of *ejidos* and *comunidades* can be collectively exploited or, more commonly, their governing bodies can assign individual usufruct.[112] *Ejidatarios/comuneros* retain usufruct rights as long as they fulfill certain obligations, the most important being that they do not leave the land uncultivated for more than two years.[113] Until 1992, land in the social sector could not be legally sold or rented; however, in practice, both were common, as was land invasions by local *caciques*, all of which led to de facto concentration of land.

Today, there are approximately 3.5 million *ejidatarios* and *comuneros* (SEMARNAP, 1999). These peasants constitute about 70 percent of all Mexican farmers, and they support over 15-million family members (de Janvry et al., 1995).

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[110] Another important difference between *ejidos* and *comunidades* is that the latter are allowed to (officially) divide rights and land between all of the descendants of all of the original members, while in *ejidos* only one family member is allowed to inherit the usufruct rights of an original ejidatario. In many *ejidos*, including Ayotitlán, this has become problematic, since, after two or three generations, many descendents of the original *ejidatarios* have no legal right to work the land, and no vote in the Assembly.

[111] In many of the *ejidos* and *comunidades* that are predominantly indigenous, traditional forms of governance co-exist with, and sometimes exert hegemony over, these state-imposed internal structures.

[112] According to the 1991 agrarian census, approximately 85 percent of all *ejidatarios* and *comuneros* have individual plots of land assigned to them (SEMARNAP, 1999).

[113] This requirement is incongruent with some indigenous agricultural practices. For example, *coamil*, the system for growing corn in Ayotitlán, requires that land remain in fallow for at least three years.

Much of their land is of poor quality, mountainous, and rain-fed.[114] About 65 percent of *ejidatarios/comuneros* have parcels of land that are less than 5 hectares, which are too small to maintain a family, meaning that many family members are forced to migrate in search of additional sources of income. Thirty-seven percent of *ejidatarios/comuneros* have parcels of land that average 6.6 hectares, and only 9 percent have parcels larger than 20 hectares (de Janvry et al., 1995).

There are many conflicts surrounding the tenancy and ownership of land in the social sector. These conflicts are both internal and external to the individual communities. Most external conflicts are related to the Government's mismanagement of the land redistribution process. In some cases, boundaries were poorly defined; in others, they overlapped; and in yet others, land was granted on paper, but never actually handed over.

In 1992, as part of the lead up to NAFTA, president Carlos Salinas made changes to Article 27 of the Constitution and to the Agrarian Code, putting an end to land redistribution and allowing for the renting and selling of social-sector land. One of the justifications for making these changes was to recognize and accommodate the renting and selling that was currently being practiced. Another justification was to give peasants more say in how to manage their resources. In this connection, along with the right to sell and rent land, the 1992 reform gave *ejidatarios* and *comuneros* the right to change the status of their landholdings (*ejido, comunidad*, small-private property), increase their membership, enter into joint ventures with private investors, use individual parcels of land as collateral for credit, and so on. Proponents of the reform argued that these changes would lead to increased productivity, and they pointed out that privatization was voluntary, requiring a two-thirds majority in the Assembly.[115] Critics, on the other hand, argued that the changes would undermine the stability of social-sector communities, exacerbate internal conflicts, and inevitably lead to a higher concentration of land and to

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[114] Only 16 percent of the land in the social sector is irrigated (de Janvry et al., 1995).

[115] This requirement has a loophole. If the first meeting of the Assembly does not constitute a quorum, then it only takes the participation of half of the community members in the next meeting to make binding decisions. In this case, one-third of the community members can produce a two-thirds majority.

increased polarization of income and wealth. The research to date tends to validate the concerns of critics.[116]

Most of the land that is not in the social sector is owned privately.[117] Private land ownership is most common in the northern parts of the country, where it predominated before the revolution (Grindle, 1990). About 15 percent of the privately owned land is in parcels of 5 hectares or less; 35 percent is in parcels of between 5 and 100 hectares; and the rest (50%) is in parcels of over 100 hectares.[118] Most of the small-scale producers, and some of the medium sized producers, live in conditions similar to those of most *ejidatarios* and *comuneros*; that is, in conditions of poverty. The large-scale producers, on the other hand, are extremely wealthy. Although they make up less than 5 percent of all agricultural producers, they own approximately a quarter of the country's farmlands, and much of the best-quality land. Because of this, and because of the modern technology that they have access to, they contribute the greater part of the value of the country's agricultural production.

Many of these large-scale producers belong to what Rollo (1986) calls 'the agrarian bourgeoisie': Mexican families that have owned huge haciendas for generations, even since before the revolution. In order to protect their land from being expropriated by the Government, many of these families have 'artificially' divided up their land by distributing land titles amongst family members, or, in some cases, by using false names. In addition, before it was legal to buy or rent social-sector land, many of these families made under-the-table deals that enabled them to exploit some of the best social-sector land, without ever actually owning it.

The other type of large-scale producer in Mexico is the transnational agribusiness, which made its appearance about 30 years ago. These agribusinesses typically have a high degree of vertical integration, controlling everything from agricultural inputs and

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[116] See for example Brown (1996), and Dussel-Peters (2000).

[117] Mexico's total land area is approximately 196 million hectares. Ejidos and comunidades control approximately 103 million hectares, privately-owned ranches and farms account for another 70 million hectares, and the rest belongs to the category of 'other', which includes public land, urban zones, areas covered by water, etc. (INEGI cited in SEMARNAP, 1999)

[118] These statistics come from Grindle (1990) and are based on the 1970 agrarian census. More up-to-date statistics could not be found.

production to marketing and distribution. As is the case with the agrarian bourgeoisie, agribusinesses are mostly oriented towards foreign markets.

Before moving on to the next sub-section, it is important to bring attention to one more major actor in rural Mexico: the landless peasant. By 1983, there were at least 3 million landless peasants in Mexico, which is more than there were before the outbreak of the revolution (Cornelius and Craig, 1988). More recent estimates are understandably difficult to find, but there is no doubt that this number has increased substantially in the past 20 years.

3.4.2 The Agricultural Sector

During the postwar period, while Mexico pursued ISI, the agricultural sector took a backseat to the modern urban industrial one, and within the agricultural sector, the peasant sector (i.e. *ejidatarios*, *comuneros*, small-scale private farmers, and landless peasants) took a backseat to large-scale commercial farming. In this schema, the peasant sector was seen as a source of surplus labour, and as an instrument for maintaining political stability. Large-scale commercial farms, on the other hand, were seen as an important source of foreign revenue, which was needed to buy capital goods for the burgeoning industrial sector. As such, governmental resources that were directed towards the agricultural sector were directed almost exclusively towards privately owned large-scale commercial farms, which were better positioned to produce cash crops for export.

During the postwar period, the agricultural sector (as a whole) consistently achieved high economic growth rates, averaging over 4 percent per annum. This was made possible partly by bringing more land under cultivation, largely through land redistribution, and partly by helping large private farmers adopt Green Revolution technology. During the postwar period, 75 to 85 percent of governmental resources allocated to agriculture were invested in irrigation schemes, the grand majority going towards large private farms in the northwest (Grindle, 1990). These farms were also the main recipients of government-subsidized credit, marketing facilities, research, extension services, and agricultural inputs, all of which helped them to increase production.

Because of these technological changes, and because of the increased amount of land put under cultivation, between 1940 and 1965, corn production in Mexico increased by an average of 3.49% per year, wheat by 4.82%, beans by 4.00%, and oil seeds by 2.42% (Barkin, 1987). These increases allowed Mexico to more or less keep pace with domestic demands, achieving near self-sufficiency in basic grains, while providing much of the population with better nutrition than it had had in the past.

But the government's agricultural development policies of the postwar period also had some very negative side effects. To begin with, they led to severe environmental damage. In many areas, extensive and intensive irrigation caused water tables to drop, lakes to shrink, and land to become salinized.[119] Chemical fertilizers, pesticides and herbicides contaminated lakes and rivers, and degraded soils. And, the widespread use of hybrid seeds displaced landrace variations, leading to a loss of genetic biodiversity.

There were also social costs. The bias towards large-scale private farms left the peasant sector behind, with virtually little or no marketing, technical, or economic support. Inadequate marketing facilities meant that many peasants had to sell their produce to 'coyotes' – intermediaries who were (and are) notorious for gouging peasants. Peasants had little access to Green Revolution technology, which was not designed for marginal lands in the first place. Because of all this, between 1950 and 1970, *ejidos* and *comunidades* produced on average half as much per unit of land as did private farmers (Grindle, 1990). Moreover, increased mechanization on large-scale private farms meant that there were fewer jobs available in rural areas, forcing landless peasants to migrate to cities in search of employment, contributing to the social and environmental problems in the cities.

After 1965, the neglect of the peasant sector also became problematic in macroeconomic terms. Between 1965 and 1976, the area of land cultivated in rain-fed areas dropped significantly, from 12.5 million hectares to 10.6 million hectares (Redclift, 1981). In an economic environment where producer prices for basic grains were kept low in order to provide cheap foodstuffs for the urban poor, many peasants found it not

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[119] It has been estimated that, in Mexico, salinization reduces crop output by the equivalent of one million tons of grain per year (Poster, cited in Goldrich and Carruthers, 1992).

worth their while to produce for the market, especially when they had to compete with large-scale producers with higher-yielding technology and better marketing facilities. At the same time, the rapid opening of US markets for Mexican agricultural products prompted many large-scale commercial producers to switch from basic grains to fruits, vegetables, and animal-feed crops. The net result of these changes was the loss of self-sufficiency in basic grains on the national level. By the mid-1970s, Mexico was spending hundreds of millions of dollars to import basic grains (Barkin, 1987).

The rapid opening of US markets in the late-1960s and early-1970s caused Mexican agricultural production to become more export oriented, and led to the intensification of commercial agricultural activities. This, in turn, greatly exacerbated environmental and social problems in the countryside. For example, the demand for beef in the United States led to the expansion of cattle ranching, especially in the southern part of Mexico, where tropical rain forests prevailed. These forests were reduced to a fraction of their former size, mostly to make room for cattle ranching, but also for coffee plantations and other export crops (see for example Gomez-Pompa et al., 1993).[120] Pasture-hungry *caciques* used every means at their disposal, including violence, to remove subsistence peasant producers from their land, leading to the formation of large numbers of landless producers and unemployed workers, mostly indigenous (Veltmeyer, 1999b). At the same time, in the northern parts of the country, where basic foods for human consumption were once grown, sorghum (for cattle) became the number-one cash crop (Barkin, 1987). All of this while millions of Mexicans continued to suffer from malnutrition. It is important to remember, here, that this strategy – specialization and integration into the world economy – is considered by the proponents of MSD to be the best strategy for overcoming environmental degradation and poverty.

By the early-1970s it was clear that something had to be done to support peasant agriculture. Not only had the decades of neglect led to the nation's loss of self-sufficiency in basic grains, but also to social unrest in the countryside. It was at this conjuncture that PIDER was initiated. PIDER sought to kill two birds with one stone, so

to speak. First, it sought to satisfy domestic and international market demands by increasing agricultural production in the peasant sector; and, second, it sought to meet the basic needs of the rural poor by integrating them into the market economy (Garibay, 1991). Thus, 70 percent of PIDER's budget was assigned to productive investments, leaving 20 percent for investments in education, health, and sanitation, and 10 percent for investments in physical infrastructure. Part of the PIDER strategy was to focus on marginalized 'micro-regions', and to elicit the 'participation' of the locals in the implementation of projects that were designed from above. Between 1973 and 1983, the Mexican government and the World Bank spent approximately US$ 2 billion on the PIDER (Cernea, 1983). In spite of these investments, however, basic-grain imports continued to rise throughout the 1970s, and the agricultural sector as a whole grew at just two percent per year, one percent behind the population growth rate (Redclift, 1981).

It wasn't until another rural development program, SAM, was implemented in the early-1980s that basic grain imports dropped significantly, and even then only for the three years that the program was in operation. SAM was initiated in 1980, at the height of the oil-boom euphoria. The program sought to channel oil revenues towards poor rural communities in order to increase their production. The two major objectives of SAM were to achieve national-level self-sufficiency in basic food crops and to improve the nutritional level of Mexico's poor. This was to be done primarily by: (1) subsidizing the price of basic-food crops for both producers and consumers; (2) subsidizing the price of agricultural inputs; and, (3) extending credit and crop insurance to peasants in rain-fed areas. Although SAM ostensibly targeted poor peasant farmers, large-scale commercial farmers, corrupt officials, and other traditional elites were able to capture much of the program's benefits (Fox, 1992). During the 3-year period that SAM was in effect, many large-scale producers switched back to basic grains in order to take full advantage of the subsidies that SAM offered. This, and the increased land that peasants brought under cultivation, resulted in bumper crops from 1980 to 1982. However, because of the high

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[120] For example, in the states of Chiapas and Veracruz cattle ranching and other export-oriented agricultural activities reduced the original tropical rain forest from 110,000 square kilometres to 16,000 by 1983 (World Resources Institute cited in Goldrich and Carruthers, 1992).

cost of the program, it was immediately terminated as soon as the debt crisis hit, causing agricultural growth rates to fall accordingly.

In the final analysis, neither SAM nor PIDER was able to increase productivity in the peasant sector in the long run, nor was either program able to significantly improve the standard of living in peasant communities. In fact, some argue that these programs did more harm than good. For example, with reference to PIDER and SAM in the state of Oaxaca, Blauert and Guidi, observed the following:

> Instead, 'development' plans are frequently the very cause of environmental degradation and of socio-political conflicts. Outsiders, central planning bureaucracies, political parties and local institutions – themselves governed by international influences – are only too often inflexible, and rooted in different economic rationalities, political and social interests to those of local ethnic communities (1992b:191).

Indeed, the logic behind PIDER and SAM was generally incongruent with the worldviews of the intended beneficiaries of the programs, and with the ecosystems in which they were implemented. These programs sought to better integrate marginalized communities into the national/international capitalist system, to replace their productive systems with ones that were more economically efficient, and to modernize them. The peasant economy, however, is geared more towards subsistence production, and their productive systems are governed by more than just economic rationale – they include social and environmental considerations. Instead of bolstering these traditional systems, however, PIDER and SAM sought to displace them. The environmental consequences of this were often severe. Incompatible technology, inadequate extension services, and poor quality land led to problems such as soil exhaustion, soil erosion, contamination from agrochemical inputs, and increased susceptibility to plagues. There is also the probability that SAM resulted in an abrupt loss of genetic biodiversity, since many peasant farmers likely abandoned their hardy landrace varieties of seeds in favour of subsidized and higher-yielding (at least in the short term) hybrid varieties (Fox, 1992). In any case, when the debt-crisis hit, attempts to address rural problems via expensive subsidies, support prices, and rural development plans were replaced with a different strategy: neoliberalism.

Since 1982, the agricultural sector has followed the same path as the rest of the economy; that is, a path towards liberalization, deregulation, and privatization. While this process got started in other sectors of the economy during de la Madrid's presidency (1982-1988), in the agricultural sector, the process didn't really get underway until Salina's term (1988-1994). Salinas, however, made up for lost time by implementing far-reaching reforms, which were later consolidated by Zedillo. A summary of these changes can be found in Table 3.3 below. The most important include: changes to Article 27, which paved the way for the privatization of social-sector land; the elimination of import quotas, tariffs, and support prices for most crops, and the gradual phasing out of the rest; the elimination of traditional subsidies for all agricultural inputs; the virtual disappearance of subsidized credit; cuts in agricultural research expenditures; and, the privatization, elimination, or emasculation of the state enterprises that provided distribution of inputs, marketing of produce, and other forms of support.[121]

As was expected, these changes have had a differential impact on the various sectors of rural producers. Proletarianized and semi-proletarianized workers have experienced a drastic reduction in real wages, with no increase in employment opportunities. Peasant producers who produce for the domestic market (mostly medium-scale producers) have seen their costs skyrocket and their revenues plummet – these producers are not in a position to shift their production to speciality export crops. Most large-scale commercial producers, on the other hand, have been able to adjust to the changes. They have been the main recipients of patented private-sector technology, and they have been able to thrive on the production of export products in which Mexico has a so-called 'comparative advantage'. Other trends in the agricultural sector over the past 20 years include: (1) a low and volatile economic growth rate, averaging less than the population growth rate; (2) low production growth rates for most basic grains; (3) a

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[121] Some compensatory mechanisms were introduced, the most important being PROCAMPO, which pays producers a fixed amount of money for every hectare they plant in basic-food crops. Ostensibly, PROCAMPO was designed to help producers while they made the transition to crops in which Mexico has a 'comparative advantage'. However, without technical support, marketing facilities, and credit, most peasant producers are simply not in a position to switch to speciality export crops. Moreover, PROCAMPO has experienced widespread bureaucratic problems (Gutiérrez, n.d.), and the real value of its payments has been devoured by inflation over the years. In 1993, when the program was introduced, producers received the equivalent of $US 100 per hectare; the real value has since dropped to $US 61 per hectare (Salcedo, 1999).

dynamic growth rate for export-oriented production (chicken factories, hog farms, fruit plantations, and vegetable farms), whose production is dominated by large-scale private producers, both domestic and foreign; (4) a continuation and acceleration of the trend for the percentage of economically active population in the agricultural sector to drop (Dussel-Peters, 2000); (5) a trend for land and other productive assets to become concentrated in the hands of a few large-scale private producers (Dussel-Peters, 2000; Salcedo, 1999); and, (6) an increase in the incidence of both poverty and extreme poverty in rural areas.

It is important to point out that Mexico's overall development strategy still gives precedence to the modern urban industrial sector, and within the agricultural sector, precedence is still given to private large-scale commercial farming, now more than ever. The main changes in the agricultural sector since the ISI era, then, have been to completely abandon land redistribution, and to further orient production towards international markets.

As far as the environmental consequences of these changes go, all available evidence suggests that the previously mentioned destructive trends have not abated; if anything, they have accelerated. Even the Mexican government was forced to admit this in their 1997 follow-up report to the Earth Summit. The main cause of this destruction is, quite clearly, the overexploitation of natural resources. Significantly, Mexico's natural resources are not overexploited to meet domestic demands, but rather to meet the demands of the international market, at least in the case of agriculture (including animal husbandry), which is the main economic activity in rural Mexico.

Table 3.3 Summary of Policy Changes in Agricultural Sector 1982-1998

	1982-1988	1988-1994	1994-1998
Politics for Agricultural Sector	Beginning of free-market reforms. At the beginning of this period, all imports had quotas, by the end, 57% of agricultural ones still did, compared to 20% for other goods. Average tariffs for agricultural imports were only 0.7%, compared to 9.5% for other goods.	Periods of retreat from free-market reforms before signing NAFTA. NAFTA laid the groundwork for complete liberalization of the agricultural sector within 15 years of its initiation.	Establishment of free trade agreements with other countries, including Costa Rica, Bolivia, Colombia, Venezuela, and Nicaragua. Free trade agreements vary with each country.
Agricultural Inputs	Substantial subsidies for all agricultural inputs, including fertilizer, hybrid seeds, credit, insurance, diesel, water, and electricity.	Reduction of subsidies, deregulation of markets, and privatization of enterprises that produce agricultural inputs.	Elimination of traditional subsidies, initiation of *Alianza para el Campo*, which provides subsidizes, mostly for heavy equipment for medium- and large-scale producers.
Crop Prices	Guaranteed prices and price controls for all principle crops, including corn, beans, wheat, rice, and sorghum. Prices vary from crop to crop but the general tendency is for them to drop.	Elimination of guaranteed prices for all crops except for corn and beans. The alignment (*concertación*) of other crop prices with international prices, which practically means liberalization. Prices for all crops (except cotton) tend to drop. Initiation of PROCAMPO, direct payment to producers of basic grains.	Continuation of policy to 'align' domestic prices with international prices, including corn and beans. Continuation of PROCAMPO, real value of direct payments drops.
Credit	Subsidized credit. Agricultural producers pay negative real interest rates, which vary from year to year from –4% to -32%.	Elimination of subsidizes. Real interest rates skyrocket to 23% in 1989, then down to 8% by the end of the *sexenio*. The amount of credit increases by 77% in real terms. Small-scale producers receive subsidized credit through PRONASOL's subprogram "*Credito a la Palabra*".	The amount of credit extended to the sector is halved. Continuation of the program *Credito a la Palabra*. Sharp rise in loan payment defaults, resulting in the restructuring of loans: loan periods are extended, some grace periods granted, and interest rates are set at about 4% above inflation.
Insurance	Subsidized Insurance obligatory through ANAGSA, perhaps the most corrupt of all federal agencies.	Replacement of ANAGSA with AGROASMEX. Insurance is voluntary. Subsidy continues.	Subsidy is extended to private banks.
Research	Reduction of expenditures on research. Research favours large-scale irrigated operations in the north.	Further reduction of expenditures. Research continues to favour large-scale producers.	Creation of coordinating body that seeks the participation of large-scale producers in decision making.
Other	There are 71 governmental agencies controlled by the Ministry of Agriculture (SRA).	Changes to Article 27 of Constitution, and to Agrarian Law. The number of SRA agencies is reduced to 20.	The number of SRA agencies is reduced to nine.

Table created from information taken from Salcedo (1999).

Table 3.4 The Main Immediate Causes of Erosion, Desertification, and Soil Degradation in Mexico

Area	Type of Degradation	Immediate Causes
Irrigated Agriculture	Salinization Soil compaction Toxic contamination Erosion	Irrigation Heavy machinery Agrochemicals
Rain Fed Agriculture	Loss of nutrients Acidification Toxic contamination Erosion	Agrochemicals Monocultures Farming on hillsides
Hot Humid Regions	Acidification Toxic contamination Loss of nutrients Loss of organic material	Cattle Ranching Monocultures Agrochemicals Reduction of fallow periods Uncontrolled fires
Arid and Semi-Arid Regions	Erosion Loss of fertility Loss of ability to accept water infiltration	Cattle Ranching Logging
Elevated Parts of Water Basins	Erosion	Cattle Ranching Logging Road Construction Forest Fires Pest Infestations

Table 3.4 was adapted from "Programa Forestal y de Suelo: 1995-2000", part of the 1995-2000 National Development Plan.

3.4.3 The Forestry Sector

Forestry is the second most important economic activity in the rural sector, but it is well behind agriculture. While agriculture (including animal husbandry) accounts for approximately 7.5 percent of Mexico's GNP, forestry (including the wood industry) only accounts for about 1 percent.[122] It is important to point out that, unlike in Canada, in Mexico, the forestry industry has not been the main cause of deforestation; rather, it has been the expansion of cattle ranching – an industry that has, for many generations, been dominated by a handful of wealthy elites.

[122] These figures refer to averages between 1987 and 1994 (Mexican Government, 1995).

The recent pattern of deforestation began in the colonial period.[123] At that time, it was primarily driven by both mining and cattle ranching. Trees were cut down in order to provide support beams for mining shafts, to smelt ores, and to serve as railroad ties; the deforested land was then taken over by cattle ranchers. In addition, forests were sometimes cleared just to make room for ranching, or for other agricultural activities. It was during this period, too, that large quantities of precious tropical hardwoods were sequestered and sold in Europe, a practice that did not lead to the elimination of forest cover, but did result in the loss of biodiversity. A summary of the other immediate (as opposed to structural) causes of deforestation in Mexico can be found in Table 3.5, at the end of this subsection.

After World War II, the Mexican government sought to regulate the forestry industry and to incorporate it into the ISI development process. By that time, most of the remaining forests were in the hands of indigenous peoples and poor mestizo peasants,[124] which is no coincidence since centuries of expanding agrarian capitalism had destroyed the forests in other areas and pushed these people onto marginalized lands (Chapala, 1997). In order to exploit forestry resources in a manner congruent with the ISI strategy, the state had to find ways to wrest these resources away from *ejidatarios* and *comuneros*. This was achieved by granting 'concessions' (of up to 40 years) to private and parastatal companies, which gave them exclusive logging rights on social-sector land. And, where concessions were not granted, logging bans were imposed. In this way, peasants were denied the right to manage their own forests, and relegated to the role of providing cheap labour, while private and parastatal companies reaped the financial benefits associated with the exploitation and degradation of the forests.

