

THE ENVIRONMENTAL
CRISIS AND PUBLIC
ADMINISTRATION IN
DEVELOPING
COUNTRIES:
THE CASE OF NICARAGUA

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THE ENVIRONMENTAL CRISIS

Our species is seriously in denial over the celerity, severity and consequences of the multiple, interrelated environmental crises we are inflicting on Mother Earth. What this ignores is that we are approaching points of no return in this century, many unknown, in relation to some of the environmental crises. It also ignores the accelerating impact of negative synergies. For example, global warming melts Siberian permafrost that releases methane gas that has 21 times the effect of CO₂, which increases global warming that melts more permafrost. To take another example, deforestation liberates CO₂ emissions that contribute to global warming that accelerates loss of habitat and desertification. Deterioration in one life support system has negative effects on others that in turn have their negative effects, converting the virtuous systemic circles that sustain life into vicious circles of accelerating decline. Human security and the security of all species are at stake.

At the same time there is growing consciousness of the destruction that is taking place before our generational eyes. This apparent contradiction, denial and consciousness, would seem to stem from our chronic, collective incapacity as a species to even reach agreement on, what the yet effectively act upon, the multiple environmental crises we confront globally. This in turn is symptomatic of the deeper political, economic, moral and existential crises that have created the accelerating, anthropogenic deterioration of Mother Earth.

The multiple environmental crises include deforestation, soil degradation, fresh water scarcity and desertification; climate change and global warming with volatile temperatures, greater frequency and intensity of extreme weather, acceleration of the El Niño/La Niña cycle, floods and draughts; contamination of water, air, soils, food, other species and humans; dead lakes, rivers and areas of the seas; loss of habitat, food chains, fauna, flora and biodiversity that already constitute a major extinction event.

THE INTERNATIONAL RESPONSE

International negotiations on almost everything have been in gridlock for decades. Climate change and global warming are no exception. The industrialized countries that have most contributed to global warming but still only marginally suffer its consequences view this as a future problem. Thus, they prioritize mitigation. The developing countries that are already living the consequences of global warming stress immediate disaster relief and adaptation.

The poor, developing countries impacted by climate change have yet to receive as a group new and additional international finance dedicated to short term damages and long term adaptation associated with global warming, nor are there effective mechanisms to do so. At the United Nations COP-16/ meeting in Cancun a Green Fund was approved but without specification of its structures, mechanisms or sources of finance. A Transition Committee of 40 experts will design the Fund prior to the Durban COP17 meeting in Durban, South Africa in November-December, 2011. Both at COP-15 in Copenhagen and at COP-16 in Cancun the developed countries spoke of US\$30 billion for the period 2009-2011 at the rate of US\$10 billion per year. However, these funds have yet to materialize. In those same meetings the Industrialized countries spoke of a

US\$100 billion dollar per annum goal--- not commitment—beginning in 2020.

The 2020 starting date for significant financing belies their view the analysis that the only emergency at present are the low lying, small insular states whose territories, fresh water supplies, agricultural fields, economies, and in some cases very existence, are threatened by rising sea levels. Their small dimensions make support more manageable, especially when compared to recognizing that the consequences of climate change are also already affecting Central America and the Caribbean, Sub-Saharan Africa and South Asia. Thus that recognition was not given at COP16 in Cancun. There is also denial and deferral of the costs of climate change mitigation and adaptation and how to finance them. The amounts are too staggering, even without including the cost of other environmental crises, and the implications for existing financial and economic structures too radical, including the fact that the prevailing, hegemonic model of development of the past 250 years is no longer sustainable.

The most affected countries that are all located in the tropics face immediate damages and long-term structural consequences. These will sharply increase year by year in the largely agricultural countries of the South. The parameters of temperature and precipitation required for staple crops critical to food security are being lost. This requires changes in planting regions and seasons for key crops and in some cases will lead to loss of viability. For example, the band of meters above sea level for quality coffee production will go up the mountain with global warming. Some current coffee producing countries will run out of altitude and drop out of this market.

