

International Essay Competition 2009

www.essaycompetition.org



DRAFT Summary and Winning Essays



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PART I: Description of the International Essay Competition

1. About the International Essay Competition

Young people are not only the future, they are also the **now**. In 2007, the number of people worldwide aged 12-24 reached 1.3 billion, the largest in history. Nearly half the people of the world today are under 25 years old. Nine out of ten of these young people live in developing countries. More importantly, the **majority of the developing world's poor are children and youth**.

Consultations and research work with youths have demonstrated that they can make a difference in fighting poverty through **their actions and advocacy activities in youth organizations**. Youths are key agents of change, but too often the nature and impact of their projects are not recognized or documented sufficiently, and youth face difficulties being heard and engaging more directly in civic life.

In order to learn how youth can make a difference in reducing poverty, the World Bank launched the **International Essay Competition**. The Essay Competition is an annual, worldwide competition targeting youth aged between 18 to 25 years and managed by the World Bank Office in Paris. The competition is designed and implemented in partnership with Country Offices of the World Bank and Public Information Centers (PIC) in 84 countries, as well as partners representing universities, NGOs and youth organizations all over the world.

In 2009, the Essay Competition for the first time included multimedia formats: **photos and short videos**.

Previous editions of the International Essay Competition, from left to right: 2004, 2005, 2006, 2007 and 2008:





2. Facts and Figures

The Essay Competition 2009 was launched on January 6, 2009. It invited young people from all over the world to reflect on:

How does climate change affect you?

How can you tackle climate change through youth-led solutions?

As result of a communication campaign in more than 100 countries, **2,469 young people from 150 countries submitted their essays**. 95% of the essays came from developing countries.

Essays were submitted in English, French and Spanish.

- 57,000 unique monthly visitors on the website www.essaycompetition.org
- 2,469 submissions from 150 countries
- 95% from developing countries

3. Essay Competition Partners

The Essay Competition 2009 was organized by the World Bank, in partnership with 10 prominent academic and civil society organizations.

The 2009 Essay Competition is funded by the **Norwegian Ministry of Foreign Affairs** (core funding), the **Korean Ministry of Strategy and Finance** (awards for best essays) and the **World Bank** (awards for best photos and videos).



- ❖ [World Bank](#)
- ❖ [Ministry of Foreign Affairs](#) of Norway
- ❖ [Ministry of Strategy and Finance of Korea](#)
- ❖ [Cairo University, Egypt](#)
- ❖ [Jadavpur University, India](#)
- ❖ [National Autonomous University of Mexico](#)
- ❖ [Conciencia Argentina](#)
- ❖ [The Glocal Forum](#)
- ❖ [AEGEE Europe](#)
- ❖ [AIESEC International](#)
- ❖ [Junior Achievement Worldwide](#)
- ❖ [Africa Leadership Forum](#)
- ❖ [Researchers Alliance for Development \(RAD\)](#)

ESSAY COMPETITION CALENDAR

January 6	Launch of the Essay Competition 2009
February 22	Deadline for the submission of essays
April 30	Finalists announced
June 22	Finalists present to Jury in Seoul, South Korea
June 22	Juries meet to discuss presentations
June 23	Winners announced
June 24	Award Ceremony



Finalists present their essays to the Jury



Finalists after the Final Jury

4. Review Process

In March 2009, submissions were blind-reviewed by the Essay Competition partners (reviewers), in a three-round reviewing process that helped identify finalists of the essay category, as well as winners in the photo and video categories.

Authors of the eight best essays were invited to present their work to the Jury during the Annual Bank Conference on Development Economics (ABCDE) in Seoul, South Korea, on June 22, 2009.

During the Final Jury, each of the eight finalists had 10 minutes to present his or her paper, followed by a Question and Answer session with the Jury and other finalists. After the presentations, the Jury discussed the presentations and announced the winners.

FINALISTS AND WINNERS

Essay Winners

First : Sophie Bathurst, Australia
“Blueprint for green schools”

Second : Guillermo Recio Guajardo, Mexico
“The repercussions of climate change on the indigenous Raramuri people: local actions, global benefits”

Third: Kwasi Gyeabour, Ghana
“Greening the Ghanaian Youth”

Essay Finalists

Jean-Paul Brice Affana, Cameroon
‘Eco-citizenship: a practical solution in the fight against climate change’

Miguel Antonio Garcia, Philippines
“Stepping Up to the Challenge: The Cebuano Youth in the Climate Change Crisis

Sonali Punhani, India
‘Go Green’-The New Mantra

Sunviana Sunaryo Suni, Indonesia
“Climate Change – An Explosive Long Bill the Earth’s Generations Must Pay”

Israel Castillo Olivera, Mexico
“Climate change – a challenge for Humanity”

Photo winners

First: Rudolf Bastian Tampubolon, Indonesia
“A little girl and hope”

Second: Ty Rithya, Cambodia/ Korea
“Youth and green purpose”

Third: Jernalyn Gayon, Philippines
Institutionalizing the "Green Movement"

Video winners (watch their videos on www.essaycompetition.org)

First: Cahyadi Widiyanto, Indonesia

Second: Saptarshi Pal, India (winner of the Essay Competition 2008)

Third: Victor Marco Emmanuel Ferriols, Philippines

Awards:

Essay

Awards:

- Eight finalists participated in the Final Jury in Seoul, South Korea, in June 2009, and attended the Annual Bank Conference on Development Economics (ABCDE)
- Money awards:
 - 1st prize: 3,000 USD
 - 2nd prize: 2,000 USD
 - 3rd prize: 1,000 USD

Video

Awards:

- Author of the winning video was invited for a screening at the occasion of the Annual Bank Conference on Development Economics (ABCDE), held in Seoul, South Korea, in June 2009.
- Money awards:
 - 1st prize: 2,000 USD
 - 2nd prize: 1,000 USD
 - 3rd prize: 500 USD

Photo

- Money awards:
 - 1st prize: 500 USD

- 2nd prize: 300 USD
- 3rd prize: 200 USD

5. Essay Competition 2009 Award Ceremony

The winners received their awards during the Award Ceremony on June 24, chaired by Cyril Muller, World Bank's Special Representative to Europe. Diplomas were awarded by **Justin Lin**, World Bank Chief Economist and Senior Vice President; **Young Geol Lee**, Vice Minister of Strategy and Finance of Korea; **Didrik Tonseth**, Ambassador of Norway in Korea, and **Oh-Seok Hyun**, President, Korea Development Institute. More than 400 people from all over the world attended the Ceremony.



Winners, finalists and Juries during the Award Ceremony in Seoul, South Korea



First prize winner Sophie Bathurst from Australia receives her diploma from World Bank Chief Economist Justin Lin



Second prize winner Guillermo Recio from Mexico with World Bank Chief Economist Justin Lin



Third prize winner Kwasi Gyeabour from Ghana delivers a speech in front of the ABCDE conference audience



First prize winner for best video Cahyadi Widiyanto from Indonesia shakes hands with Young Geol Lee, Vice Minister for Strategy and Finance of Korea

PART II: Analysis of the essays submitted for the Essay Competition 2009

Participants of the Essay Competition 2009 were asked to respond to the following questions:

How does climate change affect you?

How can you tackle climate change through youth-led solutions?

The following summary comes from a close analysis of essays submitted to the Essay Competition 2009, prepared from observations collected by members of the Jury.

1. Young people speak about the effect of climate change on their lives

Participants of the Essay Competition 2009 recognize that climate change affects their daily lives and the lives of their co-citizens, and it will continue to affect them in the future.

In young people's experience, climate change has an effect on:

- Human health: for example, the spread of malaria and dengue fever
- Biodiversity: loss of plant and animal habitats
- Food and water security: effect of droughts and flooding on agricultural, horticultural and aqua-cultural productivity, bringing about the risk of malnutrition and hunger
- Human security: conflict over water and food supplies, extreme weather conditions (flooding, hurricanes) destroying households
- Livelihoods: effect on tourism, migration patterns and workers employed in the agricultural and fisheries sector

Young authors anticipate the threat of climate change to grow in importance in the future, with decreased food supply and hunger in many parts of the world, less tourism, growing unemployment, more people falling back into poverty and ill health. Some coastal areas will be flooded and will cease to exist, while their inhabitants will become displaced.

2. Young people propose solutions to tackle climate change

Participants of the International Essay Competition 2009 see climate change as a common problem of all citizens of the world and call for common solutions. They advocate for a ‘think global, act local’ approach to address the issue of global warming. While industrialized countries are seen as major culprits behind climate change, youth recognize that everyone, rich and poor, must contribute to the solution.

On a collective level, authors propose that youth organize themselves to lobby decision-makers and to raise environmental awareness among their fellow citizens. Environmental clubs at schools, universities and community centers are a commonly proposed way of starting awareness-raising projects. Youth see themselves as powerful agents of change, educated, engaged and enthusiastic, and offer to spread knowledge of climate change in their communities. Many suggest harnessing technology: the Internet and social networking tools, to spread the message. On a more concrete level, participants propose using environmental clubs to organize community actions, such as tree planting initiatives.

On an individual level, youth call for environment-friendly gestures in everyone’s daily lives, starting with themselves. Contestants commit to using public transportation or adopting the practice of car sharing, saving water and energy in the household as well as reducing, reusing and recycling waste.

Many participants see the green economy as a potential solution to the problem of poverty and climate change at the same time and put forward ideas of youth-led start-up enterprises working in the area of clean energy and recycling.

Contestants quote Mahatma Ghandi, Al Gore, Barack Obama and the work of the Intergovernmental Panel on Climate Change as their source of inspiration.

3. Personal accounts

My relatives have been narrating stories about a family whose house was washed and cut into symmetric half by the aggressive giant. If the scene continues to be the same then sooner or later my home would be gone as well because last year the flood hit a house which is only a kilometer or two away from mine. And sooner or later glaciers would be gone and Indus would dry resulting in evaporation of our community and wildlife from the Himalayan region. (India)

The Sahara desert's move towards the West African coastline is accelerated, unarguably by climate change. It is particularly worrying that an estimated 35% of Ghana is experiencing desertification. Desertification is a recipe for disaster because its dire consequences are numerous. Primarily, desertification is the chief promoter of food insecurity. Desertification made most of northern Ghana agriculturally useless, leading to food and agriculture crisis. (Ghana)

Waves and floods hit Cebu province last January 2009. More than a thousand residents in Cebu's coastal areas were displaced by the waves and strong winds. In one southern town, 50 houses were damaged in five coastal barangays while 56 families in a neighboring town had to evacuate. Another nearby town had 156 individuals displaced. (Philippines)

The 2006 farming season is one which residents of Benue state will not forget in haste. Agricultural yield in the state was cut by yearly 30% due to unprecedented irregularities in weather events. After the first rains in March, farmers began ploughing their fields in preparation for the rains in May as is the norm; crops cultivated are those that require average level of irrigation. To the shock of the farmers and everyone, the rains did not come in May, and when it eventually came in June, it came in torrents, flooding vast farmlands and destroying villages. (Nigeria)

Together with my region's IX national youth parliament alumni, we have decided to lobby the resolution proposing the implementation of the "Luntiung Araw" or "Green Day" every 1st Sunday of the month. This proposal targets our National Service Training Program in our college curriculum since it is held during Sundays, to inculcate the advocacy to protect the environment and strengthen it. The proposal encourages the

Program to adopt an area on which tree planting and information dissemination are needed. (Philippines)

Happy Green New Year 2009 was the theme of our green activity in the beginning of 2009. We had two things to do in that campaign. First: we prepared 209 pots of varying green plants which would be distributed to houses in our living area that did not have any plants in it. On the plants' leaves we hang one laminated paper that had a message: I and you can save the Earth. Second: we shared 500 pins to teenagers in three malls. The pins had varying messages related to the green actions YDG offered to prevent the further impacts of global warming on it. Some examples of those messages are: REDUCE drafts in your home, use more EFFICIENT light bulbs, etc. (Indonesia)

“The core idea behind ecOlympics is to establish sponsored annual local competitions that involve fuel poor households, with the intention to select and reward *Efficiency Champions*, and to enable and empower them to prevent the fuel poverty trap themselves. (Germany)

4. Quotes

Finalists and winners

"If...we think long-term and embrace the challenge, climate change could present an opportunity for the establishment of an energy sector based on renewable and clean fuels, the development of world-class research centers and the implementation of a globally recognized education program in sustainability." (**Sophie Bathurst, Australia, winner of the first prize**)

"Many of the best ideas come from young minds; the global youth is, and must be, the builder of a new society." (**Guillermo Recio, Mexico, winner of the second prize**)

"Our choices today may write our dirge or our lyrics of survival tomorrow". (**Kwasi Gyeabour, Ghana, winner of the third prize**)

"The Cebuano Youth serves as a beacon of light in ending the climate change crisis. They remain as a powerful source to new ideas, innovations and initiatives. The Youth can serve as an effective force in encouraging people to redo their lifestyles and prod stakeholders to make a concrete plan of action." (**Miguel Garcia, Philippines, finalist**)

"Each generation should take a pledge that they will leave the world safer and cleaner than they found it as *We did not inherit the Earth from our ancestors, we borrowed it from our children*". (**Sonali Punhani, India, finalist**)

"I believe youth plays a big role in combating this global threat, slow but sure youth can bring the Earth back closer to the words 'green planet'". (**Sunviana Sunaryo Suni, Indonesia, finalist**)

"The Intergovernmental Panel on Climate Change confirmed, in its 1995 report, that human activity was responsible for climate change, and recommended preventive actions, while ignorance regarding the environmental impact of human activity and a lack of true awareness of the climate threat among the residents of my city are currently contributing to behaviors that encourage global warming." (**Jean-Paul Brice Affana, Cameroon, finalist**)

Other best authors

“Everybody, more so the youth, should endeavor to become the change they want to be by striving to implement their goals.” (**Uganda**)

“The easiest way to cut back on greenhouse gas emissions is simply to buy less stuff.” (**India**)

“Obviously youth cannot enforce law or create it, but they can influence it.” (**Sri Lanka**)

“The effect of climate change is felt by everyone and only everyone can stop it.” (**Nigeria**)

“Individual initiative to reduce over consumption should be done by adopting the 5R’s: Refuse, Reduce, Reuse, Repair, Recycle” (**India**)

“The potential solution to address this global crisis lies in the rapidly growing green economy. Youths could save earth and mankind through green entrepreneurship.” (**Nepal**)

“Awareness is not about telling people what will happen. Rather it is about personalizing it and telling them how it could impact their lives.” (**Canada**)

“The youth of any country are a ready army which should be harnessed to raise awareness and initiate actions to mitigate the effects of climate change as well as advocate for environmentally-friendly initiatives.” (**Ghana**)

PART III: Winning Submissions

PHOTOS:

FIRST PRIZE



A little girl and hope, by Rudolf Bastian Tampubolon, Indonesia

The poor children who live in the biggest disposal area of Jakarta - they try to survive and take action, including initiatives in tackling climate change.

This is a portrait of a poor urban community that tries to address one of the world's challenges.

SECOND PRIZE



Youth and green purpose, by Ty Rithya, Cambodia / Korea

This photo illustrates a youth-led mechanism to combat climate change. To make a greener world, youth force is absolutely necessary, that is why they work together to plant trees. This big group consists of university students who are working hard to help the environment and future generations. Let's imagine if everybody had the motivation to do so, how wonderful and green the world would be! Therefore they should be an example to the world of youth-led solutions to combat global climate change.

THIRD PRIZE



Institutionalizing the "Green Movement", by Jernalyn Gayon, Philippines

It has been a renewing tradition that the hope of our father land is the youth. Moreover, they say that the youths are the future of the land. And so with every emerging issue that concerns the nation, it is but normal to pass the burden to the youth to do better. And the issue on Global Warming is no exception. The preservation of our environment has been entitled to every man and for the next generation to pursue. But how will the youth respond to this?

I would like to share how youths like me could do something to take part in the responsibility bestowed upon us. And how youth-led organizations are able to contribute in the advocacy to protect mother earth and prevent global warming to worsen. It is but an urge to act now and contribute in our little ways. And that we don't need to become old before we feel that we are already able to do something. We must at an early age realize that the issue on global warming isn't just for politicians neither for adults only. And that we don't need to wait for others to act for us in saving our own environment.

ESSAYS

Winners:

First Prize: Sophie Bathurst, Australia, p. 22
“Blueprint for green schools”

Second Prize: Guillermo Recio, Mexico, p. 33
“The repercussions of climate change on the indigenous Raramuri people: local actions, global benefits”

Third Prize: Kwasi Gyeabour, Ghana, p. 44
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‘Go Green’-The New Mantra

Sunviana Sunaryo Suni, Indonesia, p. 91
“Climate Change – An Explosive Long Bill the Earth’s Generations Must Pay”

Israel Castillo Olivera, Mexico, p. 102
“Climate change – a challenge for Humanity”

First Prize: Sophie Bathurst, Australia
“Blueprint for green schools”



I. ABSTRACT

My vision for the future of Australia is that it will be a nation where healthy people live in a healthy environment. For this to be realised, the challenge of climate change must be efficiently addressed. An effective response demands the engagement of all sectors of society and involves both responsible adaptation to existing environmental problems as well as mitigation of further climate change. I submit this proposal for a youth-led response with the conviction that local solutions can positively contribute to environmental sustainability.

In this essay, I discuss the current impact of climate change at a national and local level. I then explain that the future consequences of the climate change challenge on services, health, water resources and the economy depend on whether the community ignores this crisis or commits to creating a carbon neutral nation that is a world-leader in green innovation and technology.

My initiative, the 'Green Schools' project, is to be led by a Green Taskforce composed of unemployed youth and other young people seeking work experience. The overriding aim is to reduce the carbon footprint of primary schools whilst promoting ecologically compatible lifestyles and an interest in environmental sciences. The other goal is to equip the Taskforce members with skills in the areas of environmental practice and management. The project is directly connected with the establishment of a 'green economy' as it involves the creation of new work experience opportunities and the development of advantageous cooperation and sustainable partnerships with industries and local businesses.

II. INTRODUCTION

As I write this essay, the citizens of my home country, Australia, struggle to come to terms with the terror inflicted by two natural disasters. In the State of Victoria, immense human loss and the destruction of entire townships has been caused by the most ferocious bushfires in our nation's history. At the same time, flash flooding and king tides have made one million square kilometres of the northern State of Queensland into an officially declared disaster zone.

While the precise causes of the bushfires remain to be analysed, scientists have emphasised that climate change in the form of hotter, drier weather within certain parts of the country means that the future risk of such fires with even greater intensity and other extreme weather events is real. Professor Tim Flannery argues that greenhouse pollution, generated primarily from coal burning, establishes the conditions necessary for such natural tragedies¹. He points out that we are the worst greenhouse polluters, per capita, of any developed nation, and stresses that we must act now to reduce our dependency on coal².

¹ Tim Flannery, 'Whoever owns the fuel', *The Guardian*, 11 February 2009, p. 31.

² *ibid.*

As news of the scale of these two natural disasters has spread, people from all around our country have responded with great solidarity and millions of dollars have been donated to assist relief efforts. It is this ‘coming together’ and goodwill that makes me optimistic that the people of our nation will join together, get involved at a local level and implement sustainable solutions in order to both adapt to existing changes in the climate and mitigate further destruction caused by the irresponsible release of greenhouse gases.

III. CLIMATE CHANGE IN AUSTRALIA AND ITS IMPACT IN THE FUTURE

Australia is the driest inhabited continent on earth and is therefore particularly vulnerable to the negative effects of climate change.³ From 1910 to 2004, the average maximum temperature in Australia increased by 0.6 °C and the minimum temperature rose 1.5°C⁴. Severe droughts in many parts of the country have limited our water resources and brought about significant agricultural losses. Increased extreme weather events such as bushfires, hailstorms, floods, cyclones and landslides have devastated communities and caused severe economic damage. Sea levels have risen on average by about 20mm per decade over the past fifty years⁵, causing significant erosion to coastal areas. Our sensitive ecosystems are already suffering e.g. the Great Barrier Reef, a natural wonder and a main tourist attraction has been affected by mass bleaching events. It is clear that our unrestrained policy of burning fossil fuels in the past has already endangered Australia’s natural and human systems.

Climate change is changing the face of Australia and will directly affect its development in the future. I believe that the path our nation chooses to follow at this point in time is critical. If we decide to pay no attention to the warnings and ignore the challenge, we will not only damage our precious ecosystems and lose our water resources but we will also have to contend with economic losses and decline in key industries such as agriculture and tourism. If, on the other hand, we think long-term and embrace the challenge, climate change could present an opportunity for the establishment of an energy sector based on renewable and clean fuels, the development of world-class research centers and the implementation of a globally recognised education program in sustainability. In a country where individualism often stands in the foreground, local initiatives to mitigate climate change will also foster a positive atmosphere of collective involvement which will benefit all members of society.

As the world contends with the current financial crisis, governments, industries and citizens alike may feel inclined to remove climate change from the top of their agendas. This would be misguided. Australia’s future social and economic prosperity depends on the way in which we take steps to mitigate further climate change in the region and to adapt responsibly to those changes in climate patterns that we are already experiencing.

³ Australian Department of Climate Change. *Climate Change: Potential Impacts and Costs*. <<http://www.climatechange.gov.au/impacts/costs.html>>

⁴ *Climate Change 2007: Impacts, Adaptation and Vulnerability*, ed. By Martin Parry and others (Cambridge : Cambridge University Press, 2007) p. 510

⁵ CSIRO. *Climate and Weather*. <<http://www.csiro.au/resources/ps3bv.html>>

Below I have outlined several examples of the foreseen negative impacts of climate change, both on a national and local level, which will be exacerbated if we do not act now. While Australians are increasingly conscious of the adverse effect of rising temperatures on our precious ecosystems, they are sometimes unacquainted with the potential consequences of climate change for services, health, water resources and the economy. I have therefore chosen to explain possible impacts in those areas.

