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**Environment and Development in Belize:
Sustainable solutions or...eco-rhetoric?**

by

Laura Cooper
B.A., Simon Fraser University, 1990

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
Master of Arts

in the Department
of
Sociology and Anthropology

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December 1993

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ISBN 0-612-00957-2

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Environment and Development in Belize: Sustainable solutions
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Abstract

Belize, Central America, hosts over two hundred reserves, sustainable development projects and conservation programs -- approximately one for every thousand inhabitants. Yet, a brief visit to this country, touted as an unspoiled tropical paradise, reveals open sewers, mountains of household garbage and an export economy fostering environmental degradation. Concomitant social problems include crack-cocaine consumption of epidemic proportions and over twenty percent unemployment.

This thesis examines the gap between environmental policy and practice in Belize. The focus is on how contemporary environmental attitudes relate to the country's economic history of boom-and-bust cycles, along with the replacement of traditional sustainable agro-ecosystems by exploitative attitudes toward nature. The question raised is whether sustainable development is feasible in this context.

Fieldwork to assess environmental problems, policy and action effectiveness was conducted in Belize in 1992. Visits were made to environmental problem areas, nature preserves and ecotourism sites. In addition to participant observation in Hopkins Village, semi-structured interviews were conducted with participants in the conservation movement, government officials and Belizeans at large. Academic materials, newspapers and environmental periodicals produced in Belize also were consulted.

The research shows that while environmental policy is in place, there exists a vast gap between paper and practice. Significant reserves and parks have been defined by the government, but the capacity for monitoring and enforcement appears to be virtually non-existent. The majority of sustainable development projects in operation were originated by expatriate Americans with marginal Belizean participation. The government's investment code allows one hundred percent foreign ownership of the productive and extractive processes, without specific concern for environmental protection. Conservation strategies

are beyond the horizons of most Belizeans since both the infrastructure and the education for awareness remain at the tokenistic level.

In this milieu it appears unlikely that sustainable development will be successful on a national scale due to the structural incompatibility of ecocentric conservationism with the ongoing technocentrism of an economic development model still geared to resource extraction. As long as these tensions predominate in the Third World, sustainable development appears to be an oxymoron rather than a realistic alternative wherein conservation replaces exploitation as the economic imperative.

Dedication

This thesis is dedicated to my traveling mates; Dee and Jesse.



Acknowledgments

I would like to acknowledge the support and assistance of my supervisory committee, especially Marilyn Gates. I would also like to acknowledge the office staff of the Sociology/Anthropology Department at SFU; Chris Ward, Jean Jordan and Gladys Ellen Durksen, for their kindness and support during the past few years. I would like to thank the many students who have assisted me by their critique of the thesis.

Without the Belizean people, especially the villagers of Hopkins, this thesis would not have been possible. For their assistance and cooperation, I owe a debt of gratitude. Finally, I would like to thank my parents for their contribution and patience during the research and writing of this thesis.

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Chapter 1

Introduction

The ongoing process of underdevelopment in the Third World, initiated during the era of colonial expansion, has led to a clash in attitudes toward nature between proponents of the development-as-economic growth model and environmental conservationists. The results have led to diverse and often opposing solutions to environmental degradation. This thesis will examine whether sustainable development, a popular "solution" in national and international conservation circles, represents a realistic option for Third World countries, like Belize, which have been environmentally degraded by conventional development processes. There are a wide range of attitudes toward nature in Belize due to its colonial and economic development history, as well as its ethnic composition. For this reason, the role of the philosophical, historical and ideological roots of the Western man-nature relationship will be considered as it pertains to colonial expansion, the justification for the suppression of traditional ecological knowledge, the development-as-economic growth model and the pursuit of sustainable development.¹

It is an underlying assumption of this research that official First World solutions to environmental problems in the Third World will be aimed at treating merely the most blatant or politically volatile symptoms with cosmetic or panacea remedies, while ignoring the structural causes as rooted in specific Third World economic histories. Many of the economic solutions posed by the First World regarding natural resource extraction have been based on technological methods developed in, and appropriate to, the northern temperate region. Thus, there is little reason to expect that the pattern of First World strategies regarding environmental solutions would be any different (Gradwohl and Greenberg 1988). Furthermore, consideration must be given to the possibility that the path to a sustainable future may not come from the technology-centered First World but

¹The decision to retain the man-nature descriptor conforms to the long-standing philosophical convention. It must be noted, however, that within Belize, the Zoo, the Tourism Industry Association, the Centre for Environmental Studies, and the Audubon Society are all headed by women.

instead may originate in the form of grassroots organizations (GROs) and indigenous agricultural practices at the community level, or non-government organizations (NGOs) operating on an international or national level within the Third World.

Within the NGO movement, however, consideration must be given to the objectives of donor agencies, whether they have development-as-growth targets using economic criteria to assess the success of specific NGO projects, or whether the goals focus more on the grassroots community-building process using social and cultural criteria for assessment.

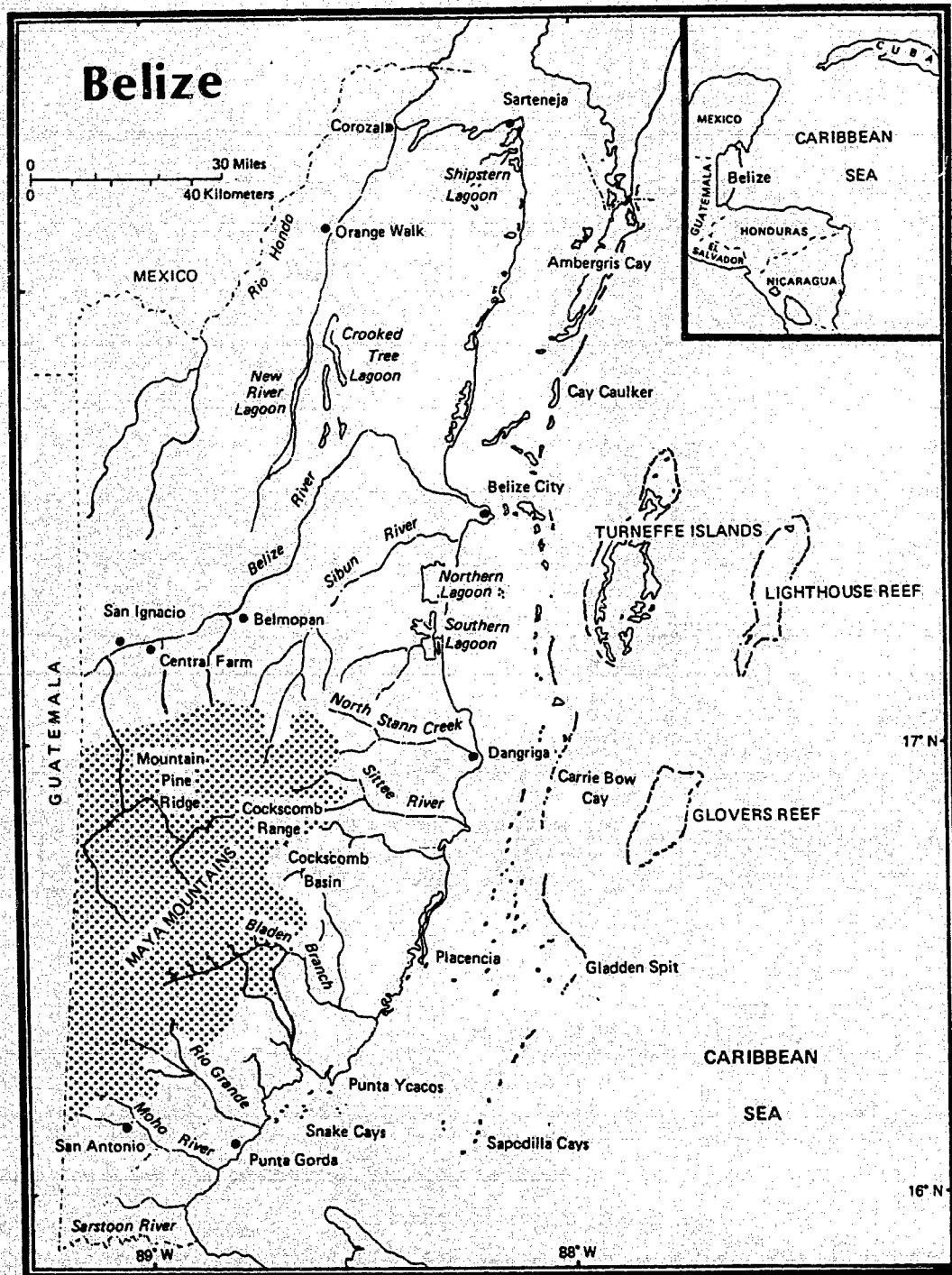
In Belize there are large foreign-owned economic-development projects such as Hershey's cacao plantation and Coca Cola's Minute Maid concentrate production. Conversely, there are many conservation-oriented NGOs with diverse sponsoring agencies ranging from the World Wildlife Fund and the International Union for the Conservation of Nature and Natural Resources to smaller organizations such as Lighthawk International. At the GRO level, the Toledo Ecotourism Association and the Habiabarra Garinagu Cerro are two projects which focus on the process of community building as the primary objective rather than growth-oriented economic development. The diversity of development and conservation activity in Belize enables the researcher to assess the wide-range of environmental action in terms of its often contradictory goals.

Why Belize? Why Not!

Belize, formerly British Honduras, is a small, ethnically and geographically diverse Central American country which has been environmentally ravaged and economically despoiled through a series of boom-and-bust resource extraction cycles which mark its history, leaving the country in a disadvantaged position from which to pursue environmentally sustainable development (see Figure 1.1). The paradox for Belize lies in the gap between environmental policy, for which the country is noted as a leader in the region, and the need for economic expansion through large-scale, foreign-owned monocrop production and resource extraction. The lack of long-term sustainability of the past and present economic development strategies being employed has led to under-

management and over-exploitation of the very resources upon which Belize is relying for its future development.

Figure 1.1: Map of Belize



Source: Hartshorn 1984:10

Environmental problems facing the country are many. Polluted ground-water and surface-water resulting from chemical run-off from agriculture, and high fecal choliform contamination due to inadequate sewage disposal or treatment, are primary human health risks. Erosion of topsoil from extensive land-clearing is leading to the depletion of the fragile nutrient recycling mechanisms necessary for viable agricultural production. The destruction of mangrove, which acts as a habitat for marine life and also prevents erosion of the coastline by tidal conditions and tropical storms, is contributing to a loss of both species diversity and land mass. Reef destruction, due to the many hurricanes which have ravaged Belize over the years, and compounded by increased tourist activity from cruise ships and scuba-diving, has in some areas threatened the livelihood of fisher persons.

The government has responded to these conditions by creating environmental protection policies and reserve areas, though they do not have the manpower or the legal processes to enforce the legislation. Signs have been posted along creeks and waterways which ask people not to dump night soil in the water, but adequate sewage disposal areas do not exist. An environmental curriculum has been developed, but it is not equally available to all schools in Belize.

Belize was chosen as the case study for the following reasons. Within the country there are a variety of attitudes and responses to environmental protection ranging from a lack of awareness of environmental issues to a strong commitment to pursuing sustainable development. The country possesses extreme geographical diversity which, in itself, presents a wide range of environmental problems as a result of specific ecosystemic responses to development strategies. Specifically, the boom-and-bust legacy of colonial expansion is still guiding current development patterns. Finally, the ethnic diversity of the country is reflected in a variety of man-nature relationships and responses to sustainable development.

Geography

Located on the east coast of Central America, Belize is the region's second smallest country with an area of 22,963 square kilometers. Bordered on the north by Mexico and on the south and west by Guatemala, the country is divided into six administrative districts, Belize, Cayo Orange Walk, Corozal, Toledo, and Stann Creek, each possessing extreme physical diversity. The inner coastal waters are shallow and are sheltered by the second longest coral reef in the world. Thus, Belize does not possess an adequate deep water port for shipping and receiving resources and goods. The reef is dotted with cayes (islands), and mangrove swamps line the sheltered inland shores. Similarly, the low coastal plain is mostly covered with mangrove swamps, though the removal of the mangrove has been increasing at a rapid rate to facilitate the creation of housing developments (see Figure 1.2) and tourist beaches.

Figure 1.2: Hopeville: a housing development in Punta Gorda, once a mangrove shoreline

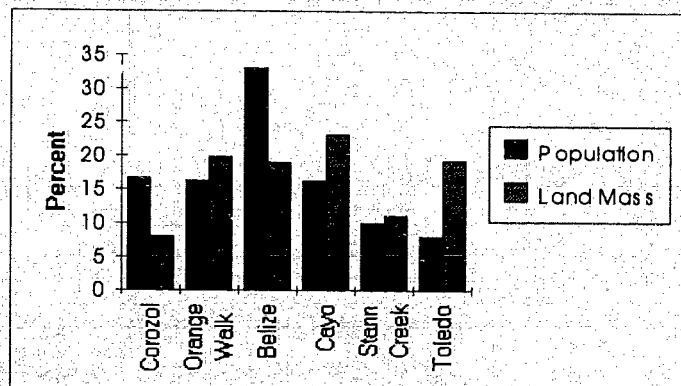


The Maya Mountains and the Cockscomb Range form the backbone of the southern half of the country, the highest point being Victoria Peak (1,127 metres above sea level) in the Cockscomb Range. The Cayo District in the west includes the Mountain Pine Ridge (ranging from 305 to 914 meters above sea level). The northern inland districts alternate between savanna and fertile river valleys, while the southernmost district is true tropical rain forest. Climatic diversity adds to Belize's distinctiveness. Though sub-tropical and tempered by trade winds, the rainfall varies from 76 centimeters in the north to 457 centimeters in the south, with a dry season from February to May (Belize Information Service 1992a).

Demographics

Though the country is small, it does not have the population pressures which tend to characterize much of the Third World. With less than twelve inhabitants per square kilometre, the estimated 190,000 people (Belize Information Service 1992a) are spread throughout the entire country, equally divided between urban and rural dwellers, though the population is not equally dispersed throughout the districts (see Figure 1.3 for population distribution by district). Over forty-five percent of the population is under fourteen years of age.

Figure 1.3: Comparison of Population density to Land Mass by District (1989)



Source: Belize Information Service 1991

It is estimated that over the past four decades as many as 60,000 Belizeans have emigrated to the United States, either legally or illegally (SPEAReports3 1990:10). Most leave the country to obtain employment in order to send remittance payments back to Belize, but will often return home to their villages and towns for extended periods of time.

The government officially lists 4,789 refugees as of January 1991 (Belize Information Service 1992:2a), though it has been estimated that in the past decade over 30,000 refugees, or eighteen percent of the country's population, mostly small-scale agriculturalists from El Salvador and Guatemala, have entered Belize. Of this number, less than one quarter have sought official refugee status. The United Nations High Commission for Refugees (UNHCR) and the Belizean government have formally set aside the Valley of Peace (see Figure 1.4), located fifteen kilometers northwest of the Western Highway, as a refugee village which houses over 700 people (SPEAReports3 1990:26). Many of the other refugees are living in small villages or are hiding in the forest.

Figure 1.4: Entrance to Valley of Peace Village



Undeniably, the country is feeling the cultural, economic and environmental pressure of its refugee situation. Mostly landless peasants, the refugees often squat on the land, engaging in slash-and-burn agriculture, or work for extremely low wages in banana and citrus (Bze.\$2.50 per hour)². More disruptive however is "the perception by an increasing number of Belizeans that refugees are endangering the 'ethnic balance' and bringing unsavory characteristics which can contaminate the rest of the population" (SPEARreports 3 1990:27).

Language

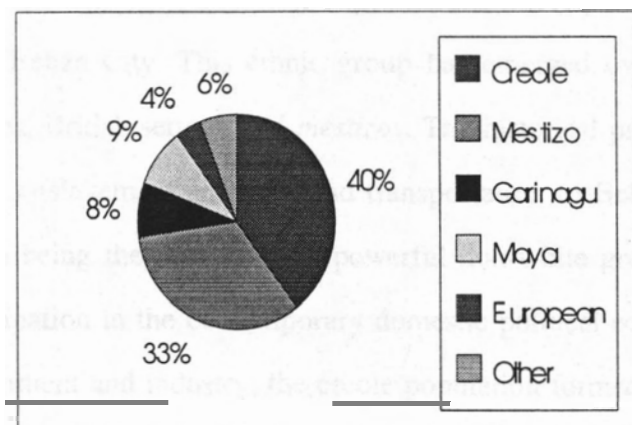
Colonized by the British, the official language and language of school instruction is English, though due to ethnic diversity consequent on slavery, indentured labour, immigration and the pre-Columbian legacy, one will also hear Spanish, Creole Patois, Garifuna or Black Carib dialects, Maya dialects, a Low German dialect (spoken by the Mennonites), Lebanese and Chinese. As a result of the continually increasing Spanish speaking population, Spanish is occasionally taught in primary and secondary school, and is the language of choice for twenty percent of the Radio Belize broadcasts, although the station has also introduced programs in both Garifuna and Maya. The government of Belize has openly acknowledged the need to promote bilingualism in its country (Belize Information Service 1991a:18).

Ethnic Enclaves

The historical relations surrounding Belize's ethnic groups have resulted in the country being divided into ethnic enclaves, which in many cases are also geographic enclaves. This microcosm of diversity yields an important dimension, as the ethnic groups have different relationships with the physical environment, both historically and contemporarily.(Figure 1.5 highlights the ethnic division of the Belizean population).

²Monetary amounts will be listed in Belize dollars which are at a fixed rate with United States dollars. U.S.\$ 1.00=Bze. \$0.50 unless otherwise noted.

Figure 1.5: Population Distribution by Ethnic Group



Source: Ministry of Economic Development, 1989

Maya

From about AD 300 to AD 900, Belize was one of the core areas of Classic Mayan civilization. Today, approximately nine percent of the population are Maya. Though it has been argued that the Maya have always resided in Belize, evidence of their continual occupation is contested (Graham 1980). The Kekchi Maya, three percent of the population, initially migrated to southern Belize from Guatemala between 1883 and 1885. The Mopan Maya, also from Guatemala, make up another three percent of the population. While historically these two groups are culturally, linguistically and geographically different, intermarriage has reduced their differences. The Yucatec Maya first arrived in Belize during the Caste Wars in the Yucatan, from 1847 to 1849, and account for three percent of the population (Belize Information Service 1992a). Though the slash-and-burn agricultural tradition of the southern Maya and the combined slash-and-burn and intensive system of the northern Maya are still in evidence in Belize today, both traditions are under threat from environmentalists aiming to stop the burning of the rain forest, and from export-agribusiness in its ever-increasing need for land.

Creole

Though the largest population group in Belize (forty percent), the *creoles* are located primarily in Belize City. This ethnic group has emerged over time from the mixing of African slaves, British settlers and *mestizos*. The historical process of colonial expansion, which led to enslavement in Africa and transportation to Belize, has also resulted in this ethnic group being the second most powerful non-white group in the country. With an active participation in the contemporary domestic political economy by holding positions in the government and industry, the creole population formed the labour backbone of the post-emancipation forestry industry and have made up the majority in the pre- and post-colonial civil service.

Mestizo

Arriving initially in Belize during the Caste Wars (between 1847 and 1849), the mestizos are the second largest population group in the country (thirty-three percent). Descended from Amerindians and Europeans, the term mestizo implies racial connotations rather than cultural attributes (Hartshorn 1984:28). Residing primarily in the Corozol and Orange Walk Districts in the north, the mestizos became instrumental in the development of export agriculture in Belize. During the decline of forestry in the 1850s, many mestizos became successful in sugar cultivation and export.

Garinagu

Accounting for approximately eight percent of the population, the *Garinagu*³ live mainly in Dangriga, Silk Grass and Hopkins in the Stann Creek District (seventy percent), with most of the remainder living in Seine Bight and Punta Gorda in the Toledo District. Settling in Belize in the early nineteenth century, this ethnic group, like the creoles, traces its origins to Africa. Originally escaped slaves, the Garinagu made their way to the West Indies and intermixed with the Caribs. Deported from St. Vincent to the Bay of Honduras

³Originally referred to as Black Caribs and later Garifuna, this group is now referring to itself as Garinagu, with Garifuna being the reference to its language.

in 1797, the Garinagu relocated to Honduras and Belize (Gonzalez 1969:20). This culturally distinct group, while never slaves in Belize, were treated with suspicion by the British and in 1872 were placed on reserves. The Garinagu have maintained their relatively closed communities to this day in the quest for cultural survival. Living primarily in subsistence fishing and farming communities, this ethnic group possesses little political or economic power, though they define themselves as culturally one of the richest groups in Belize.

East Indian and Chinese

Brought to Belize as indentured labour in the 1860s, today these groups account for two percent and less than one percent of the population respectively. Maintaining small farms or retail businesses, the East Indians live primarily in the Corozol and Toledo districts. The Chinese are scattered throughout the country and often own and operate retail outlets and restaurants in the towns and in Belize City (Hartshorn 1984:29-30).

Mennonite

Arriving in Belize via Mexico and Canada between 1958-1962, the Mennonites are a religious sect of German descent who have a history of repeated migrations consequent on legislation which they find unacceptable, discrimination in resident countries, cultural incursions from the secular world and the need for land (Sawatsky 1969)⁴. The movement to Belize resulted in the guaranteed right to operate their own schools, remain exempt from military duty and, most importantly, the availability of land to sustain the generational "hiving-off" cycle (Gates 1993). Originally, the Mennonites did not use motor vehicles for farming or transport, as this technology was denounced by their religious beliefs. For some Mennonites in Belize this has changed, and large machinery is commonplace for clearing land, cultivation and harvesting of crops and processing and packaging of food, while other groups remain steadfast followers of traditional ways.

⁴Originally from the Swiss Alps, members of this Protestant sect moved to northern Germany, and southern Russia, then to Pennsylvania in 1700, to Canada in the 1800s and to Mexico after World War 1.

Beginning with the marketing of dairy products and eggs, the Mennonites now virtually control the domestic production of poultry, vegetables, peanuts, dairy products and processed foods such as jam and jelly. The Mennonites are also buying as much available agricultural land as possible to sustain their generational increase, often placing them in competition with conservation groups for land. The Mennonite community is prospering agriculturally and economically, often at the expense of non-Mennonite small-scale farmers. As will be discussed in Chapter 5, many small farmers cannot compete with the closed system of trade and barter for goods and services which is characteristic of the Mennonite community.

Colonialism and Dependency

Belize epitomizes the legacy of colonialism which exists throughout much of the Third World. During the seventeenth through eighteenth centuries the area was initially settled by the British for the sole purpose of logwood and mahogany extraction (Ashcraft 1973; Dobson 1973). Resource extraction and economic development was conducted in a haphazard manner with little concern for either the territory or the many slaves and indentured workers who resided there.

Characteristic of colonialism is the boom-and-bust cycle of economic development which marks the country's past. One only has to trace the history of Belizean exports, from timber through hardwoods, sugar, bananas, citrus, cacao, fish, and tourism, to see the vulnerability of both its economy and environment to externally controlled export production.

Compounding the economic difficulties of boom-and-bust development are environmental problems created as a direct result of export agribusiness. The increasing use of pesticides and herbicides such as paraquat and DDT in weed control, marijuana eradication and malaria control have in many areas contaminated the ground water. Chemical fertilizers used to increase the productive yields of export crops have increasingly become a problem. Agrochemicals that are used in Belize tend to break down

under tropical soil and climate conditions at a more rapid rate than in temperate circumstances and subsequently leach into the ground water and streams. Still, the most harmful effect from agrochemicals results from direct human exposure occurring because field workers wear little or no protection (Leonard 1987). Significantly, many of the chemical substances that are in use in the Third World for the purpose of aiding in economic development have been banned in the developed world⁵. These Belizean examples underscore the dominant attitude regarding development-as-economic growth in the Third World, regardless of the evidence that exists to prove the destructive nature of such development in both long and short terms.

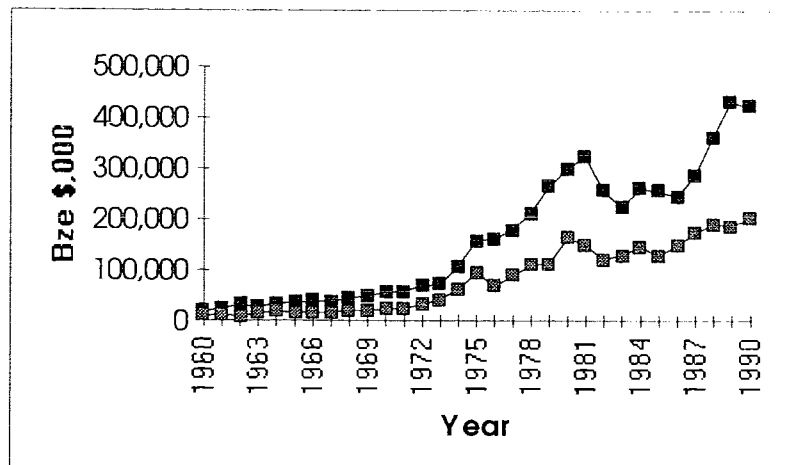
As indicated above, Belize has suffered as a direct result of First World development and consumption patterns. One response to this situation is a growing desire within the country, albeit on a small scale, to slow down the destructive patterns of development that marks the country's past. Though the government has policies which outline some sustainable development options, Belize is suffering twenty percent unemployment (Belize Information Service 1992a), a consequence of boom-and-bust development, as well as a trade deficit (see Figure 1.6) which, to a large degree, hampers the national movement toward more viable long-term alternatives.

The dependency model of A.G. Frank (1967) is applicable to the Belizean situation, as the country bears evidence of areas which were once highly "developed" but are now decaying remnants of an economically profligate past geared to resource extraction. The work of Theotonio Dos Santos (1970) explores the relationships between dependent and controlling economies and world-trade. Jan Knippers Black's (1991) work focuses on bridging the gap between theories of development and actual practice. Ronald Chilcote (1986) and Joel Edelstein (1986) provide a further elaboration of dependency and

⁵Substances banned in the United States, but in use in Belize include Chlorinated Hydrocarbon (DDT) which is used extensively in combating Malaria and DBCP (1,2-Dibromo-3-chloropropane) which is used to prevent worm destruction of citrus, banana, and pineapple, a carcinogen which has been linked to sterility in exposed humans. (Leonard 1987:144, 150-151)

underdevelopment. These sources are drawn upon as theoretical support for the underdevelopment of Belize, both past and present.

Figure 1.6: Trade Deficit: Imports and Exports



Source: Woods and Perry, 1991.

Attitudes toward both nature and the development of natural resources are based upon ideological beliefs that vary between different social, cultural and economic groups. Though it is unlikely that most people consciously think about how their attitude toward nature came to be, it bears repeating that the factors effecting the formation of the man-nature relationship should be considered. The work of David Pepper (1984) and Timothy O'Riordan (1976,1981) on the ecocentric and technocentric dimensions of the man-nature relationship, explores the environmental attitudes that are predominant in the colonial and contemporary eras. The transformations in man's relationship to the environment, as a result of scientific and technological advancements, have led to the domination by "Western man" over both cultural and natural environments in the Third World. This relationship becomes apparent when tracing the origins of the philosophical belief that science equals power over nature; thereby providing, at the very least, the ideological impetus for the suppression of traditional ecological knowledge during the colonial

expansion era. Colonialism, and later, imperialism will be equated to the technocentric end of the environmental spectrum, as outlined by O'Riordan (1981), while the philosophical principles of romanticism and the transcendentalist era are indicative of ecocentrism.

Technocentrism (technological environmentalism) implies a rational belief in the possibility of objective management of the environment such that man can enhance and harness nature for his own ends. This control over nature is justified through indicators of social progress; progress which is measured by increased material consumption and based upon complex technology. Natural laws, which are manipulated to suit economic laws, are perceived as being the domain of the experts, thus common man is discouraged from participating in the scientific management of his world.

Ecocentrism possesses both scientific and non-scientific dimensions. The scientific dimension suggests that man is part of and in a reciprocal relationship with nature. Thus, when man acts against nature, the results will have a damaging effect upon the whole system. Non-scientific ecocentrism finds its roots in philosophical teachings of the great chain of being and plenitude, leading to the belief that man is but one link in the great chain and that plenitude, in the form of biodiversity, is imperative for global survival.

Development in the Third World has many forms. Technocentric development focuses, primarily, on economic growth through the appropriation of natural resources, and through large-scale production for export-agriculture. Ecocentric development alternatives, on the contrary, imply a style of development based upon non-economic factors, coupled with a concern for the natural environment as the primary motivating force behind its action. Sustainable development has, in recent years, been gaining attention among development theorists not only as a possible bridge between opposing development styles, but also as a global development strategy.

Sustainable Development

Sustainable development is a multi-dimensional construct. On the one hand, it is interpreted as alternative development that is environmentally sustainable and, on the other

hand, is seen as little more than growth-as-usual, though scaled down, which advocates pro-growth goals based upon scientific and technological expertise. Pearce (1990) has suggested that the growth-as-usual attitude results from the lack of consideration of environmental degradation among development economists. Therefore, solutions shrouded in sustainable rhetoric could represent either the ecocentric or technocentric side of the spectrum or may, in fact, fall somewhere in the middle ground.

From an ecocentric perspective, some of the solutions include the adoption of the traditional ecological knowledge of indigenous people as the primary vehicle for reorienting economic development, the redistribution of wealth and a more equitable sharing of the profits from resource extraction. By increasing emigration from the overpopulated Third World to the developed world, a reduction in global poverty may result. The implications of these solutions would require fundamental social and structural change within the First World, resulting in a re-evaluation of the philosophies and ideological justifications by which the First World has assumed its hierarchical position in relation to the rest of the globe. Societies would need to agree to reduce, for example, consumerism and off-shore production of goods in Third World sweatshops that are owned by transnational corporations. Intrinsic to the success of sustainable development is a rebuilding of basic respect for both a man-nature harmony and global cultural differences.

First World -- Third World Historical Processes

The feasibility of global sustainable development must consider certain fundamental issues such as: the effect of the increasingly global economic processes as evidenced by neo-liberal versions of laissez-faire and comparative advantage economic philosophies; a lack of consensus on what sustainable development implies; the emergence of numerous opposing models of sustainable development; and the possibility that sustainable development may, in certain instances, be merely another form of environmental imperialism. As evidenced by the field observations in Belize, sustainable development is

being encouraged by the government, as well as by national and international NGOs (some of which receive funding from large development agencies such as USAID), and is being pressed upon Belizeans, many of who are living at or below subsistence levels. Table 1.1 illustrates the income distribution within Belize for 1982 and adds income distribution projections for 2000. The data show that less than fifty percent of the Belizean population will have annual incomes more than US\$1,000.00. The economic development picture which this data illustrates suggests that, regardless of economic development which takes place in Belize, it will only have a marginal economic impact on local Belizeans.

Table 1.1: Annual Income Distribution for Belize: 1982 and projected for 2000

1982			2000		
Percentage of Population with Incomes Above:			Percentage of Population with Incomes Above:		
Poverty Line	\$1000	\$5000	Poverty Line	\$1000	\$5000
94.2%	24.0%	5.0%	96.7%	37.3%	9.1%

Source: Graham and Edwards 1984:6.

Concurrently, large-scale foreign investors continue to pursue development objectives that are proven contributors to environmental degradation. The inability of many Belizeans to engage in projects requiring a large outlay of capital investment basically relegates them to small-scale, labour-intensive economic development schemes. Thus, sustainable development often occurs by default rather than through carefully laid-out project initiatives.

The legacies of colonial expansion and underdevelopment are present in Belize today and will be considered when addressing the possibility of achieving sustainable development within the country. The unequal power relations resulting from the colonial

period are deeply entrenched in contemporary Belize. For these reasons, this thesis outlines a brief history of Belize from a dependency or underdevelopment perspective and considers the different attitudes toward nature that are present in both historical and contemporary development processes.

Research Methodology

Preliminary research for this thesis was conducted from January 1991 to January 1992 and from July 1992 to August 1993. Fieldwork in Belize was undertaken from February 1992 until May 1992. Two environmental conferences were attended to assess NGO sustainable development strategies for the Third World and to hear from members of Third World countries about grass-roots sustainable development options under consideration. The First World Congress on Tourism and the Environment was held in Belize in April 1992 and the World Congress for Education and Communication on Environment and Development was held in Toronto, Ontario in October 1992. In addition, a review of Belizean socio-economic, political, cultural and environmental literature, researched and written by Belizeans, was undertaken. Before leaving Belize in May 1992, a subscription to the *Belize Review*, the country's ecotourism and development magazine, was obtained. This has resulted in a monthly report of sustainable development and conservation strategies taking place in Belize. Began in 1990, the magazine's editor, Mel Cutlack, favours free enterprise and economic growth but suggests that the magazine will not support any political parties rather, it will "offer loyalty to the people of Belize and the elected government of Belize." (Cutlack, 1990a:2)

The choice to drive from Vancouver to Belize served many purposes. It ensured transportation while in Belize and facilitated a thorough view of environmental and developmental problems along the east coast of Mexico. Further, an introduction to the Maya past, through visiting archaeological sites along the way, aided in understanding the complex relationship that this cultural group has had with their environment.

The first task upon arriving in Belize was to find both suitable accommodation and a research location for myself, my partner and ten year old son. Dangriga was the location chosen while still in Canada, as it was centrally located within Belize. However, Hopkins Village was where we resided and conducted much of the fieldwork. Dangriga, became the centre for obtaining goods and services, as well as some interviews, but proved too difficult to break into as a primary research site. Within two weeks of our arrival in Dangriga our vehicle had been broken into twice, verbal assaults were commonplace because we had been labeled "white Americans," and we were constantly hounded by people seeking money to buy crack cocaine and alcohol. Warned not to walk about the town at night due to the high crime rate and the less than responsive local police force, we sought out a quieter community in which to establish ourselves.

