

1. Introduction

The Maya Mountain Marine Corridor is a biologically significant area of interconnected ecosystems deliberately created to encourage conservation strategies that stretches all the way from the mountain ridges to the sea bed. The Corridor extends from the Maya Mountains, down through forests, pine savannahs and mangroves to the ocean and reefs of the Gulf of Honduras providing a landscape full of life where human beings and nature interact in many ways.

The Toledo Institute for Development and Environment (TIDE) has been working on the long-term conservation and sustainability of this rich biodiversity since its foundation in 1997. The Institute campaigns to reduce the negative environmental effects of unsustainable natural resource use in the Maya Mountain Marine Corridor, including activities such as: hunting, fishing, indiscriminate logging and intensive farming.

TIDE created the “Freshwater Cup Environmental Football League” as a strategy to encourage sustainable development and increase recognition of the importance of community-led conservation. In this project an enormously popular sport is used as a vehicle to promote environmental education and mobilize the community through teams that involve adults, children, adolescents and entire families in a positive experience. The environmental topics discussed include: solid waste, waste water management and reforestation. All these activities help protect the environment of Punta Gorda - capital of the Toledo District of Belize and home to reserves such as: the Port Honduras Marine Reserve, Payne’s Creek National Park and the TIDE Private Protected Lands.

Five years into the Programme positive results can be seen: solid waste has been removed from beaches, streets and highways; the football teams have completed reforestation campaigns and, most importantly; local residents now state that they “have understood that conservation can be and is a more stable source of income than destruction and contamination,” meaning that the community is prepared take responsibility for protecting the area on the basis of their own convictions and not external impositions.

2. Environmental Context

The Maya Mountain Marine Corridor (MMMMC) forms part of the Mesoamerican Biological Corridor¹ and extends from the south of the Yucatan Peninsula in Mexico to north-eastern Guatemala covering an area of almost 5.4 million hectares. In Belize, MMMC covers about 295,000 hectares of land and 40,000 of sea, accounting for approximately 4% of Belizean territory.

Terrestrial Ecosystem

The Maya Mountain Marine Corridor is the world’s biggest area of tropical rainforest outside the Amazon and is one of the most biologically diverse systems, with more than 220 species of tree and 350 of birds. It provides a refuge for millions of birds migrating from the Northern hemisphere in the winter months. Other wild animals in the Corridor include the jaguar (*Panthera onca*), ocelot (*Leopardus pardales*) and Marguay cat (*Leopardos*), Baird’s tapir (*Tapirus bairdii*), Morelet’s crocodile

¹ This corridor extends from Mexico to Panama.

(*Crocodylus moreletii*), the scarlet Macaw (*Ara macao*) and the Antillean manatee (*Trichechus m. manatus*).

Aquatic Ecosystem

The Maya Mountain Marine Corridor includes an enormous coral reef - the second largest in the world after the Australian Great Barrier Reef - home to more than 500 species of fish and 60 types of coral. The reef provides a home for species including: the whale shark (*Rhincodon typus*), the marine turtle (*Chelonia mydas*), the manatee (*Trichechus manatus*) and the dolphin; all endangered due to rising water temperatures, pollution, overfishing and the destruction of their habitat. The coral reef, described by Charles Darwin in 1842 as "the greatest barrier in the East Indies," is being damaged by boats and anchors as well as rising temperatures and acidification.

Historic Causes of Ecosystem Deterioration

Terrestrial

Population pressure in the Maya Mountain Marine Corridor area has extended the agricultural frontier further into the forests causing deforestation and increased pressure from highways and dams. Meanwhile, the area has also become a development pole and a tourist attraction with a major influx of new workers, vehicles and visitors that all impact on the environmental stability of the Corridor. Solid waste management is now the main environmental challenge as the country produces 1.1 kg of waste per inhabitant per year – an annual total of 181,437 tons (Medlin, 2008).

Aquatic

Some species of fish will form a bait ball in certain areas of the ocean during a full moon and the local fishing communities exploit this behaviour by extracting large quantities of fish irrespective of size. This action has significantly reduced fish stocks and in some areas of Belize fishing yields have fallen from a ton a day in the 1970s to a mere handful of fish in the 1990s. Nature Conservancy, together with other national and international conservation organizations and local authorities, have identified some areas with large numbers of fish, establishing 13 protected zones where fishing is prohibited by Government order. This will allow fish to reproduce and slowly recover their numbers.²

Protection Initiatives

In 2001, the United States Government agreed to a "debt-for-nature" deal that would reduce Belize's debt with the United States and supply the resources needed to protect 9,300 hectares of the Maya Mountain Marine Corridor and 10 kilometres of Caribbean coast. Under this agreement, the United States Government provided nearly US\$ 5.5 million authorized by the Tropical Forests Conservation Act for Belize. This funding has been used to fund our organization - the Toledo Institute of Development and Environment (TIDE) - to buy 3,237 hectares of endangered forest and to support the management of 4,500 hectares of forests in the *Golden Stream Corridor*.

