

The Development of Guanacaste Costa Rica: Policy Recommendations

Kayvon C. Ross

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Harvard University Extension School

Prof. Megan Epler Wood



Executive Summary

- The Guanacaste Province of Costa Rica, which is extremely rich in natural resources, is Costa Rica's most popular tourism destination, and its environmental management strategy will have a profound influence on the entire country.
- In recent years the region has been at the forefront of the tourist boom, and poorly planned and monitored development has brought with it water pollution, beach pollution, water and waste management pressures beyond the capacity of existing infrastructure, and destruction of natural habitats.
- Currently, Costa Rica's environmental sustainability policy is in a state characterized by poor funding, overlapping authorities, excessive bureaucracy, corruption, and a poorly coordinated decentralized approach.
- Increases in private sector funding, cruise tourism taxes, and annual property taxes would provide the financing needed to modernize and standardize the existing system of environmental management; only then may Guanacaste's problems be addressed.
- Guanacaste and Costa Rica together must fundamentally change environmental policy design and, with new sources of tax and private sector based funding, implement major infrastructural improvements in water and waste management, transport, protected areas, and security.
- Guanacaste should refocus on what originally made the region a successful tourist destination: active ecotourism.
- The public and private sectors must take immediate and decisive action in order to secure a sustainable future for Guanacaste.

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Introduction

The Guanacaste Province in Costa Rica is at the forefront of the Costa Rica's effort to manage its development sustainably. Development in the region poses both new opportunities and environmental threats to the country. Historically, the main source of income in the region has been cattle ranching; today however tourism and real estate development have emerged as the principal economic activity. Guanacaste is the most visited region in Costa Rica and must, accordingly, have a development policy that serves as an example for the rest of the country. Under complex policy circumstances, and what has been speculated as the early stage of its development, the Guanacaste province needs to choose a sustainable path forward. Costa Rica's economy, natural resources, and most importantly a historical review of its complex environmental policy, laws and governing bodies will put the Guanacaste region's current circumstance into historical context. The impacts that unregulated development has had on the region to date will be quantified in order to outline the importance of establishing sustainable environmental management programs. This paper will propose the implementation of an environmental management strategy comprised by a streamlined integration of mandatory and voluntary programs, government organizations and initiatives, private institutions, and NGOs, coupled with a stronger regulatory environment, and financed by a progressive increase in real estate tax, higher cruise ship fees and tariffs, and more help from the private sector.

Setting the Stage: Costa Rica

1.1 Overview: Why Costa Rica?

Costa Rica is a prime location for tourism located in Central America between Panama and Nicaragua. With a population of more than 4 million people, no army, volcanic mountain ranges and a sub-tropical climate, and 1,290 kilometers of coastline on both the Atlantic and Pacific oceans; the country's beaches and diverse scenery are perfect for drawing tourists.

The former Spanish colony has been peaceful and stable since 1949 when, after a short civil war, Costa Rica formed a government junta that abolished the military altogether and oversaw the drafting of a new constitution by a democratically elected assembly. In the following years the country became known as the 'Switzerland of Central America', due to its docile and diplomatic nature in a region that has been highly prone to armed conflict and civil strife. It has deeply rooted democratic traditions with a strong constitution and is a republic with three countervailing branches of government: executive, legislative, and judiciary. Costa Rica is among the best in regional rankings for health care, education, public safety and equality (recently electing its first female president) (The Economist, 2010). The literacy rate in Costa Rica is 94.9% and is one of the best in the world (CIA World Factbook, 2010). Universal public education is guaranteed in the constitution. Elementary and high schools are widespread throughout the country, and exhibit varying degrees of quality. A large proportion of the budget is spent in order to subsidize

students from poor families, and the public universities are regarded as the best in the country. Although Roman Catholicism is predominant, the constitution guarantees freedom of religion and an array of religions are practiced. The culture and language are Spanish, but English is spoken by roughly 10% of the population (Villegas, 2008). "Pura Vida", meaning pure life, is the most widely used phrase amongst Costa Ricans and is testament to the laid-back Costa Rican way of life.

Due to its geographic position between the North and South American continents and to its many microclimates (a result of the elevation, rainfall, topography, and geography of each particular region) there is a diverse array of landscapes from rain forests to dry tropical and temperate forests, volcanoes, Caribbean and Pacific beaches, high mountains, and marshy lowlands that all support an abundance of wildlife. Costa Rica is no larger than West Virginia, yet, according to Costa Rica's National Institute of Biodiversity, it is home to more than 500,000 species representing nearly 4% of the species worldwide: 12,000 species of plants, 1,239 of butterflies, 838 of birds, 440 of reptiles and amphibians, and 232 of mammals (2010).

1.2 Economic implications

Costa Rica's major economic resource is thus itself, namely its fertile land, frequent rainfall (which generates most of the country's electricity), biodiversity, well-mannered educated population, and geography. Currently its economy relies heavily on agriculture, electronics exports, and more and more, on tourism, especially in Guanacaste. The Costa Rican economy is growing and GDP has showed impressive annual increases for a decade (besides 2009 in response to the global recession); however, the strength of nontraditional imports (such as Intel Computer chips) and the tourism sector have masked the increasingly poor performance of its traditional sectors (US Bureau of Western Hemisphere, 2010). Costa Rica has grown increasingly reliant upon tourism, an industry that if practiced sustainably, can be mutually beneficial for Costa Rica's people, and environment (the very entity that sells it).

1.3 Key Tourism Statistics:

- In 1995 tourism became the country's largest earner of foreign exchange (Castillo, 2005). It now earns more than Costa Rica's main agricultural imports combined.
- A strong increase in tourism began in the mid-1980s. From 1988 to 1999, the number of annual visitors went from 329,000 to 1.03 million. The 2.09 million foreign visitors in 2008 earned the country \$2.14 billion that year, 7.2% of the country's GDP (Fallas, 2008).
- In 2008, tourism contributed the same 7.2% of the country's GDP, 22.7% of foreign exchange generated by all exports; in 2005 it was responsible for 13.3% of direct and indirect employment (Castillo, 2005).
- Costa Rica is the most visited nation in Central America.

- Ecotourism is among the most popular types of tourism in Costa Rica. As early as 1991, one half of all international visitors spent at least some time in the parks or protected areas, compared to 20% in 1983 (Epler Wood, 1993).
- Cruise tourism has developed recently without much critical environmental impact assessment, and accounts for about 16% of tourist arrivals (Durham, Honey, Vargas, 2010).
- Between 2005 and 2007, 22 of the 26 districts with the most dynamic housing construction were also tourism destinations (Durham, Honey, Vargas, 2010).