Hopkins Village, twenty-four miles south of Dangriga on the Southern Highway, has the distinction of being the largest village in Belize, with an unofficial population of 1,500 (see Figure 1.7).

Figure 1.7: A view of Hopkins from along the beach



Originally called Yugadan, the village traces its origins to the 1941 hurricane that decimated the former village of Newtown. Seeking an area to restart their community, the Garinagu of Newtown moved a few miles down the beach to find a small settlement of seven families who had arrived in 1937, after fleeing a massacre of Garinagu in Honduras. They joined the seven families already living there, built houses and began again. At the time of the fieldwork, the village had no running water or electricity, though both services were scheduled to be provided during 1993 as part of the government's Rural Electrification Plan (see Figure 1.8). According to the villagers, power poles were put up in the village years before and diesel electricity was generated but "the generator broke, no-one fixed it so we took the poles for firewood" (I-8, Hopkins, February 1992)⁶.

Figure 1.8: Power poles along the main road in Hopkins



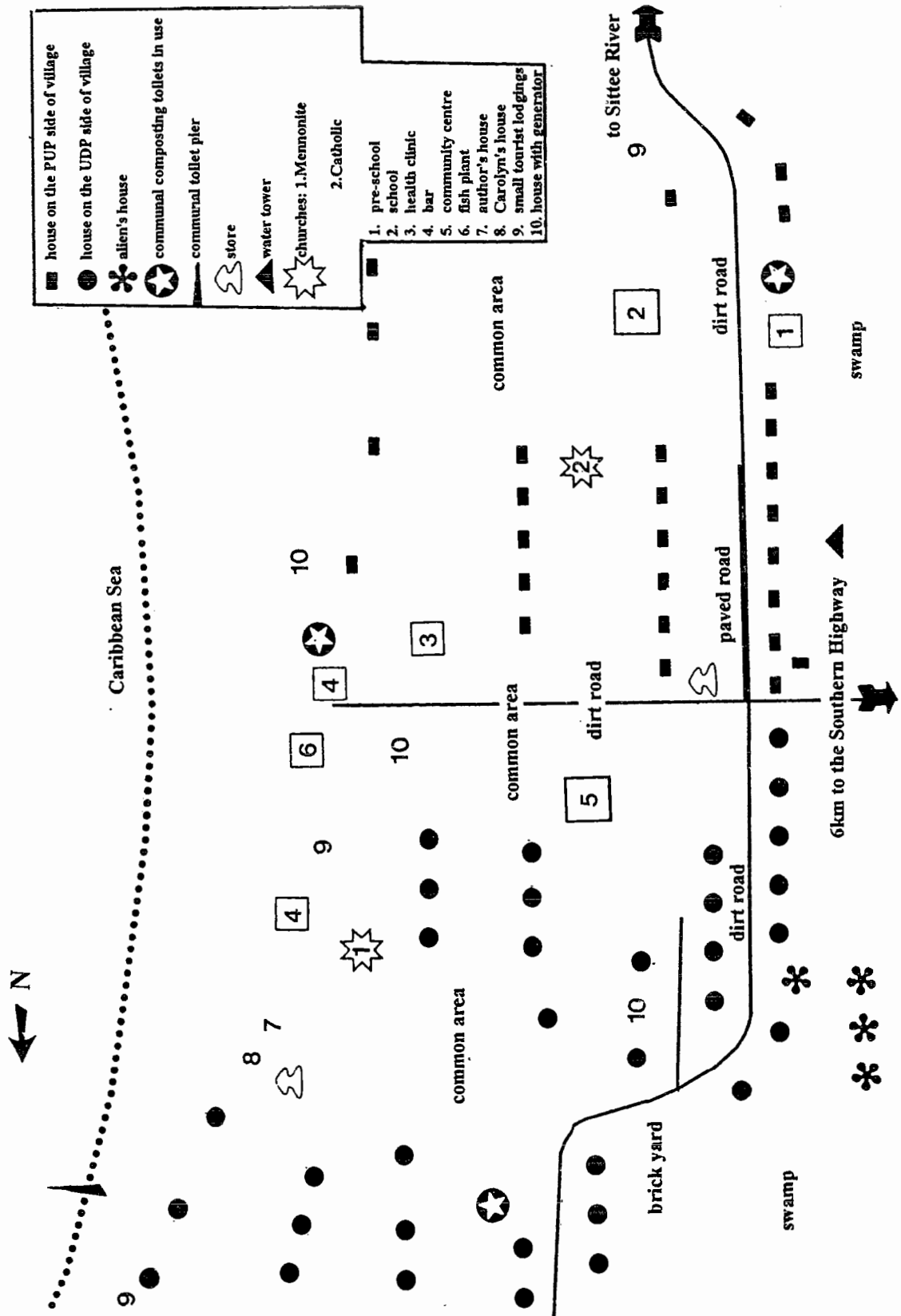
⁶Interviews are referenced by interview number, location and date unless otherwise noted.

The economic base of the community is primarily subsistence fishing and farming activity. Family gardens are planted with rice, cassava, beans and plantain. Remittance payments from relatives living in the United States are also a large contributor to village economics, as is the illegal drug trade. There are two stores in the village selling basic staples, some meat and dairy products and kerosene, yet many villagers sell items from makeshift stalls in their front yards or go door-to-door with baked goods and other foodstuffs. The village also has a fish processing plant which has been operating on an intermittent basis for five years. Both men and women leave the village to work as wage labourers in agriculture and tourism whenever possible, often leaving their children with relatives or friends. At the time we were in the village it was estimated that at least fifty percent of the school-aged children had absentee parents (I-24, Hopkins, April 1992).

The village has one community telephone, a health centre, a small stall which serves as a post office, catholic and mennonite churches, and an elementary school. There is a community centre where village meetings are held, as well as two drinking establishments that also serve as community gathering places for all ages. Figure 1.9 is a sketch of the village.

Hopkins was predominantly Garinagu, except for the few refugee families (referred to as "aliens" by the villagers) living along the swamp and two expatriate Americans who had made Hopkins their home. The Garinagu provided much of the data on the day-to-day activities of local people. Further, because there was no electricity at the time, there was no use for luxury items such as televisions, and village life was conducted outside with one's neighbours. Most women prepared food and did laundry outside while visiting with neighbours engaged in the same tasks. Likewise, many men in the village congregated around the ever-present domino games or sat under the coconut palms having a drink with other villagers while resting in the shade. Though village elders had expressed certain fears about the changes which power would bring to the village, the majority of villagers

Figure 1.9: A Sketch of Hopkins Village



interviewed could hardly wait.⁷

The dwelling I rented in Hopkins was a three meter by five and one-half meter board house on stilts, facing the Caribbean sea. Located between one of the village common areas and a major walking thoroughfare, the location provided an excellent observational point. As the house had a zinc roof from which to catch rainwater, safe drinking water rarely became a problem.

While in the village, semi-structured formal interviews were conducted with twenty-seven local people, though conversational data was collected on an ongoing basis with many other residents. The semi-structured interviews were conducted in public areas around the village, such as the bar, the store, the fish plant and on the beach where many local people congregated. After becoming known in the village, a process facilitated by our landlady, who ran the main store in Hopkins and who introduced us to many locals, semi-structured interviews were conducted. Informants were selected firstly, on the basis that they would agree to speak with me after being told that I was conducting fieldwork for a graduate thesis on environmental and development issues in Belize, and secondly because of their occupations, activities and political views. I was looking for information as to the villagers attitudes toward nature, their awareness of environmental degradation on a local, national and global scale, and what they expected would happen as Belize attracted more tourists and how this would alter village life. Questions were asked on the following themes: demographics, family history, village history, local politics, how the natural environment has changed over the years, waste disposal methods, subsistence activities, cultural activities, education, travel and knowledge of areas other than Belize. The farmers and fishermen interviewed were asked, in addition, for information on

⁷Field observations identified four villagers who already owned televisions. For the most part, they were ridiculed because many felt the televisions would rust away, due to the climatic conditions, long before power ever arrived.

methods of fishing and farming, crop production or changes in fish stocks. As participant observation was the primary mode of data collection, much time was spent gaining information while washing clothes with the women, going fishing with the men, sitting in the local tavern sipping strong rum and Belikin beer, and playing with the many children who would congregate under our house to escape the sun.

Though Hopkins became a relatively easy place to collect data, some problems emerged. At the time we chose our rented accommodation we were unaware that the village was roughly divided by political affiliation. United Democrat Party (UDP) supporters lived to the north and People's United Party (PUP) supporters to the south⁸. By living on the UDP side of the village we were labeled as sympathetic to UDP policies, resulting in the majority of the informants being UDP supporters. Also, an incident occurred near the end of our stay which hastened our departure from the village by three weeks. A young man returned to the village, after being gone for a number of months. Having had too much to drink, and being unhappy that a number of Garinagu locals were at our house for a party, he started a fist fight with two of the men. Accusing them of being friends with the "white slave masters", he left but threatened to return with a gun and "kill the whites". We were assured that, although the man did not like whites, he would probably not follow through on his threat. Regardless, we left for Canada the following day.

During the field research phase numerous trips were made to areas within Belize to observe the legacy of past and current economic activities and their impact upon the environment, in an attempt to visually measure environmental degradation as well as conservation strategies taking place. In the Toledo District in southernmost Belize, the advisor to the Mayan ecotourism project was interviewed. Information collected was essentially economic in nature: Why the tourism project rather than traditional slash-and-burn farming wage labour? Where was support coming from for the project? How were

⁸At the time of our residence in Hopkins the PUP were in power with the UDP as the official opposition.

six villages encouraged to become involved? What problems have emerged? Is the project run in an environmentally sound way?

Data was also collected through semi-structured interviews with a Canadian man who operated a portable saw-mill business in the Stann Creek district. Experienced in British Columbia forest practices, this informant provided comparative data on types of logging, harvest practices and environmental management of the resource, thereby aiding in understanding the stress and conflict which exists between subsistence land use practices, small-scale farms, and clearcutting for the expansion of export agribusiness.

Due to the growth of tourism in Belize, certain cultural items, such as Garinagu drums, replicas of Mayan artifacts, Mayan baskets and traditional music have made their way into the marketplace, often at both an environmental and cultural cost. Interviews with crafts people and musicians marketing these products yielded information about the difficulties of meeting consumer demands and competing for business using items which are traditionally ceremonial.

Belize has a number of conservation areas and organizations which are attempting to foster a conservation ethic among the population as well as building an international reputation for conservation commitment. Interviews were obtained from members of the Belize Zoo and Tropical Education Society, Belize Center for Environmental Studies, Cockscomb Jaguar Reserve, the Program for Belize, and the Belize Audubon Society. The respondents were questioned as to the length of time the group had been together and why?, primary concerns and policy objectives, membership, paid and volunteer positions, environmental problems and solutions, and attitudes toward sustainable development.

The minister for tourism and the environment, Glenn Godfrey, agreed to be interviewed (in Toronto while we were attending a conference) and outlined Belize's plan to further develop its environmental policies while continuing to obtain foreign exchange through marketing its natural resources. While the national elections in the summer of

1993 have resulted in a UDP government, the current minister of tourism, Henry Young, has promised to maintain or improve the policies of the former administration.

Belize City was the site for a portion of the First World Congress on Tourism and the Environment (April 27 to May 2 1992), with field seminars in other areas of the country. The conference was attended by more than four hundred delegates with less than one-sixth being Belizeans. The objectives of the conference planners were to locate the conference in a Third World setting; bringing global expertise to that location in an attempt to foster a sharing of knowledge between both worlds. Over twenty countries were represented at the conference. Unfortunately the conference fees, at Bze. \$175.00 for the conference and Bze. \$95.00 for the field seminar, were beyond the budget of many native Belizeans and their under-representation was apparent⁹. The field seminars, however, were more successful in that they took place in small communities and on certain cayes and were, for the most part, organized by residents of the area. Attendance at one planning session, six weeks prior to the conference, at Punta Gorda, revealed the different opinions with which the local population viewed the ecotourism conference. Local elites were wanting to exclude from participation certain members of the community who held opposing views toward ecotourism and, in this one case, seriously undermined the objectives of the United States environmentalists who had planned the conference.

The World Congress for Education and Communication on Environment and Development, held in Toronto, was attended by more than 3,000 delegates representing sixty-four countries around the globe. Conference fees ranged from Can. \$145.00 for students to Can. \$535.00 for general registration. The purpose of the congress was:

to stimulate informed action by improving the accuracy, quality and delivery of education and communication relating to the environment and sustainable development. A practical and action-oriented initiative, Eco-Ed fosters the cooperative exchange of relevant knowledge among

⁹Fees for non-Belizeans were US. \$175.00 for the conference and US. \$95.00 for the field seminars.

educators, scientists, businesses, governments, voluntary organizations and the media. (World Congress for Education and Communication on Environment and Development 1992:2-3).

Issues raised at the conference focused on Agenda 21¹⁰, yet a feeling of despair pervaded many of the presentations by participants from Third World states. Environmental degradation was continuing in their countries with little regard for the global actions advocated under Agenda 21. The interviews conducted and the sessions attended at the conference were concerned primarily with traditional ecological knowledge and its place in potential solutions to global environmental degradation.

Ethical considerations which emerged during the fieldwork pertained to maintaining the anonymity of most of the informants, thus a number, location, date format was used for referencing informants except where otherwise noted. Reasons for this include fear of reprisals from those in positions of power over many of the rural people. An example of this came during an interview with a villager who recounted losing a land lease, which the family had held for a number of years, and the land was given to the friend of an influential PUP party member. The villager who lost the lease was an outspoken member of another political party. Also, where references are made to the drug trade, those providing information fear, justifiably, for their lives. The drug trade in Belize is well established and a large contributor to the informal economy. The methods used by those in the trade to deal with informants are ruthless.

Other ethical considerations revolve around the impact which we had upon the village. During our time in Hopkins, my partner made many renovations to the house we lived in, including building a bucket shower and toilet stall, helping certain villagers do minor house repairs, offering to show local people how to construct craft items from bamboo, and taking those villagers who had become friends on trips around the country. As a result, a

¹⁰In December, 1989, the United Nations formally declared to convene a United Nations Conference of Environment and Development. Agenda 21 is the complex document, which was produced in the two years preceding the conference, and is a "comprehensive blueprint for the global actions to affect the transition to sustainable development" (Strong in Quarrie 1992:11)

few people expressed a dislike for us since our actions potentially could have altered village life. The pace of life in the village was divided by gender; women would be continually busy with domestic chores from dawn until dusk, while many men worked sporadically (see Figure 1.10). One female informant succinctly captured the male work ethos, "the only rights a man has in Hopkins is the right not to work" (I-27, Hopkins, May 1992).

Figure 1.10: Baking bread using coconut husks for fuel



With regards to the shower, though many locals criticized the project, before we left the village two other homes had similar showers installed. While minimizing one's impact upon the study group is of prime importance, in retrospect we would probably change

very little of the way we lived, while in Belize, were we to repeat the project. The objectives of the research design were met, and along the way, many important friendships were made with people in Hopkins and Dangriga. Though we did alter our surroundings, our landlady had, before we rented and renovated her house, made plans to turn it into a small tourist accommodation or a restaurant. Being able to assist her toward meeting this goal was a meager repayment for all of her hospitality and kindness.

Though many sources of data have contributed to this thesis, none was more important than the information provided by the villagers of Hopkins. The villagers who became informants and friends were fundamental to this project and their contribution should be highlighted.

The thesis is organized as follows. Chapter two examines the philosophical and ideological foundations of the man-nature relationship through the colonial era of underdevelopment and the suppression of the traditional ecological knowledge of the Maya. The chapter further explores the attitudes toward nature of the other ethnic groups in Belize as well as those of the proponents of sustainable development. Chapter three discusses the underdevelopment of Belize through a chronological presentation of the treaties which have, by and large, dictated the fate and future of the country. Analysis of both the historic and contemporary boom-and-bust cycles of resource extraction and agricultural development is also included. The chapter closes with an overview of the problems facing Belize as an independent constitutional monarchy which is locked into historic colonial power relations and a globalizing economy. Chapter four concentrates, specifically, on the conservation strategy and sustainable development projects currently taking place in the country. The major players in the conservation movement are identified, for example NGOs, government officials, and local community GROs. Chapter five is the result of field observations and interviews with Belizeans around the country and presents an alternative view to that of the previous chapter. Small farmers, fisher persons, and rural people have provided most of the information for this chapter. Chapter

six assesses the viability of sustainable development as a national development objective, and examines the contradictions arising from the field observations. The purpose is not to negate the importance of Belizean conservation strategy. Rather, it is to look at the structural incompatibility of ecocentric conservationism with the ongoing technocentrism of an economic development model still geared to resource extraction.

Chapter 2

Attitudes toward Development and the Environment

Throughout civilization, there have been historical, philosophical and ideological influences which have shaped the way in which humans view their world. Whether the traditional ecological knowledge of indigenous people or the technology-based environmental management of the First World is under consideration, the attitudes which humans have toward nature will affect their actions and responses toward the environment. This chapter will outline the major influences and the resulting effects they have had upon the contemporary man-nature relationship.

Animism and neo-Platonic Cosmology

Animism, which has been linked to the holism of traditional ecological knowledge, has been identified as the earliest known religion. Inherent in animism is the belief that every living thing, whether a tree, river or an animal, has its own spirit, and that while these spirits were accessible to man they were very much unlike man. Arising from animism were the philosophies of the great chain of being and plenitude. Originating with the Greeks and constituting a neo-Platonic cosmology, these ideas were expounded by Plotinus (in the third century AD) and Macrobius (in the fifth century AD) (Pepper 1984:68).

Essentially, the great chain of being is the belief that the universe is hierarchically composed of links, ranging from the lowest form of existence to the highest form, of which man occupies a position lower than that of the Absolute Being and the angels but above all other earthly objects or beings (Lovejoy, in Pepper 1984:69). Plenitude was also an important concept, for it was believed that abundance and diversity equaled excellence. The philosophies arising out of animism and neo-platonic cosmology can be linked to medieval cosmology.

It was during the period when the earth-centered belief system of medieval cosmology was being challenged, in an attempt to explain man's purpose in relation to the universe,

that the man-nature relationship became polarized (see Figure 2.1). O'Riordan (1981) refers to the polarized axes of the man-nature relationship as ecocentrism and technocentrism.

In 1965, McConnell described ecocentrism as being based upon a belief in a natural order in which balance was maintained "until man entered with all his ignorance and presumption" (McConnell 1965:190). Further adding to this, O'Riordan suggests that:

ecocentrism preaches the virtues of reverence, humility, responsibility and care; it argues for low impact technology, but it is not anti-technological; it decries bigness and impersonality in all its forms, but especially in the city; and demands a code of behavior that seeks permanence and stability based upon ecological principles of diversity and homeostasis. (O'Riordan 1976:1)

Technocentrism, on the other hand, is seen to "represent in modern Western societies the official dominant set of attitudes to the environment. It is the outlook of those groups in society which exercise the most power" (Pepper 1984:37). O'Riordan defines technocentrism as:

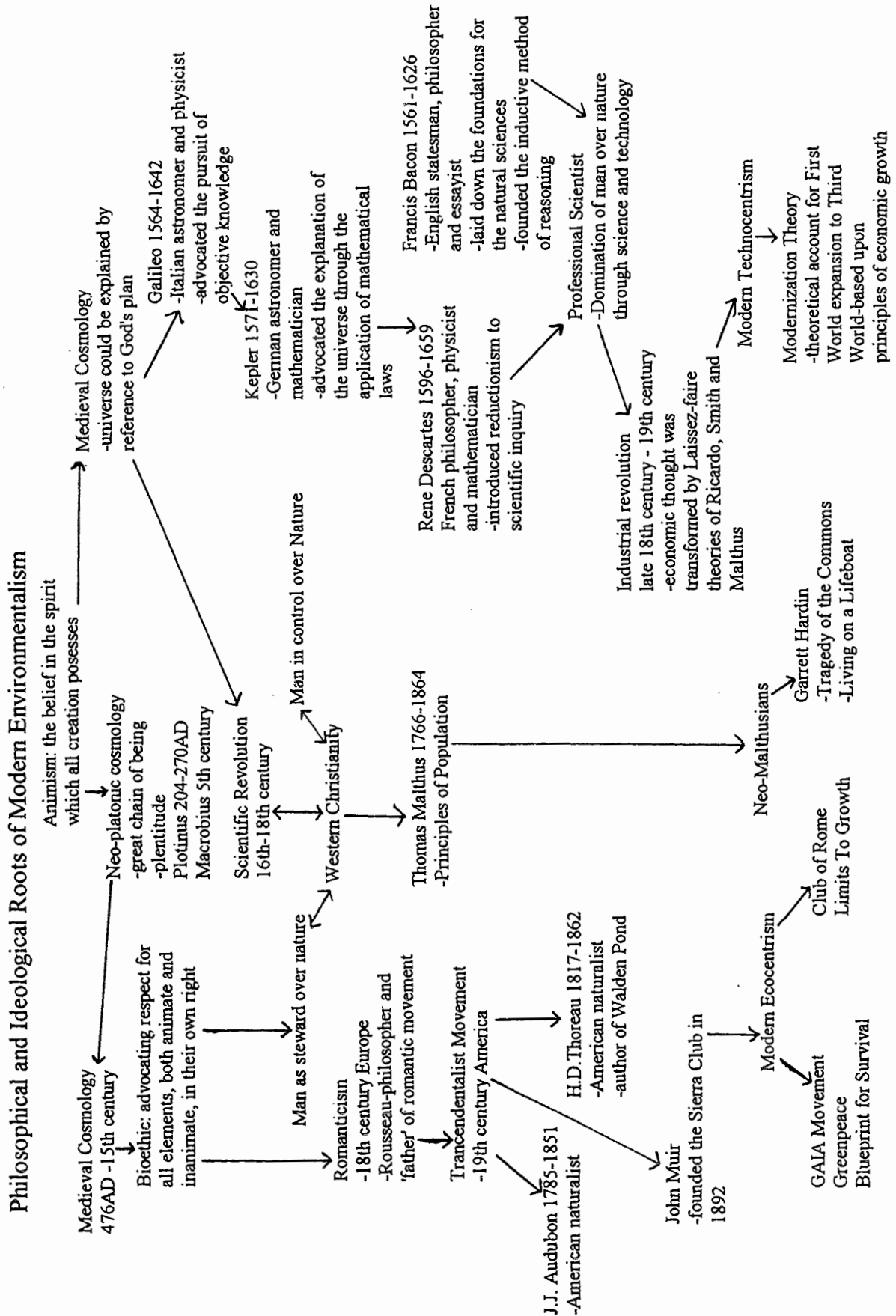
the application of rational and 'value-free' scientific and managerial techniques by a professional elite, who regard the natural environment as 'neutral stuff' from which man could profitably shape his destiny. (O'Riordan 1976:1)

Ecocentrism

As shown in Figure 2.1, animism is linked to the ecocentric side of the environmental spectrum by the philosophy of bioethical principles which suggest advocating respect for all life forms in their own right and not for purely pragmatic reasons. Adherents to bioethic reasoning contend that "nature contains its own purpose which should be respected as a matter of ethical principle" (O'Riordan 1976:4).

Following along this line of reasoning, medieval cosmology asserted that the universe was ruled by God's principles and according to God's plan. The world view of medieval

Figure 2.1: Philosophical and Ideological Roots of Modern Environmentalism



cosmologists was one in which the earth was at the centre of the universe and explanations for earth could be found in understanding God's purpose. In the sixteenth century AD Kepler and Galileo challenged the medieval world view by explaining the universe using objective reasoning and mathematical principles. It was believed that God had placed man above all other earthly elements, thus man was in a position of dominance over the earthly environment. Alternately, the principles of bioethic reasoning, in contradiction to Galileo and Kepler, placed man in a position of stewardship rather than domination over the earth, and were to become the cornerstone of extreme ecocentric beliefs inherent in the romantic and transcendentalist eras of the eighteenth and nineteenth centuries (see Figure 2.1).

Non-scientific Ecocentrism

Romanticism evolved in response to the changing condition of the material world of the industrial revolution in Europe, during the eighteenth century, which was altering the natural and cultural environment. Industrializing societies required the movement of labour from the land to urban areas; the division of labour became more specialized and complex as, increasingly, rationalized and efficient production methods were implemented. The alienation of people from each other and the land reduced labour to the status of a commodity (Pepper 1984:76).

Romanticism was a spiritual movement which was linked closely with bioethical principles. Its advocates had no desire to support industrialization, for it was attacking the very core of their philosophical belief system. From the urban squalor of the cities to the taming of the countryside, the earth was being despoiled in the pursuit of economic gain. Romanticism stood in opposition to the scientific principles and rational behaviour which was altering the world to serve the materialistic desires of man. The response of the transcendentalists of nineteenth century America was similar to that of their eighteenth century European counterparts. They advocated the protection of the wilderness, drew attention to its aesthetic beauty and, regardless of its economic use to man, felt that nature must be respected and revered in its own right (Pepper 1984:82).

The ideological beliefs of both the romantic and transcendentalist eras can be found within the core beliefs of ecocentrism. J.J. Audubon, Henry David Thoreau and John Muir provide examples of historical ecocentric philosophies which were instrumental in shaping the ideological structure of non-scientific ecocentrism. While Audubon and Muir dedicated their lives to actively pursuing conservation through the creation of wilderness areas, they had an even stronger bond. Both were influenced by the writings of Thoreau and through his work found the inspiration necessary to pursue their goals.

Thoreau is one of the most notable ecocentrics of the nineteenth century. His literary works were centered in bioethical sentiments, as was his experiment at Walden Pond, in which he lived isolated from society, though only a few miles from his home, and in 'harmony' with nature for two years. His written account of the experiment criticized the material gain which many sought from nature (Thoreau 1854, 1974). Thoreau looked to nature to purify and cleanse the spirit and soul. As with other transcendentalists of this era, many sought nature as a way of rejuvenating the self, of allowing one to be closer to God, and while doing so being able to avoid the despair created by industrialization.

An example of contemporary ecocentrism, which is inherently spiritual but cognizant of scientific knowledge, can be found in *Blueprint for Survival*, written by Goldsmith, Allaby, Allen, Davoll, and Lawrence, the editors of *The Ecologist*. Published in 1972, this book outlines the plan, and timetable, for the movement toward a utopian society. Relying on the belief in the inherent "goodness" of the human population, *Blueprint* suggests it is possible for Britain to become an ecologically conscious society. Advocating a society in which the guiding principles are based upon bioethical sentiments and a spiritual relationship with the natural environment, the plan includes the return to small self-sufficient communities, decentralization of power, undestructive alternative technologies, a shifting of agricultural production from export based toward subsistence and, inevitably, a stabilization of population size (Goldsmith 1972). Though more utopian than realistic,

this vision of the British society was an important treatise at a time when eco-doom and gloom was demanding the attention of the developed world.

In 1984, *Gaia: An Atlas of Planet Management*, was edited by Meyers and seemed to contradict the criticism of Erisman who suggested that ecocentrism was mere ecological speculation which possessed no scientific legitimacy (Erisman 1973:13). Revised and reprinted in 1993, the document thoroughly outlines the present condition of the degraded global environment. The Gaia hypothesis, originally put forward by Lovelock, in essence likens the biosphere to a living organism whose life-support systems operate through natural feedback mechanisms (Lovelock 1979). Though an argument could be made that the Gaia Atlas should be considered as scientific ecocentrism, it cannot be overlooked that the document is based upon bioethical principles placing humans in a position of stewardship, rather than domination, over the biosphere and that the human population, alone, must bear the burden for the degraded condition of the biosphere. With consideration of the rights of all species and biospheric elements to exist, with each linked to the other, the Gaia management plan for the future of this biosphere suggests that it is less a doom-and-gloom document rather than a way to reorient the man-nature relationship to guarantee biospheric survival (Meyers 1993).

Scientific Ecocentrism

The focus of the romantic-transcendentalist era was on the spiritual effects of the changing man-nature relationship, rather than on the environmental changes brought about by technology, therefore a discussion of the scientific side of ecocentrism is needed in order to show the multi-dimensional qualities of the movement. Thomas Malthus, in 1798, wrote his first essay on population. In 1806, using data from the 1801 population census, he expanded his ideas into the more precise *Essay on the Principle of Population*. The principle stated that population, when unchecked, increases in geometric ratio while subsistence increases in arithmetic ratio, and that population tended to increase to the limits of the food supply. Factors which were responsible for keeping populations from

exceeding the limits were called checks: positive checks included war, famine and disease, while preventative checks included abortion, infanticide and birth control. In the second edition of *Essay*, Malthus added moral restraint, meaning voluntary abstinence from sexual activity, as an additional preventative check. This allowed for a justification of the fact that those living above subsistence level tended to have smaller family sizes, thereby not supporting the principles of Malthus' population thesis. Thus, as living conditions for the certain classes improved beyond subsistence, it was due to moral restraint. (Malthus 1806,1963).

Armed with these Malthusian notions, the ruling elite in Britain were able to ignore the effect of industrialization and capitalism on the poorer classes, for poverty was the result of natural laws and scarcity was a natural phenomenon. Perelman argues that Malthus was aware that poverty would encourage the working classes to accept wage labour; thus, while Malthus attempted to adopt a cover of objectivity, in reality his population thesis was tailored to the immediate needs of capital (Perelman 1979:80).

Karl Marx, a vehement critic of Malthus' population theory, believed that the laws of population were most strongly influenced by the social relations of production. Through the creation of the proletariat, as a result of capitalist development, an industrial reserve army is produced and reproduced through the destruction of traditional methods of production, mechanization and industrial crisis (Marx 1867,1977). Poverty and overpopulation, then, were not a result of either the inability of the earth to accommodate man's subsistence needs or the unrestrained passion of certain classes, but served to provide for the needs of capital in the form of a surplus population. Marx argued that capitalism was only one phase of an evolutionary scale in the development of human society. Capitalism, by its very nature, would set in motion its own destruction. With the concentration of capital into the hands of owners of the means of production, the petit bourgeoisie would become bankrupt and, realizing the problems inherent in capitalism, would join the proletariat. Together, the new proletariat would overthrow the capitalist

elite, thereby moving the society toward a socialist system and eventually a classless communist society.

Although Malthus' work has been widely criticized for its lack of empirical support as well as its eurocentric tendencies, one cannot ignore his contribution to ecocentric environmentalism. In the wake of the environmental pessimism of the 1960s and 1970s, neo-Malthusians have had a profound impact on the environmental movement through their work on overpopulation, pollution and the limits-to-growth theory. The scientific law adhered to by neo-Malthusians is based upon the notion that the carrying capacity of an ecosystem has limits and as such the population, whether human or animal, cannot rise beyond the limits. When looking at overpopulation, these theorists suggest that environmental degradation is but another positive check, or in Malthus' term "misery", which will work not only to control population but large-scale economic growth as well.

Garrett Hardin is a well known neo-Malthusian who wrote *The Tragedy of the Commons* (1968). The analogy used in this essay was aimed at refuting Marxist principles of the potentiality of a communally owned and operated society. The "commons" was a pasture which was communally used by a group of farmers. If each farmer grazed cattle according to the carrying capacity of the pasture, the pasture would sustain the needs of the farmers. But the responsibility to do this lay with the individual; therefore, the greed of certain farmers would most certainly result in the overgrazing of the pasture, leading to degradation. If the farmer used only his own pasture he would not overgraze, for in the long run he would lose (Hardin 1968:1243-1249).

In 1974 Hardin wrote *Living on a Lifeboat*, in which the lifeboat analogy is used to point out the fallacy of the richer nations taking moral and economic responsibility for poorer nations. In short, the United States is the lifeboat and poor nations are the people drowning in the sea. The lifeboat has a limited capacity, though it still has room for more survivors. The options facing those in the lifeboat are to accept all the drowning people which would surely swamp the boat, to only accept a select few which would bring the

boat to its capacity thereby reducing the safety factor, or to let the people drown thereby guaranteeing the safety of those on board the lifeboat (Hardin 1974:561-568). In short, Hardin suggests that the poorer nations should not be carried on the shoulders of the richer ones. Absent from the work of both Hardin and Malthus are attempts to analyze the structural causes of the unequal global balance of capital and environmental degradation. By advocating the natural laws of limits based upon carrying capacity without a thorough analysis of historical economic relations, global patterns of food production and resource extraction, Malthusian and neo-Malthusian theories appear to be nothing more than ethnocentric diatribes seeking justification for the policy actions of colonialism and, later, imperialism.

Contemporary scientific ecocentrism, through the production of documents like *Limits to Growth* (1972), has addressed some of the shortcomings of neo-Malthusian theories. *Limits* resulted from the meetings of an informal group called the Club of Rome. Originally a group of thirty business people from ten countries, the Club of Rome had grown, by the time of the publication of their report in 1972, to over seventy people from twenty-five countries. Focusing on the interdependency of economic, social, and environmental problems or conditions, the Club set out to predict the outcome of the interactions between the above mentioned processes and the natural limits placed upon growth by the global ecosystem. The mathematical global model used for analysis was designed by J. Forrester at the Massachusetts Institute of Technology and facilitated the analysis of "global trends of accelerated industrialization, rapid population growth, widespread malnutrition, depletion of non-renewable resources and the deteriorating environment" (Meadows 1972:21).

The report resulted in the computer-aided analysis of variables derived from the above mentioned global trends. The scenarios generated led to the conclusions that if the present growth rate continues, the earth will reach its limits within the next one hundred years, unless changes are implemented to create a state of economic and ecological stability.