² <http://www.nature.org/wherewework/centralamerica/belize/work/art8602.html>

In 2004, Nature Conservancy created a tri-national forest protection plan with the Governments of Mexico, Belize and Guatemala working together with local organizations, landowners, regional Government, governmental agencies and the scientific community. The plan will approach the issues of land use management, forest fires, the monitoring of local species and sustainable tourism alternatives.

The National Protected Areas Policy and System Plan (NPAPSP) was launched in 2006 to establish and reinforce an administrative structure capable of implementing policies and to achieve a simple, functional and integrated national system for protected areas.

In 2008, TIDE and other conservation organizations³ prepared the Conservation Action Strategy for the Maya Mountain Marine Corridor, providing specific reference to this area within the framework of the National Plan. This document provides details of each of the 14 protected zones, the organizations that will lead these activities, and specific conservation objectives to protect the habitat of various species (see Table 1). These are the tools on which the country is reliant in order to conserve the environment and protected areas in a country that the FAO states has the highest national percentage of protected lands in Latin America (35%).

Table 1
Conservation Objectives

Terrestrial Ecosystems	Fresh Water Ecosystems
1. Mountain Forests	7. Fresh water systems
2. Broadleaf forest on the coastal plains	Species
3. Pine savannahs	8. Large marine vertebrates
Marine Ecosystems	Cultural
4. Coastal estuaries	9. Archaeological Sites
5. Seagrass beds	
6. Coral reefs	

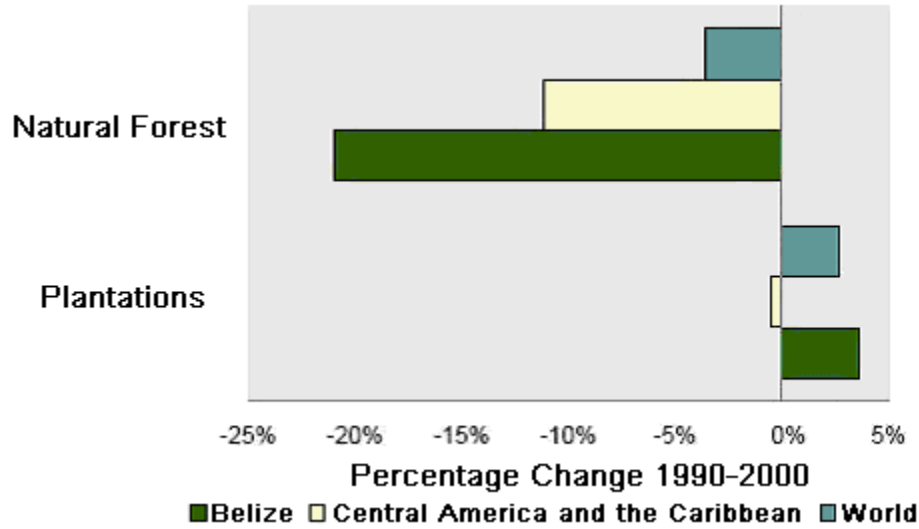
Belize still has a serious problem with deforestation. According to information from the World Resources Institute (see Figure 1), the native forests of Belize have been reduced by more than 20% between 1990 and 2000, against an average of 10% for Central America and less than 5% in the rest of the world.⁴ The rate of deforestation in Belize is double than that of Central America (2.3% versus 1.2% annually) and, should this tendency continue to the year 2020, forest cover will fall to 58%.⁵

³ Ya'axché Conservation Trust, Fisheries Department, Forestry Department, The Nature Conservancy, Fauna & Flora International

⁴ World Resources Institute, 2000.

⁵ Young, 2008.

Figure 1
Percentage of Change in the Forest Area by Type, 1990 -2000.



Source: World Resources Institute, 2000.

The major environmental challenges currently facing Belize are solid waste management, water quality and deforestation.

Current Causes of Ecosystem Degradation

The District of Toledo has the lowest population density in Belize. This area has significantly higher levels of total and extreme poverty than the national average (57.6% and 47.2% respectively⁶) and also has the highest proportion of rural population (81.4%⁷). The main economic activities of the area are agriculture, small-scale farming, fishing, hunting and, in recent years, some degree of tourism.⁸

Deforestation is partly caused by the hunting of the lucrative animal species of these forests. Many local animals have a high commercial value and local people can use them for barter or income generation. The land here is vast and covered in dense forest so the hunters start fires to help them surround and capture the animals. Large tracts of land are left destroyed as a result and usually no attempts are made at reforestation. In 2003, data from FAO stated that there were 44 endangered species including: 28 types of plant, 4 species of mammal, 2 of birds, 4 of reptiles and 6 fish.⁹

Another factor that threatened the Corridor ecosystem has been the recent discovery of large oil reserves in the area. In 2002, the Government authorized the Belize Natural Energy Limited (BNE), a private company, to start commercial oil exploitation¹⁰ and 17 companies have so far been granted licenses for oil extraction

⁶ Caribbean Development Bank, 2002

⁷ National Human Development Advisory Committee, 2002.