By the late-1970s, in the context of the Government's legitimacy crisis and of growing social unrest in the countryside, many communities began to protest against these policies. Initially, most protests were focussed around demands for higher wages,

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[123] Before the arrival of the Spaniards, indigenous peoples practiced shifting agriculture, which required that plots of forested land be cleared using slash and burn techniques. These plots were used to grow crops, and then left to regenerate themselves for several years. There is conflicting evidence with regards to whether or not this caused deforestation in the long run.

[124] Today, there are approximately 56 million hectares of forested land left in Mexico (SEMARNAP, 1999), and somewhere between 70 to 90 percent of it is in the social sector (Bray, 1995).

and the provision of social-welfare services (by the logging companies); however, as time went on, some communities began demanding community control over the forestry industry within their territory (Bray, 1991; 1995). These demands were nurtured by the Echeverría administration, which began a program, in 1975, to train communities to manage their own forest resources and forest industries. In the early-1980s, when concessions ended in states such as Oaxaca and Quintana Roo, pressure from peasants, activists, and reform-oriented government officials combined to end the concession period across Mexico. This opened the door for a new era of community forestry, which culminated in the passing of the 1986 Forestry Law. This law granted communities the right to develop their own forestry management plans, to determine their own annual allowable cuts (subject to the approval of the federal government), and to participate in policymaking. What's more, at the time, Mexico's forestry industry still enjoyed subsidies and protective trade barriers. However, within the broader macroeconomic climate, neoliberal policies were already blowing in, spelling out the imminent revision of the 1986 forestry law, and the end of protectionist measures.

In 1992, after the signing of GATT, and as part of the lead up to NAFTA, the Salinas administration revised the forestry law, bringing it in line with other neoliberal reforms. The 1992 law opened the door to private investment (both domestic and foreign), deregularized the forestry sector, privatized technical forestry services, essentially put an end to government extension work and to subsidized credit for community forestry operations,[125] and began the process of tearing down protective trade barriers. Modelled after the Chilean experience, this new law privileged large-scale industrial plantations over native forest management, the former typically controlled by private investors, and the latter by peasant communities. The new law also meshed well with the changes made, in the same year, to Article 27 and the Agrarian Law, which helped private investors gain access to forest resources on social-sector land. When NAFTA came into effect two years later, the schedule for eliminating protective tariffs was established, ranging from immediate removal to 15 years, depending on the product.

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[125] When Zedillo took over, a governmental agency was established – Servicio de Extensión Técnica Forestal – to provide community forestry operations with technical assistance again.

These new structures have forced community-forestry operations in Mexico to compete head to head with modernized operations in the United States and Canada, which have the two largest forestry industries in the world. In Canada and the United States, forestry products can be produced much more cheaply, because of the highly destructive clear-cutting techniques employed, the modern equipment used, and the relatively low numbers of jobs per unit of production. In Mexico, by contrast, most community forestry operations are inefficient in strictly economic terms: their equipment is outdated, they use selective logging techniques, they require a high number of jobs per unit of production, and they do not take advantage of 'economies of scale'. The social benefits of community forestry, and its potential for ecological sustainability, are apparently low priorities for the Mexican Government, which hopes to generate more revenue from the forestry industry by attracting foreign capital, modernizing equipment, establishing plantations, intensifying extraction in native forests, exploiting more forests, reducing the number of jobs per unit of production, etc. (Mexican Government, 1995). The neoliberal reforms that have been undertaken in order to accommodate this transition militate against community forestry, and are likely to have negative environmental consequences (Bray, 1995; Silva, 1995; Snook, 1997). The flooding of the Mexican market with cheap forestry products will force 'economically inefficient' community-forestry operations to close, if they haven't already, contributing to unemployment and poverty in rural areas, and creating incentives for illegal logging. All of this, combined with intensified industrial production, will likely lead to further environmental destruction.

Table 3.5 The Main Immediate Causes of Deforestation in Mexico

Activity	Relation to Deforestation
Mining	This was one of the main causes of deforestation before the twentieth century. Trees were cut down in order to build mining shafts, smelt ores, and serve as railroad ties.
Extraction of precious hardwoods	This was another one of the main cause of deforestation before the twentieth century. Precious tropical hardwoods were extracted and sold on the international market. Although this did not lead to the disappearance of forest cover, it did result in a decrease of biodiversity, and it was often the first phase of more intensive selective logging.
Cattle Ranching	Today, cattle ranching is the main cause of deforestation in tropical forests, and second only to forest fires in temperate forests. The expansion of this industry is driven by the high demand for beef in the US. Land is sometimes cleared specifically to make room for pasture; at other times, ranchers take over land that was originally cleared for other reasons.
Forest Fires	The Government considers Forest fires to be the major cause of deforestation in temperate forests, and one of the top three in tropical forests.
Colonization Projects	In the past, land was sometimes cleared by the federal government in order to make room for new peasant communities. Roads were built with Government funds, logging contracts were given to private or parastatal companies, the timber was 'mined', and then sold on the domestic or international market. Although the pretence for clearing land was to alleviate demographic pressure, cleared land often fell into the hands of wealthy ranchers.
National Security	Much of the territory that borders Guatemala was deforested in order to help control the migration of indigenous refugees fleeing from US-sponsored genocide. These refugees are considered to be a political threat because of their potential to infiltrate Mexican indigenous communities, provide arms, and spread radical ideas about social justice.
Industrial Forestry	In the postwar period private and parastatal companies were given exclusive rights to cut down trees on social-sector land. National-level regulations and standards obliged them to use a selective logging technique whereby 35% of commercial species were extracted. Although this system left a considerable amount of forest cover, it caused the size and numbers of commercial species to gradually decline.
Community Forestry	Since the 1970s, many communities in the social sector have been managing their own forestry operations. Although some of these communities have moved towards more ecologically sustainable logging techniques, most still use the same techniques that were used by the private and parastatal companies in the postwar period.
Export-oriented agriculture (perennial bush and tree crops)	A relatively minor amount of forested land has been cleared in order to grow industrial crops such as coffee, cacao, rubber, sugarcane, cotton, pineapple, and mango. This type of agricultural activity has always been dominated by large-scale private producers, and it still is today. However, within the last ten years or so, peasant cooperatives have successfully entered a niche market for organically grown 'fair-trade' coffee.
Shifting Agriculture	Some traditional agricultural technology calls for plots of land to be cleared using slash and burn techniques. After one growing season, these plots are left to follow for a number of years. Although this was formerly considered to be the number-one cause of deforestation, many researchers today argue that it is in fact ecologically sustainable when practiced properly, according to tradition. In fact, it has been discovered that shifting agriculture can have beneficial consequences, providing habitats for wildlife and enhancing forests' ability to regenerate themselves.
Illegal Logging by peasants	In some areas, this has become a major source of deforestation, especially in communities that have a low-level of organization, and in forested areas close to urban centres. Individual members of poor communities use everything from axes, handsaws, and donkeys, to chainsaws and small trucks to cut down trees and sell them on the black market.
Construction of houses, cooking, heating, and lighting	Most peasants that live in forested areas use timber to construct parts of their houses and fences, and firewood for cooking, heating, and lighting. Much of the firewood that is collected is deadwood, which does not contribute to deforestation. However, where demand for firewood exceeds supply, trees are sometimes cut down.

Information for Table 3.4 was mostly taken from Gomez-Pompa (1993), Mexican Government (1995), and Snook (1997).

3.4.4 Summary

Because of the social upheaval at the beginning of the twentieth century, much of Mexico's territory is now in the hands of peasants, in the social sector. However, most of this land is of poor quality. Moreover, in the postwar period, the social sector was extremely neglected, since it was seen merely as a concession required to maintain political stability, and as a source of surplus labour. Within the paradigm of modernization, and as part of the ISI development strategy, large privately owned farms were considered to be the more progressive institution, and the backbone of the rural economy. Therefore, instead of investing in the social sector, the Government directed almost all of its rural-sector allocations towards large-scale private farms, which produced cash crops for export, thereby providing the country with foreign exchange for the industrialization process. At the same time, private and parastatal companies were given exclusive rights to log on social-sector land, which also provided the government with revenues that it would not have received otherwise, as well as providing raw materials for urban industrial development. While this strategy led to sustained economic growth, it also led to increased income disparity, and extensive environmental destruction.

During the 1970s, in an effort to address some of the problems generated by the ISI strategy, some resources were directed towards the peasant sector. However, these resources proved to be too little too late, and they did little or nothing to effect structural change. When the debt crisis hit in the early-1980s, rural development programs were drastically cut back, and the Mexican government began implementing neoliberal reforms. However, it wasn't until Salinas assumed the presidency in the late-1980s that the agricultural and forestry sectors were subject to these reforms. These reforms appear to have exacerbated many of the previously existing social and environmental problems in the rural sector: poverty has increased in both absolute and relative terms, and environmental degradation continues unabated.

It is important to underscore that, in contrast to the manufacturing sector, agriculture was largely export-oriented even before neoliberal reforms were undertaken, or at least the significant portion controlled by the Agrarian bourgeoisie and transnational

agribusiness was. Therefore, neoliberal reforms in this sector merely reinforced a long-standing commitment to a strategy of specialization and integration into the world economy.

Now that we have finished outlining the structural conditions of rural Mexico, and connected them to the problems of poverty and environmental degradation, it is time to turn our attention to the efforts that have been made to overcome these problems. Some of these efforts have already been reviewed, but not necessarily through environmental lenses. In the following sections, we will sharpen our focus another notch by reviewing the sustainable development efforts that have been pursued in Mexico over the past 20 or 30 years. We will begin with an examination of the Government's response to the environmental crisis, and then follow with a review of the grassroots' response.

3.5 The Government's Response to the Environmental Crisis

The Mexican government has responded to the environmental crisis by adopting the strategy of MSD, and by applying HSD in a few select micro-regions. As outlined in the previous chapter, the three main components of the MSD are economic growth, better management of natural resources, and the dissemination of environmentally sound technology. Of the three, economic growth is the most important, since it is considered to be necessary for investing in better environmental management and technology, and for eliminating poverty, which is considered to be a major cause of environmental degradation. The MSD strategy also seeks to target the poor with social welfare programs and with programs aimed at improving productivity in marginalized communities in an ecologically sustainable manner. This latter focus is the sidekick-strategy to MSD, referred to in the previous chapter as HSD.

The purpose of this section is to demonstrate that the Mexican government's development strategy corresponds with MSD and HSD, and to connect this strategy to the context described above in order to postulate the reasons for its implementation. Given the timing and manner of its implementation, it appears that the Mexican government adopted MSD as part of its strategy to maintain political stability and implement neoliberal reforms. As with other components of this broader strategy, such as

democratization and decentralization, MSD was formulated and orchestrated by international institutions, and implemented by most Latin American countries. In this regard, it appears that the main reason for adopting this strategy was to make the adjustments necessary to continue with the international development project and to facilitate the accumulation of wealth.

In Mexico, the northern-style environmental movement did not surface until the 1980s, which is when the government began to adopt MSD, both in rhetoric and in practice. Therefore, the adoption of this strategy can also be understood, in part, as a response to domestic pressure. In other words, one of the reasons why the Mexican government adopted MSD was to try to divert and co-opt potential threats to the political system that had arisen from the environmental crisis (Mumme,1992).

The timing and manner in which MSD was implemented leads one to believe that international opinion also played a major role. Mexico's most important environmental policy initiatives coincide with and conform to major international conventions, declarations, and publications concerning the environment (e.g. UNCHE, the Bruntland Report, and the Earth Summit). Moreover, many of these initiatives were taken during the lead up to NAFTA, which suggests that the Government perceived environmental policy, along the lines of MSD, to be a requirement for entering into international trade agreements, attracting foreign capital, and receiving support from international development institutions.

In order to help test these hypotheses, and to demonstrate the correlation between the Mexican Government's environmental policy and MSD/HSD, a sketch of Mexico's environmental policy will be provided. This policy can be summarized in the following terms:

(1) Economic Growth. Economic growth is the backbone of MSD strategy and the Mexican government's overriding priority. According to the proponents of MSD, the best way to achieve economic growth is by adhering to the principles of neo-classical economics: streamlining the state, privatization, elimination of trade barriers, specialization in products in which one has a comparative advantage, integration into the world economy, etc. As outlined in the previous sections of this chapter, this is exactly

what Mexico has done since the early-1980s. So far, the results have been continued economic growth, increased poverty, and further environmental degradation.

(2) Environmental Laws and Regulations. Environmental laws and regulations are part of the MSD strategy to better manage natural resources. In Mexico, the first environmental law was enacted in 1971, during the lead up to UNCHE. As Mumme (1992) points out, this law was little more than a symbolic act, since it did not stipulate the norms and standards necessary for its implementation. In 1982, just before the debt-crisis hit, a more focussed law was proclaimed, but due to the debt crisis, and to the resulting cuts in government spending, it was almost impossible to enforce the law. It wasn't until 1988, the year after the Bruntland report was published, that a law "with more juridical teeth and greater regulatory capacity" was enacted (Gates, 1998: 158). This law, the General Law of Ecological Equilibrium and Environmental Protection (LGEEPA), reflects the philosophy of the Bruntland report in that it seeks to strike a balance between development and the environment "without interrupting or interfering excessively in the production process" (Preamble to LGEEPA, cited in Gates, 1998). Since its enactment, there has been an increase in factory inspections, and some fines and closures have been levied against some of the country's most noxious polluters. However, in the context of Mexico's serious environmental problems, relatively few enterprises have been fined or closed, and the closures are almost always temporary, reflecting the priority of production over the environment.[126] For the most part, reduction of toxic emissions is voluntary, and companies that make an effort to use 'clean' technology are rewarded with certificates. Besides the LGEEPA, a number of other laws, such as the Forestry Law, the Water Law, and the Agrarian Law, have also been modified to reflect the MSD/neoliberal philosophy.

(3) Governmental environmental agencies. In Mexico, the first cabinet-level environmental agency was set up in 1982 by the de la Madrid administration: the Ministry of Urban Development and Ecology' (SEDUE). SEDUE was invested with

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[126] According to the Government, in 1999, over 56,000 industries were inspected, but only 1.7% of them were (temporarily) shut down (SEMARNAP, 2000b). Given the abundance of toxic wastes and emissions in Mexico, this points to one of two things: either the norms and standards are too low, or companies are able to bribe government inspectors.

broad administrative authority over environmental matters, but, because of the debt crisis, its budget was drastically cut, and remained small throughout the term, meaning that the implementation of environmental law, and the incorporation of environmental factors into government decision-making, remained largely symbolic throughout most of the 1980s. In 1992, during the lead up to NAFTA, and around the same time as the Earth Summit, Salinas replaced SEDUE with the Ministry of Social Development (SEDESOL) as part of an attempt to improve policy implementation. Under the direction of SEDESOL, a number of high-profile environmental measures were undertaken, including: the banning of sea-turtle hunting, a tree planting campaign, the creation of several protected areas, and the token enforcement of environmental laws and regulations. It is also worth mentioning that SEDESOL was given responsibility for administering PRONASOL, which means that, during Salinas' term, social development was directly linked to sustainable development, which is also a reflection of the MSD philosophy. What's more, by putting social and environmental development under the same umbrella, the Salinas administration created a mechanism for applying HSD in marginalized communities. When Zedillo took over, federal ministries were reshuffled, and a new one was created exclusively for the environment: the Ministry of the Environment, Natural Resources, and Fisheries (SEMARNAP). SEMARNAP was charged with the responsibility of conserving the environment and coordinating sustainable development efforts across all branches of government.[127]

(4) Incorporating environmental matters into government decision-making. Since the enactment of the LGEEPA in 1988, the Mexican government has made it mandatory to include environmental impact assessments in all federal public works, and in all potentially polluting industries, such as mining, and tourism, for example. In addition, since the early-1990s, the federal government has produced a number of environmental management plans, including the Integrated Border Environmental Plan (which was elaborated in collaboration with the US government), and the Program for Forests and Soils, which was part of the 1995-2000 National Development Plan. Many state- and municipal-level governments have also included environmental issues in their planning

[127] In November of 2000, SEMARNAP's name was shortened to 'the Ministry of the Environment and

and decision-making, at least in rhetoric. And, finally, in its follow-up report to the Earth Summit, 'Rio + 10', the Mexican government boasted about better coordination between the various branches of government vis-à-vis environmental planning.

(5) Creating inventories and monitoring natural resources. Under the direction of SEMARNAP, inventories of the country's natural resources have been created, including the National Forestry Inventory, the National Soil Inventory, and the National System of Information about Biodiversity. The idea is to monitor renewal and depletion rates, and to produce information that can be used to help optimize the exploitation of these resources.

(6) Protected areas. The primary purpose of protected areas is to conserve natural resources. In Mexico, the first protected area was formally established in 1917, and since then as many as 386 protected areas have been declared, representing around 40 percent of the national territory (Gomez-Pompa et al., 1995). In most cases, these declarations have done little to curb the overexploitation of natural resources within these areas. The latest fashion in protected areas is the 'biosphere reserve'. By 1998, Mexico had 31 biosphere reserves, 11 of which are recognized by the United Nations' Man and the Biosphere program (MAB). These reserves act as a focal point for the Government's efforts to promote HSD. In theory, biosphere reserves are designed to strike a balance between conservation and sustainable development, and to serve as laboratories for the elaboration of sustainable-development alternatives. However, in practice, at least in the Mexican reserves, much more attention has been directed to conserving natural resources than to improving the standard of living of local inhabitants. In this vein, with reference to Mexican biosphere reserves, Gomez-Pompa and Dirzo observe that "there is no doubt that the cost of conserving the environment in Mexico has fallen on the poorest of the poor, since it is they who, by law, are prohibited from using their soil and exploiting their forests in the ways that they want" (author's translation, 1995: 20)

(7) Environmental education and training. The Government has embarked on a number of educational and training campaigns as part of an effort to reduce pollution, rationalize the use of natural resources, and elicit the participation of the general

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Natural Resources' (SEMARNAT).

population. For instance, sustainable agriculture has also been promoted with manuals, catalogues, courses, diplomas, conventions, expositions, spots on radio and television, etc. Other examples of environmental education and training include a campaign to educate the rural population about forest fires, the formation of fire brigades in rural areas, and a program to promote the rational use of electrical energy amongst children.

(8) Environmentally sound technology. Environmentally sound technology is designed to increase the environmental efficiency of productive and consumptive activities, and it is a major component of the MSD strategy. The Mexican government has whole-heartedly endorsed the idea of importing and developing environmentally sound technology, largely because it is seen as the easiest way to 'fix' environmental problems, and also because it draws attention away from the structural causes of environmental problems. In addition, environmentally sound technology is seen as an avenue for receiving international aid and preferential terms of trade. Some examples of this type of technology in rural Mexico include new techniques for managing native forests that allow for higher extraction rates, the construction of fire breaks to control forest fires, forestry plantations, germplasm banks to compensate for the loss of genetic biodiversity, tree nurseries for reforestation projects, biotechnology designed to increase silvicultural and agricultural production, biotechnology designed to make crops and trees more resilient to pests, biotechnology designed to clean up polluted bodies of water and contaminated soil, the installation of solar panels to provide electricity and to heat water in isolated rural households, and the provision of alternative fuels for cooking and heating (to reduce the consumption of firewood). Undoubtedly, many of these efforts have had a positive environmental impact. However, in the absence of structural changes, their potential for overcoming environmental problems appears to be limited.

(9) Hybrid Sustainable Development (HSD). As outlined in the previous chapter, HSD combines elements from both MSD and GSD. In Mexico, HSD is known as '*desarrollo microregional*' (micro-regional development). This strategy was actually initiated in the 1970s with programs such as PIDER, and then later refined in the form of the Municipal Funds Program, and the like. The environmental dimension of these programs is most salient where they coincide with biosphere reserves. In these areas, locals are encouraged to 'participate' in top-down initiatives that are designed to either

arrest environmental deterioration, or to improve productivity in an ecologically sustainable way. Sometimes participation is encouraged by offering an economic incentive, other times by offering technical assistance, and yet other times by demonstrating, through pilot projects, that the given program or technology has merit. Typically, these programs include efforts such as terrace building, organic pest control, replacing chemical fertilizers with 'green manure', diversifying production, and even building upon traditional technology.

(10) Cooperation with international institutions. As mentioned above, the Mexican government has demonstrated a commitment to cooperate with, and be subordinated by, international institutions in the realm of the environment (and in just about every other realm for that matter). By 1997, the Mexican government had signed 68 international agreements concerning the environment, including the Montreal Protocol on Ozone Layer Depleting Substances, the Convention on Biological Diversity, the International Convention to Combat Desertification, the Framework Convention on Climate Change, and the Basel Convention on Transborder Movements of Hazardous Wastes and its Disposal.

In summary, over the past 20 years, the Mexican government has made some significant advances with its environmental policy along the lines of MSD/HSD. On the one hand, this strategy has undoubtedly had a positive impact on the environment in the sense that the situation could have been far worse if the Government had done nothing. On the other hand, by the Government's own admission, so far, this strategy has been unable to reverse the trend of increasing environmental degradation. At a special UN session (Earthsummit+5), held in April of 1997, the Mexican government reported that "in spite of the efforts that have been realized over the past two decades, in Mexico, there has been an increase in deforestation, soil erosion, over-exploitation of fisheries, contamination of the water in the most important basins, contamination of the air in the largest cities, and deterioration of natural resources and biodiversity (author's translation, Mexican government, 1997). The reason for this failure lies in the nature of the MSD strategy itself: instead of addressing the structural causes of environmental degradation, it seeks to overcome the crisis with a 'technical fix'.

3.6 The Grassroots' Response to the Environmental Crisis

3.6.1 General Description

As would be expected, the grassroots' response to the environmental crisis in Mexico corresponds with GSD, as outlined in the previous chapter. This strategy includes elements such as authentic participation, collective action, gaining control over local natural resources, self-reliance, gearing production towards the needs of the community, diversifying production, reviving and building upon traditional technology, small-scale development, and networking amongst other community-based organizations and solidarity groups. The purpose of this section is to demonstrate how this strategy has been adopted and developed by many marginalized communities in rural Mexico. This will be done by providing a general description of the practice of GSD in Mexico, including a re-examination of the 'thickening of civil society' through environmental lenses, and by providing a short synopsis of some documented case studies of GSD.

As described above in the sub-section entitled 'the thickening of civil society', since the early-1970s, there has been a proliferation of autonomous grassroots organizations in rural Mexico. Typically, these organizations were formed through the combined efforts of community members and social activists from outside of the community, the latter including priests, teachers, and so-called 'organic intellectuals', many of whom went to work in poor rural communities after the 1968 student massacre. Generally speaking, over the past three decades, these organizations have sought to improve the living conditions of peasants in two ways: (1) by implementing small-scale development projects geared towards meeting the basic needs of community members; and, (2) by trying to change local-, regional-, and national-level structures and policies that are inimical to the poor. The former corresponds with 'self-reliant sustainable development', and the latter with 'social-activist sustainable development', the two ideal-type models of GSD described at the end of Chapter Two. Examples of self-reliant sustainable development in Mexico include: building terraces, planting orchards, reviving traditional technologies and building upon them, replacing herbicides and pesticides with organic pest control, replacing chemical fertilizers with 'green manure', reviving traditional

cottage-industries, establishing traditional health clinics, and so on. Many of these activities are the same as the ones that fall under the category of HSD, indicating that there is much overlap between the two in practice. In theory, the distinguishing factor between HSD and self-reliant GSD is that the former is primarily top-down and from the outside, and the latter is bottom-up and from the inside. However, in some cases, the two appear to blend together in an iterative process whereby grassroots organizations take advantage of HSD-oriented government programs, and vice versa.