The critiques of *Limits* were many. Francis Sandbach suggested that the "ahistorical nature of the "Limits" debate reduces its credibility, and one only has to consider historical evidence to be able to refute the "refined pessimist position" (Sandbach 1978:25). In essence, Sandbach is arguing that *Limits* does not consider further exploration into new reserves of non-renewable resources, population controls already in evidence and the effectiveness of pollution control legislation in practice. Further, if the authors of *Limits* had considered these factors, the outcomes generated would have presented a radically different picture (Sandbach 1978:22-32).

The use of computer analysis of the variables has also caused criticisms, like those of Kaje (1973:331-334), regarding the problems inherent when programming the range of social indicators, especially the more qualitative elements. In response to this concern the authors of *Limits* stated: "The present model considers man only in his material system because valid social elements simply could not be devised and introduced in this first effort" (Meadows 1973:188). Regardless of the criticisms, *Limits* has helped raise global environmental consciousness within the Western world to the point that if technocentrism can be likened to the motivating force behind Western economic development, ecocentrism can be seen, to some degree, as the global environmental watchdog. Contemporary environmental groups, such as Greenpeace, the Sierra Club, the World Wildlife Federation, and the International Union for the Conservation of Nature and Natural Resources, are based upon ecocentric philosophies of biodiversity and stewardship, thereby advocating the rights of non-human species to an existence which is unhampered by man.

Technocentrism and the Evolution of Western Environmentalism

Technocentric attitudes toward nature can be traced to the scientific revolution (sixteenth to eighteenth century) which was emerging at a time when medieval cosmology (see figure 2.1) was the dominant ideology for explaining man's relationship to his environment. Though subjective in orientation, medieval cosmology held that the physical

world could be explained in reference to God's plan. With the emergence of the scientific revolution, the emphasis for explanation of the universe was through the application of mathematical laws. Though the concept of God was still important, scientists, such as Kepler, believed that God was the creator and nothing more:

Why waste words? Geometry existed before the Creation, is co-eternal with the mind of God, is God himself; geometry provided God with a model for the creation and was implanted into man, together with God's own likeness - and not merely conveyed to his mind through the eyes. (Kepler, quoted in Pepper 1984:48)

Galileo further refined this argument by suggesting that all objects had both primary and secondary qualities. The primary qualities would exist regardless of whether they were perceived by humans or not thus, an object would still possess shape, size, position, motion, and quantity. Taste, smell and colour were secondary qualities which existed only in human consciousness, were subjective and not measurable (Galileo 1623,1957). Thus, objective knowledge was perceived as true while subjective knowledge was not.

This belief came to dominate the scientific revolution and served to validate the quest for scientific truth as being the only way to secure accurate knowledge for mankind. Rene Descartes, in the seventeenth century, introduced the reductionist view. This suggested that "through analysis, everything can be reduced to the same basic quantities and qualities, all of which are measurable and expressed in terms of universally-applicable principles" (Pepper 1984:50). The work of Descartes challenged the roots of knowledge through which Medieval man ordered his world: "the complex sequence of movements which to medieval man might have appeared as proof of some kind of inner 'force' or 'spirit', could all be explained quite simply by reference to internal mechanical structure" (Cottingham 1978:553). This later came to be known as Cartesian dualism, describing the separation of subjective and objective knowledge. This dualism "rather than any Christian doctrine, paved the way for the man-nature separation in which the former was conceived

of as superior to the latter, though Descartes himself did not draw from it the conclusion that nature was created for man alone" (Pepper 1984:52).

If the work of Descartes was seen as outlining the scientific method of inquiry, the work of Francis Bacon must be seen as providing the purpose for which the scientific inquiry was undertaken. Medieval cosmology focused on the unity of man and nature while Cartesian dualism advocated their separation, but it was Bacon who asserted the creed that scientific knowledge equals power over nature (Pepper 1984):

Our main object is to make nature serve the business and conveniences of man...To stretch the deplorably narrow limits of man's domination over the Universe to their promised abound. (Bacon, quoted in Weisberg 1971:15-16)

Clearly, by the time of Bacon's writing, adherence to the principles of medieval cosmology was no longer of paramount concern for classical scientists. Man was given intelligence, by God, over other objects in the universe in order that he could serve God better by knowing the natural laws of how the universe functioned. Armed with this God given knowledge, it stood to reason that man was intended to not only use nature, but the entire universe, for his own ends.

From the visions of Decartes and Bacon emerged the professional scientist, one who could replace, or at least equal, the importance which priests had earlier held for society. Black suggests that during the era of classical science, the paradox created by the domination of man over nature would lead to the eventual destruction of both, and that by conquering nature, man was in need of a system that would hold exploitative policies in check (Black 1970:44).

The economic development policy implications of the perceived superiority of scientific knowledge, over all other kinds of knowledge, suggests that lay persons should trust the scientist and scientific management, and believe that his objective and rational approach to knowledge is the most valuable in its own right. The rationale behind this philosophy justified the suppression of traditional ecological knowledge during the

colonial era and provided the impetus for development which considered the man-nature relationship as only economic.

Western Christianity

If the scientific revolution is seen as destroying the unity of the man-nature relationship, Western Christianity has been linked to further dividing ecocentric and technocentric beliefs. Historian Lynn White suggested that "by destroying pagan animism, Christianity made it possible to exploit nature in a mood of indifference to the feelings of natural objects" (White 1967:1205). White's notion that Western Christianity set up a system whereby man was put on earth to dominate the natural environment has created considerable controversy (see Doughty 1981; Moncreif 1970; Tuan 1968). White argued that with the emergence of Western Christianity came the struggle between pagan animism and Christian teachings.

White is arguing that Christianity, "not only established a dualism of man and nature but it also insisted that it is God's will that man exploit nature for its proper ends" (White 1967:1206). Further, White is charging that the ethnocentrism of Christianity, which placed man above nature and Christians above pagans, is still inherent in present science and technology and, for this reason, Christianity must bear some of the burden for the present ecological crisis.

Taylor (1986) suggests that it was the Christian notion that God places man in a position of holding stewardship over his creation on earth, to subdue it and to make use of its bounty in a responsible way, that led to the conditions described by White. Moncreif (1970) argued that man's greed, and not Christianity, led to the eventual destruction of pagan animism. Moncreif criticized White for neglecting to consider other forces such as democracy, technology, urbanization, increasing individual wealth and an aggressive attitude toward nature as relevant variables in accounting for environmental degradation. Though there is little consensus on the responsibility of Christianity for the ecological crisis, one cannot ignore the impact Christian missionaries had on indigenous populations

in Belize, as well as on the slaves and Garinagu who settled there, during the era of colonial expansion.

Traditional Ecological Knowledge

In the movement toward objective 'value-free' scientific explanations of the man-nature relationship, the existence and importance of traditional ecological knowledge has often been overlooked. Martha Johnson has defined traditional ecological knowledge as "a body of knowledge built up by a group of people through generations of living in close contact with nature" (Johnson 1993:4). The differences between traditional ecological knowledge and Western science and technology are many (see Figure 2.2), and though Western science dominates, increasingly more people are looking toward the traditional man-nature relationship to find solutions to current global environmental degradation.

Figure 2.2: Traditional Ecological Knowledge (TEK) versus Western Science (WS)

- TEK is recorded and transmitted through oral traditions; WS employs the written word
- TEK is learned through observation and hands on experience; WS is taught and learned in a situation usually abstracted from the applied context
- TEK is based on an understanding that the elements of matter (earth, air, fire, water), which are classified as inanimate, also have a life force. All parts of the natural world- plant, animal, and inanimate elements- are therefore infused with spirit
- TEK does not view human life as superior to other animate and inanimate elements: all life-forms have kinship and are interdependent. Unlike WS, humans are not given the inherent right to control and exploit nature for their own interest at the expense of other life-forms
- TEK is holistic; WS is reductionist. WS deliberately breaks down data into smaller elements to understand whole and complex phenomena. For TEK, all elements of matter are viewed as interconnected and cannot be understood in isolation
- TEK is intuitive in its mode of thinking; WS is analytical
- TEK is mainly qualitative; WS is mainly quantitative
- TEK is based on data generated by resource users. As such it is more inclusive than WS, which is collected by a special group of researchers who tend to be more deliberate and selective in the accumulation of facts
- TEK is based on diachronic data (long term series of information in one locality); WS is largely based on synchronic data (short time series over a large area)
- TEK is rooted in a social context that sees the world in terms of social and spiritual relations between all life forms. Relationships are based on reciprocity and communal resource management; WS is hierarchically organized and vertically compartmentalized. The environment is reduced to conceptually discrete components that are managed separately

- TEK explanations of environmental phenomena are often spiritual and based on cumulative collective experience. It is checked, validated, and revised daily and seasonally through the annual cycle of activities; WS employs methods of generating, testing, and verifying hypotheses and establishes theories and general laws as its explanatory basis

Source: Johnson, 1992:7-8.

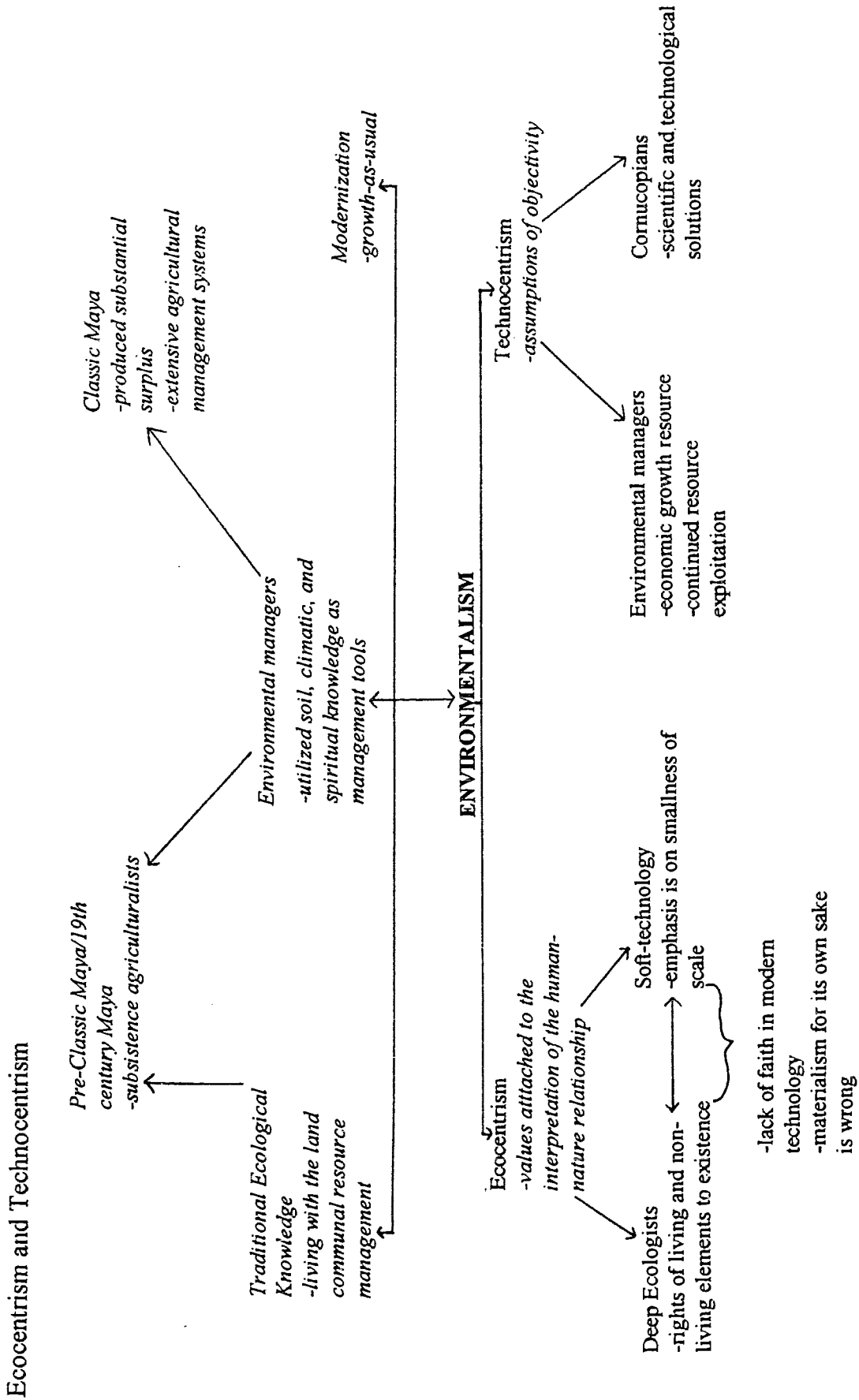
The O'Riordan model of environmentalism (see Figure 2.3) does little to effectively accommodate traditional ecological knowledge. The Classic Maya, using both *milpa*¹¹ cultivation and intensive terracing of foothill slopes and raised beds, displayed considerable sophistication in using their soil resources. With careful planning, based upon a vast amount of observational data, a keen understanding of the limits of the ecosystem, seasonal weather patterns and the will of the Gods, the Maya civilization flourished. Without the benefit of Western technology, the Maya understood the fragility of their soil base and the need to preserve, and not abuse, this valuable resource. In response to drought:

the Classic Maya coped by developing complex, locally adapted water management systems, including cenotes, chaltunes (underground cisterns) supplied by the mining of cave water, aguadas (shallow soil-lined ponds) sometimes maintained as reservoirs, bajos (seasonal wetlands), drains, and possibly canals in various combinations. (Gates 1993:77)

The cultivation of maize is a primary example of how the Maya blended their astute understanding of the environment with spiritual practices to produce this crop. Linked to birth, death, misfortune and plenty, the rituals of maize cultivation became the cornerstone of this civilization. "We and the maize are of the same substance; our creators made us of maize, and our strength comes from the maize we have eaten at sunrise, noon, and sunset almost from birth" (Thompson 1970:288).

¹¹Milpa is a method of cultivation in which small areas of maize are interplanted with beans and squash (slash-and-burn or swidden).

Figure 2.3: Ecocentrism and Technocentrism



Source: O'Riordan 1981 in Pepper 1984.
 Modifications to O'Riordan's model, made by this author to accommodate TEK and expand the conceptions of environmental management, are in italics.

The ancient Maya saw the world as a flat, four-cornered object which was surrounded by a male Sun that was associated with time and a female Moon associated with fertility. Mayan cosmology contained many gods which were to be appeased through rituals and offerings. Before sowing a milpa a piece of copal incense was placed on top of dry corn husks at the mid-point of the plot of land. This was set on fire while as *milpero* prayed to the rising smoke. Following the ritual burning of the husks and copal, he then made five holes in which to plant the first seeds. These holes formed a square with one hole in the centre and one at each corner. This configuration was both the sign of the cross and a symbol for the world directions (Schackt 1983:56-58). Relying on signs from nature, planting was undertaken according to the Maya day count and, for example, the presence of certain flowering plants. Poor weather or planting conditions would require offerings to the gods responsible, as would successful planting and harvesting.

As environmental managers, in the strictest sense, the Classic Maya do not fit the taxonomic categories listed under technocentrism (see Figure 2.3). Intensely spiritual and believing in bioethical principles, these people utilized a complex technology to provide not only for subsistence but also to generate a surplus which facilitated population growth among the Classic Maya civilization, thereby not fitting under the ecocentric classification either. Perhaps the shortcomings of the O'Riordan model are due to its lack of consideration, or acknowledgment, of the importance of traditional ecological knowledge.

The World Commission on Environment and Development (WCED) stated "Tribal and indigenous peoples will need special attention as the forces of economic development disrupt their traditional lifestyles--lifestyles that can offer modern societies many lessons in the management of resources in complex forest, mountain, and dryland ecosystems" (WCED1987:12). Regardless of the importance of traditional ecological knowledge (Agarwal 1992; Tyler 1992), there are still many countries and corporations around the globe which are committed to economic development practices which serve to undermine the imperative of giving indigenous people a voice. Rooted in the unequal power relations

and the ethnocentric beliefs of colonialism, technocentric environmental action, in which man is in domination over nature, has underdeveloped many areas of the globe, leaving dependent, unstable economies and environmental degradation in its wake.

Today, environmental policies, which are based solely on the recommendations of scientific experts, define solutions which are not necessarily cognizant of the needs or relationships of the lay person to his/her environment, thereby reducing the importance of traditional ecological knowledge. Expert-defined solutions therefore tend to be aimed at a problem from which the expert is far removed. The dominant belief behind technocentric solutions to the global environmental crisis is based upon man's position in the great chain of being. The resulting attitude is that science got us into this and, by God, science will get us out!

Sustainable Development: a bridge to the future?

Global environmental degradation is now widely perceived to have reached crisis proportions. Population pressures, pollution, urbanization, ozone depletion are but a few of the apparent results of the technocentric man-nature relationship affecting virtually all parts of the globe. While, theoretically, sustainable development seems like a plausible solution, realistically it suffers from multiple definitions and equally as many interpretations of those definitions. In 1987, under the chairmanship of Norway's prime minister Gro Harlem Brundtland, the World Commission on Environment and Development (WCED) published *Our Common Future*. In this report sustainable development was defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987:4). The mandate of the WCED was to attempt to define new solutions to economic development and environmental protection on a global scale. Thus, the report was written in a positive upbeat manner suggesting that it was possible for a new era of economic growth that could be based upon policies to sustain and expand the environmental resource base (Welsh and Bertorin 1990:950).

A UNESCO publication, *Environmentally Sustainable Economic Development: Building on Brundtland* attempts to outline the opposing reactions to the WCED report as being firstly, growth as usual, but at a slower rate, and secondly, to define sustainable development as "development without growth in throughput beyond environmental carrying capacity" (Goodland 1991:10). Thus, conflict is inevitable.

On the one hand, political realism rules out income redistribution and population stability as politically difficult if not impossible; therefore the world economy has to expand by a factor of five to ten to cure poverty. On the other hand, ecological realism accepts that the world economy has already exceeded the sustainable limits of the global ecosystem and that a five to tenfold expansion of anything resembling the present economy would simply speed us from today's long run unsustainability to imminent collapse. (Goodland 1991:10-11)

Though the authors of the UNESCO document suggest that while development without growth cannot cure poverty, they do advocate income redistribution, population stability, and raising prices for the exports coming from poorer countries. The more equitable distribution of capital and sharing of the world's resources will undoubtedly require extreme political measures while incurring the wrath of those countries which possess large segments of the world's capital and who use their assets to appropriate an excessive share of global resources. The underdeveloped world, which is the area in the most need of economic growth and suffering the most from environmental degradation, does not dare to halt growth for fear of losing its tenuous economic position and trade relations with other nations. For the success of such apparently grandiose schemes as global sustainable development to be realized, there needs to be further definition as to the actual policy content of the proposed solutions, and it must be realized that sustainable development is not interchangeable with appropriate technology. Further, appropriate technology should be a fundamental aspect of sustainable development policy, particularly in the Third World.

Sustainable development does encompass a growth-as-usual philosophy which voices an underlying concern (whether acted upon or just rhetoric) for the conservation of the environment into the next generation. Alternative or appropriate technology and development can be distinguished from sustainable development. Alternative development regards the sustainability of the environment as the paramount concern and not economic growth. Examples of appropriate technology would be the use of solar cooking facilities in the tropical Third World to replace wood and coal; using solar or wind-generated electricity rather than building hydro-electric dams or relying on diesel-generated electricity. The confusion between sustainable development and alternative or appropriate technology and development needs to be clarified by those who are in policy-making positions before consensus as to the goals of sustainable development can be met. Regardless, economic factors which favour growth as the solution still underlie the sustainable development debate.

In outlining policy options moving toward global sustainability Soedjatmoko has suggested that the developed world must:

deal with the problem of underdevelopment and international poverty on a scale that does justice to the magnitude of the problem; accept the free movement of people in the way the free movement of capital has now by and large been accepted; and a combination of the first two options: a much higher level of international development cooperation and a much higher level of immigration from the Third World, coupled with policies that aim at increasing the absorptive capacity and the necessary tolerance of the receiving country. (Soedjatmoko 1990:318)

Ecocentric policy options for solutions leading to sustainable development would require a vast restructuring of the social and economic relations between the First and Third Worlds. Yet in many of the developed countries, aid packages to the underdeveloped world are being cut back, while borders are increasingly being closed to the world's poor. Clearly, technocentric philosophy supporting Western man's superiority

over the natural and cultural environment in the underdeveloped world, has the power to tip the sustainable development scale in favour of alleviating the global eco-crisis through continued economic growth rather than alternative or appropriate technology and development. Though sustainable development was hoped to be the bridge to the future, it may be polarizing the environment/development issue to such a degree that consensus may never be attained.

The traditional ecological knowledge of the indigenous populations, though now being heard to some degree, has never been given a significant place among the solutions and policy implications within the growth side of the sustainable development debate. In a country such as Canada, with a large and reasonably well organized indigenous population, the voice of native Canadians is only now being heard with reluctance. Like the Maya in Belize, the First Nations people in Canada had lived in a relative state of harmony with the environment until colonialism became the dominant development pattern. In the process of legally challenging the Canadian state for the right to continue their traditional ecological land use practices by proving the way in which technocentric development had degraded their traditional lands, the Canadian National Task Force on Environment and Economy (CCREM) has stated: "Sustainable economic development does not require the preservation of the current stock of natural resources or any particular mix of human, physical and natural assets. Nor does it put artificial limits on economic growth, provided such growth is both economically and environmentally sustainable" (CCREM 1987:3). The CREM position on sustainable development echoes the dominant attitude among many developed nations. The economic attitude that continued growth will solve global poverty and environmental degradation is short-sighted. Most problematic, however, is that it is the developed world to which many Third World nations are looking to for solutions to heal the state of the global environment. Given the developed world's superior access to technology and economic resources, it seems most likely that the solutions which emerge from these countries will favour the

growth side of the sustainable development solution. Western society must acknowledge that:

we do not have an ecological crisis, the ecosphere has a human crisis. Our story about our place in the scheme of things has somehow gone awry in the industrial age. For sustainable development, therefore, the need is for more appropriate philosophy than for more appropriate technology. If we tend to ourselves, nature will take care of itself. (Rees 1992:25)

In tending to ourselves, we must understand the historical processes that have led to large-scale poverty, the continued depletion of non-renewable resources, and the urgency with which the developed world had obliterated many indigenous cultural groups or completely ignored their traditional ecological knowledge. It is at this juncture that theoretical explanations of development need to be examined in relation to the changing man-nature relationship.

Man-Nature and Development Theory

Two dominant theoretical schools which have attempted to account for, or justify, the colonial era and the contemporary position of Third World nations are modernization and dependency. Diametrically opposed, modernization theory implies an evolutionary process in the development of a society, whereas dependency focuses on unequal development resulting from the historical imbalance of power relations between the Third and First Worlds. These theoretical schools can be placed on an ecocentric-technocentric continuum based upon the manner in which the man-nature relationship is perceived (see Figure 2.4).

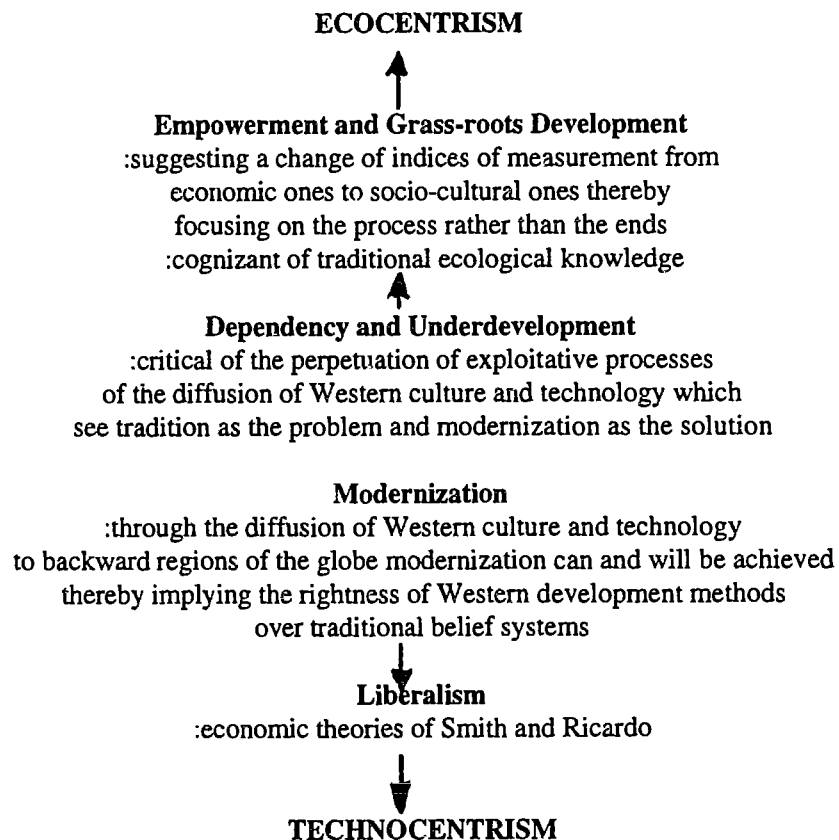
Modernization

Modernization theories arose in the 1950s and gained momentum in the 1960s resulting from postwar, and Cold War global economic conditions. Preceding and influencing modernization was liberalism. Originated by Adam Smith (1776), and adhered to by Great Britain in the nineteenth century and the United States in the twentieth century, liberalism was a belief in the free flow of goods, services and capital across

geopolitical boundaries. Supported by Ricardo's theory of comparative advantage was the notion that countries should take advantage of their natural resources and labour to specialize the productive process and trade for what other countries could most efficiently produce (Black 1991:24).

Building on the principles of liberalism, modernization theorists defined development in terms of economic growth; thus, poverty conditions in the Third World could be alleviated through the trickle-down effect resulting from First World capital investment in the poorer nations. The evolutionary progression from a backward state to a modern state was perceived as natural and justified, as it would elevate the poorer nations to a level similar to the developed ones.

Figure 2.4: Development Theories and their Relationship to the Environment



Peter Worsley, in his book *The Three Worlds*, discusses the colonial era having been "justified by appealing to notions of progress" (Worsley 1984:285). This 'progress' had political, economic and cultural components in that colonies were dominated by metropolitan powers and these colonies were the producers of raw materials supplied to consumers and manufacturers in the First World. The cultural diversity within the colonial territories was to be replaced by a Cinderella-like transformation in the image of the colonial power. Adding to this domination was the importation to the colony of Western technology, aimed at increasing the output of resources. Rather than being seen as erosive forces, taming the environment and the indigenous culture was deemed as imperative for the successful evolution toward a modern state. It was believed that traditional man-nature relationships were the problem and that modern technocentric man-nature relationships were the solution.

The notion of a hierarchical natural and social order suggests that not only is progress synonymous with Western civilization, but also that this progress is supported with the philosophy and ideology of technocentrism. The diffusion model, inherent in modernization theory, uses two main groups of criteria to define capitalist development. One is national wealth, as measured by per capita Gross National Product (GNP) and other quantitative indices, and the other is the degree of modernity, which includes social and political characteristics (Verhelst 1990:14). Because of the low per capita GNP and the uneven distribution of modernity throughout much of the Third World, capitalism has not "taken off" yet because of obstacles to growth. The solution to this problem, within modernization theory, is the continued economic, political, social control and influence from the developed world. Thus, through the use of technology to increase output and expand external markets, capitalist development can and will be achieved. The backward areas of the country, which are hampering development, can be removed by technological diffusion to the hinterland (Verhelst 1990:16) regardless of the fact that the hinterland, in

many cases, supports fragile tropical ecosystems perhaps incapable of sustaining high levels of capitalist development.

Though modernization theorists and economic development planners considered the cultural and psycho-social barriers to the diffusion of Western culture and technology to the Third World, they did it from an ethnocentric perspective rather than a culturally relative position. Worsley (drawing from Scott 1976) discusses the moral economy of the peasant, focusing on the survival psychology in which tradition is their insurance against an unpredictable future. "To the peasant, the future is the future, not a time upon which dreams of improvement are projected" (Worsley 1984:120). By not acknowledging the importance of traditional man-nature relationships and cultural practices, colonial expansion into Belize did not increase the level of modernity through the diffusion of technology and Western culture. Rather, it acted to suppress tradition and create a culturally and economically dependent society.

Dependency Theory

An alternative to the modernization theory of development is that of dependency and underdevelopment. While definitions of dependency abound, Theotonio Dos Santos provides the most appropriate one for the Belizean situation.

By dependence we mean a situation in which the economy of certain countries is conditioned by the development and expansion of another to which the former is subjected. The relation of interdependence between two or more economies, and between these and world trade, assumes the form of dependence when some countries (the dominant ones) can expand and be self-sustaining, while other countries (the dependent ones) can do this only as a reflection of that expansion, which can have either a positive or negative effect on their development. (Dos Santos 1970:231).

Dos Santos' definition challenges the notion that underdevelopment, thus dependency, was an evolutionary process through which all societies passed at one point in time. The

work of André Gunder Frank adds a necessary dimension to the understanding of underdevelopment. In a critique of global economic expansion, Frank posits that it is a commonly held belief by modernization theorists, though an erroneous one, that "economic development occurs in a succession of capitalist stages. The now developed countries were never underdeveloped though they may have been undeveloped" (Frank 1970:5).

Further, the process of attempting to develop the Third World, through either colonialism or imperialism, has underdeveloped peripheral regions of the globe, such as Belize. "The most significant result of the colonial heritage is not a system of values or cultural orientation but economies shaped by the needs of the centre of the expanding system" (Chilcote and Edelstein 1986:20). Selective development or underdevelopment has created a boom-and-bust economy based upon the demands of the external markets. As in Belize, areas which seem most backward today were the most intimately linked to the metropolis in the past, and are thereby a product of the boom-and-bust cycle of development. As Chilcote and Edelstein state:

Each boom created an inflationary period...Land and other resources were employed to produce the product that was in demand on the international market. Monocultural economies were created. Infrastructure--roads, railroads, housing and other facilities-- was built to permit and facilitate the extraction of resources and shipment abroad. Networks of internal communication and transportation were neglected. When the international market for boom products declined, they were left with only symbols from past glory. (Chilcote and Edelstein 1986:33)

The objectives of colonialism were based upon a belief in the supremacy of the metropolis over the periphery and, as such, were driven by a uniquely Western philosophy wherein the developed world believed that the peripheral regions could only benefit from the diffusion of Western political, economical, technological, cultural and environmental attributes. Within the colonies, the development imperative was focused on altering the

traditional economy, culture and relationship to the environment to facilitate the successful infiltration of technocentric ideology. Belize provides an excellent historical record of the colonial process of co-opting the environment, culture and economy for the purpose of furthering the perceived needs of the colonial master.

Black has suggested that dependency theorists see the diffusion of Western attributes to the Third World as an impediment to development by perpetuating exploitative relations. She suggests that the main assumptions of dependency theorists are that economic interest has primacy over culture in determining who has power and status; the causes of underdevelopment lie in the economic relations between the dominant powers and the client state; that within the client state the perpetuation of poverty is managed by the clientele class (local elite), thereby replicating, to some degree, the colonial apparatus; and finally, the dominant foreign power benefits at the expense of its client states and within the client states the client class (local elite) benefit at the expense of other classes (Black 1991:28).

Black further suggests that the bridge in the development theory gap may be made by considering the role of grass-roots community development projects which do not focus primarily on the means to an end, rather on the process of empowerment leading to the future social and cultural stability of the community. By using culturally and socially appropriate criteria rather than economic criteria as the sole indicator of success, grass-roots development may be the necessary direction for many Third World nations. The following chapter will explore the colonial era in Belize, its effect of the man-nature relationship of the various groups residing in the country and the perpetuation of exploitation in the contemporary era.

Chapter 3

From Buccaneers to Bikinis: the Underdevelopment of Belize

Belize's Department of Tourism refers to the country as undiscovered and unspoiled, implying that it has not been ravaged by the resource extraction or mono-crop production of the country's past and present. The pamphlet advertising this unheralded beauty will be the first Belizean reading material many visitors encounter. If one is flying directly from the airport to one of the established tourist areas, and does not look outside the confines of the carefully orchestrated and prepared tourist enclaves, then the vision suggested above may appear true. There are, however, many dimensions to Belize which should be considered in the creation of a more holistic picture. The legacy of colonialism has set the country on a course of development which has had a direct impact on environmental problems facing Belize today, therefore history cannot be overlooked. The past and present underdevelopment of Belize has created a pattern of resource extraction which is based on the boom-and-bust cycle of development. This has resulted in the most underdeveloped regions today having been the most exploited in the past.

Today, Belize is faced with high unemployment, poverty, lack of reliable communication and transportation networks and foreign ownership of many of its industries. The country's imports far outweigh its exports, resulting in a growing trade deficit. The emigration of the intelligentsia and unemployed, primarily to the United States, is causing difficulties for the developing service sector. It is within this milieu that the government of Belize is advocating its commitment to sustainable development. Given the historical development, or underdevelopment, of Belize, and the country's reliance on its dependent position in the global economy, of which Belize has always been a part, it seems unlikely that sustainable development is possible on a national scale. This chapter will explore the underdevelopment of Belize through man-nature relationships of the pre-colonial, colonial and contemporary eras, cognizant of the environmental attitudes of the

indigenous population and other ethnic groups in the country, to lay the foundations for an analysis of the current environmental situation within Belize.