⁸ This ecosystem is a popular tourist attraction due to the great biodiversity of an area that holds the world's second largest coral reef, a great variety of animal species, vast tropical forests and a warm tropical climate.

⁹ FAO, 2003.

¹⁰ Belize Natural Energy Ltd, 2008.

in Belize.¹¹ Many of the oilfields are located in conservation areas, leading to clashes with local authorities and citizens.¹²

The area covered by the Freshwater Cup Project (the Toledo District) is dealing with serious problems of illegal fishing and difficult issues in the conservation and protection of the coral reef. The area is protected by clearly established procedures and laws against illegal fishing. There are policies in place for the protection of marine species and trained staff work locally. However, the rate of illegal and unlicensed fishing has not been reduced and restricted species and undersized fish continue to be overexploited.

This situation is not helped by precarious local waste management practices. The handling of both liquid and solid waste has many shortcomings including: a lack of resources, an absence of clear procedures for the treatment and elimination of waste, poor community education on good waste management practices, and; flaws in landfill management. A National Solid Waste Management Plan (NSWMP) was created in 2000 in order to pursue a solution to these problems.

Meanwhile, the Toledo District has experienced significant demographic change due in part to increasing numbers of coastal inhabitants¹³ and rising tourism, both of which have placed dangerous pressure on the ecosystem in the absence of adequate control systems.

3. Securing a Future for Children: Ecological Sustainability and Climate Change Mitigation

Environmental protection forms part of the basic rights of children as is stated in Principle 2 of the Declaration of the Rights of the Child¹⁴: “The child shall enjoy special protection, and shall be given opportunities and facilities, by law and other means, to enable him to develop physically, mentally, morally, spiritually and socially in a healthy and normal manner and in conditions of freedom and dignity”.

Environmental degradation and the impact on the climate will also have severe repercussions on advancement toward the Millennium Development Goals. This will affect not only Goal No. 7¹⁵ that refers specifically to the issue, but also those relating to health and education. As will be seen later, poor sanitation in schools can lead to illness and encourage school drop-out. Maternal and infant morbidity and mortality rates also continue to raise concern.

Children and Adolescents Vulnerable to Primary and Secondary Impacts of Environmental Degradation and Climate Change

Although children and adolescents do not cause climate change and environmental degradation in developing countries, it is the young people in rural areas who are hit particularly hard by the impact of droughts, floods and cyclones. All these disasters contribute to increased poverty, poverty-related disease and limitations on access to

¹¹ Febrero, 2009

¹² Young, 2008.

¹³ The University of Texas estimates the demographic growth rate at 2.39%. Merman, Jan, Dr. Jay Raney and Dr David Maidment, 2005

¹⁴ As proclaimed by the General Assembly in Resolution 1386 (XIV), of 20 November 1959

¹⁵ Ensure environmental sustainability.

education, consigning children to the intergenerational replication of poverty. According to the report "Face of Disaster: Children and Climate Change," half of all of the victims of natural disasters are young¹⁶ and most of the dead are children. Displacement and relocation in temporary housing following a natural disaster produces extreme situations of stress and distress and is especially dangerous when it exposes children to sexual harassment and abuse. A lack of drinking water and basic sanitation heightens the risk of diarrhoea and possible death in cases of poor nutrition.¹⁷ Elevated temperatures are another cause of infant mortality. A study carried out in São Paulo demonstrated that the death rate amongst children aged less than 15 years-old increases by 2.6% for each degree over 20°C and environmental authorities believe the current trend in greenhouse gas emissions will inevitably lead to a temperature increase of 1° or 2°C in coming years. Meanwhile, low levels of nutrition due to food shortages of any sort are widely known to have serious consequences and impacts on the physical development of children, sinking them further into poverty and inequality.¹⁸

Children and young people have been responsible for innumerable environmental protection initiatives. The United Nations Atlas of Student Action for the Planet reviews environmental protection experiences and projects undertaken by young children and adolescents. For example, students at one school decided on an ecological campaign to clean up their school and community, selling plants and using the money for conservation work in the green zones of the city. And as we shall see below, an important component of the Freshwater Cup Environmental Football League is that children and young people in the community are considered central actors in environmental protection and in encouraging adults in their community to participate.