There is no such grey area when it comes to social-activist sustainable development. Examples of activities that fall into this category include: lobbying, offering positive policy alternatives, land invasions, occupying government offices, sabotaging the equipment of private and parastatal logging companies, protest marches, and even armed insurrection, as in the case of the Zapatistas. These actions are often geared towards gaining control over local natural resources. Although it would be a gross exaggeration to say that these activities constitute an environmental movement, they clearly have an environmental dimension. Peasants who engage in environmental action seek to put an end to the depredation of natural resources by large private enterprises in search of profits, not so that the natural resources can be left idle in the interests of global environmental health, but rather so that the peasants themselves can exploit them, ideally, in an ecologically sustainable way. Although the productive activity of peasants is not inherently ecologically sustainable, widespread anecdotal evidence suggests that, where a high degree of internal organization exists, the productive activity of peasants does tend to be ecologically sustainable, at least in Mexico (Bray, 1995; Snook, 1997). Some of the case studies included below speak to this.

As indicated earlier, umbrella organizations have played an important role in the thickening of civil society. The formation of these organizations corresponds with an important element of the GSD strategy: networking between grassroots organizations in an effort to bring about structural change. In Mexico, umbrella organizations began to appear in the late-1970s, and early-1980s, helping to articulate the strategies and demands of civil society. These organizations not only put pressure on the government to adopt pro-peasant policies, they also helped improve the productive activity of their member-groups by providing them with some essential services and facilitating the exchange of

locally developed technology. As mentioned above, the CNPA and UNORCA are the two largest and most important umbrella organizations to have been formed in rural Mexico. Other examples include the National Confederation of Coffee Producers (CNOC), The Mexican Association of Ecological Agricultural Producers (AMAE), the Mexican Network of Forestry Organizations (Red MOCAF), and the National Union of Social Foresters (UNOFOC). Over the past decade or so, many of these organizations have incorporated environmental dimensions into their productive concerns. For example, the CNOC promotes the creation of ecologically and socially sound 'coffee-agroforestry' among its approximately 75,000 affiliated producers, virtually all of whom produce "shade-tree coffee", and 11,500 of whom are certified to produce organic coffee (Castillo and Toledo, 2000).[128] The AMAE focuses largely on certifying producers of organic agricultural products other than coffee, and has as many as 15,000 certified members (Bray, 1995). And, both the Red MOCAF and UNOFOC are increasingly addressing the issue of sustainable logging, with many of their members now certified by the Rainforest Alliance (Bray, 1997).[129]

As this rudimentary sketch indicates, there is definitely an environmental dimension to thickening of civil society in rural Mexico, which reflects the GSD school of thought. Central to this school of thought is the concept of authentic participation. As demonstrated earlier in this chapter, over the past thirty years, authentic participation in rural Mexico has manifested itself in the form of community-level organizing, intra-community-level organizing (e.g. the formation of umbrella organizations), implementing small-scale development projects, exchanging ideas and information, and engaging in social activism that demands structural change on all levels. In all of these

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[128] Mexico is now the world's number one exporter of organic coffee. As with other organic products in Mexico, organic coffee is predominantly produced by the social sector.

[129] Social forestry in Mexico accounts for about 40 percent of the Mexican timber production and about 15 percent of its processing. According to Bray (1995), some community forestry operations in Mexico, such as the San Juan Nuevo Parangaricutiro in Michoacán, the *Unión de Comunidades Ejidos Forestales de Oaxaca* in Oaxaca, the *Unión de Ejidos Emiliano Zapata* in Durango, the *Sociedad de Productores Forestales de Quintana Roo*, and the *Organización de Ejidos Productores Forestales de Quintana Roo*, are in the vanguard of community forestry worldwide. Silva (1995) concurs. According to Silva, "important experiences of community forestry in Quintana Roo, Durango, Oaxaca and other states demonstrated that employment income, the development of capital and delivery of social services all prospered under peasant forestry. Forest inventories suggest that sustained yield harvests are closer to becoming a reality than under the concession system which led to blatant overlogging of commercial species" (1997, 482)

manifestations, environmental concerns have become increasingly important. To be sure, peasants have received some support from NGOs, academic institutions, and social activists, and in a few areas they have even received support from some reformist elements of the Government. But, this caveat notwithstanding, the main protagonists in the 'thickening of civil society' have been the peasants themselves. This is evidenced in the case studies provided below.

In order to round out our description of the grassroots' response to the environmental crisis, we will now turn to these case studies, which are meant to illustrate the generalizations made above, demonstrate the heterogeneity of GSD in practice, and help contextualize our case study of Ayotitlán.

3.6.2 Five Short Synopses of Documented Case Studies[130]

1. Self-reliant GSD in the municipality of San Juan Mixtepec, Oaxaca (Blauert and Guidi, 1992a: 284-285):

The municipality of San Juan Mixtepec lies where the highland and lowland regions of Mixteca in north-west Oaxaca meet, some of the most eroded areas in Mexico. It encompasses 35 villages and has long been the home of a Mixtepec Indian community, today comprising 14,000 inhabitants, linked by kinship and linguistic, religious, political and economic bonds.

Since the colonial period, the relationship between local peasants and their environment has changed radically, the traditional subsistence and exchange economy having been transformed into an extractive one for the benefit of Mexico City and Spain. Since the middle of this century, the relationship has deteriorated still further because of the community's increasing dependence on industrial products. To produce a marketable surplus of corn and beans, the San Juan Mixtepec peasants abandoned plot rotation, cut down forest to expand their farming area, and started in the late-1960s to use chemical fertilizers and pesticides. To widen their sources of income, they also started to raise more sheep and goats which graze freely on communal land.

The consequences of such changes in land use are now clear: the soil on the hillsides has been washed away, the volume of water in the rivers has decreased and forest cover is depleted. Today, Mixtepec, which was a relatively fertile area 40 years ago, is poor and dry with only 3.6 per cent of its land suitable for agriculture. The community still depends primarily on farming, but almost all the cropped area lies on

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[130] These synopses are direct quotes from indicated sources.

steep eroded slopes, thinly covered with exhausted soils which are now saturated with nitrate; the land is barely productive...

In September 1986, however, a group of concerned teachers and returned migrants were elected to the municipal authority. In association with the Comité de Maestros (an organization of Mitxtepecos teachers) and the Comité Voluntario (an organization of returned migrants from California, particularly conscious of the importance of restrengthening communal self-identity and maintaining group cohesion) and with the collaboration of "outside" researchers, they put together a proposal in early-1987 to address San Juan Mixtepec's socio-economic problems. The project had a twofold purpose: to address environmental and production problems and to recover those cultural aspects most directly linked to communal identity.

The focus was to be on combining traditional agricultural knowledge with alternative technologies that were simple, low-cost and adapted to the local context. Farmers themselves would choose, apply and evaluate technical alternatives which they considered suitable to their situation. Above all, the project would respect the Mixtepecos' own social organization, their concept of time and their capacity to make their own decisions. From the outset, it was a central objective to demonstrate the feasibility of developing a small project which avoids as much as possible the "invasion" of outside specialists (whether from non-governmental organizations or state agencies) in the communities...

Today, the project is working in three main areas: conserving the environment and improving agricultural production; training "health promoters"; and setting up a producers' cooperative...

2. Social-Activist sustainable development in the Chimalapas and Mixe, Oaxaca (Blauert and Guidi, 1992a: 287)

To the east of Mixtepec, the Union of Indigenous Communities of the Northern Isthmus (UCIZONI) is addressing similar issues to the San Juan Mixtepec Project, but on a broader front. Acting as a support group to several Indian communities in the lowland Mixe and Chimalapas regions in the south-east of Oaxaca, the Union has gained a reputation for defending communities affected by logging and human rights violations. By the mid-1980s, it was in contact with some 30 communities over four municipalities in the Tehuantepec Isthmus between the Gulf of Mexico and the Pacific, its activities ranging from holding meetings with government agencies to direct action,

Drawn together to oppose the invasion of their lands by loggers, settlers and cattle ranchers over many decades, the different Indian communities of the lowland Mixe and the largely Zoque and Zapotec villages of the Chimalapas region have a long tradition of resistance. Direct action by Chimalapas communities against illegal loggers and ranchers in the region, which accounts for one-fifth of the two million hectares of tropical forests remaining in Mexico, became commonplace in the 1970s as local people blockaded roads and destroyed machinery.

In 1986 the logging in the Chimalapas came to national attention: in July of that year, representatives of the Chimalapas communities met with the governor of Oaxaca to protest against the logging by, among others, the brother of the governor of the neighbouring state of Chiapas, but no action was taken. In December 1986, local activists ("Chimas") detained ten men, whom they accused of being illegal loggers, land invaders, drug traffickers and cattle thieves, among whom were the Chiapas governor's brother, his nephew and four gunmen. The Chimas burned the men's centre of operations in the forest, confiscated or destroyed machinery and took the men to the municipal offices in Santa María Chimalapas where they held them as security against their demands. These included compensation for illegal logging of over 80,000 hectares of forests, the end to further land invasions from Chiapas and elsewhere, and the termination of logging licenses. Government representatives, police, helicopters and army units from Chiapas descended on the village, quickly agreeing to implement a 1967 presidential decree recognizing Indian land rights to over 460,000 hectares of communal lands on the state boundary between Oaxaca and Chiapas. Four days later, after a promise was given by the new governor of Oaxaca to meet his Chiapeneco counterpart, the Chimas released their hostages.

Following the December 1986 "kidnappings", the communities of the Chimalapas continued to negotiate with various authorities, publicize their situation and campaign, in alliance with organizations such as UCIZONI and the national federation of environmental organizations, the Pacto de Grupos Ecologistas (PGE).

UCIZONI has also coordinated activities to pressure agencies such as the Ministry of Agriculture – in one instance, by occupying the Ministry's offices in May 1988 – and to denounce cattle ranchers, *caciques* (local political strongmen) and state forces who burn forests and crops, and detain, beat and torture villagers. Connected with this, the Union provides legal aid and runs various projects concerning women's rights. It is also involved in agricultural production by arranging workshops on traditional and non-traditional low external input agriculture and conducts economic studies in support of other activities.

3. Reviving and building upon traditional technology in the lowlands of Tabasco (Altieri, 1986: 23-24)

Various forms of subsistence farming are known to have been employed by the original Indian inhabitants of Tabasco, Mexico, and are thought to have achieved highly productive levels. Slash and burn production (corn, beans, etc.), while kitchen gardens (huertos familiars), composed primarily of tree crops and their associated understory of herbs, shrubs and vines, added variety to the local diet.

Recent emphasis on cash cropping and stock-raising has led to a gradual abandonment of traditional agricultural practices and crop varieties in Tabasco. As part of an attempt to achieve the diversity and stability of production originally characteristic of the traditional agroecosystems of the region, Gliessman et al., in collaboration with local peasants, installed production units, referred to here as modular systems

(modulos). The primary focus of a "modulo" is to apply ecological principles to present agriculture, incorporating both the empirical knowledge and ancient practices still present in the region.

A "modulo" consists of 5-15 hectares controlled by several family units. The social structure of the community determines whether the families actually live within the "modulo" or in a nearby community (ejido) and work in the "modulo" during the day. Production from each "modulo" is either consumed directly by the families living there, or distributed to the members of the ejido. Any excess in production is made available for sale or exchange.

Each "modulo" has as part of its basic structural design an outermost band of vegetation consisting primarily of native second growth species. This band serves simultaneously as a windbreak, a source of natural predators and parasites for biological pest control, as well as a source of firewood and building materials. At the same time, these shelter belts also serve as biological reserves or germplasm banks of a diversity of tropical plants and animals...

The interior part of each "modulo" is modeled after the topographic diversity existent at each site. In cases where the lowest part of the "modulo" is centrally located, large tanks are constructed to serve as catchments for dissolved nutrients and particles of soil and organic matter and all other runoff from the production unit. Fish, ducks, and other aquatic animals are produced in these tanks, with aquatic plants and sediments, and are used as fertilizer in other parts of the "modulo"...

In the "modulo", the major part of the production of traditional basic food crops is concentrated in the chinamapas. According to the distribution of soil types, drainage, topography, and other physical characteristics of each site, a wide variety of annual and perennial crops are planted following the planting methods and combinations traditionally used by the peasants. This includes such intercropping systems as the local corn/bean/squash polyculture, cassava/corn/ papaya, the platano/chaya/tomato/cilantro/rabano mixture, and the perennial crop systems with diverse mixtures of fruit trees and their associated understory herbs, shrubs, and climbing vines. Following the practice of the local campesinos, every utilizable area is occupied by vegetative cover, both in time and in space.

4. Gaining control over natural resources in the Sierra Juárez, Oaxaca (Bray, 1991: 13-18):

Until the 1950s, forest exploitation in the Sierra Juárez was light... However, as part of the 1950s national development policies, 261,000 hectares of Sierra Juárez forests came under a 25-year concession to the foreign-owned (but nationalized in 1965) Fábricas de Papel Tuxtepec (FAPATUX) to produce paper and news pulp... FAPATUX did no real forest management or reforestation during the concession period... the total forest area in the Sierra was reduced to one-third during FAPATUX's concession, with significant degradation of the rest of the forest...

The first significant rebellion against such practices broke out in 1968, when the community of San Pablo Macuiltianguis organized 14 other communities into the Unión de Pueblos Abastecedores de Materia Prima a FAPATUX. Their actions led to a five-year boycott of FAPATUX that eventually forced the factory to close for 40 days in 1972...

When they first organized themselves, the communities' primary objective was to receive more economic benefits; sustainability of the resource was not yet an issue. Their demands included higher wages for community loggers, a larger stumpage fee, scholarships for workers' children, protective equipment, and more roads. Eventually, FAPATUX made some bargaining concessions... The bargaining concessions forestalled further efforts at local economic initiative during most of the 1970s. But as October 1981 and the end of FAPATUX's 25-year concession approached, a new surge of grassroots initiatives developed.

On March 9, 1980, 13 communities assembled in the mountain hamlet of Guelatao to create the Organización en Defensa de los Recursos Naturales y Desarrollo Social de la Sierra de Juárez (ODRENASIJ). Its primary goal was to prevent a renewal of the concession and thereby guarantee communities the right to manage their own forests. The organization quickly established a newspaper, *Tequio*, whose first edition presented a vision that encompassed both development and conservation...

ODRENASIJ launched a whirlwind of activities: publishing *Tequio*, visiting other forest community organizations in Mexico, organizing the first national conference of forest community organizations in May 1981, and lobbying the state and federal government officials to promote its cause...

In late-1981, the government tried to reinstitute the concession not just for 25 years but in perpetuity. Outraged, the communities mobilized to defeat that attempt, obtaining legal and other kinds of help from their supporters. In 1982, the communities at last won their struggle, in the process establishing a major precedent in community control of natural resources in Oaxaca and in Mexico.

5. Community-based sustainable forestry in Quintana Roo (author's translation, Merino, 1992: 40-43)

The Civil Society of Forestry in the Mayan Zone (SCFZM) is made up of 16 ejidos, which are located in the centre of Quintana Roo, which has a considerable expanse of tropical forest. For more than 10 years, the Mayan Zone and the southern part of the state have been the cradle of two of the most interesting and successful experiences in sustainable management of tropical forests, which stand out for their pioneering character on both the national and international level, and for the level of participation they have fostered. The experience of the SCFZM is one of these cases.

[The following is an excerpt from an interview of three SCFZM members]

We perceive forest management to be a basic tool for exploiting the forest in a sustainable and appropriate manner. We started with nothing. The first thing we did was to carry out basic studies of the forest in each of the ejidos, which provided us with a snapshot of the composition of the forest. This was done with very few resources, and it never would've been completed if it weren't for the dedicated participation of the *ejidatarios*. Now we have forest inventories of 162,000 hectares of forest, and we can tell which species to exploit and which not to, what the density and distribution of each species is, what can be extracted and where, and, what production we can offer. Based on the studies, we also established reserve-areas in each of the *ejidos*. Taking into consideration that cedar takes 50 years to reach maturity, we divided the reserve-areas into 25 parts, each of which is exploited only once every 25 years, which allows for the trees to regenerate themselves. The extraction rate has dropped considerably, since only mature trees – which can cause problems in the forest – are cut down. Alongside the extraction, we carry out a process that we call "forest enrichment": for every tree we cut down, we return 10 little trees. The SCFZM has nurseries (a central one, and a few in the *ejidos*), the seeds are taken from the forest when trees are extracted, and often the peasant families that plant them take care of them until they are ready for the nursery, or for planting in the forest...

There are diverse factors that have influenced [our success]. To begin with, there was the institutional support we received in the early stages from the Pilot Plan [a group of researchers]. With regards to the *ejidos*, one important factor was that locals saw the benefits of our project in a relatively short amount of time... there were also a number of jobs that were created. Another very important factor has been the emphasis, since the beginning, on training the *ejidatarios*, and on transferring knowledge and responsibilities. In this way, the *ejidatarios* feel like they are [authentically] participating in the management of the forest, and they have become true owners of their resources, and the ones most interested in protecting their forests. For example, in Laguna Kana, someone destroyed a sign for the prevention of forest fires, and he was almost expelled from the ejido...

The difficulties and obstacles are many and various: there are marketing limitations; a need for resources, and support for the technical jobs; a lack of technology and productive infrastructure; and other problems that stem from the conditions of poverty in the region. Lastly, we have come up against political pressure from groups that have been adversely affected by our taking control of the forest resources...

We definitely believe that the work of the SCFZM is important enough to open up new perspectives and build new possibilities... In the medium and long term, we plan to set up local industries that can produce more-finished products, with more value added. Another important line of action that we have already started to explore is to get our timber certified. With this, we can ask for prices that are slightly higher than those normally found in the market, and, in exchange, we can guarantee that our product has been produced under sustainable conditions. In this way, the consumer contributes to the preservation of the forest.

3.7 Conclusion

In this chapter, we examined the structural conditions of rural Mexico with an eye on environmental degradation, poverty, and sustainable development. We began by analysing the socio-economic, political, and agrarian context of the past 60 years, the period during which the environmental crisis manifested itself. This was followed by a brief description of the Government's response to the environmental crisis, and then the grassroots' response. The main objectives were: (1) to test the hypothesis that the causes of environmental degradation and poverty are structural (social, economic, and political); (2) to evaluate the practice of MSD and GSD in terms of their potential for overcoming environmental and social problems; and, (3) to provide a backdrop for our study of environmental degradation, poverty, and sustainable development in the community of Ayotitlán.

What we saw was that, during the postwar period, development was driven by the modernization paradigm. The Mexican government pursued a strategy of ISI that privileged the modern urban industrial sector, and gave precedence to large-scale commercial farming over peasant farming. The postwar political system was semi-authoritarian; its corporatist and clientelistic structure helped maintain political stability by granting peasants the title to (mostly marginal) land, and by stifling their capacity to organize themselves. All of this led to a period of uninterrupted economic growth, often referred to as 'the Mexican Miracle'. However, by the late-1960s, economic stagnation began to set in, indicating that the ISI strategy had exhausted itself. The problems that had accumulated in the postwar period were manifold, including unequal distribution of wealth, regional disparities, unemployment, poverty, and environmental degradation.

In the early-1970s, in the context of these problems, the Government entered into a political crisis. In an effort to re-establish political legitimacy, and to resolve or at least postpone some of the social and economic problems that had accumulated in the postwar period, the Government implemented moderate political reforms and tried to direct some of the fruits of development towards marginalized sectors of the population – not by redistributing wealth, but rather by trying to increase the size of the pie. It was during

this time, too, that grassroots organizations began to form in the interstices of the fragmenting political system.

In 1982, after a decade of heavy borrowing, the debt crisis hit, forcing the Government to accept IMF-designed structural adjustment programs. In order to help push these reforms through, the Government pursued a strategy of democratization, decentralization, and MSD, as formulated by the World Bank and other international institutions. Although these processes did not provide significant opportunities for marginalized people to genuinely participate in development, they did create a political climate that was conducive to increased mobilization from below. During the late-1980s and 1990s, the neoliberal project was shifted into a higher gear, enveloping the rural sector in the process. Over the past 20 years, this has led to an increase in poverty in both relative and absolute terms, and increased environmental degradation.

The examination of Mexico's agrarian structures of the past 60 years reveals direct links between the immediate causes of environmental degradation and broader structural forces. Over the years, much of the best agricultural land has remained in the hands of large private commercial farmers, who produce cash crops for the international market, thereby providing the country with foreign exchange for the industrialization process. During the postwar period, almost all of the Government's resources allocated to the rural sector were directed to these private farms in order to help intensify production through the adoption of Green Revolution technology. This led to widespread environmental destruction in the form of salinization, toxic contamination of soil and water, soil compaction, erosion, etc. When this technology was introduced to the peasant sector, often through rural development programs designed to help peasants produce a surplus for the market, the environmental consequences were often even more severe, largely because of the poor quality of their land to begin with. Structural conditions in other sectors of the rural economy led to processes that were equally as destructive. For example, the demand for beef in the United States led to the expansion of large privately owned cattle-ranching operations, which displaced peasant farmers, and caused extensive deforestation and soil erosion. And, in the forestry sector, the state wrested forest resources away from peasants and handed them over to private and parastatal logging

companies, whose destructive logging practices contributed to the deterioration of Mexico's forests.

All of this suggests that the causes of poverty and environmental degradation in rural Mexico are rooted in the social, economic, and political structures of the past 60 years. These structures are designed to facilitate the accumulation of wealth for a tiny minority, and to maintain political stability. They have given overriding priority to the needs of capital (both foreign and domestic); they have left close to half of the population living in poverty; and they have led to the overexploitation of natural resources, largely to satisfy the demands of the international market. All of this is especially true in the last 20 years, since neoliberal reforms were implemented.

MSD is supportive of these structures. It is predicated on the assumption that aggregate economic growth is necessary, and that the best way to realize this growth is by adhering to the principles of neo-classical economics (i.e. neoliberalism). MSD seeks to overcome the environmental crisis, not by addressing the underlying structural causes of the crisis, but rather by better managing natural resources and by developing environmentally sound technology; in other words, by applying a technical fix. Over the past 20 years, the Mexican government has pursued MSD by enacting environmental laws and regulations, creating governmental environmental agencies, encouraging the dissemination of environmentally sound technology, creating inventories of natural resources, monitoring natural resources, and so on. By the Government's own admission, these measures have done little or nothing to slow down the rate of environmental destruction. Thus, both empirical evidence and theoretical inconsistencies lead to the conclusion that MSD is not capable of overcoming the environmental and social problems of rural Mexico.

MSD's sidekick strategy, HSD, is somewhat more progressive. It is a top-down strategy that borrows from and sometimes blends with GSD. For the past 25 years, the Mexican government has sponsored HSD in a few select micro-regions, most notably where biosphere reserves exist. Some evidence suggests that efforts along these lines have had a positive impact on some marginalized communities, especially where a high-level of grassroots organization existed previously. However, like MSD, HSD

emphasizes technical solutions to environmental problems, and largely ignores the broader structural context in which it is applied. In the final analysis, therefore, it is unlikely to have much of an impact on environmental and social problems in the big picture.

By contrast, GSD aims at addressing the structural causes of environmental degradation and poverty. This strategy represents the environmental dimension of the activities of rural Mexico's civil society. Rural Mexico's civil society emerged in the early-1970s, and grew thicker as time went on. The GSD strategy it has adopted has two foci: (1) implementing ecologically sustainable small-scale development projects that are designed to meet the basic needs of community members (i.e. self-reliant sustainable development); and, (2) social activism aimed at changing structures at all levels (i.e. social-activist sustainable development). The underlying objective of both types of activities is to improve the living conditions of the poor. During most of the 1970s, the grassroots organizations that comprise civil society were relatively isolated from each other. In the late-1980s, umbrella groups emerged to better articulate the strategies and demands of civil society, and to provide some essential services for their member-groups. And, in the 1990s, the Zapatistas emerged as a leading force in civil society, demanding local autonomy, local control over local natural resources, and authentic participation in higher-level decision-making. It has yet to be seen whether or not these developments can eventually translate into significant structural change, but their potential for doing so is the measure of GSD's potential for overcoming the interrelated problems of poverty and environmental degradation in rural Mexico.