One of the destructive impacts of climate change that will be experienced on a local level is a disruption to services that are in place to support everyday life within the community. In the cities of Australia such as Sydney and Melbourne, it is expected that the increase in extreme weather events will result in flash flooding, added pressure on sewage and drainage systems and possible disruptions in electricity supply⁶. This will mean that extra stress will be placed on emergency services and their ability to respond to all calls with efficiency will be compromised. Everyday transport services will also be affected as the higher temperatures will contribute to the frequent buckling of railroads and the melting/softening of road pavement⁷. On a national level, increases in storm frequency and/or intensity will adversely affect the reliability of telecommunications and of all transport services, in particular shipping and aviation⁸.

Frequent heatwaves, increased temperatures and humidity will also adversely affect the most vulnerable members of society (e.g. the elderly, the young, the sick and the homeless) and there will be an increase in heat-related deaths⁹. Remote indigenous communities that already experience social disadvantage may be placed under added pressure from sewage disposal and increased infection.¹⁰ Of recent times, medical specialists have observed a relationship between drought conditions and suicide amongst farmers. This suggests that climate change will bring about a higher incidence of psychological health risks in rural communities. Further, it is predicted that warmer conditions will increase the intensity and frequency of water-borne and food-borne diseases¹¹. These may even be spread further south which will place additional strain on the medical sector that is already struggling. The quality of the water will also be reduced through increased algae blooms in dams and reduced rainfall in many states of Australia will threaten water security in our urban centers.

If we fail to act now, Australia's future prosperity cannot be ensured. Even under a moderate warming scenario, corals on the Great Barrier Reef are expected to be exposed to annual bleaching by 2050¹². This will have serious consequences for fisheries production because of the reduced number of species in the area. The agricultural sector

⁶ Australian Department of Climate Change. *Climate Change: Impacts by Region*.

< <http://www.climatechange.gov.au/impacts/regions/nsw.html> >

⁷ *ibid.*

⁸ *ibid.*

⁹ *The Regional Impacts of Climate Change*, ed. By Robert T. Watson and others (Cambridge : Cambridge University Press, 1998) p. 136

¹⁰ *ibid.* p. 137

¹¹ Australian Department of Climate Change. *Climate Change: Impacts by Region*.

< <http://www.climatechange.gov.au/impacts/publications/pubs/risk-scenarios.pdf> >

¹² *ibid.*

will also suffer as rising temperatures will result in stressed livestock, reduced stone fruit harvests and an increase in plant disease, weeds and insect pests¹³. Salinity in coastal areas will also reduce the productivity of the land¹⁴.

The appeal of Australia as a holiday destination with natural attractions will be reduced because of coral bleaching, damage to coastal areas and resorts due to rising sea levels, increased storm surge activity, heatwaves, droughts and less snow cover in alpine regions. This negative impact on the tourist industry will have economic implications and cause an increase in unemployment. Increased bushfires as well as the increase in coastal flooding and erosion from rising sea-levels, for example, also pose the threat of damage to property and infrastructure. Extreme weather events in Australian cities will also cause greater personal and insurance losses.

IV. 'GREEN SCHOOLS' SOLUTION: INTRODUCTION

i) Overview of the Project

The Australian Government program 'Work for the Dole' seeks to improve the employment prospects of Australians without a job by offering them work experience opportunities in projects that provide facilities and services of value to the local community¹⁵. I propose a series of new projects that will be led by a 'Green Taskforce' composed of unemployed youth participating in the 'Work for the Dole' scheme and other young people seeking work experience. These concrete projects to be undertaken by the Taskforce are specially tailored to support my 'Green Schools' initiative. They are designed to offer job-seeking youth confidence and experience in the workforce and to equip them with some of the skills and knowledge required for permanent employment in trades concerned with the environment. At the same time, these projects will create a culture of ecological awareness and healthy living within schools and assist the students to further reduce their carbon footprint.

ii) Stakeholders:

The methodology of my 'Green Schools' initiative has been informed by my most recent experience in project management where I teamed up with three other students at university in conjunction with the German human rights organization TERRE DES FEMMES to create and trial a program in domestic violence education. My experience has led me to believe that the most successful projects are those where all stakeholders benefit.

In this project, the foremost stakeholder is of course **the environment**. These projects are designed to cut energy consumption at Australian primary schools and introduce the

¹³ *The Regional Impacts of Climate Change*, ed. By Robert T. Watson and others (Cambridge : Cambridge University Press, 1998) p. 136

¹⁴ < <http://www.climatechange.gov.au/impacts/publications/pubs/risk-scenarios.pdf>>

¹⁵ Workplace.gov.au. *WFD: Home*. <<http://www.workplace.gov.au/workplace/Programmes/WFD/>>

students and the wider community to simple sustainable practices that will be essential to the mitigation of further climate change. The leaders of this project i.e. the **members of the Taskforce** will gain experience working with children and their commitment to this environmental initiative will hopefully encourage them to extend their skills and seek permanent employment in this area. The **primary school students** will be encouraged to practice a sustainable and healthy way of living. Through the hands-on projects, their interest in environmental science will be awakened from a young age.

One of the main aspects of my project is the development of advantageous cooperation and sustainable partnerships with **industries and local businesses**. As awareness about the potential effects of climate change in Australia is heightened, industries and businesses are increasingly answerable to public opinion for the environmental consequences of their actions. Some companies have already visibly responded to consumer demands for a green market e.g. large supermarket chains have introduced reusable shopping bags that carry their logo. This example illustrates that it is not only the environment that benefits from these initiatives but also the company through a new form of 'mobile marketing'. In my project, sponsorship will only be sought from those companies that are committed to the development of environmentally sustainable practices. Through their engagement, the **wider community** will also be alerted to ways in which to reduce the carbon footprint of their household/ business.

V. 'GREEN SCHOOLS' SOLUTION: ORGANISATIONAL TEMPLATE

i) Preliminary Measures:

The Department of Education, Employment and Workplace Relations will be involved in the preliminary organization of the project. The Department will interview and select a motivated group of young people who are currently experiencing unemployment or seeking work experience to form the Green Taskforce. A member from the local government will be appointed to oversee the smooth running of the project and offer feedback to the Taskforce members. The Taskforce will, however, be encouraged to show initiative and manage the various stages of the 'Green Schools' project.

I propose that five to ten primary schools within a specific area of Sydney be chosen to trial this project. The Taskforce will firstly calculate the carbon footprint of the participating schools. They will then visit the schools and conduct a presentation in assembly time on the impact of global warming and introduce the students to the 'Green Schools' initiative. They will inform the students of the simplest ways to cut down their emissions (e.g. turning off the lights when leaving a room, setting sleep mode on the school computers when not in use) and introduce the bigger projects that will involve the students over the next twelve months.

ii) Walking School Bus

One of the jobs that will be undertaken by members of the Taskforce is that of the walking bus driver. Although the idea of a walking bus i.e. a group of students who travel

to their local primary school on foot and are accompanied by a parent or guardian, has been implemented in some communities, it is not a wide-spread practice in Sydney with many parents opting to drive their children to the school gates. These parents are often rushing to work and they are afraid to let their children walk to school alone considering the chaos of ‘peak hour’ on the streets of the suburbs. If walking-bus drivers were provided to primary schools within a structured and reliable program, however, more children could enjoy the mental and physical health benefits of walking to school whilst reducing their carbon footprint.

I envisage that the pilot project for the ‘walking bus’ would work as follows:

- The local school will canvas interest amongst parents in the project and advise the taskforce of the number of ‘bus drivers’ required (at least one for the front and one for the back of the bus)
- The chosen ‘bus drivers’ will then survey the area and work in conjunction with local schools to establish the best location for the ‘bus stops’ and the safest route to school.
- Signs reading ‘Walking Bus Stop’ will be erected at the chosen stop-off locations to encourage all citizens to think twice about using their cars for short distance trips.
- Children will be able to join the walking bus every morning and afternoon.

The walking bus provides benefits to many stakeholders in the ‘Green Schools’ initiative:

- It will reduce transport emissions and encourage other community members to think twice about taking the car.
- There will be a reduced number of cars on local streets which will also ease traffic congestion during peak hour.
- With increasing rates of childhood obesity, the walking bus is a positive initiative in promoting a healthy lifestyle.
- The youth within the Taskforce will gain leadership experience, learn to interact with children and prove to the community every school morning/afternoon that they are competent and committed workers.

iii) Vegetable Garden:

The ‘Green Schools’ initiative will also give the participating schools the opportunity to create a vegetable garden on school grounds with the support of the Taskforce. This project aims to create awareness in children about where food comes from and alert them to the carbon emissions generated from the long-distance transportation of produce.

The organization of this stage will be as follows:

- Members of the Taskforce that are interested in improving their skills and capabilities in business will form a sub-team. The focus for this team will be the establishment of links with Australian companies that pursue sustainability within

their operations. The team will seek to obtain financial grants and/or material donations from these companies. Possible types of companies that will be approached include:

- a) Supermarket chains that emphasise the importance of fresh food and healthy living in their advertising campaigns.
 - b) Hardware chains that sell the latest ecologically-friendly products
 - c) Gas companies that are developing/promoting new low and zero emission technologies
- Having secured finances and materials, the Taskforce will discuss with school authorities and find a suitable site for the vegetable patch on school land
 - Members of the Taskforce will set up the vegetable garden
 - Teachers will integrate hands-on gardening activities into science/ agriculture classes to complement theory lessons
 - Students will be chosen to take responsibility for the vegetable patch on a rotational basis with members of the Green Taskforce overseeing its maintenance.

All stakeholders will profit from this initiative:

- Companies that wish to reinforce their image as socially and environmentally responsible enterprises will be able to show their support for the community and its young people.
- The Taskforce members will develop their skills in landscaping and constructing by setting up the vegetable garden.
- The school students will learn the value of fresh food. They will be exposed to products that are in season and that grow locally which will hopefully influence their food choices in the future.

iv) Native Planting:

Australia-wide events such as ‘National Tree Day’ (a joint initiative of Planet Arc and Toyota) are a very positive step in creating awareness about biodiversity and the idea of offsetting carbon emissions. Having participated in this event, however, I have noticed that many of the trees that are planted in my local community during this event do not survive for more than six months. The native species are often overrun by noxious weeds.

I propose an ongoing maintenance program following ‘National Tree Day’ to be incorporated into the ‘Green School’ initiative. It involves a partnership between the primary schools and local businesses.

- After the annual plantings on ‘National Tree Day’, the primary schools will be given responsibility for a group of trees that have been planted in a specific area in the local community.
- The Taskforce will lead an afterschool bush regeneration club twice a month where the progress of the trees will be monitored and noxious weeds will be removed.

- The ‘business’ division of the Taskforce will create links with small businesses in the community who will be asked to ‘sponsor a tree’. This means that if the tree that they have chosen to sponsor is still growing tall after one school year, they will donate a book/ other educational resource concerning the environment to the school’s library as well as an energy-saving light globe.
- The businesses in turn will be acknowledged at the end of the year in the environmental section of the local newspaper

This is again a win-win initiative for all stakeholders.

- It will increase the number of native species in the local area to the benefit of the environment and the enjoyment of the local community
- It is a chance for the primary students to learn in a hands-on way about caring for the environment and offsetting emissions.
- The educational resources donated from the small businesses have the potential to inspire the students’ interest in environmental sciences. The energy-saving globes will further cut emissions.
- Small businesses will receive recognition for their commitment to environmental initiatives within their community.

v) Green Expo:

Another major event that will be managed by the Taskforce in conjunction with the schools will be a Green Expo that will be held one weekend in the grounds and buildings of one of the participating schools. Members of the general public will be encouraged to attend. The Expo aims to showcase energy saving products and green services. It will allow residents to acquire information and make informed choices about effective ways to tackle climate change in their homes and businesses.

There are several key stages that relate to the management of the Expo:

- The Taskforce will directly approach companies specializing in green products/ services and invite them to set up a stall for the Expo. The Taskforce will also work in conjunction with the local press to attract small scale ‘green’ businesses whose products/ services specifically target the needs of the district.
- Local media will be approached to promote the event.
- Exhibitors will be required to provide/set up/dismantle their own stalls on the day of the Expo. They will contribute a sum of money which will later be used to finance the ‘Rewards and Acknowledgment’ section of this Project.
- Scientific, artistic and literary coursework relating to the environment that the primary students have produced throughout the year will also be showcased during the event.
- Several environmentally friendly ‘check points’ will also be set up at the Expo e.g. a station where car tires can be inflated to the appropriate level

This event also provides benefits to all stakeholders:

- The Expo is a unique opportunity for green companies to directly advertise their products and promote their commitment to sustainable living and the mitigation of climate change. It will also provide a platform for networking, particularly for local exhibitors.
- Consumers will be given the opportunity to learn about and compare ecological products/ services and sustainable practices that are particularly relevant to the local area.
- Through the project management of the Expo, the Taskforce will gain communication and organizational skills.
- The primary students and their teachers will have a chance to celebrate their involvement in the ‘Green Schools’ initiative through the showcasing of student work.

vi) Rewards and Acknowledgment

The money collected from the companies that set up a stall for the Expo will be used to finance the ‘Rewards and Acknowledgement’ stage of the project.

- A ceremony will be held at the town hall, council chambers or other public place.
- The Taskforce members will receive formal acknowledgement of their participation in the Project. They may also be eligible to receive a qualification in conservation and land management or horticulture. A monetary award will be given to members of the Taskforce whose commitment to the initiative has been outstanding.
- Representatives from companies and businesses that supported the project will also receive certificates of acknowledgement.
- The participating schools that have reduced their carbon footprint by at least 5% will be given official green status. They will be awarded an official ‘Green Schools’ logo to be placed on their school notice board.
- The school that has the smallest carbon footprint by the end of the project will be given the remaining money from the Expo. They will be encouraged to invest this money in new energy-saving equipment (e.g. solar panels) or environmental activities and educational resources.

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Second Prize: Guillermo Recio, Mexico
“The repercussions of climate change on the indigenous Raramuri people:
local actions, global benefits”



The Repercussions of Climate Change on the Indigenous Rarámuri People: Local Actions, Global Benefits

“The Earth is our mother, she feeds us and she will receive us when we die.” [“La tierra es nuestra madre, ella nos da de comer y ella nos va a recibir el día que nos muramos.”]
-popular Rarámuri saying

Forest Industry in Mexico

International actors are known for imposing the ideology of modernization in the farthest reaches of the planet. Although progress has certainly allowed the global society to obtain greater knowledge-related benefits, we must not forget that this increased knowledge should be used within a context of sustainability.

Over the years, indigenous peoples have witnessed the invasion of capitalism into their territories. This is because of the high level of interest in usurping natural resources, and eventually establishing industrial complexes, which become communities that suffer a tremendous loss of ancestral biodiversity.

This has been the case with the *Rarámuri*¹⁶ or Tarahumara indigenous ethnic group, an indigenous community located in the southwest of the northern Mexican state of Chihuahua, with an estimated 84,086 indigenous *Rarámuris*, who represent three percent of the state’s total population.¹⁷ The Tarahumaras live together in the Sierra Tarahumara, a part of the Sierra Madre Occidental mountain range.

The majesty of the Sierra Tarahumara is seen in the enormous diversity in natural resources, with hundreds of endemic species that are very valuable for their traditional and cultural use. Therefore, in the Sierra Tarahumara alone, almost 600 medicinal plants have been documented, and in the words of German geographer, George Mayer, “The Western Sierra Madre ecosystem combines transitions of extreme differences in altitude and climate to form the greatest biodiversity of the American continent. 7,000 plant species, or one fourth of all the botanical species in Mexico, are found in the region.”¹⁸

The Sierra Tarahumara also has various species of forest resources, such as pine, fir, and ash forests, which are vital for local and global development. This can be seen if we briefly analyze the importance of the Tarahumara forest in an international, national, and regional context.

¹⁶ The light-footed ones

¹⁷ Monárrez, Joel (200?) Public Health in Mexico [*Salud pública de México*] Vol. 42 No. 1 Cuernavaca Jan./Feb. 2000 http://www.scielosp.org/scielo.php?pid=S0036-36342000000100004&script=sci_arttext

¹⁸ COSYDDAC (1999) The Forest Industry and Forest Resources in the Sierra Madre de Chihuahua: Social, Economic, and Ecological Impacts. [*La industria forestal y los recursos forestales en la Sierra Madre de Chihuahua: impactos sociales, económicos y ecológicos.*] <http://www.texascenter.org/publications/forestal.pdf>

One of the most outstanding features of the forests in the Sierra Tarahumara, at the global level, is the significant contribution to the field of environmental sciences, such as ecology, since the endemic species are an essential part of the ecological balance.

Climate regulation is another critical factor that allows us to understand the importance of preserving the forests in the Sierra Tarahumara. Since the signing of the Convention on Climate Change at the Earth Summit in Río de Janeiro (1992), the international community has fought to preserve biodiversity in order to reduce the consequences of climate change.

The contributions made by the Sierra Tarahumara at the local level are evident primarily in the way that groups of people interact with it. From before the arrival of the Spanish, *Rarámuri* communities depended, and still depend, on the natural wealth of the forests for their domestic needs—wood, food, and spiritual customs. However, the destruction of their forest began during the colonial era. Deforestation therefore started with the arrival of the Spanish colonizer, and it must be borne in mind that during the period of the Spanish Colony, firewood was one of the most symbolic fuels and was used in towns and cities. Furthermore, the mindset at that time was that natural resources were inexhaustible; the consumption of wood was therefore one of the main activities.

The foray of Mexican forest production into international spheres began in 1992 during the presidency of Carlos Salinas de Gortari (1988–1994), subsequent to the amendment of Article 27 of the Constitution,¹⁹ which addresses matters related to forests and land. Through this article, various tariff barriers on wood resources were promptly removed.

In addition, on January 1, 1994 Mexico—along with Canada and the United States of America—ratified the Free Trade Agreement (FTA). The new free market model attracted the attention of the North American market. Suddenly different transnational corporations decided to invest in the vast Tarahumara forests, which had been exclusively reserved for regional gain.

Unfortunately, the hope of reducing the poverty levels in the region, guaranteed by the Free Trade Agreement, has not become a reality and much remains to be done. A recent trend of great environmental importance is the high rate of legal and illegal deforestation in the Sierra Tarahumara (almost 90 percent of the wood obtained for the forest industry in Chihuahua comes from Tarahumara land),²⁰ thereby increasing an irreversible ecological imbalance.

¹⁹ COSYDDAC (1999) The Forest Industry and Forest Resources in the Sierra Madre de Chihuahua: Social, Economic, and Ecological Impacts. [*La industria forestal y los recursos forestales en la Sierra Madre de Chihuahua: impactos sociales, económicos y ecológicos.*]

<http://www.texascenter.org/publications/forestal.pdf>

²⁰ Ibid.

What are the Effects of Climate Change?

Soil is one of the *Rarámuri* community's most fundamental ties to its historic past and traditions. Several population groups recently questioned the deforestation techniques that have increased the levels of soil erosion. Statements made by environmental organizations, such as Greenpeace México and Fuerza Ambiental, indicate that ever since the felling of trees began, soil erosion has increased.

The danger of deforestation is still imminent in Mexico, and secret felling is disrupting the national climate systems. Furthermore, because of the non-existence of tree species in our tropical and temperate forests (as is the case with the conifer forest in the Sierra Tarahumara), it is impossible to capture CO², which is found freely in the atmosphere. Recent research shows that "Mexico has deforested more than one-third of its forests and jungles, thereby reducing its original woodland area of 52 percent of the country, to 33 percent in the year 2000."²¹

At the international level, Mexico must demonstrate social responsibility in environmental matters, since it produces approximately two percent of greenhouse gas emissions, and if this trend continues, it is projected that by 2010, Mexico will be generating twice its current volume of emissions.²²

My Experience in the Tarahumara

Below, I will briefly present my experience as a volunteer in the Sierra Tarahumara, where I had the opportunity to witness the serious effects of climate change on one of the most isolated indigenous communities, which has the highest poverty rate in the country. This account seeks to illustrate the critical situation faced by the Tarahumaras.

During my years as a university student, I had the opportunity to explore various areas of learning. However, there was something inside of me that made me want to leave that circle in which I was immersed, and learn about a reality that was alien to my own. One afternoon, while walking along a corridor of the University, I saw a yellow poster hanging that read: "Hear the call of the Tarahumara." Eager to learn more about that call, I signed up for the information session and a few weeks later became a volunteer in the Sierra Tarahumara.

On reaching the town of Huiyochi, and once inside the old clinic of the town, a group of children came to welcome us. Quickly trying to say *Kwira ba* (hello) in our best *Rarámuri*, we began to greet them.

²¹ Ricker, Martín (2008) The Role of Mexican Forests in the Storage of Carbon to Mitigate Climate Change. Institute of Biology [*El papel de los bosques mexicanos en el almacenamiento de carbono para mitigar el cambio climático. Instituto de Biología*], UNAM. México D.F. <http://www.smf.mx/C-Global/webElpapelbosquesmex2.htm>

²² Molina, Mario (2005) Air Quality in Mexico. A Comprehensive Approach [*La calidad del aire en México. Un enfoque integral*]. Fund for Economic Culture [*Fondo de Cultura Económica FCE*], México. DF.

In Huiyochi, we were surprised by the great distances between houses in the same community, which meant that everyone had to walk long distances to go from one house to the next. When we asked Juan, our small nine year old *Rarámuri* guide of the first few days, why this situation existed, he said that it was because there was little arable land.

During the first weeks we noticed the tremendous ecological damage within the Sierra Tarahumara. Almost 60 percent of the families in the community of Huiyochi were enduring the hardship caused by the environmental changes, which were reflected in the barren farmland.