1.4 Environment Policy (Koehler, 2007)

An integrated approach to environmental policy is critical to Costa Rica's success. Environmental policy has two arms, each with its own pros and cons:

- *Voluntary Programs*: are established by government and international environmental agencies and encourage beyond compliance environmental performance and cover issues absent from current regulatory framework. These programs generally fall into three categories: 1. Unilateral initiatives that are established by industry associations or 3rd parties, 2. Public voluntary (in which government invites industry), and 3. Negotiated agreements (between industry and government).

Support: Provide economic benefits (using environmentally friendly technologies and processes), provide green reputation for firms and a consequent price premium, cost efficient, improve regulatory flexibility, appeal to environmentally conscious investors, encourage technological innovation.

Criticism: participant motive may lie in a desire to prevent more regulations, disguise poor environmental performance, or elude frequent and detailed monitoring, and create barriers of entry for new competitors.

- *Compulsory Instruments*: Mandatory government imposed laws and regulations

Support: traditional approach, requirements for pollution control, sustainable technologies, and equipments

Criticism: costly, inefficient, hindrance to the competitiveness of business, discourage innovative environmental management technologies, often plagued by a lack clear standards, monitoring, enforcement, heavy influence of industry lobbyists.

1.5 Environmental Sustainability Programs, Policy, & Law (1960-1990)

1.51 Conservation

Interestingly it was deforestation and agribusiness *not* tourism that first committed Costa Rica to a path of environmental sustainability. Costa Rica's first strictly protected area was established in 1963, after which the first four national parks were officially created in 1970-1971 as a way to preserve Costa Rica's biodiversity (Weaver, 1999). The **National Park System** has since expanded to include over 30 parks and reserves and more than 230 different protected areas and is now the backbone of the country's ecotourism industry (Honey, 1999). Private reserves have also emerged as key in supporting Costa Rica's natural habitats and biodiversity. Encouraged by the government as a means of augmenting the public system, private reserves such as La Selva and Monteverde Cloud Forest Preserve are visited with comparable frequency to the most popular national parks. These often dedicate a greater percentage of revenues to maintenance and research. Currently 23.4% of Costa Rica is under some type of conservation by either the public or private sector (Earth Trends, 2003).



1.52 Early Environmental Policy, Building Blocks

In 1973 the **General Health Law** provided the Ministry of Health with broad powers to enforce pollution controls, and the Division of Environmental Health has attempted to set standards for air and water quality. However, trained personnel and equipment have been, and are still, in short supply. The **Maritime Zoning Law 6043** of 1977 established government ownership of all coastal land extending 200 meters from the high tide point. This created a *public zone*, open to all, comprised of the first 50 meters of tideland, and a *restricted zone* for the remaining 150

meters inland in which the government can grant leases called concessions for the occupation and use of the land. Mangroves too became part of the **Maritime Terrestrial Zone (ZMT)**, no matter how deep inland they reach. The ZMT is overseen by at least 23 national institutions and 15 municipalities that have responsibilities related to tourism development (Durham, Honey, Vargas, 2010). The bureaucratic nightmare has meant that enforcement of the law to date has been makeshift, and violations of the law are more often exposed by community activists, NGOs, and the media than Costa Rica's governing bodies. As the municipalities were empowered, and Costa Rica's environmental strategy became more and more decentralized, concessions often were granted to build within the ZMT via bribery and political influence.

In 1985 the **Law on Tourism Development Incentives** created the **Costa Rican Tourism Institute (ICT)** and was established with an objective of creating an "accelerated and rational" development of the industry describing tourism as a "public utility" (1985). The ICT gives many tax incentives to tourism businesses regarding supply chain, tourism infrastructure, and depreciation, although until modifications were put in place, the law made it cost-prohibitive for locally based smaller businesses to qualify.

Faced with one of the highest deforestation rates in Central America by the late 1980s, Costa Rica adopted the concept of sustainable development wholeheartedly. The **Forest Credit Certificate (CAF)** was created in 1986 in order to provide tax rebates and other incentives for reforestation (Pagiola, 2007). The Costa Rican government then launched a campaign to formulate and raise funds to support a **Conservation Strategy for the Sustainable Development of Costa Rica (ECODES)** in 1986.

1.6 Environmental Sustainability Programs, Policy, & Law (1991-2010)

Grasping the current environmental management strategy, and the reality of its shortcomings, is essential in understanding the forthcoming recommendations. Across four decades, Costa Rica made a series of policy and legal changes to combat environmental problems such as deforestation, soil erosion, coastal marine and fresh water pollution, fisheries protection, waste management, and air pollution. Costa Rica has taken a decentralized approach to environmental sustainability that granted a great deal of authority to municipal governments which often lack knowledge and resources. The country established a range of overlapping environmental policy instruments that have been vulnerable to corruption due to the low wages of government employees and unmonitored funding. The resulting sluggishness with which the bureaucratic institutions in Costa Rica operate is the main criticism of foreigners trying to invest in the country (Aragon, 2008).

Costa Rica's next policy step was to create an Environmental Department and introduce subsidies for reforestation and forest management on private land. A **National System of Conservation Areas** was established in the 1990s consisting of an array of wildlife refuges, buffer zones, protected areas, national parks, and private reservations called SINAC to decentralize forest management and conservation. Local management and decision-making of all

protected areas in the country allowed each of the 11 conservation areas to become *relatively* autonomous in the design and implementation of environmental policy in their respective jurisdictions. The environmental aim of this new phase of Costa Rican environmental policy is best spelled out by the 1995 **Environment Law 7554** that mandates a “balanced and ecologically driven environment” for all (Sanchez-Azofeifa, Praff, Robalino, & Boomhower, 2007).