At One With The Cosmos: The Ancient Maya

When a person says 'I am a human being and my two feet are on the earth, and I can do whatever I want to to nature for my benefit,' in that moment the person ceases to be Mayan. (Batzibal in Nidever 1993a:12)

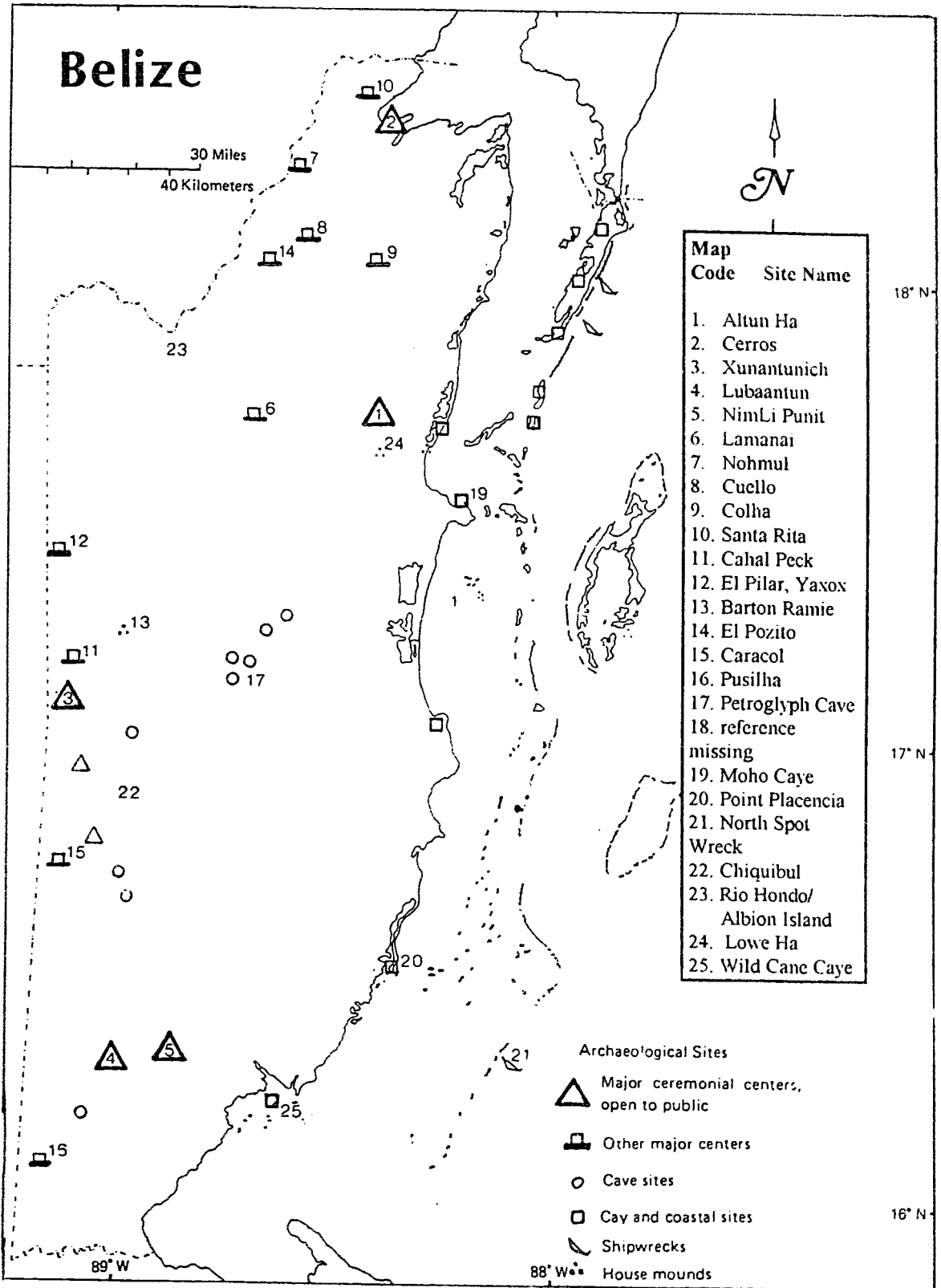
It has been suggested that the earliest relationship between humans and the environment in Belize can be traced to the pre-Maya civilization whose ancestors crossed the Bering land bridge approximately thirty thousand to forty thousand years ago (Dobson 1973; Waddell 1961). The quest for survival brought these people further south in search of big game and later, as game diminished, as gatherers of seeds. Evidence uncovered at Cuello, in the Orange Walk District in Belize, dates the ancient Maya to 2000 BC (Education Task Force Belize 1984).¹²

The ancient Maya who occupied Central America¹³ possessed complex technological, agricultural and social systems (see Figure 3.1 for a map of known ancient Maya sites in Belize). Regarding the agricultural systems, pollen data suggests that the Maya of Northern Belize were cultivating the uplands in the wet season and the lowlands in the dry season, around 1000 BC. (Pohl 1990:9). Year-round cultivation facilitated the expansion of food production to the point that, during the Classic phase, many labourers could be freed from subsistence activities to build large ceremonial centres.

¹²The civilization of the ancient Maya is divided into three periods: Pre-classic 1200BC - 200AD characterized by village farming communities; Classic 200AD - 900AD characterized by massive architectural centres, carved stelae and complex social organization; Post-classic 900AD -1500AD characterized by long distance trade and contact with colonizers (Hammond 1991).

¹³Hammond (1991), has defined the Maya area as reaching from the northern tip of Yucatan at sea level, south to the mountain basins of the continental divide. On the west it reaches almost to the Isthmus of Tehuantepec, to the east, it is bordered by the Caribbean Sea.

Figure 3.1: Map of known Major Maya Archaeological Sites in Belize



Source: Hartshorn 1984

By the late Classic period, the lowlands in northern Belize were possibly flooded over, forcing the Maya to engage in cultivation at higher elevations. Evidence reveals that by the early Post-Classic period, water levels had decreased or stabilized, enabling farmers to return to the flood plain "because soil nutrients continued to be relatively high and swidden cultivation associated with peak population densities would have resulted in declining yields" (Pohl 1990:10). Though there are many theories being considered to explain the decline of the Maya in the post-classic period, there is no consensus as to the cause. Consideration has been given to climatic changes causing drought and lowering of the sea-level, overpopulation leading to inadequate food resources, the disruption of trade, decimation through disease during the period of Spanish conquest and the hierarchical order of the Mayan society as contributing factors leading to its collapse.

Though the technological advancements of the ancient Maya were considerable, perhaps none was more significant than the domestication and cultivation of maize. The worship of maize was at the root of Mayan cosmology for it was this food source which enabled the civilization to grow and flourish. The task of farming was conducted within a shroud of ritual, taboo and sacrifice. Mayan cosmology, fundamental to daily existence, was based on a contract between man and his gods: "The Gods help a man in his work and provide him with his food; in return they expect payment, and much of the time that payment should be made in advance" (Thompson 1970:170).

The rituals of Mayan cosmology were the domain of the priests, as was the computation of the Mayan calendar and resulting omens and prophecies derived from it. Therefore planting and hunting were only carried out after the corresponding rituals had been conducted (Dobson 1973). Principle deities invoked for agricultural success were the sun god, the rain god, the wind god, and the maize god (Thompson 1970).

Though elements of the cosmology of the ancient Maya are present today, they have been syncretized with Catholicism and with secular attitudes toward agricultural

production. Therefore, many Maya still worship the soil and maize, giving food offerings to appease the gods, while cognizant of the pressures of market-based production.

The issue of the continual presence of the Maya in the region during the post-classic decline to the eighteenth century is still under debate. Howard (1977) has argued that the Maya of southern Belize were driven completely from the region and that "by 1659 most of the Manche Chol appear to have been removed, leaving the area encompassing the present Toledo District virtually uninhabited" (Howard 1977:12). He further suggests that during the mid and late nineteenth century, the area was reoccupied by the Mopan Maya and later by Kekchi Maya, who returned to work as labourers on German-owned coffee plantations (Howard 1977:13). Oppression in Guatemala led many Maya to escape to Belize, where they faced harsh living conditions that were offset, however, by the freedom to pursue traditional subsistence ways.

Dobson (1973) has suggested that the ancient Maya had little to do with the making of modern Belize. Such a statement must be challenged. For one thing, one cannot ignore the degree to which archaeological sites are being excavated by interested parties from around the globe and used to increase foreign exchange through tourism. Because of the extensive Maya occupation of the Yucatan, Belize and Guatemala, the promotion of ancient Mayan cultural sites and traditions is being used to generate capital on a community, national and regional level.

The Toledo Ecotourism Association, an indigenous grass-roots organization in the Toledo District, is relying on ancient sites located on Mayan lands to supplement village income and reduce the reliance on wage labour and slash-and-burn agriculture. Nationally, Belize's department of archaeology is developing a number of major sites to promote tourism and increase foreign exchange potential. Regionally, the La Ruta Maya, also known as the El Mundo Maya project, is being considered by Mexico, Guatemala, Belize, El Salvador and Honduras (Garrett 1989:424-478). The objectives of the countries involved are the creation of a Maya route which will draw tourism to the various areas to

uncover the richness of the past occupation of the Maya civilization as well as integrating the extensive biosphere reserves in the three countries. (*Belize Review* 1992a:31). Though the project appears as a groundbreaking attempt for the countries involved to move beyond regional differences and historical disputes and focus on sustainable development, it has been criticized for the lack of participation of the Maya in the development plan and the execution of the program (Cutlack 1993:2).

Contact and Resistance: The Maya, the Spanish and the British

First sighted in 1502 by Columbus, no effort was made by Westerners to visit Belize until 1531, when Spanish exploration parties declared it unsuitable for settlement (Dobson 1973). Undaunted by these early reports, Spanish priests conducted missionary activities along the Belize River, and by 1550 declared that some Maya Indians had been converted to Christianity.

The first actual settlement in Belize was around 1638, when a group of English seamen became shipwrecked near what is now Belize City. Prior to this, in 1617, a pirate named Peter Wallace set up camp in the same location while he scouted out Spanish galleons to rob. Piracy was the initial attraction to Belize, but attention soon turned to certain tropical hardwoods and logwood, also called dyewood (*Haematoxylon campechianum*), as it was in great demand as a source of dye for the burgeoning cloth industry in the developed world. Thus, what was once an encampment of pirates became a settlement of logwood harvesters called baymen (Setzekorn 1984:127-129).

Over time the British demand for dyewood surpassed that of the Spanish, resulting in a British monopoly over the export. In the minds of the British, the extractive potential of the area more than justified the development of permanent settlements in Belize, yet it would be 1862 before it formally became the colony of British Honduras. The area was not only the subject of numerous treaties (see Table 3.1) and disputes, but also existed solely for the extraction of its resources.

Table 3.1: Treaty Negotiations between Spain and Britain regarding British Honduras

Year	Treaty Name	Resulting Implications for Belize
1667	Treaty of Madrid	An agreement of perpetual peace between the Crowns of Great Britain and Spain that there should be perpetual peace between them.
1670	Godolphin Treaty	Opened all of the Americas to British Colonization, including Jamaica, and agreed that the two crowns would abstain from all acts of violence.
1713	Treaty of Utrecht	A proposal on the part of the British allowing the cutting of dyewood in the Bays of Campeche and Honduras.
1729	Treaty of Seville	Opposing positions between Britain and Spain in which the Spanish requested the removal of the settlements of dyewood harvesters and the British response that under the treaties of 1670 and 1713 the rights of the British had been confirmed.
1763	Treaty of Paris	Though affirming Spanish sovereignty, Spain permitted the British settlers to cut logwood though no boundaries were defined.
1783	Treaty of Versailles	Reaffirmed the rights of the woodcutters under the 1763 treaty though the boundaries were defined as: being between the Belize River and the Rio Hondo River. Further, this was in no way to challenge Spanish sovereignty and no fortifications were to be constructed within the treaty area.
1786	Treaty of London	This treaty called for the evacuation of the British from the Mosquito Coast in return for expanded boundaries for wood-cutting, with the inclusion of mahogany, to extend south to the Sibun River. Further, no coffee, sugar or other agricultural plantations were to be undertaken and there was to be no formation of a system of government, either civil or military.

Source: Humphreys 1961:1-15

Spanish colonialism, in the years preceding the British occupation of the settlement, resulted in vicious battles in which many Maya died. Though smallpox, hookworm and malaria further ravaged the Maya population during the Spanish conquest of 1520-1545, archaeological evidence has proven that the Maya did not capitulate to the demands of the invaders (Bolland 1977:17-20). These people fought to retain their independence against the Spanish and, later, the British.¹⁴

The British however, reacted differently, and in this context it is important to underscore lack of acknowledgment of the indigenous population in Belize by early representatives of the British crown. According to Major Sir J. Burdon, there was no

¹⁴Grant Jones in his book *Maya Resistance to Spanish Rule*, discusses the movement of the Yucatec Maya into Belize during conquest and notes that the Southern Maya (west central Belize) became a stronghold against the Spanish (Jones 1989).

record of any indigenous population, and no reason to believe any existed except far into the interior, when the Baymen began logwood extraction in the 1700s. Further, it was believed that the archaeological evidence which did exist was merely remnants of an ancient occupation which had expired long before British settlement took place (Burdon 1931). When the Maya were acknowledged by early colonialists, it was suggested that "The Indians who live near the English are so inconsiderable that it is unnecessary to take any notice of them" (Dalling 1779, quoted in Bolland 1977:21). The ignorance, on the part of the British, regarding the indigenous population within Belize set the stage for a future laden with confrontation between two groups with opposing man-nature relationships: the holistic cosmology of the Mayan and the technologically-centered, market-driven ethnocentrism characteristic of the colonial era.

The traditional ecological knowledge of the Maya has been ignored throughout the development history of Belize, resulting in the application of agricultural practices by foreign developers and domestic non-Maya which are unsuitable for the physical environment. Yet, regardless of the evidence of environmental degradation brought about through the implementation of agribusiness techniques, it is often the practice of "making milpa" which has come under fire for compromising the natural environment. Referred to as slash-and-burn agriculture or swidden agriculture, the making of milpa has changed very little over the centuries. Burning the forest, then planting seeds using a stick, cultivating and harvesting the crops, then leaving the area lie fallow from two to twenty years, is an agricultural practice which has stood the test of time, if the area under cultivation is not overly stressed due to population pressures. The modern-day problem lies in the number of refugees who are being forced to flee their home countries for the hills of Belize. Though the problem emerged during the escape of many Maya from persecution in Guatemala in the nineteenth century (Howard 1977), today as many as 10,000 refugees are making milpa in the forest. Environmental degradation is apparent in the declining yields of milpas. The stress on the milpa system created by population

increase and the demand for land has resulted in the spread of milpa cultivation into many of the nature reserves which exist throughout Belize. However, during the forestocracy of the eighteenth century, the perceived Mayan threat to the environment was due solely to conflicting land use practices between the British and the Maya.

Conflict and Confrontation: Mahogany and the Maya

It has been suggested that not only did the Maya choose the relatively mild rule of the British over the more violent confrontations with the Spanish, but that the British occupation did in no way displace the Maya (Caiger 1951). Archival records of the British settlement have revealed this to be nothing more than a colonial myth as it was the growing mahogany trade which brought forth often violent confrontations with the indigenous population (Bolland 1977; 1988). As sources for mahogany in easily accessible areas were exhausted, the search continued further inland, up the many rivers which bisect the country and into the Mayan occupied forests. By the late eighteenth century "the British, whose sole concern was then the extraction of timber, perceived the Maya swidden agriculture [slash-and-burn] as a threat to forest reserves, while the Maya viewed British expansionism as a threat to their territory and their independence" (Bolland 1988:94).

Though the Mayan relationship with the natural environment had suffered many challenges due to disease, war, climatic change and overpopulation, the Maya still retained their world view which was vastly different than the one imported and imposed by the British and Spanish. The lack of acknowledgment by the British of an indigenous population in the area was short-lived. As early as 1788, records show that an attack of wild Indians had taken place and in 1802 troops were sent upriver to punish the Indians who were attacking the mahogany works (Burdon 1931). The attacks, by the Maya, upon not only the mahogany works but also upon the settlement of Belize City, were constant, and though the Maya were a geopolitically decentralized group, making it difficult for

them to mount a massive attack against the colonizers, this also meant the Maya could not be beaten in one battle (Bolland 1988).

The British attitude to the Maya changed during the years of conquest from that of non-existence (1650-1750), to wild Indians (1770s), to peaceful savages (1830s), to ferocious fighters (1850s), to potential sources of agricultural labour (1860s to present). As the 1830 *Honduras Almanack* states:

With respect to the Indians, the real aborigines of the South American continent...they are in general a timid, inoffensive race; they seem to be guided as much by instinct as reason; they travel independent either of track or guide, through woods and bush impervious to others...A small bag of maize, slung over their shoulder...is all the subsistence they need; and thus, in a state of nature, they wander...over wilds unknown to men. (*Honduras Almanack* 1830:11-13)

The above description of the Maya, though portraying them as peaceful, also points to the differences between their relationship to the natural environment and that of the British. Agricultural land use practices by the Maya entailed a pattern of cultivation which had nothing in common with the economic potential of mahogany extraction. Private ownership of land was not part of the holistic cosmology of the Maya, though, when their right to use the land was challenged by the British, resistance followed. Not allowing the Maya to stand in their way, the colonialists set out on a course to civilize and tame both the cultural and natural environments to better serve the economic interests of the colonial master. Once subdued and controlled, exploitation of the resources could continue unchallenged from within the tiny settlement.

The Settlement of Belize: Colonial Expansion

The scientific revolution in the Western world and the resulting technological advancements set in motion forces which irrevocably altered the relationship between humans and the natural environment. This is not to suggest that prior to this period the relationship existed in a technological vacuum. The implication is that the scientific

revolution increased both the tools available for controlling nature and the pace at which this could be done. The accompanying market economy led to the ever-expanding search for exploitable resources. This was conducted in areas of the globe where Christian supremacy and perceived technological superiority were ample justification for cultural genocide and resource extraction. In an effort to facilitate the successful co-opting of labour forces, it was believed necessary to remake the land of "savages" over in the image of the colonial master. The British settlement of Belize is a case in point.

Though many treaties mark the diplomatic fight between Spain and Britain over the territory (see Table 3.1), the Spanish continued to attack the British settlements in Belize, culminating in the battle for St George's Caye in 1798. Victorious, though less well prepared, the British settlers were never again to face a military attack from Spain on Belizean territory. Still, it was not until 1817, through parliamentary action, that Britain declared the area a "settlement for certain purposes, in the possession and under the protection of His Majesty, but not within the territory and domain of His Majesty" (Fernandez 1989:13). Though the act defined Britain's economic rights and the rights of the settlers, it did little to quell claims being made by Guatemala to the southern mountainous regions of the territory. With the collapse of Spanish sovereignty over Central America in 1838, an independent Mexico recognized British title to Belize, though Guatemala claimed to have inherited Spain's sovereignty over Belize (Shoman 1987:14; Thorndike 1978:14). The 1862 declaration of the new colony of British Honduras also did not define, for Guatemala, the rights of the British in the area. Treaties were created and broken (see Table 3.2) yet the key to the dispute was (and still is) Guatemala's access to the Atlantic to which Belize stands in the way. This dispute, unresolved even today, complicated Belize's move toward independence and has also required the British to maintain a garrison within the country. Despite active skirmishes along the border zone in the 1970s, Belize and Guatemala have never again gone to war over the unresolved border

dispute and are continually seeking a way to negotiate a settlement which is deemed fair to both sides.

Table 3.2: Treaty Negotiations between Guatemala and Belize

Year	Treaty Name	Resulting Implications for Belize
1849	Anglo-Guatemalan Commercial Treaty	Britain recognizes the independent republic of Guatemala.
1859	Anglo-Guatemalan Convention	Signed by both countries mainly to block American interests in Central America. Article 7 of the Convention required the building of a road through Belize to the coast to facilitate Guatemalan access to the sea. No agreement could be reached as to the division of cost for the access therefore the treaty was not ratified.
1863	Additional Convention	Defined the responsibilities as to the building of the road though Guatemala did not ratify the treaty within the specified time limits.
1933	Attempted Arbitration	No agreement reached and Guatemala declared the 1859 Convention null and void.
1965	Webster Proposals	United States asked to act as sole mediator in the dispute, by both Guatemala and Britain. Presented to the Belizean government (who had been granted self-government in 1964) and Great Britain, with the full endorsement of the government of the United States, the Webster proposals were rejected.

Sources: Grant 1976; Humphreys 1961; Thorndike 1978; Waddell 1961.

The Forestocracy: Monopolization of the Physical Environment

Colonization for the sole purpose of resource extraction to support the metropolis, at the expense of the periphery, is a pattern of resource exploitation which is actively pursued on a global scale, even today. The mono-economy in Belize, resulting from lack of diversification of exports, is characteristic of Third World underdevelopment. The boom-and-bust cycle of the dyewood trade is an excellent example. With the introduction of artificial dyes, such as aniline in the nineteenth century, the demand for dyewood in the colonial markets became limited. When the dyewood markets declined, the British sought out another wood product to export. As some mahogany was already being shipped from the area, these markets were further developed.

The demands of mahogany exploitation involved more capital, land and equipment than dyewood. Thus, landholdings became more centralized under the ownership of a few

wealthy, and often absentee, landowners. In 1787, twelve settlers owned over four-fifths of all land available under the Convention of London (Bolland 1988). The resulting forestocracy meant that control over resource exploitation would favour forest products at the expense of diversified economic development, thereby further facilitating boom-and-bust cycles.

The Belize Estate and Produce Company Ltd. (BEC), whose headquarters were in London, was established in 1875. In 1942 it became a subsidiary of the multinational corporation, J. Glickson Property and Investment Trust Ltd., which later became part of the International Timber Corporation. By the time BEC was acquired by Glickson in 1942, the company owned over 404,686 hectares, or one-fifth of the colony, much of which was obtained from small landowners who could not secure funding to develop or even maintain their holdings (Grant 1976). A Belizean Education Task Force school text states the following regarding the BEC:

Except for a brief period in the 1870s when it invested in sugar cultivation, the BEC's only activity on the land has been forestry exploitation. Yet it never used proper forest management nor did it replant trees - it just cut and shipped them. The BEC was never able to use all its land, but it prevented others from using it in order to keep the population dependent on the company and so better secure a cheap labour force...Over the years, the BEC has made hundreds homeless and fought strongly against the rights of its workers. It has controlled many aspects of Belizean society, making and breaking laws to suit its own interest. Its power is such that for a long time the Company controlled the government of Belize. The BEC helped to underdevelop Belize by ruthlessly exploiting its lands and its people. (Education Task Force 1984:36)

The monopolization of resources and labour by the BEC is characteristic of underdevelopment. Belize was important only as long as it was providing resources; it was cheaper, and guaranteed the most profit for the company, if a single resource was

exploited at a time. This way, control over the market for the product was dictated by the company; fixing prices for the resource often forced independent vendors to sell not only their product, but often their business to the company. The degradation of the environment, as a result of timber extraction practices, was not a consideration. The BEC-nature relationship was one of domination and control, with no concern for either the indigenous or growing immigrant population.

Economic Development and the Slave Trade

To us in Africa, land was always recognized as belonging to the community. Each individual within our society had a right to the use of the land, because otherwise he could not earn his living and one cannot have the right to life without some means of maintaining life. But the African's right to land was simply the right to use it; he had no other right to it, nor did it occur to him to try and claim one. (Nyerere 1984:35)

The labour force in the early years of the colony consisted mainly of slaves who were imported to Belize from Africa via Jamaica. The slaves accounted for seventy-one percent of the population in 1745 and, until the abolition of slavery in 1834, remained at or above fifty percent of the total population (Bolland 1988:47). There was no acknowledgment, by the British, of the cultural beliefs of African slaves beyond that of the suppression of their traditional ways. Grant (1976) suggests that the image which prevails, regarding the compassionate treatment of slaves by settlers, is less than true. While the nature of the logwood and mahogany trade demanded a certain degree of trust between slave and master, there is evidence of mistreatment of slaves. When the slave rebellions began in the 1820s and many slaves escaped to Spanish territories, the mahogany industry became threatened. In an effort to deter the desertions by slaves, "every conceivable punishment, ranging from death and mutilation to perpetual imprisonment was employed" (Grant 1976:43).

As the nineteenth century began, the British Crown was struggling to end slavery throughout the Empire. While Belize had a higher manumission rate than the British West Indies, it was still far less than the rate in the Spanish colonies. The apparent freedom offered in these colonies enticed many slaves to leave Belize. In an effort to stem the emigration of a much needed labour force, "the Imperial Government...passed the Abolition of Slavery Act in August, 1833. All slavery was to cease on August 1, 1834, and was to be replaced by the apprenticeship system" (Ashcraft 1973:35).

Theoretically, the apprenticeship system was to lead to the eventual freedom of the individual slave, but realistically the system provided the slave owner with an additional four years of service. While there was much trepidation on the part of the settlers as the four-year apprenticeship drew to a close, the slaves eagerly awaited the beginning of their actual freedom. This transition period was again marked by an increase in emigration from the colony and subsequent labour problems for the forestry industry. However, many of the freed slaves remained in the territory to work in forestry. Pay was provided through a system of advances such that the slave was always in debt to the company. The premise of cash advances was to purchase supplies to be taken into the camps. Once in the camps the workers had to purchase additional supplies from the company at exorbitant prices. This so-called "truck system" encouraged workers to take goods instead of cash wages. The result of the wage system aided the contractor or master in keeping the workers poor and tied to the company; a set of conditions somewhat similar to those experienced under slavery.

During the years of the forestocracy, the slaves were discouraged from agricultural activity, as it would require time which the British felt would be better spent harvesting trees. Belize existed to provide resources to support the market desires of the developed world. In such a system, the economic base of the colony existed only to the degree that there was an external market for the resources extracted or an internal market for imported goods. A mono-economy, Belize was even more vulnerable to outside forces.

Foreign capital investment, ownership, and control over the environment were to become the mainstay of its economic base.

The declining forest industry of the 1870s was not due solely to international market fluctuations, but was also influenced, perhaps most strongly, by the method by which the trees were extracted. Rather than building communication and transportation links throughout the colony to enable the future growth of logging, the forest contractors relied on the abundance of waterways to transport resources to the coast. Land to be logged was staked out according to its proximity to the rivers. Once cut, the logs were hauled by man and mule down machete cut trails to the river. In this manner, all available mahogany could be exploited before moving deeper into untouched lands. This haphazard method had a deleterious effect not only on the industry but also on the post-forestry economy which was to follow. As the 1891 Colonial Report claimed: "Neither roads nor a road system exists. Land communications...depend today, as it had to, doubtless, generations ago, on mahogany truck and wing paths, on logwood *picados*, and on primitive forest tracks that are utilized to connect such truck paths" (Colonial Report, quoted in Ashcraft 1973:44-45).

With expanded markets in the United States for mahogany in the early twentieth century, the forest industry experienced a period of expansion. The depression period of the late nineteenth century appeared to have passed, and once again the area possessed the means to economic viability. But, as suggested by Ashcraft:

In spite of the increased volume in forestry exports, underdevelopment crept into the country. The reasons are clear: continued focus on a mono-economy...left the country dependent on the whims of foreign buyers and fluctuations in the international forestry market. With all efforts concentrated on exports, it was impossible to develop even a small scale system of domestic production that could supply the domestic market. Consequently, the country remained heavily dependent on imported supplies which could push the balance of trade in an unfavorable

direction...With metropolitan powers either directly or indirectly controlling the market activity, the rate and value of imports gradually surpassed that of exports. The trade picture in many ways tells the story of the growth of underdevelopment in British Honduras [Belize]. (Ashcraft 1973:49)

Agricultural Development: Environmental Degradation? Just Increase the Yield

Historical analysis suggests that the Maya and mestizos of the Yucatán peninsula were instrumental in bringing export agriculture to Belize after settlement by the British. The Yucatán Caste War (1847-1849) was a bitter and protracted battle between the Spanish and the Maya during which the Maya population of the Yucatán peninsula was reduced by half (Reed 1964). The effect on Belize was increased immigration of Maya and mestizo refugees, bringing with them their strong agricultural tradition and bitter memories of Spanish colonialism. During the Caste War in the Yucatán, it should also be noted that a revival of anti-colonial activity was occurring among the Maya of western Belize as well (Bolland 1988:94). Being small-scale agriculturalists, but with a familiarity with plantation agriculture, the refugees proved an attractive source of agricultural labour for the British and by 1852 they were cultivating sugar, corn and tobacco. The surplus sugar, which was produced by the refugees, was exported to Britain. Realizing the potential for agricultural exploitation to reduce the economic decline caused by the faltering mahogany trade, large landowners actively pursued agricultural development. By 1868, the resource extraction focus shifted from forestry to cane production, thereby marking Belize's introduction into the global agricultural market. The difference between the plantation-style cultivation of large landowners and that of the milperos was the system of production. On the plantation, steam-powered cultivation techniques were used which required a large amount of human labour, while on the milpa man and animal power to produce subsistence crops took precedence.

Unable to compete with the large estates, many small-scale farmers were driven from their land. In an effort to control land for agriculture, freed slaves were denied equal

access to land ownership as a result of an order from the Crown rescinding free land grants in favour of a per acre charge. The Garinagu who had arrived in Belize at the turn of the century were put on reserves, created through the Crown Lands Ordinance of 1872, and their movement throughout the colony was restricted (Barnett 1991:67). To the large landowner, the Garinagu, creole, Maya and mestizos were merely a potential source of cheap labour which was guaranteed by increasing their reliance on imported goods.

During the latter part of the nineteenth century, the Garinagu were increasingly looking toward wage labour to supplement their subsistence activities. Being unable to provide for themselves by traditional subsistence fishing and farming activities, many males were forced into absentee wage labour in the developing banana industry in Stann Creek and Toledo districts or by working on the docks loading boats (Gonzalez 1969:32-36). This practice of absentee wage labour became firmly entrenched not only in the Garinagu communities, but in all of Belize, as the reliance on wage labour replaced the importance of subsistence agriculture for many of the people.

Both historically and contemporarily, Garinagu attitudes toward nature differ considerably from that of the Maya. With a long history of persecution in St. Vincent and Honduras, the Garinagu have been forced to live within the boundaries and regulations imposed by their country of residence. Garinagu spirituality is closely linked with the supernatural, though worship of the physical environment is uncommon. In the past, for example, rituals would be performed and sacrifices would be offered to the gods to ensure a fisherman's safe return, to restore health of the sick, to put a curse on one's enemies and to appease one's ancestors. Today, rituals from the past are invoked on special occasions, such as the nine night celebrations (nine night is a celebration for a person who has died), but are otherwise rarely used. The Garinagu are a very pragmatic people with few ties to the land; due to historic land ownership restrictions placed upon them by the British crown, though, they have always had a strong faith in the ability of the sea to provide. The resulting man-nature relationship is one in which the sea is the focus of life, though it is no

longer the focus of ritual and offerings. Past attempts by the Garinagu to increase their reliance on the land for agricultural surplus was undermined by the British during the colonial years.

The mercantile import economy, which began during the early forestry years, gained momentum along with agricultural production. Imperative to the mercantile elite was the maintenance of a domestic economy almost totally dependent upon imported goods. As a result, subsequent efforts to develop internal market systems for the exchange of locally produced food and goods were seriously hampered. An example of this was the treatment of the Garinagu who attempted to sell their agricultural surplus in Belize Town. In 1811, the Garinagu were not allowed to be in the town without first having obtained a permit for entry and had to leave within forty-eight hours (Bolland 1988). Also, forcing people to labour for wages, rather than to maintain milpas or gardens, guaranteed the dependence of the growing population upon the mercantile and agricultural elites.

The legacy of the forestocracy had many effects on the development of agriculture in Belize. The inadequacy of both overland transportation routes and shipping ports seriously hampered the export agriculture industry. Because of the coastal vulnerability to tropical storms, the only adequate shipping port was in Belize City and was controlled by the mercantile elite. The lack of transportation links, both by road and sea, to Belize City from the rest of the colony replicated the metropolis-hinterland relationship which existed between Belize and Britain. The local elites lived in and around Belize City, having little or no contact with the rest of the country, a relationship similar to that of the foreign elites who controlled the economy from the outside.

The primary forces acting against agricultural development were lack of capital, capital improvement and local support (Ashcraft 1973:44). Further, the BEC had much of the land and labour locked up, so there was little quality land available for cultivation and even less available labour to work it. Setzekorn has added another interesting dimension to the problem. He suggests that the alienation of the creole forestry worker from farming

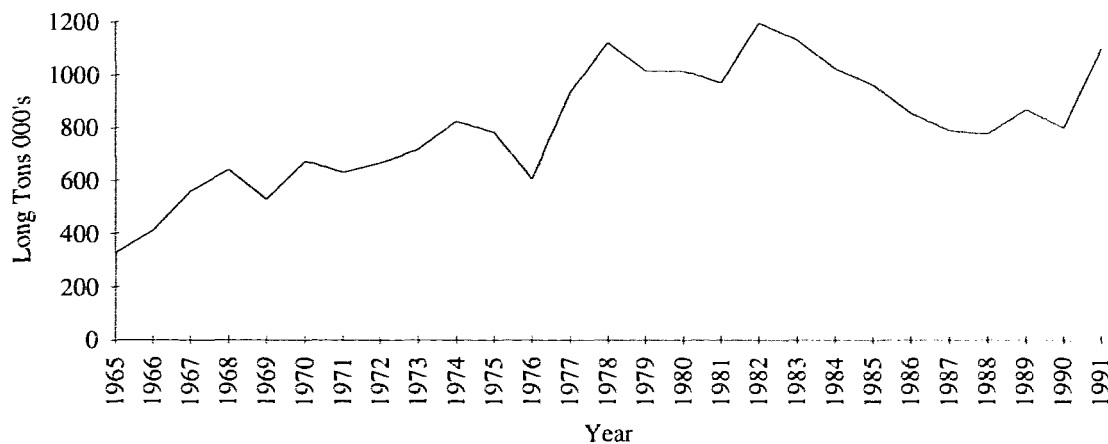
pursuits is primarily a racial issue. Farming is largely a mestizo and Maya activity, and agricultural labour in some ways resembled the conditions under plantation slave systems, thus a racial and occupational inferiority became associated with agricultural labour. Consequently, for the creole labourer, seasonal forestry work was preferable to agricultural labour (Setzekorn 1981:204). By the end of the nineteenth century, export agriculture was being actively pursued as a primary economic development strategy though, like forestry, it would experience boom-and-bust phases.