Case of the Jiménez Family

Our daily task was to assist various families in Huiyochi. Of all the families that we came to know, I can say that we had a close relationship with Juan's family, the Jiménez family. His father, Patricio, is one of the most respected men in the community because his *anayáwari* (ancestors) were great heroes for the *Rarámuris*. María, his wife, was known for preparing the best *teswino*²³ in Huiyochi. However, it was very difficult to communicate with her since she did not speak Spanish, which is typical of indigenous women in the Sierra Tarahumara who have to do household chores, thus preventing them from attending school, which is where most Tarahumaras learn Spanish.

Patricio and María have three children. The oldest is Felipe, whom unfortunately we did not meet since a few weeks earlier, because of the small harvest resulting from the low rainfall recorded during the month of March, he went to the city of Cuauhtémoc,²⁴ where he managed to get a temporary job as an apple picker. The second son, Juan, was in the third grade at primary school. He told us that his favorite subject was History because he liked to know what had happened before all of us were born. And lastly, there was Martina, who was only four years old.

One morning, Patricio took us to his workplace, a sawmill located on the outskirts of the municipality of San Juanito. Owing to the fact that he had to walk just over two kilometers to get to work, Patricio always took the precaution of leaving home at 5:00 a.m. to avoid any delays, since the first to arrive were hired to work that day.

I immediately noticed the vast expanse of land that used to be a forest, but now only bears the remains of a place that was once the habitat of hundreds of species.

Patricio's job, like so many other Tarahumaras who worked at the sawmill, was to fell trees, which are subsequently sent to various machines that convert wood into semi-finished products. At this stage, Tarahumara labor is almost minimal and despite the fact that this small sawmill is known to use extremely obsolete technology, the owners choose to hire trained personnel to operate these tools.

²³ Sacred drink prepared using fermented corn.

²⁴ Other migration centers are Parral, Ciudad Juárez, Ciudad de Chihuahua, and Los Mochis, Sinaloa.

The work done by the Tarahumaras is characterized by exhaustive and long days, with workers at great risk of becoming accident victims. In terms of payment, the workers earn only 80 pesos per day (approximately US\$5.70).

The Tarahumara people know that this depredation of the forests is an activity that is slowly putting an end to their existence, and are aware of the tremendous damage being done to the earth. However, in the absence of better economic opportunities, this type of work is the only option.

It is important to mention that the purpose of the forest in every ecosystem is the evapotranspiration of water to vapor, the gas that rises into the atmosphere to form clouds, which in turn will be responsible for producing rain, and a constant life cycle and enrichment of the soil leads to fertile land. However, cutting the trees will halt this cycle, the rains will stop, temperatures will rise, an irreversible process of desertification will start, and water resources will decrease, as seen in 1999 when the *Basaseachi* waterfalls dried up due to a reduction in rainfall in the Sierra Tarahumara. The sum of all the above factors is the engulfing of the Tarahumara by climate change.

The Drought Research Center [*Centro de Investigación sobre Sequías CEISS*] recently stated that “as a result of climate change, in recent years the institution has lost 68 percent of its forest cover, recorded persistent droughts, and witnessed an increase of up to 4°C in temperature. Also, since 1993, annual average rainfall has been below 400 millimeters.”²⁵ In a region that is accustomed to having an average temperature of 5°C during the winter, after severe climate changes, the thermometer has dropped to -10°C in some sections of the Tarahumara. Likewise, during the summer, the temperature was usually 30°C. Now it is above 38°C. According to the State Civil Protection Unit of Chihuahua [*Unidad Estatal de Protección Civil del Estado de Chihuahua*], climate change in the region will result in a 25 percent decline in annual precipitation. Furthermore, in most of the territory, extreme temperatures of 53° C in the shade are expected.²⁶

This increase in temperature, which causes excessive heat, lack of rainfall, and poor vegetation, has greatly affected the sowing of corn, beans, and alfalfa. Traditional agriculture was unable to withstand the severe increases in temperature and the drought that dominated the Sierra for most of the summer. The harvest was lost, leaving the family without food for several days. The uncertainty of not knowing what they would eat during those days was an ongoing concern for the families of Huiyochi.

The effects of climate change are not only the change in the environment, but also the severe social repercussions. Some of the impacts include migration, malnutrition, and drug trafficking. I will briefly describe below the three aforementioned effects.

²⁵ Planeta Azul (2007) Climate Alert in Chihuahua [*Alerta el clima en Chihuahua*]. Planeta Azul, environmental journalism. Chihuahua, México. <http://www.planetaazul.com.mx/www/2007/05/28/alerta-el-clima-en-chihuahua/>

²⁶ Ibid.

1.- The decision to leave the ancestral lands is attributable to the consequences of climate change, which have impacted the way of life of the *Rarámuri* ethnic group. Strong environmental degradation, coupled with extensive periods of drought, has created serious **migration** problems. However, this process is not easy, as the Tarahumara must leave their families and enter a culture that is totally different from their own.

Despite the existence of more opportunities, it will be hard for both men and women to break the yoke of discrimination, as they face labor exploitation in unskilled jobs, such as those in the manufacturing industry, construction, and domestic services. As a result, the adoption of alien cultural values is more evident, and the loss of the *Rarámuri* (culture) has therefore become a constant factor in the second generation Tarahumaras who reside outside of their community. Felipe, whom I never had the chance to meet, came to mind, but this did not prevent me from thinking about the difficult circumstances under which Felipe grew up in the Sierra Tarahumara, which pushed him to seek better opportunities for his family. Upon my return to the City of Chihuahua, I was moved by the sight of a young *Rarámuri* boy juggling with small balls, begging for alms in front of the Ministry of Social Development. At that moment I remained reflective and at a loss for words.

2.- Efforts by public health institutions in Mexico to combat the effects of **malnutrition** have been limited, as these institutions are only located in big cities. Some 90.6 percent of the most inland communities of the Sierra do not have health services.²⁷ During the time that I was in Huiyochi, I observed only one visit by medical representatives.

Obtaining a suitable diet has caused abject misery, since 50 percent of children under five years of age suffer from malnutrition, 23 percent of children are underweight, and 2.5 percent have severe cases of malnutrition.²⁸

3.- **Drug trafficking** is increasingly commonplace in Tarahumara families that allow poppy plant growing in their own homes as an alternative source of income. This situation has triggered serious problems with security and violence in the Sierra.

How Can We Address Climate Change in the Tarahumara?

The situation is quite grim, and the high level of environmental degradation caused by the effects of deforestation on climate change and recent social problems have led me to wonder: What can we do to help? How can we do it? How can we combat climate change?

²⁷ Pintado, Ana (2004) Tarahumaras, National Commission for the Development of Indigenous Peoples [Comisión Nacional para el Desarrollo de los Pueblos Indígenas], México DF.
http://www.cdi.gob.mx/index.php?option=com_docman&task=doc_details&Itemid=&gid=48

²⁸ Tarahumara Foundation [Fundación Tarahumara] José A. Llaguno (<http://www.tarahumara.org.mx/>)

My friends and I therefore decided to create a Biointensive Orchard with the Jiménez family. The orchard uses sustainable agricultural methods that have the capacity to put nutrients back into the earth, where labor is the most important value. Creating an orchard does not require big tools, only pick axes, shovels, and forks. The Ecology and Population Association [*Asociación de Ecología y Población*] mentions the following features of the Biointensive Orchard: “(a) *It obtains results of between 400 and 3,100 percent, even in adverse soil conditions; (b) It does not require fertilizers or chemical pesticides; (c) It only needs 30 percent of water, which is particularly important in arid zones or areas that receive little rainfall; and (d) It reconstructs the soil 60 times faster than nature itself.*”²⁹

The process was very simple. We first marked out the space for the orchard, with 1m x 3m as the measurement. We then used posts and cords to mark the five beds where we would plant beetroot, zucchini, corn, potato, and radish. We will explain below the double digging technique, a process that is extremely relevant for soil regeneration. In the first bed, we made a 30 centimeter ditch, using the points of the fork to loosen the earth, which was removed and placed in a container. We then continued using the fork to loosen the earth that was beneath the earth that had been removed.

Alongside our first ditch, we conducted the same procedure to remove 30 centimeters of earth, which would be placed in the first ditch. All the steps were repeated until the five beds were completed. The double digging technique is noted for leaving the soil “loose and ideal for the roots of plants to penetrate it without too much effort.”³⁰

Having an orchard was very important for the family, as it gave them a great sense of purpose to take due care of the orchard. It was very gratifying for us to be able to return four months afterward to Huiyochi and see the fruits of our labor: food self-sufficiency and a reduction in soil erosion, since the soil was being kept moist. There was also community interaction, because since there was a method that provided food in abundance, it generated even more *Korima* (spirit of giving), whereby anything good that I possess I share with my brothers for the benefit of the community.

During the 2007–2008 period, 12 biointensive orchards were established in Huiyochi, extending to the neighboring communities of Guacayvo, Osachi, and Tayarachi.

Through the orchards project, we managed to combat the specter of poverty and malnutrition caused by global warming. However, the critical issue requires more actions to reduce the effects of climate change. In addition to the biointensive orchards project, I would therefore like to present two more programs.

²⁹ Martínez, Manuel (no date) *The Biointensive Method of Cultivation [El método Biointensivo de cultivo]*. Ecology and Population Association [*Asociación de Ecología y Población*].

<http://www.bosquedeniebla.com.mx/imagen/metbio.doc>

³⁰ Ibid.

(a) *Tarahumara Verde*

Based on the principles of sustainability, the program, in collaboration with environmental NGOs, seeks to reforest native species of the Sierra Tarahumara in order to (i) combat climate change by planting hundreds of trees that will capture the free CO² in the atmosphere; (ii) reverse the deforestation process; (iii) increase the green areas that have been reduced by the invasion of forest sawmills; (iv) balance the rain cycle; (v) reduce soil erosion; (vi) reduce extreme weather changes; and lastly (vii) promote the conservation of natural species.

(b) Environmental Education

Young people are constantly being denied the opportunity to participate in the building of a more just and equitable society, perhaps because we are still too young to provide ideas that are worthy of discussion. Nevertheless, many of the best ideas come from young minds. The global youth is, and must be, the builder of a new society.

Mexican youth must also be the protagonists of essential changes in indigenous communities, including the *Rarámuri*. In my opinion, one of the most evident shortcomings of contemporary Mexico is our poor educational system, especially in terms of the ecological culture, where, part of the blame rests with us, the young people, who do not demand a greater focus on environmental matters from our teachers and the Government.

As a volunteer and a student, it pains me to know that indigenous populations are always the main victims of environmental changes. It is precisely this lack of care for the indigenous communities that makes them vulnerable to surrendering their land to a system of overexploitation.

As young people, we must be more sensitive to these major issues. A bicultural-bilingual *Rarámuri* environmental education program would be a suitable measure for combating climate change from the bottom up.

Similarly, the educational program not only promotes the dissemination of ideas in rural schoolrooms, but also man's interaction with the environment as an effective means of emphasizing knowledge of and empathy for nature. The following paragraph therefore reflects the points to be addressed in the area of environmental education.

(1) Natural Preservation: The *Rarámuri* philosophy believes that respect for nature is essential for human development. During my voluntary service in the Sierra, I remember speaking with Sofía, a young rural teacher, who was trying to teach children the importance of caring for our environment. In order to achieve her objective, Sofía used the *Rarámuri* philosophy to explain to children how nature got angry with man if man forgot about her and polluted her. Using a creative approach, a course is being adopted that promotes the use of indigenous knowledge in plant and animal conservation.

(2) World Tree: The main advantage in starting environmental education early is that it gives children and young people the necessary tools for protecting the environment. Furthermore, as the child grows, s/he will become a parent, an active member of the community, and an opinion leader who will seek to transmit this ecological learning to the new generations. Through the “World Tree” workshops, Tarahumara groups of children and young people are invited to become witnesses of the benefits that this program can provide for the global society.

Conclusion

The need to rescue the indigenous Tarahumara community from climate change is critical. It is impossible to speak about progress and modernization, as presented in international agreements such as the FTA, when we see that within Mexico, 84,088 indigenous *Rarámuri* are in a desperate situation of marginalization. We young people should be among the primary promoters of national ethnic wealth, and, as such, the opening up of the discussion, where cultural value is taken into consideration, is of fundamental importance in order to ensure real social change. Biodiversity would therefore be supported through indigenous care, which would combat climate change. Finally, we must raise awareness about the fact that national cooperation must be the way forward in the quest for intergroup development. If as a society we are capable of making great strides, why can't we address and promote socially responsible development that elevates our human worth?

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Third Prize: Kwasi Gyeabour, Ghana
“Greening the Ghanaian Youth”



GREENING THE GHANAIAN YOUTH.

INTRODUCTION

Climate change is a big issue for my country, even though current government policy only outlines it, there's no implementation of these outlines. Ghana hosted the 2008 United Nations climate change talks in Accra (21-27th August 2008), where several negotiations were made with no immediate impact on the host nation. According to the Encarta encyclopedia, my country is currently only 24% forested and it is rapidly dwindling down per annum. Ghana has about 22 million people in an area of about 238,500 sq. Km and a population density of about 99 persons per square Kilometer. We depend extensively on hydroelectric power for energy, and about 55 % (2000) of the population is employed in the agricultural sector. The sector is not as mechanized as those in the advanced countries so we mostly depend directly on the vagaries of the weather. Most Ghanaians live on less than a dollar a day even though official economic figures suggest a better situation. Ghana officially protects about 4.8% of its land area but there is the issue of illegal sales of these lands to timber companies, and illegal logging activities by locals. Although we have ratified international agreements protecting the ozone layer, tropical forests, wetlands and endangered species, government activities and policies do not consider these agreements. Foreign companies with much financial influence normally get their way with the government. Our climate is composed of two rainy seasons in the south and one long rainy season in the north. There is also the Harmattan/dry season between November and January. Climate change has brought about extremities in the weather patterns in Ghana.

Recent Weather Extremes and its effects in my country.

The harmattan/ dry season for the past 3 years has not followed its regular pattern. In August 2006, the drought lasted really long as it was severe, to the point that the Black and White Volta Rivers nearly dried up. Several other rivers dried up in the forest areas, example the River Offin in the Ashanti region dropped to its lowest in almost a century. Ghana was caught up in an energy crisis, when the Volta River dropped about 41 feet below its regular level to a critical level. This meant that several energy dependent companies had to close down, according to the National Labor Department, approximately 33 companies filed for insolvency between September 2006 and March 2007 causing over 2300 workers to lose their jobs. The layoffs affected several families who were already struggling to make ends meet. Data Bank researchers (a financial research institution in Ghana) projected the energy crisis to cost Ghana about 1.4 billion US dollars. As a student in Ghana's premier university, I suffered when one of my semester papers (French) was put on hold due to the lack of power to play the Oral tapes that semester. At night living conditions were unbearable since the temperature was high and we had no power to start the ceiling fans in a small room for four students. We had to do all our research in the day on some days and in the nights on other days since the Volta river authority had given us a timetable for electricity load shedding. It lasted for about 8 months. In those 8 months economic activity was badly affected, several hospitals which were not prepared for the situation had to move their patients to the two national Teaching Hospitals (Korle – Bu Teaching Hospital in Accra and the Okomfo

Anokye Teaching Hospital, Kumasi) which were already overcrowded. A few patients had to be put in the verandas.

When it did rain in the last two weeks of August and the first week of September 2007 it was excessive in the northern, upper west and upper eastern parts of Ghana exceeding the usual records. The flooding in the North left 20 people dead and 400,000 people in some 592 communities badly affected, most of them lost their homes since a majority of the houses there are mud houses. Several villages were washed away. There was also flooding in some 10 communities in the western region of Ghana. The U.N had to come to the aid of Ghana otherwise the conditions would have been worse. As a student volunteer for the relief efforts in the northern region, I was devastated by the horrible scenes I encountered. Children in these communities were under shock and battling with cholera after the flood. A look in these already malnourished children's eye could strike a tear in the eye of even the hard hearted

We have also been through periods of severe droughts and high temperatures which have led to food shortages and led to rural water shortages. There are several areas in the northern part of Ghana which have been rendered infertile due to Human activity that fuel bad weather. Flooding also has caused soil erosion which has affected the production of food crops in the forest areas. The Ghana Environmental Protection Agency has predicted that by 2080, cocoa beans will no longer grow and thrive in Ghana due to climate change. Most Ghanaians in the rural areas are subsistence farmers and with the recent bad weather and high temperatures most of them are being forced to starve due to a decline in crop yields. Most of these people survive on less than 1 dollar a day (so you can only imagine). The youth in the rural areas in Ghana have therefore exponentially increased their migration into the cities only to sell hair ribbons on the streets or at best, dog chains. One gentleman I interviewed said that before, it used to be good back home in his village but now, the weather conditions do not favor farming and therefore he was earning a very low income from farming as low as 15 cedis (12 dollars) in a month from the sale of the small yield he gathers. He has 3 children, a wife and an ageing mother to take care of back at home and therefore the least he could do was to look for a "better" job in the city. His translation of "better job" meant being a human porter of goods at the central market in Accra. At least he was making 15 cedis more than he was making back home. Not much improvement in his standard of living but an improvement nonetheless. There are millions of Ghanaians in the same situation. The prices of certain food stuffs have tripled in the last 2 years alone. Plantain, millet, maize and cassava which constitute the basic ingredients of almost all local dishes have increased significantly in price.

A SURVEY

A survey I undertook Thursday 5th of February this year, for the sake of the essay using a sample of 200 young men, who live in my community, brought forth the following results.

Q1	YES	NO	INDIFFERENT
*Does Climate change affect you?	96%	3%	1%
*Do you feel policy makers should consider climate change in Economic Policy?	89%	6%	5%
*Do you feel there's adequate information circulation concerning climate change in Ghana?	12%	88%	-
*Have you heard of the word "Carbon footprint"	3%	97%	-
*Do You feel the Youth have a huge role in slowing down the pace of Climate Change?	94%	6%	-
*Are you doing anything to ensure the Earth's Survival as a young Person?	1%	99%	-

The above data suggest that more young people in my community believe it's up to them to slow down the pace of climate change but most of them are currently doing nothing to help slow down climate change. Most young Ghanaians including myself believe that the government is not really doing much to spread the information about climate change and how to slow down the process. The 138 districts in the nation have at one point or another recorded several incidents of bush fire caused by bad farming practices such as slash and burn, which not only leaves the land bare for soil erosion but destroys vegetation and also group hunting for hare and rabbits, where these farmers smoke them out with fire. From this sample, I believe that at least most of the youth in my community like most other young men in the nation believe the government and the youth need to collaborate to help save our nation and hence our lives. Information dissemination would therefore be made a major priority in this essay. Making people aware of the problem is solving the problem halfway.

The Practically green solutions-Community Level
Green Mutual Sector Fund

Indeed the generation of the green entrepreneur is already here with us at least in the advanced countries. In our part of the world, companies which go green either collapse through lack of solid financial base or are NGO funded. The idea of green industry doesn't exist yet in Ghana primarily due to lack of private investment in the green sector.

The average person in Accra has heard of some form of investment. It is like the latest phenomenon to hit Ghana especially on our university campuses. For this reason, I believe myself and a couple of friends can start an open-ended (the number of shares will not be fixed) sector growth fund⁸. The targeted portfolio would be energy companies i.e. bio- diesel companies, clean and renewable energy technology firms, for example firms that deal in energy saver light bulbs, and renewable energy consultants. We would also invest in companies which sell agro-based, forestry products (seeds). In Accra for example there are quite a number of these firms in mushroom forms. I believe that by investing in these companies, we would give them the necessary liquid capital base to maintain and purchase new capital goods, advertise, and in the long run to expand. At the

same time the share holders of the fund will be making steady interest on their investment. A back end-load⁹ will be deducted from the redemption price, at a rate which decreases progressively depending on how long the holder has had the shares. We would begin the fund from the university campuses and gradually spread out to the general public. To gain a lot of shareholders and to reduce the risk involved, a massive mass education will be carried out to inform the general public as to the importance of investing funds into these firms and the need to save our climate.

The Climatic Change Relief and Impact Center. (CCRIC)

I also believe that through the collaboration of myself, friends and the local assembly of my community this center can be made a possibility. Since climate change is here to stay I believe we might as well learn how to adapt to it. This centre will train young men in disaster response and refugee management and disaster simulation drills. In times of flooding for example instead of waiting for the National disaster management organization (NADMO) who might not arrive in time anyway, we could be proactive and save lives and property. Now I believe when the Local Assembly supports the idea, we can convince a lot of young men to volunteer for the program. The training would be done by NADMO officials on weekends. The center will also carry out sensitization programs for the less educated and elderly farmers. Some of them engage in bad farming practices that only end up increasing carbon dioxide in the atmosphere, for example a majority practice slash and burn and don't make fire belts before the process, the burning of the trees sends large amounts of CO₂ into the atmosphere and affects a large area of forest land and mostly evolve into bush fires. Some of these farmers, upon starting the bush fires fail to inform the district firemen for fear of victimization and leave the fire to spread. The centre will also organize durbars on certain holidays to teach members of the community on how to survive in times of climatic disasters and the need to inform the fire station or the youth of their community in case of bush fires. There will also be training on how to reduce health risks that normally follow disasters. Had this system been in place in the northern part of Ghana the casualties from the floods would have been less. Most communities in developing countries need to prepare for such climate disasters.

Green Revolution

Most of the trends that are “in Vogue” are created by the youth. In my community for example, if college students came back home from school with a particular hairstyle it would spread as fast as wildfire. Based on this, I believe that as a tertiary level student I could, with the help of my colleagues, spark a green revolution and collective action which may eventually spread to other parts of the country. Through this I hope to achieve the following:

The Green Scout Movement

I propose a Green scout movement fashioned after the Boy Scout movement, only this time the focus will be on the environment, climate change and how to slow down the process. This movement will target young men from the ages of 6 to 21. The movement will have three divisions. The first division will be the Green Prince, the second will be the Green Scout and the final division will be the Green Entrepreneur.