In the next chapter, we move our analysis down to the local level by examining environmental degradation, poverty, and sustainable development in the community of Ayotitlán.

CHAPTER 4

THE EXPERIENCE OF AYOTITLÁN

4.1 Introduction

This chapter presents a case study of environmental degradation, poverty and sustainable development in the *ejido* of Ayotitlán. Ayotitlán is an indigenous community situated in the Sierra of Manantlán, a mountainous region located 50 km off the Pacific coast of central Mexico, famous for its natural beauty, wealth of natural resources, and high degree of biodiversity.

Over the past 60 years, modernizing forces have been rapidly transforming both the natural environment and the people of Ayotitlán. Large private logging companies, private and parastatal mining companies, and outside cattle-ranching operations have laid claim to much of the community's territory, overexploited its natural resources, and left behind a wake of environmental destruction, poverty, and internal conflict. At the same time, changing demographics, the displacement of traditional socio-economic systems, imported technology, and the loss of local indigenous culture have all contributed to the community's social and environmental problems.

Over the past thirty years, a number of strategies have been implemented in an effort to address these problems. To begin with, community-based organizations have pursued strategies that correspond with GSD. These strategies include: (1) social activism geared towards gaining control over local natural resources; (2) connecting with other grassroots organizations in an effort to effect broader structural change; and, (3) implementing small-scale ecologically sustainable development projects in an effort to improve the living conditions of the local population. In addition, various organizations from outside of the community – NGOs, academic institutions, and some governmental agencies – have sought to address the community's social and environmental problems in other ways. At times, these organizations have provided technical assistance for the projects of community-based organizations, and, at other times, they have implemented their own projects, most of which correspond with HSD.

This chapter has three interrelated objectives. First, it seeks to further test the hypothesis that the root causes of environmental degradation and poverty lie in the prevailing social, economic, and political structures at all levels. This will be done by investigating links between the immediate causes of environmental degradation in Ayotitlán and broader structural forces. Second, it seeks to evaluate the potential of the sustainable development strategies that are currently being pursued in Ayotitlán. And, third, it seeks to complement the study of national-level structures presented in the preceding chapter with a community-level case study, which is the most appropriate unit of analysis for examining GSD.

This chapter is organized into eight sections, not including the introduction and the conclusion. The first section provides a general description of Ayotitlán, including such factors as geographical location, demographic distribution, physical infrastructure (roads, schools, health clinics, etc.), productive activities, and social and environmental problems. The purpose of this section is to provide a 'snapshot' of Ayotitlán in the year 2001, which can be used as a point of reference and a point of departure for the following sections.

The next section reviews the community's struggle for control over its local natural resources. Since the post-World War II period, the natural resources of Ayotitlán have been overexploited and degraded by large-scale capitalist enterprises: logging companies, mining companies, and cattle-ranching operations. This section examines how these various enterprises were able to gain access to the community's resources, and connects these processes to the structural conditions outlined in Chapter Three. This is followed by a description of the community's resistance to the penetration of capitalist enterprises. As we shall see, this resistance is in many ways typical of the grassroots movement that began to take shape in rural Mexico in the early-1970s.

The next section examines the community's resource-management system. In Ayotitlán, there are actually two systems of resource management: one traditional, the other *ejidal*. The latter was superimposed on the former in the second half of the twentieth century.

The following section examines the community's main productive activity: the cultivation of corn. The intention, here, is to show how changes to traditional technology – brought about by demographic changes, economic structures, and imported technology – have contributed to the degradation of the local natural-resource base.

This is followed by a section that analyses Ayotitlán through the lenses of economic diversity and community-level self-sufficiency. Over the past 60 years, and especially over the past 30 years, productive activities in Ayotitlán have become less diverse, leading to a decrease in community-level self-sufficiency. These trends appear to have contributed to problems of poverty and environmental degradation.

The next section presents a table that sums up the main environmental problems in Ayotitlán, and links them to their immediate causes. This is followed by a section that describes the present-day local-level actors and their respective sustainable development strategies. And, finally, in the last section, the community's internal conflicts are examined in order to determine the degree to which they impede GSD.

The findings of this chapter further support the hypothesis that the underlying causes of environmental destruction and poverty are structural and that the best way for communities to address these problems is to pursue an endogenous version of GSD. It also suggests that top-down efforts in the form of HSD can help create a political environment that is conducive to GSD.

4.2 General Description of Present-Day Ayotitlán

The *ejido* of Ayotitlán forms part of the municipality of Cuautitlán, located in the southwest corner of the state of Jalisco. The community should be at least 60,000 hectares in size, according to land titles granted by the State in the second half of the twentieth century; however, its present size is only about 45,000 hectares. And, of these 45,000 hectares, eight thousand are controlled by mining companies and ranching *caciques*, and ten thousand are located in the nucleus of the Sierra of Manantlán Biosphere Reserve (RBSM), where human settlements and productive activities are prohibited.

The total population of Ayotitlán is approximately 6,000 (INEGI cited in Robertson, 2001). This population is spread out over 74 hamlets and villages, the two most important being Telcruz and Ayotitlán,[131] with populations of 1,166 and 528 respectively (INEGI, 1995). Both of the main centres have electricity and tubed water, as do many of the medium-sized ones.[132] There are also public telephones in both of the main centres; however, bad connections and the unavailability of phone cards mean that telephones are often inoperable for days at a time.

There are two access roads that connect Ayotitlán to the outside world: one that goes from the town of Cuautitlán (Jalisco) to the village of Ayotitlán, and another that goes from the town of Minatitlán (Colima) to Telcruz. Until 1994, the road between Cuautitlán and Ayotitlán was impassable during the rainy season, and a river between Telcruz and Ayotitlán prevented vehicles from moving between the two centres. In 1994, PRONASOL funds were used to upgrade the road between Cuautitlán and Ayotitlán and to build a bridge across the river between Ayotitlán and Telcruz. The four centres are now connected year round, and a bus service carries passengers in and out of the *ejido* three times a day. There are also a number of smaller roads within the *ejido* that connect some of the medium-sized villages, but these roads are still impassable during the rainy season.

The community has 50 primary schools, 4 junior high schools, and one high school (INEGI, 1995). Most, if not all, of the teachers are mestizo and come from outside of the community. The high school is located in the village of Ayotitlán; and, until now, it has had to share its facilities with the local junior high school. However, a new high school is currently being built, and should be ready by the year 2002, which is also the first year that all grade levels will be offered.[133]

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[131] Ayotitlán is the name of both the *ejido*, and one of the two main centers in the *ejido*.

[132] In all, 61% of the inhabitants of Ayotitlán have electricity, and 67% have access to tubed water (INEGI, 1995).

[133] On a general level, schools within the community experience problems of absenteeism and low levels of academic achievement. These problems can largely be explained by the following factors: (1) most children are undernourished; (2) some children have to walk long distances to get to school; (3) sometimes it is necessary for children to stay home and help with the daily chores; (4) generally speaking, the curriculum is not compatible with the community's needs and indigenous culture; and, (5) the school calendar is not adapted to local productive activities and religious ceremonies.

There are two small health clinics in Ayotitlán: one in the village of Ayotitlán, and the other in Telcruz. Both are understaffed and chronically short of supplies and medicine.[134] The *ejido* also counts on a network of so-called '*Casas de Salud*' (Health Houses): small buildings equipped with first-aid supplies and staffed by community members with a minimal amount of health-related training. In addition, there is a Centre for Traditional Medicine in the village of Ayotitlán; but this Centre has not received any funding since it was first established in 1995. All in all, the health facilities in the community fall well short of meeting the medical needs of the local population (Rojas, 1996; SEMARNAP, 2000).

There are three small churches in Ayotitlán: one in Telcruz, one in the village of Ayotitlán, and another in a village called 'Lagunillas'. Whereas religious ceremonies in the latter two reflect a mix of local-indigenous and Catholic beliefs, in Telcruz, the ceremonies appear to be entirely Catholic, which speaks to the higher degree of connectedness that Telcruz has historically had with the outside world, largely because of its geographical location (Rojas, 1996).

The houses in Ayotitlán are mostly constructed from locally available materials. About half of them have adobe walls, and most of the rest have walls made out of either small logs or bricks.[135] Roofs are typically made out of wood and rounded clay shingles (*tejas*); and a layer of plastic or tarpaper is often added to help keep rain from entering. Almost all of the houses have dirt floors, a kitchen area, a sleeping area, a foyer-like living and eating space, and a multi-purpose outdoor patio area. The houses are small by Western standards; less than 3% of them have latrines; and there is an average of 5.6 inhabitants in each one (INEGI, 1995).[136]

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[134] There is only one experienced doctor in Ayotitlán, who splits her time (40 hours a week) between the two clinics. In addition, in each clinic, there are two young doctors and a nurse. The young doctors are doing their residency; they are available 7 days a week, 24 hours a day. The nurses are only available 5 days a week, during the day.

[135] The houses with walls made out of small logs have the logs laid horizontally, and a clay-straw mixture is used to fill the cracks in between. Most of the brick houses in the *ejido* are located in Telcruz; and the rest are found in the village of Ayotitlán (Rojas, 1996). Bricks come from outside of the community.

[136] Even though, by Western standards, the houses in Ayotitlán are small and crowded, and lack amenities, some researchers have warned against using this as a measure of poverty. Both Robertson (no date) and Rojas (1996) suggest that the houses in Ayotitlán are not only compatible with the local natural environment, but also with the lifestyles, values, culture, and cosmovision of the local inhabitants.

The economy in Ayotitlán revolves around subsistence farming. The principal economic activity is the production of corn, which is also the community's main staple. Corn is grown on hillsides, on small plots of land that are cleared using traditional slash and burn techniques. Since the 1970s, some imported technology (herbicides, chemical fertilizers, and hybrid seeds) has been incorporated into the production process, resulting in various forms of environmental degradation. Other subsistence agricultural activities include fruit production, vegetable growing, and animal husbandry (chickens, pigs, and goats). Today, hunting, fishing, and gathering are relatively minor activities, but they are still practiced on occasion, adding some variety to the local diet.

Locals also engage in some agricultural activities that are primarily commercial, the most important being coffee production, the cultivation of fruits and berries, cattle ranching, and beekeeping.

Other sources of income include: government subsidy and social-welfare programs, most importantly PROCAMPO and PROGRESA; wages from temporary work in urban centres and on commercial farms; sales of locally produced artesian crafts (e.g. pottery, embroidery, sandals, hammocks, and rustic furniture); the renting of pastures; and illegal logging.

Besides the economic activity of the locals, within the community's territory, there is also a significant amount of economic activity carried out by outsiders; the most important of these activities are mining, marijuana growing, cattle ranching, and (in the recent past) commercial logging. Of these activities, cattle ranching is the only one that provides locals with any income worth mentioning, but even this is paltry, since pastures are rented out at well below their market value,[137] and since many of the community's best pastures have been usurped by external *caciques*, who pay nothing.

Almost all of the inhabitants of Ayotitlán are Nahaut Indians, whose ancestors have lived on the land since time immemorial. Because of centuries of oppression, racism, and 'modernization', the Nahaut Indians of Ayotitlán have lost many aspects of their native culture. For example, they have forgotten their native language, and they no longer wear

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[137] Gerritsen (1999) reports that, in the village of San Miguel, where some of the community's best pastures exist, families earn between US$ 50 and US$ 175 a year from renting their pastures.

their traditional clothes. However, much of their original culture still remains, constantly evolving, and manifest in their systems of production, social structures, religious ceremonies, stories, values, ways of thinking, etc. What's more, over the past 10 years or so, there has been a deliberate effort to revive and build upon some aspects of this culture.

There are many social problems in Ayotitlán, all of which are related, in one way or another, to the forces that led to the loss of local-indigenous culture: oppression, racism, exploitation and 'de-indianization'.[138] These problems include low-levels of income, unemployment and underemployment, social stratification, malnutrition,[139] illiteracy,[140] alcoholism, and violence. All of these problems can be summed up in one word: *poverty*. The Indians of Ayotitlán live in an extreme state of poverty, forming part of the poorest 24% of Mexico's rural population.

Besides these problems, and related to them, Ayotitlán suffers from a host of environmental problems, including deforestation, soil erosion, loss of soil fertility, pest infestations, the accumulation of garbage, and the contamination of streams and rivers.

The following sections will elaborate on these problems, investigate their local-level causes, and explore links with broader structural forces.

4.3 The Struggle for Control Over Land and Other Natural Resources[141]

As is the case with all indigenous communities in Mexico, in Ayotitlán, the struggle for control over land and other natural resources goes back to the colonial period, when haciendas began taking over the community's land in order to produce cash

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[138] Bonfil defines 'de-indianization' (*desindianización*) as "the loss of original collective identity as a result of the process of colonial domination" (author's translation, 1989: 13)

[139] According to a study conducted by Rojas (1996), ninety-five percent of the children in the Ayotitlán suffer from malnutrition.

[140] Forty-one percent of the population of Ayotitlán over the age of 15 is illiterate (SEMARNAP, 2000)

crops and livestock for Mexico City and Spain. Since it is beyond the scope of this thesis to try to reconstruct this story in its entirety, this section focuses on the developments of the post-World War II period, which is the period during which large-scale capitalist enterprises were able to intensify their exploitation of the community's natural resources, leading to widespread environmental damage.

Central to our analysis of this process is the manner in which these enterprises were able to gain access to the community's resources. As we shall see, this access was facilitated by key segments of the state apparatus. In this regard, links to the structural conditions described in Chapter Three become obvious. As we saw in Chapter Three, in the post-World War II period, Mexico pursued a development strategy of import-substituting industrialization (ISI), which gave priority to the modern urban industrial sector, and which called for the exploitation of Mexico's natural resources by large-scale capitalist enterprises. These enterprises were considered to be the most efficient vehicles for providing raw materials and economic surplus for the industrialization project. As such, political and social structures were created to facilitate these enterprises' access to the country's most important natural resources, including those of Ayotitlán.

These structures also had to include mechanisms to maintain political stability. The most important mechanism in this regard was land reform. As we saw in Chapter Three, over the course of the twentieth century, over half of the country's territory was delivered to landless peasants, in exchange for their political loyalty. However, the best land and the most important natural resources were reserved for large-scale capitalist enterprises. In Ayotitlán, as in the most of the rest of the country, the land-reform process was held back and fed leftovers, while capitalist enterprises feasted on the community's wealth of natural resources.

We will begin our analysis of these structural forces in Ayotitlán by reviewing the history of the formation of the ejido.

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[141] This section draws heavily on Rojas (1996): an 8-year multi-disciplinary study of the *ejido* of Ayotitlán, which focuses largely on social and political issues. Additional information was obtained from other publications and by interviewing community members and knowledgeable outsiders.

4.3.1 The History of the Formation of the Ejido

In 1691, the King of Spain granted a land title to the 'Republic of Ayotitlán'. Although a copy of this document has never been found, reference to it is made in another document entitled "*manifestación hecha por parte de los naturales del Pueblo de Ayotitlán, Provincia de Amula*", which is dated 1757 and signed by don Felipe Vizcaino y Urrutia, a legal representative of the viceroy (Robertson, n.d.). Not only does this latter document make reference to the original land title, but it also establishes the territorial boundaries between Ayotitlán and the haciendas that surrounded it at the time. Based on this document's description of these boundaries, it has been estimated that, in 1757, the size of Ayotitlán was somewhere between 100,000 and 447,000 hectares.[142]

Over the course of the next 150 years, however, the size of Ayotitlán shrunk dramatically as haciendas took over the community's land in order to produce cash crops and livestock for Mexico City and the international market. This process was accelerated in the last part of the nineteenth century, during the dictatorship of Porfirio Diaz, who put in place structures that encouraged the expansion of haciendas at the expense of communal landholdings. By the time the Mexican revolution broke out in 1910, Ayotitlán's territory had been reduced to approximately 8,300 hectares (Robertson, n.d.).[143]

After the war, the Indian peasants of Ayotitlán applied to the State to have their land returned to them. According to the guidelines set out in the 1917 Constitution, there were three channels through which they could apply: restitution, *dotación* (roughly translated as 'provision'), and amplification. The first was for peasants who had land titles from before the revolution; the second was for those without land titles; and the

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[142] According to Angulo (1996), the territory described in the 1757 document is about 100,000 hectares in size. However Robertson (no date) reports that the community hired an engineer to estimate the size of the territory described in the document, and that he calculated it to be approximately 447,000 hectares.

[143] This statistic comes from a governmental document that contains information on the number and size of haciendas and community landholdings in the region where Ayotitlán is located. The document is dated 1892 (Robertson, n.d.).

third was for those who had already been granted land through one of the first two channels. In 1921, the community of Ayotitlán applied for land via the restitution process. This process was approved by the governor of the state of Jalisco in 1927. However, the federal government did not respond until 1956, and only then to notify the community that it would not acknowledge the authenticity of the 1757 document, thereby converting the process to one of *dotación*.

In reality, the authenticity of 1757 document is indubitable. Not only does it correspond to the oral testimony of community members, but it also has the support of palaeographic evidence (Rojas, 1996). The real reason for rejecting the document was because of pressure from commercial-logging *caciques*. During the mid-1900s, a handful of logging *caciques* were accumulating fortunes from their forestry operations in the Sierra of Manantlán. By having the 1757 document rejected, these *caciques* were able to reduce the size of the community's land claim, and delay the local land-reform process.

To be sure, the governmental agencies in charge of the land-reform process – the Mexican Agrarian Council (CAM) and the Department of Agrarian Affairs and Colonization (DAAC) – were willing accomplices. As mentioned earlier, during the postwar period, local-specific decision-making of this type stemmed from clientelistic relationships between *caciques* and governmental officials. And, on a broader level, the country's ISI development strategy called for the exploitation of the country's natural resources by large-scale capitalist enterprises.

Because of these dynamics, the land-reform process in Ayotitlán was stalled for over four decades. It wasn't until 1963, forty-two years after the community applied for land, and seven years after the process had been converted to one of *dotación*, that the federal government finally announced its resolution to create a 50,332-hectare *ejido* in Ayotitlán. However, even this did not result in the immediate handing over of land.[144] Capitalist interests were able to stall the process for another 14 years before any land was officially handed over; and then, only 34,700 of the original 50,332 hectares were

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[144] Once a presidential resolution is made, the land is 'provisionally' handed over to the respective community. However, as Rojas points out, "the provisional handing over of land to ejidatarios doesn't have, in real terms, any validity; it is only a political act, a symbolic act of social justice" (author's translation, 1996: 59).

delivered. Today, thirty-eight years after the Government's resolution, the community of Ayotitlán is still waiting and pressuring for the remaining 15, 632 hectares.

In 1965, two years after the first resolution, the community applied for more land via the amplification process. In 1974, the Government announced a resolution in favour of this process, amplifying the *ejido* by 10,350-hectares. But it wasn't until 1981 that this land was officially handed over; and, by the time it was handed over, it had been completely deforested by commercial loggers (Rojas, 1996).

To sum up, the community's original land title from the sixteenth century was completely dismissed; and, of the sixty thousand hectares granted by the state in the second half of the twentieth century, only 45,000 were handed over. The delays and omissions associated with this process all stem from the state's priority to accommodate the needs of capital.

4.3.2 The Penetration of Logging Companies

Commercial logging activities have been carried out in Ayotitlán, and more generally in the Sierra of Manantlán, since at least the late-1800s, at which time the foreign-owned Colima Lumber Company began extracting precious hardwoods from the area (Robertson, n.d.). It appears that logging activities abated during the revolution, only to be reinitiated with more vigour in the 1920s, by other foreign-owned companies, working in concert with local logging *caciques*. It wasn't until the post-World War II period, though, that the rate of extraction reached a level of 'relentless mining', leading to rapid deforestation.

In the postwar period, there were a number of *caciques* carrying out logging operations in the area. According to the research conducted by Rojas (1996), the main one was a person by the name of Antonio Correa. Correa dominated the local forestry from 1950 to 1983, deforesting an estimated 36,000 hectares of land in the process. The secret to Correa's 'success' stemmed not only from his clientelistic relationships with

high ranking government officials, but also from the financial backing he received from US capital.[145]

The tactics used by Correa and his accomplices to secure access to the forests of Ayotitlán include the following: (1) making fraudulent land claims; (2) stalling and partially blocking the local land-reform process; (3) spreading violence throughout the community; and, (4) creating internal divisions within the community.

(1) Making fraudulent land claims. Correa claimed to own 22,500 hectares of the land in and around what is now officially recognized as the *ejido* of Ayotitlán. The basis for this claim stems back to before the revolution, when the Mexican government obliged landowners (including communities that owned land collectively) to pay property taxes. According to an article published in 1969 in the newspaper *El Occidental*, at the turn of the century, the community of Ayotitlán had to pay for these taxes in kind, with 2,500 hectares of forested land (cited in Rojas, 1996). However, there is some doubt as to whether or not this is true. Rojas (1996) suggests that the Government may have simply used property taxes as an excuse to usurp the land and transfer it to private hands, where it could generate revenue.[146] In any case, according to *El Occidental*, this land passed through the hands of various owners until it was finally acquired by Correa, in 1939. However, as soon as Correa came into possession of the land, it somehow increased in size from 2,500 to 22,500 hectares. Obviously, some type of fraud was committed, and no doubt with the complicity of governmental agencies. Thus, from the available information, it appears that Correa and his allies were able to use a questionable land title (of 2,500 hectares) to help stall the local land-

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[145] On April 20th, 1969, the newspaper *El Occidental* published the following: "From 1957 until now, the authentic exploiters of the forests of Ayotitlán and Manantlán have been foreigners Bruce Hoover and Frost Snyder, according to the documents we have seen... In reality, those who appear to have concessions for these exploitations, like Mr. Correa or Avelino Hervella, are only elements that have lent their services to a powerful foreign company..." (author's translation, cited in Rojas, 1996: 82).

[146] Even if the taxes were legitimate, one has to question the fairness of governmental policies that oblige indigenous communities to pay taxes in the form of land. The productive activity in Ayotitlán has always been geared towards subsistence living. Therefore, one hundred years ago, the community simply would not have had the money to pay taxes; nor would it have received any benefits in return. Hence, a policy that requires communities such as Ayotitlán to pay taxes in kind is essentially a mechanism for appropriating and privatizing communal land.

reform process and to gain access to tens of thousands of hectares of Ayotitlán's forests.

(2) Stalling and partially blocking the local land-reform process. As outlined above, it took forty-two years (from 1921 to 1963) for the Government to announce its resolution to create an *ejido* in Ayotitlán, and another fourteen years before any land was handed over. The first delay can be explained, in part, by the time it takes for government employees to conduct censuses and to survey land. Considering the amount of land that was eventually transferred to the social sector – over half of the country's territory – it is reasonable to expect censuses and surveys to take a few years to complete. However, there is little doubt that the main reason for the extraordinary long delay has to do with the pressure from Correa, and perhaps from other logging *caciques*, to delay the local land-reform process. As mentioned above, one of the tactics used to stall this first phase of the process was to have the community's 1757 land title rejected.

With respect to the second delay, the fourteen years that it took for the agrarian authorities to partially execute the presidential decision to create an *ejido*, there is really no other reasonable explication aside from allowing Correa more time to mine the community's timber. In this instance, Correa's blatantly fraudulent land claim was instrumental in stalling and partially blocking the process. As mentioned above, only 34,700 of the designated 50,332 hectares were handed over in 1977. The 15,632 hectares that were not handed over supposedly belonged to Correa. Not surprisingly, this land had the densest and most valuable forests on it (Rojas, 1996).

Correa and his allies in government were able to use similar tactics to delay the amplification process. As mentioned above, it took nine years (from 1965 to 1974) for the federal government to announce its resolution in favour of this process, and another seven years to execute it. In the meantime, Correa was able to accelerate his logging activity on the designated land;[147] and, by the time the

[147] Based on information published in the newspaper *El Occidental*, in 1969, in the four months after the governor of Jalisco officially approved the amplification process, Correa cut down 58,000 cubic feet of fine

land was finally handed over (in 1981), it had been completely deforested (Rojas, 1996).