Sugar Development: Boom-and-Bust

Beginning with the production of almost 3,000 tons of sugar in 1868, reaching a high of 113,555 tons in 1979, and leveling off to less than 100,000 tons in the late 1980s, the sugar industry exemplifies the underdevelopment of Belize (SPEAReports3 1990:69). Largely foreign-owned, the sugar industry, like most agriculture in Belize, has been subjected to international market shifts, changes in consumption patterns, as well as unstable weather conditions characteristic of the region. In the 1860s, when the mestizo refugees demonstrated that sugar cane could produce a profit, a boom period followed. Land ownership patterns of the forestocracy era resulted in a monopoly over sugar production by a few elites. Corozal and Orange Walk districts experienced a boom phase during which the necessary transportation infrastructure, railroads and truckroads, were being built to move the sugar to the coast for shipping. At the end of the nineteenth century, the production of sugar beets in Europe all but decimated the industry in Belize as the bust period began (Everitt 1969). Revived in 1964, with the rebuilding of the Corozal Sugar Factory (later called Libertad), by British-based multinational Tate and Lyle, foreign-controlled production strategies were implemented and modernizing techniques were used. Also in 1964, through its subsidiary Belize Sugar Industry, Tate and Lyle Ltd. built another factory at Tower Hill in Orange Walk District. Modernization and improved planting techniques simplified the planting and sped up the harvest and led to yields such as that reported in 1979.

During the regional recession of 1982-83, the sugar industry was threatened, a situation which was exacerbated in 1985 when the demand for sugar dropped as United States market preferences turned toward artificial sweeteners and American sugar quotas to Belize were lowered. Tate and Lyle closed down its Libertad factory and laid off 1,000 workers (Fernandez 1989:37). In 1987, the Libertad plant was purchased by the Petrojam corporation from Jamaica to process ethanol from sugar cane (Woods and Perry 1990b:90). As a result, sugar production is once again experiencing a "boom" phase and in 1990 was reported as generating twice as much export revenue as citrus (Belize Information Service 1992a:20) (see Figure 3.2 for tonnage of sugar production).

Figure 3.2: Sugar Cane Production (100s tons)



Source: Belize Information Service 1992a; 1991b; Henderson 1990; Price 1992.

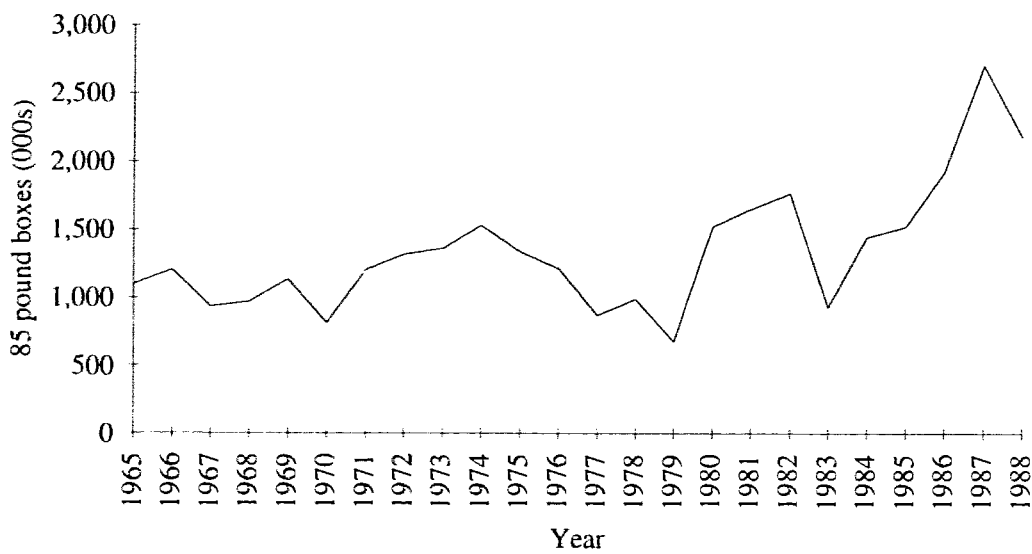
Similar to the inappropriateness of forestry extraction techniques, mechanized cultivation techniques contributed to environmental degradation and crop failure. Referring back to the milpa method of cultivation, the amount of topsoil disturbance is minimal and burning enriches the soil. Fallow-time of the milpa is dictated by soil condition and population pressure. With mechanized cultivation techniques, the top-soil is often removed entirely through clearcutting. Stumps are uprooted in the process thereby

removing potentially valuable nutrients from the soil and increasing erosion during inclement weather. In opposition to crop rotation characteristic of milpa methods, mechanized cultivation promotes mono-crop production, which leads to weed problems requiring chemical controls (Barnett 1991:68). On the other hand, the productive yield can be increased through the use of chemical fertilizers but toxic build-up becomes a problem. This ultimately achieves the short-term goals of increased profit through export crop production and the long term consequences of non-sustainable development.

Citrus

Citrus production is largely controlled by the Minute Maid division of Coca Cola and experienced its boom phase during the declining years of sugar in the 1980s (see Figure 3.3).

Figure 3.3: Citrus Production in 85 pound boxes (100s)



Source: Woods and Perry 1991b.

Foreign investment policy made it possible for a consortium, including Coca-Cola and two Houston, Texas businessmen, to purchase 277,690 hectares of land (twelve percent of the

entire land mass of Belize) for citrus development in 1985. By 1986, according to plans they were to have 2,023 hectares under cultivation with an additional 2,023 hectares being planted each year to a total of 10,117 hectares (SPEARReports3 1990:21). However, economic factors and pressure from international conservation groups led Coca-Cola to divest itself of all but 13,406 hectares of their 76,890 hectare parcel and the two Houston businessmen have indicated that they have no intention to develop their holdings.

Particularly problematic for Belizeans is the way in which Coca-Cola was able to renege on its deal with the Belizean government without penalty, although legal safeguards existed at the time. Under the Alien Landholding Ordinance, a foreign developer is required to set out a development plan to obtain a license. The conditions, if not met, can result in the forfeiture of land. In this particular land deal the developers did not submit a formal development plan. In addition, the government declared that the license was not voidable, thereby removing legal options by which to protect Belizean land (SPEARReports3 1990:21).

The situation is similar regarding the production of cacao, which is controlled by Hershey. The domestic production of dairy products, such as eggs and milk, and poultry, since 1958, has been increasingly in the hands of the Mennonites. Though land reform has attempted to put some control in the hands of small landowners (Barnett 1991), some farmers have experienced difficulty competing with closed economic systems, such as that articulated by the Mennonites, or in being able to produce enough to ensure competitiveness in the face of international market fluctuations. The small landowner is also subjected to political corruption and social discrimination based on ethnicity, political affiliation or region of the country in which he/she lives. Another consideration is the drug trade, which by nature is labour intensive, but which is also ruled over by powerful and wealthy Belizeans. Thus, Belize has moved into the later part of the twentieth century as an independent constitutional monarchy which is trade-dependent upon the United States

while trying to recover from its colonial legacy of exploitation and control under contemporary conditions of expanding American interests.

Dependent Independence: The Political History of Belize

British Honduras [Belize] is the creation of Western Man...an economic satellite, a sensory extension of metropolitan countries and industries...a node in the network which forms the international market economy. (Ashcraft 1973:16)

The political history of Belize, as a modern state, began in 1765 with public meetings, which originally were informal gatherings of settlers, but over time became a legislative body of elected magistrates that exercised judicial and administrative functions. Based upon the Burnaby Code (1765), a set of rules governing the settlement and the acquisition of land, seven leading settlers were to be named as magistrates who would enforce the regulations of the territory. Eligibility for magistrate positions was based on race, income and colour, resulting in a small elite being in control of the settlement as well as the timber economy and, ultimately, resulting in an elite control over the environment. The governing body in the settlement remained adamant regarding the colour of its members until the early twentieth century when the free coloured (creole) population began to argue for political rights. Because the abolition of slavery was becoming an issue in the colonial territories, the free coloured people were granted political equality, of a kind, with the whites, but the free black population was denied such status.

The Public Meeting in fact served the interests of only the economic elites, while the remainder of the settlement's population existed only to the extent of their service to the elites. Black (1991) refers to this situation as the relationship of clientele class benefitting at the expense of other classes. Due to the boom-and-bust nature of the mahogany market, local elites, who became indebted to London merchant houses, often lost their holdings. It was in this manner that the BEC was formed in London in 1859 and, by 1881, owned over a million acres of land; a monopoly it was to maintain until the 1970s (Shoman 1987).

Monopolization of the land also brought with it control over the political system in the colony, thus shifting control from the settler elite to the metropolitan elite. The legacy of the forestocracy and the attitude of divide and rule, regarding the different ethnic and racial groups within the colony, served to keep the BEC in control politically, economically and domestically and environmentally.¹⁵

As power shifted from the settler elite to the metropolitan elite, the Public Meeting system of government needed revision. In 1854, the Public Meeting system was disbanded and replaced by the Legislative Assembly (Bolland 1977:188-191). After seventeen years, the Legislative Assembly was dissolved and replaced by the Legislative Council, supported by the crown colony system. Under this system, attempts were made to return power to the Crown rather than having control stay in the hands of the elite population. By the end of the nineteenth century, the local elite was comprised of an expatriate community of 400 persons, mainly white Britishers who had recently come to the colony to secure land and commercial interests, and a Creole elite of about a dozen families who were descendants of old settler families (Shoman 1987:16-17). Under continued pressure from the local elite for constitutional change, the Crown restructured the Legislative Council in 1933. With the move to an elected council, power returned to the elites as they managed to impose high property and income qualifications, thereby once again being in control of the environment:

European oriented Creoles and Mestizos were accepted and acceptable, principally because they maintained the class values and pretensions of the old establishment. When European land-owning countenances gave way, in the late twenties, to those of Creole and Mestizo merchants, and the seat of power shifted from the land to the counting houses, the priorities of the new elite were indistinguishable from their predecessors. Labour still had to be kept submissive,

¹⁵Divide and rule was a policy between the Colonial administration and the British settlers where the different ethnic and cultural groups were kept away from each other by way of reserves and by giving "privileges" to certain members of an ethnic group, thereby creating suspicion both between groups and within the same group. Divide and rule simplified the Colonial Administration's control of the people. (Education Task Force 1984)

direct taxation still had to be resisted and the constitution, which equated wealth with political influence, had still to be maintained. (Ashdown, quoted in Shoman 1987:18).

The twentieth century brought with it a number of events which led to the declaration of independence in 1981. Resistance to exploitation, beginning with the Maya in 1894 and moving throughout the colony in the 1920s and 1930s, began a political movement to support the rights of workers. During this time the anti-racial philosophy of Marcus Garvey was being embraced by Belizeans, resulting in riots to protest the racist treatment, by the British, of the Belizean servicemen who fought in World War One and World War Two (Ashdown 1990). The great depression of 1929-40, the 1931 hurricane which devastated the country, and the devaluation of the Belizean dollar in 1949, all served to expose the dire position of the colony and its lack of a secure future under colonialism.

The strain of class inequality, poverty, and unemployment, coupled with the lack of land ownership, led to the beginnings of political organization by the workers and unemployed. What began as the Labour and Unemployed Association in 1934 became the General Workers Union in 1943, and "established a basis in both consciousness and organization for the nationalist movement and the People's United Party [PUP]" (Shoman 1987:20) Further, "contrary to popular myth, the PUP did not grow out of the worker's movement - rather, the middle-class Creole leaders of the PUP took over the movement and used it for party political purposes" (Shoman 1987:87).

While other political parties emerged during the years leading up to independence, the PUP, under the charismatic leadership of George Price has dominated the Belizean political scene. Except for a four and one-half year period in which the United Democratic Party (UDP) ruled the government, the PUP has maintained over a thirty year reign¹⁶. While nationalism and self-determination have been the primary philosophical roots of the PUP platform, "Price's middle-class political associates were anti-socialist as well as anti-colonial and pro free-enterprise capitalism as well as pro American" (Bolland 1986:113).

¹⁶During the elections of July 1993, the United Democratic Party was returned to power.

In 1954, with the help of the PUP lobbying effort, universal adult suffrage was granted by the Crown, with limited self-rule following in 1964. During the ten intervening years the nationalist political movement refined its policies and practices, which led to an appearance of increased power being given to the average Belizean. In 1962, the Security of Tenure law was passed which gave people rights to the land they lived on, though a clause was inserted which gave the landowner the right to remove his tenant with one year's notice. Using the Land Acquisition Act of 1947, the government was pressured to buy land from large absentee landowners to redistribute among the people. Though action was slow to be taken, between 1971 and 1975 89,371 hectares of land was redistributed to Belizean farmers, and between 1975 and 1982 a further 145,229 hectares was acquired. (Belize Education Task Force 1984:58).

Regardless of its relative monopolization of the Belizean political scene, the PUP has not had an easy task. Once the issues of moving toward independence were ironed out, the PUP still had to deal with economic difficulties. After the 1961 hurricane which devastated Belize City, the capital was relocated to Belmopan in the interior in 1971. Following this action, in 1973 the country's name was changed from British Honduras to Belize. Faced with poverty and unemployment, in a country which had virtually no domestic economic stability or established regional trade, the PUP remained committed to replacing colonial control with American control. Thus, economic growth was not to happen on a small domestic scale, but was to result from increased foreign capital investment. The policies of the PUP favoured the "exploitation of the country's natural resources by corporate American capital" (Grant 1976:229).

The United Democratic Party, formed in 1973, considers itself to be right of centre. Strongly anti-Communist, the UDP is a conservative party committed to "free enterprise and giving free-rein to foreign investment" (Shoman 1987:84). During its term in office, the UDP encouraged growth among the private sector such that concessions were

available to foreign investors, which strongly encouraged one hundred percent foreign ownership of an enterprise.

The UDP was also criticized for increasing the United States presence in Belize, though both parties have openly courted American intervention in the political economy and domestic policy of Belize. In 1981, the United States Embassy in Belize had seven diplomats, by 1990 this had increased to forty-five. Peace Corps Volunteers now number one-hundred and forty (the highest per capita in the world), and USAID has over thirty representatives in Belize. In 1985 an agreement was signed between the government of Belize (UDP at the time) and USAID for a loan of US \$13 million, to be disbursed in sums between \$1.5 and \$2.5 million, but subject to the government carrying out the policies of USAID. Therefore, USAID is entitled to information regarding the economic situation in Belize and holds influence over government policies and programs, including foreign trade, domestic price policy and practices, levels of public sector savings, agricultural policy and the structure of the Belize Electricity and Marketing Board. Further, USAID has allocated US \$60 million of its development assistance fund to strengthening the free-enterprise system of economic planning and development, which is administered by AID-sponsored NGOs (SPEAReports3 1990:22). Foreign ownership and control of resources is still firmly entrenched; subsistence land use practices are still secondary to export production; poverty, unemployment and environmental degradation abound.

The quest for independence within Belize appears to have resulted in the trading of a British colonial master for an American one. Regardless of the apparently peaceful democracy which is said to exist in Belize, the roots of underdevelopment which were set in place in the 1700s are still apparent today. Though Belize has been credited for its commitment to sustainable development, the reality of the potential success of such a style of development seems, at best, uncertain. Having been trapped by its participation in a globalizing economy, it seems unlikely that Belize can slow down or alter the course of

development it has been following since the days of dyewood and mahogany. The lack of economic diversification, coupled with the country's reliance on imported products, further supports its underdevelopment.

The movement toward independence did not rally nationalism around cultural symbols, rather it relied on being free from colonialism and free to pursue foreign investment. Thus, the divide and rule ideology of the colonial era is still prevalent today. Pronounced ethnic divisions do exist within the country. Belize as a nation is a result of negotiated geopolitical boundaries and not an emergent nationalist identity.

The control over the environment by foreign and local economic elites still separates the various groups of people within the country. The Maya, many of whom still maintain milpas, are increasingly being encouraged to halt their subsistence farming and turn to tourism or wage labour. The Garinagu who farm cannot begin to compete with the Mennonites for a share of the domestic market, though they do hope chemical fertilizers will give them an edge. The promotion of tourism, the number one growth industry for Belize, is further damaging the environment as more and more people are visiting ecologically fragile areas which are not equipped to handle the impact of increased tourism.

One is left to question, then, the viability of sustainable development as the primary vehicle of economic expansion in Belize. Sustainable development implies, as suggested earlier, small-scale projects utilizing low-impact technology. Since unemployment and poverty are serious issues in a country with a very small population, one must look to the labour requirements of development to find the cause of the problem. In view of the necessarily small-scale of sustainable development, it appears unlikely that it will do much to solve the problems of unemployment, regardless of its inherent labour-intensiveness. Given the conditions of the boom-and-bust legacy of development which mark Belize's past and present, coupled with the government's present policy aimed at increasing foreign investment into the economy, it appears likely that sustainable development is little more

than eco-rhetoric. Regardless, the country has gained recognition for its environmental policy and practices, and these will be discussed in the following chapter.

Chapter 4

Environmental Action, Conservation Strategy and Ecotourism in Belize

In the twelve years since independence, the conservation movement in Belize has been gaining increased momentum and worldwide attention. With seventy percent of its rainforest still intact (Mahler and Wotkyns 1991:VI111), the government of Belize, via the ministries of natural resources, environment and tourism, agriculture and fisheries have, with the aid of internal and external lobbying groups and both national and international non-government organizations (NGOs), set aside forests, wetlands, and wildlife sanctuaries as reserves or protected areas totaling over 809,371 hectares of the area. In a post-colonial country, with a well- recorded history of underdevelopment and dependency, these efforts appear to be impressive as a starting point in achieving diversified economic growth coupled with the preservation of the fragile sub-tropical ecosystem.

Within the region, both Mexico and Guatemala have, like Belize, been creating biosphere reserves and environmental legislation, but economic development pressure and poverty often negate the effects of conservation strategy. An example is Mexico's 1992 proposal for a hydro-electric facility, to be located thirty-five kilometers upriver of Guatemala's Piedras Negras. To be built by Mexico, the dam would flood the Usumacinta Basin, destroying the basin's mahogany forest and unexcavated Mayan sites on the Piedras Negras reserve. Further, extensive areas of Mexico's Lacandon forest would also be flooded. Though the project is supported by Guatemala's president, Guatemala's past history of hydro-electric power generation is far from environmentally sound. In the early 1980s Guatemalan Chixoy Dam was completed at a cost of US \$1.5 billion, a sum nearly matching the country's foreign debt. Today, the dam's tunnel has to be reinforced every two years to keep it from collapsing, while the dam's basin is almost completely deforested. In Guatemala, where over eighty percent of the population live in poverty, the government appears to be forced to choose non-sustainable development over

environmental protection (Perera 1992:34). In contrast, Belize appears to be the pillar of environmental conscience in a region ravaged by poverty and environmental degradation.

This chapter will document many of the conservation and sustainable development strategies which have been undertaken in Belize in the years since independence, along with listings of the NGOs and patrons of the various projects. In addition, the chapter will include a brief synopsis of articles which have appeared in travel articles and magazines which support tourism in Belize, but have been written by foreign visitors.

Belize Audubon Society

Any attempt to trace conservation strategy in Belize must begin with the Belize Audubon Society (BAS). Formed in 1969 as a foreign chapter of the Florida Audubon Society and affiliated with the United States Audubon Society, the BAS became an independent organization in 1973. Early in its history, the BAS was primarily an organization of avid bird watchers, but as encroaching development threatened the habitat of many of Belize's birds, conservation became a fundamental objective of the group (Interview with a BAS Director, Dangriga, March 1992).

The BAS, as a non-profit organization, has become affiliated with many influential international conservation organizations. Beginning in 1986, membership was obtained in the International Union for the Conservation of Nature and Natural Resources (IUCN), based in Switzerland. Later, membership in the Flora and Fauna Society of the United Kingdom and the Central American Network of Non-Governmental Organizations, furthered the legitimacy of the BAS. Locally, the BAS retains membership in the Belize Tourism Industry Association (BTIA), and members of the BAS serve on the National Tourism Council. Since 1984, at the request of the government of Belize, the BAS has been instrumental in financing, development and operation of areas which have been established under the National Parks System Act of 1981.

Concerned with the preservation and development of the environment and the conservation of Belize's natural heritage, the BAS is actively involved in education and

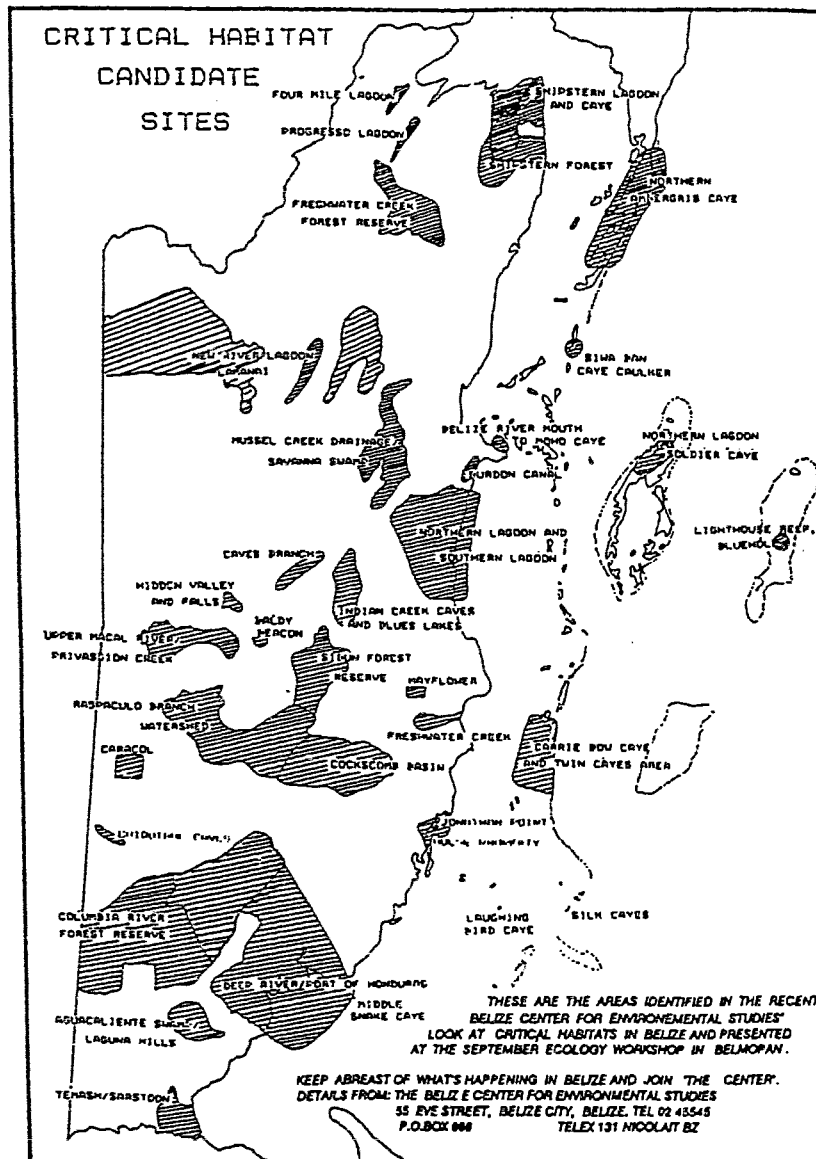
conservation. The environmental education program, in operation since the society was formed, is jointly funded by the World Wildlife Fund (WWF). The education program includes the presentation of lectures and films on environmental conservation to both schools and the general public. Also, a radio program and library facilities are available. The BAS acts as an advocacy group to lobby for legislation protecting species in danger of extinction (*Belize Review* 1992d:6-7).

The Government of Belize

In the years since independence Belize has been actively pursuing conservation strategies as a means toward furthering its sustainable development potential. Though the government has not defined a formal environmental policy or laws, there does exist, within various government ministries, a desire to encourage conservation. The passage of the National Parks System Act in 1981 was a major step in this direction. To date, over 222,578 hectares of government land has been incorporated into the protected lands system. Further, the government manages over 566,560 hectares of land in forest reserves covering about twenty-eight percent of the land area in Belize (Nicolait 1991:8; 1992:7). Though logging is allowed in the forest reserve under the Forestry Ordinance, clear-cutting and agricultural development are not. The forest reserves provide a buffer to neighbouring parks and nature reserves and act as protection for watersheds, thereby controlling flooding and soil erosion caused by clear-cutting and agricultural production. Though agricultural production has accelerated the destruction of wildlands since independence, the government of Belize has begun to create Special Development Areas (SDA) in ecologically sensitive regions of Belize. The legislation, by which SDAs are created, allows for zoning of land to be used for specific purposes including the identification of critical habitat areas (see Figure 4.1). The SDAs encourage the participation of local communities in the development of management plans, while encouraging communities to voice economic concerns and infrastructural needs (Nicolait 1992:10). Archaeological reserves are also being defined by the government.

In 1989 the PUP government created the ministry of tourism and the environment, followed in 1990 by the department for the environment. With the assistance of the World

Figure 4.1: Critical Habitat Sites identified by Belize Centre for Environmental Studies



Source: Belize Centre for Environmental Studies 1990:8

Wildlife Fund, the establishment of the new conservation unit of the department of forestry took place in July 1990 (Matola 1990:9). In July 1993, the national election unseated the PUP and reinstated the UDP. Acknowledging that the tourism industry is second only to agricultural development, the new minister of tourism has declared that he will continue the conservation strategies of the former government, with an increased focus on ecologically sustainable small-scale tourist development (*Belize Review* 1993e:21).

Government Reserve and Conservation Areas

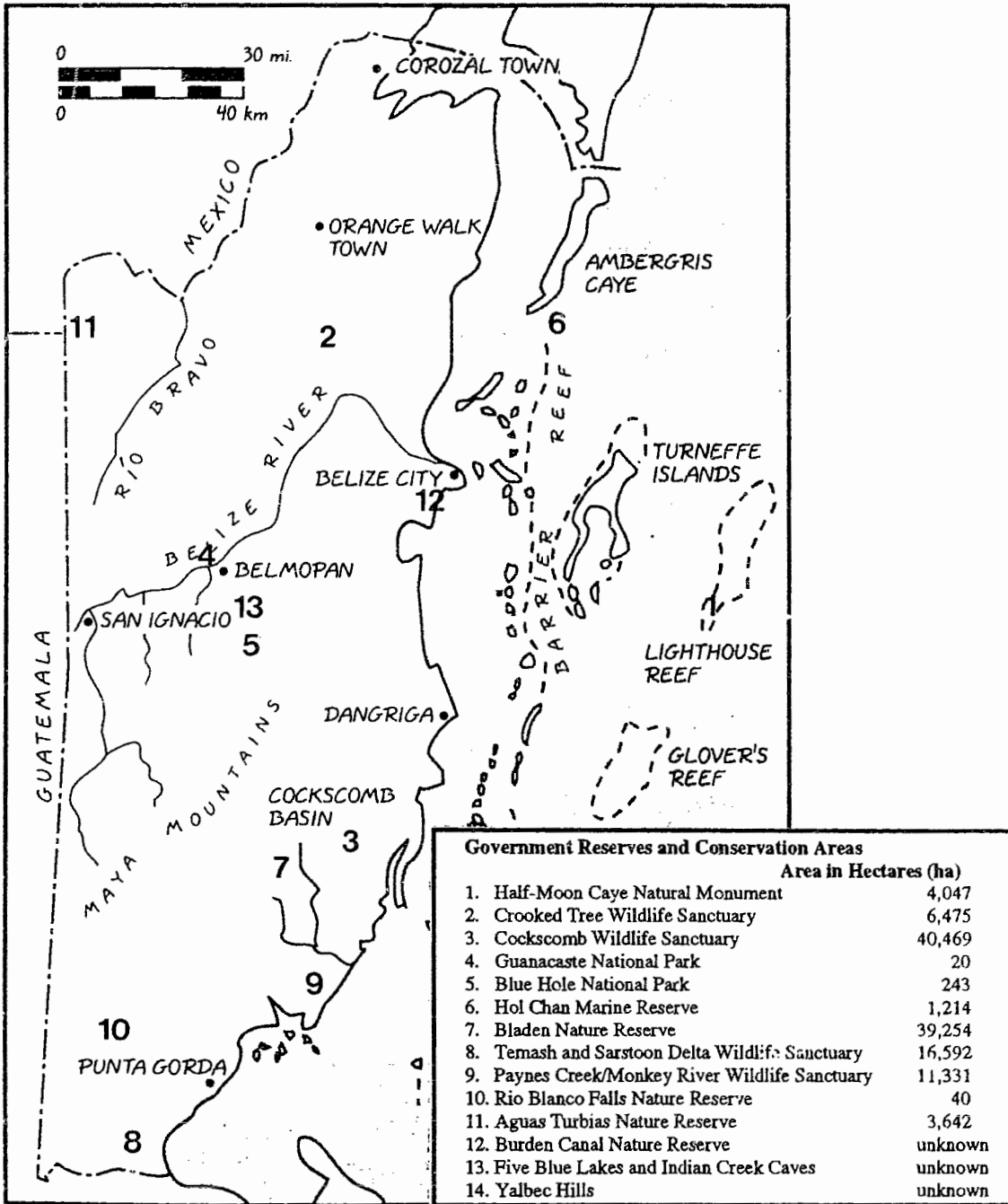
Half Moon Caye Natural Monument was established in March 1982, the first reserve to be created under the National Parks System Act of 1981.(see Figure 4.1 for a map of government reserves and conservation areas) The 4,047 hectare marine reserve consists of six kilometers of Lighthouse Reef, part of its inner reef lagoon, deeper water beyond the reef and the entire Half Moon Caye. This Caye is important as the only nesting ground for the Red-footed Booby in the western Caribbean. With the help of the BAS, financial assistance from the MacArthur Foundation and lighthouse keepers living on the island, the reserve is maintained, though increasingly reef damage, caused by boat anchors, has presented a problem.

Crooked Tree Wildlife Sanctuary, established in November 1984, and sponsored by the Government, the BAS, the Underhill Foundation and Wild Wings Foundation, is a complex system of wetlands and freshwater lagoons surrounding the village of Crooked Tree. With the BAS as the manager for the sanctuary, the 6,475 hectare reserve is the habitat for migratory and resident birds, the endangered turtles, crocodiles and tapirs. The BAS also maintains a visitor's centre in Crooked Tree Village, and hires and trains park wardens.

Cockscomb Basin Forest Reserve was established in 1984 in an attempt to impose hunting restrictions on the jaguar. Resulting from the research work of Dr. Alan Rabinowitz, which confirmed the presence of the jaguar, a campaign was launched to

preserve this threatened animal. In 1986, a small portion of the reserve was declared a wildlife

Figure 4.2: Government Reserves and Conservation Areas



Source: *Belize Review* 1993a; Mahler and Wotkyns 1991

sanctuary, and in 1990 the sanctuary was expanded to include the entire forest reserve; the total area of protection is over 40,469 hectares. Sponsored by the BAS, the government of Belize and the World Wildlife Fund, Cockscomb Basin incorporates nature and educational trails, a visitor centre, two guest houses and trained park wardens from the neighbouring Maya village (see Figure 4.3). Training for the wardens was funded by the BAS.

Figure 4.3: Warden at Cockscomb Wildlife Sanctuary



Guanacaste National Park, at the request of the BAS, was declared to be held in reserve, by the government in 1973, as a future national park. Obtaining park status in 1990, the 20 hectare area is sponsored by the BAS, the government of Belize, the MacArthur Foundation and the New York Zoological Society. Located near Belmopan, the nation's new capital, the park has two miles of trails, rest areas, a visitors' centre and a comfort station.

Blue Hole National Park is a 243 hectare park established in December 1986. Sponsored by the BAS, the government of Belize, the World Wildlife Fund and the MacArthur Foundation, the Blue Hole, itself, is the result of a collapsed limestone cave. Also the park hosts an extensive subterranean cave system. Upland tributaries of the Sibun River, one of Belize's major waterways, run through the park.

The 1214 hectare Hol Chan Marine Reserve was established in May 1987 to protect the barrier reef ecosystem. Sponsored by the government of Belize, the World Wildlife Fund and the United States Agency for International Development (USAID), the reserve has become an important tourist location. It also plays a significant role in the preservation and increase of fish stock for local fishermen. The marine reserve is closely guarded by local wardens, though fishing by special license is allowed within the park. The reserve is experiencing some reef degradation as a result of careless scuba divers and snorkellers, regardless of the penalty system for damages. Sharks have been sighted inside the reef, due to damage caused by hurricane Gilbert, resulting in a tourist hazard. Three critical habitats are being protected within the park: sea grasses, mangrove and coral reef, all of which are vitally important to the maintenance of the park's sea life.

Due to the efforts of the BAS, the World Parks Endowment (an affiliate of IUCN) and Lighthawk, the 39,254 hectare Bladen Nature Reserve, which was scheduled to be logged, gained a permanent reprieve and on 5 June 1990, became a national park. Surveying for the reserve was conducted by the Massachusetts-based Manomet Bird Observatory. The survey resulted in a prediction that the area would generate more income from tourist dollars than from logging revenue. As the upland watershed is a critical habitat for a number of endangered species, only scientific research and educational activities may take place within the park.

Additional reserves which have been defined include: Temash and Sarstoon Delta Wildlife Sanctuary, 16,592 hectares; Paynes Creek/Monkey River Wildlife Sanctuary, 11,331 hectares; Rio Blanco Falls Nature Reserve, 40 hectares; Aguas Turbias Nature

Reserve, 3,642 hectares; Burden Canal Nature Reserve; Five Blues Lake and Indian Creek Caves; and the newest declared reserve, Yalbec Hills, is in the Cayo District.