The Green Prince division will be made up of students (boys and girls) from primary school class 1 to class 5. This division will focus on bringing the ideas of greening the environment to the children and teaching them of the importance of clean climate activities. They will also be involved in camping programs. The kids would also be encouraged to participate in green oriented science fairs which we would organize. We will partner them with adults who will supervise them in the completion of these series of tasks. Upon completion of a task a prince will earn a badge of completion and a certificate of accomplishment. Now their attire will be a green shirt and shorts with a green neckerchief. They will advance as they learn more and perform more tasks. After class five however a scout will advance to the next stage which is Green Scouting. This level focuses on the role of the scout in campaigning about global warming and embarking on other green activities such as tree planting and training the members of their household to use energy efficiently and to reduce their carbon traces. After advancing through the various tasks involved in this stage, they will advance to the final stage which is the stage of the Green Entrepreneur by which stage a scout should be between 18 and 21. Here the scouts will be trained on how to become green entrepreneurs in the first stage and in the second stage; they will be challenged to create their own climate saving activity or project. Upon completion a scout would get a diploma in entrepreneurship.

The Community Recycling Initiative.

Here I believe that my friends and I can collect renewable items that people in my community would otherwise throw away, and group them into categories for recycling. Now we plan to put boxes at vantage points especially at the community center, and label these boxes. We will separate them into paper, rubber and metal recyclables. Items like cans, bottles, newspapers and cardboard will be collected. We would then take them to companies in the community who manufacture these goods for recycling. In order for this to be successful, a larger number of young men need to be put together. Individual homes will be rewarded for choosing to separate their garbage to make collection easy. If recycling is taken seriously, then we wouldn't have to deplete the few trees we have left, since there would be raw materials in the form of recyclables. The problem of waste management would also be tackled through recycling.

Online green social networking

Social networking on the internet is very common these days among the youth. Most of the young men and women are either on "Facebook", "Hi5", "MySpace" or "clubghana". Internet blogging is also very common in Ghana. We can establish the Ghana temperature Movement online as a group on "Facebook". Members of the group can invite people in their friends' network from other communities to join the group. On the group's forum boards, members can share ideas as to how to tackle global warming and the problems we face in Ghana which are climate related. We will also send environmental messages to the inbox of our members inviting them to our programs and share environmental solutions with them. Members will also be encouraged to blog on the issue so the message can be spread faster. Because the modern Ghanaian youth is energy dependent we will also focus on household energy consumption and how to reduce the carbon footprints of our homes. Likewise groups like these can be formed on other social networking sites until we can create our own environmental social networking website for our community and beyond.

Inter-School Climate Change solutions fair

This fair will allow young men and women in my community to showcase their projects on renewable energy and effective energy conservation. With the help of my colleagues I believe this can be made possible. With expected sponsorship from local firms and the local Assembly, We will reward the best practical climate change solution project and promote it to the national level. Participating schools in my community will each year compete with four projects from each school. This fair would encourage the youth to research into ways of improving their lives and other alternate forms of energy.

Green solutions – National Level

Carbon Compensation Plan (CCP)

Companies such as those in the cement manufacturing companies contribute CO₂ when calcium carbonate is heated alongside fossil fuels. According to Wikipedia, It is estimated that cement production is responsible for 5% of all global man-made CO₂ emissions, 50% of which is from the chemical process, and about 40% from burning fuel. The cement industry is estimated to emit nearly 900 kg of Carbon Dioxide for every 1000 kg of cement produced. Developing countries like Ghana use cement extensively in their building processes.

On this level I believe that my friends and other college students can come together to push to policymakers what I call the Carbon Compensation Plan. This is where firms like the cement manufacturers whose activities directly affect the environment will be forced to pay an exclusive compensating tax to the government. Revenue from this tax will be used in providing free energy saving light bulbs for homes which can't afford to switch all their light bulbs to energy savers. Also the revenue can be used to finance tree planting exercises and renewable energy research which is not well funded in Ghana. These companies will also be required to plant a quantity of trees annually for as long as they operate in the country. In addition I believe that the government can place an importation tax on high carbon goods.

National Pre-college environmental service

In Ghana, from Senior High School, students stay home for about 10 months before they enter into a tertiary institution. The plan is to campaign for policymakers to engage these students in climate oriented service before they enter into college. Policymakers can make sure that community service will count towards a student's admission requirements. These young men and women will be trained for three months and afterwards will be required to do a field work in their respective districts, such as community sensitization against deforestation for livestock grazing and discouraging of the slash and burn practice which normally leads to bush fires in some districts. They will also carry out water projects in water-stressed¹⁰ rural communities and as part of their field work each student should plant at least two trees in his assigned community. A certificate of community service will be provided to them upon completion of the service. Some students who show higher intellectual ability in their secondary schools can be drawn into research on how to convert the large tracts of infertile land in the northern part of Ghana into arable land.

A day should be set aside by the government to honor the young men and women for their outstanding service in this climatic venture.

Proposed Ideas for international Organizations- International level

Of course not all the ideas I have can be carried out by the youth alone. There are those that international stakeholders have the strength to carry out.

The World Bank Group which has affiliated institutions such as, the International Finance Corporation (IFC), International Development Association (IDA), International Center for Settlement of Investment Disputes (ICSID) and the Multilateral Investment Guarantee Agency (MIGA) could also add a new environmental finance institution to their group since they have shown passion about the topic through this essay competition. The World Bank also helped to establish the Carbon partnership and the Forest carbon partnership facility all of which promote clean energy ventures. The bank has employed Carbon Finance programs which I believe could be managed by a new institution to ensure efficiency.

I propose the International Climate Investment Bank (ICLIB) - Which would invest in both private and public enterprises that are working in the field of renewable energy and efficient energy conservation. This World Bank Institution would also bind its members to include climate change in their domestic economic policies and encourage green solutions through dialogues. The institution would also provide support for research into climate change. The institution will also sponsor conferences and organize workshops on the topic for member nations. Members will be tasked to buy a minimum number of shares of the capital stock of the bank not according to the size of their economy but by their level of climate pollution. The operational funds of the bank will be raised through sales of interest bearing bonds and the issuance of notes in the world's capital markets. This will free the other affiliate institutions to focus on their specialized programs.

World Forestry Reserve Heritage sites

Unlike the UNESCO's world Heritage site, this program will involve every member of the United Nation. Every member of the UN will be charged to reserve a portion of their forest lands which will be managed by a joint team of the local government and the United Nations Environment program. The proportions of the site will depend on the size of the country and their population distribution. There will be emphasis placed on the preservation of rainforests such as the Amazon jungle and the Congo rainforest. Once the site is chosen it would become an international property. Now this site can be separate from national reserves. A convention will bind all the signatories to protect and maintain these properties for future generations and to ensure the sustenance of the earth.

Conclusion

We should act immediately! For as Confucius in the Confucian analects once said of a superior man "He acts before he speaks, and afterwards speaks according to his actions." We could talk about climate change for years and not live to meet eternity. We owe it to ourselves as the youth to do our part to save our own lives. To work together wherever possible to change the direction of climate change into our direction of peace love and sustainable development. Our choices today may write our dirge or our lyrics of survival tomorrow.

8- Sector mutual funds concentrate investments on one sector, / industry.

9- Back end load-a mutual fund sales charge for the sale of shares.

10- water stress- how exposed, people are to water shortages.

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Finalist
Jean-Paul Brice Affana, Cameroon
‘Eco-citizenship: a practical solution in the fight against climate change’



1. INTRODUCTION.

*Climate change is the defining issue of our time*³¹

Is climate change affecting my life?

Four years ago, I would not have been able to answer this question. Not because this is not so, but because I was unaware of the fact that climate change poses a real threat to my life. I was blinded by my own ignorance. I have unwittingly contributed to global warming; to the warming of this earth that also belongs to you. Currently, climate change is affecting my life and the lives of the residents of my city. I have also played a role in creating the problem. Many around me are oblivious to the effects of their daily activities on the environment and human health. I am writing this essay on their behalf, with the aim of lifting the fog of ignorance that surrounds them. One day, I had the good fortune of seeing a map of global warming on the Internet. Believe me, it is not a pretty picture. I had just learned that without swift action, we will soon have to settle for life on an unlivable planet! What is most alarming is that instead of taking action, we are wasting precious time pointing fingers at industries because of their high levels of greenhouse gas emissions and then sitting back and crossing our arms. What about the responsibility we bear for climate change? I live in Yaoundé, the capital of my country, Cameroon. The climate is equatorial, and my city has a rainy season that lasts for nine months and a dry season, for three months. In 1990, rainfall did not exceed 300 mm per year and temperatures, 27°. ³² Cameroonian climatologists agree that the city is currently experiencing disturbing climate change. Unfortunately, the response of the population, which is heavily impacted, is one of inertia. As a result, the effects could exceed the response capacity in the future. The Intergovernmental Panel on Climate Change confirmed, in its 1995 report, that human activity was responsible for climate change, and recommended preventive actions, ³³ while ignorance regarding the environmental impact of human activity and a lack of true awareness of the climate threat among the residents of my city are currently contributing to behaviors that encourage global warming. I also realized that the lack of sufficient education on the subject of early adaptation and mitigation measures, which climatologists view as a priority, curtails the participation of the population in efforts to combat climate change. The idea came to me of reversing this situation in order to analyze the picture that would emerge. This analysis led to two main conclusions. The first was that a population oblivious to the negative impacts that its daily activities can have on the environment unwittingly contributes to climate change. Furthermore, its lack of education on the application of adaptation and mitigation measures heightens its vulnerability and curbs its contribution to controlling this phenomenon. The second was that a different population, cognizant of the environmental impacts of its activities and knowledgeable about climate change will engage in behaviors aimed at eliminating these impacts. And in instances where it is a victim of this phenomenon, its education on the application of adaptation measures will lead it to

³¹ Ban Ki-moon, United Nations Secretary General, excerpt from “A Stronger United Nations for a Better World.” Opening of the 62nd Regular Session of the United Nations General Assembly, New York, September 25, 2007.

³² Geography, Cameroon, Africa, and the World, *Cours moyens* 1st and 2nd years. Mbono-Samba M., Béling-Nkoumba, *les Editions Africaines*, 1990, p.13.

³³ Intergovernmental Panel on Climate Change (IPCC), Second Assessment Report, First Session of the Conference of the Parties, Berlin, Germany, 1995.

make practical contributions to curbing it. These are the messages that this essay seeks to convey. It demonstrates how knowledge of the environmental impacts of human activities and education on the application of preventive and adaptation measures lead not only to awareness in a social group of the threat of climate change, but also to practical contributions to curbing it. Eco-citizenship education of populations is possible if we wish to achieve these objectives. The young people of Yaoundé can spearhead this mobilization effort in order to preserve life on this planet. They have the capacity to do so.

2. THE CLIMATE THREAT TO MY CITY AND LIFE

*The threat posed by climate change to the survival of civilization calls for prompt, far-reaching, and global action.*³⁴

I live in a low-income area of Yaoundé, which urban planners describe as being at risk and unsuited to rehabilitation. My neighborhood is highly prone to flooding, as is more than 60 percent of the urbanized area of the city.³⁵ As is the case with 85 percent of the population of Yaoundé, the lack of household waste collection forces us to resort to individual sanitation methods daily, with all the risks that this entails. The river and streams that wend their way through the neighborhoods serve as our main garbage dumps. Our houses are built largely with salvaged and recycled materials, and our problems with overcrowding are compounded by the threat of climate change hanging over our heads. The residents of my city are especially vulnerable to disruptions caused by flooding during torrential rains. The last rainy season was devastating. Damage is sometimes measured in the loss of human lives. On March 24, 2008, a mother and son were killed by a landslide following heavy rain in one neighborhood. In another, an entire family was left homeless. And I still recall Monday, May 28, 2007, when a little six-year-old boy was crushed by a car as he played in water that had just flooded the sidewalk in the downtown area after a storm.³⁶ One year later, on April 26, 2008, flooding in the Nkolbisson neighborhood produced significant damage following heavy rains that made headlines in the newspapers.³⁷

People have stopped keeping track of cases. This situation is unprecedented. Uncontrollable flooding in the downtown area is producing traffic jams and considerable physical destruction. The entire area of the city located on the banks of the Mfoundi river is highly flood-prone, and the river, which runs through the city, quickly becomes swollen. In addition to the unstable climate, blockage of runoff areas by waste from households and small businesses is preventing the flow of water. With nowhere to go, the water rises up to sidewalks, flooding swampy neighborhoods located downstream such as my own. My family house was flooded four times during the last rainy season! I

³⁴ Al Gore, Nobel Peace Prize 2007, excerpt of the speech delivered at the prize award ceremony, Oslo, Norway, December 10, 2007.

³⁵http://www.cameroon-info.net/cmi_show_news.php?id=20810, article "Report: Douala and Yaoundé, symbols of poverty in Cameroon," October 22, consulted February 6, 2008 [online].

³⁶ Cameroon Tribune, No. 8858/5057, Wednesday, May 30, 2007, SOPECAM, Article "Nsam: Child Crushed by Car," page 11.

³⁷ Cameroon Tribune, No. 9256/5455, Tuesday, December 30, 2008, SOPECAM, Special retrospective: "In the notebook," p. 23.

lost my notes and textbooks in the panic. The post-evaluations that followed were inconclusive. These conditions make it very difficult for me to continue my studies.

The violent rain and storms in March 2008 caused power outages in Yaoundé, owing to a host of technical problems such as fallen telephone poles and transformer breakdowns.³⁸ These constant outages have made for dark nights, making it impossible to use the computer for homework.

For us, the end of the rainy season and the start of the dry season give us little reason to celebrate. Indeed, new problems soon arise. Periods of searing heat make it difficult to obtain water from supply points. It is very difficult for us to have access to running water and in the rare instances that we do, water is often shut off. Water-borne diseases have spread like wildfire in my neighborhood. Children are the most hard hit. I have seen many die of typhoid fever and cholera. The vulnerability of the residents of my neighborhood to illnesses attributable to climate change is high. The human toll is all the more disturbing given that it affects mainly the health of the poorest. Permanent ponding of water in my neighborhood and the rise in average temperatures have created a favorable breeding ground for the female anopheles mosquito and for widespread malaria. We are plagued by mosquitoes day and night. How can students study peacefully when they are bothered by these insects or when they are always sick? What will hospitals do to save all those whose lives are threatened when they are already so overwhelmed by the high number of cases?

One of every two Cameroonians lives in the city.³⁹

Urban planning specialists have, for a long time, attributed this massive rural exodus to the employment problem. Climate change problems, which force the hardest hit populations to seek refuge in urban centers in their quest for a more hospitable environment or habitat, did not immediately spring to mind. My city is a victim of this urbanization. Every day, hundreds of “climate refugees” pour into the city, bringing with them the myriad effects spawned by overcrowding. From the housing crisis to the overconsumption of water and electricity reserves, to unemployment, Yaoundé is buckling under the pressure of climate change, which is affecting various activity sectors that directly impact the lives of the people.

Thousands of workers with workplaces in highly vulnerable areas are abandoning or quitting their jobs, leaving behind a trail of unstaffed schools, hospitals, police stations, etc. Others prefer to commute between their workplace and major cities. High rates of interurban migration have quickly led to an increase in the number of traffic accidents. Drivers' visibility is often reduced by dust or rain storms. At offices and companies, the productivity of workers, exhausted after long commutes, declines, putting them at risk of being dismissed and experiencing financial problems.

My city, and even more so, I myself, have therefore not escaped the effects of climate change. Flooding has become the daily plight of my family and the residents of my neighborhood. This situation will worsen in the future, and our homes could disappear under water should rainfall levels rise. Thousands will be homeless. The number of “climate refugees” will increase exponentially, a situation that will directly

³⁸ Cameroon Tribune, No. 9065/5264, Wednesday, March 26, 2008, SOPECAM, Article “Electricity: blackout problems are back.” Page 19.

National Statistics Institute, Cameroonian Household Survey (ECAM), 2004.

impact urban planning and create public health problems. The northern and coastal regions will be most hard hit by fleeing victims. Albinos, whose skin and eyes are highly sensitive to ultraviolet rays, will find it very difficult to survive periods of intense heat. Their health is at risk. The economic effects will be greater in the future, given that the transfer or generation of clean and renewable sources of energy will be very expensive for Cameroon, which is already poor and heavily indebted, despite the fact that it is a developing country.

The threat of climate change is therefore urgent and needs to be addressed now. Practical, long-term solutions should be found and should involve everyone, at both the local and global levels. An appeal for ecological civic-mindedness must be made to the residents of my city.

3. HOW CAN I CONTRIBUTE TO CONTROLLING CLIMATE CHANGE IN MY CITY?

*“It is time to make peace with our planet. We have everything we need to get started [...]”*⁴⁰

The quest for practical solutions is of paramount importance if we wish to combat climate change. In my city, the small number of industries and the fact that technologically, they lag so far behind, is curbing their ability to emit large quantities of greenhouse gases. The production of these gases, particularly carbon dioxide, is largely attributable to household activities and in particular to the transport sector. Urban transport, composed largely of taxicabs and motorcycle taxis, is contributing greatly to climate change in Yaoundé. And although many drivers are unaware of this, thousands are using “zoa-zoa” fuel, a mixture of gas and oil, despite the fact that it has been banned by the Government. This “fuel” quickly came to dominate the transport market, owing to its affordable prices and large quantities produced on the black market. Fuel specialists have discovered that this mixture is not only harmful to the engines of vehicles, but also to the health of people who breathe the fumes in automobile traffic and to the environment into which these pollutants are released. The city of Yaoundé has approximately 25,000 taxi drivers for approximately 18,000 vehicles.⁴¹ Almost all these taxi drivers have certainly already used “zoa-zoa” as fuel, either knowingly or unknowingly. Added to these numbers are those of motorcycle taxi drivers. One can therefore imagine the impact that this is having ...

It costs a lot to obtain a college education in my country. I have had to struggle with this reality since I obtained my *Baccalauréat*. I have taken odd jobs during my free hours to help my family cover a number of expenses. I sell youth magazines to young people, tutor secondary school students, and very often manage a “call-box”⁴² at the university. In November 2007, a relative suggested that I drive his taxi to make some money. From the first week, I started using “zoa-zoa” as fuel. I could save money, but at

⁴⁰ Al Gore, Nobel Peace Prize 2007, excerpt of the speech delivered at the prize award ceremony, Oslo, Norway, December 10, 2007.

⁴¹ Estimates provided by the parking services in the Mayoral Office of Yaoundé and by the five taxi driver unions in the city of Yaoundé (SYNACPROTCAM, SYNACTUICAM, SN CHAUTAC, SYNCHTACAM, and SYNPROCTAC).

⁴² The term refers to boxes that may or may not be painted, used as work stations by subcontractors who provide the general public with mobile telephone goods and services in Cameroon.

the same time, I was contributing to global warming, something of which I was unaware. A few months later, I came upon the map of global warming on the Internet. What an image! The accompanying testimony sent shivers up my spine. I realized the extent to which I am utterly vulnerable to climate change and the extent to which I bear responsibility for it. Tears welled up in my eyes. Real tears. Since that time, I promised myself that if I could acknowledge my culpability, then I could also reverse the trend. There was no need for me to wait until I became United Nations Secretary General to act. There and then, I decided that the time for action had come.

The proposal below is a practical idea that can contribute to combating climate change. This essay competition gives me an opportunity to submit my proposal for review by experts at the World Bank Group. They will help me determine its viability and capacity to effect positive change in the environment in which I live.

THE GREEN TAXI CAMPAIGN TO COMBAT CLIMATE CHANGE

“Be the change that you wish to see in the world.”⁴³

On several occasions, I have surprised a customer by looking in the rearview mirror and seeing the person throw trash out the window of the taxi I usually drive. Unfortunately, this trash clogs rainwater drainage areas, leading to flooding. When the water recedes, this trash ends up in swamps, rivers, streams, or in the soil, owing to erosion.

I have come to understand that a lack of awareness of the environmental impact of such behavior by the residents of my city leads them to contribute to global warming. These same attitudes are seen in homes, through the wasting of water and electricity and the dumping of waste in open air areas. Thinking of my conversations with customers, I recalled how easy it was for taxi drivers to start discussions with their customers. I suddenly realized that taxi drivers, the majority of whom are young people like me, can say no to “zoa-zoa” if they are mobilized and then provided with training that gives them an understanding of environmental issues and of ways of preventing and combating climate change, which could also allow them to provide the customers they transport with environmental education aimed at raising their awareness of the threat of climate change and especially of the need to engage in eco-friendly behavior in their daily lives, in order to combat and curb this phenomenon. Taxi drivers can play a key role in combating climate change by saying no to “zoa-zoa” and providing all their customers with eco-citizenship education in discussions with them. This was the inspiration behind the “Green Taxi Campaign” to combat climate change!

a. Definition

The “Green Taxi Campaign” to combat climate change is a vast operation aimed at building awareness and educating the residents of Yaoundé so that they can understand clearly the impact of human activities on the environment, become truly cognizant of the climate change threat, and engage in eco-friendly behavior in their daily activities in order to contribute to combating this phenomenon. This campaign takes place in urban taxis which, since that time, have been dubbed “green” taxis.

b. Goal and Objectives

⁴³ Mahatma Gandhi, founder of the Movement for Non-Violence during a period of strikes.

The goal of the campaign is to get the population and taxi drivers in the city to contribute to climate change through the adoption, on a daily basis, of a responsible attitude of eco-citizenship.