Children and adolescents have traditionally been excluded from prevention programmes - a practise that increases the number of risks facing them and also fails to make the most of an excellent channel for communication and information on how to deal with these risks. It is important to remember the anecdote of the child who saved an entire community in the Indonesian tsunami of 2004. When he saw the way the sea had withdrawn he remembered from a lesson at school that this was the precursor of a tsunami and he told his neighbours to flee to the high ground. The Save the Children document "Child-led disaster risk reduction: a practical guide" recommends greater protection for children in any humanitarian situation. It also recognises the importance of disaster risk reduction education and ensuring that children take an active role in preparation and response. It strongly recommends that local communities and governments should consider children as active participants who contribute to community well-being and protection prior to a disaster and encourages governments to establish child-led disaster reduction programmes in the community.

Several organizations fully recognize the advantages of environmental work with children and adolescents and they promote environmental education amongst these groups, developing capacities and creating openings for real participation in the decisions that affect them. A clear example of this can be seen in UNICEF programmes that strengthen the knowledge and capacity for action of adolescents and children worldwide, making them into agents with true mobilisation capacity in

¹⁶ Save the Children (2008)

¹⁷ UNICEF (2008)

¹⁸ Bartlett (2008)

promoting environmental protection, water quality and nature conservation. The WASH¹⁹ programme, for example, operates in schools and empowers individuals to achieve a baseline for sanitation and hygiene - a determining element in the health and scholastic development of children. Poor sanitation in schools can impact negatively on child attendance rates and can even encourage drop-out. WASH activities include environmental and sanitation education programmes, promoting child participation in local, national and global environmental initiatives.

Another example of this type of work is provided by the "Children in a Changing Climate"²⁰ programme that works on the conviction that children and adolescents are the key agents for promoting change and that the best possible efforts should be made to provide them with opportunities for training, action and lobbying on climate-related issues. This organization and its constituent foundations encourage the participation of children and adolescents in the disaster prevention and climate change decision-making processes and also work toward improved training on the subject.

The United Nations Environment Programme (UNEP) has been working to develop youth initiatives through global and regional activities and networks since 1985 - International Youth Year. UNEP has held competitions and has drawn attention to the environment by inviting youth representatives to sessions of the Advisory Council and producing reports on local and global environmental issues. In 2003, UNEP Advisory Council approved production of "Tunza"²¹ a youth magazine to provide children and adolescents worldwide with information and tools that would enable them to "treat Mother Earth with Care" and act for a better world. Tunza aims to bring all the schools, children's organizations, children and adolescents working with UNEP together into a youth and environment network. The aim is to reinforce the ongoing activities such as: yearly international painting and writing competitions for children; information exchange through networks and e-groups; the formation of associations with schools and community organizations in order to establish more groups and extend the network; the creation of regional and national environmental youth networks and the formation of close working relationships with them. This initiative includes the active participation of other United Nations entities like the World Health Organization, UNICEF and UNESCO, private companies and non-governmental organizations such as the Scout Movement. One of the most significant achievements was the International Children's Conference for the Environment held in Malaysia in 2006, where 250 delegates (aged from 10 to 14 years old) from all over the world experienced plenary sessions, practical workshops on environmental issues and field trips. Each of the delegates signed an environmental contract with UNEP making a commitment to undertake concrete action in order to protect the environment and raise awareness of environmental issues and the United Nations "Tunza" strategy.

¹⁹ The Water and Sanitation for Health Project

²⁰ <http://www.childreninachangingclimate.org>

²¹ "TUNZA" means "to treat with care or affection" in Kiswahili (a sub-regional East African language).

The Importance of Education

Environmental education is on the curriculum of many State schools in the region, teaching children about the need for environmental sustainability on our planet and how they can contribute to this. Programmes that explicitly explore weaknesses in the environment allow children to develop specific and achievable actions to protect this. As a result, they become active promoters of recycling at home and they educate adults in waste management and protect water quality. Following this logic, the British non-governmental organization "Climate Choices" has developed a series of teaching materials, activities and games to help to teachers of 9 to 11 year-olds present students with the vast challenges of environmental change and teach them what they can do to reduce their personal impact.²²

School is also the perfect place for providing children and adolescents with training in disaster impact reduction strategies.

In the wake of the 2004 tsunami, Save the Children developed and implemented a disaster prevention programme that formed part of the curriculum in primary and secondary schools. This trained children in disaster prevention and response, informing them of various programmes and evacuation plans. This action ensures that children and adolescents are aware of the characteristics of their local environment and enables them to reduce exposure to risk for themselves, their families and communities.

There is no doubt that respect for children and adolescents as subjects with full rights provides enormous benefits for society as a whole. This process clearly involves child protection but also includes involvement and respect for young people as prime movers in environmental protection and the prevention and mitigation of natural disasters. It is precisely this attitude that underlies the "Freshwater Cup Environmental Football League."