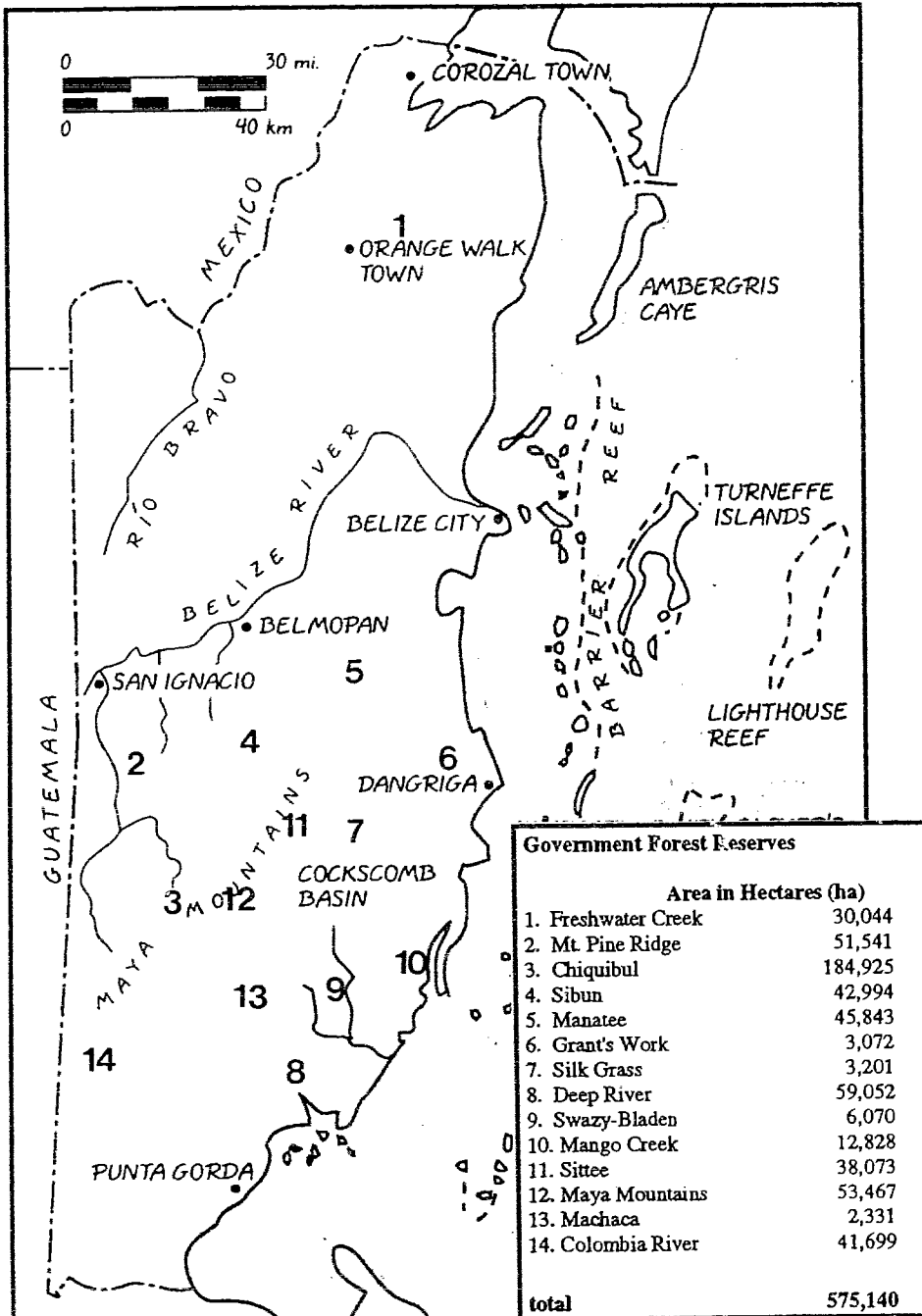
Government Forest Reserves

Belize has fourteen forest reserves totaling over 575,140 hectares (see Figure 4.4), and while this appears praiseworthy on paper, in practice these areas are gaining considerable attention due to unfavourable forestry practices, road building, increased illegal hunting, and encroachment by refugees from neighbouring countries who practice slash-and-burn agriculture. Perhaps the Columbia River Forest Reserve, established in 1973 and totaling 41,699 hectares in the Toledo District, has gained the most notoriety as a result of a logging concession which was granted to a Mexican company in 1992. Registered as the Belize Veneer Manufacturing Company, the company employs only five Belizeans and has logged mahogany and cedar in a haphazard manner. To date, "of the 568 mahogany and cedar trees which have been cut only about 200 have been hauled out; the remaining logs, if left for a while, will begin to decompose...In addition there seems to be financial problems limiting the work of the logging operation" (Hoare 1993:21).

Private Reserves

These reserve lands, while privately owned or leased from the government of Belize, are managed for conservation and in some cases sustainable development (see Figure 4.5). The Community Baboon Sanctuary was established in 1985 to protect the Black Howler monkey, known to Belizeans as the baboon. The sanctuary began as experimental grassroots conservation with over one hundred landowners having pledged to use their lands to benefit the preservation of the monkey (Horwich and Lyon 1990:7). Dr. Robert Horwich began his research in 1981, and during the following years slowly gained the approval of the government of Belize and the support of not only the BAS, but also World Wildlife Fund, the Lincoln Park Zoological Society and, most importantly, the local farm owners. Participating landowners have pledged to follow the conservation and management plan which was drawn up with the support of Horwich and local farmers.

Figure 4.4: Government Forest Reserves



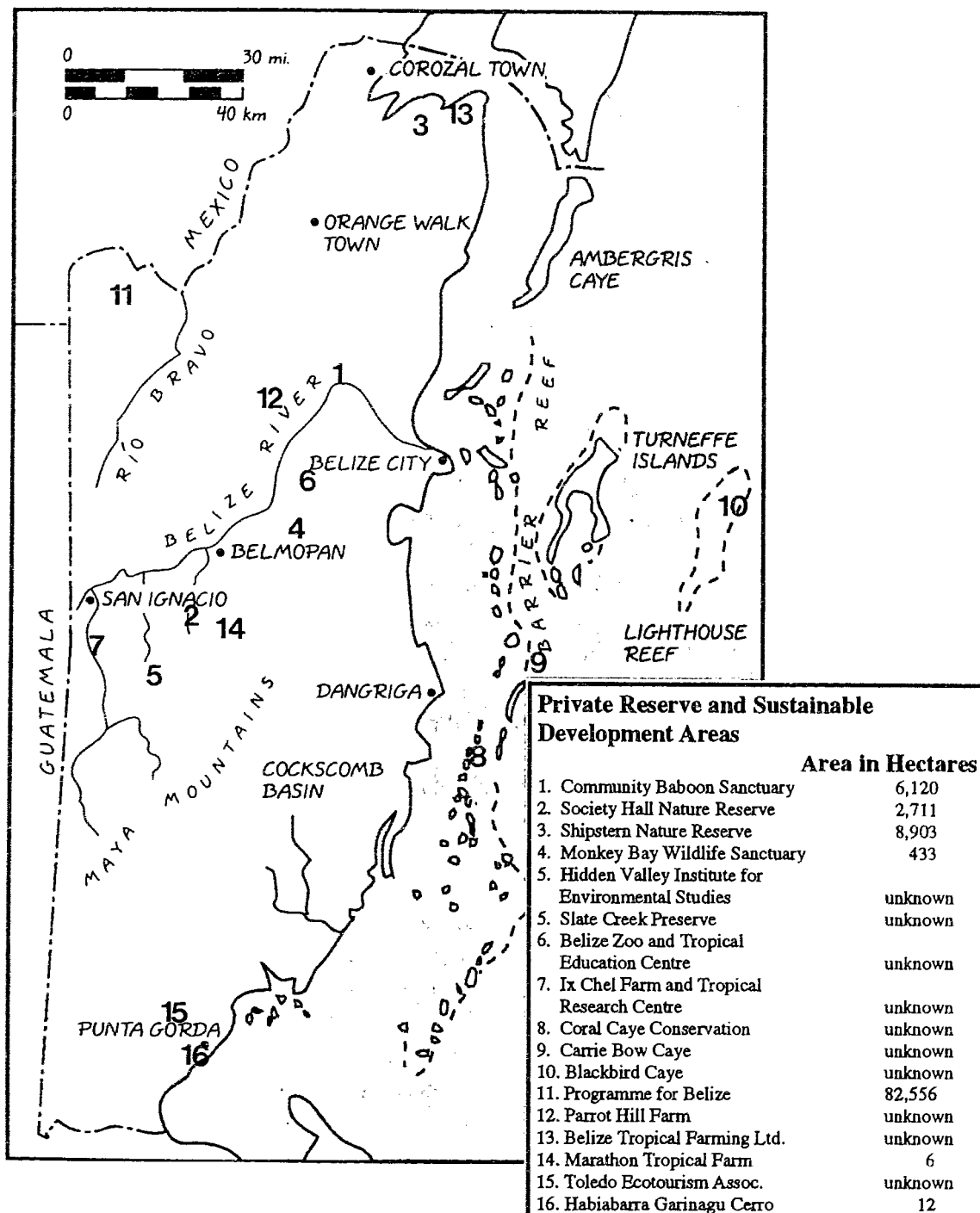
Source: Nicolait 1990b; Mahler and Wotkins 1991)

The plan includes protecting forests along riverbanks, leaving food trees when clearing land and maintaining corridors of forest around farmed areas. Originally an area of 777 hectares, the sanctuary has grown to 6,216 hectares, which includes eight small agricultural villages. The village of Bermudian Landing houses a natural history museum and visitors' centre, the sanctuary headquarters and manager's office. The plan for the sanctuary was to have the BAS act as overseer for the project until 1992, during which time the local community would learn to take over the management of the sanctuary. Unfortunately, during the spring of 1992, the sanctuary manager was fired, due to alleged mismanagement of funds, resulting in considerable controversy. The attitude of the BAS was that the sanctuary should have been prepared to take over the operational requirements, thereby releasing the BAS from its commitment, and to begin functioning as an independent entity (Interview with a BAS director, Dangriga, March 1992). The sanctuary now has a new manager and, though it is still suffering growing pains, is moving steadily closer to achieving its goals.

Society Hall Nature Reserve covers an area of 2,711 hectares and is located in the Mountain Pine Ridge. The reserve was donated to the government of Belize to be leased and managed by the donors with external assistance. There are no facilities or services available, and entrance to the area is restricted to only those having gained prior permission from the management.

Shipstern Nature Reserve is an 8,903 hectare reserve in the Corozol District which is composed of hardwood forests, mangrove swamps and salt water lagoons. The reserve is managed by the International Tropical Conservation Foundation of Switzerland, and maintains a butterfly breeding centre for the export of butterflies as a means of generating income to be used to manage the reserve. Both researchers and tourists utilize the nature trails and breeding centre.

Figure 4.5: Private Conservation Reserves in Belize



Source: Nicolait 1990a; *Belize Review* 1991a; Mahler and Wotkyns 1991.

Monkey Bay Wildlife Sanctuary comprises 433 hectares of trails, forest, lagoons and wetlands. This sanctuary is privately owned and operated. It is open to the public for camping, hiking, swimming and picnicking. Educational programs and environmental awareness are the main objectives of the sanctuary and are offered to both local and foreign visitors (see Figure 4.6).

Figure 4.6: Environmental Awareness sign on the Western Highway



Hidden Valley Institute for Environmental Studies is a privately funded research and education facility. The institute works at developing environmental education materials for use in local schools. Accommodations are available for researchers, educators and naturalists who are studying the biology and ecology of the area.

Slate Creek Preserve, still in the planning stages, is intended to lead to the conservation of an important watershed area. The area under study is privately owned by both Belizeans and non-Belizeans and will encompass the community of Seven Miles in

the Mountain Pine Ridge. As with the Baboon Sanctuary, a community-based conservation and management plan is being proposed under the guidelines set forth in UNESCO's Man and the Biosphere Program (MAB)¹⁷. Suggested ways of financing the preserve are: experimental research areas to assess methods of sustainable development, traditional use areas implementing traditional land use practices, rehabilitation areas for modified or degraded ecosystems, and ecotourism (Bevis and Bevis 1992:16-20).

The Belize Zoo and Tropical Education Centre was initiated in 1983 by Sharon Matola, an American biologist, to house the animals which were used by British filmmaker Richard Foster while making the film "Amanti". The Zoo has become a cornerstone of Belize's conservation movement. With considerable funding from private donations, gate receipts, World Wildlife Fund, USAID, IUCN, Wildlife Preservation Trust International and the Belizean government, the Zoo is the most widely viewed tourist attraction in the entire country (see Figure 4.7). The new solar-powered Zoo is housed on a 63 hectare site on the Western Highway and is easily accessible (*Belize Review* 1990:29). The education centre is actively involved in the creation of environmental education materials being used in some schools in Belize and in the training of those teachers who will be implementing the curriculum. During an interview with the education director for the Belize Zoo, I was given copies of two environmental curriculum modules: land-use and pollution. Subsequent fieldwork has revealed that the curriculum is in use mainly in Belize City and other major towns. Many rural schools either have not received the material or have only one copy for the entire school population. School tours are available but transportation from outlying areas of the country is difficult and relatively expensive. The Zoo has gained attention within the international conservation community for its unique design and is

¹⁷The MAB programme began over twenty years ago by promoting long-term conservation of the world's representative ecosystems. The programme called for the need for scientific research and constant monitoring of the environment. Over the years MAB has evolved to reflect the influence of human populations in the biosphere as well as man's continuing responsibility for its continuing evolution (Meyers 1993:167)

perhaps the only place in Belize where the local population can come to view such a wide array of the country's indigenous wildlife population in a uniquely natural setting.

Figure 4.7: The New Belize Zoo: main building and museum



Ix Chel Farm and Tropical Research Centre is privately owned by Dr. Rosita Arvigo and Dr. Gregory Shropshire, former United States citizens (Mahler and Wotkyns 1991:155). The centre's focus is studying tropical plants and the preservation of tropical forests. Identifying and testing the healing properties of medicinal plants and recording the therapies and treatments of local healers is a priority of the centre. Also offered are tours of the Panti Medicine Trail; a guided tour through trails during which medicinal plants are pointed out and their healing properties are discussed. Dr. Arvigo also works with the associate director of the New York Botanical Garden, Dr. Michael Balick, in attempting to identify the uses of the many plants growing in Belize. Funding from the United States

government's National Cancer Institute is responsible for an ethnobotany project at the farm, as part of a three-continent, five-year search for plants which could be used in the treatment of presently incurable diseases, such as AIDS. (Mahler and Wotkyns 1991:155).

Coral Caye Conservation Organization resulted from a 1986 expedition during which a team of researchers from Britain began to explore the condition of the reef in Belize. Expeditions have been carried out on a yearly basis since then. At the request of the Belizean government, the Coral Caye Conservation (CCC) has been developing a management plan for the protection and sustainable use of the cayes. A non-profit organization, CCC has a research station on South Water Caye, which houses the research teams and their equipment. Having identified the mechanisms of reef destruction as soil erosion from clearing the mangroves, anchors from fishing and tour boats being dragged across the reef, and damage caused by careless divers, the CCC has proposed strategies to aid in the reef's preservation. Using trained divers who are volunteers and pay their own way, the organization intends to continue its yearly ten-week expeditions to Belize. (Coral Caye Conservation 1990).

Carrie Bow Caye is leased from the Bowman family of Belize by the Smithsonian Institute. This half-hectare caye is a science research station used for tracking the impact of agriculture, fishing, storms, pollution and other influences on the fragile coral reef ecosystem (Mahler and Wotkyns 1991:68-69). A trip to the caye revealed the presence of toilet facilities which were situated at the end of a pier, depositing waste directly into the sea surrounding the Caye (see Figure 4.8).

Blackbird Caye was selected as the site for ecological marine studies which are associated with Biosphere 2 project which began in Tuscon, Arizona in September 1991 (*Belize Review* 1991b:12-13)¹⁸. The research being conducted will study communication between dolphins and humans, with the elaborate underwater communication system being

¹⁸The research vessel *Heraclitus* set up its operating base at Blackbird Caye, with communication links between the Tuscon Biosphere, the vessel and the research station on the Caye. Blackbird Caye was chosen as it is a relatively intact ecosystem in which to conduct dolphin studies..

Figure 4.8: The Facilities at Carrie Bow



provided by an American movie director Francis Ford Coppola (Mahler and Wotkyns 1991:74).

The Programme for Belize is operating under a formal agreement with the Belizean government. This non-profit corporation was formed in 1988. Programme For Belize (PFB) is a consortium of national and international environmental groups whose goal is to "assist in the conservation and economic development of the natural resources of Belize with emphasis on the long-term sustainability of the resource base" (UNICEF 1991:65). The lands managed by the PFB are held in trust for the people of Belize; to be developed or maintained in a sustainable way. These will include sustainable agriculture, sustainable logging and forest management, the extraction of non-wood products such as nuts and chicle, and ecotourism (Interview with PFB Director, Dangriga, March 1992). The Rio Bravo Conservation Area, which adjoins the Calakmul Reserve in Mexico and the Reserva

Maya in Guatemala, is 61,512 hectares of primary tropical forest in northwestern Belize. Coca Cola Ltd., in 1990, donated 16,997 hectares of the Rio Bravo lands to PFB. Of the remaining lands owned by Coca Cola, an additional 21,044 hectares was donated in 1992 (*Belize Review* 1992b:13). Coca Cola's divesting of all but 12,141 hectares of its Belize lands was influenced, to a degree, by criticism leveled at the company by Friends of the Earth, an international environmental group, due to the environmentally degrading results of the large-scale cultivation of citrus. Though the PFB is interested in acquiring more land in the area, they are in competition with Mennonite farmers who want to clear the forest and plant agricultural crops and graze livestock (O'Neill 1993:126). As part of PFB's effort to raise the necessary capital to continue purchasing land, they have initiated a plan in Britain, with the help of Tate and Lyle Ltd., whereby individuals can purchase and endow an acre of forest in the Rio Bravo lands for Bze. \$80.00. As of 1991, the United Kingdom has contributed over Bze. \$360,000 (US. \$155,000.00) to the PFB (Edgell 1991:30). The PFB has gained the support of numerous NGOs and individual patrons from around the globe, which has aided in extending their projects to include the preservation and management of the La Milpa Maya archaeological lands. Further, the PFB is actively involved in supporting other NGOs and conservation projects operating in Belize.

Environmental and Conservation NGOs Operating in Belize

Many of the conservation areas and private reserves named above are part of the NGO network operating within Belize. They will not be listed again in the following section. The following groups do not operate reserve lands but act as consultants, advisors and/or conduct research aimed at promoting conservation and sustainable development within Belize.

Belize Centre for Environmental Studies (BCES) was registered as a non-government, non-profit company in April 1988. The BCES was established to promote the integration of environmentally sound planning with economic development. The objectives of the

BCES are to promote the sustainable use of natural resources, to document changes in natural resource use and economic growth, to formulate and implement policy relating to resource use, to establish a forum to enable those involved in planning, development, conservation and education, to pool resources and share ideas, and to create and encourage awareness among Belizeans of the need for wise management of its natural resources. The centre is located in Belize City and provides library resources, computer resources, a graphics studio, a map library, a conference room and a photo lab. The BCES is involved in conducting environmental impact assessments (EIA) on development projects within Belize and advising the government of its findings. The BCES also coordinates funding from external NGOs to facilitate the centre's EIA research. Some of the funding agencies are: USAID, the Wilderness Committee of Western Canada, Cultural Survival, Conservation International, Consortium for Central American Universities, World Wildlife Fund/US, Nature Conservancy, and CARE International (BCES 1992; UNICEF 1991:44).

Belize Enterprise for Sustained Technology (BEST) became a registered NGO non-profit organization in 1985 and is dedicated to improving and sustaining the economic and cultural well-being of the low-income people, defined primarily as women, rural people, unemployed urban dwellers, in Belize. BEST lists its purposes as follows: to provide integrated training and technical assistance; to promote business management, enterprise development and efficient use of resources; to foster and encourage the active participation of people in their own enterprises and in community development; to support the sustainable development of the natural resources in Belize; and to enhance the meaningful involvement of women in development. As a result of these objectives, BEST works primarily with low-income farmers, fisher persons and small scale entrepreneurs. Funding for BEST comes from its local and international sponsors and patrons and from its client groups who pay, based upon their available resources, for the services received. (BEST 1991)

The Society for the Promotion of Education and Research (SPEAR) was formed in 1969, and registered as a non-profit company. SPEAR is "dedicated to creating national consciousness and achieving social and economic justice through participatory research, popular education, community development and community action" (UNICEF 1991:14-15). The target group for SPEAR are the poor and disadvantaged living within Belize. The organization publishes a quarterly journal and the papers presented at their annual conference. While their work, to date, does not focus on environmental issues, it deals with social, economic and political issues facing Belizeans. Although not all publications are written by Belizeans, they appear to uphold SPEAR's commitment to non-partisan social action.

Project Tree was funded by the National Geographic Society, with the help of NASA's Jet Propulsion Laboratory (JPL) in California. With assistance from the government of Belize and the Programme for Belize, Project Tree was designed "as a means of perfecting the use of airborne instruments in the measurement of various critical factors which will reveal the health of the ecological system down below" (Hartman 1990:21) With preliminary research starting in 1989, followed by aerial research in 1990 the project has revealed a wide array of valuable data on both the viability of the remote sensing devices and the conditions of the region under study. Due to the extensive Maya habitation of the area centuries ago, the researchers had difficulty finding the necessary plots of untouched lands upon which to conduct their studies (O'Neill 1993:120). With the information gathered at the Gallon Jug location in northwestern Belize, NASA hopes to be able to measure how vegetation responds to environmental changes, to identify low environmental impact areas for farming, and general dynamics of a rainforest ecosystem.

Sustainable Development Projects

Some of the projects discussed in the preceding sections include sustainable development objectives and will not be discussed further in this section. The following projects identify their objectives solely as sustainable development, which also implies

conservation and a commitment to environmental protection though not necessarily appropriate technology.

Start Now Corporation of Eau Claire, Wisconsin, has financed the creation of a sustainable agricultural farm in Belize called Parrot Hill. Privately owned, but aided by the corporation, Parrot Hill Farm was developed on savannah land which, in 1980, at the time it was started, was typical of the devastation left behind after tropical forests are clear-cut (Schanen 1992:2). The induced desert-like conditions which existed were fertilized with hundreds of tons of organic waste, planted with nitrogen-fixing plants which, over time, regenerated the soil and enabled the commercial production of citrus and vegetable crops. Parrot Hill also has a learning centre and offers five-day seminars on sustainable agriculture (*Belize Review* 1993b:18).

Butterfly farming is being attempted by residents of the village of Sarteneja in Belize. Set up as a cooperative under the Belize Tropical Farming Ltd.(BTFL), this community is planting relevant food plants to encourage the laying of eggs, which are then collected and harvested. The caterpillars are then reared in homes until they reach the pupae stage, at which time they are purchased from individuals by BTFL and exported to Britain. Although the enterprise has run into various export-related stumbling blocks, such as guaranteed shipment space and permits, the government has aided the BTFL in overcoming these difficulties.

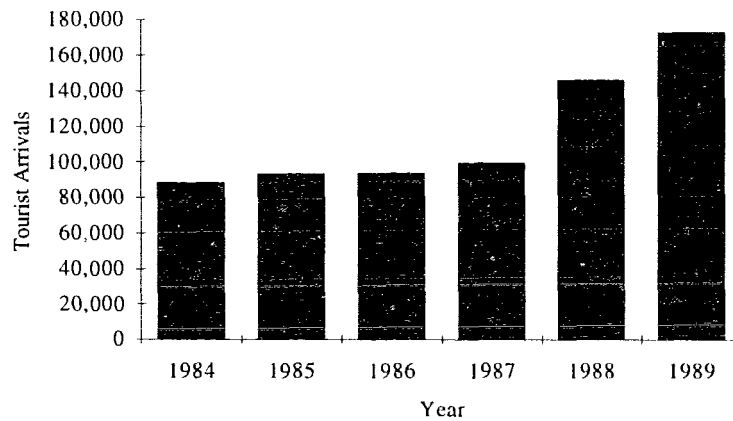
Marathon Tropical Farm began in 1987 on a 6 hectare site in the Cayo District. Though the farm began exporting flowers to Houston, Texas in 1989, management problems slowed down production for a while. Under new management, the farm is now rehabilitating its gardens and looking to expand its markets to Holland, Miami and other Central American countries, while continuing to pursue the growing domestic flower market. The current farm manager has offered free seedlings to any Belizeans who wish to begin production, asking only that all growers market their product as a united group. Intending to reach full production status within two years, Marathon Farm's management

feels it can generate gross income in excess of Bze. \$200,000 annually (Belize Today 1992b:2-9).

Ecotourism

Tourist arrivals have been increasing as more of Belize becomes 'discovered' as a holiday destination. (see Figure 4.9). Resulting from concerns of the environmental degradation of mass tourism, former Belizean minister of tourism and environment Glenn Godfrey, in a speech made in Toronto in October 1992, stated that "the government of Belize last year formally declared Ecotourism as the main thrust of our marketing and development efforts" (Godfrey 1992:7).

Figure 4.9: Tourist arrivals in Belize between 1984-1988



Source: Belize Chamber of Commerce and Industry 1990:11.

In 1991 and 1992, Belize hosted the First Caribbean Conference on Ecotourism and the First World Congress on Tourism and the Environment. At the United Nations Conference on Environment and Development in Rio de Janeiro in 1992, Belize announced its intention to establish an International Institute of Environment and Development (IIED) focusing on the policy of sustainable development in the region. The first step in the development of IIED was taken in September 1992, when all seven foreign

ministers of Central America traveled to the Republic of China to sign an agreement to establish a regional language centre in Belize, to be funded by the Republic of China. Currently, under the agreement, Spanish and English are being taught to students from the member countries in an attempt to remove the language barrier between the Central American regions. Further, the proposed institute will become a multi-disciplinary agency addressing the varied development activities of the region, with a concerted focus on ecotourism training and in particular, training ecotourism guides.

On a national level, the Belize Tourism Industry Association (BTIA) was formed in 1985 to "bring together all tourism and tourism related interests in the country in order to meet the challenges of a dynamic and growing tourism industry" (BTIA 1991). Incorporated in 1989, the BTIA established, with a grant from USAID, a headquarters equipped with computers and a resource library. In addition, the BTIA offers courses in tourism training and skill development and actively markets Belize's tourism assets in the international arena. In 1992, the government developed the Tour Guide Regulation, requiring the licensing and training of guides. Additionally, a five percent tax levied on all tours was to be paid by the tourist, collected by the guides and used to provide training. In response, the BTIA lobbied the government to negate the tax as it felt it would put unnecessary pressures on guides. Thus the BTIA has taken an active role in lobbying for its membership (*Belize Review* 1992b:2).

Ecotourism, which is defined as "travel that contributes to preservation of natural and cultural environments while causing minimum environmental damage" has become the development focus of many interested persons both locally and abroad (Nidever 1993:3). Longacre Expeditions and Ecosummer Vacations are two well known operations located in the Pennsylvania, United States and British Columbia, Canada, respectively, who are operating eco-tours to Belize. The tour packages include diving, caving and visits to Mayan ruins. While the economic benefits and environmental preservation received by Belize from internationally based ecotourism operations are questionable, there are two

ecotourism operations in the Toledo District which most closely approximate a small-scale, community based, low impact, culturally relative ecotour.

The Toledo Ecotourism Association (TEA) began in 1990 after a series of community-sponsored workshops on ecotourism were held in the Toledo District. In November of 1990, nineteen men from six villages (Laguna, San Jose, San Miguel, Santa Cruz, San Pedro Columbia and Barranco) met with Chet Schmidt, an American who has been living in Belize for twenty-four years, (an ardent supporter of conservation in Belize and director of the Toledo Homesite Farming and Ecology Centre), and agreed upon the following objectives: to develop an association (TEA) and ecotourism program enabling the communities involved to plan, control and profit from the project by distributing the economic opportunities to all within the villages who are participating members; to ensure that ecotourism revitalizes and strengthens traditional cultural activities; to protect and profitably exploit natural resources in a sustainable manner; and that any profits accrued, after the service providers have been paid, will be used to better the health, education, employment, museum development and maintenance of the community's development programs (TEA 1991). Ecotourism has offered the participating Mayan communities the opportunity to generate enough income to reduce their reliance on slash-and-burn agriculture.

Since this initial report was issued, the TEA has overcome tremendous hurdles, both within the specific communities involved and the Toledo District generally and, the project has gained global attention. In August of 1991, Laguna was the first village to complete its guesthouse, and to date five other communities have also done the same. With the completion of the Laguna guesthouse, the TEA prepared for its first guests. In 1991, a group of film-makers created a documentary of the first twenty-four hour eco/jungle tour, shown on the Discovery Channel, an independent cable network operating out of the United States. For some of the service providers in the village of Laguna, the money

generated from this first eco-tour was more than they had ever earned before (see Figure 4.10).

Figure 4.10: Fee Structure and Distribution of TEA-generated income

All Prices are in Belize Dollars

		Service Provider	Health & Education	Permaculture	Office	Guest House	Ongoing Training	Tourist Agent	Workshop/ Meeting Transportation	Government Tax
Guest House	16.00	12.00	.50	.50	.50	.50	.50	.50	.50	.50
Meals	6.00	5.00	.13	.13	.13	.13	.13	.13	.13	.13
Guides	5.00	4.00	.13	.13	.13	.13	.13	.13	.13	.13
Music	10.00 Per Musician Per Hour	8.00	.25	.25	.25	.25	.25	.25	.25	.25
Dances	5.00 Per Dancer Per Hour	4.00	.13	.13	.13	.13	.13	.13	.13	.13
Storyteller	5.00 Per Hour	4.00	.13	.13	.13	.13	.13	.13	.13	.13

The chart above shows how tourist-generated money is allocated in the village. A portion of the money spent in each category is placed in one of the T.E.A. Barranco funds. When the fund for improved village health and education reaches

Source: *Belize Review* 1993d.

The program sends visitors to the different villages on a rotating basis, ensuring the revenue generated supports all member communities. Currently, the TEA is soliciting funding from outside agencies to build and operate their own office in Punta Gorda. At present they are using the free space provided by Chet Schmidt, voluntary consultant to TEA. Acting in this capacity, Schmidt has made the villagers aware of the environmental and cultural options which could not only guide the project but also result from it, including both positive and negative aspects. Further, Schmidt has given many hours of his time and experience to ensure that the project is a success for the villagers.

During an interview with Schmidt, in March 1992, he outlined the negative reactions toward both the TEA and himself from members of the Punta Gorda business community. Included among reactions, and played out in the community newspapers, were accusations that Schmidt had misappropriated funds from a local school (he has since been cleared of

those charges). Further allegations were made that he was not concerned with cultural and environmental protection, rather that he was nothing more than a "mere colonial", willing to exploit the TEA for his own benefit. This resulted in the local planning committee denying Schmidt the right to present his views on ecotourism at the field seminar which was offered as a component of the First World Congress on Tourism and the Environment held in Belize in April 1992 (though conference participants intervened and insisted that he be allowed to present). Schmidt's ostracism seems to derive from fear in the local business community that the TEA would draw tourism dollars away from the town to the TEA project. Attitudes have since changed because the TEA is bringing additional tourism to Punta Gorda, as all travelers seem to spend time in the town, communicating with the TEA and organizing transport to the distant villages. Therefore, while the TEA continues to develop its unique brand of tourism, with the aid of Schmidt, the local business community is also benefitting by increased foreign exchange earned through tourism dollars. Further positive effects have been that certain members of TEA have attended ecotourism conferences and workshops both in Belize and internationally, and are learning how to promote ecotourism which is environmentally and culturally sustainable.

The Habiabarra Garinagu Cerro (HGC) was formed in 1990 by the Garinagu residents of Punta Gorda to create economic opportunities which are cognizant of traditional Garinagu culture. Described as a "conservation of culture" project by volunteer chairperson Emma Martinez, the project is being constructed on a thirteen hectare parcel of land leased from the St. Vincent Block (a 388 hectare parcel of land held collectively by the Garinagu). With an expected completion date of 1995, the HGC intends to have a traditional Garinagu village which will offer cultural displays of dancing, music, arts (see Figure 4.11) and crafts, history and village life; an ecotrail and conservation area aimed at creating an awareness of the need for sustainable farming practices and conservation; an educational facility and model farm to teach sustainable, intensive farming techniques; a cash-crop growing area to reduce dependence on tourism revenue; and the Freedom

neighbourhood farm as a model of sustainable intensive agriculture using the permaculture design of growing nitrogen-fixing plants. The HGC will be run by trained Garinagu with profits being distributed to the St. Vincent Block Homesite Farmers' Fund, the Garifuna

Figure 4.11: The Waribagabaga Garinagu Drummers and Dancers



Welfare Program, the Garifuna Scholarship Fund and the national Garifuna Council (*Belize Review* 1993f) As with the TEA, the HGC has experienced many hurdles in bringing their plan to fruition. Now, having gained the attention of the government of Belize and attempting to solicit support from other agencies, the future of the project is hopeful. On more than one occasion during the spring of 1992, dissension between the Garinagu of the Toledo District and those in the Stann Creek District was characterized to this researcher as a struggle for power between the two groups. With so few resources available to the Garinagu in Belize, there was fear among the groups in both areas that

their cultural projects were in competition. The report in the *Belize Review*, cited above, suggests that these hurdles are being overcome.

From the Outside...Looking In

While much of the information listed above came from Belizean sources, both publications and personal interviews, there is a growing interest in Belize within international travel and retirement communities which will be discussed below.