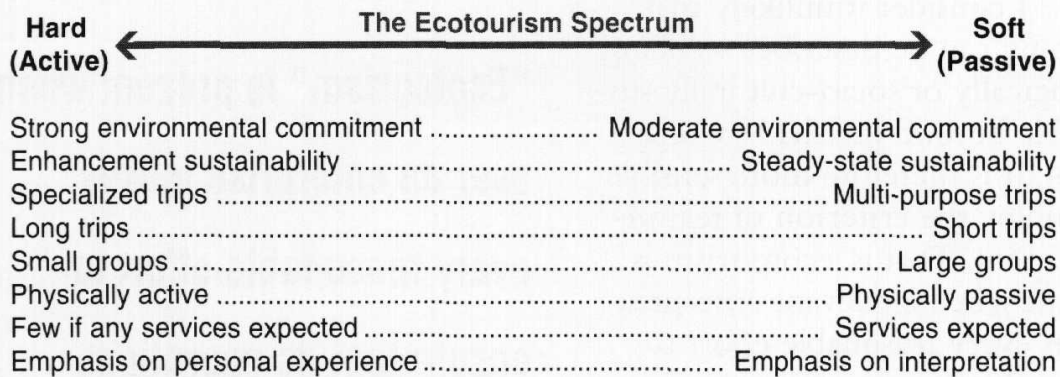
To monitor Costa Rica’s protected areas and natural resources over time, impact assessments are conducted by a wide variety of private and public institutions and NGO. Building on the initial CAF program, in 1996, Costa Rica enacted **Forest Law No.7575** which officially sanctioned the reduction of greenhouse gas emissions, provision of hydrological services, biodiversity conservation, and the value of recreation and ecotourism. The law introduced a permit system (**Payments for Environmental Services** or PSA) to contract landowners for the services provided by their lands, and established the **National Fund for Forest Financing** (FONAFIFO) administered by the **Ministry of Environment and Energy** (MINAET). It has been a major contributor to the percentage of protected lands in Costa Rica. It is financed less from the tourism industry that profits from Costa Rica’s green reputation and more from a fossil fuels tax, carbon credits, and grants from the World Bank and the Global Environment Facility (Pagiola, 2007). One of MINAET’s primary responsibilities is for the coastal forests, many of which are in the GMT and prone to concessions for alteration. MINAET has ultimate jurisdiction over such forests overriding municipal authorities. The **Biodiversity Law** enacted in 1998 established a national strategy promoting the conservation and “rational use” of biodiversity resource (Sanchez-Azofeifa, Praff, Robalino, & Boomhower, 2007). The law is an important component to the country’s stated dedication to sustainable development. Accordingly, the law attempts to create a legal framework for conservation, and marked the signing and ratification of various international and regional agreements. The law established that the **National Commission for Biodiversity Management** (CONAGEBIO), together with SINAC, is responsible for the administration of the country’s natural resources. It aligns itself with the country’s strategy by aiming to use a highly participatory process at local and national levels.

1.7 Ecotourism: A Green Alternative for Costa Rica?

In the same period, the mid-1990s, due to the tax incentives, Ecotourism in Costa Rica really took off. From 1982 to 1991 there was a 30% increase in visitors to Costa Rica’s national parks (Bien, 2000). Currently there is no clear-cut consensus on the definition of ecotourism (often dubbed sustainable tourism) in Costa Rica, or in any other part of the world for that matter. Due to the varied types, and spectrum of commitment to sustainability within the ecotourism industry (see exhibit 1), it cannot be grouped into one categorical definition. The broadest and most applicable is that ecotourism, built on the guiding principles of sustainable development, is a type of responsible travel to natural areas that conserves the environment and sustains the well-being of local people (19).

Exhibit 1

Characteristics of hard and soft ecotourism as ideal types



Source: David Weaver and Laura Lawton, "Overnight Ecotourist Market Segmentation in the Gold Coast Hinterland of Australia," *Journal of Travel Research* (in press).

In a time when much of the developing world was industrializing, and urbanizing, Costa Rica set its sights on ecotourism as a clean alternative from traditional sectors such as mining, timber, ranching, and agribusiness. It is hotly debated the extent to which ecotourism in Costa Rica is truly an environmentally sustainable practice for the country. The pros and cons of ecotourism are summarized below:

Benefits:

- Alternative to environmentally damaging industries.
- Economic incentive for conservation. Helped promote the creation of about 75,000 acres of private reserves (Bien, 2000).
- Encourages the development of infrastructure on a smaller scale than Costa Rica's traditional industries.

Criticisms:

- Profit over environmental protectionism: ecotourism can eventually lead to the nation's wildlife being viewed as a commodity to be exploited for economic gain.
- Visitor carrying capacity: Costa Rica's national parks are under increased pressure from a burgeoning and unregulated number of visitors, many of whom are 'eco-tourists'.
- Lack of enforcement and monitoring: Principally due to a lack of funding, corruption, and inadequate local expertise.
- Greenwashing: Increasingly a 'green' label is attached to travel services that do not technically qualify as ecotourism.

From 1994 to 1998, under President José María Figueres, Costa Rica launched a \$15 million publicity campaign to attract U.S. and Canadian eco-tourists to the country (Cordero & Bonilla, 2006). Whether deserved or not Costa Rica has earned a reputation as the premier ecotourism destination in the world (Honey, 1999), and wanted to capitalize on it. The country began two well respected 'green' certification programs aimed at advancing the goals of ecotourism, and environmental sustainability:

In 1996 Costa Rica introduced the **Bandera Azul Ecológica (Ecological Blue Flag) Program** was created as an incentive, and then registered by the government as a decree as way to stimulate protection of beaches against environmental contamination and increase public knowledge (Rivera & De Leon, 2005).

Beaches are judged based on the following parameters (weighted):

- Quality of ocean water 35%
- Quality of water for human consumption 15%
- Quality of sanitary conditions on the beach (Trash, domestic/industrial water run-off) 10%
- Safety 10%
- Environmental education and Administration 10%

(Cordero & Bonilla, 2006)

1 to 5 Blue Flags are awarded depending on the degree of compliance. The Ecological Blue Flag is awarded each year to the beaches that obtain a minimum of 90% in the evaluation. Beaches that are awarded the distinction highly publicize the results and receive the attention of more potential tourists, and investors (and arguably more of their exchange).

The Costa Rican Board of Tourism (IST) developed a voluntary **Certification for Sustainable Tourism Program** (known as CST) in 1997 in response to a boom in tourism, and the consequent explosion of hotels and other developments close to highly protected areas. It was a response to the increasing environmental threats: most notably the pollution of rivers and most popular beaches, deforestation of sensitive areas (*once again*), and destruction of wetlands. The program was aimed at all types of businesses in the tourism industry, but it began only with lodging providers. Third party auditors certify and monitor the adoption of 'beyond-compliance' environmental practices in four general areas of environmental management. The CST program rates hotel environmental performance by granting from zero to five 'green leaves' that can allow participant hotels to gain a comparative advantage in terms of 'greenness' (and absorb the associated price premiums). As of 2009, out of the approximately 3,000 hotels and tour operators in Costa Rica, only 105 have a Certification for Sustainable Tourism (Evans, 1999).

Guanacaste: Leading the pack

The Guanacaste province, located in the Northwestern part of the country along the Pacific coast, has a dependable dry season, its own airport (which enables tourists to avoid long bus trips from San Jose), volcanoes, endless beaches 150 kilometers of which are located in the Nicoya Peninsula, and is certainly the most popular tourist destination in Costa Rica.

2.1 Overview: Guanacaste



Historically, the main source of income of Guanacaste was earned from cattle ranching. Due to a decline in international demand for beef the industry has steadily been shrinking. Many lands that were once pastures are reverting back to dry forest, or being used for tree plantations, or agricultural land (in order to grow sugar cane, cotton, and rice). However the region now faces the highest rate of unemployment in the country (over 10%), and is considered one of the poorest provinces.