4. The Project

History

The programme is operational in three protected areas: Port Honduras Marine Reserve, Payne's Creek National Park and the TIDE Private Protected Lands along the coast of the Maya Mountain Marine Corridor. The first of these was declared a natural reserve in 2000. It covers approximately 160 square miles and there are two towns within the reserve (Monkey River and Punta Negra) where the main economic activities consist of commercial fishing, fly fishing and tourism. Payne's Creek National Park was declared a nature reserve in 1994, becoming a national park in 1999. This park covers more than 38,000 acres, and the four Mayan archaeological sites discovered there provide great tourism opportunities. The TIDE Private Protected Lands are mainly located along the banks of the Rio Grande.

When these areas were granted natural reserve status local people were offered no help with adaptation or technical assistance, whereby they continued with their customary agricultural and fishing practices in ignorance of the environmental considerations inherent in reserve status. These inappropriate agricultural and fishing practices are combined with the endemic poverty of the area, low educational levels

²² For details: <http://www.climatechoices.org.uk/pages/activities0.htm>

and unceasing population increase (partly due to immigration from other Central American countries) severely hampering the adoption of more eco-friendly, sustainable lifestyles.

Against this backdrop, TIDE opted for a project model that would use the inexpensive and popular sport of football to mobilise entire populations, thus using sport as a vehicle to increase and consolidate environmental awareness. The football league and championship tournament have been used to develop educational and environmental awareness programmes. They have taught local people how to save resources, use sustainable fishing and forestry techniques and understand the rules and regulations in place to protect the area and the endangered species. Moreover, any team wishing to register for the football tournament must first design and execute an environmental project fitted to the physical and economic capacities of their home area.

Given the shortage of leisure activities and the overall poverty of the local area, the programme also acts as a sound source of entertainment that contributes toward a healthy lifestyle for adolescents and children.

Before undertaking the programme, TIDE studied the participation potential of various communities, also considering other basic elements that would allow the programme to operate adequately. These factors included estimated numbers of teams, community leader commitment to supporting the teams and the implementation of environmental projects. TIDE also looked into the potential impact of developing environmental awareness, possible outcomes for environmental conservation and how the sport might impact on community health and well-being.

Objective

The objective of the “Freshwater Cup Environmental Football League” programme is to develop greater awareness and commitment to the ecosystem amongst citizens of the District of Toledo in Belize, stressing the importance of local species and their conservation. It uses sport as an incentive and driving force for change, impacting on both the players and the entire community.

Goals

The programme goals are to:

1. Generate a greater awareness of the importance of conservation and the sustainable use of natural resources amongst the local population.
2. Directly involve local people in resource planning and management, thereby creating a feeling of belonging with the land.
3. Instil pride in local communities, forming connections between the ecosystem, victories in the competition and successes in the ongoing environmental projects.
4. Improve general health and well-being throughout the District.
5. Participate in improving present and future quality of life for young people, discouraging the use of drugs or the formation of gangs and rewarding those who participate with contributions to cover educational costs for the less well off.

Activities

The potential success of the programme quickly became clear in the high levels of participation and support provided by community members and leaders. The next

step was to spread news of the competition through local leaders and schools and get the teams organized, publicising the conditions required for participation and providing details of the help that would be provided.

Team members must all come from the same community and must have an ongoing environmental project that has been designed, discussed and approved by all members of the team in response to a need within the community. TIDE support is provided to complete the project design and execution.

In the first few years, the initial teams consisted of all-male adult members due more to budget restrictions than a disregard for the importance of the younger generations. This decision was partly made on the basis that adult males - as the main producers, hunters and fishers - are the prime agents of sustainable change within the community. Nonetheless, these games were used to involve the whole community from the outset. This inclusion came partly from attending the matches as supporters, but also from the training sessions offered in support of the team's environmental projects. Junior teams have been formed since 2007, and women's teams were brought into the game in 2008. The youth teams also have to run environmental projects in their school or community, according to their individual capacity – for instance, seven teams of 10-12 year olds have implemented waste management and cleaning projects in their homes, schools and even on the football fields themselves.

Public response to the programme has been more than enthusiastic, in fact the number of teams wishing to register exceeded TIDE capacity to cover the costs of team strips, football field rental, referee fees and the technical help needed to run the environmental projects. At present TIDE can only accept up to ten teams. Once registration has taken place the competition is arranged and the whole community is drawn into the action.

The Environmental Projects

As mentioned above, all participating teams must formulate an ongoing environmental project. The project must have been previously discussed by team members in response to a community need, thereby ensuring that the whole community and not just the team will participate in execution of the programme. This ultimately leads to improved care and maintenance of the Maya Mountain Marine Corridor watersheds.

Once the team has decided on its environmental project, TIDE officials are available to revise and supervise implementation. There is an enormous variety of projects. TIDE Executive Director Celia Mahung, has listed: the cleaning of illegal tips, beaches and rivers; tree planting; poster design for highways and coastal areas highlighting environmental awareness and the harmful effects of careless waste disposal, and; artistic presentations of various sorts in elementary schools or community meetings on the wealth of the surrounding environment and the importance of protecting this for present and future generations.