(3) Spreading violence throughout the community. During the 33 years that Correa carried out logging operations in Ayotitlán, violence was spread throughout the community in response to, and in an effort to pre-empt, local resistance. To begin with, in the early 1950s, when Correa's logging operations were just getting underway, the village of Tenamaxtla was destroyed and many of its inhabitants were massacred for resisting the penetration of commercial loggers.[148] This massacre was ordered by army general Marcelino García Barragán, a patron/client of Correa, and, incidentally, the same person who ordered, or at least carried out, the 1968 massacre of student protestors in Mexico City.

The violence did not stop there. According to the oral testimony of community members, and to the denouncements of the newspaper *El Occidental*, over the course of the next 20 years, community members were subject to various forms of violent oppression, including intimidation, kidnapping, torture, and murder. It wasn't until the early-1970s, when a group of politicized teachers arrived in the community that the violence began to abate.[149]

(4) Creating internal divisions within the community. In 1972, in the context of nascent organized resistance within the community, Correa was able to buy off a group of community members and, with the complicity of agrarian authorities, put them in charge of the *ejido*. From that time onwards, with the partial exception of a 3-year period during the mid-1990s, the *ejidal* apparatus of Ayotitlán has been dominated by leaders who give priority to the interests of capital.

With all of these tactics, and with the support of the Government and international capital, Correa was able to carry out logging activities in Ayotitlán for thirty-three years. It wasn't until 1983 that his logging activities came to an abrupt end, when community

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timber on the designated land, which is equivalent to the amount of timber he had been authorized to cut down in a two-year period (Rojas, 1996: 78).

[148] Interview with Don Nazario Al Dama, one of the elders of Ayotitlán (September 21, 2001).

[149] Interview with Don Felipe, one of the elders of Ayotitlán (October 10, 2000).

members set fire to his equipment. This, however, was not the end of commercial logging in Ayotitlán. Around the same time, another logging *cacique*, Guadalupe Michel Victoria (otherwise known as 'El Cazango'), began making arrangements to take over the local logging industry.

Michel used many of the same tactics as Correa to gain access to the community's forests. To begin with, he made use of a fraudulent land title, even more obviously fraudulent than Correa's. Apparently, the land-title in question was acquired by Michel by suing a deceased woman in 1932; Michel then sold the land, once in 1971 to some relatives, and then again in 1976 to two other people. Then, in 1979, the multiple owners elaborated a document with the intention of covering up the double-sale fraud by indicating their agreement to ignore the validity of the first sale. All of this, while the land in question had already been granted to the community of Ayotitlán by the executive branch of the federal government (in 1963) and handed over to the community by the agrarian authorities (in 1977) (Rojas, 1996).

In spite of these irregularities, and in spite of the legal measures taken by several community members to block Michel's access to the forests, Michel was able to carry out highly lucrative logging activities for two or three years in the mid-1980s. Like Correa, Michel received the crucial support of several key actors, including the agrarian authorities, the state police, and the *ejidal* authorities. It was not until the RBSM was created in 1987, that all commercial logging activities in Ayotitlán came to an end.

4.3.3 The Penetration of Mining Companies

Mining companies have been exploiting the natural resources of Ayotitlán since at least the early-1960s. Currently, there are at least two mining companies in Ayotitlán: a parastatal company called Peña Colorada and a private one called Minera de Monterry. Of the two, Peña Colorada is the largest and most important. Both are exploiting the community's natural resources without the permission of the community at large, and without paying the community the indemnification to which it is legally entitled, according to Mexico's Mining Law.

These companies were able to gain access to community's natural resources with the help of the state government of Colima and the municipality of Minatitlán, which is located just south of Ayotitlán, in the state of Colima. Sometime in the early- to mid-1900s, these two governments began extending their jurisdiction into the municipality of Cuautitlán, and into the state of Jalisco. The border that has divided the two states/municipalities since the nineteenth century, the river Marabasca, is the same as the one that was used to delimit Ayotitlán's territory in the aforementioned 1757 land title, and the same one that was used to delimit the 34,700 hectares of land that were delivered to the community in 1977. However, in order to accommodate the interests of mining companies, the state of Colima and the municipality of Minatitlán changed the name of the river and moved the state border approximately 12 km into Jalisco, arbitrarily extending their jurisdiction into 8,000 hectares of Ayotitlán's territory. With this manoeuvre, the municipality of Minatitlán was able to collect thousands of pesos of taxes (annually) from Peña Colorada and other mining companies (Rojas, 1996). Although the State of Jalisco and the municipality of Cuautitlán still recognize the river Marabasca as the border between the two states, these two governments have remained quiet accomplices throughout the entire process.

Community-based organizations in Ayotitlán, on the other hand, have taken legal action to try to sue the mining companies. Because these companies are mining on land that was supposedly delivered to the community in 1977, they are obliged by law to pay the community indemnification. So far, they have paid nothing, and, the community's legal action has now been stalled in the courts for 20 years. Meanwhile, Peña Colorada continues to extract 10,000 tones of iron per day (Rojas, 1996).

4.3.4 The Penetration of Ranching Caciques

A group of ranching *caciques* have also laid claim to part of Ayotitlán's territory. These *caciques* acquired the land, first, by invading it and claiming it was their own; and, then, when they were unable to prove that it was their own, they petitioned the Government to give them the land in the form of an *ejido*. In 1981, the executive branch of the federal government announced its resolution to create the *ejido* 'El Rodeo',

granting the *caciques* 4,300 hectares of land that had previously been granted to Ayotitlán, in 1963.

4.3.5 The Penetration of Conservationists

In 1979, researchers from the University of Guadalajara and from the University of Wisconsin discovered an ancient relative of corn (Zea Diploperennis) in Ayotitlán, attracting national and international attention to the area's high degree of biodiversity (Graf et al., 1995). Since then, there has been a concerted effort to promote biological research and conservation in the area. These efforts led, first, to the creation of Las Joyas Scientific Station in 1984 (a research centre that occupies 1,200-hectares of the community's territory); then, in 1985, to the formation of the Manantlán Institute of Ecology and Conservation of Biodiversity (IMECBIO); and, then, finally, in 1987, to the creation of the Sierra of Manantlán Biosphere Reserve (RBSM). The RBSM covers approximately 45% of Ayotitlán's territory (Gerritsen, 1998). Half of the community's territory in the Reserve lies in the buffer zone, where certain rules and regulations pertaining to the use of natural resources must be observed; the other half lies in the reserve's nucleus, where human settlements and productive activities are prohibited.

4.3.6 The Community's Organized Resistance: Social-Activist GSD

In Ayotitlán, organized resistance to the penetration of large-scale commercial enterprises began to coalesce in the 1970s, in the context of a nation-wide political crisis and a nascent grassroots movement. As with other marginalized communities in rural Mexico, grassroots organizing in Ayotitlán was stimulated by the arrival of politicized outsiders. In 1972, a group of elementary school teachers arrived in the community and began helping the community organize itself in defence of its local natural resources, particularly the forests. In the mid-1970s, these teachers introduced a radical peasants' organization into the community: the *Alianza Campesina Revolucionaria* (ACR), which also helped spur on grassroots organizing, and which eventually linked Ayotitlán's struggle to national-level movements via the CNPA.

In their struggle for land and for other natural resources, community members used a variety of tactics, all of which correspond with the model of social-activist GSD presented in Chapter Two. Initially, community members took legal action in an effort to block loggers, sue mining companies, and obtain the land that had been granted to the community but never delivered. However, by the early 1980s, when all of this proved futile, the community turned to more radical protest actions. In 1983, community members destroyed Correa's logging equipment by setting fire to it; and, in 1985, access roads were blocked in order to prevent Michel's logging equipment from passing, resulting in a violent clash with riot police (Rojas, 1996). In response to these types of actions, the state police were brought in, curfews were imposed, suspected leaders were detained and beaten, check points were established in order to keep track of vehicles going in and out of the community, and so on.

In addition to these local-level protest actions, and around the same time, some community members participated in national-level events organized by the CNPA. As mentioned in the preceding chapter, in the late-1970s and early-1980s, the CNPA was the leading umbrella organization for Mexican peasants, articulating their strategies and demands on the national level. In this way, community members began networking with other grassroots organizations in an effort to bring about more fundamental change.

Although the sum of these efforts acted as a major obstacle to commercial logging activities in Ayotitlán, it was not enough to put an end to the plunder. In order to accomplish this, the community had to form an alliance with the sponsors of the RBSM. To be sure, the community was split on the issue. On the one hand, internal *caciques* who controlled the *ejidal* apparatus, and who enjoyed the patronage of logging *caciques*, were clearly opposed to the creation of the RBSM; they quite rightly saw it as a threat to their privileged position. On the other hand, community members who had, for many years, been at odds with commercial logging interests saw the reserve as a vehicle for neutralizing internal *caciques* and improving the living conditions within the community; they supported the creation of a biosphere reserve, even though they had serious reservations about the rules, regulations, and restrictions that it implied.

When the RBSM was created in 1987, political conditions within the community changed in some significant ways, and community members adapted their strategies accordingly. With the creation of the Reserve, logging *caciques* were expelled; internal *caciques* were, to some extent, neutralized; violent oppression virtually disappeared; and technical and financial assistance became more readily available. In this context, the community began dedicating more energy towards internal organizing, leading to the formation of a number of community-based organizations, including: (1) the Society of Social Solidarity (SSS), an organization that grew out of the ACR, and that focuses mostly on small-scale productive activities; (2) the Union of Indigenous Communities of Manantlán (UPIM), a politically oriented organization designed to gain more control over local natural resources and to offset the power of internal *caciques*; and, (3) the Council of Elders, a traditional social structure that was revived in order to help democratize decision-making within the community, and in order to help gain control over local natural resources. The latter two organizations continue to pressure the Government for the 15, 632 hectares of land that was granted to the community but never delivered; and, they continue to struggle against the mining companies and logging *caciques* that exploit and degrade the community's natural resources without the permission of the community at large.

The Zapatista uprising also changed the political landscape in Ayotitlán. To begin with, since the uprising, there has been a barrage of government spending directed towards Ayotitlán and other marginalized indigenous communities located in mountainous areas. This spending has been delivered through a variety of channels, including PRONASOL's Municipal Funds Program, INI and the Regional Funds Program, state-level revenue sharing formulas (*Zonas Prioritaries*),[150] PROGRESA, and PROCAMPO. Over the past seven years, this spending has literally changed the face of Ayotitlán, providing potable water, electricity, roads, bridges, schools, health facilities, productive projects, and so on. At the same time, it has presented new challenges for community-based organizations such as the SSS, the UPIM, and the Council of Elders.

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[150] *Zonas Prioritarias* is a mechanism that was incorporated into the state-level revenue-sharing system during Zedillo's term in office. It directs additional funds to municipalities that have a large percentage of their population living in extreme poverty.

For example, the members of these organizations must now ask themselves: How can we take advantage of these newly available resources? How can we avoid co-option? And, how can we stop internal *caciques* from capturing the lion's share?

In a broader context, the Zapatista uprising has also provided the community with an opportunity to link its local-level struggle with a national-level indigenous movement. In this connection, community members have participated in many of the events organized by the Zapatistas, including national-level indigenous conferences and protest marches in Mexico City. They have also made formal declarations in support of La Ley Cocopa; and, in line with all this, in the year 2001, they declared the community of Ayotitlán to be an autonomous indigenous community. In these ways, the Indians of Ayotitlán are practicing social-activist GSD in an effort to bring about structural change.

4.3.7 Summary

In this section we examined the struggle for control over natural resources in Ayotitlán. We began by describing how capitalist enterprises were able to gain access to these resources, followed by a description of the community's organized resistance to these enterprises. The main objective of this section was to investigate links between local-level conditions and broader structural forces.

What we saw was that, in the postwar period, capitalist enterprises were able to gain access to the community's most important natural resources. This was made possible by the crucial support of key elements of the state apparatus, including the agrarian authorities (the CAM and the DAAC), some branches of the legal system, the army, the state police, and the relevant municipal and state governments. Together, these agencies presented a wall of bureaucracy that accommodated the interests of capital, blocked the claims of peasants, and protected the image of the highest authorities of the state. This is not surprising; it fits with ISI and with neoliberalism, which call for the exploitation of the country's most important natural resources by large-scale capitalist enterprises.

With respect to the community's organized resistance, it is typical of the grassroots movement in rural Mexico that began in the 1970s: it was initiated with the help of social

activists from outside of the community; it included protest actions typical of social-activist GSD, such as legal action, protest marches, road blocks, and sabotage; it was linked to umbrella organizations in the 1980s; and it was linked to the Zapatista movement in the 1990s. In addition, in the mid-1980s, the community entered into a decisive alliance with the sponsors of the RBSM, leading to the expulsion of commercial loggers. Within the past 30 years, violent oppression has virtually disappeared from Ayotitlán; a political space has been created for the formation of autonomous grassroots organizations; and, the community has been provided with some economic resources and technical assistance.

In spite of these advances, many problems and injustices still exist in Ayotitlán: mining companies and cattle-ranching operations continue to exploit and degrade the community's natural resources; the creation of the RBSM has deprived the community of much of its territory; and almost all of the community members continue to live in conditions of extreme poverty.

In the following sections we will examine other factors that have contributed to the environmental degradation of Ayotitlán, and investigate their links with broader structural forces.

Table 4.1 Summary of the History of the Formation of the Ejido of Ayotitlán

1691	King of Spain grants the 'Republic of Ayotitlán' a land title.
1757	The territory of Ayotitlán is delimited in a document signed by a legal representative of the viceroy. According to this document, the size of Ayotitlán should be somewhere between 100,000 and 447,000 hectares.
Late-1800s	Foreign-owned logging companies begin to extract timber.
1921	The community of Ayotitlán applies to the Government for the restitution of its territory.
1927	Governor of Jalisco gives official notification in favour of the restitution process.
Early-1950s	Logging *cacique* Antonio Correa begins to exploit Ayotitlán's forests. Massacre in Tenamaxtla, ordered by general Marcelino García Barragán.
1956	Logging *caciques* Antonio Correa, Marcelino García Barragán, and Longinos Vázquez put pressure on the Government to reject Ayotitlán's application for restitution of communal land and to revert the process to one of *dotación*.
1960	Logging-*cacique* Antonio Correa receives 25-year concession from the federal government to exploit the forests of Ayotitlán
1963	The Official Gazette of the Federation publishes the presidential resolution to create a 50,332-hectare *ejido* in Ayotitlán.
1965	Ayotitlán applies for the amplification of its *ejido*.
1968	Governor of Jalisco gives official notification in favour of the amplification process. The Supreme Court orders the CAM to hand over the land that the federal government granted to Ayotitlán in 1963.
1972	Politicized teachers arrive in Ayotitlán. Correa and his accomplices put 'puppets' in charge of *ejidal* apparatus.
1974	The Official Gazette of the Federation publishes the presidential resolution to amplify the *ejido* of Ayotitlán by 10, 350 hectares.
1977	Partial execution of the 1964 resolution to form an *ejido* in Ayotitlán: the Government hands over 34,700 hectares of land.
1979	Ancient relative of corn, Zea Diploperennis, is discovered in Ayotitlán, attracting worldwide attention to the area's high degree of biodiversity.
Early-1980s	Ayotitlán links its struggle with the national-level grassroots movement being led by the CNPA
1981	Execution of amplification: the Government hands over 10,350 hectares of land. Community members take legal action to sue the mining company Peña Colorada. The Official Gazette of the Federation publishes the presidential resolution to create an *ejido* called El Rodeo, taking away 4,300 hectares of Ayotitlán's territory.
1983	Community members set fire to logging-*cacique* Antonio Correa's logging equipment, putting an end to his logging operations in the area.
1984	Establishment of Las Joyas Scientific Station.
1985	Logging *Cacique* Guadalupe Michel uses riot police to gain access to the community's forests.
1987	The RBSM is created by presidential decree. Commercial logging ends.
1994	The Zapatista uprising prompts the Government to direct a wave of social welfare spending towards Ayotitlán and many marginalized indigenous communities. The community links its struggle with the Zapatista movement.
2001	Community members declare Ayotitlán to be an autonomous indigenous community.

4.4 The Resource-Management System

In Ayotitlán, there are two resource-management systems superimposed on each other: one traditional, and the other *ejidal*. Over the past 30 years, the latter has been gradually displacing the former, resulting in the concentration and parcelling of land, causing internal conflicts, and contributing to the degradation of Ayotitlán's natural-resource base.

As is the norm for Mexico's indigenous communities, in Ayotitlán, the traditional resource-management system is based on communal values, and geared towards the needs of the community. According to this system, community members cultivate land collectively in groups of ten to fifteen people, often bound together through close family ties. A particular family often works the land for several generations; there is no need for fences; and, conflicts over land-use are resolved by the Council of Elders.

Over the past 30 years or so, this system has been gradually transformed by: (1) the imposition of the *ejidal* system; (2) the penetration of the market economy; (3) the loss of traditional cultural values; and, (4) increased demographic pressure.

(1) The imposition of the *ejidal* system. It is important to underscore that the *ejidal* system was imposed on the community of Ayotitlán. As mentioned above, the community originally applied for land via the restitution process, with the intention of creating a *comunidad*, which would have been somewhat more compatible with the community's traditional resource-management system.[151] However, in an effort to undermine communal values, and to facilitate the penetration of large-scale capitalist enterprises, the Government converted the restitution process to one of *dotación*.

In line with the modernization paradigm, which prevailed in Mexico throughout the postwar period, *ejidal* authorities were encouraged, from above, to assign community members individual usufruct rights (Grindle, 1990). This

[151] As mentioned in the Chapter 3, although *comunidades* are similar to *ejidos* in many respects, they differ in two important ways. First, it is more common for *ejidos* to officially parcel out their land. And, second, in *ejidos*, only one family member is allowed to inherit the usufruct rights of an original *ejidatario*, whereas in *comunidades* all of the descendants of an original *comunero* have the same rights.

encouragement was given further impetus in 1992, when Salinas made changes to the Agrarian Law and to Article 27 of the Constitution. Even though Ayotitlán is one of the few *ejidos* in Mexico that has so far resisted the pressure to formally parcel out its land,[152] the imposition of the *ejidal* system has led to some *informal* parcelling of land. In this connection, the *ejidal* authorities (i.e. the *Comisariado* and the Council of Vigilance), have allowed many community members to fence off communal land and to claim it as their own, leading to social differentiation and internal conflict.

As mentioned above, the *ejidal* authorities of Ayotitlán are corrupt. From 1972 onwards, with the partial exception of a 3-year period in the mid-1990s, the *ejidal* apparatus (i.e. the *Comisariado*, the Council of Vigilance, and the Assembly) has been dominated by a small group of community members who are affiliated with the CNC. These people enjoy the patronage of, and are kept in place by, the CNC, the Ministry of Agrarian Reform (SRA), the PRI, the municipal authorities, and the capitalist enterprises that exploit the community's natural resources; and, they make decisions accordingly; that is, their decisions reflect the priority to accommodate the needs of capital and to stay in power. Furthermore, within the community, these people act as internal *caciques*, rewarding those who are loyal to them by, inter alia, allowing them to fence off communal land and claim it as their own, and punishing those who oppose them by, inter alia, taking away their *ejidal* rights, and in some extreme cases, by denying them a parcel of land to cultivate corn. The dynamics of this 'internal *caciquismo*' will be examined in more detail below; the thing that needs to be highlighted here is that, in Ayotitlán, the *ejidal* system is dysfunctional in terms of resource management.

(2) <u>The penetration of the market economy</u>. Underlying and associated with the problems caused by the *ejidal* system is the penetration of the market economy. Although the local economy still revolves around subsistence production, over the years, there has been an increase in productive activities oriented towards the

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[152] Only 15% of the *ejidos* in Mexico have not been officially parceled (SEMARNAP, 1999).

national and international markets. The most important of these activities include cattle ranching, coffee growing, commercial corn production, and fruit production (Angulo, 1996). Where production is geared towards the market, land tends to be concentrated in the hands of fewer families, and production tends to be intensified, in order to produce the desired surplus (Angulo, 1996; Rojas, 1996). Moreover, as outlined in the previous chapter, the neoliberal structures of the past 20 years have led to a dramatic drop in the producer price of corn and coffee, requiring commercial producers of these products to further expand and intensify their operations in order to generate a reasonable profit. From another perspective, the monetization of the local economy has encouraged many community members to temporarily emigrate in search of employment, meaning that they have less time to work and properly maintain their subsistence plots of land, leading to 'short cuts' such as the spraying of herbicides, for example.

(3) The loss of traditional cultural values. The penetration of the market economy has also contributed to the loss of traditional cultural values, which has in turn affected the system of resource management. In the past, the objective of all economic activity was to produce enough so as not to go hungry; now, the objective of much of the community's economic activity is to accumulate wealth. Because of this, communal values have largely been displaced by individual ones; or, put another way, sharing has largely given way to competition. In the past, it would have been unthinkable to try to take over a neighbour's land, especially if it had been in his family for generations; now, it happens frequently. With the complicity of the *ejidal* authorities, and in the context of increased availability of governmental resources for individuals that want to implement 'productive projects', many community members seek to increase their landholdings, to take advantage of external funding, and to gain an advantage over neighbours and kinfolk.

(4) Increased demographic pressure. Although the population growth rate in Ayotitlán has been drastically curbed by permanent emigration, the population continues to grow: today, there are at least twice as many people living in the

community than there were a hundred years ago.[153] This has intensified the competition for access to natural resources and brought about the need to increase overall production. This, combined with the factors mentioned above, has prompted locals to clear new ever-more-marginal land each year, to reduce fallow periods, and to try to intensify agricultural production with imported technology, all of which contribute to the degradation of the local natural resource base.

It is important to emphasize that Ayotitlán's traditional resource-management system has not completely disappeared: it continues to exist, in a somewhat crippled form, in the same space and time as the new capitalist/*ejidal* system, creating a very complex situation. For example, during this research, when community members were asked whether or not their families owned individual parcels of land, some would say that they did and that every family in the community owned a private parcel of land; and, others would insist that all of the land was owned in common, and that parcels of land were only temporarily assigned to individual families. Along the same lines, while some community members fence off land and claim it as their own, others continue to work parcels of land collectively; or, in other situations, community members 'lend' a part of their land to someone in need. It bears mentioning in this regard that, over the past ten years, as part of a general effort to revive and build upon the traditional local-indigenous culture, many community members have gone back to working parcels of land collectively.[154]

In summary, over the past thirty years, in the context of the structural conditions described in Chapter Three, the traditional resource-management system in Ayotitlán has been eroded and partially displaced by the *ejidal* system, by the penetration of the market, by changing values, and by increased demographic pressure. This has resulted in the informal parcelling of land, the concentration of land, the clearing of new land, and the intensification of production. All of this has contributed to local environmental degradation.

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[153] Robertson (no date) quotes a document from the historical archives of Autlán, estimating that the population of Ayotitlán in the year 1904 was 2704.

[154] Interview with Cesar Díaz, member of UACI that has been working and researching in Ayotitlán for the past seven years (June 20, 2001).

4.5 The Coamil System

In Ayotitlán, the principle economic activity of the locals is the cultivation of corn, which is mostly grown using a traditional system known as '*coamil*'.[155] This technology was developed in Ayotitlán over the course of several hundred years; it was adapted to the local ecosystem by taking into consideration the characteristics of the soil, the seasons, the area's steep slopes, the natural vegetative cover, and so on. And, it was also adapted to the needs and capabilities of the local inhabitants by taking into consideration the size of the population, the kinds of tools that were available, the availability of labour, the community's social structures, its cultural values, etc. Significantly, this constantly evolving system was able to meet the needs of the local population for several hundred years without destroying the local environment. However, over the past 60 years, and especially over the past 30 years, this system has undergone some significant changes, which have contributed to the community's environmental problems. This section takes a brief look at the causes and consequences of these changes.