An extensive system of protected areas was established from 1970 to 1990 and covers roughly 9.6% of Guanacaste's territory. Currently, the largest protected areas are the Santa Rosa National Park, the Guanacaste National Park, and the Palo Verde National Park (Baker, 2004). In addition to the 7 national parks, there are also a number of smaller areas of conservation scattered across the province such as forest reserves, and wildlife refuges. It is not hard to see why the Guanacaste Province is currently one of the most popular tourist destinations in the world, and has been in the midst of a tourism and development boom since 2002.

2.2 Key Tourism Statistics:

- 45% of tourists (many returning visitors) who come to Costa Rica visit the Province of Guanacaste (Programa Estado de la Nación, 2007).
- 96% of tourists leaving the country said they would recommend Guanacaste to a friend as a tourist friendly destination (Sanchez-Azofeifa, Praff, Robalino, & Boomhower, 2007).
- During a 7-day holiday of, tourists would spend an average of \$2,251, excluding flight costs (Sanchez-Azofeifa, Praff, Robalino, & Boomhower, 2007).
- In Liberia, the Daniel Oduber International Airport has experienced a 100 percent growth between 2003 and 2004 (Roman, 2007).
- After the decline of agriculture, tourism has become the main source of employment for Guanacaste.
- The chamber of tourism estimates that almost 3,000 people from Guanacaste indirectly or directly benefit from tourism (Roman, 2007).
- At the present time Guanacaste is experiencing an intense tourist and real estate boom and has the highest rate of development of all Central America.

Exhibit 2: Land Dedicated to Human Settlements & Tourism on the Pacific Coast, 1980-2005:

Case study locations	Years					
	1980 (ha)	% of area	1998 (ha)	% of area	2005 (ha)	% of area
Northern Guanacaste						
Papagayo-El Coco	62.38	1.18	434.85	8.27	726.79	13.83
Potrero-Flamingo-Brasilito	31.05	0.91	266.67	7.98	418.24	12.42
Playa Grande-Tamarindo	22.47	0.74	246.85	8.1	837.61	27.5
Southern Guanacaste						
Samara-Punta Islita	56.94	0.97	224.77	3.84	544.34	9.27
Malpaís-Montezuma	13.15	0.69	7.52	0.42	32.24	1.73
Paquera	11.77	0.46	11.23	0.45	23.16	0.92
Puntarenas and Golf Islands						
Puntarenas – Caldera	726.38	9.7	1,291.03	17.05	1,724.84	22.63
Central Pacific						
Herradura-Jacó	78.98	3.97	268.34	13.33	415.92	20.67
Quepos-Manuel Antonio	190.98	8.62	301.5	13.73	297.46	12.99
South Pacific						
Dominical-Tortuga	10.56	0.63	50.08	2.76	43.98	2.91
Golfito	184.43	6.26	200.05	6.84	215.52	7.31
Puerto Jiménez	25.67	1.37	88.54	4.84	101.96	5.45

(Durham, Honey, Vargas, 2010)

2.3 Environmental Management Policy: A Changing Tide

In recent years, there has been a dual approach to tourism development in Guanacaste that many argue to be inconsistent with Costa Rica's 'green' image, and declared sustainable development objectives. A great deal of large

scale development has been introduced to the region. In fact, the rest of the country is watching keenly with considerable opposition, although exist large influential pockets of support for tourism on a grander scale.

Two government projects paved the way for the boom in development that has occurred in Guanacaste:

- i. **Liberia International Airport:** Became functional in 2002
- ii. **Gulf of Papagayo Tourism Pole:** Large investment by the central government, via the ICT, in a large-scale resort development project. The government purchased the land and gave ICT the responsibility to lease concession blocks to private developers.

Beginning in 2002 the Guanacaste region became an epicenter for coastal tourism-related development.

Guanacaste's economy has in fact become quite dependent on tourism. Direct and indirect jobs in tourism-related businesses were estimated to total 66,000 in Guanacaste province in 2006, and the construction sector accounts for 5% of Costa Rica's Gross Domestic Product, and experienced double digit growth from 2002 to 2008 (until reverberations from the World Financial Crisis practically halted foreign investment within Costa Rica) (Durham, Honey, Vargas, 2010).

Resort and residential tourism (on a grand scale) has taken off in Guanacaste. Through the combination of resort property with vacation homes, it has proven easier for real estate developers to finance all-inclusive (viewed by many Costa Ricans as '*all-exclusive*') resort complexes with restaurants, golf courses, marinas, spas, and shops. These types of larger scale developments can result in significant structural changes being made to fragile landscapes. Developers say that by combining a resort with vacation homes, they increase the value of both (Honey & Krantz, 2007). Intense and often chaotic construction of small and medium hotels combined with vacation homes, apartment towers, condos, and gated communities have also become quite commonplace. North American developers, investors, and tourists have been the primary financial drivers behind, and beneficiaries of, the fast paced coastal development (Durham, Honey, Vargas, 2010).

This new form of coastal tourism development, large-scale and mass market in orientation, is far different in terms of its environmental (and social impact), and trajectory, than the ecotourism for which Costa Rica has earned its environmentally-friendly reputation.

2.4 *A Tangled Web*

Environmental policy in Costa Rica has been unable to keep up with the influx of foreign investment, and development. There exists no sound, long-term planning program for many basic issues such as public property concessions and infrastructure construction. According to CGR (comptroller general) in 2006 only 18% of

municipalities had adequate and updated territorial management plans (Roman, 2007). The national strategy's heavy reliance upon weak, unknowledgeable and ill-equipped municipal governments has arguably impaired its objectives.

The majority of the now empowered local governments in key tourism locations do not have the necessary capacity to conduct effective monitoring or planning; meanwhile there is limited coordination with ICT, SINAC, and other governmental and public organizations. Although the **Costa Rican Tourism Institute** (ICT) plays a central role, tourism and real estate development on the coast is overseen by a very complicated network of laws and government agencies that cover such topics as territorial land-use planning, construction, conservation, and environmental impact and control. In fact, at least 23 national institutions, the 11 municipalities of Guanacaste, and 4 district councils have roles in overseeing the enforcement of the ZMT law and have responsibilities related to tourism development in the coastal zone (Memoria Annual, 2007). There also exist a number of other public organizations, private institutions and NGO's involved in an array of aspects of general tourism policy and incentives in Guanacaste. The sheer number of institutions involved, combined with their overlapping, and often unclear scope of responsibilities, lack of coordination, and funding has led to an administrative conundrum for the province. Beyond the mere geographical scope of protected lands in Guanacaste, the varied designations (and subsequent governing authorities) of protected lands combined with a limited budget have proven to be a fundamental problem for effective land-management (i.e. managing use and development in a sustainable way) of the territories that comprise SINAC and the ZMT.