When a team is short of the time and money needed to complete their project, they can request assistance from TIDE coordinators who will work with them to help reschedule project tasks in order to meet the given deadline, provide technical assistance and obtain donations of materials where necessary.

Each environmental project involves the players, their family and friends, which leads to greater participation and awareness within the community. Once the projects have been concluded, TIDE evaluates them all and awards prizes to the three best projects. All teams have the right to participate in the football championship regardless of where they come in the environmental projects.

In many cases the environmental projects transcend the football championship. One good example of this is Bella Vista Village - a team that has participated in the championship five times and continues to work on solid waste treatment in the community. In 2008, they opened a sanitary landfill outside the residential area, reducing the previous negative impact of insects and disease on community health. The team had to use their own mechanical skills to repair a tractor in order to build the new landfill site.

Other examples can be seen in the communities of Jacintoville and Elridge, two neighbouring towns alongside the Jacinto Creek that flows into the Port Honduras Marine Reserve. Both teams have participated since the programme began and both have won the environmental project competition on several occasions with projects that are still running today. These projects include: educational environmental awareness programmes in the area's elementary schools; environmental awareness highway signs and coastal posters; and various fundraising activities to improve the appearance of their community.

Sporting Activities

Since the programme began in 2005, the championship has taken place annually from January to June. The adult teams play on Sunday afternoons and the junior teams play during the week. Each team must register the names of their team members and details of their prospective environmental project, paying a registration fee that is returned once the championship is over and their environmental project has been successfully implemented. At present there are two leagues to the championship: adults and juniors, divided into two geographical groups: the North Maya and South Maya mountains.

In the first year all games were held at home by one of the participating community teams alternating with each game. It soon became clear that the small size of these communities and the low number of supporters severely limited environmental outreach into society. Also, given the local terrain and the poor condition of roads, transportation within the Toledo District was difficult. Hence, in the second year of the programme all the games were held in the District capital, Punta Gorda, making transportation of the teams and supporters much simpler. This change of location provided an added incentive to participation in the championship as a player or spectator, giving everyone an opportunity to visit the city.

The games are refereed by professionals in accordance with FIFA rules - an aspect that provides the championship with the degree of gravitas it deserves. Each of the games is used by TIDE to promote environmental awareness, discuss the advances made in each environmental project and the challenges each team might face, ultimately becoming an event where individuals can discuss their experiences and exchange ideas while maintaining the interest of a group of people from different communities, including supporters, family and friends. This has provided the community with new recreational activity, supporting a healthy family lifestyle and operating as a mainstay for improved environmental awareness and knowledge of

sustainable resource use. The games are also used to generate income by some families who sell food and refreshments to the crowd.

Efficiency and Effectiveness: Accomplishments, Funding and Costs

- Accomplishments

In its four years of operation, the programme has brought over one hundred football players, their families and communities together in leisure activities and environmental programmes that have raised environmental awareness and improved local surroundings. The junior league has greatly promoted healthy lifestyles and the strong link with environmental projects has increased community interest in sport and care for the environment. The seed of long-term environmental awareness has also been planted in the children who will grow to farm and fish in accordance with the environmentally-friendly attitudes they have internalised, applying them in the future in both their home and work lives.

The thousands of local residents who turned out to support their home teams have been provided with information on environmental conservation and are now aware of the potential for environmental harm inherent in their daily activities and actions. As a result they can implement changes that ensure conservation whilst maintaining sufficient production in order to generate an income.

The programme has very successfully led to the elimination of most of the waste found on beaches, highways and along the coast. It has also contributed to better maintenance and conservation of the mangroves.²³ Similarly, groups of volunteers have formed within communities to defend local areas and to stop the unsustainable resource use that is so damaging to the environment; they protect and improve their communities and implement strategies to show tourists how to keep the coastal areas clean. The environmentally-friendly outlook persists far beyond the football season, reaching deep into the daily life of the communities.

Residents throughout the district today are proud of their local environment and are willing to invest in its maintenance. For example, the Emery Grove community — winners of the environmental project competition and third in the championship in 2007 — has continued with both football training (in order to win the championship) and efforts to clean up the community. Emery Grove is now renowned for its clean environment and has become a role model for other communities.

The following are perhaps the most important environmental achievements in terms of full community participation and the leading role of children and adolescents as the driving force in the community:

- Litter collection in six communities, covering parks, rivers, highways and beaches.
- Tree planting in five communities for reforestation and aesthetic improvement as well as the prevention of erosion.
- Educational campaigns on environmental protection in five communities, including the design and erection of billboards on environmental themes,

²³ Mangroves are ecosystems of salt-resistant trees that can be found in the river-ocean transition zones of river estuaries along the tropical coastlines of the planet.

lessons in school and meetings to discuss environmental issues with various communities.