In accordance with the traditional *coamil* system, corn is grown on small plots of land called '*milpas*', whose average size is between 1 and 2 hectares. Before seeding, these plots of land must be cleared of their natural vegetation. This is done near the end of the dry season using a slash-and-burn technique: first underbrush is cleared, then large trees are felled, and then the debris is set on fire, adding nutrients to the soil and helping to control pest infestations. The vegetation is cut down in February or March, and the burning takes place in May. Seeding begins after the first rainfall, which comes in June or July, and harvest takes place in December. The two main tools that are used in this process are the machete and the '*coa*'; the latter is a spade-like instrument with a small flat head. In addition, donkeys are used to haul equipment, seeds, and produce to and from the *milpas*. Traditionally, *milpas* were left to fallow for 12 years after one growing season; today, the normal fallow period is two or three years.

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[155] There are actually three systems for growing corn in Ayotitlán: the *coamil* system, a plough-and-yoke system, and an irrigation system. Of the three, the coamil system is by far the most common; this is mostly because the other two systems cannot be used on the steep slopes that cover most of the community's territory. Rojas estimates that the *coamil* system is applied to 5,600 hectares of the community's agricultural land (1,400 of which is seeded and 4,200 of which is left to fallow in any given year), the

The shortening of fallow periods is not the only change that Ayotitlán's traditional *coamil* system has undergone; as mentioned above, there have been a number of changes over the past 30 years, all of which can be linked, in one way or another, to the structural conditions described in the previous chapter. The changes to Ayotitlán's traditional *coamil* system can be summarized in the following terms:

(1) The commercialization of some production units. The traditional *coamil* system was designed to meet the subsistence needs of the community. However, over the past 30 years, in the context of nation-wide rural-development strategies designed to draw marginalized communities into the market economy, some of the production units of Ayotitlán have been commercialized. Where this has happened, the demands of the national and international markets have led to the concentration of land, the clearing of new land, and shortening of fallow periods (Angulo, 1996).

(2) The concentration of land. Today, the size of corn-production units varies greatly: from 2-4 hectares on the low end, to 23-25 hectares on the high end (Angulo, 1996).[156]

(3) The clearing of new land. The clearing of new land is driven mostly by increasing demographic pressure, but also by the penetration of the market economy. As mentioned above, every year, more of the community's land is cleared for agricultural production, contributing to deforestation, amongst other things.

(4) The Shortening of rotation cycles. As mentioned above, traditionally, *milpas* were left to fallow for 12 years after one growing season. Now this is rarely practiced. According to the research of Angulo (1996), nowadays, the majority of the *milpas* in Ayotitlán are only left to fallow for 2 to 3 years, and most of the rest are left to fallow for 5 to 7 years. The shortening of fallow periods has led to soil exhaustion, pest infestations, and soil erosion.

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plough-and-yoke system is applied to 100 hectares, and the irrigation system is only applied to 50 hectares (1996).

(5) Extensive cattle grazing after harvest. It is now common practice for locals to rent out their *milpas* after harvest to cattle-ranchers from outside of the community. Cattle eat the leftover corn plant itself, and as they forage for food on the steep slopes of Ayotitlán, they contribute greatly to the problem of soil erosion.

(6) The disappearance of intercropping. In the past, corn was intercropped with legumes, which not only provided locals with additional produce and helped the community to be more self-sufficient, it also added nitrogen to the soil. This practice has since been abandoned.

(7) The introduction of agrochemicals. Agrochemicals were first introduced into Ayotitlán in the early 1970s. Generally speaking, as time went on, their use became more common, especially the use of herbicides, which greatly reduced the work associated with weeding.[157] Chemical fertilizers are also used by a significant minority of local producers; however, even where chemical fertilizers are used, they are usually applied only in the immediate vicinity of individual plants, and in quantities well below the recommended level (Angulo, 1996). On the whole, the marginal soils of Ayotitlán are poorly suited for agrochemical inputs, and even the limited amounts that have been used over the past three decades have greatly contributed to local environmental problems such as contamination of soil, pest infestations, and erosion.

(8) The introduction of hybrid seeds. Because of the government subsidies associated with the various rural development programs that have been implemented over the years, a minority of producers in Ayotitlán has begun to use hybrid seeds (Angulo, 1996). The vast majority, however, continued to use the local landrace varieties: (1) because they are better adapted to local environmental conditions; (2) because they do not require an expensive package of agrochemical inputs; and, (3) because locals prefer the taste of corn from landrace variety seeds. The

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[156] In this context, the term 'productive unit' refers not only to the land under cultivation in any given year, but also to the land that is in fallow (Angulo, 1996).

continued use of these landrace variety seeds has an extraneous benefit as well: it provides the world with the in-situ conservation of some genetic biodiversity.

To sum up to this point, in Ayotitlán, the production of corn (i.e. the principal economic activity of locals) is carried out using a method that predominantly corresponds with the traditional *coamil* system. However, over the past 60 years, and especially over the past 30 years, this system has undergone some significant changes, leading to various forms of environmental degradation. The question that needs to be asked, here, is: What precipitated these changes? On the one hand, there is increased demographic pressure, which calls for the expansion and intensification of productive activities in order to meet the needs of the local population. This appears to have been the main reason for the clearing of new land and for the shortening of fallow periods; and it also appears to have encouraged the use of agrochemical inputs. On the other hand, there is the penetration of the market economy, which also calls for the expansion and intensification of productive activities, in this case, to produce a surplus for the market. However, as mentioned above, most of the corn produced in Ayotitlán is not oriented towards the market; therefore, the penetration of the market can only account for changes to the *coamil* system to the small extent that corn production has been commercialized. However, from another perspective, some of these changes can be attributed to the market demands associated with agrochemical sales and beef production.

Before moving onto the next section, it should be mentioned that, over the past 5 to 10 years, Ayotitlán's *coamil* system has been experiencing another kind of change: the introduction of ecologically sustainable alternative technology. In this area, the RBSM has taken a lead role, promoting organic pest control, organic fertilizers, and the construction of erosion barriers, amongst other things. Even in the short time that these technologies have been applied, there have been some important advances, most notably in the control of pest infestations.

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[157] Robertson (no date) reports that, in Ayotitlán, the introduction of herbicides reduced the average time required for weeding from one week to one day.

4.6 Diversity and Self-Sufficiency

This section takes a look at Ayotitlán through the lenses of economic diversity and community-level self-sufficiency. Over the past 60 years, and especially over the past 30 years, productive activities in Ayotitlán have become less diverse, leading to a decrease in community-level self-sufficiency (Angulo, 1996; Robertson, n.d.; SEMARNAP, 2001). These tendencies are closely related to trends towards specialization and integration into the market economy. Even though most of the productive activities in Ayotitlán are still geared towards the needs of the local population, over the years, there has been a shift in the direction of commercialization.

Sixty years ago, there was very little economic exchange between Ayotitlán and the outside world; the community was isolated, both geographically and economically. As such, the inhabitants of Ayotitlán engaged in diverse economic activities in order to meet their diverse needs. For example, a variety of plants were grown and collected for medicinal purposes; 'cottage' industries produced most of the community's tools, building materials, clothes, and furniture; backyard gardens and orchards provided a wide variety of fruits and vegetables; wild berries and fruits were collected from the forests; hunting and fishing complemented animal husbandry; and, legumes were intercropped with corn. The diversity of these activities meshed well with the region's high degree of biodiversity in the sense that locals were able to meet their basic needs and enjoy a varied diet without causing major environmental damage.

To be sure, everything was not perfect; in many ways, life in the past was more difficult. This is an important point, to which we will come back later. For the time being, though, what needs to be underlined is that, before the postwar period, Ayotitlán was virtually self-sufficient, it engaged in diverse economic activities, and these activities did not cause major environmental damage.

This began to change about sixty years ago. In the context of national- and international-level development strategies driven by the modernization paradigm, the economy of Ayotitlán began undergoing a process of monetization and commercialization. In many ways, this process was initiated by the large-scale capitalist enterprises that began overexploiting the community's natural resources in the postwar

period. These enterprises impoverished Ayotitlán by depriving it of much of its land and other natural resources on which it depended for its subsistence economy. Unable to meet its needs to the same extent as in the past, the community was forced to engage in money-generating activities in order to buy essential goods and services from outside of the community. Once this process was set in motion, it snowballed: the more commercial economic activity displaced subsistence activity, the less the community was capable of meeting its own basic needs, and the more economic activities had to be further commercialized in order to obtain the money necessary to buy essential goods and services from outside of the community. Of course, in the complex processes of commercialization, monetization, and modernization, there are many other factors that come into play. For example: traditional values begin to change; people begin desiring 'luxury' items and status symbols; some become addicted to alcohol, tobacco, soft drinks, and the likes; and all the while the mass media delivers a strident message to consume more. All of these factors eventually came into play in Ayotitlán.

In Ayotitlán, the trend towards commercializing and monetization were greatly accelerated in the 1970s. As we saw in Chapter Three, this was the period during which the ISI-development model was going through a crisis, leading to nation-wide rural development programs designed to increase agricultural production in marginalized communities, and calling for large-scale capitalist enterprises to accelerate their exploitation of the country's most important natural resources. In Ayotitlán, these structural conditions caused more of the community's resources to shift from a subsistence orientation to a commercial one. For example, areas that were once used for hunting were taken over and destroyed by commercial loggers; lands that were once used to grow subsistence crops were converted to coffee growing or cattle grazing; and, time that was once spent on traditional farming or on maintaining backyard gardens, was dedicated to working on large-scale commercial farms outside of the community.

At the same time, convenient and relatively cheap consumer products began duplicating and replacing locally available ones. This not only led to the accumulation of garbage, but also to the reduction or abandonment of many productive activities, such as intercropping beans with corn, growing fruits and vegetables in backyard gardens, and

making detergents out of plants. All of this added up to a decrease in diversity vis-à-vis productive activities, and a concomitant decrease in community-level self-sufficiency.

Over the past ten years, another trend has been superimposed on this one. In the context of sweeping neoliberal reforms in the rural sector, plummeting producer prices for corn and coffee, increased availability of credit for productive projects through programs such as PRONASOL, and increased technical assistance from various agencies and organizations, there has been a re-diversification of productive activities in Ayotitlán, only this time, oriented towards the market. Along these lines, the community now produces and sells honey, blackberries, soap, sandals, saddle mats, embroidery, ceramics, and rustic furniture. Generally speaking, these productive activities have had a positive impact on the community, providing it with much needed income and employment. Moreover, even though these activities have, to some extent, increased the community's dependence on external markets, they have done so in a relatively safe way in the sense that, because of their diversity, the community's destiny is not pinned on the market demand of a single product.

Finally, with respect to self-sufficiency, within the past 10 years, government subsidy and welfare programs such as PROGRESA and PROCAMPO have done much to increase dependency on the outside world. There is no doubt that these programs have helped make life easier for the inhabitants of Ayotitlán; however, they do so in a potentially dangerous way: in the same way that morphine kills pain, these programs ease the suffering associated with poverty without attacking the root causes; and, they become addictive over a period of time. In the words of the president of the CNC in Ayotitlán:

> By giving out money and groceries, they are putting in the memory of the brains of children that the Government is going to keep supporting them when they are grown up... I'm not saying that PROGRESA has bad results; I don't know, we'll find out as we go along. But, imagine if all that money was put into new productive projects.... PROGRESO is going to end some day, and when that economic support disappears, God knows what we are going to live on.[158]

In summary, in Ayotitlán, over the past 60 years, and especially over the past 30 years, there has been a tendency for subsistence productive activities to be displaced by

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[158] Interview with the local president of CNC (October 19, 2000).

commercial ones; and, until ten years ago, there was a concomitant tendency for productive activities to become less diverse. These trends, combined with paternalistic social welfare programs, have led to a decrease in self-sufficiency on the community level. And, all of this appears to reproduce poverty and contribute to environmental degradation.

This brings us to the end of our analysis of local-level structural conditions. The next section presents a table that connects these conditions to the main immediate causes of environmental degradation in Ayotitlán, and the following sections examine the sustainable development efforts that are currently being pursued in the community.

4.7 The Main Immediate Causes of Environmental Degradation in Ayotitlán

Type of Environmental Degradation	Immediate Causes	Comments
Deforestation	1. Commercial Logging 2. Forest fires 3. Cattle ranching 4. Expansion of *coamil* system. 5. Illegal logging 6. Firewood and construction of houses and fences.	1. Commercial logging has, by far, been the main cause of deforestation in Ayotitlán. It has been estimated that, between 1950 and 1983, commercial logging left 36,000 hectares of land deforested (Rojas, 1996); and this does not include the deforestation that was brought about by the commercial logging activities that were carried out before or after this period. Since logging activities were terminated in 1987, some trees have grown back; however, they are smaller, and there are now problems with pest infestations. 2. Forest fires are the second major cause of deforestation in Ayotitlán. Forest fires have been started accidentally by farmers clearing land to plant corn, by careless campers, by lightening, by community members protesting commercial logging, and by community members protesting the creation of the biosphere reserve (Graf et al, 1995; Rojas 1996). 3. Once land has been deforested, it is used as pasture, mostly by large-scale cattle-ranching operations from outside of the community. 4. Every year new ever-more-marginal land is cleared by locals in order to plant corn. 5. Illegal logging is a relatively minor cause of deforestation in Ayotitlán. Because of the geographical isolation of the community, and because of the constant presence of RBSM personnel, it is difficult for illegal loggers to extract timber without being noticed (interview with RBSM extension worker, May 2, 2001). 6. The local consumption of wood for domestic use is a relatively minor contributor to deforestation in Ayotitlán. Much of the firewood that the community consumes comes from dead trees and the cutting down of trees for houses and fences is regulated and monitored by the RBSM.
Removal of bedrock and creation of disposal sites for contaminated rubble and liquid wastes	1. Mining	It has been estimated that the mining company Peña Colorada extracts 10,000 tons of iron ore per day. In order to accommodate the waste products generated by this mining activity, the company has opened disposal sites within Ayotitlán. To get some idea of the magnitude of the environmental destruction caused by mining activities, within a 2-month period in 1990, Peña Colorada dumped close to 60,000 tons of solid wastes onto the community of Ayotitlán (Rojas, 1996).
Soil erosion	1. Deforestation 2. Grazing of cattle 3. Expansion and intensification of *coamil* system 4. Use of herbicides	1. It is reasonable to assume that a considerable amount of erosion has occurred where steep slopes have been deforested; however, there has not been a study to quantify this. 2. Cattle grazing on hillsides greatly accelerates the erosion process. 3. The clearing of new land for the cultivation of corn and the shortening of rotation cycles has resulted in less vegetative cover on hillsides, which in turn leads to soil erosion. 4. Herbicides eliminate more vegetation than manual weeding, leaving the soil more susceptible to erosion.

Type of Environmental Degradation	Immediate Causes	Comments
Soil exhaustion, toxic contamination of soil, and pest infestations	1. Intensification of *coamil* system	The shortening of fallow periods, the abandonment of intercropping, and the introduction of agrochemical inputs has led to soil exhaustion and toxic contamination, which has in turn made crops more susceptible to pest infestations.
Contamination of streams and rivers	1. Poisoning of crayfish 2. The use of herbicides 3. Human and Animal feces 4. Garbage and bleach	1. Fishermen sometimes poison streams and rivers as a means for killing and capturing crayfish. 2. It is reasonable to assume that herbicides are washed into streams and rivers; however there has not been a study to quantify the seriousness of this problem. 3. The dwellings in Ayotitlán do not have outhouses or flush toilets. In addition, most farm animals are left to roam free. This situation has almost certainly led to the contamination of the water system, especially in the more densely populated areas. 4. Garbage is often found in or around streams and rivers; and it is now common to use bleach for washing clothes.
Accumulation of garbage	1. Increased consumption of manufactured products and processed foods	Over the past 30 years, the community has steadily increased its consumption of manufactured products and processed foods. Some waste products are recycled or re-used (mostly beverage containers), others are burned or buried, and others are left along roads and pathways, or thrown into gullies and streams.

4.8 The Main Local-Level Actors and Their Sustainable Development Efforts

This section provides an overview of the sustainable development efforts that are currently being pursued in Ayotitlán. The idea, here, is to evaluate the effectiveness and the long-term potential of these strategies. This will be done by providing a profile of each of the main local-level actors in the community, and by examining their respective sustainable development strategies through the theoretical lenses presented in Chapter two. The main local-level actors in Ayotitlán are as follows:

(1) The Society for Social Solidarity (SSS)

As mentioned above, the SSS grew out of the ACR's experience of the late-1970s and 1980s, which revolved around local-level resistance to commercial logging activities. Since logging activities were terminated in 1987, the ACR has slowly faded out of the picture, giving way to the formation of the SSS.

The SSS was officially founded in 1990. It is a community-based organization whose primary objective is to promote the development of small-scale commercial industries. These industries include apiculture, hand soap, organic coffee, coffee liqueur, blackberries, and hibiscus. In promoting these industries, the SSS has received technical and marketing support from the University of Colima, and more recently from the UACI.

The profile and projects of the SSS correspond to the model of self-reliant GSD described in Chapter Two: it is a community-based organization that promotes a wide range of small-scale ecologically sustainable development projects. The commercial nature of these projects is not necessarily inconsistent with GSD. In this regard, we recall the advice of GSD-proponent David Korten: "Allocate a portion of surplus local productive capacity (beyond what is required to meet local basic needs) to produce goods and services for export to national or international markets" (1990: 69). This is essentially how the SSS's projects work in practice: they are carried out over and above subsistence agricultural activities.

How successful have these projects been? This depends on the yardstick used to measure success. On the one hand, since only a small percentage of the population is involved in these projects, they have had a relatively minor impact on the community at large, especially in economic terms. On the other hand, they provide a supplementary source of income for the community members who are involved, and they have helped develop organizational skills and self-confidence. It warrants mentioning in this regard that some members of the SSS are also members of the Council of Elders, which is more politically oriented. In this connection, and in the connection with the ACR, the experience of Ayotitlán reflects the tendency for social activism to give rise to and build upon endogenous small-scale development projects, and vice versa.

(2) The Union of Indigenous Communities of Manantlán (UPIM).

The UPIM is a politically oriented community-based organization that was founded in 1990. Although most of the organization's members come from the *ejido* of Ayotitlán, there are also some who come from surrounding indigenous communities, including Cuzalapa, Chacala, and Plan de Méndez. According to one of the organization's founding members, the UPIM was established "to address the needs of the community, especially with respect to human rights abuses and defence of natural resources".[159] In practice, this has led to various forms of political action, especially in the area of alliance building, both within and outside of the community. Within the community, the UPIM has allied itself with the SSS and with the Council of Elders; and, outside of the community; it has built strategic alliances with the UACI (an agency of the University of Guadalajara), the INI, the administrators of the RBSM, the Network of Sustainable Agricultural Alternatives (RASA), and with other indigenous communities.

The UPIM participates in projects and undertakes political action in collaboration with all of these organizations. In collaboration with the Council of Elders, the UACI, and to a lesser extent the SSS, the UPIM has supported legal action along two lines: (1) to obtain the 15,632 hectares of land that was granted to Ayotitlán but never delivered; and, (2) to protect the *ejidal* rights of community members who oppose internal *caciques*. Also in collaboration with these organizations, UPIM members have participated in cultural exchanges with other indigenous communities, in state- and national-level indigenous conferences, and in declarations in support of Zapatista initiatives. And, finally, in collaboration with the UACI, and with the financial support of the INI (in some cases), the UPIM has been involved in a variety of community-level projects, all of which have a strong cultural dimension, and some of which have a productive dimension as well. The UPIM does not take the lead role in any of these projects or political actions; instead, it acts as an interface between various organizations, and provides crucial political support for some projects.

It should be mentioned in this regard that the political importance of the UPIM has waned over the past few years. There are a couple of reasons for this. First, the UPIM is

not a very democratic organization; it has been completely dominated by the only president it has ever had. And, second, over the past seven years, the UPIM has been largely overshadowed by the growing strength of the Council of Elders.

(3) The Council of Elders

Before the imposition of the *ejidal* system, the Council of Elders was the maximum authority in the community of Ayotitlán. It was comprised of twelve of the most respected elders in the community, who made decisions on behalf of the community, resolved internal conflicts, and assigned responsibilities (Robertson, 2001). In the late-1940s, in the context of increasingly violent oppression stemming from commercial logging interests, the Council of Elders was forced to start meeting clandestinely in the forests of Ayotitlán.[160] It wasn't until 1994, with the political support of the UPIM, and the technical support of the UACI, that the Council of Elders began to meet in the open again. Since then, the organization has grown steadily in both strength and numbers.

Today, the Council of Elders is the most important community-based organization in Ayotitlán. Instead of being comprised of just 12 members, as it was in the past, it is open to the community at large, and it includes many members of the SSS and the UPIM. Once a month, representatives from almost all of the villages within the community walk long distances to attend the Council's meetings, which are held in a building built specifically for this purpose, located just a few hundred meters from the village of Ayotitlán. At these meetings, a wide variety of issues are addressed. For example, problems with internal land invasions are discussed, workshops are planned, conferences are organized, declarations are formulated, information is disseminated, and discussions are held with representatives from various governmental institutions (e.g. the Public Ministry Agency, the State Commission for Human Rights, and the Ministry of Health and Assistance). Everyone is welcome to participate in these meetings, including

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[159] Interview with Cerilo, one of the founding members of the UPIM (Sept. 21, 2001).

[160] Interview with Cesar Díaz, member of the UACI that has been working and researching in Ayotitlán for the past seven years (June 20, 2001).

women,[161] issues are discussed at length, and decisions are made collectively. In these ways, the Council of Elders acts as a vehicle for *authentic* participation in Ayotitlán. On the same note, the overarching goal of the Council is "to increase control over resources and regulative institutions", which is entirely consistent with the concept of 'authentic' participation, as defined by the proponents of GSD.[162] In this connection, the main objectives of the Council are as follows:(1) to democratize decision-making within the community, first by wrestling internal decision-making authority away from the *caciques* who dominate the *ejidal* apparatus; (2) to gain control over the natural resources that rightfully belong to the community; and, (3) to participate in policy making at higher levels, particularly at the national level. In line with these objectives, the Council of Elders has pursued various courses of action. For example, it has taken legal action against the *ejidal* authorities; it has tried to take over the *ejidal* apparatus; it has taken responsibility for addressing the community's internal conflicts, especially those which stem from the informal parcelling of land; it has taken the lead role in pressuring the Government for the 15,632 hectares that was granted to the community but never delivered; and it has taken the lead role in linking Ayotitlán's struggle with the Zapatista movement.

To sum up, the Council of Elders is a quintessential example of social-activist GSD in practice. The challenges it faces are formidable. But the simple act of taking on these challenges has, in itself, fostered a sense of pride and self-confidence amongst the Council's members, and it has helped develop leadership and organizational skills.

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[161] Although many of the women in the community attend the Council's meetings, few speak out. This has much to do with the respective roles of men and women in Ayotitlán's traditional society: the primary role of men is to defend the land (*cuidar la coa*); and the primary role of women is to defend the culture (*cuidar la jicara*). Since the Council of Elders focuses largely on land rights, it is not surprising that it is dominated by men. Nevertheless, cultures constantly evolve, and there is no reason why women cannot continue to increase their participation in the Council of Elders.

(4) The Organization of Support for Indigenous Communities (UACI)

The UACI is an agency of the University of Guadalajara that was created in 1994, in the conjuncture of the Zapatista uprising. According to the president of the UACI, the organization was formed to "save, conserve, defend and develop indigenous cultures in their territories" (author's translation, Robertson, 2001). The UACI is based in Guadalajara, and it works with various indigenous communities throughout the state of Jalisco, focussing largely on Ayotitlán and on Huichole communities in the northwest corner of the state.