Specifically, it seeks to:

- Mobilize taxi drivers around trade unions and associations;
- Organize training sessions on environmental issues and ways of combating climate change that target this group so that they can educate passengers;
- Lobby against the use of “zoo-zoo” by drivers, particular drivers of taxicabs and motorcycle taxis;
- Identify, at the level of each trade union and association of drivers, a task force capable of spearheading and coordinating campaign activities;
- Provide each “green” taxi with a small recyclable trash can (or encourage them to provide one) in which customers will be encouraged to dispose of their trash once on board instead of dropping it on the sidewalk (taxi drivers will empty them in public trash bins at the first opportunity or at the end of the workday) and with posters and fliers to be distributed and posted in their vehicles;
- Conduct a bi-annual household survey in the city aimed at assessing the impact of the campaign and noting concerns and suggestions; and
- Conduct a survey of the taxi drivers involved with the campaign in order to assess their activities and document difficulties and obstacles encountered, as well as suggestions and needs. This will make it possible to better gauge the impact of the initiative and make any improvements that may be necessary.

c. Activities to be Conducted

- Organizing meetings of taxi driver unions and associations in Yaoundé aimed at involving them in the project, considering their contributions and suggestions, assessing their level of individual and/or joint commitment, and implementing strategies for and with them that will facilitate their interventions;
- Holding seminars/workshops targeting taxi drivers on environmental issues and ways of preventing and controlling climate change, spearheaded by individuals selected on the basis of their expertise;
- Producing posters and fliers related to combating climate change, pedagogical tools bearing the slogan “*Climate change is the consequence of our daily actions. We can combat climate change. Be an eco-citizen!*” for distribution to taxi drivers;
- Engaging in climate change discussions with passengers, emphasizing the role played by human activities and the practice of eco-behavior as a practical solution to controlling this phenomenon, spearheaded by “green” taxi drivers;
- Communicating in verbal and non-verbal ways in order to avoid arguments with passengers who may display reticence. In such cases, posters and fliers will play a key role; hence the need to post them in places where they are clearly visible; and
- Conducting the necessary impact evaluation studies on the campaign, which could take place every two years. However, “green” taxis will exist for as long as drivers wish to have such vehicles.

d. Results Expected

The campaign will help with the implementation of a true collective awareness-building organizational model, given the threat of climate change and the impact of human activities on climate change. The dissemination of information on climate change in “green” taxis and education of passengers on eco-citizenship will equip them with the tools needed to combat this phenomenon, given that:

- The number of “zoa-zoa” users will decline or even be reduced to zero;
- Taxi drivers in the city will be mobilized and then provided with training related to environmental impacts and measures to prevent and combat climate change;
- A task force will be identified by each taxi driver association and trade union in order to coordinate campaign activities with the aim of strengthening its impact;
- “Green” taxis will be found in automobile traffic in Yaoundé and the drivers will provide passengers with valuable education to combat climate change;
- “Green” taxis will have recyclable trash cans that their passengers will use and drivers will empty;
- The amount of waste on pavements and sidewalks will decline considerably and waste will no longer be strewn in swampy areas when it rains;
- The contribution of the population to climate change will be replaced by its contribution to combating this phenomenon;
- Impact studies will be done of campaign beneficiary households and of taxi drivers involved in the campaign;
- The Government, NGOs, and “green” youth associations will assist with the campaign, in particular with the production of posters and prospectuses, execution of impact studies, technical coordination of activities, and training of taxi drivers;

- Unions and associations of taxi drivers from other cities will replicate the initiative and mobilization will be ramped up to the national level; and
- Tax drivers will assume ownership of the campaign, thus facilitating the sustainability of awareness-building activities.

e. Beneficiaries

Taxi drivers in Yaoundé will be the direct beneficiaries of this campaign, along with their passengers.

The rest of the population will be indirect beneficiaries, in addition to persons passing through the capital who use taxis during their stay.

f. Participants

- “Green” taxi drivers;
- “Green” NGOs;
- “Green” youth associations;
- Environmental experts and climatologists;
- The Government; and
- Taxi driver unions and associations in Yaoundé.

g. Impact

Yaoundé has close to two million residents. It is very difficult to find someone who has never taken a taxi, even just once. Taxi drivers number 25,000 and the number of vehicles in circulation that are used as taxis by their actual owners or occasional drivers stands at 18,000. Every day, thousands of residents travel in these taxis, some doing so several times.

One can well imagine that building awareness around climate change in taxis will offer an opportunity to reach a very large number of persons. Given that each taxi can accommodate four persons and that 18,000 taxis are in circulation, then 72,000 persons can be reached through awareness-building (18,000 x 4). It should also be borne in mind that a single taxi can make roughly ten trips per day. Therefore, if 40 persons use a “green” taxi in one day and “green” taxis number 18,000 (this is not impossible!), then the level of awareness will be raised among 720,000 citizens (72,000 x 10). The impact can therefore be considerable. And in instances where all persons impacted do not implement the changes sought, then the large numbers who do can in turn educate those around them.

h. Monitoring and Evaluation

Monitoring will take the form of meetings organized with actors involved with the campaign and with different partners. Problems, needs, and suggestions will have to be recorded.

The evaluation will entail impact studies targeting taxi drivers and households based on objectively verifiable indicators at the start of the campaign.

i. Prospects

- Over time, the campaign could morph into a “National Citizen Education Program on Climate Change Using the Public Transportation System.” This program will

bring together all urban and interurban transport providers in Cameroon in order to build awareness among passengers; and

- In partnership with the three mobile telephone operators in Cameroon, it will be possible to implement the “Five Million SMS Program”,⁴⁴ to combat climate change, which will consist of sending text messages to the almost five million subscribers in Cameroon⁴⁵ on combating climate change and practical advice on daily eco-citizenship activities.

⁴⁴ Short Message Service

⁴⁵ <http://www.lesafriques.com/Cameroun/27.html>, Article “Cameroon: Mobile telephone fees fall by 20%,” June 11, 2008, consulted February 17, 2009 [online].

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Finalist
Miguel Antonio Garcia, Philippines
“Stepping Up to the Challenge: The Cebuano Youth in the Climate Change
Crisis



STEPPING UP TO THE CHALLENGE:

The Cebuano Youth in the Climate Change Crisis

SUMMARY

In Cebu and around the Philippines, ten-foot waves, floods and strong winds opened the Year 2009. Homes were destroyed, families were displaced, properties were heavily damaged, and lives were lost. Local governments shelved out millions of pesos to help victims and repair infrastructures.

Many see Climate Change as a major cause. Erratic weather changes and above-than-normal rainfall levels provide clear evidence that human activity's ill effects to the country was worsening.

Cebu province is enjoying rapid urbanization and growth. But with development, energy consumption, power supply shortages, air pollution, and oil exploration have become growing social and environmental problems. These issues contribute to worsening climate change.

Youth-led organizations like the **Clean Air Youth Alliance**, **Save the Tañon Strait Citizens' Movement**, and the **Carolinian Economics Society** have responded to combat the problem. But limited logistical and financial resources have constrained them from maximizing their overall contribution to society.

With this, I propose a **Climate Change STEP UP** Plan to concretize the different initiatives. This includes:

- **Setting up a Climate Change Youth Initiative**
- **Tapping Online Social Networks**
- **Extending links with governments and businesses**
- **Pushing information to strengthen climate change actions**
- **Using the Youth's Voice to advocate climate change reforms**
- **Providing Climate Change research**

Finally, I propose setting up a **Climate Change Youth Watch**. This will use youth groups to collect data on companies' emissions standards; monitor government agencies; research energy-efficient innovations; report companies with poor environmental practices to media; and, propose policy measures on energy efficiency.

CEBU'S CLIMATE CHANGE CRISIS

Waves and floods hit Cebu province last January 2009. More than a thousand residents in Cebu's coastal areas were displaced by the waves and strong winds. In one southern town, 50 houses were damaged in five coastal barangays while 56 families in a neighbouring town had to evacuate. Another nearby town had 156 individuals displaced.

A northern town saw wreckage of four coastal barangays, displacement of 36 families, and loss of properties worth 700,000 pesos. To the west, a large section of the seawall protecting a commercial village collapsed; a total of 10 coastal barangays were affected. In my hometown of Dumanjug, 134 families were affected, 34 houses were gone, and 108 residents were displaced by the bad weather. Fortunately, family relatives living there were spared.

Fifty million pesos is needed to mend Cebu's infrastructure in the coastal towns. However, our province was not the only affected area. Many places in the Philippines were hit worst. Northern Mindanao suffered five days of heavy rain. The **Philippine Atmospheric, Geophysical & Astronomical Service Administration** reported that the region's ten-day normal rainfall stands at 82.8 millimetres. But in one day alone, rainfall already hit 104.4 millimetres, surpassing average standards.

In Cagayan de Oro, colossal waves affected 12,797 families or 73,096 lives. One barangay saw the destruction of 95 homes and damaging 90 more. Two other barangays had 134 houses ruined with 229 families seeking refuge in evacuation centres. In neighbouring Misamis Oriental province, floodwaters bashed 16 municipalities and 2 cities. Damage on crops, live stocks, and infrastructure rose to 51,230,862 pesos. Lives affected included 14,580 families or 75,709 persons.

Up north in Luzon, 150 coastal houses in La Union province were brushed off by ten-foot sea surges. Another 1,000 residents lost their homes in southwest Palawan Island. Floods also knocked the country's eastern provinces. More than 21,000 residents in central Leyte temporarily lived in evacuation sites. Six family members in neighbouring Northern Samar died from a landslide triggered by flash floods.

The year opened with rains pouring and waves thumping. Lives were affected and lost by the surprising weather changes. One columnist in Cagayan de Oro observed that rainfall during the whole ordeal was 461 percent higher than average. He said that culprits were to be blamed. One of them is **Climate Change**.

Although debate still lingers, the **Fourth Assessment Report of the Inter-governmental Panel on Climate Change** declared that global warming over the last 50 years is attributable to human activity. Undoubtedly, recent erratic weather conditions devastating the country are symptoms that climate change is already here.

Climate change studies revealed that changes in global temperatures are due to human activities like polluted emissions, fossil fuels consumption, and exorbitant energy use from industries. In where I live, Cebu's rapid urban and industrial development would increase energy consumption and pollution. At present, two climate change issues are fast emerging: **Clean Air** and **Oil Exploration**.

Cebu City is facing dilemmas in air pollution and energy demand. Although considered 'fair' in air quality, data gathered in the city showed emissions standards to exceed those required in the country's Clean Air Act (Republic Act 9749). Mobile vehicular emissions account for 70 percent of total emissions. Roadside emissions surveys conducted by the Energy and Clean Air Project (ECAP), the City Traffic Operations Management (CITOM), and the Land Transportation Office showed that 3.7 percent of diesel-using vehicles in Cebu City had complied with vehicle emissions standards.

The **Department of Energy** has also expressed alarm over growing energy demands in the Visayas region where Cebu is located. Coal-fired power plants were floated as suggestions to curb power shortage in the region. However, these base load plants emit pollutants that would exacerbate the climate change problem.

With energy demand increasing in the Visayas and volatile oil prices in the global market, the Philippine government has sought measures to generate its own energy supply. Among the possible energy sources being considered is oil.

In December 2004, the Philippine government and the Japan Petroleum Exploration Corp (JAPEX) signed a service contract allowing JAPEX to conduct oil explorations in the **Tañon Strait**. But during President Fidel Ramos's term, the strait was declared a marine protected area. Surrounded by the provinces of Cebu, Negros Oriental and Negros Occidental, the strait serves as a sanctuary to 14 of 25 species of dolphins and whales in the country. It's a source of livelihood for people living in its coastal communities.

Oil exploration in the Tañon Strait started in November 2007. Its impact affected the lives of many. JAPEX set a seven-kilometre fishing ban around the drilling site. This displaced 1,500 fishermen who depend largely on the strait for their income. Each fisherman was set to lose 10,600 pesos. Other threats include destruction of the marine habitat and the endangering of the lives of inhabiting dolphins and whales. Man-made noise from drillings may hamper communications among marine mammals. As a whole, the possibility of finding oil in the country's seascape would risk the country from even greater risks to climate change.

Nevertheless, civil society was adamant in taking the fight to the courts and in the streets. Protest rallies, lawsuits, and consultations with local government heads pressured JAPEX to stop its drilling operations in May 2008. Environmentalists rejoice this as victory but the battle is far from over. Cebu's growth as a highly industrialized metropolis would continue to crave for more energy sources.

Pressed with escalating environmental threats, local governments organized the first **Metro Cebu Summit on Climate Change** in 20 January 2009. The summit tackled on the state of Cebu's environment and policies that require urgent implementation. The summit invited sectors from business, nongovernment organizations, the academe, youth, environment advocacy groups, and local community leaders. The key output from the summit was forming the **Metro Cebu Air Shed Governing Board**. A mandate of the Clean Air Act, the Air Shed Governing Board is tasked to monitor emissions tests in Metro Cebu and institute policies to improve Cebu's air quality.

Still, there is still much to be done with the newly-organized Air Shed Governing Board. Faced with limited funding, local governments have to allocate funds for the governing board. Moreover, it has to acquire more emissions testing equipments since there is only one available for the whole region.

CEBUANO YOUTH & CLIMATE CHANGE

With the daunting climate change challenges facing Cebu, closer ties with other stakeholders is vital. The youth is seen as one such to combat the climate change crisis. They comprise the largest sector in society and they possess dynamism, creativity and passion. Partnering with youth-led organizations can increase the success in pushing forward Cebu's climate change agenda.

Cebu is never sparse of youth advocates for the environment. With problems in wasteful energy consumption and pollution hounding the province, a myriad of youth-led environmental initiatives has mushroomed in schools and communities. In my university, groups like the **Clean Air Youth Alliance**, **Save the Tañon Strait Citizens Movement**, and the **Carolinian Economics Society** have been active youth groups promoting environmental reform and sustainability. These groups have already organized large-scale civic actions which have caught the attention of governments and agencies in local, national and international levels.

The Clean Air Youth Alliance

The **Clean Air Youth Alliance** (CAYA) is a loose network of youth organizations tasked to promote clean air through individual and joint initiatives. Established by ECAP, the network has 10,000 young adults and 34 organizations nationwide. Several CAYA chapters have been established across the Philippines. Among the active chapters include those in Metro Manila, Baguio and Davao.

In April 2008, ECAP brought CAYA to Cebu with several colleges and universities in the metropolis attending its launching. **CAYA Cebu Chapter** attempts to directly address the problem of climate change by looking into emissions from machines, engines, vehicles and plants. Responding to the problem, CAYA formulated **STEP UP** goals

towards clean air and energy efficiency. The goals outline the specific individual and concerted steps the youth can contribute in curbing climate change.

Programs initiated by different chapters include Anti-Smoke Belching Campaigns, Traffic and Road Safety Games, Bio-Fuels advocacy, Power Patrol for Energy Efficiency and Conservation, and Climate Change Forums. In Cebu City, CAYA volunteers serve in roadside emissions testing for its anti-smoke belching campaign. Our volunteers have also participated in conducting a **Baseline Compliance Survey** in the city. Volunteers partner with the CITOM board to collect data of 200 vehicles in city areas with high concentrations of moving vehicles. Volunteers interviewed motorists regarding the frequency vehicles have been checked for emission tests and the number of times they have repaired them.

Table 1: The CAYA STEP UP Goals

	CLEAN AIR	ENERGY EFFICIENCY
S	Stop smoke belching	Support restructuring the power industry
T	Tell people you know about the ill effects of air pollution	Take part in public consultations & hearings on new energy policies
E	Exercise regular preventive maintenance of motor vehicles	Enlist coalitions that promote reforms
P	Practice proper driving to reduce unwanted emissions	Practice energy efficiency & conservation
U	Use cleaner fuels and engines	Use clean, indigenous & renewable energy sources
P	Properly abide the Clean Air Act	Promote public-private sector partnership

CAYA is also active in its information campaigns. Volunteers frequently conduct seminars and forums about the CAYA initiative, climate change, clean air and energy efficiency. It has carried out road shows to different Cebu City schools orienting students about CAYA and its advocacies. Expanding its partnership, the group is set to launch **CAYA Kids**. Student organizations in the elementary and high school levels will be invited to join the cause.

Save the Tañon Strait Citizens Movement

With the JAPEX oil drilling becoming a concern among the Cebuano citizenry, a group of environmentalists launched the **Save the Tañon Strait Citizens Movement** (STSCM). The group is a coalition of environment advocates opposing oil drilling plans in the strait. The coalition consists of environmental lawyers, professionals, fishing folks, members of the academe, environmental activists, students, and various cause-oriented groups.

STSCM has encouraged students in colleges and universities to appeal before higher authorities to stop oil drilling and focus on finding renewable and cleaner energy. They use active nonviolence and media in amplifying the oil exploration opposition. They also organized creative protests and forums on oil exploration's ill effects. They have helped mobilize coastal communities to defend their fishing rights.

In 2008, STSCM, nongovernment organizations, and university academic departments organized an **Environmental Summer School**. The summer school provided capacity building to Cebuano youth passionate about the environment. Inviting youth ages 18 to 35, the program provided basic concepts, theories, and laws on development and environment; analyzed specific environmental problems impacting communities and personal lives; and encouraged the youth to propose actions and develop interventions to protect the environment.

The Summer School had learning visits, lectures, and immersion trips. Modules included topics on sustainable development, water management, renewable energy, public health, biodiversity, sustainable farming, environmental economics, governance and justice in the environment, environmental movements, and involvement of fishing communities.

Youth-led Initiatives in Climate Change Research

A CAYA partner, the **Carolinian Economics Society** initiated its own programs in line with environmental conservation and sustainable development. Last 20 September 2008, the organization hosted the **Young Economists' Visayas Regional Convention**. The regional convention is an annual program sponsored by the Young Economists' Convention of De La Salle University in Manila and our university. Other regional conventions were also organized in Northern Luzon, the National Capital Region, and Mindanao.

The regional theme touched on **Business in Partnership towards Environmental Conservation and Sustainability in the Visayas**. We invited representatives in the academe, environmental law, civil society, the business sector, and local government to share their thoughts and policy recommendations at how businesses can curb climate change. They were united in calling the youth to become active participants in pressuring businesses and governments to realize environment reforms.

Undergraduate students from our university presented their research on the environment. Two of my classmates imparted their study on firms' environmental management systems (EMS) and their compliance to ISO 14001 certification. They showed that industries inclined to international exports tend to seek for the certification. Another classmate presented her thesis on the determinants of passenger vessel accidents in the Philippines. Inspired by the country's weather conditions, the conclusion drawn is that human and ship accidents result to greater number of deaths and missing passengers.

Our university's **Department of Economics** has been active in propelling an environment research agenda. Many of our professors have researched on coastal preservation, energy, environmental enforcement and monitoring, and water management. Influenced by this thrust, students have entered into this research field.

Three of my classmates are currently working on climate change perceptions in Cebu's real estate markets. On the other hand, two of my classmates and I have already written an econometric paper on the determinants of greenhouse gases in highly industrialized countries. Results confirmed that GHG emissions are due to human activities like energy usage and production of traditional fuels. Productions in gas, industrial waste, oil and heavy fuels show significant results to rising CO₂ emissions. However, one factor that could actually impede GHG emissions is provision of efficient energy measures. Research in finding energy-efficient ways is vital to mitigate climate change.

Today, my team is currently finishing our thesis on the impact of environmental news to Philippine companies' stock prices. Our research is an extension to the landmark work of Dasgupta, Laplante, and Mamingi (2001). It has been empirically tested that market forces actually induce firms to comply with environmental standards. Results show that positive news on better EMS and investments improving environmental performance increase the firm's stock price. On the other hand, stock prices go down with negative environmental reports like oil spills, citizens' protests, and hazardous plant emissions.

A Network of Young Environmentalists

Seeing that partnering youth organizations is vital, the Cebu City government enjoined all youth organizations together towards the vision of a liveable Cebu by organizing the **Cebu City +10 Youth Sector Summit** last 31 January 2009. Areas tackled in the youth summit included culture, peace and order, environment, out-of-school youth, economics, and local government.

An important highlight in the youth summit is the outlining of action plans. For the environment, concerns include climate change, global warming, waste management and handling of environmental resources. Measures suggested include resource sharing among organizations, advocating recycling campaigns, supporting environmental laws, tapping local government units, promoting environmental awareness and education, segregating garbage, using indigenous materials, and implementing solid waste management systems.

The group outlined specific steps towards a better Cebu environment through a 2009 to 2010 action plan.

Table 2: Proposed Action Plan for the Environment

ACTION PLAN	YEAR								
	2009	2010	2011	2012	2013	2014	2015	2016	2017
Network with environment organizations									
Establish core group of environment organizations									
Initiate environment awareness & education campaigns									
Promote stricter implementation of environmental laws									
Support & volunteer in comprehensive emissions tests									
Push for construction of bicycle lanes									
Partner in implementing waste management systems									
Use indigenous materials for better water facilities									
Build infrastructures producing renewable energy									
Assess effectiveness of initiatives and projects									

Though idealistic and ambitious, the youth network has yet to resolve problems in logistical and financial resources among participating youth organizations. Additionally, it has yet been resolved how various youth organizations could participate. Much has to be done in drafting concrete steps in laying out the actions envisioned. Curbing climate change requires more youth stakeholders involved to make the youth’s voice loud and clear.

PUTTING THINGS TOGETHER

There is still much to be done in strengthening the environment youth network. First, I believe research is one ingredient missed by youth-led environment organizations. Research provides the youth with an arsenal of informed knowledge to sustain climate change projects.

Second, youth organizations can increase their impact if they focus on a particular issue. Engaging in mere tree planting initiatives or one-time recycling drives would only waste resources we could use for more sustainable initiatives. Admittedly, youth organizations lack the logistical and financial resources to implement and sustain innovative programs. Targeting the fundamental causes of climate change will do more good to the cause.