- The launch of two eco-tourism programmes in two communities, including path building and the erection of environmentally-friendly billboards.
- The founding of the Environmental Club led by mothers of the Jacintoville community.
- The elimination of illegal tips and the opening of a new, organized tip in accordance with environmental waste management standards within the communities of Jacintoville and Bella Vista.
- The location of refuse cans in all ten communities, painted and decorated by members of the community — mainly students.
- The Belize Army football team accompanies TIDE forest rangers on regular patrols.
- And perhaps the most important element is that there are now over 10,000 people in these communities who make a living from the natural resources of the Maritime Maya Mountain Corridor within a production model that protects the environment whilst ensuring a level of income sufficient to ensure their dignity.

The most far-reaching outcome regularly quoted by community members, is that barely four years ago no one cared if there was rubbish everywhere, but the championship has changed everything for the better. Today each and every member of these communities is committed to the cleanliness and appearance of their local area, something of which they are very proud. According to the local communities, this change is entirely due to the environmental awareness programmes and their capacity to inculcate the understanding that conservation provides a more stable and secure source of income than environmental devastation and contamination.

- Funding and Costs

TIDE received financial and technical support for this programme from various sources including: international organizations, private companies, the public sector, individual donors and even the communities themselves - providing the manual labour for various activities and materials for the championship and environmental projects (see Table 2). Funding for the initial launch of the programme was provided by the regional Mesoamerican Barrier Reef System, with the support of the World Bank and the Global Environment Fund (GEF). The Coca-Cola Foundation was the second biggest sponsor, making a commitment to provide further resources in order for the programme to continue. Then came TIDE itself, providing the resources required to keep the programme going, contributing approximately US\$ 10,000 so far and covering the salaries of Institution staff offering advice and support. TIDE technical support includes the organization and coordination of the football championship which forms the basis of the success of a programme that has made massive inroads in terms of developing environmental awareness. Lastly, it is important to highlight the participation of the “Program for Conservation of Protected Areas by the Belizean Financing Agency”

The total cost of the programme in 2008, including operation and administrative costs, was BZ\$ 53,587 (equivalent to US\$ 26,794) (see Table 3). Some 55% of these costs (excluding the contributions of the teams, their families and communities) are related to environmental activities, covering elements ranging from initial and follow up visits to awards for environmental projects. The largest

percentage of costs linked to sporting activities corresponded to transportation costs, due largely to the poor condition of local roads and the occasional need to hire boats.

**Table 2
Funding**

Source of Funding:	Total value of funds (in BZ\$) since the project began
World Bank/GEF: Mesoamerican Barrier Reef System	21,200
Coca-Cola Foundation (Atlanta)	20,000
Protected Areas Conservation Trust (Belizean Finance Agency)	10,000
Football championship ticket sales	11, 000
Individual donors	7,000
Scotia Bank (Toledo Office)	200
TIDE	20,000
Participant communities	3,000
Total:	91, 500

Source: Programme organizers, application document (2007)

Challenges and Solutions in Programme Implementation

One of the biggest difficulties faced by the programme is the shortage of time available, especially amongst adults within the communities. The men are responsible for the land and animals while the women have all the domestic tasks to attend to. Consequently, each individual within the community is allowed to provide whatever is within their capacity, and those with more available spare time make up for the shortfall of others when implementing the environmental programmes. This programme has been resoundingly effective and has elicited a high level of community commitment as local people have recognized the benefits of both its recreational and environmental aspects.

Meanwhile, the time commitments of several members of the community meant that the football season was conflicting with time available for environmental projects. In response to this problem, TIDE staff agreed with community representatives that environmental projects should take place before the football season in order for the whole community to spend their weekends on the environmental projects without having to miss a football match. Thus, the environmental project has now become a prerequisite to team registration and all environmental projects must be concluded prior to the football season.

Another problem has been the high cost of transportation for teams and supporters. In order to reduce transportation costs the tournament will be now be divided into two geographical areas: the South Maya Mountain and North Maya Mountain, with a final held between the two winning teams in Punta Gorda.

However, it is important to point out that not even these difficulties were enough to prevent the environmental projects or matches going ahead.