In the October 1991 issue of *Lifestyle Retirement Magazine*, a Vancouver, Canada-based publication, an article appeared entitled "You Can Live in a Tropical Paradise on \$350.00 a Month." The article describes a paradise that few could refuse, citing the following reasons: Belize is English speaking and "can you imagine going to the hospital with chest pains at 3 A.M. and not being able to communicate with the doctor?"(p.47); a former British Colony; an excellent phone system "compliments of the Queen" (p.47); almost non-existent industry and "as pollution free as any place can be in this day and age" (p.47); healthy lifestyle with no stress; swim in the bathtub warm Caribbean waters; a lovely 3 bedroom house on the beach for \$150.00 a month; seafood and fruit for free; and all on \$350.00 a month. Upon returning to Canada an attempt was made to contact the editorial department of the magazine, only to find out they had no information beyond the contact number for the California-based company which sent them the article. A call to the toll-free number of Preview International in California revealed that the number had been disconnected and calls were being routed to another number. Unwilling to spend the money on a toll call to attain further information as to how the information was collected, the "paradise" described above may always remain a mystery to me.

Condé Nast Traveler: Truth in Travel, published an article in its June 1991 edition entitled "Escape: Bewitched by Belize - a Miracle in the Caribbean," in which the author, Martha Gellhorn, described Belize as "as multi-racial and multi-religious as you can get, and it is serenely color-blind and serenely tolerant" (p.84). The author goes on to suggest that "Colonialism did its best here, leaving behind the habit of elections...and British

Colonialism failed to do its worst - the nasty racism I used to detect in other colonies" (p.90). Referring to Belizeans as loyal subjects to the Queen, and as not knowing how lucky they are, past and present, and that they are safe from the evil meddling of Washington in Central America, the author also called the country roadless and stated that half the children were illegitimate but not abandoned. Though the article described the physical beauty of the country with some degree of accuracy, one is left to wonder if articles such as this display the pathological nature of ongoing cultural imperialism rather than the objective reporting of conditions.

An interesting account of a six-day kayaking trip to the cayes on the Belizean reef is the subject of an article which appeared in the December 1991 issue of *Islands International*, a travel magazine. The reporter/kayaker, Dewey Schurman, does a commendable job of discussing this adventure tour taken under the guidance of a Belizean kayaking guide. Mentioning local products and services, the author also discusses the impact on local guides of cruise ships which visit uninhabited cayes, leaving little, if any, foreign exchange in Belize, and the adventure travel companies who do not utilize Belizean equipment services or guides. The twelve-page article includes many photographs and descriptions which do not attempt to capture the cultural ambiance of Belize but, rather, are aimed at capturing the attention of the adventure traveler.

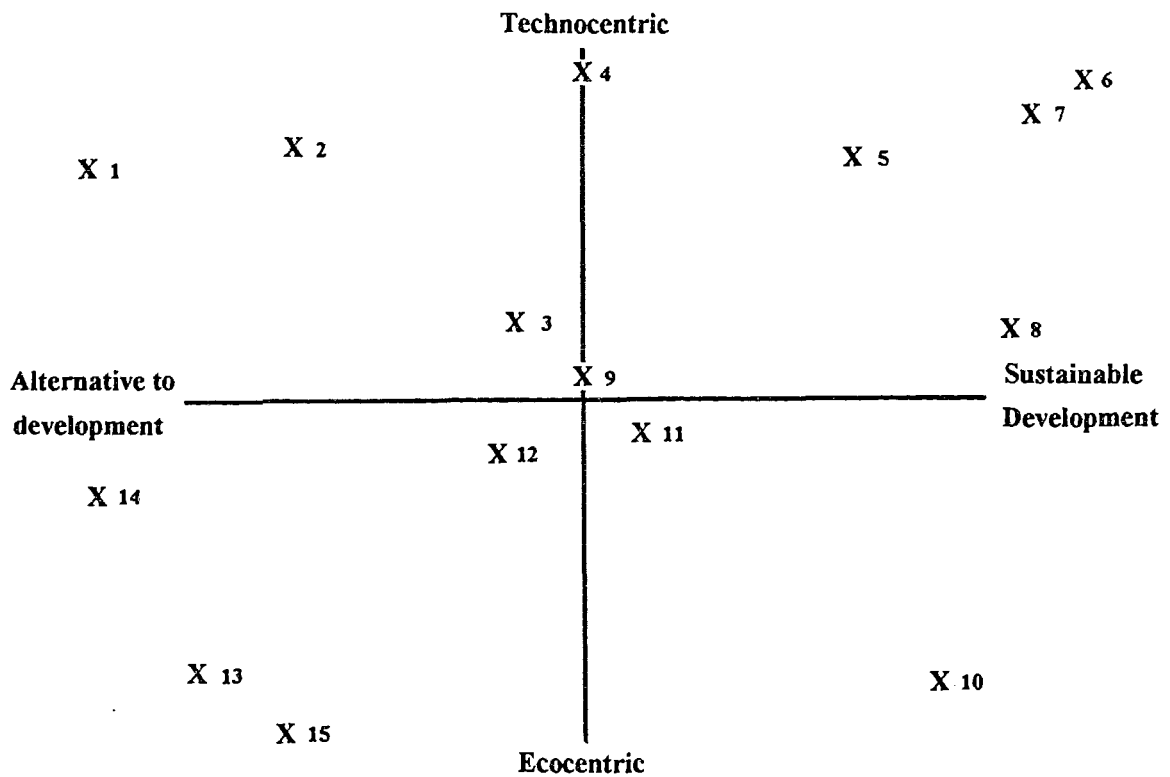
The Summer 1987 issue of the *Toronto Globe and Mail* travel magazine, *Destinations*, has an article entitled "Wild and Weird in Central America," which, as a result of its attention to cultural, social and political issues, reports on a considerably different Belize from the one in the above discussed articles. The author, Ronald Wright, mentions not only the physical beauty of the country, its infrastructural problems and its history, but also delves into the hazards which may face tourists. Street crime, violence, robbery and the inevitable sand fly have all been described to the reader in the most coherent manner, while balancing these with the eco-consciousness of certain Belizeans who are involved in tourism. While the article may appeal only to the more adventurous of

travelers, it was one of the few outsider accounts of travel in Belize which presented a wide spectrum of the Belizean life and not an artificially constructed, ethnocentric view.

As illustrated above, Belize has embarked upon environmental protection strategies which, if enforcement mechanisms exist, may turn the country into a leader in the conservation movement, not only within the regional boundaries of Central America and the Caribbean, but within the global community as well. As economic diversification is a priority for many post-colonial dependent states, Belize has adopted this as policy to carry the country into the next century with as much stability as is possible. With the assistance of many interested parties, conservation strategies in Belize cover a wide spectrum of projects, encompassing both the eco and techno ends of the spectrum while employing either alternative technology or a growth-model of sustainable development (see Figure 4.12).

While it is obvious that Belizean environmental rhetoric is taking on the appearance of a well-oiled machine, the country still has a long road ahead of it in its quest for environmentally conscious economic independence and self-sufficiency. The following chapter will address some of the contradictions which exist between environmental policy and action, and the practical reality of life for the majority of Belizean citizens. At the grassroots level, many Belizeans have basic and urgent concerns regarding subsistence needs which must be addressed before the country can openly embrace environmental policies which require the cooperation and participation of its people.

Figure 4.12: Sustainable Development and Conservation in Belize



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| <ol style="list-style-type: none"> 1. Programme for Belize 2. Belize Tropical Farming Ltd. 3. Community Baboon Sanctuary 4. Project Tree (NASA) 5. Ix Chel Farm and Tropical Research Centre 6. Programme for Belize 7. Columbia Forest Reserve 8. Belize Enterprise for Sustainable Technology 9. Belize Centre for Environmental Studies 10. Belize Zoo and Tropical Education Centre 11. Cockscomb Wildlife Sanctuary 12. Habiabarra Garinagu Cerro 13. Monkey Bay Wildlife Sanctuary 14. Toledo Ecotourism Association 15. Belize Audubon Society |
|--|

Chapter 5

But We Can't Eat Sustainable Rhetoric!

As shown in the last chapter, Belize has attracted the attention of a number of environmental and conservation organizations within the global community because of its well-developed strategies, and apparent openness toward environmental preservation. However, one should not assume the success of the environmental policy without addressing other dimensions of this carefully constructed picture. For sustainable development to work it will require the commitment of more than the government, foreigners, and the small number of Belizeans engaging in sustainable development projects. Many of the interviews conducted, during fieldwork in rural areas, have led to the conclusion that Belize does not have nation-wide participation in its conservation efforts. As for the condition of the environment in Belize, the majority of informants expressed a lack of knowledge of environmental problems, both locally and internationally. Major concerns emerging in the interviews related to unemployment, subsistence needs and the future for the children. When questioned about sustainable development, many people did not recognize the concept. This, however, is not surprising given that the term is theoretically ill-defined. This chapter will give voice to the contradictions which have emerged between the environmental strategies discussed in the preceding chapter and the information resulting from participant observation and interviews.

Domestic Environmental Concerns:

Water and Sewage

The lack of infrastructure within Belize goes far beyond inadequate communication and transportation systems. The East Canal in Belize City is one of the most stunning examples of an eco-disaster. The canal is still the dumping ground for raw human sewage, as many homes in its vicinity are directly linked by sewer pipes to this disposal source. Though numerous plans and inventive ideas have been drawn up and presented to the government for alternative solutions to the canal (Cutlack 1990:26), nothing has, as yet,

been done. Though a Canadian International Development Agency (CIDA) funded sewage and water system was completed in Belize City in 1987, many home owners and renters have opted out of investing in indoor plumbing or water for they do not want to be in debt for the sewage improvement costs.

Though most towns have a septic system of some sort, many of the small villages suffer from a lack of any sewage containment or treatment facility. In Hopkins Village, the people living along the back of the village dump their night soil into the swamp; those living along the front dump into the sea. In the late 1980s, Peace Corps volunteers built a number of "composting toilets" in the village (see Figure 5.1).

Figure 5.1: A completed and in-use composting toilet



Based upon a two-tank system in which the solid waste and liquid waste would be separated, the liquid would then drain into the ground and the solid waste would be removed to be utilized as fertilizer. The structures, when the Peace Corps left, consisted of

a concrete block box, with two raised concrete sections on the top, to act as the "seats". A Canadian-born Belizean man, who operated a local portable saw-mill, donated enough lumber to the village for the structures to be completed. Unfortunately, "The lumber was put in the hands of a certain villager who used the lumber to build his house and so...there sit the toilets" (I-7, Hopkins, February 1992). Of the seventeen toilets built throughout the village, only three appeared to have been finished and in use. Some villagers did not want to use theirs because they wanted to "take the toilets apart and use the bricks to build walls for a house" (I-3, Hopkins, February 1992). One local woman used her concrete "box" for drying fish (see Figure 5.2), while another just poured her family's night soil down the hole. Further compounding the issue, no-one in the village among those interviewed could explain just how the composting system was to work.

Figure 5.2: Toilet used as a drying rack (centre of photo)



Of the four village women who were questioned about dumping their family's night soil into the sea, the most common attitude expressed was "the sea has always taken care of us"(I-1,I-5,I-10,I-11, Hopkins, March, 1992). Further, the notion of this action being a contributory factor to environmental degradation was simply something they did not understand. Traditional ways are still very strong among the Garinagu; the sea gives them food and takes away waste. In this context the visitor has no other option but to do as the Belizeans do! (see Figure 5.3)

Figure 5.3: Author disposing of night soil



The village also has communal toilets at the end of a pier which are used by many residents. Though this is a practice which contributes to fecal coliform, algae growth and damages fish and sea grass habitat, it is widely practiced among the coastal communities and on the cayes. Traditionally, fishing has been, and still is, an important aspect of the Garinagu culture, thus living near the water is fundamental to their existence. In Hopkins, one can find many children playing along the shore, setting traps for catching shell fish or netting small fish to supplement their family meals, while feces lie in small puddles at the water's edge, having been washed up on shore. The 1992 *World Development Report*, suggests that the "most widespread contamination of water is from disease-bearing human wastes...[which] pose great risks for people who are compelled to drink and wash in untreated water" (World Bank 1992:44). At some point, the basic human requirement of a reliable potable water source must be actively addressed by the government and its supporting NGOs as fundamental to successful sustainable development.

In view of the government plan to bring water and electricity to the village, I questioned a resident about installing a septic tank for his family. He explained that the cost for this would be beyond anything his family could afford, and that his priority was to build a house that would withstand hurricanes (see Figure 5.4) and eventually to have electricity (I-14, Hopkins, April 1992). Although the Rural Electrification Plan will bring power to the village by the end of 1993, it is the responsibility of the individual homeowner to have his/her house wired. The desire for electricity far supersedes the desire for a septic tank and, with little disposable income, it appears likely that the sea will continue to "take care of the village".

The composting toilet project, while in theory a contribution to halting the potential health and environmental problems associated with fecal coliform, is an example of a First World solution to a Third World environmental problem. Though colonialism did not create the sewage problem in the rural villages and in Belize City, it underdeveloped areas of the country through its resource extraction practices while failing to provide the

Figure 5.4: Concrete house being built around existing dwelling: two years into the job



infrastructure to deal directly with domestic environmental problems. The band-aid approach of the toilet project failed in Hopkins because the villagers, for the most part, have a different understanding of the "problem" than perceived by the Peace Corps volunteers. In fact one informant stated that "the Peace Corps effort was a waste of valuable concrete" (I-15, Hopkins, March 1992). Had the communication about the project been a two-way effort, between the Peace Corps and the villagers, the project may have been a success; instead the village is left to house the concrete relics of yet another "solution".

Solid Waste

The waterfront of Hopkins also serves as the garbage disposal area for the sea-side residents. Each family or group of houses has a pit which holds the family garbage until there is a wind-still night when the piles can be burned (see Figure 5.5). Past and present practices of reusing and recycling glass and plastic are commonplace (see Figure 5.6), but

the increasing abundance of these containers has resulted in many of them being thrown away. Toxic household cleaning agents, aerosol containers and plastics make these pits an environmental time-bomb. Often the pits lie for two or more weeks, and are a source of treasures for children looking for plastic and string to make kites or tin cans to make drum kits (see Figure 5.7). For the many resident dogs and chickens, the pits act as a source of food.

Figure 5.5: Garbage Pit on Hopkins Beach



Solid waste has become a serious problem in many other areas in addition to Hopkins. A trip to Caye Caulker revealed the presence, on the south end of the caye, of a large garbage dump below the surface water line (see Figure 5.8). The "dump" is located near the airstrip which was built to facilitate tourism on the caye. Currently, funds are being spent to construct a waiting room for the small, seldom-used airstrip. Nearby is the dump, which has tested positive for fecal coliform, and lies filled with groundwater. The fresh water source for residents on the caye is being infected by an increasingly polluted source.

Figure 5.6: Recycled tin cans and Glass



Figure 5.7: Children playing in the pits



Twenty years ago the problem did not exist, but today the dump is becoming filled with toxic household products such as bleach, cleaning solvents, paint, plastic diapers and other imported artifacts from the developed world. Not only damaging to humans, the thin soils on the caye allow seepage of this contaminated water onto the reef during heavy rains resulting in algae growth on the coral, and the death of fish and sea grass habitat.

Figure 5.8: Caye Caulker garbage pit



The country's reliance on imported products is undoubtedly compounding the solid waste management problem. As locally produced food and goods are less available than imports, Belizeans will purchase, at an exorbitant price, imported products which are overpackaged and overproduced. The resulting garbage, for which there is no recycling market or awareness of the toxic nature of garbage pits, has become a serious problem for the country. Within Hopkins and other villages, plastic and glass containers initially were

prized possessions to be used for honey, cooking oil and kerosene, but now, with a plethora of such items, they become discarded in the garbage pit to be burned.

In an effort to halt the garbage problem in Belize City, a litter officer was appointed in 1992. In the first seven months on the job, the man had given out a few Bze. \$50.00 fines for littering, but this has hardly proved to be a deterrent, for the streets of the city still abound with garbage. In Hopkins, the elementary school uses picking up litter as a punishment reserved for the more severe behaviour problems among its students.

In Dangriga, the creeks which run through the town are not only depositories for night soil, but also can be seen, at any time of day, to be floating with garbage. Though attempts are being made to curb this problem, little success has been achieved. Many of the Belizeans interviewed either did not notice the garbage, or were faced with more serious issues on a daily basis than worrying about the growing garbage problem in their village, town or country.

Electricity

Most of the electricity in Belize comes from diesel generating plants. The country does not produce diesel so all necessary fuel is imported. Some hydroelectricity is purchased from Mexico, but the amount is very small and does little to relieve the environmental problems associated with burning fossil fuel. Belize possesses considerable potential sources of renewable energy such as hydro, solar and biomass. Currently, a small degree of solar power is in use and a potential hydroelectric production site is under consideration on the Macal River.

As suggested in Chapter 1, technocentric control over nature is justified through indicators of social progress, such as increased material consumption. The First World, with high consumption levels, is seen as a highly technocentric society which is using technology to control the effects of its consumption patterns. Whether it is in the form of protective liners for landfills or by shipping its garbage to economically underdeveloped areas of the globe (labeled environmental racism by a delegate at the ECO-ED conference

in Toronto, 1992) the First World is capable of hiding, for now, the detrimental effects of its high material consumption. Belize, however, is not. So far the country's government has failed to demonstrate a firm commitment to pursuing domestic environmental stability by building the infrastructure to guarantee safe drinking water, sewage treatment and garbage disposal, thereby addressing fundamental human health issues.

Water contamination will continue to plague Belize. Water sources near agricultural lands are often used by human and animal populations. Run-off from agriculture brings chemical fertilizer and pesticide contaminants into the water source, especially after extensive clearings. Perhaps one of the most damaging sources of contamination comes from paraquat. This herbicide has been in use since the early 1980s as part of the United States-sponsored program to eradicate marijuana at the source. Belize is the fourth largest supplier of marijuana to the United States, and aerial spraying of paraquat in the northern districts has been undertaken. In one northern village near a sprayed area, honey production dropped forty percent, and numerous children and elderly became sick from drinking well water. Though no testing of the water source was conducted to directly link the paraquat spraying and the illness, the villagers feel very strongly that the root cause of their problems lay with the spraying.

Malaria and other Health Risks

The lowlands of Belize act as an excellent mosquito-breeding and malaria-transmitting ground. Although Belize has reported only one malaria death in the last fifteen years, the number of people affected by the disease is growing (see Table 5.1) Thought to be eradicated in 1957, mosquito populations developed resistance to DDT. By 1982, seventy-three percent of the country's population were living in malaria-infested areas (Hartshorn 1984:39). During the 1980s, a massive DDT spraying program was undertaken. Swampy areas, sewage pits and homes were sprayed. Once a home was treated, a number was painted on the exterior of the house. In Hopkins, a woman interviewed talked about the spraying, and while she understood the mosquito and the

problems associated with it, she felt the "things they were putting in my house to kill the mosquito were worse than the mosquito...when they left I washed it off" (I-2, Hopkins, February, 1992).

Table 5.1: Malaria statistics for Belize 1980 - 83

Year	Population	Confirmed Malaria Cases	Annual % increase	%Population w/Malaria	Pop. protected by Spraying
1980	145,353	1540	10	1.1	
1981	147,000	2072	34	1.3	
1982	155,370	3868	.87	2.5	47% (73,323)
1983	159,262	4595	19	2.9	82% (131,112)

Source: Hartshorn 1984:39

Malaria rates are constantly fluctuating in Belize and it appears likely that this will continue, as new eradication methods are tried and the mosquito's resistance is built up. Areas which are cleared for agriculture or other development will, if not properly drained, hold water in the rainy season and become mosquito habitat. Similarly, while the low level areas already provide excellent habitat, the relocation of people to swampy and marshy regions will only further exacerbate the problem. The resettlement of San Pedro, on Ambergris Caye, provides an excellent example of this.

San Pedro was originally a subsistence fishing community which, in the 1960s, became a source of lobster for export to the United States. The resulting modernization in the form of telephones and electricity attracted American tourists to the caye. Over time, a number of the Americans became citizens of Belize while retaining American citizenship, and began investing in hotels and restaurants on the caye. With the increased development, San Pedro was transformed from a sleepy fishing village to a North American tourist enclave. Today, the town has four main roads running parallel to the sea, which forms the eastern border of the town, with a swampy lagoon along the western border. The original

inhabitants of the town are being forced further from the sea and manual labourers or service industry employees and refugees live along the swamp, which is an excellent mosquito habitat. "The expansion of the town created a new discrimination based on income and directly related to the environment. The swampy areas are filled by garbage, since no other material is available" (Dachary and Arnaiz 1992:6-7). In an interview with Arnaiz on Caye Caulker (May 1,1992), it was revealed that her research indicated an increase in health risks for the population living along the lagoon in the form of malaria, diarrhea, intestinal disorders and cholera with no mechanisms apparent for solving the problem, and little or no support being offered by the American-Belizean economic and political elites on the cayes. Though some may look to Ambergris Caye as an example of social progress brought about by modernization and First World investment and intervention, the government of Belize can do little to control the exploitation of either the natural environment or the people. As in the colonial era, foreign ownership of the land and the means of production carries with it a loss of control by the indigenous and local population. The ethnic hierarchy which exists on the cayes, with foreigners at the top, followed by influential creole and mestizo people, with poor creole and "aliens" at the bottom, will ensure that those residents living along the swamp will continue experiencing health problems as a result of environmental degradation consequent upon altering the natural environment to meet short-term development needs.

Other common environmental health risks commonly found within Belize are intestinal disorders and diarrhea. The Belize Department of Health, with assistance from the World Health Organization, is working to immunize all children for diphtheria, whooping cough, tetanus, polio, measles and tuberculosis (Belize Information Services 1991a).

Agricultural Development and Environmental Degradation

Pre-historically Belize was a land of subsistence milpa agriculture of corn, beans and squash, characterized by shifting cultivation. This practice by the ancient Maya also included the terracing of foothill slopes or planting in raised beds on valley floors to

benefit from alluvial deposits in the soil (Hartshorn 1984). Relying on this rather sophisticated blend of milpa and intensive agriculture, the ancient Maya civilization flourished for centuries.

Agriculture in contemporary Belize is a much different picture. Its roots can be traced to the forestocracy of the colonial era. The small agricultural labour force in Belize has always been seen as a hindrance to development and in competition with forestry. Other than subsistence agriculture by the Maya, agricultural development did not boom until the forest markets declined. As stated in chapter 3, the Yucatán Caste Wars (1847-49) caused a shift in this pattern as the mestizo refugees brought with them a plantation style of agriculture in the 1800s. Another major shift for agriculture came in the late 1950s with the immigration of Mennonites to Belize.

Today, Belize has a growing domestic agricultural industry, preferential markets through Caribbean Community and Common Market (CARICOM), guaranteed quotas for sugar and banana, and a growing citrus industry. Providing sixty-five percent of the country's foreign exchange earnings and employing thirty percent of the total labour force, agriculture utilizes thirty-eight percent of the total land mass, with only ten to fifteen percent in use during any one year (Belize Information Service 1992a). As stated previously, there are also small sustainable agricultural farms, such as Parrot Hill Farm, but monocrop production of export crops is most prevalent. The following discussion will address the environmental problems associated with milpa, small and large farms as identified from interviews.

Milpa

Though this agricultural practice is well suited for some tropical and sub-tropical soils because of its minimal damage to the soil, there has existed in Belize, both historically and contemporarily, a negative attitude to milpa cultivation. Realistically, soil fertility is compromised only when internal systemic pressures, such as population growth, and external pressure, such as in-migration, force the milpero to rotate his fields at a faster

rate, not allowing the necessary fallow time, thereby depleting the soil. A milpero outlined the current constraints on milpa cultivation as follows: he had difficulty supporting his family of seven from the milpa, his need for cash had forced him to plant bananas and rice for sale rather than traditional subsistence crops, he was unable to return to certain plots he had used in the past because the land was now in government reserve or being used for tourism, increasingly he was finding more and more insects in his crops, and less and less yield. When questioned as to what he thought the future would bring he replied, "I will try to get a piece of land to farm every year, the same piece, but I don't know...the machines and the fertilizer to make the bananas grow...they are things I do not understand. They say the jungle must not be burned and planted so much" (I-16, Belize City, April 1992). He was returning to the Toledo District to face an uncertain future, one in which his traditional relationship to the environment was forever being changed. He does not understand the wheels of development which are guiding Belize toward the future. When we talked about sustainable development he could not grasp the difference between the milpa cultivation of his father and himself in the "early years" and the objectives of sustainable development today. He was raised to understand the needs of the soil, and its ability to grow certain crops or its need to lie fallow. As he said, "The bush, it always grew back but now...I must work the same soil over and over and this is not good" (I-16, Belize City, April 1992).

Small Farms

The Garinagu of Hopkins traditionally have been subsistence farmers and fisherpeople. Since arriving in Belize in 1802, this group have lived primarily beside the sea, and within walking distance of a farm or garden plot. The problems facing these farmers are many. The Garinagu men engage in wage labour as a supplement to their subsistence food practices. When a surplus of food was available, it was sold in the village or towns. Increasingly, pressure has been put on the farmers to expand and develop cash crops such as citrus or cacao, because, under the land lease regulations, they can be taxed for

undeveloped land or lose their land lease all together. Historically denied the right to own land, the Garinagu were placed on reserves and forced to obtain permits to travel throughout the country. This is no longer the case, but the Garinagu are still discriminated against by the creole and mestizo populations of Belize. Interviews with Garinagu farmers have revealed a number of problems arising as they try to obtain leased land and develop cash crop production.

Land lease regulations under the department of agriculture, require land to be "improved" if the lease is to be retained. The leasee has a three year period during which the improvements must be made. Unfortunately, the specifics of the improvement clause are non-existent, leaving the farmer with little guidance as to the development of his farm. Though the farms are in many cases used primarily for subsistence, increasingly they are being converted to monocrop export production.

A Garinagu farmer in Hopkins who was interviewed has operated his farm since 1986. He has tried to diversify his crops but finds himself being drawn back to cacao and citrus. As his farm is located near the Hummingbird Hershey plantation, he was given young cacao seedlings by the company in 1986. Presently he has 2.8 hectares of cacao and 2.83 hectares of citrus. He has a small vegetable garden, but intends to continue to expand his two main crops. There have been many hurdles facing him as a small farmer, but the most troublesome is the lack of working capital and machinery. Competing with larger mechanized farms, he is able to generate only a marginal surplus for farm improvements. Improvement loans are available from the government, though many farmers hesitate to become indebted for costly equipment and other necessities, thereby making it even more difficult to maintain the farm.

In telling his story, this Garinagu farmer often laughed at his plight, though the frustration he felt was apparent. Early on he tried to earn money by "getting into chickens." This project failed because he could not compete with the Mennonites who have a monopoly on poultry production in the country. He could not afford to grow feed

corn and had to buy it from the Mennonites. The Mennonites operate a closed system wherein inputs for poultry production are obtained through the exchange of labour and barter rather than cash, thereby minimizing production costs. Finding that he was unable to compete with the Mennonites he subsequently stopped raising chickens. He expressed a sense of anger at the PUP government's policy of Belize for Belizeans as he said, "The Mennonites they are not Belizeans yet they control so much" (I-4, Hopkins, March 1992).

Unable to afford machinery, this farmer cleared his land by hand, using a machete and burning off the slash and stumps. Though the Mennonites will clear land for Bze. \$950.00 per acre, this was far beyond his means. Once the land was cleared he planted plantain, cassava, beans, and corn. Next was cacao and then citrus. When asked about fertilizer and pesticides, he expressed a desire to use organic fertilizer, but due to its relative unavailability he opted for chemicals instead. He said he knew the chemicals were bad for the environment and for people but it was the cheapest and most readily available source. A USAID-funded environmental report on Belize has cited as one of the key problems among small farmers using pesticides as a lack of knowledge about pesticide use and timing of treatment, leading to little control of pests and sustained losses of the harvest (Hartshorn 1984:87).

Unsure of whether or not he will be able to pay for the loans he has already obtained, this informant wants to turn his farm into a tourist resort by building cabanas. Located near the Blue Hole National Park on the Hummingbird Highway, he sees tourism as the way to sustain his family in the future. For him, farming is a very competitive venture which has become too difficult and too uncertain to rely on to support his family.

Many of the other villagers in Hopkins retain small garden plots which are within a two-hour walk of the village. These farmers, by and large, do not use fertilizers or pesticides, but rely on traditional techniques of mixed planting to cultivate their lands. From these gardens they provide cassava (see Figure 5.9), plantain, banana and rice to supplement the family diet. The making of cassava bread is a traditional Garinagu women's

activity, which is usually a two-day process, involving many women. The laborious task of grating the cassava by hand is being replaced in certain areas by motor-driven graters, thereby reducing the number of women participating in the process (see Figure 5.10).

Figure 5.9: Hopkins women preparing locally-grown cassava for bread



Another small scale farmer in Hopkins, maintained a small two hectare plot of land, seven miles from the village. He wanted to obtain more land so he could grow cash crops, but had insufficient means to make this possible. He spent much of his time looking for odd jobs to supplement his income as he found the farm did not produce a surplus. Responsible for a large extended family, his future plans consisted mostly of dreaming up new schemes for becoming a "rich man". Many of the villagers laughed at him, for they seemed to know his plans would never come to fruition (I-6, Hopkins March 1992).

Figure 5.10: A Garinagu woman using a motor-driven cassava grater



Talk about plans for future economic success was commonplace among the many villagers we came to know. Some had already planned how the soon-to-materialize water and power were going to almost magically transform their lives into something they had heard existed in the United States, while others felt that the changes would have either little or a negative impact on traditional life. Within Hopkins, it was estimated that as many as fifty percent of the children live with relatives or friends while their parents are working in the United States to send remittance payments home (I-12, Hopkins, April

1992). Though absentee parents and remittance payments are a common practice among many Belizeans, the dream for material riches, such as those perceived to exist in the United States, pervades many people's lives.

Mennonite Farms

Located in Orange Walk, Cayo, and Toledo districts, the majority of the Mennonites arrived between 1958 and 1962. Many came via Canada then Mexico as they were searching out land and seclusion. By special arrangement with the Belizean government, the Mennonites are guaranteed the freedom to practice their religion, use their own language, locally control and operate schools for the sect children, organize their own financial institutions and remain exempt from military service. Over the years that they have been in Belize, the Mennonites have gained a monopoly over the domestic beef, poultry (including eggs and milk) and feed crops for animals. Added to this, they possess the working capital to invest heavily in mechanized agribusiness utilizing chemical fertilizers, pesticide and weed control techniques. The Mennonites are also heavily involved in the market for furniture and brick making. The overall success of this group has resulted from their substantial agricultural skill and their closed economic and communal system of operation. The success of the Mennonite way of life makes them a major competitor with the small scale farmer attempting to gain self-sufficiency in agriculture, beef or poultry production. With the ability of the more progressive Mennonites to access and implement newer technology, the small-scale farmer is placed in a precarious position when trying to compete (Hall 1973). Yet, the Mennonite use of technology poses a paradox which has caused divisions among the various communities. The Mennonites of Spanish Lookout have adopted the use of machinery, and other "modern" agricultural methods, whereas those of Santa Elena have shunned these items in favour of the traditionally dictated religious philosophy. Among the latter group, horse and buggy, coupled with manual land-clearing and cultivation methods, are used. Intent on

keeping to the "old ways", the Santa Elena community shuns contact with the more "progressive" Mennonites of Spanish Lookout.

Spanish Lookout is located about twenty minutes off the Western Highway. A visitor may be inclined to feel as though he/she was being instantly transported to a farming community located in the mid-western United States or the prairie region of Canada. Gone was the wild growth of the jungle, replaced by orderly fenced-off fields of grain swaying in the ever-present breeze, women in long dresses and scarf-covered heads packaging peanuts in tidy warehouses, and bearded men discussing the harvest or overseeing the Mennonite agricultural labourers and care of the animals.

As stated in chapter 4, many Mennonites are buying up available agricultural land to develop monocrop production which will ensure the colony's survival into the next generation. The environmental consequences of this style of agricultural production are many. Increasingly, the land is requiring more fertilization as the monocrop production and higher yields are taxing the already overworked lands. Concern over the chemical runoff from fertilizers and pesticides does not appear to be an issue with this group as to this point they have been successful at maintaining or increasing production levels. Some Mennonites have a technologically-centered view of the land which they own and intend to continue to maximize the economic potential of their resource. Their success, however, is also due to the care with which they tend their crops or animals and the persistence of traditional cultivation practices, such as communal work parties. Though modern technology has infiltrated their communities, the old-world ways of maintaining a close, somewhat spiritual respect for plants and animals is ever-present.

A Garinagu man interviewed in Hopkins, has become a Mennonite minister in the village, with a congregation of eleven (see Figure 5.11). He stated that he had no difficulty merging his traditional Garinagu beliefs with those of the Mennonite sect. He was in a relatively better position economically than many in the village because the Mennonites had set him up with a mechanized brick-making operation. Brick-making is undertaken by

Figure 5.11: Mennonite Church in Hopkins (centre of picture)



a number of villagers, though it is a laborious task when done manually. With his machine, the minister could make two hundred bricks per day while other villagers would produce between fifty and one hundred hand pounded blocks. The Mennonites, who also engage in furniture-making, found the Garinagu minister contracts for the completed blocks and transported them to the buyer (see Figure 5.12). When asked how many Garinagu had converted to Mennonite faith, he was unable to provide exact numbers, but thought that it was not many.

The presence of the Mennonite communities in Belize has had a profound impact of reducing the country's reliance upon imported produce, eggs, dairy products and poultry. The problems associated with their domestic agricultural monopoly affect mainly the small struggling farmers, a problem to which the Belize government seems to turn a blind eye.