Decree of Territorial Organization: In 2008 Costa Rica signed into law a decree that would radically restrict development along the Guanacaste coast. The decree sidesteps local municipal authority, regulates construction regarding height, density and minimum easements from the coastline to roughly 2.5 miles inland. It creates 4 zones in which construction cannot exceed 65% of property area:

- i. *Maritime Public Zone:* 50 meters from the high tide mark upon which nothing can be built.
- ii. *Restricted Zone:* Allows buildings up to 16 meters (approximately 3 stories) from the 50 to the 200-meter mark.
- iii. *Intermediate Zone:* Allows heights of up to 24 meters (6 stories) up to 800 meters inland.
- iv. *Internal Zone:* Allows for heights of up to 36 meters (9 stories) and covers the next 4 kilometers (Nicholson & Diaz, 2008).

The decree also mandates the proven availability of water, access to a public roads, and environmental viability studies before any development gains approval (Nicholson & Diaz, 2008). The Minister for Tourism, Carlos Ricardo Benavides, said the decree was also in response to what he called "the municipalities' inability to deal with the unchecked growth" (Nicholson & Diaz, 2008).

The majority of problems have not been attributed to content of the laws, decrees and policies that impact tourism and development in Guanacaste, but in their clarity and the viability of their application. The general framework of environmental management in the region has resulted in what the Estado De La Nacion Reporte XIV (2007) described as “procedural omissions and failures related to its [the ZMT’s] technical, political, and administrative management”, and “weak land use planning by all of the institutions involved, the absence of clear and effective policies, and little understanding of the strategic importance of an integrated and sustainable management from social, economic, political and environmental perspectives.” Although contradictions between Guanacaste’s environmental management policy and the ‘green image’ the region would like to project have had negative environmental impacts, the region’s development, if sustainable, is the key to its success (and will likely have implications throughout the rest of Costa Rica).

2.5 Critical Environmental Impacts and Management Issues in Guanacaste

Currently there exist significant issues attached to what has often been coined “the brown agenda” such as inadequate water, sanitation, drainage and solid waste disposal, recycling services, poor urban and industrial waste management, and beach, aesthetic, water and air pollution (Estado De La Nacion, 2007). Coastal development has proceeded forward without adequate infrastructure and oversight to deal with such issues.

Media attention, government intervention, local conflicts, community protest, and litigation over natural resources and environmental issues have become far more commonplace since the boom began in Guanacaste. There are many significant environmental management issues in Guanacaste which will be explored in the most specific terms possible. The following will highlight the most pressing environmental impacts tourism development has had in Guanacaste.

2.51 Water Scarcity, Management, & Pollution

A Scarce Resource: There is perhaps no environmental issue that has stirred up more controversy in Guanacaste than water. Increased development in the arid Guanacaste region has ironically led to a scarcity in one of the country’s most abundant resources, water. Tourists use 10-15 times more water than rural and urban families in the same setting (Epler Wood, 2010), and in most of the regions of the country, water production capacity is very close to current demand. The risk of deficit is high. Various cities and towns in Guanacaste already suffer from water shortages and rationing; there is a great deal of uncertainty surrounding the issue. In 2007, the Estado de la Nacion report found that unknown quantities of water are extracted in Guanacaste, and the aquifers’ capacity has not been determined and accused public institutions of a broad failure to monitor to accurately determine levels of quantity, quality, and demand.

As is commonplace in Costa Rica, there are multiple institutions, often with overlapping and unclear responsibilities, that are involved in policy and regulation of water and sanitation including: the **Ministry of Health** (MINSALUD), the **Regulatory Authority for Public Services** (ARESEP) and the **Ministry of Environment and Energy** (MINAET) to name a few. Revenues in the Costa Rican water and sanitation sector do not come close to covering operation and maintenance costs and the sector's financial situation is dubious.

Sardinal. At no point in the history of development in Costa Rica has this issue come to the forefront as it did in Sardinal, a town in Guanacaste near the popular beach towns of Playas del Coco, and Ocotol. A local real estate group, Grupo Mapache, was intending to divert water from the aqueduct located in Sardinal to provide water for their expansive condominium and hotel project in the coastal communities of Playas del Coco in which the new developments were located (Sonray, 2008). Due to new regulations resulting from the Decree of Territorial Organization, it was impossible to obtain development permits without proof of sufficient water, and the small aquifers in Coco and Ocotol could not support projected demand. The water aqueduct in Sardinal provides a sufficient amount of water to support the town of Sardinal, but its maximum capacity was uncertain. Amid protests, (<http://www.youtube.com/watch?v=wZLpFNsW54A>), pipe burning, and reports that people were contaminating the water with gasoline, legal challenges finally forced a feasibility study that was required in May of 2008. After much controversy water is expected to start running through the pipes of a section of an aqueduct that will supposedly meet the demand of residents as well as developers. A resolution by the national environmental technical secretariat cleared the last hurdle for the water project. The Sardinal Aqueduct was one of the more violent and nationally publicized conflicts out of many that have taken place on Guanacaste's coast centered on its most precious resource, water.

A large gap in funding in the tourist-rich region has resulted in outdated technologies, inadequate maintenance, and the poor physical condition of Guanacaste's water conveyance infrastructure. It is estimated that within Costa Rican water companies as much as 50% of water is lost (non-revenue water). Until Costa Rica is able to channel its vast supply of rainwater to satisfy the demands of the booming Guanacaste region, there will likely continue to be controversy surrounding the water supply in the region.

Water Pollution. Water pollution in Costa Rica is prevalent in the country's ocean, rivers, lakes, estuaries, and even in some of the aquifers that supply the nation with potable water. Among the other culprits such as agro-businesses and untreated urban sewage discharge from the Central Valley, tourism development has proven to be one of the primary causes of water pollution in Guanacaste.

Guanacaste's ocean and fresh water is under a number of threats, from inadequate sanitation facilities, leaking septic tanks, storm water drainage, and residential and industrial wastewater discharge from urban, rural and coastal areas. Waste and sewage runoff generally travel wherever the forces of man and or nature take them which in most

instances is ends up being the ocean. After a heavy rain, trash bags, car tires, plastics and other unsightly waste is not uncommon to see flowing down the rivers or in the breaking waves of the ocean beaches. There is a severe deficiency of treatment facilities to manage the increased levels of discharge from industry, and new development in Guanacaste. Often times the wastewater that is collected is discharged into rivers and receiving bodies without any treatment. Such sources of water pollution both threaten to infiltrate subterranean supplies, as well as the region's fresh and ocean water.