Our study showed that energy efficient means is significant in reducing greenhouse gas emissions. This tells us that **Energy Efficiency** should be the centralizing theme in the youth-led initiative.

Finally, youth-led organizations should be mindful that there is more to environment education and awareness. The thesis we are working on shows how citizens' actions in rewarding or punishing firms through the stock markets can provide incentives for firms to improve their environmental performances. Thus, the youth can significantly contribute on this effort by becoming active players to appeal businesses, governments, and international agencies to stop activities that could worsen climate change.

Figure 3: STEP UP for Climate Change Plan

STEP UP for Climate Change

Cebu has a very active youth passionate about the environment. Different youth-led initiatives show how the youth has already made steps to curb climate change. However, a more structured and concerted initiative can increase our contribution to society.

Here, I propose a **STEP UP** Plan for Climate Change that integrates the various youth-led initiatives enumerated.

STEP 1

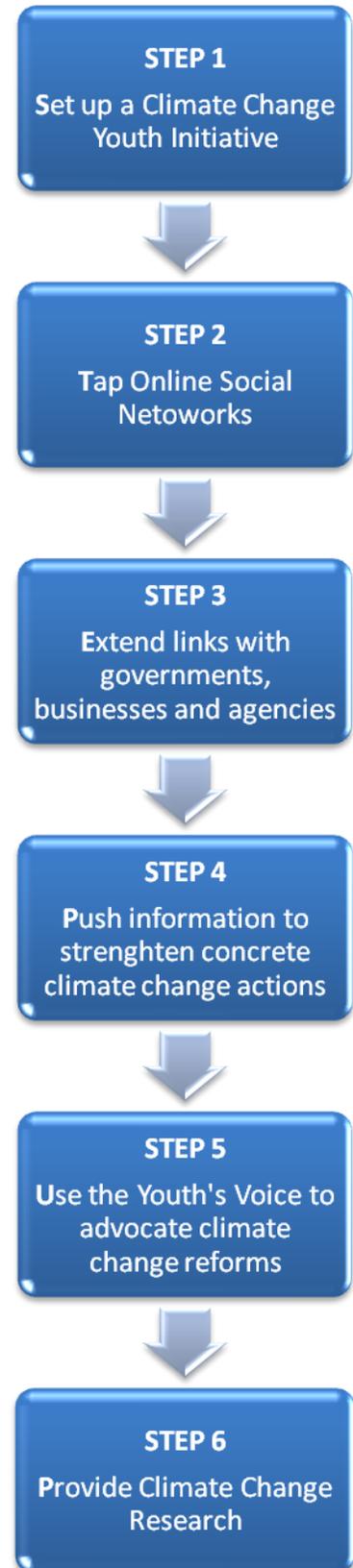
Set up a Cebu Climate Change Youth Initiative

Pooling together different Cebu youth organizations passionate about the environment is promising. However, there must be one clear direction. Clearly, the activities advocated by different youth-led environmental groups are related to climate change. Through a **Cebu Climate Change Youth Initiative**, youth organizations can share resources in their concerted efforts that could maximize their impact on programs and campaigns. With **Energy Efficiency** as the central thought, focusing on a unifying advocacy would guide the youth network to allocate the limited resources for maximum impact to society.

STEP 2

Tap Online Social Networks.

Online networks are effective in increasing awareness to people around the world. The youth can also use this innovation to inform people about Cebu's climate change challenge and how energy efficient means can mitigate the problem. The youth can use popular online social networks like Facebook, Multiply, MySpace, and Friendster to campaign not only to fellow Cebuano youth but also to reach out to other youths in the Philippines and around the world.



Blogging and video blogging can also be useful to inform the youth. Uploading an oil spill on YouTube, posting a photo on Cebu's air pollution problems, or reporting a company's poor environmental performance in a blog are effective means in maximizing the climate change reform campaign.

STEP 3

Extend links with governments, businesses and agencies.

In fighting climate change, entities that should be tapped include local government units, businesses, community leaders, environmental advocacy groups, national and international agencies, the academe, and other youth groups. A large-scale concerted effort is needed to ensure effectiveness and efficiency of any climate change initiative.

Unifying these stakeholders would strengthen our voice in recommending policies. Specifically, among the possible partners we can tap in Cebu include departments in environment, energy, education, and economic development, different colleges and universities in Cebu and the Visayas, local chambers of commerce and industry, city and provincial governments, nongovernment organizations and international environment agencies. Concrete examples in this partnership include close coordination with the Metro Cebu Air Shed Governing Board and participation in baseline compliance surveys and roadside emissions tests. Also, partnering with schools like the CAYA Kids program is worth noting.

STEP 4

Push information to strengthen concrete climate change actions.

It's not enough to simply inform people about the climate change problem; action must be done. Information campaigns are only effective if people do what they know. At the same time, fun is also necessary to reel in uninterested youths to join. Initiatives like the STSCM Environment Summer School exposed the youth in how they can use their knowledge to actively participate with communities in opposing the JAPEX oil exploration. Additionally, the program allowed youth participants to enjoy communing with nature and bonding with fellow youths. We can use the Summer School concept to involve the youth to find ways and initiatives in advocating energy efficiency measures.

STEP 5

Use the Youth's Voice to advocate climate change reform.

Supported by research, an initiative of active nonviolence can induce companies to follow environmental standards. Since companies are rewarded or punished by people through the market, the youth can serve as an added market incentive for firms to stick to eco-friendly activities. Creative and peaceful student-led protests like those initiated by the STSCM Youth are important in signalling companies to abide by environmental laws and standards.

STEP 6

Provide Climate Change Research.

Research should serve as the backbone to any youth-led initiative. Any concerted effort against climate change would not mean anything if it does not directly address the problem. Youth-led researches could greatly contribute to programs and initiatives by informing the network what to address and do.

It is important to encourage students to partake in researches related to energy, climate change, and sustainable development. Holding student-led conferences like the Young Economists' Convention can cultivate a research culture in Cebu's youth-led network. Capacity building is also needed to improve research skills among the youth. Partnering with professors, funding agencies, and development foundations are among the few steps that can strengthen the youth's research capabilities.

A strong network of youth organizations, creative social networks, partnership with important environment stakeholders, innovative information campaigns, loud and clear youth voice, and well-trained research capabilities will pave the way in forming a **Climate Change Youth Watch** in Cebu.

Figure 4: Forming a Climate Change Youth Watch



The **Climate Change Youth Watch** concept will tap environment youth groups to collect data on Cebu companies' emissions standards and environmental initiatives, monitor government agencies in their responsibilities, research on energy-efficient innovations and environmental performances among Cebu-based companies, report companies with poor environmental practices to the media, and propose policy measures on energy efficiency. With this innovative initiative, youth-led organizations can step up the campaign in mitigating climate change in Cebu.

CONCLUSION

The overwhelming challenge of climate change issues facing the Cebuano youth will be long, hard, and uncertain. Just recently, ten coastal barangays in Cebu's southern towns

were affected by flash floods. Waves thrashed roads while residents dragged their belongings across floodwaters.

But in our fight, some progress has been done. Last September 2008, the first baseline survey CAYA participated showed that only 25 percent of vehicles complied emissions standards. But the second survey in December 2008 showed that compliance improved to 33 percent. Results imply better enforcement by local government units and better informed knowledge among Cebuano motorists. CAYA plans to partner again with the CITOM for another Baseline Survey in March 2009.

A new chapter in the oil exploration struggle would have emerged as **NorAsian Energy Ltd** conducted a location survey off the coast of Cebu's southeast. However, Cebu's provincial governor issued an executive order suspending the survey. And in February 2009, 23 municipal mayors and 152 coastal barangay chiefs pledged to protect the **Tañon Strait Protected Seascape** through a Memorandum of Agreement with the Provincial Government and other government agencies. Without doubt, the STSCM Youth's campaigns were successful.

In the end, the Cebuano Youth serves as a beacon of light in ending the climate change crisis. They remain as a powerful source to new ideas, innovations and initiatives. The Youth can serve as an effective force in encouraging people to redo their lifestyles and prod stakeholders to make a concrete plan of action. A well-thought framework, strong research armour and a concerted effort among different youth-led initiatives are key steps to strengthen the youth's influence in society. Through these, the Cebuano Youth will be ready to step up to the Climate Change challenge.

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Finalist
Sonali Punhani, India
'Go Green'-The New Mantra



‘Go Green’-The New Mantra.

Realizing the Inner Self through the Universal Self:

On 25th June 2006, I boarded the Jammu Express for my first visit to the Heaven on Earth – Kashmir. My destination was the Holy Cave Shrine of Amarnath in the up hills of Jammu and Kashmir to pay my offerings to the ice Shiva Lingam. The Shivling is a natural ice stalagmite that waxes between July and September in the Holy months of Shravan and melts thereafter. It is believed to be one of the three abodes of Lord Shiva, where his Holiness narrated the story of eternal life and immortality to Mata Parvati. The Shiva Lingam which formed naturally for thousands of years is one of the most sacred pilgrimages of the Hindus.

My longing for cleansing and purifying the eternal soul was shattered when I reached the base camp in Pahalgam enroute Amarnath. There I was informed that the Shivling has melted completely due to unusual hot climatic conditions. From a majestic height of fifteen feet snow image that pierced the rocks, it was left to a mere seven inches. Hopes and beliefs of more than five hundred thousands pilgrims who had gathered to pay their respects to Lord Shiva – The Creator at the Holy Shrine were shattered.

Governor, Jammu and Kashmir, Mr. N.N. Vohra tried to pacify the pilgrims by citing the reason for the same. The depth of the snow around the caves which used to be around twelve meters earlier was only left to three feet. The regular advent of helicopters, deforestation around the area, large scale human activities all perpetuated to the dissolution of the Shivling. In nutshell the real culprit was – Global Warming that was adversely impacting us in all ways- environmentally, economically, socially and now even religiously.

On my return, I decided to find out more about this issue of Climate Change and see what could be done positively to make a difference.

The Hindu Philosophy- School of Thought:

In Indian tradition, the Earth is worshipped as the compassionate Mother Goddess. It is believed that, in her maternal aspect, mankind not only satisfies material needs but also has a chance to realize the Supreme consciousness. This according to me also has a scientific connotation to it.

Scientific evidence indicates that the Earth is a living being. Tracing history of millions of years of evolution of life on Earth, it appears that we are becoming conscious of the importance of preserving the earth’s heritage. According to Hindu mythology human consciousness has to find its essential identity with the universal consciousness for peace and tranquility. Whether humanity makes such a transition science is not certain. What is certain is that humanity is in severe crisis and cannot continue on its present destructive path for long or else it will perish.

This paradigm according to Vedic conception believes that the Earth on which man lives and works, loves and suffers is directly affected by man's condition. Conversely, we can assume that Earth can also be hurt by man. Therefore, to strike an equilibrium Man has to be more sensitive to his usage pattern of the planet earth.

The hymns to the Mother Earth-Bhumi Sukta in the Vedas give due to the ancient sense of morality towards the Earth and also reveal a deeper sense of the significance of the World for realization of the Universal Self.

The Global Crisis:

According to Environmentalists change is a fundamental characteristic of the environment. From the ice age of the past to the industrial age of the present, the climate of the earth has been changing. Changes due to natural factors are acceptable but those due to increased human activities leading to greater acceleration, is a cause of grave concern.

The earth's climate is changing - its atmosphere is warming at an unprecedented pace rising by 0.6°C in the last decade. By 2050 scientists predict that the earth will be warmer by 1.5°C to 4.5°C . Nine of the hottest years recorded in more than a century have occurred since 1988. These are alarming trends!! The earth's climate is a complex interaction between the sun, oceans, land, air and the biosphere. Global warming imbalances these linkages creating havoc in the environment. In 1988, the United Nations set up the IPCC Inter Governmental Panel on Climate Change. This was the first of its kind scientific body of international experts to investigate the issue of climate change. Mr. Rajendra Pachauri, Chairman of the IPCC cited that the increased Greenhouse Gases effect was the root cause of the problem.

One hectare of tropical forest is estimated to store four hundred forty five tonnes of carbon in its biomass and soil. When a forest is cut in the name of development, much of the stored carbon is released into the atmosphere as CO_2 . As the green cover diminishes fewer plants are left to remove CO_2 from the atmosphere through photosynthesis, thus disrupting the eco-balance.

The release of GHG's due to excessive burning of fossil fuels disrupts this optimal balance. I tried to speculate and find reasons for the same. We only have ourselves to blame for this mess. Our lifestyles which reflect obnoxious consumption are causing these changes. Flashy cars, wasteful use of electricity, the greed to acquire more and more material resource is causing pressure on mother earth. Man exists as if there is no Tomorrow.

Despite widespread concern over global warming, humans are adding carbon to the atmosphere even faster than in the 1990s. Latest research suggests that the Carbon Emissions have been growing at 3.5% per year since the year 2000, up sharply from 0.9% per year in the 1990s. We need to take urgent affirmative measures which are collective as we have only "One Earth to Live On". If we do not act so, the earth's fragile

environment would evolve beyond us. The earth will go on without us. **Eventually we will realize that if we destroy the ecosystem, we destroy ourselves.**

The Indian Scenario:

The challenge in a country like India is tremendous. Being a largely agriculture economy, India is particularly vulnerable to the impacts of the climate change. The Himalayan temperature is increasing at an alarming rate of 0.6⁰ C annually. Rising sea levels in coastal region is damaging nursery area for the fisheries, causing erosion and flooding, coral bleaching, glacial lake outflow and altering the configuration of forest ecosystems.

Scientists believe that the fluctuating weather conditions in a country suggest that it is reeling under climate chaos. For more than a decade now, India has been experiencing contrasting extreme weather conditions, heat waves to cyclones at one end and droughts to floods at the other. Orissa, an important eastern state of India, is classic example of chaotic climate change events. There have been instances of destruction of mangroves along the Southern Coastal region, a steep fall in agriculture and forest productivity, coral bleaching etc. which are being experienced in the Indian sub-continent.

According to estimates, India as a contributor to climate change ranks amongst the top ten countries of the world with the highest Green House Gas emissions. It emits more than two hundred and fifty tonnes of carbon every year in the atmosphere, which has to be curbed by being friendly to the environment. Our huge populace is putting an unprecedented burden on the environment. Being a developing economy we have to be extra cautious. Remember, Pollution should never be the price of prosperity.

Though a fast developing country, India has one of the best records of climate change mitigation with one of the lowest per capita carbon emission in the world. Its automobile industry has better clean technology. Major cities have introduced clean fuel like CNG and LPG. The Government of India has proposed mandatory blending of ethanol in petrol. Price of energy, both electricity and fuel, is much higher than the developed world. Though its economy is growing at a rate of 7-8%, there has been a mere 3.7% growth in energy usage. These are cautious consumption trends. But much more needs to be done.

The paradox is that we are a developing economy. India and China need to chart a different growth path to develop low carbon economies to combat global warming. The experience of developed countries has proved disastrous. According to a study, the total carbon released into the atmosphere as CO₂ by an average US resident is two hundred and sixty tonnes per year with respect to by an Indian which is merely six tonnes per year. The total amount placed in the atmosphere by an American citizen since 1900 is more than forty times with respect to an average Indian.

The other side of the story is very bleak. We are more than a billion people in India. Therefore, the developed economics of the North need to address the issue of over consumption while the Southern developing world has to deal with over population. These two together—over population and over consumption are the most important causes

responsible for the environment degradation. We need to address them simultaneously and not in isolation. The bargaining needed to get Southern attention to over population and the northern's willingness to face the issue of over consumption will only help to bridge the global divide.

The Indian projections of Climate Change in the future (as presented below) will impact productivity of most crops. Water availability will reduce drastically. Increased droughts and floods are likely to increase production variability. Increasing sea and river temperatures are likely to impact our aquaculture and fisheries.

- Productivity of most crops would decrease due to increase in temperature and decrease in water availability (especially in IGP). Greater loss expected in Rabi.
- Reduced frequency of frost damage in Punjab
- Impacts on food quality could be variable
- Considerable effect on microbes, pathogens, and insects
- Imbalance in food trade due to positive impacts on Europe and North America, and negative impacts on us
- Increasing temperature would increase fertilizer requirement for the same production targets and result in higher emissions
- Increased droughts and floods are likely to increase production variability
- Increased water, shelter, and energy requirement for livestock
- Increasing sea and river water temperatures are likely to affect fish breeding, migration, and harvests.

Youth Participation in Green Endeavours:

Gandhiji, the great Indian Mahatma rightly said that the **mother earth provides enough to satisfy every man's need, but not every man's greed.** We, the youth of this world, should practice the Gandhian philosophy of simple living and high thinking. Over consumption of goods and services should be restricted. Each one of us in one's own little way can make a positive difference.

Individual initiative to reduce over consumption should be done by adopting the 5R's.

- Refuse unnecessary goods and services. Plastic bags should be a strict No-No as they are non biodegradable. The Government of India has banned the use of plastic bags. It is instead propagating the use of traditional, localized recyclable paper and cloth bags.
- Reduce - We, the inhabitants of the planet Earth, should minimize the consumption of the goods and services as much as we can. Switch off the computers, TV when not in use, walk or cycle to college, marketplace, propagate

car pools, use natural electricity etc are some initiatives which can make a significant difference.

- Reuse - Today is the era of 'Disposables' which is considered as fashionable. We should reuse goods as much as we can and it will automatically reduce the demand for new goods. This in turn will reduce the demand for production of new goods.
- Repair- Old furniture, car, electric equipment and reuse them as they are cost effective and ecofriendly options.
- Recycle goods so that they can be used over and over again.

When I look back, I realize that my grand mother followed all these principle in her own subtle way. The traditional Indian living patterns were based on the 5R's. There were no disposables and food was cooked and consumed in reusable metal utensils. Every time we went to the market to buy fruits and vegetables we carried a home stitched cloth bag from an old bed sheet which was reused for years. When it got torn, it was used as a floor mop or duster till it became completely tattered.

Those were indeed simple times. Simple living and high thinking was the guiding principle of life. There was so much sharing and more of "We" than "Me" as we see today.

In the 'new age of convenience' - Disposables Consumerism, we waste as much as we consume. In some cases, Packaging costs are almost 55% of the cost of the product. Therefore, we need to simplify our consumption habits by demanding for natural, organic products from the producers.

Green Initiatives:

Today, as a citizen of the 21st century, I ponder and wonder "Have we truly developed"? When I look around, I see a meltdown in all spheres - moral, economic, social and environmental. The picture is indeed bleak and we, the youth of the country, have a national responsibility to take concrete steps.

In my college, we formulated an Eco Club responsible for creating awareness regarding environmental friendly practices. Through posters, slogan writing, puppet shows, street plays, and similar traditional media we spread the message of "Green Environment - A Sustainable Environment". Eco Club runs campus-wide campaigns to promote water and energy conservation, organizes national intercollegiate recycling competitions, energy conservation contests and hosts annual celebratory events like Earth Day and Environment Day. We also have an "Each One Teach One" programme where each student imparts life skills to at least one individual from the under privileged section of the society. Through this personalized interaction, messages on eco friendly strategies are imparted which are localized to the community.

When I think deeper on this subject, I see a lot of hope as many Green Initiatives have been launched. People in the media, educational institutions, resident welfare associations

(RWAs), Non Governmental Organisations (NGOs) are voicing their concerns and taking concrete measures to address the issue of Climate Change.

We have taken a pledge to plant a tree on our every birthday. The Delhi Govt. has started the 'Green Delhi' campaign, where free saplings are available to be planted anywhere, anytime by anyone.

Diwali - The festival of lights and crackers is one of the most auspicious Hindu festivals celebrated in India. A campaign by the school students for the students "Say No to Crackers" was launched. It has made a significant decrease in the pollution levels of the country, as the youth and children have voluntarily decided to boycott the use of crackers and celebrate a smoke free and noise free Diwali.

I was impressed to hear that many RWAs in Delhi, the capital of India, have tied up with schools and colleges, Multinational Corporations etc. to get waste paper completely recycled by collaboration with an NGO – **Waste2Wealth**. The RWAs collect paper from the area residents and hand it over to the NGO at the end of each month. These include old bills, visiting cards, newspapers, and magazines etc which are otherwise sold by each household to the scarp dealer who does not send it for complete recycling. The NGO has tied up with various recycling industry units who then make fresh paper from it again. The philosophy is that every scrap of paper should be recycled through ecofriendly options.

Statistics show that by recycling a tonne of waste paper we can save at least seventeen large trees, seven thousand gallons of water, enough energy to heat or air-condition an average home for six months, besides protecting the green cover to absorb the Green House Gases generated from human activities. Delhi alone consumes twenty thousand metric tonnes of paper and through citizen actions like these; we can help to make our city Green.

Another ecofriendly initiative in this direction is **SmritiVan** - a park where family members plant saplings as tribute to their departed. At a mere cost of US\$ 10, a sapling of your choice can be selected. It is then planted with a stone plaque bearing the name and message of those loved ones whose memory is to be immortalized. Once planted the maintenance is the responsibility of the Municipal Corporation. We can go back to the evergreen whenever we want for strength and solace. Watching them thrive can make memories grow fonder even as the project helps the city become greener and its air cleaner. The idea is to adapt a tree and establish a relationship with it forever. Families draw comfort from seeing the tree flourish and that's what memories are for. Trees, after all, make unusual but poignant memorials. Presently, around five thousand trees have been planted in the SmritiVan by Delhi residents in the memory of their beloved ones. Indeed a novel Green Idea – **To plant a sapling and Grow a Memory.**

Going Green – The New Mantra:

India has embarked on "Go Green"- New energy mantra. It has launched as ambitious mission of harnessing sunlight and wind to contribute at least 5% power to the country's

energy basket. The credit for this goes to the awareness campaigns pitched by young environmentalists who would also earn money by savings through carbon credits. I strongly feel that the global venture of trading carbon credits by adopting CMDs is a novel idea. According to economists, a green fiscal stimulus can provide an effective boost to the global slowdown. It will generate increased labour demand in a timely fashion and also build a foundation for a sound sustainable and strong growth in the future.