The UACI began working in Ayotitlán in 1994. Its entry into the community was facilitated by the UPIM, which provided UACI representatives with crucial political support, and introduced them to key members of the community. UACI representatives quickly gained the confidence of community members, and were invited to attend underground meetings of the Council of Elders. This interaction was catalytic, and with the technical and moral support of the UACI, the Council of Elders came out of the forest and began holding meetings in public. Since then, the two organizations have had a symbiotic relationship, undertaking projects together, and mutually empowering one another in the process. To be sure, all of the Council of Elders' projects mentioned above are also the UACI's projects. Decisions regarding these projects are made democratically by the Council of Elders, and the UACI provides suggestions and technical support.

In addition to its work with the Council of Elders, the UACI carries out other projects with the community. These projects all have a strong cultural dimension, and some have a productive dimension as well. Some examples include: the revival of traditional industries such as embroidery and pottery; the marketing of these products, the collection and recording of traditional beliefs and fables; the elaboration of a short book on local traditional medicinal practices, and the establishment of a centre for traditional medicine in the village of Ayotitlán.

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[162] UNRISD defines authentic participation as "the organized efforts to increase control over resources and regulative institutions on the part of groups and movements of those hitherto excluded from such control" (Pearse and Stiefel, 1979:8).

In the seven years that the UACI has been working with the community of Ayotitlán, it has adhered to a methodology of Participatory Action Research (Robertson, 2001).[163] The point of departure for this methodology is for outsiders to sit down, listen, and learn from community members about their vision of reality, their needs, and their priorities (Chambers, 1983). Community members and researchers then enter into an iterative process of discussion, planning, action, and reflection designed to "increase critical consciousness among group members... [and] change the status quo where unjust social, and economic, and decision-making structures exist" (Smith, 1997:177). Hence, in both theory and practice, the UACI's intervention in Ayotitlán corresponds with GSD: instead of imposing development onto the community from the outside and from above, the UACI stimulates and facilitates development from within and from below. Along the same lines, the UACI promotes reviving and building upon traditional technology; and, it acts as link to other indigenous communities and to other grassroots organizations.

What sort of impact has the UACI had on the community? During the course of this research, when this question was posed to community members who work with the UACI, the response was invariable: "since the UACI began coming to Ayotitlán 'things' have improved". By 'things', community members are not referring to more disposable income, more services, or more employment – as UACI members cautiously point out, their intervention has not brought about a measurable increase in the community's material standard of living – rather, the 'things' that the community members are referring to are less tangible, such as improved organizational skills, self-esteem, and self-confidence.

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[163] The particular model of Participatory Action Research (PAR) that the UACI adopted and applied was developed by Juan José Rendón in his work with indigenous communities in Oaxaca (Robertson, 2001). As Robertson (2001) points out, "Rendón's model stems from the methodology of dialogue and the problematization of Paulo Friere" (Robertson, 2001: 2). For an overview of the history of PAR see Fals Borda (1992); and for a definition and description see Smith (1997) or Maguire (1987).

(5) The local cooperative[164]

The local cooperative is a textbook example of self-reliant GSD. It was formed in 1996 by a committee of thirteen community members (four women and nine men), who were elected by a group of fellow community members interested in developing horticulture in backyard gardens/orchards. The cooperative began by selling agricultural equipment on Sundays and holidays in the village square of Ayotitlán; and when its members noticed how much demand there was for these goods, they began looking for ways to expand. In 1998, they received a 40,000-peso loan from INI to build a warehouse/outlet on the outskirts of the village of Ayotitlán. During this transition, they expanded their line of merchandise from 10 types of products to more than 300, including some that are produced within the community. Today the cooperative has 73 associated members; it provides full-time employment to about a half a dozen community members; and it provides the community with low-cost essential goods. Over its 5-year trajectory, it has not only helped meet the needs of the local population, but it has also fostered organizational skills, self-confidence, and self-reliance among its associate members, the indispensable technical support it receives from the RBSM notwithstanding.

(6) The local (junior) high school[165]

The teachers working at the local (junior) high school are apolitical, and their priority is to teach students the state-designed curriculum.[166] However, over and above this curriculum, they promote some forms of ecologically sustainable technology. Projects along these lines include: a vegetable garden that uses alternative technology; a school orchard that will provide (under-nourished) students with fresh fruit once it is

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[164] The following information about the cooperative was obtained from two sources: (1) by assisting a meeting in Ayotitlán between associate members of the cooperative and a visiting World Bank representative (October 22, 2000); and, (2) from a one-page document written by Arturo Moreno Hernández. This document's bibliographical reference is unknown.

[165] As mentioned above, in Ayotitlán, the junior high school and the high school share the same facilities and the same teachers.

[166] While this curriculum provides students with some useful skills, much of its content is highly irrelevant in the context of Ayotitlán. Furthermore, it is heavily laden with an ideological message designed to garner support for the state and to culturally homogenize the population.

mature; a composting project; and support for the recycling project associated with this research (see Appendix A). For the most part, these projects correspond with the HSD model outlined in Chapter Two.

(7) The internal *caciques* who dominate the *ejidal* apparatus

In Ayotitlán, the *ejidal* apparatus (i.e. the Assembly, the Council of Vigilance, and the *Comisariado*) is dominated by a small group of internal *caciques* who are affiliated with the CNC. These *caciques* took over the position of *Comisariado* and the Council of Vigilance in 1972 with the help of logging-*cacique* Antonio Correa and his accomplices in Government. Since then, they have managed to stay in power through fraud, and with the support of the CNC, the municipal government, the PRI, and the SRA. The *ejidal* authorities of Ayotitlán owe their allegiance to these institutions, and they act accordingly, facilitating the economic activities of external *caciques* and large-scale capitalist enterprises within the community's territory. In return, they are given responsibility to administer projects within the *ejido*, providing them with the opportunity to capture a disproportionate share of resources. A couple of examples serve to illustrate. The first has to do with PROCAMPO. The *ejidal* authorities in Ayotitlán are responsible for providing the SRA with a list of community members who are eligible to receive PROCAMPO cheques. Basically, they put whoever they want on this list, including some names that should not be there (i.e. close relatives and friends), and omitting others that should be (i.e. some of the community members who oppose them).[167] The second example has to do with the financial resources made available through INI. The local branch of INI provides credit to individual community members interested in undertaking productive projects such as cattle ranching. In order to take advantage of this credit, community members need to have a place to graze cattle. In this connection, *ejidal* authorities use their positions of authority to fence off communal land for themselves and for their supporters in order to take advantage of this credit and start up (or expand) small-scale ranching operations.

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[167] Interview with Cesar Díaz, member of the UACI (June 20, 2001).

All in all, the *ejidal* authorities of Ayotitlán are corrupt. And, although they do not promote sustainable development per se, they do facilitate capitalist development geared towards GNP growth, and in this sense, they could be considered agents of MSD.

(8) The municipal government of Cuautitlán

As mentioned above, Ayotitlán forms part of the municipality of Cuautitlán. The government of this municipality is located in the mestizo town of Cuautitlán, which has a population of approximately 2000, accounting for about thirteen percent of the municipality's total population (INEGI, 1995). The mestizos in Cuautitlán dominate the municipal government, which makes decisions accordingly. As one observer put it: "If ten candies are sent to the municipality of Cuautitlán, nine of them stay in the municipal centre".[168] By contrast, although the Nahaut Indians of Ayotitlán make up 38 percent of the municipality's population, they have virtually no say in decision-making at the municipal level, and they have traditionally received a far-lesser share of the municipality's resources.

So far, the inhabitants of Ayotitlán have not made any serious attempt to take over the municipal government; internal conflicts prevent them from doing so. For example, in the last municipal elections (in November of 2000), the Council of Elders and the SSS supported the PRD candidate, the UPIM supported the PAN candidate, and the *ejidal* authorities supported the PRI candidate. The PRI candidate won. As a matter of fact, the municipality of Cuautitlán has always been controlled by the PRI; and this has reinforced its clientelistic relationship with Ayotitlán's *ejidal* authorities, who are affiliated with the CNC: a corporatist branch of the PRI.

The municipal government plays two important roles vis-à-vis development in Ayotitlán. First, like the *ejidal* authorities, it forms part of a complex web of accomplices that give large-scale capitalist enterprises access to the community's most important natural resources. And, second, and more germane to our discussion here, over the past ten years, in the context of decentralization, it has acted as a conduit for MSD programs

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[168] Interview with Peter Gerritsen, head of the community development branch of IMECBIO (May 2, 2001)

such as PRONASOL and *Municipios Prioritarios*, both of which come from higher levels of government.[169] Most of the funds associated with these programs have a criterion attached to them that obliges the municipal government to spend a certain percentage of them outside of the municipal centre. Through these mechanisms, over the past 10 years, the municipality of Cuautitlán has administered a multitude of medium-size development projects in Ayotitlán, including electrification, the provision of potable water, and the building of roads and bridges.

As mentioned above, these projects have had a major impact on Ayotitlán; and there is no doubt they are greatly appreciated by the inhabitants of Ayotitlán. As many community members point out, they have made life 'easier' for the local population. However, at the same time, as some elders point out, they have also brought about some negative changes, such as loss of community-level self-sufficiency, further loss of indigenous culture, more garbage, and more environmental degradation in general. Moreover, medium-sized projects of this type do not encourage authentic participation: the most important decisions are made by higher levels of government; the municipal government makes decisions concerning the projects' implementation, perhaps in consultation with the *ejidal* authorities; corruption runs rampant; and some community members are provided with temporary employment.

In the final analysis, although the MSD projects administered by the municipality have improved the material standard of living in Ayotitlán, they do not score high in terms of ecological or social sustainability.

(9) The National Indigenous Institute (INI)

As its name denotes, the INI is a national-level institution concerned with the welfare of Mexico's indigenous communities. During Salinas' presidency, it was given responsibility for managing PRONASOL's Regional Funds Program, which is oriented

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[169] When Zedillo became president in 1994, he dismantled PRONASOL and decentralized two-thirds of the funds for regional and social development (that used to be channeled through PRONASOL) down to a state level. Since then, the municipality of Cuautitlán has received its development funds from a state-level planning structure (COPLADE), which includes a mechanism for concentrating social-welfare spending in marginalized municipalities (*Municipios Prioritarios*).

along the lines of the HSD model presented in Chapter Two. This program is the only PRONASOL sub-program to have survived past Salinas' *sexenio*; when Zedillo became president in 1994, it was decentralized down to the state-level. The Regional Funds Program is still the INI's most important program, defining its orientation vis-à-vis sustainable development.[170]

The INI started working in Ayotitlán in 1991. Currently, it manages four types of projects in the community: productive, infrastructural, cultural, and juridical. The main focus is on productive projects, and to a lesser extent on infrastructural projects. Seventy-five percent of the cost of its productive projects is covered by low-interest loans from the Regional Funds Program; the remaining 25% is paid by the beneficiaries themselves, either through regular instalments, or more commonly by providing labour and/or local materials. Some examples of productive projects include: cattle ranching, irrigation systems, beekeeping, a bakery, a coffee-processing plant, a nursery for coffee bushes, horticulture in backyard gardens/orchards, the rehabilitation of environmentally degraded areas, and a warehouse/outlet for the local cooperative. With respect to infrastructural projects, the INI covers the total cost with non-repayable grants. Examples of infrastructural projects include potable water systems for individual homes, upgrades to homes, and solar panels for houses without electricity. Cultural projects are also paid for with non-repayable grants. Examples of these projects include costumes for traditional ceremonies, the establishment of a centre for traditional medicine, and workshops on traditional knowledge. Information on juridical projects was not available.

As this brief review indicates, most of the projects that INI finances in Ayotitlán correspond with HSD: they are small in scale; most of them have a productive orientation; some of them include an environmental dimension; most are conceived from above; and, most require local 'participation' to implement. At the same time, the INI also provides financial assistance for the grassroots initiatives of Ayotitlán's community-based organizations.

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[170] For an analysis of the Regional Funds Program see Fox (1994b).

(10) The Manantlán Institute of Ecology and Conservation of Biodiversity (IMECBIO)

IMECBIO is a branch of the University of Guadalajara, based in the town of Autlán.[171] It was created in 1985 as part of the lead up to the creation of the RBSM, and, until 1994, it was the principal actor in the Reserve, carrying out research and projects geared towards conservation, and taking on the role of administrator (Graf et al, 1995). However, with all of the limitations inherent to an academic research centre, during this period, it was unable to administer the Reserve effectively (Graf et al, 1995; 2000; SEMARNAP, 2000). As Graf et al point out, "IMECBIO did not have the institutional capacity to carry out governmental actions, such as protecting and supervising the reserve's nucleus, and coordinating the development programs of various institutions" (author's translation, 2000:2). As such, in 1994, the responsibility for administrating the RBSM was handed over to SEMARNAT. In the new scheme of things, IMECBIO continues to work in the RBSM, assuming responsibility for managing Las Joyas Scientific Station, and for implementing projects dealing with environmental education and community development. However, in none of these capacities does it have much of an influence on Ayotitlán; in fact, today, its sustainable development efforts in Ayotitlán are limited to a campaign against forest fires.

(11) The Ministry of the Environment and Natural Resources (SEMARNAT)[172]

SEMARNAT is the federal ministry responsible for coordinating the Government's sustainable development efforts on the national level. The local branch of SEMARNAT (in Autlán) has been managing the RBSM since 1994. As mentioned earlier, the driving force behind the RBSM is conservationism; and SEMARNAT reflects this orientation with its sustainable development efforts in Ayotitlán: its priority is conservation, and community development is seen as a means to this end.

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[171] Autlán is situated between Ayotitlán and Guadalajara. It takes about two-and-a-half hours to drive from Autlán to Ayotitlán.

[172] Before 2001, this ministry was called 'The Ministry of the Environment, Natural Resources, and Fisheries' (SEMARNAP).

SEMARNAT's projects in Ayotitlán can be grouped into three categories: (1) conservation and rehabilitation of the environment; (2) the promotion of ecologically sound technology; and, (3) technical support for self-reliant GSD.

Efforts that fall into the first category include: (1) all of the activities that have to do with protecting and supervising the nucleus of the RBSM; (2) the enforcement of rules and regulations in the Reserve's buffer zone, including rules about cutting down trees; and, (3) the production of trees and bushes in a nursery located in the village of Tiroma.

With respect to the second category, the promotion of ecologically sound technology, so far, most of SEMARNAT's efforts along these lines have been directed towards one locality: the village of San Miguel, which is the locality with the highest population of Zea Diploperennis, the ancient relative of corn that brought international attention to the Sierra of Manantlán.[173] In San Miguel, SEMARNAT has been encouraging the locals to plant strips of blackberry bushes on hillsides that have been cleared for agriculture. This not only helps control erosion, but it also provides the inhabitants of San Miguel with a commercial product that can be sold on the market (blackberries). In addition, the presence of blackberry bushes discourages locals from clearing unwanted vegetation with fire and herbicides, both of which could potentially destroy the bushes. As indicated above, the use of fire and herbicides has contributed to various forms of environmental degradation in Ayotitlán, including the spread of pest infestations.[174] Over the past three years, San Miguel's crops of corn have been devastated by a pest called '*pingo*'. By reducing the use of fire and herbicides in the area, and by encouraging locals to collect and destroy the *pingo* manually, SEMARNAT has brought the pest infestation under control. Last year was the first year that San Miguel had a good harvest since the infestation struck.

Along similar lines, besides its work in San Miguel, in other parts of Ayotitlán, SEMARNAT has been promoting the construction of rock barriers to help control erosion on hillsides that have been cleared for agriculture.

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[173] Interview with representative of SEMARNAT (May 2, 2001).

[174] The use of herbicides destroys the habitat of the natural enemies of pests (Interview with representative of SEMARNAT, May 2, 2001).

By promoting environmentally sound technology in these ways, SEMARNAT exemplifies the model of HSD presented in Chapter Two: its projects are conceived by experts who come from outside of the community; the community is consulted before projects are implemented; and community members are enticed to participate either by offering them a small wage, or by demonstrating their effectiveness through pilot projects.

With regard to the third type of sustainable development that SEMARNAT pursues in Ayotitlán, the support of self-reliant GSD, SEMARNAT's most important contribution along these lines has been to provide technical support for the local cooperative. At least once a week, SEMARNAT representatives make a trip out to Ayotitlán to help the cooperative with its accounting, amongst other things.

And, finally, it warrants mentioning that SEMARNAT and the RBSM in general have helped to create a political climate in Ayotitlán that is conducive to GSD. As mentioned above, the creation of the RBSM helped neutralize the *caciques* who control the *ejidal* apparatus, creating a political space for the formation of community-based organizations. In addition, in its dealings with Ayotitlán, SEMARNAT avoids politically sensitive areas, and it makes an effort to work with all groups within the community. And, finally, in 1997, SEMARNAT created two Technical Advisory Councils (one in Colima and the other in Jalisco) that bring together state-government representatives, municipal-government representatives, academic institutions working in the RBSM, NGOs working in the RBSM, and community-based organizations. These councils serve as vehicles for 'political lobbying', and they help strengthen reformist elements within the two levels of government.

This brings us to the end of our analysis of local-level actors in Ayotitlán and of their sustainable development efforts. In the next section, we examine the internal conflicts in Ayotitlán in an effort to determine the extent to which they impede GSD.

4.9 Internal Conflicts: An Obstacle to GSD?[175]

Today, the internal conflicts in Ayotitlán revolve around the struggle for control over natural resources.[176] Basically, there are two groups involved in this struggle: community members affiliated with the CNC (i.e. the internal *caciques* who control the *ejidal* apparatus), and community members affiliated with autonomous grassroots organizations (i.e. the SSS, the UPIM, and the Council of Elders). Henceforth, the former group will be referred to as the 'CNC-group', and the latter as the 'grassroots-group'. The CNC-group provides political support for the economic activities of large-scale capitalist enterprises within the community's territory; it is in favour of assigning individual usufruct rights; and some members of this group are even in favour of completely privatizing the *ejido*. The grassroots group, by contrast, is opposed to allowing large-scale capitalist enterprises exploit the community's natural resources; it would like to preserve the communal nature of Ayotitlán's traditional resource-management system; and most of its members would like to see the *ejido* of Ayotitlán converted into a *comunidad*. Over the past 10 years, the main arena for this conflict has been the *ejidal* apparatus; both groups have been struggling to occupy the position of *Comisariado* and to have a majority in the Assembly.

The roots of this conflict go back many years, stemming mostly from the penetration of commercial logging companies and the imposition of the *ejidal* system. As outlined above, when the *ejidal* system was imposed onto Ayotitlán, it introduced a new decision-making structure, displacing the traditional authorities in the process (i.e. the Council of Elders). Commercial logging *caciques* made sure that this new decision-

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[175] Most of the information in this section was obtained from interviews with various community members and outside observers. The two most fruitful interviews in this regard were with Cesar Díaz, a UACI representative, and with Martin Gomez, a representative of SEMARNAT.

[176] The internal conflicts in Ayotitlán are complex; their roots go back many years; and all of them were caused, or at least exacerbated, by external intervention. For example, the imposition of Christianity over 100 years ago caused internal conflicts within the community (Rojas, 1996); the imposition of the *ejidal* system in the second half of the twentieth century also provoked internal conflicts; as did the penetration of commercial loggers, the arrival of the ACR, the creation of the RBSM, the arrival of opposition parties (to the PRI), and so on. Today, these conflicts manifest themselves on different levels: from clashes between individuals over parcels of land, to battles between organized groups over control of the *ejidal* apparatus. It is beyond the scope of this thesis to explore all of the nuances of these conflicts; therefore, we will have to content ourselves with an analysis of the central issues, fully aware that they are just 'the tip of the iceberg'.

making structure was controlled by community members who would protect their interests. Thus, members of the 'CNC-group' were bought off and put into positions of authority. The CNC-group was then able to maintain its position of authority and dominate the Assembly through a variety of mechanisms. Firstly, community members who opposed them ran the risk of being denied a parcel of land to cultivate corn. Secondly, those who supported them were often rewarded with the opportunity to fence off communal land and claim it for themselves. Thirdly, opposition to the *ejidal* authorities implied opposition to commercial logging companies, and community members who defied logging *caciques* were subject to violence and intimidation. And, finally, the CNC-group always had the option of using fraud to win *ejidal* elections.

When the *ejido* was created in 1963, and then expanded in 1974, sixteen-thousand-twenty-five community members were given *ejidal* rights; that is, rights to vote in the Assembly.[177] According to the agrarian laws that applied at the time, there were only three ways for *ejidatarios* to lose these rights: (1) by dying; (2) by moving away from the community; and, (3) by leaving their assigned parcels of land uncultivated for more than two consecutive years. In addition, *ejidal* rights could only be passed on to one family member, usually the eldest son, but sometimes the widow, or one of the other children. In Ayotitlán, as in the rest of rural Mexico, this led to a situation where many of the descendents of the original *ejidatarios* do not have *ejidal* rights, and thus no vote in the assembly.

Before 1990, the CNC-group was able to dominate the Assembly without having to resort to blatant fraud. However, in the new local-level political context of the late-1980s and 1990s, nascent community-based organizations began to pose a threat to the CNC-group's dominance. In an effort to circumvent the possibility of losing *ejidal* elections, the CNC-group requested that the agrarian authorities come to the *ejido* to update the list of community members who had *ejidal* rights, replacing the names of deceased *ejidatarios* with the names of their heirs, and eliminating the names of *ejidatarios* who had left the community or abstained from cultivating land for more than two consecutive

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[177] This statistic was provided by president of the CNC in Ayotitlán; it corresponds closely to a figure that was provided in an interview with a representative of SEMARNAT: 1622. Incidentally, when the *ejido* of Ayotitlán was created, only the 'heads of family' (i.e. the men) were given *ejidal* rights.

years. Instead of carrying out the investigation that this sort of update would have required, CAM representatives simply showed up one day and accepted an 'updated' list from the *ejidal* authorities (i.e. the CNC-group). This updated list excluded many of the community members who were affiliated with the UPIM and the SSS (the Council of Elders was still meeting clandestinely at that time), going to the absurd lengths of claiming that some of them had died or left the community, when in reality they were still living in the community and cultivating corn. These people lost their right to vote in the Assembly, and their *ejidal* rights were given to other community members who belonged to, or supported, the CNC-group.

In spite of this manoeuvre, the political strength of autonomous grassroots organizations in Ayotitlán continued to grow. And, in 1993, the grassroots-group put forward its own candidate for *Comisariado*. This candidate won the 1993 *ejidal* elections. The grassroots group took advantage of this opportunity to strip *ejidal* rights away from the community members who had fraudulently received them in 1990, and to return them to their 'rightful' owners. Because of the revisions made to the Agrarian Law in 1992, this manoeuvre did not require the direct involvement of the agrarian authorities; all that was necessary was a majority vote in the Assembly, which could always be manufactured by the group controlling of the *ejidal* apparatus, in this case, the 'grassroots group'.

In 1996, the CNC-affiliated group regained control of the *ejidal* apparatus, largely because the grassroots-group's *Comisariado* ended up being as corrupt as his predecessors, at least according to one outside observer.[178] In any case, in 1996, the matter concerning *ejidal* rights was taken to court, and it has yet to be resolved.

This situation was further complicated in 1999. Confronted with the possibility of losing the 1999 *ejidal* elections, the CNC-group, with the complicity of the *Procuraduría Agraria*, created 400 new *ejidal* rights at the last minute and assigned them to their supporters. With this manoeuvre, the CNC-group was able to retain control of the *ejidal* apparatus.

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[178] Interview with representative of SEMARNAT (May 2, 2001).