Marinas. Recently marina proposals that are popping up all over the Guanacaste have also been a considerable threat to Guanacaste's marine life, and shorelines. Currently there are few functioning marinas but the new proposals could generate 16 new marinas (3 of which are were already under construction in 2008) within several years giving the country the potential to host around 5,000 boats (Thompson, 2008). In Playa Manzanillo for instance, located in Northern Guanacaste, a \$15 million marina with a 372 boat docking capacity is under construction. Manzanillo proceeded forward with its marina plans despite the community's recent loss of its blue flag certification which was in main part caused by the pollution of the Hotel Occidental Allegro Papagayo, a hotel which has become a notorious example in the country of disregard for the environment (discussed later).

In fact, ocean and fresh water contamination seemingly is most prevalent in the most developed, and tourism oriented coastal communities (despite large foreign investment in these areas). Tamarindo for instance, another coastal town in Guanacaste that lost its blue flag certification, has no water treatment plant and allowed many tourism facilities to operate without their own systems in place (A.M. Costa Rica Staff, 2008). Many visitors have come to Guanacaste to be greeted by foul-smelling waters high in nitrates and bacteria, and dirty beaches. Water pollution, along with other environmental issues (to be discussed), have on many occasions created a huge contrast between reality and tourist expectations based upon Guanacaste's international reputation of innumerable ecological resources and environmentally friendly ways.

2.52 Beach Pollution

In Guanacaste many of the most popular tourist beaches have been found to be polluted (often times riddled with rubbish), and their waters to contain high levels of bacteria. There is a lack of public sewage treatment systems in most coastal towns and cities to accommodate new and even existing needs. 69 of 89 beaches analyzed along Costa Rica's coasts in an Ecological Blue Flag study between 1996 and 2005 were found to be threatened by direct and indirect sources of pollution (A.M. Costa Rica Staff, 2008). In 2008, 59 beaches (out of hundreds) retained their blue flag certification while eight beaches lost them (Avalos, 2008), and in 2009, out of 81 applicants, only 61 beaches won the distinction, and just two obtained the maximum 5 stars (Diaz, 2010). Nowhere in Costa Rica is this phenomenon more prevalent that along Guanacaste's vast coastline.

There are several causes of pollution concentrated around Guanacaste's beaches that are directly related to the development of the region. Some of the hotels, residential developments, and commercial businesses in the region have been discharging their sewage directly into the ocean, or indirectly, with discharges into rivers and creeks, and many others lack adequate waste management systems. In many cases environmental feasibility studies were not performed at all. Trash is also being dumped into the oceans and current measures to prevent and reduce marine debris are inadequate. The increase in beach-goers from large scale tourism has also polluted the beach as many do not properly dispose of their trash such as cans, bottles, and cigarette butts. In 2007 1,315 pounds of trash were removed from just 3.7 miles of shoreline in Costa Rica (A.M. Costa Rica Staff, 2008).

Man-made materials, especially plastics, are intentionally and accidentally making their way into Guanacaste's coastal ecosystems and can cause significant harm to birds, fish, and marine mammals that ingest or become entangled in the debris. Marine debris, and beach pollution also poses a health and safety hazard to beachgoers and divers, and could impact coastal recreation and tourism revenue.

2.53 Solid Waste Management

As development continues in Guanacaste there has proven to be failing, and failed infrastructure in solid waste management. In Guanacaste there is not sufficient collection, transport, processing, recycling, disposal or monitoring of waste. According the **Instituto de Fomento y Apoyo Municipal**, the government municipal oversight agency Coastal municipalities in the province are in a state of crisis over disposal; of the 11 Guanacaste municipalities, only the 4 (tellingly, they are those with no coastal development) are in control of their solid waste situation (Rogers, 2007).

Since Guanacaste does not have ample landfill capacity, or other waste management resources to meet demand, trash pickup by the municipalities is limited mostly to the main towns, and most coastal areas are not served. Even the larger inland towns of Guanacaste such as Nicoya and Santa Cruz (see map of Guanacaste) do not have the resources to properly operate a large landfill and must regularly rent trash compactor trucks. Many towns and municipalities operate open, and in many cases condemned dumps far beyond their capacities that remain in use for lack of a better option (see below):

- *La Cruz*: 15 tons per day, Open dump, condemned
- *Liberia*: 40 tons per day, Dump closed, landfill program underway
- *Santa Cruz*: 35 tons per day, No operating site
- *Nicoya*: 30 tons per day, Open dump, condemned
- *Hojancha*: 15 tons per day, Controlled dump
- *Nandayure*: 10 tons per day Open dump, replacement project underway.
- *Carrillo*: 25 tons per day, Controlled dump, condemned (Rogers, 2007).

Many private waste pickup services have shot up in recent years resulting from the shortcomings of the public sector. In many instances, such private services do not have the institutional capacity and performance standards necessary for responsible management of solid wastes; combined with a poor (if even existent) monitoring environment, lackluster performance is common, and egregious violations are certainly not unheard of.

One such instance that attracted a great deal of media attention occurred when the citizens of El Gallo in Guanacaste documented up to 100 trucks a day arriving at a sewage plant in their town, carrying waste water from the four-star Hotel Occidental Allegro Papagayo. Citizens even went so far as to blockade the road to the dump site invoking a Sala IV (Costa Rica's highest judicial authority) resolution that ordered the Municipality of Liberia to redress the issue (Diaz, 2008). The hotel has been accused of, via a private contractor, shipping hundreds of trucks full of sewage to an under-equipped sewage plant in the town of El Gallo (Thompson, 2008). Allegedly, after the hotel contracted a company to remove the waste it did not ask where the sewage went. The sewage plants of El Gallo, located 6 miles north of Liberia, were only authorized to treat one truckload of sewage per day, and the procession overwhelmed the town creating an unbearable smell (A.M. Costa Rica Staff, 2008). Eventually the central government temporarily closed the hotel until adequate waste disposal systems were put in place.

Not only does this instance illustrate the lack of oversight of the waste management activities private sector, but also how the tourism industry and municipal authorities, which in this instance were those controlling the dumpsite, sometimes turn a blind eye in Guanacaste. The perpetual solid waste mismanagement in the region can be directly attributed to a severe lack of public sector funding, oversight, and support.

2.54 Land Use: Deforestation, Destruction of Wetlands, Landscape Alteration

Much of the development in Guanacaste has taken place near national parks, and the most attractive beaches. Great swaths of desirable land have been scooped up by developers, and in some instances not used in a sustainable fashion; negligence of environmental protections of wetlands and forests has occurred on many occasions. Some argue that Costa Rica does not benefit from large scale development because it puts undue pressure on the environment and causes extensive environmental upheaval necessary to clear the space.