In view of the ever-rising need of Energy, India has addressed the need of Energy generation through non-conventional measures. In addition to hydro generation, India has forayed into wind and solar power generation as well. In Asansol West Bengal, the country's biggest solar energy power plant of 100 MW is coming up. In Gujarat, the government has signed an agreement with several companies to provide solar lanterns. The change is also taking place at the community level. Many NGOs, spearheaded by many young environmentalists with a Green mission, are introducing innovative clean technologies. **Pollution often disappears when we switch to renewable resources.**

“Development Alternatives”- an NGO, handed over a solar power plant to villagers in Uttar Pradesh's Jhansi District. This village did not have power supply since the country's independence and now they have their own ecofriendly solar power plant.

Anticipating the possibility of load shedding in the summer of 2007, young green entrepreneurs in Mumbai embarked on a Save Power Campaign called “I Will and Mumbai Will”. These activities were initiated to educate and motivate the consumers to switch over to CFL lamps which, in partnership with Phillips India, were made available to consumers at discounted rates. Consumers were appealed, through advertisements in Leading Newspapers, to operate their washing machines and other electric gadgets at non-peak hours and set their air-conditioners to 24^o C and thus join the Conservation Campaign. This was backed up with Awareness Programmes on Energy Conservation and Electrical Safety held in schools and colleges. Visits of children from schools to thermal power station at Trombay were organized. The contents of all the awareness programmes focused on the need for energy conservation, easy to follow tips on conserving energy and precautions to be taken while using electric gadgets to avoid accidents. Such initiatives were replicated in various states of India and have led to green entrepreneurship.

As they say, **Need is the Mother of all Inventions.** Fly ash technology is providing relief to the over stressed resource base of soils being mined for the production of fired-bricks. This is demonstrated in the post-tsunami reconstruction project in South India. The massive task of reconstruction after the tsunami had necessitated the requirement of large amounts of high quality building materials in a short span of time; material that would also resist the deteriorating effects of the salt water in coastal regions. Fired bricks, the popular materials for construction have already stressed the scarce resource of available soil. Fly ash, available in plenty as a waste from the thermal power plants, is now rapidly gaining acceptance in producing bricks used for construction of eco friendly houses. The erstwhile waste of the power plants has become a manna for the building industry

struggling to seek environment friendly, high quality and affordable alternatives. The use of fly ash block technology has shown a way to reduce the consumption of energy and the use of scarce agricultural soil required for the production of traditional fired bricks and at the same time provides a solution to the environmental hazards of dumping ash as has been the practice of most power plants in India.

The Delhi Government has banned the use of plastic bags by every citizen and has mandated commercial vehicles to use cleaner, greener fuel in Delhi. Presently over one hundred thirty thousand vehicles plying on Delhi roads use CNG as fuel. Garbage has been used as refills at large wasteland sites and these are converted to green parks.

Making IT Green, an initiative of the Indian IT industry, ensures adoption of green technologies and practices including green buildings, green computing infrastructure like energy efficient data centres, power efficient computers, sharing infrastructure, shared data centers and addressing issues like e-waste management.

Making Green happen through IT deploys IT solutions which help firms and businesses become green, including cloud computing, video-conferencing, intelligent transport systems, Web-conferencing, motion and heat detection sensors.

Making Green Warriors encourages over two million employees of the IT-BPO industry to adopt a green life-style and thereby become change agents to create a sustainable impact in the society around themselves through increasing awareness and more importantly changing behaviours.

The Indian IT industry has been at the forefront of many transformational initiatives and I am sure it will play a very important role in creating a more sustainable environment, not only in India, but also across the increasingly flat world we live in today.

Green credentials are already becoming evaluation criteria and thus creating green solutions will enable firms to differentiate themselves in an increasingly competitive market."

A Green Hope:

The present environmental crisis has a global impact. Regrettably, only in times of crisis, we learn that each one of us is an integral part of the whole. We never know the worth of water till the well is dry. What we do or fail to do have a very real impact on the existence of the Earth as it's all inter related. Humanity has to change and must grasp the idea of Cosmic Unity in which the body, mind and surroundings all appear as one Entity, only then can we contribute effectively towards promoting a holistic way of life that will help to overcome this present environmental crisis. We have to devise strategies to change and focus on the complete well being so as to avoid a Global Catastrophe.

Muhammad Yanus, noble prize winner 2006, has called for global lifestyle changes to make the world a better place. We should adopt a lifestyle which is consistent with this

decision as we cannot continue a lifestyle at the cost of the planet itself. Each generation should take a pledge that they will leave the world safer than they found it as **“We did not inherit the Earth from our ancestors, we borrowed it from our children”**.

I see a lot of hope in these initiatives undertaken by the young Green Entrepreneurs. I am sure children, on their visit to Amarnath - the Holy Cave Shrine of Lord Shiva, will not be disappointed like me. They will get an opportunity to witness the tall natural ice stalagmite in all its glory and peace.

Finalist
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“Climate Change – An Explosive Long Bill the Earth’s Generations Must
Pay”



CLIMATE CHANGE – AN EXPLOSIVE LONG BILL THE EARTH’S GENERATIONS MUST PAY

ABSTRACT

In the writing of this essay, I am trying to see the impacts of climate change as **an explosive long bill** the Earth’s generation must pay to the Earth for what they have taken from it. There are prices for what we have exploited and stolen from the Earth and our furious planet is now asking.

The explosive long bill we have to pay, in the form of devastating impacts of global warming, are already evident in Indonesia and will likely worsen due to the fact that my country is experiencing one of the highest rates of tropical forest loss in the world. As a result, the boosting effects of climate change have influenced some crucial life aspects in Indonesia.

Living in Indonesia for almost 20 years has made me see how the climate change affects people’s life, especially my life as a youth. I believe youth plays a big role in overcoming this global threat. Due to the fact that the impacts of climate change will not last not only for a short-term but long-term, in this golden opportunity, I am trying to present and express youth as the NOW green generation who can both start a step to make the Earth a better planet to live and prepare for the NEXT green generation with youth’s own unique way.

PREFACE

Hope springs eternal in the human heart - After many disappointments at failures of preventing the rapid effects of climate changes and even being faced up to the fact that the Earth is now a destructed planet, I still go on hoping and dreaming of my bright future and better living I will have on this Earth.

I used to think living, playing, working, and doing my varying activities on Earth are purely free. In fact, they are not; they are things we have to pay for. The Earth will ask for its payment whenever it wants to and I see the climate change as the way our Earth asks for its rights.

The green emerald, that was how many countries called my beloved country, Indonesia, due to its awesome tropical rain forests several years ago. It was a fact that Indonesia was a great archipelago with fertile soils and natural resources in its each island. As a result, not less than five countries try to colonize this great archipelago. But now, the fame of Indonesia is just a history. My country is no longer called the green emerald. Green forests are illegally logged, fertile soils and natural resources are irresponsibly exploited, there is no more green emerald lying on the Earth equator. Global alarm has rung due to the destruction of tropical rain forests. Deforestation causes the extinction of many species and extreme changes in our global climate. If the world does not do anything and

just goes with the flow of the current rate of deforestation, the world's tropical rain forests will be gone within 100 years; causing threatening effects to the global climate and the elimination of flora and fauna on the Earth. Moreover, a big amount of pollution is produced every single day since Indonesia is a developing country which counts on its industrial sectors. No wonder, the unstoppable effects of climate change are now happening in Indonesia. The great perpetual destructions done in this archipelago have created an explosive long bill we have to pay. There are prices for what we have exploited and stolen from this country as a part of our planet. Like what I have tried to explain before, the Earth will ask for its payment, and our furious planet is now asking.

The explosive long bill we have to pay, in the form of devastating impacts of global warming, are already evident in Indonesia and will likely worsen due to the fact that Indonesia is experiencing one of the highest rates of tropical forest loss in the world. High levels of both population density and biodiversity, combined with its geographical condition where 80,000 kilometers of coastline and 17,508 islands are spread along, make this archipelago one of the most fragile countries to the effects of climate change.

THE INDONESIA'S STATUS QUO

More than 20 million hectares of forest have been cleared since 1985, but the majority of this land has not been put to productive alternative uses and Indonesia has lost an estimated 72 percent of its original frontier forest⁴⁶.

Those two facts are reflecting how severely deforestation happens in Indonesia. Some of the rain forests are cut down for agricultural use such as the grazing of cattle, and the planting of crops. Low-educated farmers chop down a small area and burn the tree trunks. This process is called slash and burn agriculture. This agriculture mechanism is commonly done by most Indonesian farmer. Modern agriculture occurs on a larger scale. Commercial logging, the cutting of trees for sale or export as timber or pulp, is another common form of deforestation. Logging can occur legally and selectively, where only the economically valuable species are cut. But then, in Indonesia, illegal logging becomes a national issue. Most tropical green forests in Kalimantan and Sumatra are illegally and irresponsibly logged which create great deforestations in Indonesia. A new WWF report says deforestation in just one province in Indonesia like Sumatra is producing enough greenhouse gases to rival key industrial nations.

On the other side, carbon-dioxide (CO₂) is the major gas causing the greenhouse effect which causes global warming that leads to climate change. All the things that produce CO₂, like a car burning gas, and the things that absorb CO₂, which are growing plants, are involved in what we call the global carbon cycle. Tropical forests hold a significant amount of carbon (a wood is 50% carbon (C)⁴⁷) which joins with oxygen (O) to form CO₂. When a forest is cut or replaced by skyscraper buildings, the carbon that was stored in the tree trunks combines with oxygen and is released into the Earth atmosphere as

⁴⁶ <http://www.globalforestwatch.org/english/indonesia/forests.htm>

⁴⁷ http://www.myminnesotawoods.umn.edu/legal/lega_carbon.html

carbon dioxide (CO₂) and this is the way deforestation in Indonesia stimulate the further impacts of climate changes in my country – Indonesia.

CLIMATE CHANGES DOES AFFECT MY COUNTRY

Since 1900, Indonesia, especially Jakarta, has become warmer by 0.2-1° C annually⁴⁸.

I live in Jakarta, the capital city of Indonesia. As a city which is located on a coastal area, Jakarta is one of most vulnerable city to the impacts of climate change. Nevertheless, the developments of my city are done without considering the environment factor. Now, like everyday, I can see million vehicles passing through the roads. Most of them emit gases that pollute the air and contribute towards the worsening impacts of global warming. Other ways, in which deforestation happens, occur in my city. They are the building of malls, apartments, skyscrapers buildings that are built on a land which was used to be a water-conservation or a public park. This condition is worsened by industries and factories that are mushrooming in Jakarta. Most of their wastes are spread all over the land, water, and even air. On the other side, I and, I am sure, they know those things are obviously worsening the ozone layer's condition that can lead to greater impacts of climate change. But then, money talks.

The boosting effects of climate change have influenced some life aspects in Indonesia. As a business student, I will try to focus on how the environment is affected and how it finally makes the economy of Indonesia threatened.

- **FIRST: ENVIRONMENT**

The rapid melting of glaciers in both north and south-pole due to the global warming raises sea level. Recently, the sea level has been increasing about 2 mm annually and the United States Global Change Research Program projects a global sea-level rise of 48 cm over the next century.⁴⁹ This will result in significant losses of Indonesia's coastline, islands and the associated marine resources, such as: fish, coral reefs, mangroves, etc. A million people along the coastal area of Indonesia will likely be at risk from flooding due to the rising of sea-level. Approximately 60% of Indonesian lives in coastal areas and low-lying coastal cities like my city, Jakarta.

THE LOVELY YET ENDANGERED "FRIENDS" FROM CENTRAL-KALIMANTAN

My father and mother were born in Kalimantan. When I was a kid, together with my parents, I visited Kalimantan. One of the most unforgettable moments is when I visited Sabangau National Park in Central-Kalimantan. Sabangau is famous for its Orangutans. It was such a great pleasure for me to meet them. It was obvious,

⁴⁸ <http://www.antara.co.id/arc/2007/4/17/kenaikan-suhu-global-pengaruhi-curah-hujan-di-indonesia/>

⁴⁹ http://www.cara.psu.edu/internal/Case_Studies/Hampton_Roads/RygelTHESIS.pdf

by that time orangutan had become endangered species. When I was there, I got a chance to hold a baby of orangutan. It was the time when I knew orangutan was just like us that need to be loved and cared. I took a picture of us, and at the right corner of the picture, I wrote “friends forever”.

Rising temperatures and changes in precipitation will have negative impacts on orangutans by reducing their food resources, the fruit trees. A longer dry season will reduce the availability of fruits and will negatively impact orangutan populations because female are more likely to be pregnant when there are sufficient food resources. The fact is that, since 1999, the fruit productivity in Central-Kalimantan has remained low due to the unstable climate change and it massively impacts not only orangutan but also other animals. Furthermore, the case of illegal logging happening in Kalimantan handled seriously. This factor will also negatively impact orangutan population by destroying their habitats, which have to take many years to be recovered. Orangutans can only be found living in the rain forest tree tops. Orangutans spend 90% of their lives in the trees and sleep in nests they build in the tree tops⁵⁰. The further accelerated deforestation happening in Indonesia will not only threaten orangutans in Central Kalimantan but also all orangutans in Indonesia and other tropical rain forest’s animals.

- SECOND: ECONOMY

So, how the severe environment gives some further threatening impacts on the economy of my country?

As a maritime country, Indonesia must seriously concern about the impacts of global warming. The effects of climate change will continually affect the aquaculture industry, such as: fish and prawn industries, and infrastructure in the region. The rising sea-level has destructed the marine ecosystem which directly affects the reproduction cycle of marine creatures. In addition, climate change also has made the sea’s waves unstable. My father, who owns a small aquaculture industry, has felt the impacts of climate change on his business since few years ago. But he insisted this year makes those impacts realer even greater. The decreasing number of fish caught has automatically made my family’s income also decline. Nevertheless, by seeing the fact that there have been many ships and boats sink due to the terrifying big waves, my father is perhaps one of the luckiest aquaculture businessmen because until the time I am writing this essay, all of his ships are still fine. However, my father is just one of the aquaculture industry owners. As a maritime country, Indonesia must have a large number of aquaculture industries. Indeed, my father and other aquaculture businessmen know that their business is facing a big threat which also means a big threat to the economy of Indonesia.

⁵⁰ <http://www.sPCA.bc.ca/animalissues/orangutan.asp>

As an agricultural country, the economy of Indonesia is fraught with danger. Indonesia is faced up to the fact that its fertile soils, which are significant natural assets, will soon be flooding areas due to the global rising sea-level. Moreover, unstable temperatures and changes in precipitation will have negative impacts on crops. Decreasing both quality and quantity of crops will seriously weaken the economy of Indonesia by affecting the consumption and export sector.

As a developing country, where the industrial sectors play a big role in its economy, Indonesia will suffer some detrimental problems. Moderate sea-level rise will result in significant physical and socio-economic impacts because many of industries infrastructure are concentrated in low-lying coastal areas which are threatened to be significantly lost.

Consequently, by the time those crucial economy sectors totally defunct due to the further Earth destructions like deforestation, it will not just those business people who suffer but all Indonesian. The number of unemployment which is already high will be even higher and lead to more perpetual poverty in this nation. I am not trying to make a mountain out of a mole hill. Climate change is more than just a troublesome phenomenon. Not to exaggerate, climate change is a global big threat of all our life's aspects.

Explained previously in how I see the effects of climate change as an explosive long bill we have to pay before it really explodes. **It is not just me, you, him, or her who has to pay the bill, but US.** So, what can youth pay the bill with?

YOUTH – THE NOW GREEN GENERATION

I and some good friends of mine belong to the Greenpeace international organization. Greenpeace is an independent global campaigning organization that acts to change people's attitudes and behavior to protect the Earth from the effects of climate change⁵¹. Greenpeace invites people around the world to care more about this planet through a simple way, which is donation. The money collected will be used to slowly rebuild what has been destroyed on our planet. Our membership for almost 7 months makes us updated with our fragile planet's condition.

Knowing and realizing the facts that the impacts of climate changes have not been seriously solved and even have been surprisingly fastened drives us to attempt actions which are more than just donating funds through Greenpeace.

YOUTH DOES GREEN (YDG)

I have been a member of Youth Does Green (YDG) since October 2008. YDG is a forum consists of many university students all around Jakarta. In 2009 its member has already reached 596 people and all of them are 19 – 24 years old. YDG believes that youth can drive people to care more about the Earth which is being threatened by the impacts of

⁵¹ <http://www.greenpeace.org/international/>

climate change. The goal of this forum is to make people behave positively to the environment which in the end will help the problems of climate change. Its agenda is to make a “green activity” every three months. So far, I have involved in one green activity in the early January 2009, which is:

A GREEN ACTIVITY – HAPPY GREEN NEW YEAR 2009

Happy Green New Year 2009 was the theme of our green activity in the beginning of 2009. We had two things to do in that campaign.

First: we prepared 209 pots of varying green plants which would be distributed to houses in our living area that did not have any plants in it. On the plants’ leaves we hung one laminated paper that had a message: I and you can save the Earth.

Second: we shared 500 pins to teenagers in three malls. The pins had varying messages related to the green actions YDG offered to prevent the further impacts of global warming on it. Some examples of those messages are: REDUCE drafts in your home, use more EFFICIENT light bulbs, etc.

Those two things aim to create an awareness of the impacts of climate change among people. YDG believes the first step to drive them to concern more about the Earth is to create an awareness. When the awareness has been created, it will lead to actions. The actions done frequently will create a habit. When a green habit has been created in one’s life, then YDG’s mission is accomplished. But creating awareness among society is not an easy thing. It needs months even years to create it. But no matter how long it will take, YDG believes if there is a way there is a will. At least, YDG has started the right step to achieve its goal.

YOUTH PREPARES THE NEXT GREEN GENERATION

FIRST STEP

During my second semester in my campus, I got Community Development. To pass this subject with a good grade, a group of students needs to create and do a social project. After some considerations, we decided to choose Kampung Kids, a free education center provided to kids from low-economy level, and name our project: Kampung Kids Goes Green.

What did we do in Kampung Kids Goes Green? We invited kids from Kampung Kids to our campus. Two buses were provided to take them to our campus and back to Kampung Kids. The first session was started with a fun presentation about the global warming. It was surprising to know that not even a single kid knew about this global issue. During the presentation, they kept asking what, why, and how the global warming could happen. It was ironic, the threats of climate change are obviously in front of our eyes but there are still a lot of people who even do not know what climate change is. If they do not understand what problem they are actually facing, what we expect them to do? Those

kids are representative of the majority of Indonesian kids since most of Indonesian is at the low-economy level. In fact, kids are those who will grow up and are expected to be the next green generation after youth to make the Earth a better planet to live. **I am fully aware that past cannot be reversed, the only thing we can do upon it is learn from it and plan for a better future by preparing it from the present time.** That is what precisely I and my friends do. We realize that we cannot change the already happening impacts of the climate change. What we are doing now is aim to make our planet better for and from now. I believe youth plays a big role in solving this global threat. Slow but sure youth can bring the Earth back closer to the words “a green planet”.

The presentation ended up with a question: Can we still help our planet? Before my group answered the question, we gave them one t-shirt each where a space for writing their green promise is provided. It was really impressive for me to read what each of them wrote on their t-shirt. One of the best green promises for me was coming from a little girl, named Siti. She wrote: I promise to love my Earth the way I love my mum and dad. A simple yet awesome promise, isn't it? After that, it was the time to answer the crucial question. We took them to our campus's gazebo. While they were sitting, we gave them one small pot each, where they could put their name on it, a plastic of fertile soil, and a plant named sansevieria. Why sansevieria? According to our observation through books and internet, sansevieria is one of the best plants for clearing the air, as plants can absorb the carbon-dioxide⁵². We taught them patiently how to plant and grow a sansevieria well and I saw kids enjoyed it really much. When all of kids had finished with their plant, they looked very happy and satisfied. By that time, we asked them to pay attention to what we were going to say. We briefly explained: Although sansevieria and you are still little, but all of you are the big key which can help and safe our planet from global warming for now and future. By starting to plant the green plants, we have are answering the crucial question together, YES, we can still help our planet indeed. They stated that they loved the plant and promised to take a good care of it until it grew up.

Growing thought in kids' mind is the same with growing plants on soils. We have to be patient in planting the right thoughts in their mind and keeping the thoughts away from bad factors, until the thoughts grow and become a mature tree. A right, strong, and mature thoughts will lead to the actions supporting the thoughts. This will be the time when kids are not kids anymore but youth. The problem we are facing now is that: Have the right thoughts been planted yet in our kids?

A WRONG THOUGHT

I have one student and she is clever and diligent. One day, when we were about to do Mathematics' exercise, she opened her cupboard and took a new note book. On the other side, I saw her previous note book still had two blank papers left. I asked: “why don't you just use the previous note book? I think it will be more than enough for this exercise.” She answered: “No, I want to write on the new note book. It will be tidier, won't it?” Then I insisted: “No, you should concern about our earth. Global warming is happening. Paper is made of wood and for every paper you use; there is a tree which is cut down.”

⁵² <http://www.preen.com/articles/best-houseplants-for-clearing-the-air>

And surprisingly she answered: “Ah, it is just me. I mean although I don’t care about that thing but others still do, it won’t matter, will it?” By that time, I realize that most kids and people may have A WRONG THOUGHT. They may think: **If I do not care about the Earth BUT others STILL DO, it WON’T matter, WILL it?** Because it is only me, one single person cannot change the world, can I? So why should I care much about it? That wrong thought drives people insensitive to the effects of climate change. Insofar as that thought sticks in people’s mind, they tend to do nothing upon this threat.