This is basically where Ayotitlán's internal conflicts stand today. The question is: How much have they impeded GSD? We will recall from Chapter Two that the sine qua non of GSD is authentic participation. With this in mind, it appears that the community's internal conflicts have done much to impede GSD. Until these conflicts are resolved, there can be no broad-based popular participation in internal decision-making. In its struggle for control over natural resources, each group is trying to deny the other the right to participate in decision making. An obvious solution to this conflict is to give everyone in the community *ejidal* rights, and to make decisions democratically in the Assembly; and in fact this is what the grassroots group is trying to achieve in the long run: most of the members of this group would like to see the *ejido* converted into a *comunidad*, which would extend voting rights to everyone in the community. However, this is easier said than done. The CNC-group has long enjoyed the privilege of dominating the Assembly and of receiving the patronage of external *caciques* and of higher levels of government. The members of this group are not willing to give up their privileged positions for an equal vote in the Assembly and an equal share of the community's resources. Herein lies the crux of the problem.

One final comment on internal conflicts before moving on to the conclusion: there seems to be a general consensus amongst community members and outside observers that the intensity of the community's internal conflicts has subsided over the past couple of years. If nothing else, there seems to be more cordiality between the two opposing groups. One can only hope that this is the beginning of a trend towards community-wide solidarity.

4.10 Conclusion

In this chapter, we examined the experience of Ayotitlán. The main objectives were: (1) to complement the study of national- and international-level structures presented in the preceding chapter; (2) to further test the hypothesis that the root causes of environmental degradation and poverty lie in the prevailing social, economic, and political structures at all levels; and, (3) to evaluate the effectiveness and potential of the sustainable development strategies that are currently being pursued in Ayotitlán.

We began by reviewing the history of the formation of the *ejido*, followed by an examination of how large-scale capitalist enterprises were able to gain access to the community's most important natural resources. The purpose of this exercise was to investigate links between local-level structures and higher-level ones. We found these links to be readily identifiable.

To briefly recap, in Chapter Three, we saw that, in the post-World War II period, Mexico pursued a development strategy of import substituting industrialization (ISI). According to this strategy, the rural sector was assigned the role of supplying the modern urban industrial one with foreign exchange, raw materials, and cheap labour. Since large-scale capitalist enterprises were considered to be the most efficient vehicle for delivering these resources, they needed to be given access to the country's most important natural resources. In order to facilitate this access, the state set up political and social structures accordingly. Some of these structures were national-level ones, like the ones describe in Chapter Three; others were local-level ones, like the ones described in this chapter. The most important local-level one in this regard was the *ejido*. The *ejido* was intimately linked to national-level political and social structures through a variety of mechanisms, including the CNC, the PRI, and the agrarian authorities (i.e. the CAM and the DAAC). In fact, it was even directly linked to the executive branch of the federal government, which ultimately decided when and where *ejidos* would be created. When the *ejidal* structure was imposed on Ayotitlán, it displaced traditional local-level structures and divided the community, thereby helping facilitate the entry of large-scale capitalist enterprises. At the same time, the army and the state police were used to spread terror throughout the community; and various elements of the state apparatus served to block the claims of nonconforming community members, and to accommodate the needs of capital. All of this indicates that the penetration of large-scale capitalist enterprises in Ayotitlán is a structural phenomenon; and as such, the environmental damage caused by this penetration can also be linked to structural conditions.

Large-scale capitalist enterprises are the main perpetrators of environmental destruction in Ayotitlán. As outlined above, commercial logging and cattle ranching have been the driving forces behind the community's most serious environmental problems: deforestation and soil erosion. Mining companies have also caused severe

environmental damage by extracting millions of tons of iron ore each year. However, these enterprises are not the only agents of environmental destruction in the community; as the discussion above revealed, the locals themselves contribute to the degradation of their own natural-resource base. In this regard, links to structural conditions are much more complex, and somewhat less obvious; but they do, nevertheless, present themselves.

To begin with, the environmentally destructive practices of the locals can be linked to a cycle of poverty that was largely initiated by large-scale capitalist enterprises. As we saw, these enterprises initiated a cycle of poverty in Ayotitlán when they took over many of the natural resources on which the community depended for its subsistence economy. Once this subsistence economy was disrupted, a web of interconnected factors came into play that implicated the locals themselves in processes that caused further environmental damage and reproduced poverty. For example, locals who could no longer support themselves on subsistence activities were forced to emigrate from the community in search of employment (both temporary and permanent); and this led to the further diminishment or abandonment of subsistence economic activities. At the same time, and for the same reasons, other productive activities in the community were commercialized; and, in order to meet the demands of the market, these commercialized activities had to be intensified and/or expanded, leading to the concentration of land in the hands of fewer community members, and to the overexploitation of natural resources. Meanwhile, the community's remaining subsistence economic activities also had to be intensified, since there was now less time and space for them. Imported technology was adopted to reduce the workload and/or to produce more in a shorter period of time; traditional cultural values began to change; locals began increasing their consumption of consumer goods; and the community became increasingly dependent on the outside world. As this synopsis suggests, all of these changes were nurtured by structural conditions; and this being the case, it follows that the poverty and environmental destruction associated with these changes can also be linked to structural conditions.

However, there is still one more loose thread that needs to be addressed: population increase. In line with the MSD argument, this research indicated that increased demographic pressure contributed to the processes of environmental degradation in Ayotitlán. On this issue, there are two important points that need to be kept in mind.

Firstly, as demonstrated above, increased demographic pressure is not the main cause of environmental degradation in Ayotitlán; it is only a contributing factor, and a relatively minor one at that. Increased demographic pressure is one of the factors that encourages locals to engage in environmentally destructive practices; but, as we have seen, the environmental destruction caused by locals is minor in comparison to that caused by large-scale capitalist enterprises. And, furthermore, in many ways, population increase can itself be linked to structural conditions. The Nahaut Indians of Ayotitlán lived in the Sierra of Manantlán for hundreds of years without experiencing a population explosion. It wasn't until the twentieth century that the combination of Western medicine and conditions of poverty caused this population to increase dramatically.

Therefore, demographic considerations notwithstanding, *the experience of Ayotitlán supports the hypothesis that the root causes of environmental degradation and poverty lie in the existing social, economic, and political structures at all levels.*

This conclusion needs to be kept in mind while evaluating the sustainable development efforts that are currently being pursued in Ayotitlán. If the root causes of environmental degradation and poverty are indeed structural, then only strategies geared towards effecting structural change can be expected to overcoming these problems.

As we have seen, efforts along the lines of MSD do not address the structural causes of poverty and environmental degradation; in fact, MSD supports existing structures and pretends to overcome social and environmental problems with economic growth, better management of natural resources, and environmentally sound technology. In Ayotitlán, projects along these lines include: the conservation efforts of SEMARNAT and IMECBIO; some of the productive projects sponsored by the INI, particularly those geared towards incorporating the community into the market economy; the Government's program PROCAMPO, which is ostensibly designed to help peasants switch from corn production to crops in which Mexico has a comparative advantage; PROGRESA, which fits with the MSD philosophy that aggregate economic growth is necessary to afford social-welfare programs that 'target the poor'; and, finally, all of the medium-sized development projects administered by the municipality (i.e. electrification, potable water, roads, bridges), which fit with the same philosophy. As mentioned above, over the past

10 years or so, these programs have done much to improve the material standard of living in Ayotitlán. However, at the same time, they have made the community far more dependent on the outside world, and they have reinforced processes that cause environmental damage and that reproduce poverty. As such, we are forced to conclude that, although these projects have helped to alleviate poverty, they do so in a way that is neither ecologically nor socially sustainable.

Projects along the lines of HSD appear to have more potential. These projects are small in scale, they require some degree of local participation, they are top down, and they focus on technical solutions. In Ayotitlán, the principal agents of HSD are SEMARNAT and the INI, and to a lesser extent the local high school. Examples of HSD projects in Ayotitlán include: blackberry production, erosion control, and plague control (SEMARNAT); apiculture, coffee-growing, horticulture in backyard gardens/orchards, rehabilitation of environmentally degraded areas, and installation of solar panels (INI); and composting, school-yard horticulture, and recycling (the local high school). These projects have helped improve the standard of living in Ayotitlán. Although they have not done so to the same extent as MSD projects, they are less expensive and they appear to be more ecologically sustainable. In addition, HSD projects have helped community members to develop organizational skills and to build solidarity. However, since they do not address the structural causes of environmental degradation and poverty, their potential for overcoming these problems in the long run appears to be limited.

Self-reliant GSD is similar to HSD; the main difference is that self-reliant GSD is endogenous. In Ayotitlán, efforts along the lines of self-reliant GSD include the formation of the local cooperative, all of the SSS's projects, and some of the UPIM/UACI's projects, such as pottery, embroidery, and traditional medicine. Like HSD, self-reliant GSD has helped improve the community's material standard of living in an ecologically sustainable way. In addition, and even more so than the HSD projects, the self-reliant GSD projects appear to have fostered organizational skills, self-confidence, and self-esteem.

Self-reliant GSD projects have also given rise to and built upon social-activism, and vice versa. The political actions of the ACR in the late-1970s and early-1980s gave rise to

the SSS; and the overlapping membership and cooperation between the SSS, the UPIM and the Council of Elders also speaks to this iterative process. It also warrants mentioning in this regard that the sponsors of the RBSM contributed greatly to the opening of a political space that allowed for the formation of grassroots organizations.

In Ayotitlán, the principal agents of social activist GSD have been the ACR, the UPIM, and the Council of Elders. The political activities of these organizations include: road blocks, sabotaging logging equipment, legal action against mining companies, legal action designed to recuperate over 15,000 hectares of lost land, and participation in national-level social movements designed to bring about structural change. In the 1980s, these efforts contributed to the expulsion of commercial logging companies; in the 1990s, they helped attract a barrage of social welfare spending; and, over the course of the past 25 years, they have done much to 'empower' the Indians of Ayotitlán.

Today, the biggest local-level obstacle to advancing along the lines of GSD is internal conflicts. The community of Ayotitlán is divided internally: with the CNC-affiliated community members on the one side, and the members of grassroots organizations on the other. Until the conflicts between these two groups can be resolved, popular participation in internal decision-making will be inhibited; the community will be unable to take a united stand against mining companies and cattle ranching *caciques*; and, the possibility of taking over the municipality will remain elusive.

In conclusion, the experience of Ayotitlán supports the hypothesis that the underlying causes of environmental destruction and poverty are structural; and, it suggests that the best way to address local-level social and environmental problems is to pursue an endogenous version of GSD. It also suggests that top-down efforts in the form of HSD can help to create a political environment that is conducive to GSD. And, finally, it points to the importance of resolving internal conflicts.

The following chapter seeks to draw some broader-level conclusions.

CHAPTER 5

CONCLUSION

In this thesis, we examined environmental degradation, poverty, and sustainable development on three levels: first, we explored the theoretical issues surrounding sustainable development; then we investigated the structural conditions of rural Mexico; and, finally, we examined the experience of the community of Ayotitlán.

The purpose of this last chapter is to tie these three levels together and wrap things up. This will be done by simply re-stating the major conclusions that were drawn along the way, and then by offering some very general policy recommendations.

The most important conclusions of this thesis are as follows:

1. The MSD strategy, as articulated in the Bruntland report and in Agenda 21, is theoretically flawed. This strategy is predicated on the assumption that there are no absolute limits to economic growth, only temporary limits imposed by the current state of technology. As we saw in Chapter Two, the argument to the contrary is convincing.

2. The root causes of both poverty and environmental degradation (at least in rural Mexico) appear to lie in the existing social, economic, and political structures at all levels (local, national, and international). These structures give overriding priority to the needs of capital (both foreign and domestic); they concentrate real decision-making power in the hands of a few, namely, those who control capital; they help concentrate income in the hands of a few; they help large-scale capitalist enterprises gain access to the country's most important natural resources; they encourage the overexploitation of natural resources; they destroy traditional socio-economic systems; and, they leave a large percentage of the population living in conditions of poverty.

3. MSD does not appear to be capable of overcoming the problems of poverty and environmental degradation in rural Mexico. In spite of the Mexican government's efforts to implement this strategy over the past twenty years or so, environmental

destruction has continued unabated, and the incidence of poverty has increased in both absolute and relative terms.

4. The Mexican government appears to have adopted the MSD strategy as part of a broader strategy to maintain political stability while implementing neoliberal reforms. As with other components of this broader strategy, such as 'democratization' and decentralization, MSD was formulated and orchestrated by international institutions, and implemented by most Latin American countries at the same time. In this regard, it appears that the main reason for adopting this strategy was to make the necessary adjustments to continue with the international development project and to facilitate the accumulation of wealth.

5. MSD's sidekick strategy, HSD, appears to have had a positive impact on some marginalized communities in rural Mexico, including the community of Ayotitlán. However, since this strategy does not address the structural causes of poverty and environmental degradation, its long-term potential for overcoming these problems appears to be limited.

6. The most promising strategy for overcoming rural Mexico's problems of poverty and environmental degradation is for marginalized communities to pursue endogenous versions of GSD. With reference to the theoretical framework constructed in Chapter Two, there are two types of GSD: self-reliant GSD and social-activist GSD. As we saw in Chapters Three and Four, in practice, these two strategies often give rise to and build upon each other. In many marginalized communities in rural Mexico, including Ayotitlán, the pursuit of both types of GSD has contributed to better standards of living, and helped to 'empower' marginalized people. In addition, by seeking radical structural change, social-activist GSD attacks the root causes of poverty and environmental degradation. For this reason, it holds the most potential for overcoming environmental and social problems in the long run, notwithstanding obstacles in the form of internal conflicts.

Taking these conclusions into consideration, it becomes clear that the best way to address Mexico's problems of poverty and environmental degradation is to encourage

GSD. Therefore, we will conclude this thesis by considering some very general policy recommendations along these lines. The first are the ones put forth by the proponents of GSD: (1) give priority to meeting basic needs, as opposed to achieving aggregate economic growth; (2) strive to become more self-reliant, on both the national level and the community level, but especially on the community level; (3) diversify productive activities and direct them more towards the needs of the community, as opposed to the needs of the market; (4) seek endogenous solutions to local-specific problems; (5) focus on small-scale, or 'human-scale', development projects; (6) build upon traditional technology; (7) take long-term ecological sustainability into consideration; (8) undertake projects collectively and try to foster broad-based participation; and, (9) network with other marginalized communities and grassroots organizations in an effort to bring about structural change.

In line with the philosophy of GSD, which sees the community as the principal agent of development, these recommendations are mostly directed to community-based organizations, and to the solidarity groups that work directly with them. However, most proponents of GSD would readily acknowledge that these groups are not the only agents of development – governments, international development institutions, and academic institutions can also do their part in creating an environment that is conducive to GSD. In this vein, it is recommended that progressive elements of international development agencies and of national-level governments (that deal with Mexico): (1) enter into agreements with the Mexican government informed about the needs and demands of Mexico's poor (as defined by the poor themselves); (2) make the needs/demands of Mexico's poor the number one priority in negotiating with the Mexican government; (3) discourage macroeconomic policies (such as the existing ones) that have proven to be detrimental to the environment and inimical to the poor; (4) work to dismantle structures that serve to siphon off economic surplus from developing countries (for example, foreign debts, intellectual property rights, and unequal terms of trade); and, (5) support academic research in the area of sustainable development, especially participatory forms of academic research, such as the kind that is being carried out by the UACI. It is also recommended that progressive elements of the Mexican state apparatus: (1) give priority

to meeting the needs/demands of the poor, as articulated by the poor themselves;[179] (2) provide community-based organizations in marginalized communities with access to the financial resources they need to carry out *their* projects; and, (3) support projects along the lines of HSD as a stepping stone towards more fundamental change. Efforts along all of these lines can help create a political and economic climate that encourages GSD, and that moves towards the radical structural change that is necessary to overcome poverty and environmental degradation.

[179] Mexico's rural poor have clearly defined their needs/demands in, for example, the *Ley Cocopa* (the agreement to come out of the negotiations between the Zapatistas and the Mexican government), and in the proposed Rural Development Law, which was put together over a two-year period (between 1998-2000) by peasants, agrarian organizers, academics, and legislators (see footnote number 81, on page 82 of Chapter Three)

APPENDIX A.
METHODOLOGY FOR RECYCLING PROJECT

Some of the information included in this thesis about Ayotitlán was collected through participant observation, while working with a group of youths, helping them to implement a recycling project. This appendix outlines the methodology that was used to implement this project.

Insertion Into the Community

On September 17th, 2000, I was taken out to the community of Ayotitlán by a representative of the UACI and introduced to several key (groups of) people, including the Council of Elders, the teachers at the local school, and a number of informal community leaders. I had been told that garbage had become a growing concern in the community, and I asked these community leaders if they did in fact think it was a problem and if they were interested in having me work with them towards finding solutions. The community members I spoke with confirmed that it was a serious problem, and they welcomed the idea of my working with them.

The next step was to find a focus group with which to work with. After consulting several people (both inside and outside of the community) and making some general observations, I decided to ask the students and teachers at the local high school if they would be interested in forming the core of a 'promotional team' (*equipo promotor*). I presented a proposal to them on October 9, 2000, the response was positive, and in the four months that followed I worked closely with them, especially with the fourteen students in grade eleven, which is the highest grade-level that was being offered at the time

Methodology

The first task of the promotional team was to define the scope of our project. Our time frame for completing the main activities of the project was four months. Taking this into consideration, as well as financial and human-resource constraints, we decided to

focus our energy on only two of the villages in the community: the villages of Ayotitlán and Tiroma.

The next step was to carry out a preliminary diagnosis of the problem. This was done in a group brainstorming session that addressed the following questions: What do we already know about the problem of garbage? What are the causes of the problem? What are the consequences? And, what do we need to know in order to decide on a course of action?

The next step was to gather more-in-depth information about the problem and to investigate possible courses of action. Several methods were employed to do this. First, a questionnaire was designed and distributed by the students in order to find out, or at least to get an indication of: (1) whether or not the community at large thought that garbage was a serious problem; (2) what the community's garbage was comprised of; (3) how much garbage was being produced; (4) what community members did with their garbage; and (5) what ideas they had for overcoming the problem. Second, collection centres in two nearby towns (Autlán and El Grullo) were visited in order to generate ideas that could be linked to the design and implementation of a recycling system in Ayotitlán, and to see if we could connect our stream of recyclables with theirs. Third, recycling companies in Guadalajara were visited to find out what materials they bought, in what condition the recyclables had to be in order to be accepted, how much money they were willing to pay for each type of material, and if they were willing to send vehicles out to Ayotitlán in order to collect stockpiled materials. Fourth, outside organizations that work in Ayotitlán were consulted to see what they could do to help. And, fifth, some community members were asked, through informal conversations, for their opinions and ideas.

This investigation provided us with a wealth of information with which to decide on a course of action. In accordance with the preliminary diagnosis, it was found that many of the community's solid wastes were already managed well. Materials that could be exchanged for small amounts of money were taken out of the community, and eventually recycled or reused. For example, glass bottles (beer and pop) were retained by local vendors and returned to suppliers, and aluminium cans were collected by children and sold to local stores, which in turn sold them to intermediaries. Other residual

materials were re-used. For example, some metal cans were re-used as planters, plastic bags were re-used for carrying things or for nursing small plants, and some plastic bottles were re-used for carrying water. Much of the garbage that was not sold or re-used was cleaned up by some of the women in the village, who then burnt or buried it. And, organic wastes were either fed to farm animals, or simply left outside in nature to decompose.

Although this system functioned well for some of the community's solid wastes, it did not function well for all of them. Almost all of the materials that could be exchanged for money were managed well, but only a small percentage of the rest of the material could be re-used, meaning that most of it had to be burned or buried. This was problematic – burning garbage emits toxic fumes; and buried garbage takes years, sometimes decades, to decompose, all the while contaminating soil and groundwater. Moreover, not all of the 'worthless' material was being burned or buried; a large amount of it was being left along pathways or thrown down gullies and into streams, where it became a breeding ground for insects, amoebas and bacteria. Aside from being an eyesore, this garbage posed a serious risk to the health of the local inhabitants. Furthermore, farm animals were getting sick and in some cases dying from trying to eat this garbage.

Through our investigation we discovered/confirmed that this 'worthless' garbage was mostly comprised of plastics, and to a lesser extent metal and glass. Although this material could be worth something if it were properly separated and delivered to a recycling company in Guadalajara, in Ayotitlán it was indeed worthless – the cost of transporting it to the closest recycling centre (Guadalajara) greatly outweighed the amount of money that recycling companies were willing to pay for it. It was discovered, though, that both of the nearby collection centres (in the towns of Autlán and El Grullo) were prepared to accept separated recyclable materials from Ayotitlán, but without paying for them. In addition, representatives from SEMARNAT said that they were willing to transport recyclables from Ayotitlán to Autlán or El Grullo free of charge. Therefore, even though we could not collect any money for recyclables in Ayotitlán, we were at least able to find a way to transport them out of the community at no cost.

After having acquired this information, the next step was to decide on a plan of action. The plan that was decided upon had three components: (1) to promote environmentally friendly behaviour; (2) to organize a 'clean-up-the-village' day; and, (3) to establish a collection centre in the village of Ayotitlán where separated recyclables could be left, and eventually picked up and carried away by representatives of SEMARNAT.

In order to promote environmentally friendly behaviour in the community, several actions were undertaken. First, videos that dealt with the problem of garbage and the benefits of recycling were shown to all of the students in the junior high school and high school (approximately 250 students). Copies of these videos, as well as written material concerning garbage and recycling, were left at the school for future reference. Second, a flyer was designed and distributed by the grade eleven students to promote the three Rs: reduce, re-use, and recycle. The students also made signs to promote the three Rs. These signs were posted in various parts of Ayotitlán and Tiroma. Third, a display was made to explain to the illiterate members of the community how to separate recyclables. And, Fourth, the director of IMECBIO was invited to give a presentation on recycling to the students in the primary, junior high, and high schools in Ayotitlán.

The 'clean-up-the-village' campaign took place on December 14, 2000. Approximately 250 students from the primary school, the junior high school and high school participated. The day before the campaign, all of the students were shown which materials could be recycled and how to separate them. Then, the day of the campaign, each grade-11 student led a group of about 15 other students to various parts of Ayotitlán and Tiroma to collect recyclable garbage and burn the rest. Recyclable materials were carried back to the school, where a group of students were waiting to separate them and put them into burlap bags. These bags were eventually picked up by SEMARNAT and transported to the collection centre in Autlán. There was, however, a major delay: the bags were supposed to be picked up on December fifteenth, the day after the campaign, but it ended taking three months before the last of them were removed from the schoolyard; this was largely because of a problem that SEMARNAT had with one of its vehicles.

With regards to establishing a permanent collection centre in the village of Ayotitlán, we spoke with members of the local cooperative, who agreed to allow the cooperative's warehouse/outlet between Ayotitlán and Tiroma to be used for this purpose. However, before community members start leaving separated recyclables at the warehouse/outlet, another promotional campaign will need to be carried out in order to better inform people about the centre, and to teach them which materials can be recycled and how to separate them.

Results

This project had a number of tangible results. First and foremost, awareness was raised in the community about the problem of garbage and about possible solutions to deal with the problem. This was especially true for the student body, which was more directly involved with the project. Students had to think carefully about the causes and consequences of garbage, and about what could be done to overcome the problem. Moreover, students learned which waste materials could be recycled, how to separate them, and where to deliver them. The awareness of the community at large was also raised by the promotional campaign and by the clean-up day.

A second result was increased cleanliness in Ayotitlán and Tiroma. This was mostly due to the clean-up day, which was well organized by the students in grade 11. Dozens of burlap bags were filled with separated recyclable garbage, and eventually taken away to a nearby collection centre. The garbage that could not be recycled was collected and burned. Although this increase in cleanliness was, for the most part, temporary, it probably contributed to changing habits in the community, and it was also instrumental in teaching the students how to recycle.

In order to help deal with the problem in the long-term, the groundwork was done to establish a local collection centre at the local cooperative. However, one year later, this centre is still not functioning. This is mostly because the grade-eleven students lost interest in the project, partly because SEMARNAT took so long to collect the recyclables from the clean-up day, and partly because the students are simply too busy with their studies and with the work they have to do at home to dedicate extended periods of time to

projects of this sort. Perhaps the best way to take the project to the next step is to find some way to financially compensate the main organizers.

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