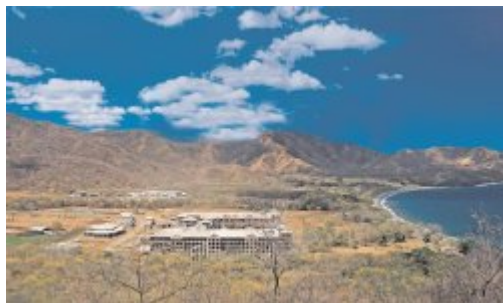
Much of the Guanacaste's recent development has been geared towards residential tourism; namely large condominium developments that can have an overbearing presence, and are often built for foreigners who wish to own a second home in Costa Rica, yet use is occasional. This practice generates few jobs beyond the construction stage, and such homes can become rental properties that compete with hotels (a consequence that was unanticipated by the CST).

Recent development in Guanacaste sits on prime coastal real estate where Costa Ricans traditionally have gathered. More and more often, landscapes are being dominated by large coastal developments that affect the natural

aesthetic of Guanacaste's beautiful coastline. Many locals reject Cancun-style development. Critics say at its best, it is distasteful, at its worst criminal.

The five star Hotel Riu located on the once virgin Playa Matapalo, 20 miles from the international airport in Liberia, Guanacaste is a perfect illustration of landscape alteration at its most invasive stage. The massive 701 room, 7 story hotels sits just 200 meters from the beach and dominates the landscape (AM Costa Rica Staff, 2009). Article 17 of the Environment Law of 1995 defines "landscape diversity" as a criterion for land use planning and "visual contamination" as actions, works, or facilities that exceed the acceptable limits established through current or future technical norms. Hotel Riu's seemed to show no consideration in their development plans that the area is predominantly of rural character.

Hotel Riu's presence is undeniable (see photo below):



In addition to Hotel Riu's questionable status in terms of visually contaminating the environment, the Spanish hotel has also been accused of building first, and obtaining permits second. There have also been various accusations of environmental infractions by community associations, members of the PAC, and environmental groups. The hotel said to have showed blatant disregard for principals of sustainable development and more specifically the regulatory plan of the **Ministry of Environment, Energy and Telecommunications (MINAET)** and Tempisque Conservation Area. A lawsuit by the Confraternidad Guanacaste, an environmental watch-dog group, claims the Riu is guilty of violating environmental laws in cutting down mangrove trees within the 50-meter public zone, replacing the wetlands with sand, filling drainage ditches, and damaging the nearby reef during the construction process (AM Costa Rica Staff, 2009).

2.6 Conclusions:

Guanacaste, the epicenter of tourism and real estate development in Costa Rica, must lead the Costa Rica through an environmental management policy that sets the standard for sustainable development. The rest of the world is watching, and the rest of the country will follow suit. Massive, unplanned, and poorly monitored development affects the long-term well being Guanacaste's people and environment. Problems such as inadequate water, sanitation,

zoning, drainage, solid waste disposal, recycling services, poor urban and industrial waste management, and beach, aesthetic, water and air pollution must be addressed (Estado De La Nacion, 2007).

The region must protect its most valuable resource, itself. The fast pace of development has placed undue environmental pressure on national parks, protected lands, rivers, oceans, beaches, and other natural resources. Tourism has become a vital source of income for the region; however it has rendered much of Guanacaste's already weak infrastructure semi-functional, or in a complete state of disrepair. Decentralization, excessive bureaucracy, and a lack of funding has resulted in an environmental policy comprised of both the private and public sector (both central and municipal) that lack the competence, training, funding, coordination, and are rife with corruption. Costa Rica's environmental policy has good scope in theory, but lacks enforcement. The Decree of Territorial Organization represented the first step in the right direction, and highlights that development can have many positive effects on the country.

1. A Way Forward, Recommendations:

3.1 Increase Funding of Environmental Management Initiatives:

In order to implement any of the environmental management recommendations that will be put forth in the following sections, a fundamental hurdle must be overcome, financing. Even with the will to improve its financial management strategy, Guanacaste must also have the way. It must improve its tax base, and institutional framework in order to finance and effectively make infrastructural improvements in the region, and enact programs geared towards sustainability.

3.11 Private Sector:

Despite local suspicions of privatization regarding what the government describes as 'public-private partnerships' (PPPs) around projects involving infrastructure such as water (see Sardinal), and roads, the private sector must make more 'contributions' (as an increase in corporate tax may hinder new investment) in the areas in which they operate, and profit. Public-private partnerships and other forms of cooperation between the private sector and governments at national and local levels are used frequently around the world in both developed, and developing countries to for expanding infrastructure such as energy, utility, telecommunications, transportation systems, construct and operate water, sewer, and waste treatment facilities (Rondinelli & Iacono, 1996). Guanacaste need not be an exception. The private sector benefits greatly from Guanacaste's green image, but does not contribute enough to its upkeep. If done so in a collective, organized manner, private funding (i.e. from developers, small business owners, and an array of other private beneficiaries) can contribute a great deal of capital to advance environmental management objectives.

3.12 Cruise ship tourism:

Cruise tourism accounts for 16% of tourist arrivals in Costa Rica and the industry generates heavy profits in Costa Rica, while retaining much of the tourism revenue (a widespread practice industry), and receiving large commissions on locally operated tourism activities (Durham, Honey, Vargas, 2010). Cruise ship tourism on the in Guanacaste generates little revenue, and makes up less than 1% of tourism revenue nationally. Passenger spending is very low; a 2005 CREST study showed that overnight visitors spend an average of 18 times more than cruise passengers in Costa Rica (Durham, Honey, Vargas, 2010). Passenger head tax, other taxes, docking fees and other port fees are less than half of the Caribbean average, and far less than cargo ships which are given less priority (Durham, Honey, Vargas, 2010).

Although few studies exist focusing on the cruise industry in Costa Rica, it is well known that it is growing. Given Guanacaste's firmly established international tourist friendly reputation, and the number of marina projects that are currently underway, Guanacaste should increase the associated taxes, and tourist revenues from its cruise tourism to at least Caribbean averages (which more than double those of Guanacaste) to help finance a stronger policy of environmental management.

3.13 Annual Real Estate Taxes:

So as not to compromise foreign investment, an increase *only* in the annual real estate tax should be implemented. There already exists sufficient sales tax of 1.5% property value, and various stamps that need to accompany the final title deed roughly are 1% of the recorded value. However, annual property tax payments are generally 0.25% of 0.55% of a property's appraised value, and in the near future municipalities, who are responsible for collecting the taxes, will be able to set their own rates as low as 1%.