Now, I am trying to refresh our mind. We can just change that wrong thought simply like this: **If I do not care about the Earth AND others ALSO DO NOT, it WILL matter, WON’T it?**

SECOND STEP

Understanding that kids do matter to the Earth’s future, I am trying to prepare them with a way that is giving a significant impact both now and in future. Because I love teaching, I am planning to build my own tuition center. My mother has supported me by buying me a house which can be developed into a tuition center. While having my forth semester in my campus, I am planning to open my dream tuition center in the next July 2009. Since “Sun” is my family’s name (I am Chinese), I will name it Sun Tuition Center (STC) that can also represent my tuition center’s image – giving the brightest way of studying. The target market of STC is from kindergarten to lower secondary.

What makes my tuition center different? As a tuition center, a quality of teaching has to be put in a very first place. While maintaining and increasing its quality, STC will grow the right thought in kid’s mind. The right thought I mean here is: kids also play a big role in preventing the further impacts of climate change.

STC will have a small computer’s room that will have two PCs. Those computers can be used for searching data for students’ assignments or playing a computer game when students have to wait for being fetched home. And that is the point when STC can grow the right thoughts in kids’ mind. Through a computer game which is fun and educative, kids will be easier to digest what actually STC is trying to share with them.

Eggy-Savvy, it is the name of the only computer game that will be provided inside STC’s PCs. *Eggy-Savvy* is a game CD created by some good friends of mine for an event in my campus. In that computer game, there are two characters kids can choose, Eggy (a boy) and Savvy (a girl). Both characters have the same goal, which is to make their living area greener by planting trees and using the energy wisely. It has some levels to accomplished, the wiser you use the energy and the more trees you plant; the faster you will accomplish the level. I have played *Eggy-Savvy* for several times and I enjoy it really much. I believe that kids will love this educative yet fun game. By seeing the fact that kids tend to copycat what they see especially in TV and game, I am really sure there will be a big possibility that they will implement what Eggy and Savvy do in the game in their real life starting from now.

Finally, it does not matter, how many people start to do the “green actions”. What keeps going on my mind is just a conditional which is previously mentioned: **If I do not care about the Earth AND others ALSO DO NOT, it WILL matter, WON’T it?** So, that is why I, you, and WE have to care.

CONCLUSION

The impact of climate change is affects the bill we have to pay together. Both directly and indirectly, climate change is threatening youth from many aspects of life. We can make the long bill paid soon as all of us attempt to act. Youth as the green generation can make a big change for the future by doing actions for one goal which is to make our planet a better place to live and preparing the next green generation. Because in the end, it is youth, who will be the future leader that has to protect the Earth and finally give the responsibility to kids, who will be the next future leader after us.

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Finalist
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“Climate change – a challenge for Humanity”



Climate Change: A Challenge for Humanity

Summary

There is no doubt that four thousand words are not enough to address all the problems faced by humanity. However, we can examine the main one—the one that threatens mankind's very existence.

There is much discussion about global warming. We seek to assign blame, define concepts, and strive to stop the phenomenon. The ideologies of the various governments around the world cause them to blame their opponents and to suggest that the latter have greater responsibility for solving the problem, but without a doubt, it is now time to start assuming our responsibility, not from an ideological, religious, or country standpoint, but as a species that inhabits planet Earth.

In the following lines, I will present my views on global warming, and the important role that we as young people living in rural communities have to play, since we have had the opportunity to pursue university degree programs and are starting to build small companies.

We are aware that Quintana Roo, like most states in Mexico, is already heavily involved in activities that jeopardize and contribute to climate change. Increasingly intense hurricanes, longer periods of drought, severe flooding, and the emergence of new plagues make the news on a daily basis. Global warming undoubtedly plays a major role in all of the above. But, what is our view of the problem? What strategies are we proposing? This essay seeks to answer these and other questions.

1.- Acknowledgements

The ability to express our opinion, but even more importantly, to make recommendations to help build awareness among the new generation of green entrepreneurs, is an opportunity for which we are grateful to the World Bank and the organizers of the essay competition, which, more than a competition, is a forum for the convergence of universal ideas from the generation that will take the baton for the leadership of the planet, as it has been proven that major changes in awareness among human beings have been achieved through knowledge and ideas.

I mention the foregoing because I have read several of the essays submitted for the competition in previous years, which gave me insight into not only how my peers in America think, but those from other continents as well.

Climate change, as can be seen from the collection edited by Jeremy Leggett,⁵³ is a phenomenon on the rise. This essay is not the forum for raising technical issues, as there are many papers written about these issues and one only has to surf the internet to find information. I will instead seek to address the problem from another angle.

2.- Overview — the current situation with climate change

Global warming, a phenomenon that has existed for several decades now, is caused to a large extent by human beings, since despite the fact that we have the capacity for thought, reasoning, and understanding, we have transformed, and on many occasions even helped to destroy, former elements of a biological cycle. Nature did not give us a resistant skin, but we, owing to the abovementioned capacity, manufacture clothing from different materials. We cannot run at over 50 km/h, but we build vehicles to transport ourselves.

The foregoing clearly demonstrates that our species is primarily responsible for climate change. A culture of overproduction, consumption, and waste, without any restrictions or social responsibility, not to mention environmental friendliness, has led us to the brink of collapse and the damage to nature is close to being irreversible.⁵⁴

3. - Effects of global warming on my country and community

3.1 The laws and Mexico: Article 4, paragraph 4, of the Mexican Political Constitution stipulates the right to a healthy environment.⁵⁵ There are 31 local laws on ecology, and over 2,500⁵⁶ municipal regulations that stipulate the minimum requirements for impacting the environment as little as possible, in addition to the hundreds of institutions responsible for designing and conducting environmental programs. Nevertheless, the degradation continues.

⁵³ Leggett, Jeremy K., editor, *Global Warming: the Greenpeace Report*, compiled by Jeremy Leggett. Economic Culture Fund [*Fondo de Cultura Económica*], Mexico, 1998.

⁵⁴ Naredo, José Manuel y Parra, Fernando, editors. *Toward a natural resources science [Hacia una ciencia de los recursos naturales]*. Siglo XXI de España Editores, Madrid, 1993.

⁵⁵ Honorable Congress of the Union (2009), *Political Constitution of the United Mexican States* [On-line Publication] available at: <http://www.cddhcu.gob.mx/LeyesBiblio/>. [Accessible as of January 22, 2009]

⁵⁶ National Statistical and Geography Institute [*Instituto Nacional de Estadística y Geografía*], Government of Mexico. Visit: <http://www.inegi.org.mx/inegi/default.aspx>

3.2 Natural phenomena: The hurricanes that lash the Mexican Caribbean coast, as well as the Gulf of Mexico and the Pacific coast, are increasingly intense.⁵⁷ In the coastal zones, beach erosion is an undeniable reality. At present, municipalities like Benito Juárez, where the city of Cancún is located, are concerned and have programs underway to save the beaches.⁵⁸ Many hotels that were previously outside of the Maritime Land Zone [*Zona Marítima Terrestre*]⁵⁹ now have their foundations laid under water.

At the same time, my region, South East Mexico, which includes states like Tabasco, Campeche, Yucatán, and Quintana Roo, has been affected by severe flooding and extended periods of drought⁶⁰ over the last five years.

3.3 My community: I am from the state of Quintana Roo, and the community where I live, *Pucté*, which is the name of a tree in the region, depends primarily on sugar cane cultivation to survive and is organized under an agrarian legal framework in Mexico known as “*ejido*.”⁶¹ Generally, sugar cane harvesting or cutting takes place over a six-month period,⁶² but in 2009, it is felt that, owing to the fall in production resulting from the lack of water, this task will take only four months and that this time frame will be sufficient for processing what was normally covered in six months.

3.4 Another problem we have to solve: Unfortunately, in addition to global warming, another problem has taken root in most of the towns in my state: the lack of food production.⁶³ In rural areas, the plots of land on which people live are usually 2,500 square meters, which indicates that rural folk have sufficient land and space to produce at least 5 percent of what they consume.⁶⁴ Nevertheless, on several occasions I have even seen persons buying drinks made from lime concentrate, when they have healthy trees in their own yards that are laden with fruit. Helping the planet also means not consuming in excess.

3.5 Forecast and outlook: *At the current rate, having started the process of overheating the planet, coupled with the fact that we have stopped producing*

⁵⁷ Chávez, Javier, correspondent (2005). Wilma demonstrates her destructive power in QR: the worst is yet to come [*Wilma da muestras de su poder destructivo en QR; falta lo peor*] [On-line Publication] available at: <http://www.jornada.unam.mx/2005/10/22/036n1est.php> [Accessible as of January 22, 2009]

⁵⁸ *Unidad del Vocero* (information service) of the government of the state of Quintana Roo. (2009) Recovery of the beaches is a priority for Quintana Roo [*La recuperación de playas es prioridad para Quintana Roo*]: Sara L. Ruiz Chávez. [On-line Publication] available at: http://www.unidaddelvocero.com/2009/febrero/noticias/noticiasdia/03_04.html [Accessible as of January 24, 2009]

⁵⁹ The Political Constitution of the United Mexican States describes the Federal Maritime Land Zone as that territorial space 20 meters inland from the high tide. This strip is regarded as federal property and does not belong to anyone in particular. The possibility of possession may only be gained by direct concession from the Government of Mexico.

⁶⁰ Ministry of Rural Development and Indigenous Affairs [*Secretaría de Desarrollo Rural e Indígena*] (2008). Livestock Farmers Fear the Drought [*Temer Ganaderos por la Sequía*] [On-line Publication] available on the Internet at: <http://sedari.groo.gob.mx/WebPage.php?IdUbicacion=6&Pagina=Nota.php&IdNota=4667> [Accessible as of January 24, 2009]

⁶¹ What is the “*ejido*?”

⁶² Approximately from the second fortnight of November to the end of May, date when the rainy season begins.

⁶³ There is currently a FAO program in Quintana Roo for own consumption, but it has not been enough to stimulate production, not even for own consumption.

⁶⁴ Research how much land an individual would need for own consumption.

most of what we consume, thus paving the way for the return of slavery through foods, and in developing countries like Mexico that hope to one day have the commodities found in first world countries, I predict that we will, in a few years, have an eroded State with most of its resources almost irreparably damaged. Epidemics such as dengue, which are caused by a mosquito in my region known as the Aedes Egypti mosquito, and malaria will be increasingly stronger and more difficult to combat.

Obviously, all the abovementioned variables have a direct impact on the economy. Little attention is paid when one individual falls ill, but if we analyze this phenomenon, not in one individual, but in an entire country, we will note that in a country where the indexes of sick persons are high, the country is less productive.

As a citizen who is aware of and accountable for what my brothers and sisters are doing to planet Earth, I will therefore have a lot of work to do, which I started several years ago, by at least transforming my immediate environment, and beyond, by using the written word. Time is running out, since we are no longer at the prevention stage, but rather at the stage where we have to repair the damage we have inflicted.

4.- Who is responsible for environmental degradation?

First, we need to have the maturity to accept that there are common problems that have little to do with the existing political ideologies, or rather, are not caused by a specific culture.

Environmental degradation is one such problem. It is a problem that is not fully attributable to a specific economic model, but to human beings as a species instead. There are very few examples of cultures that have shown total respect for the various life forms on earth.⁶⁵ Most of them preceded our generation. It would seem that we are naturally predisposed toward self-destruction, and not toward adapting. We are instead destroying our environment.

Each country has contributed in some way to global warming. Each human being has a hand in it, from the time of our birth until our death. Our awareness has not increased over several hundred years. We continue to be victims of the same flaws and passions. The insatiable desire to have more continues to create tensions between our societies. If it is a problem caused by our species, then the only way to solve it is collectively.

5.- The current economic model and the challenge for the generation of green entrepreneurs

Despite the fact that I previously stated that it is not a problem specifically generated by one method of production, those who lead and control the means of production can in fact help to increase human awareness to stop global warming.

Until recently, most companies produced without taking into consideration any factors other than supply and demand. They sought to make maximum profit with minimum investment. The environment was last on entrepreneurs' list of concerns; there was indifference toward the environmental impact they were causing. Based on the report

⁶⁵ Visit the webpage at: http://www.etniasdecolombia.org/comunica_etnica2.asp?cid=658&did=1017
[Accessible as of January 24, 2009]

entitled “The Limits to Growth,” published in 1972, and updated in 1992, with the title “Beyond the Limits to Growth,” sponsored by the Club of Rome,⁶⁶ there has been a steady increase in awareness about the finite quality of natural resources, especially the non-renewable ones.

Concern for the environment was expressed in this publication and other mediums, conveying the message to many other persons, also making it, to some extent, a collective concern and fortunately, that of a number of entrepreneurs as well. Unfortunately, from that time also, it would appear that such an ecological trend was the catalyst for those who create business opportunities by exploiting a human need. I will shortly explain why. Despite the fact that environmental awareness increased, many abused the term, by operating in areas where formerly it was prohibited to do so. Any forest, lake, ecosystem, or natural resource, began to be seen as exploitable, under the pretext of sustainable development.

The new green entrepreneurs must be motivated first and foremost by the idea of satisfying basic needs in human beings, rather than by the desire to create the need in order to open new markets. I remember a marketing class in which my very enthusiastic teacher explained to us that need was no longer a prerequisite for establishing a company; instead it was important to have the opportunity to create a need and then sell products.⁶⁷

The new generation of young entrepreneurs must no longer subscribe to that way of thinking. In the following chapter, I will list some of the principles to which we, as green entrepreneurs, must adhere. I include myself, because I am currently developing an agroindustry in the food production line.

6.- Some guidelines for green entrepreneurs

6.1.- *The unsustainability of the current financial and economic system:* Trying to explain that the planet’s ecological problems are not related to the economic model used by most nations would be tantamount to trying to explain life on the planet without the existence of sunlight.

If we really want to improve and change the vision of the new generation of entrepreneurs, to convert them into green entrepreneurs, we must first acknowledge the mistakes that have been made, and accept that the neoliberal system, in the case of us Westerners, as presented by the large transnational corporations and the beneficiaries of that system, has not solved humanity’s problems and has in fact helped, to a large extent, to exacerbate the social and environmental circumstances of the countries where it has been established.

6.2.- *Social responsibility:* The green entrepreneur must be fully aware that his/her objective, beyond personal gain, is to form part of a social structure, in which his/her participation is as important and necessary as that of the individual who provides his/her labor to achieve an economic goal. The loss of social sensitivity is the worst enemy to have, because if adequate measures are not taken, it will make an individual believe that he/she is above the society and can do without it.

6.3.- *Environmental friendliness:* The establishment and design of companies, without taking into account the impact that they will have on the environment, is what the present generation of young green entrepreneurs must avoid. While we know that even the use of

⁶⁶ Visit the webpage: <http://www.clubofrome.org/eng/about/4/> [Accessible as of January 24, 2009]

⁶⁷ Grande, Ildefonso. Real consumer behavior and marketing [*Conducta real del consumidor y marketing*]. ESIC Editorial, Madrid, 2006.

“green technologies” entails some pollution, since, for example, in order to build a windmill, one has to pollute, it is also true that we can cause as little as impact as possible during the industrial process.

Our companies must, to a large extent, be accountable for the pollution that they generate. We cannot continue to think, as we have done until now, that the responsibility for keeping the environment healthy and free of garbage is the exclusive purview of the State. It is not enough to label our packages with phrases such as “let us protect the environment,” “recyclable container,” and “environmentally responsible company.” We must instead contribute a part of our capital, along with the State, to developing clean technologies. Humanity’s survival cannot be accomplished in isolation, since the only way to achieve it is through teamwork: the Public and Private Sectors must collaborate.

6.4.- Financing of projects to improve planet Earth: Those of us who are in the business world, in my case, starting a micro-enterprise, have an obligation to allocate part of our profits to research, not only as a mechanism for optimizing resources, but also for financing other centers, as well as projects geared toward improving planet Earth. I wish it were not so but, unfortunately, we are so accustomed to using money as the only means for achieving other objectives, that even the simple planning and drafting of a project requires capital.

6.5.- International cooperation: Cooperation not only refers to the assistance that we can provide to other countries or places in crisis, but also to awareness of global problems. Let us join forces and share our feelings and needs, share responsibility so that adverse circumstances in another part of the planet are also considered to be our problems, because we belong to the same species.

6.6.- Globalization of ideas: Ideas geared toward improving humanity, or according to Martí, making virtue fashionable, should be globalized. Humanity must, like never before, be truly free. Knowledge should be the fundamental pillar that directs our future. I am referring to real knowledge, real truth.

The new generation of green entrepreneurs should be persons who are not only educated, but also possess a high degree of common sense. The true scientific spirit should dwell in them. Multidisciplinary work should be their *modus operandi*.

6.7.- Reform of the global financial system, humanizing it: I commented earlier that if we really want to conquer the ills that afflict humanity, we must re-examine the economic model and financial system that dictate the type of government in different countries. Right now we are in crisis. For example, in my beautiful state of Quintana Roo, in January there were over five thousand unemployed persons, most of them construction workers.⁶⁸

The foregoing contrasts with what I remember being told in my pre-university classes: that the free market was the best system, and that it allowed persons to accumulate as much as possible. I believe that at this stage there is a lot to review, since it is up to the major international financial institutions to determine the character of the new green entrepreneurs. For example, in Mexico, as a result of the North American Free Trade Agreement signed with the United States of America and Canada, a set of legal reforms has been initiated, which, although they might redound to our benefit, are prejudicial to us in light of the disparity in conditions, especially the economic and technological ones.

⁶⁸ See reference at the end of the document.

It is complex since, in order to stop environmental degradation, each method of production must be analyzed. In my case, I criticize the neoliberal model, given that I have grown up under its principles and premises. Nevertheless, in communist countries, such as the Republic of China, there is a lot of work to be done since the problems generated today have been caused by the various political expressions created by our species.

6.8.-Let us not seek justification through sustainable development: Examples abound in my state and municipality where the term “sustainable development” has been used to justify the exploitation of what was previously prohibited. The new generation of green entrepreneurs must truly respect nature.

6.9.- Awareness that no-one is far from anyone. “We live on a globe”: This point is very important, since what might appear to be far from us and therefore unable to affect us, is not really far away. Problems in one country are also a problem for humanity, and what one nation does, for example nuclear testing, even when they are sovereign decisions, affects our planet.

7.- Measures being taken by the young people in my region to help build green awareness

7.1.- Creation of youth networks and groups

We have become aware that problems can no longer be resolved in isolation; rather, we have to work as a team and that is why we have chosen to create networks. In the case of the rural area where I live, the Rural Youth Civic Association of Quintana Roo [*Asociación Civil Juventud Rural Quintanarroense*], which focuses on bringing together young people, professionals, and non-professionals living in the rural areas of the state, was recently established. At present, the only way to advance and develop is to be organized collectively.

7.2.- Design of community ecology projects

In addition to the work we are already doing in various areas, we recently began developing a program known as Youth Camps of Rio Hondo [*Campamentos Juveniles Río Hondo*], since, as you will recall, Quintana Roo is the state in the Republic of Mexico that shares a border with Belize and Guatemala, with the Río Hondo serving as a natural border between both countries. Youth Camps of Rio Hondo is a community program in which each rural population establishes a committee of five young people. Provided that along the border, for the entire river bed, there are approximately 19 communities, there will be a team of approximately 95 young persons, responsible not only for building awareness, but also for forming part of a group that will continuously supervise and monitor the condition of the river. This group will organize clean-up campaigns and ensure that people do not wash their clothes or cars in the nearby streams.

7.3.- Working with rural folk to provide advice on production projects

On one hand we have established a rural civic organization geared toward the development of youth, cultural, sports, and ecology projects, among others, while on the other hand, we have also created a rural management cooperative that provides advice on aspects ranging from agricultural projects to legal and economic issues through two committees that were created within it. These are (a) the research committee, which is responsible for promoting and conducting research as the only means of acquiring

knowledge; and (b) the Committee for the Promotion of Energy Efficiency and Saving [*Comisión de Promoción del Uso Eficiente y Ahorro de energía*], which seeks to provide rural folk with services ranging from the conduct of environmental impact assessments, to the study and analysis of energy-saving mechanisms and the implementation of the use of alternative technologies.

Contrary to the widely-held view that rural folk are uneducated, and that because of their ignorance they are not environmentally aware, experience has shown us that most rural communities that have not yet endured the ravages of urban living, which is based on consumption and not on production, are societies with great environmental awareness. The Mayan culture is still present in my state. I have witnessed how within Mayan communities there is great respect for nature. Even before planting, a ceremony is conducted in which permission is sought from Mother Earth. The same applies to the cutting of trees or hunting of animals. There is no overplanting—just what is needed for the survival of the community.

In towns where the method of organization is changing rapidly, we explain to them that it is more efficient to form a group and build a barn, than to cut down hundreds of hectares of forest for extensive livestock rearing.

7.4.-Impetus for the organization of groups

As rural young people, we have come to realize that our return to the community is essential for its development. The Civic Association, as well as the Cooperative of which I am a member, will also seek to create other organizations. Providing advice to communities is the main task that I am currently carrying out.

There are two problems that I already mentioned at the beginning of the essay, which we must resolve without delay: global warming and food production.

8.- Proposal from the rural young people of Quintana Roo for humanity: Establishment of the University for Humanity

In addition to the universities sponsored by the United Nations Organization, there should be a university financed by organized international civil society, and by international public and private organizations that wish to contribute and are interested in education. This university should offer degrees that do not focus on a specific branch of knowledge, but rather on those problems that confront us as a species. Sooner rather than later, it will become the institution responsible for monitoring our development, as well as our risks. Its recommendations should be serious, sincere, transparent, and free of cultural, ideological, and religious biases. It should become a beacon of hope for many of us who believe that humanity can be saved, and the solution is in our hands.

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