**Table 3
Costs for 2008**

Description of Costs	In BZ\$
Fresh Water Cup 2008 – Adult League	
Championship administration	3,000
Pitch hire and preparation	2,380
Support for environmental projects	5,000
Monitoring and evaluation of projects	3,500
Equipment and supplies for projects	4,000
Security (football season)	1,200
Security for championship	225
Match officials and championship statistics	300
Match officials and championship (football season)	4,000
Transportation (pre-season team visits)	900
Matches	300
General meetings	300
Team prizes	880
Championship trophies	500
Shirts for players	1,760
Championship trophy	400
Trophy for environmental project	300
Other football championship trophies	3,000
Other environmental project trophies	2,100
Footballs	480
Promotion	1,400
Reports on national radio	1,050
Football championship posters	500
Contingency – 10% for emergency/unexpected costs	3,747
TOTAL Fresh Water Cup 2008 – Adult League	41,222
Fresh Water Cup 2008 - Junior League	
Team trophies (1 st , 2 nd , 3 rd place) + championship trophy	1,500
Prizes for winning team (First Place), school registration fee and equipment/trophies	2,400
(Second Place Prize) School registration fee and school equipment	800
(Third Place Prize) School equipment	400
School uniform/football shirts	1,440
Transportation (pre-season)	1,000
Materials for environmental projects	2,000
Promotion	1,000
Games/school meetings	300
Footballs	400
Contingency – 10%	1,124
TOTAL Fresh Water Cup 2008 - Junior League	12,364
TOTAL Fresh Water Cup 2008 - Adult and Junior Leagues	53,587

Source: Programme Organizers, Additional Information Form (2008)

5. What makes this Programme so Innovative?

This programme has been able to use a traditional sport as a catalyst for the development of in-depth environmental awareness, providing each community with the capacity to design, execute and maintain stable and sustainable environmental projects. This model has also inculcated a sense of environmental responsibility in terms of caring for the environment in all members of the community, increasing their respect for and pride in their local area, regardless of age, gender, or ethnic origin. At the same time the programme promotes healthy exercise and provides an opening for recreational activities that were previously rare or unheard of in these poor, remote areas.

The main virtue of the programme is the combination of its simplicity, the profound impact it makes upon society and the relatively low cost — even given the problems in communication and transportation. This programme model could also be replicated in urban areas with better transport links, in other remote areas of the country or even using another sport as a catalyst.

The great popularity of football is transferred onto care for the environment, developing awareness of sustainability and actions that can help protect local surroundings. With just this one activity - a football championship - the programme is able to mobilize and involve the entire community. The football players become the stars of the championship, their families accompany and support them both in the games and in preparing and implementing their environmental projects, and their communities back them in the hope that their team will become the champions and win the environmental project competition.

6. Lessons Learned

- Activities undertaken within reserves, protected areas, or natural parks, cannot overlook the resident population and development models devised must allow for income generation and better standards of living for residents.
- Community involvement is essential in preservation of the environment and providing solutions to all the problems faced in attempts to protect these areas, even after these have been declared reserves or protected areas.
- The aforementioned must include methodologies where residents play an active role in conservation, in spreading environmental awareness, in the definition of environmental regulations and the fulfilment of these. This requires extensive support from government authorities.
- The development of environmental awareness must go beyond lectures on the issue and must be generated through concrete examples of the inherent benefits of environmental conservation for each and every member of the community.
- It is enormously important that this environmental awareness should encompass all inhabitants, including the adolescents and children, within the community, making them aware of the shared responsibility of each and every person in conserving the environment. There is absolutely no better way to disseminate an idea than by allowing children and adolescents to 'teach' their parents behaviours that will be absorbed into the daily routines.
- Community traditions must be used to help develop environmental awareness; the more well-known, attractive and entertaining these are to community members, the easier it will be to involve the whole community. In

- this particular case football was used, but any other sport or hobby could be used as long as it is broadly recognised and appreciated throughout the community.
- These types of activities always have better cost-benefit outcome than traditional models such as conferences or talks.
 - The active participation of governmental or non-governmental institutions is indispensable in the execution of this type of programme. These entities can organize the various activities, providing support for sport-related issues, or advice on technical matters or for the environmental projects.

7. Conditions and Recommendations for Replication

This programme is easy to replicate in any country of the region, or even any part of the world, as the starting point is simply a sport or any activity that can generate sufficient interest and involve the entire community. This programme can work equally well on issues such as care for the environment, health and hygiene or quality of education.

The support of an organization — either public or private — is essential during the implementation phase, providing coordination for the activity and guiding it toward a predefined end (conservation and respect for the environment in this case) in order to avoid the emphasis being placed exclusively on the sporting event. The given institution must fully understand the objectives of the programme and the role of the activities as a means by which to accomplish these objectives.

Another enormously important aspect that must be borne in mind is the actual capacity of each community to undertake the prescribed activities. Care must be taken to consider their ethnic and socioeconomic composition, only promoting actions fitted to their capacities and working against any form of discrimination in order to guarantee success.

The public authorities responsible must provide broad support for the actions undertaken by the community, especially in terms of fulfilling the necessary regulations. Very little long-term change can occur if the authorities do not ensure that sanctions are imposed when those responsible fail to undertake the necessary acts of conservation. For example, if residents establish a water cleaning system, but if such a thing is not mandatory for foreign investors such as tourism operators, then the impact will be greatly reduced and communities may even abandon their projects.

It is absolutely essential that each community should clearly identify and experience the advantages of caring for the environment showing them the benefits inherent in conservation and how this can guarantee improved standards of living for members of the community.

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