Costa Rica's property tax policy shoots itself in the foot by empowering local municipalities that have exhibited poor collection rates, and by setting extremely low property tax rates (based upon a flawed ideology that a minimum tax will force the productive use and investment of assets). Property taxes played a very marginal role in the equity of the tax system. Even with the recent implementation of luxury home tax in which the rate increases from properties worth about \$172,000 (market value) to those over \$1,500,000,000 (0.30%-0.55% respectively) , rates remain extremely low (as does the level of public services) when compared to US standards of between 1% and 4% (Tax Foundation, 2010) .

The province should raise property tax rates to 1.5% (a level comparable Costa Rica's more developed Central American neighbors such as Panama and Belize). Additionally, Guanacaste should build efficient property tax enforcement via routinely updating and assessing property values (noting capital improvements etc.), and improving collection.

Tax revenue collected annually from real estate taxes and building permit fees (from mostly foreign sources), and personal and corporate income tax (as a result of increased employment) can solidify the tax base in Guanacaste and bring about much needed funding for environmental objectives that will secure the region's future.

3.2 Untangle the Web:

In order to enable a more streamlined, coordinated, standardized approach to environmental management, structural changes need to be made within the governing system of public and private sectors.

3.21 Improve Institutional Coordination and Collaboration:

Better communication and coordination is needed between the many different public and private sector organizations that carry out a wide variety of programs that touch upon environmental management (see 3.21 *A Tangled Web*). This will bolster and protect the country's most valuable natural assets for the development of tourism sustainably. Responsibilities within the many governmental initiatives, programs, and ministries must be drawn out in a clear and concise manner, and should not be overlapping. The many complex bureaucracies (made up of the organizational structure, procedures, protocols, and regulations in place) to manage the environment must be reformed to create a more efficient inter-institutional system.

Both top-down and bottom-up approaches need to be integrated to create regular channels of feedback and communication between the various governing bodies of the central government and municipal authorities.

3.22 Improve Legal Framework:

Internal shortcomings, inconsistencies between local and national policy, a lack of resources, and an underfunded regulatory system must be addressed. A situation of environmental management categorized by overlapping authorities, and reliance on poorly equipped, and informed municipal governments should be rectified.

Land use planning needs to ensure adequate infrastructure, and promote clean technology. The regulations, requisites, and responsibilities of land use in Guanacaste should be consolidated and standardized into a policy for the entire region, based upon the existing national laws for coastal development.

A better funded and highly integrated legal framework will also ensure better monitoring and enforcement. There is a dire need to evaluate and conduct environmental impact analysis of different sectors, and major players in the tourist industry. Once these institutional improvements have been accomplished, major infrastructural improvements can begin to take place.

3.3 Infrastructural Improvements:

New sources of funding, and a well coordinated governing body would enable the type of infrastructural improvements that Guanacaste desperately needs to make in order to tackle the array of environmental issues that threaten the region's future, and bolster the eco tourism industry.

3.31 Water Management:

A new system of water treatment, service, and protection of sources should be implemented to replace outdated and non-functioning septic systems, and waste treatment facilities, and protect reserves such as aquifers. Funding should be provided for the improvement of municipal wells and the water supply infrastructure. Costa Rica must investigate potential systems that channel the country's abundant supply of rainfall in order to meet the explosive water demands of the Guanacaste region.

3.32 Solid Waste Management:

Guanacaste's failing solid waste management system needs a complete upheaval through a large increase of funding, human capital resources, and oversight. Adequate waste collection, transport, processing, recycling, and disposal are a priority for the region. The construction of new landfills, and dump sites, monitoring existing dump sites, and closing of condemned dump sites should be orchestrated as soon as possible. Also, full time municipal staff should be employed to collect debris and other solid waste along roads, beaches, parks, and other public lands.

3.33 Transport Infrastructure:

Costa Rica's Ministry of Public Works and Transportation (MOPT) and its **National Highway Council (CONAVI)** must be funded in order to give them sufficient capacity and equipment to manage Costa Rica's 30,000 kilometers of roadway effectively, sustainably, and to an extent that roads are safe and tourist friendly places. MOPT in some cases, delegates the repair and maintenance of to local municipalities, but must begin to provide appropriate oversight also.

Roads, Bridges and Tunnels: There has been much controversy about the state of Costa Rica's ground transportation infrastructure. Everyday driving in Guanacaste is characterized by cars and trucks weaving along narrow roads, and often times in attempts to pass other vehicles, or avoid potholes, crossing into oncoming traffic lanes. A massive effort should be undertaken to repair and rebuild Guanacaste's tunnels, the often failing or completely washed out, one lane, and in some instances, unfinished bridges, and their pot hole riddled, mostly unpaved roads.

Also, the scope of the recent government effort to reactivate the railroads for city transportation must be expanded. The network of Costa Rican, owned and operated by private company Incofer, should be elaborated and made suitable for passenger use (especially geared towards tourists and commuters) to reduce air pollution and roadway congestion that in large part is a result of tourism development.

3.34 Increased Support for Protected Areas:

SINAC should be provided with more funding for the 32 national parks, 12 biological reserves, 13 forest reserves, and 51 wildlife refuges they manage. Financial support is needed in order to purchase and repair equipment, update tourist facilities to comply with environmental standards, train and hire more personnel, and respond to threats posed by illegal logging and pollution. Additionally CONAGEBIO, and other governing bodies of protected lands should coordinate with, and provide support for SINAC in order to ensure effective oversight.

3.35 Security Infrastructure:

Numerous municipal police officers should be trained and employed to improve the failing security situation (marked by petty crime such as theft, prostitution, and drug dealing). Decreased security in many coastal communities in Guanacaste is direct threat tourism revenue, and associated private sector funding for environmental initiatives.

3.4 Ecotourism: Roots Before Branches:

Last, however certainly not least, Guanacaste should make an effort to steer itself back to its ecotourism roots, and stray away from more environmentally damaging mass tourism development, and less lucrative cruise ship tourism.

Expand Width and Breadth of Eco-friendly Programs: An expansion of incentives and scope, for the eco-friendly CST and Blue Flag programs should be implemented. The CST program should be used in the planning, and construction stages of hotel and residential tourism. The government should also provide more incentives such as grants, financing, tax credits and exemptions to tourism oriented companies that comply with CST.

Environmental Education: A greater degree of organized efforts, through ecotourism, should be made to teach Guanacastecos and foreigners alike how natural environments function and, particularly, how they can manage their behavior to live sustainably, and efforts they can make to help the regions ecosystems. The aim should be to increase people's knowledge and awareness about environmental issues, teach them the necessary skills and expertise to address the challenges, and make informed decisions and take responsible action to help Guanacaste.

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