Figure 5.12: Mennonites supplying furniture to a hardware store in Dangriga



Export Agribusiness

While of primary importance to the growing economy in Belize, this style of agricultural production is increasingly coming under attack from environmental groups for its degrading effect on the fragile ecosystems. Utilizing mechanized methods of land clearing and cultivation (see Figure 5.13), the uncertainty of a guaranteed labour force, which has always been problematic, has been reduced. The environmental implications of clearing large tracts of land and engaging in monocrop production, however, increases the need for pesticides, herbicides and chemical fertilizers. Water contamination from these chemicals is a growing problem which is threatening the safety of the domestic water sources in the country.

Figure 5.13: Mechanized land-clearing for agribusiness



Sugar

Concentrated primarily in Corozol and Orange Walk districts, sugar accounts for more than fifty percent of the country's foreign exchange earnings (Belize Information Service 1992a). Having dominated agricultural outputs for over one hundred years, sugar cane is now grown for sugar, rum-making and ethanol production. Controlled by the Belize Sugar Industries (a division of Tate and Lyle Ltd.) which own large mechanized plantations and the Tower Hill Refinery, this industry is also supported by many small farmers who plant less than three hectares per year. Soil erosion from clearing land, depletion of soil nutrients, pests and plant disease, and water and soil contamination from pesticides, herbicides and fertilizers, and the boom-and-bust cycle of development, are all characteristic of this industry.

Citrus

Located in Stann Creek District, citrus is the second highest earner of foreign exchange. With approximately four hundred registered growers, ninety percent of these farm less than eight hectares each, while two companies control over thirty-six percent of the groves under cultivation (Belize Chamber of Commerce and Industry 1990). The large growers have more working capital, and therefore increased access to new technologies, fertilizers, pesticides and greater influence within the citrus marketing board. Two of the small-scale growers who were interviewed discussed, at length, the difficulties they had attempting to compete with the large growers and disputes over prices paid for their crops. According to these sources, a certain grower in the Stann Creek District allegedly had made his money through the drug trade and began citrus production. His previous activities had placed him in a position of power within the community which carried over when he began in citrus. Thus, some small growers are being subjected to the demands and expectations of the local "Citrus Baron" (I-36, I-37, Stann Creek District, May 1992).

The production of citrus concentrate has an associated high degree of environmental degradation. During an interview with a small citrus grower in Silk Grass, in Stann Creek District, we discussed the excessive and careless disposal of the pulpy acidic sludge, a waste product of concentrate production. The process of disposal consisted of "many trucks that haul the sludge to open fields and dump it. The high acid content in the sludge literally burns the soil in the area where it is dumped. The concentrate plant spends thousands of dollars every year to dispose of the sludge" (I-37, Silk Grass, April 1992). The solutions discussed included a proposal by an American from Miami who had presented an offer to the government to build a composting plant for the sludge. The process was based on the concentrate producers paying to dump the sludge at the composting plant, where it would be cleaned by neutralizing the acid content and then resold to the citrus growers as fertilizer. According to the informant, while the

government was seriously considering the American's offer, it did not include the hiring of local Belizeans.

Banana

The banana industry began in 1866 in Stann Creek District, and attracted the attention of the United Fruit Company (UFC). The promising nature of this crop prompted the UFC to build a thirty-two kilometer railway to bring the crop to a small port in Stann Creek. Destroyed by Panama disease in 1913 (Grant 1976:36), the banana industry became virtually non-existent and the railway was closed down. The industry was revived in the 1960s, but has suffered many setbacks due to hurricanes, Sigatosa disease, labour shortages and poor management (Fernandez 1989:39). As with any monocrop production, weed control becomes a primary task and paraquat is the chosen herbicide used in banana production. As discussed earlier, there are many human health risks associated with the use of paraquat.

A number of the villagers in Hopkins worked in the banana industry as unskilled agricultural labourers. Paid Bze. \$2.50 per hour, the workers are be picked up in an old transport truck between 4:00am and 5:00am and driven to the plantation, about forty kilometers south on the Southern Highway. Many times the transport truck would not return to the village until 9:00pm or even later, resulting in a fourteen to sixteen hour work day. Though some Garinagu worked on the plantation, the labourers were primarily "aliens" who lived along the swamp side of the village. (The Garinagu refer to the Salvadoran, Guatemalan and Honduran refugees as "aliens"). The refugees were deliberately excluded from community life in the village. Keeping to themselves, the refugees rarely interact with anyone outside of their group.

Fishing

Nationally, fishing and aquaculture is growing in importance according to market demand in the United States. Controlled by four cooperatives, fish exports accounted for 2.3 percent of the gross domestic product in 1988 (SPEAReports3 1990:17). Though

throughout Belize's history many more cooperatives have existed, most have failed due to poor management and lack of government support. Expected to increase in importance due to shrimp farming, the lack of regulatory enforcement has resulted in over-fishing leading to both depleted fish stocks and the catching of undersized fish, lobster and conch. Though new markets in Japan are being sought for a deep-sea queen lobster, this has not yet materialized. Other problems plaguing the fishing industry result from water contamination from human waste, solid waste and chemical run-off, destruction of mangrove, poor management of the industry and from other countries fishing Belizean waters (see Figure 5.14).

Figure 5.14: Honduran shrimp-boats off of the coast by Dangriga



Fishing has always been an integral part of the Garinagu culture, and was traditionally done from hand-carved dugout boats called dories. Though a few Garinagu still make their own boats (see Figure 5.15), most use manufactured wood or fiberglass boats with motors. Undertaken for subsistence and market purposes, approximately ten percent of the available male labour force in Hopkins fish either part-time or full-time. Some of the men set up fishing camps on the cayes and remain for up to three weeks. Working in

teams, the men take turns keeping the camp supplied with ice and bringing surplus fish to either Belize City, Placentia, or Punta Gorda to the fish processing plants. Often, the fish are sold to public markets, door to door in the villages or to restaurants. The men fish for barracuda, conch, snapper, lobster, rock fish and yellow tail.

Figure 5.15: Garinagu boat carver - fisherman in Dangriga



On one trip to Glover's Reef with three Hopkins fishermen and their families we visited two different fishing camps at Southwest Caye and Northeast Caye. The camps appeared to be temporary, but in fact they had been in use for many years by Hopkins fishermen. The method used for fishing was a heavy nylon line on a cork or wooden spool. Once caught, the fish would be hauled in by hand, killed and put on ice. Conch were picked up by skin divers off the shallow reef bottom and lobster were speared with a gun or hooked with a gaff hook. Many problems face the reef fishermen. Fresh water supplies for the camps are a constant problem. On the cayes which were being developed for tourism the

fishermen often were not allowed to leave their work camp. On Southwest Caye our group left the camp area to visit the tourist restaurant. A cruise ship had arrived on the caye at approximately the same time carrying a load of caucasian tourists. As we approached the restaurant we were denied access to the facility as a group and told "you and you can stay (meaning myself and my partner) but those people can't (meaning our traveling companions)". After much heated discussion the bottom line was that the "management" of the resort did not want the Garinagu mixing with the tourists. The fishermen living at the camp also had been experiencing this attitude and were angry because for many years the caye had been for Hopkins fishermen, but now their access was limited and they were restricted to the leeward side.

The village also had a number of fishermen who worked alone, going out on a daily basis and fishing until they had enough money to subsist for a month or two. These men mostly sell their catch to the villagers. In the afternoon, when the boats return, many villagers flock to the beach, helping to haul in the boat, and carrying the fisherman's supplies and catch into the village. Acknowledging the villager's effort, the fisherman give fish in varying amounts, depending on his relationship to the different helpers and the amount of effort each person had put out. For some villagers, this helping activity provided a necessary supplement to their daily diet. Village children also fished in the waters near the village, either from the shore, or for those who possessed them, in smaller sized hand-carved dories. Their catch would be taken home for dinner or would be sold to other villagers for a nickel or two.

A diesel-generator-powered fish processing plant was built in Hopkins in the mid 1980s. The plant employed six village women to clean, weigh and process the fish. During the two years the plant was open, the number of people in the village engaging in fishing for profit increased. Unfortunately, the plant managers, who were related to persons in Hopkins, absconded with the profits, leaving many unpaid fishermen and a closed plant in their wake. In March 1992, a Canadian man and his son arrived in Hopkins to re-open the

plant. Gus Young, a Newfoundland fisherman, brought his experience and enthusiasm to the village, and for a while the plant was the "talk of the town". Once again people were returning to the sea with a vengeance, and many women were vying for the precious opportunity to engage in wage labour within their village. After six weeks, and numerous generator repairs, the plant began receiving and processing fish. Within two weeks of opening, a Garinagu man from Punta Gorda, with relatives in Hopkins, was hired by Gus to manage the plant. Shortly thereafter he disappeared with the money, and once again the villagers were suspicious and hesitant to continue supplying the plant. At the time of our departure from the village, Gus had received money from his family in Canada to pay the villagers and, though somewhat reluctant, had decided to "give it another go".

The problems encountered by the villagers, regarding the theft of their wages, is a similar one expressed by people interviewed in other industries in Belize. The marketing boards, management personnel and large plantation owners of the resource-based industries clearly control the productive process, leaving many of the independent or small-scale producers to face unfair pricing of their product or, in many cases, direct theft and non-payment of wages.

Forestry

The forestry industry in Belize has been of little economic importance as a primary industry for many years and in 1990 accounted for only 1.5 percent of domestic exports (Belize Information Service 1992a). An interview with a portable saw-mill operator in the Stann Creek District has revealed some information on the environmental problems with forestry. Referring to his operation as sustainable forestry, this Canadian-born Belizean citizen has been operating his mill for eleven years in Belize. Currently, most of his work is milling felled timber on lands being cleared for agriculture. The greatest difficulty encountered is trying to convince land developers to have the timber milled as opposed to burning. Though burning off timber and slash is the traditional land clearing practice, he tries to convince the developers, often unsuccessfully, of the environmental and economic

benefits of milling the wood. When questioned as to why some refuse to have the lumber milled he responded,

Maybe because I'm white they don't trust me. Mostly I think they are so used to slash-and-burn methods for clearing land...The environmental problems of slash and burn are not a concern to many of the developers. There seems to be such pressure to clear, burn and plant and not take the time to consider the environmental factor. (I-8, Dangriga, February 1992)

The evidence of the "problem" discussed above was apparent in the Stann Creek district, as many acres of forests were removed to increase agricultural production (see Figure 5.16).

Figure 5.16: Land-clearing for citrus



Tourist Development

Touted as the growth industry for the future, tourism has become the second highest development priority for the Belizean government (Belize Chamber of Commerce 1990:11). Though tourism has been discussed in previous sections, there are many environmental pressures associated with its development which should be addressed here.

Caye Chapel is perhaps one of the worst case scenarios of mangrove destruction as a result of tourism. Privately owned by an American citizen, the caye was cleared of mangrove to create an extensive beach front (see Figure 5.17). The environmental implications of this action are the destruction of mangrove habitat and a decrease in the land mass of the caye as erosion of the existing beach is a constant problem. Though dredging and sandbagging are constant activities, they are not long-term solutions (see Figure 5.18 for a view of undamaged mangrove).

Figure 5.17: The results of mangrove destruction of Caye Chapel



The destruction of mangrove is not specific to Caye Chapel, but can be observed throughout the cayes and sea front on the mainland as the pressure mounts to create attractive beach front resorts. The cayes also have a limited capacity to sustain human habitation, based upon water, land-mass and vegetation. As with Ambergris Caye, the

Figure 5.18: Undamaged mangrove



ability of the caye to sustain further development has been met or, as argued by Dachary and Arnaiz (1992), exceeded, leaving the environment in a seriously degraded state. The Sapodilla Cayes in southern Belize have also suffered as a result of tourism, with excessively high levels of human and solid waste contaminating the already small amount of ground and surface water available.

Water related recreational activities such as fishing, diving and snorkeling, as well as hurricanes, are having an adverse impact on the reef. Destruction of the reef from boat anchors and curious souvenir seeking divers and snorkellers have led to coral death. Unheard of in the past, sharks have been threatening human activity inside the reef as more of the coral barrier to the open sea is destroyed through hurricanes. Although coral is a protected species in Belize, and therefore illegal to possess, one can buy black coral jewelry and other coral products at the international airport and other tourist shops.

On the mainland, tourism opportunities are being sought out by many entrepreneurial Belizeans and foreigners alike. Though ecotourism, like sustainable development, suffers from multiple definitions and practices, it is a solution to environmental degradation and economic development with unknown long-term consequences. At the First World Congress on Ecotourism and the Environment the working definition used, for conference purposes was:

Ecotourism is travel that promotes conservation. In addition, those involved in ecotourism (as providers, travelers, hosts) seek to minimize negative environmental impacts while working to achieve authentic, intimate, meaningful, and educational encounters between visitors and local natural and cultural phenomenon.
(First World Congress on Tourism and the Environment 1992)

As a saviour for the environment, the motto is "take only photos, leave only footprints". The attraction of many travelers to this style of tourism is the opportunity to "go where no one has gone before"; except maybe the indigenous population who have survived by virtue of their unique understanding of the carrying capacity of their environment. As increasing numbers of people enter ecosystemically fragile areas of Belize, the environment will undoubtedly be subjected to degradation resulting from increased numbers of "footprints".

As a viable economic endeavour, ecotourism needs the participation of either a large number of travelers or only a few travelers paying a high price. Though the cost of an ecotour in Belize ranges from a few dollars to thousands of dollars, an analysis of where the eco-dollars end up is imperative before rubber stamping this style of tourism a "success". The Toledo Ecotourism operation is designed to keep the tourist dollars spread out within the community, but there are few operations in Belize such as this. Foreign-operated ecotours to Belize charge between US. \$3000.00 and US. \$4000.00 for trips ranging from one to two weeks. Whether kayaking, diving or hiking, these operations

often bring their own equipment and guides, thereby not utilizing the native population. Leaving little foreign exchange in Belize, one is left to wonder how such ventures actually meet the minimum requirements of ecotourism as stated above.

While in Belize City for a conference, a young Canadian man was interviewed who was offering "eco-tours" to various locations on the mainland. During our discussion it was revealed that this fellow had little experience in tourism, beyond being a waiter at a large resort hotel in Canada, and knew little of the cultural or environmental history of Belize. His prices for a day trip ranged from US. \$40.00 to US. \$150.00, little of which was earmarked for the communities where he would take his ecotourists, and he was the only guide (I-30, Belize City, May 1992).

Similar Canadian and American entrepreneurs were encountered during my travels throughout Belize. Though some of these people expressed an apparently sincere commitment to the principles of ecotourism, the majority were looking for "get rich quick" opportunities. At the ecotourism conference in Belize City, one of the conference presenters, an American operating ecotours in Brazil, outlined how he had become successful in his ventures into ecotourism. His main point was that he brought his own guides from the United States as they best knew what the travelers would want. When challenged by delegates at the conference, he stated that natives in the areas where he operated just did not operate on the same time schedule, nor did they communicate easily with the travelers; in short, "for this operation to make a profit, using local guides is just too risky". After much criticism from the delegates, he agreed to pursue utilizing the local population in the future.

As an alternative to mass tourism, ecotourism, in theory, does have a certain appeal as a sustainable development initiative. Belize is attempting to overcome some of the above mentioned problems by offering guiding seminars, though the cost is often beyond the means of many locals who want to get involved, and through promoting its tourism institute (discussed in chapter 4). Further, the Tourist Board and the Belize Tourism

Industry Association are sending members to ecotourism conferences and workshops around the globe to gain knowledge as to how to handle ecotourism in a sustainable way. Still, this may not address the contradictions which are inherent in ecotourism. In short, for ecotourism to be economically viable it needs to make available, to increasing numbers of travelers, sojourns into wilderness areas. As the numbers increase, so does the potential for environmental degradation.

Another aspect of tourism which needs to be addressed is the production of cultural items for sale to tourists as souvenirs. Among the Maya communities in the Toledo District, baskets and other woven items are in demand as tourist items. During an interview with Chet Schmidt in Punta Gorda we discussed the economic potential of marketing the items but also the pitfalls (I-35, Chet Schmidt, Punta Gorda, March 1992). While driving to Punta Gorda, through the community of Big Falls, the truck was stopped by four Mayan children waving baskets. As we left the vehicle we were surrounded by children and mothers urging us to buy, each offering a better deal than their neighbour. Trying to spread our purchases among the group we left with many baskets, bowls, belts and bracelets (see Figure 5.19).

In response to our story about this incident, Schmidt told us of the problems which were emerging for the Maya as a result of the growing trade in cultural items. The increasing demand for baskets was depleting the source of grass used for weaving as no one was replanting. Mayan women, who traditionally worked cooperatively, were now in competition with other village women, thereby upsetting the cultural balance within the small villages. Furthermore, the women, who do not generally mix with foreigners or outsiders to their community, were often seen on the streets of Punta Gorda literally begging tourists to buy their crafts. Though some Mayan communities have set up craft cooperatives to guard against the above mentioned problems, many have not and, according to Schmidt, the problem will likely worsen as increasingly the Maya are drawn into the tourist industry.

Figure 5.19: Craft sellers on the highway



In Dangriga, Austin Rodriguez is a Garinagu drum maker who has been producing his drums for both the Garinagu and the tourist market. As one of the best drum makers in the country, Rodriguez' craft skills are in great demand (see Figure 5.20). During an interview he discussed how the process has changed for him over the years, recalling how he used to be able to walk to find wood and vines, but now he must travel for many hours to get the necessary materials. As more of the land is cleared or altered through agricultural development, and as the demand for cultural items increases, areas which once provided the raw materials for traditional crafts will be depleted. As with the drum making, the unavailability of vines has caused Rodriguez to resort to imported nylon rope for much of this work. Acknowledging the unsuitability of some of the materials he is forced to use, he has learned to adapt the design of the items in order to keep up with the demand.

Figure 5.20: Austin Rodriguez (foreground)



Other by-products of increased tourist trade which have become particularly problematic are prostitution and tourist crime. By 1992, the Pan American Health Organization had reported fifty-three cases of AIDS, of which forty-six persons have died. (Pan American Health Organization 1993) Though the field work was unable to directly link the spread of the illness to the tourist trade, consideration must be given to tourism's potential for increasing prostitution and prostitution related diseases within the country. Tourist crime, though increasing, has also been a problem to the point that travel books and magazines always warn travelers not to stay in Belize City. Compounding tourist crime is the growing drug problem in Belize. Crack cocaine usage among Belizeans is growing at a phenomenal rate due to young people from Belize going to New York, Chicago, Detroit, Miami and Los Angeles and bringing the drugs home. As one crack user stated in an interview with a Belizean newspaper regarding tourism and tourists, "I will

continue to hassle the tourists for money. I could ask them for it or cut their throats." (Amandala 1992).

Though tourism is an opportunity to provide much needed foreign exchange and increase employment opportunities in Belize, there are many dimensions to its development which could serve to compound environmental and cultural problems already facing the country. Still in its infancy, tourism development seems to be following the pattern of past development, with the large and more economically viable operations being owned by foreigners or Belizean elites and located in close proximity to airstrips or reasonable road service, while small hotels and guest houses are locally owned and operated in areas of the country where transportation infrastructure and proper waste management is lacking.

Interviews with Belizeans and field observations of environmental degradation in the country indicate clearly that there are two sides to the conservation picture. The conservation goals of the Belizean government and its supporting NGOs have not been adequately communicated to the population. The First World solutions, such as those presented by the Peace Corps toilet project or the CIDA project to provide a sewage system in Belize City, fall far short of success. The gap between environmental policy and its application becomes apparent when one talks to small-scale farmers attempting to compete with agribusiness, or when considering the environmental health dangers which exist throughout much of Belize. Though sustainable development is interwoven through Belize's economic development policy, one must consider the reality of policy application before accepting the conservation strategies as more than rhetoric. At the First National Symposium on the State of the Belizean Environment" held in Belize City on June 3-4, 1993, Sister Fahima, a resident of More Tomorrow Village in the Cayo District, seemed to best sum up the view of many villagers.

My idea is that government agencies should consider the needs of the villages first, because we are the people who

get the food on the table. We in the villages are not responsible for the depletion of the ozone layer. We are not responsible for raping the land, for the oil spills, for the poisoning of the sea. Responsibility for these disasters throughout the world is with hungry-shark investors and greedy politicians who take bribes behind closed doors, under the table, over people's heads...poor people like us in the villages.(Fahima, quoted in *Belize Review* 1993c:2)

Chapter 6

Summary and Conclusion

Sustainable Development and the Environment: Irreconcilable Differences

In chapter one, a question was posed regarding whether or not sustainable development was a realistic option for economically dependent and underdeveloped post-colonial nations, like Belize. Furthermore, it was stated that the underlying assumptions of First World solutions to Third World environmental degradation will be cosmetic or panaceas as long as they continue to ignoring the structural causes of the problem. To facilitate the analysis of these statements, the roots of Western man's relationship to the environment versus the holism intrinsic to indigenous cosmologies, such as that of the Maya, was explored. This was undertaken to assess the degree of influence which philosophical, historical and ideological processes have had on past and present attitudes toward nature.

In reviewing the colonial and neocolonial history of Belize, the most salient point which emerged was the lack of responsibility, by the settlers and the British Crown, for the cause-and-effect outcome of resource extraction and export agricultural development on the environment. This lack of responsibility extends to contemporary attitudes toward the "growth-as-usual" philosophy, wherein there is either no conscious acknowledgment of the existence of a relationship between man and nature, beyond one of domination and control, or there exists a belief in the ability of scientific and technological "advancements" to repair environmental damage.

The other end of the spectrum of the man-nature relationship is that of traditional ecological knowledge. As the Maya believed, the very foundations of man's existence lie within a holistic world view based upon bioethical principles of the rights of animate and inanimate elements to existence. Living with the land, rather than on the land, these people were able to survive within the constraints placed by nature. To imply that the Maya did not alter, or degrade, the natural environment is erroneous. The main difference between

Classic Maya land-use and that of the colonial era lies in the ability of the agro-ecosystem to repair the damage. As evidenced by the example in chapter four, of the NASA project, the researchers experienced difficulty finding areas of "pure vegetation" upon which to conduct their scans. Although extensively used during the Classic Maya period, the jungle, now completely overgrown, gave the visual impression of being untouched. When electronic scans were attempted, evidence revealed that much of the research area had, in fact, been cultivated during the Classic period. Although it is too early to tell if the extensive land clearing in contemporary Belize will, at some point in time, return to a state of apparent naturalness, clearly the introduction of chemical substances into the environment and stripping the soils via mechanization, will play a critical role.

The colonial history of Belize has revealed not only a pattern of blind determination to control and manipulate the natural environment but also a complete disregard for the non-white populations which inhabited the country. However, the narrow world view and ultimate goal of the British in Belize is little different than that of other countries who engaged in colonial expansion during the same time period.

With the relationship between the colonizers and the remaining population defined as domination and control by the former over the latter, this pattern has replicated itself in contemporary Belize, though the colonial master was replaced by a neocolonial one, namely the United States. Throughout its history, anti-environmental attitudes in Belize have been absorbed and propagated from generation to generation.

The presence of the United States in Belize has grown considerably stronger, as evidenced by the USAID agreement in 1985 and continuing foreign ownership throughout the country. The problem is exacerbated by the increasing number of Belizeans emigrating to the United States and returning home laden with American cultural values. Over forty-five percent of the population is under fourteen years of age, an age group that is especially susceptible to American cultural influence, which is evidenced by ghetto

blasters, Reeboks (at Bze. \$150.00 a pair), membership in the growing Crips and Bloods gangs and the increasing use of crack cocaine.

Modernization theory has attempted to account for capitalist expansion around the globe based upon the diffusion of capitalist-derived technology and economic principles to "backward areas". Belize has experienced the diffusion of capitalist technology but it has had negligible benefits for the people. It has, however, facilitated the success of foreign-owned economic ventures. While evidence does exist of so-called modernization-related developments, an example being the thirty-two kilometers of now-defunct railway in the Stann Creek district, clearly the diffusion of technology, via the trickle-down effect, leading to modernization throughout the country, did not happen.

As boom-and-bust cycles of economic development continue to ravage the country's economy, theories of underdevelopment and dependency seem to best describe Belize. The lack of adequate infrastructure, dating from early colonial expansion, has hampered the country's movement toward future economic stability. The metropolis-hinterland relationship between Belize and Britain firmly entrenched a local elite among the creole and mestizo population, and it still exists in contemporary Belize. Presently, the local elites are building new residential subdivisions which rival those appearing in North America in both layout and housing style. Yet, among the rural or poor urban population, comprised mainly of Garinagu, Maya, uneducated creole, and refugees, inadequate housing and poverty abound. In the northern half of the country, which has experienced the most economic development, and houses the majority of the local and foreign elite, the main roads are paved and are adequate for passenger traffic. These roads, however, are still unsuitable for the reliable transportation of perishable food products because they are very narrow with numerous potholes.

The southern portion of Belize is a vastly different world which is characterized by the lack of reliable roads or communication links, inadequate health care facilities, and increased clearing of land to facilitate agricultural development. Educational equality does

not exist between the rural and urban schools. Further, less than twenty-eight percent of the rural children will move beyond the elementary level.

Sustainable development strategies do exist but the application of these strategies falls short of relieving the country of either its dependency upon the United States, its ever-growing trade deficit and the improvement in the quality of life for the people is questionable. In this context, sustainable development is an oxymoron which raises more questions than it answers, particularly when such strategies imply growth-as-usual but at a slower pace. Further, many sustainable solutions are not developed with the participation of people at the local and grass-roots level, rather they are derived from the "experts" and are administered from the top down.

In Belize, most of the small sustainable development projects were started by expatriate Americans as evidenced by the Belize Zoo, Parrot Hill Farms, the Community Baboon Sanctuary and the Ix Chel Farm and Tropical Research Centre, or by scientific organizations originating in the First World. The attempt here is not to denigrate, in any way, the importance of these projects. Rather, the crucial point is that sustainable development, by and large, is being initiated by First World citizens and is being imposed upon Belizeans. There are some Belizeans who are benefitting, economically, from their participation in sustainable development, an example being the farmers who support the Community Baboon Sanctuary. Yet, unemployment figures remain at or above twenty percent.

As to why sustainable development initiatives have not penetrated the majority of the local population, one must first look to Belizean attitudes toward nature to find the clues. With colonization came the suppression of Maya traditional ecological knowledge. The traditional man-nature relationship of the slaves and Garinagu was likewise suppressed. Any agricultural development within Belize was subjected first to treaty diplomacy between Britain and Spain, and later to the boom-and-bust cycles of the forestocracy. When it finally emerged, agricultural development was focused upon export production

rather than on domestic food crops. Mercantilism, aimed at increasing exports to the colony, instilled an attitude of inferiority toward Belizean-produced food and goods, an attitude which is prevalent today.

Given that the Belizean population has had over two hundred years to digest the colonial man-nature relationship, to the detriment of traditional ecological knowledge, it is little wonder that sustainable development action gains its impetus from the mainly upper-middle class American expatriate population. After years of being denied the right to openly apply traditional attitudes toward nature, many Belizeans are expected to adopt the first World solution of continued economic growth through small-scale sustainable development, while non-sustainable development projects are being encouraged for foreign investors. As evidenced by the Foreign Investment Code, one hundred percent foreign ownership is allowed, and though sustainable development is mentioned, at no point in the code are environmental protection policies defined.

Acknowledging that Belize is heavily dependent upon maintaining its position in the global economy, sustainable growth, as it is presently being carried out, is not a viable national development strategy. The environmental movement in Belize is, for the most part, the product of a First World imperative wherein the First World defines the rules.

Though it is likely that man's relationship to the environment was not even a remote consideration in the minds of the early settlers, missionaries, or the British Crown, the philosophical justification for domination and superiority was, and still is, the underlying basis of the First World man-nature relationship. Pitted against the holistic Maya cosmovision, Western science and technology emerged as the apparent winner in economic development circles. However, the environmental degradation which has resulted from Western man's domination over the natural environment has generated conservation organizations and sustainable development strategies pledged to heal the past and present wounds.

Whether driven by a guilty conscience or an attitude of moral superiority, the First World proponents of sustainable development may be sentencing the Third World to small-scale, low-technological development. With the exclusion of local people from the planning and implementation of many projects, sustainable development may, ultimately, lead to further impoverishment. The sustainable systems of indigenous people were virtually eradicated in the quest for modernization. Now, First World environmentalists are advocating that indigenous people return to traditional land-use practices, though using First World "improvements" on them. This apparently schizophrenic stance, on the part of the First World, is not the solution. Though attitudes to the environment have shifted, at least on the surface in development circles, the prevalence of non-sustainable, foreign-owned development projects in Belize undermines the national sustainable development ethos with as much force as does the exclusion of the local population in the planning process.

Jan Black (chapter two) discusses the idea of empowering small communities to develop, using social and cultural indicators of success rather than First World-generated quantitative indices such as Gross National Product. This alternative to economic development may, in fact, work on an individual community basis but there needs to be a global-wide shift away from the growth-as-usual philosophy of development before grassroots action will be given its appropriate place. The grassroots alternatives to development are based upon collective community action, which has always been present among subsistence-based indigenous populations. Traditional societies have always possessed organizational knowledge which can be drawn upon to initiate and sustain alternatives-to-development projects, thereby allowing for the exclusion of externally imposed operating structures or objectives of national and international development agencies. This does not presume that grassroots action will necessarily exclude external assistance, but that the organizational process of the grassroots action would be able to define the type of assistance needed, based upon group consensus.

The solutions arising from grassroots organizations tend to be specific to each community's needs, cultural traditions and value systems, thereby requiring the comparative analysis of these strategies to be based on the qualitative measurement of the process, rather than on quantitative indices. This is not a problem for grassroots organizations but it is a concern of development planners, NGOs, and their sponsoring agencies. What is needed are new indices of measurement which, by not focusing on economic growth as a determining factor of success, allow for culturally relative grassroots strategies to be accepted as successful alternatives to economic development.

Alternatives to economic development do exist in Belize and, though these projects are called sustainable development, they appear to fit under the category of alternative grass-roots action. The Toledo Ecotourism Association project, though advised in the beginning by an expatriate American, is an excellent example of a grassroots alternative-to-economic-development project. All decisions regarding the project's objectives derive from the participation of members from all six communities. The communities work together to build the necessary infrastructure to support ecotourism as well as guaranteeing the equitable sharing of opportunity for earning foreign exchange. Income generated is used to improve conditions within the villages for the local population as well as allowing the Maya to reduce their reliance on slash-and-burn agriculture. The priority of the Association is not to generate a profit, rather it is to facilitate the building of inter and intra-community stability.

The Habiabarra Garinagu Cerro project, another grassroots alternative, was created to improve the community's health-care, educational opportunities for the children and to facilitate a return to more traditional cultural ways of life. The group refer to their initiative as a conservation of culture project, implying that the focus is on building a stable community from within. Conservation of the environment is also a priority for the sustainability of the HGC lands for future generations.

The similarities between both the TEA and the HGC projects are the lack of participation and intervention from outside agencies, beyond the few monetary donations each group has received, as well as the bottom-up approach each group has adopted. Though numerous hurdles have stood in the way of the operation of the projects, each group has dealt with these, in the past, by utilizing solutions based upon consensus and the internally defined needs of the community. Thus, if the TEA and the HGC are able to maintain autonomy over their projects, the future for these alternatives-to-development appears hopeful.

The ability of individual communities to turn the tide of environmental degradation is of paramount importance, yet inevitably it is not at the community level where the culprits lie. Until non-sustainable development is controlled on a global scale, and sustainable development, as currently articulated, is philosophically differentiated from grassroots alternatives-to-development, sustainable development will remain an oxymoron in Belize as well as in other Third World nations.

In the quest for solutions, one must not lose sight of the day-to-day existence of the inhabitants of the Third World. While we are able to theorize in the luxury of First World academic institutions, there are others who go about their daily routines of meeting subsistence needs, participating in community affairs and passing on knowledge to future generations, while oblivious to the relatively recent First World imperative to "heal the Third World".

As the sun rises over Belize (see Figure 6.1), we are no closer to identifying the way in which the First World will create strategies to solve Belizean environmental degradation. Therefore, one must consider the possibility that the answers lie within the knowledge and experience of Belizeans themselves, rather than in the minds of the development experts, modernization theorists, or First World environmentalists who just can't seem to plan Belize's way out of the problem.

Figure 6.1: Sun setting on Hopkins Village



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Acronyms

BAS	Belize Audubon Society
BCES	Belize Centre for Environmental Studies
BEC	Belize Estate and Produce Company
BEST	Belize Enterprise for Sustainable Technology
BTFL	Belize Tropical Farming Limited
BTIA	Belize Tourism Industry Association
CARICOM	Caribbean Community and Common Market
CCREM	Canadian National Task Force on Environment and Economy
CCC	Coral Cay Conservation
CIDA	Canadian International Development Agency
ECO-ED	World Congress on Education & Communication on Environment & Development
EIA	Environmental Impact Assessment
GDP	Gross Domestic Product
GNP	Gross National Product
GRO	Grassroots Organization
HGC	Habiabarra Garinagu Cerro
IIED	International Institute of Environment and Development
IUCN	International Union for the Conservation of Nature and Natural Resources
NGO	Non-Government Organization
PFB	Programme For Belize
PUP	People's United Party
SDA	Special Development Area
SPEAR	Society for the Promotion of Education and Research
TEA	Toledo Ecotourism Association
UDP	United Democrat Party
UFC	United Fruit Company
UNCHR	United Nations Commission for Refugees
UNESCO	United Nations Educational, Scientific and Cultural Organization
U.S.AID	United States Agency for International Development
WCED	World Commission on Environment and Development
WWF	World Wildlife Fund