PUBLIC ADMINISTRATION IN TIMES OF ENVIRONMENTAL CRISES

Countries affected by climate change face daunting challenges with little or no international support. Thus, they must mobilize their own societies to survive. In these circumstances public administration, policy, planning and finance as we know them will have to be rapidly and radically restructured to confront the challenges of the environmental crises. Human security policies, prioritizing food security, including water, will become an all-consuming priority in many countries. Not only developmental efforts, job and livelihood creation and poverty reduction are placed in jeopardy by climate change, but also the absolute decline of already poor developing countries becomes a real possibility. This occurs when the impacts of cumulative disasters converge to become a national disaster.

Disaster planning and management generally operate on the hypothesis of stand-alone events that are dealt with on an emergency basis. Specialized agencies undertake planning and preparation as well as participate in immediate response which is largely the responsibility of local officials and the military. A priori and ex post facto evacuations, search and rescue, and relief operations are the domain of these agencies. Other agencies become involved in rehabilitation and especially reconstruction. These stages are more or less lineal.

When environmental crises disasters become annual and multiple, while some are of a magnitude that requires years of recovery, the stages become iterative and not linear. In countries with geological risks (earthquakes, tsunamis, volcanic activity) or nuclear risks (power plants in dangerous locations), in addition to the environmental ones, planning and preparation are geometrically more complex.

International support in disaster situations is ad hoc, unpredictable, always insufficient and generally short-lived. The most recent disasters receive most support while assistance to the disaster before last enters into rapid decline and then disappears from international attention when there have been several subsequent disasters. There is no concerted, systematic, coordinated international mechanism to deal with major disasters, not even in highly risk areas.

The situation with regard to structural adaptation is even worse. Countries face these situations virtually without international support. The poorest countries receive least support for crop losses and shifts in agricultural yields, regional production patterns and even the loss of viability of crops, as well as attendant food insecurity with environmental refugees.

In these circumstances disaster planning and management merge with development planning and management. They become one and the same thing. There is no development without taking into account the risks, accumulated costs, and structural adaptations required by climate change. Likewise, confronting immediate damages and long-term adaptation require the coordinated mobilization of practically the entire government and all of its resources, as well as support from society in general. Thus disaster planning becomes a part of development planning.

Major disaster situations are all consuming of the time and energy of a government. Mistakes can increase risks to human life and suffering, as well as material losses. They can also lead to economic, social and eventually political instability. The accumulative effect of annual, recurring climate change costs and adaptation, in addition to trying to save development and poverty reduction priorities in these circumstances, sneaks up on different governments at different points in time and then becomes all consuming. **Human security policy becomes the central focus of all national policy.**

Societies with a high level of social organization and mobilization, as well as strong local and national leadership, have a much greater capacity to confront these situations than countries that only rely on government organizations, budgets and bureaucracies.

THE CASE OF NICARAGUA

While the international fora debate whether the average world temperature rise in the 21st Century should be limited to 2 degrees centigrade or 1.5 degrees, Nicaragua and the rest of the tropics have already experienced greater increases. The average annual national temperature increase in Nicaragua in the past 50 years has been 0.06 degrees centigrade a year which represents a total increase of 3 degrees centigrade in the past half century. However, there is great regional variation even within Nicaragua. On the Pacific Coast the increase in the past 52 years of records has been 0.94 degrees while on the Caribbean Coast the increase is also 0.94 degrees based on 47 years of records. Away from the moderating influence of the sea in the Northern interior mountains, where there is a dry zone in danger of desertification, the increment in 54 years has been 4.05 degrees. Obviously, the impact of another 2 degrees or more on top of that would be disastrous.

The alternation of the phenomenon of “El Niño” and “La Niña” has historically occurred between 3 and 7 years with an average rotation of every 4 years. Historically, Nicaragua has been affected by a tropical storm or hurricane once a decade. However, the situation in Nicaragua has been the following since the year 2005:

2005: Flooding, Tropical Storm Stan, Hurricane Beta

2006: El Niño, draught

2007: El Niño, draught in the first crop; La Niña, excess humidity in second crop, Hurricane Félix

2008: La Niña, flooding, Tropical Storm Alma

2009: El Niño, draught in second crop, Hurricane Ida

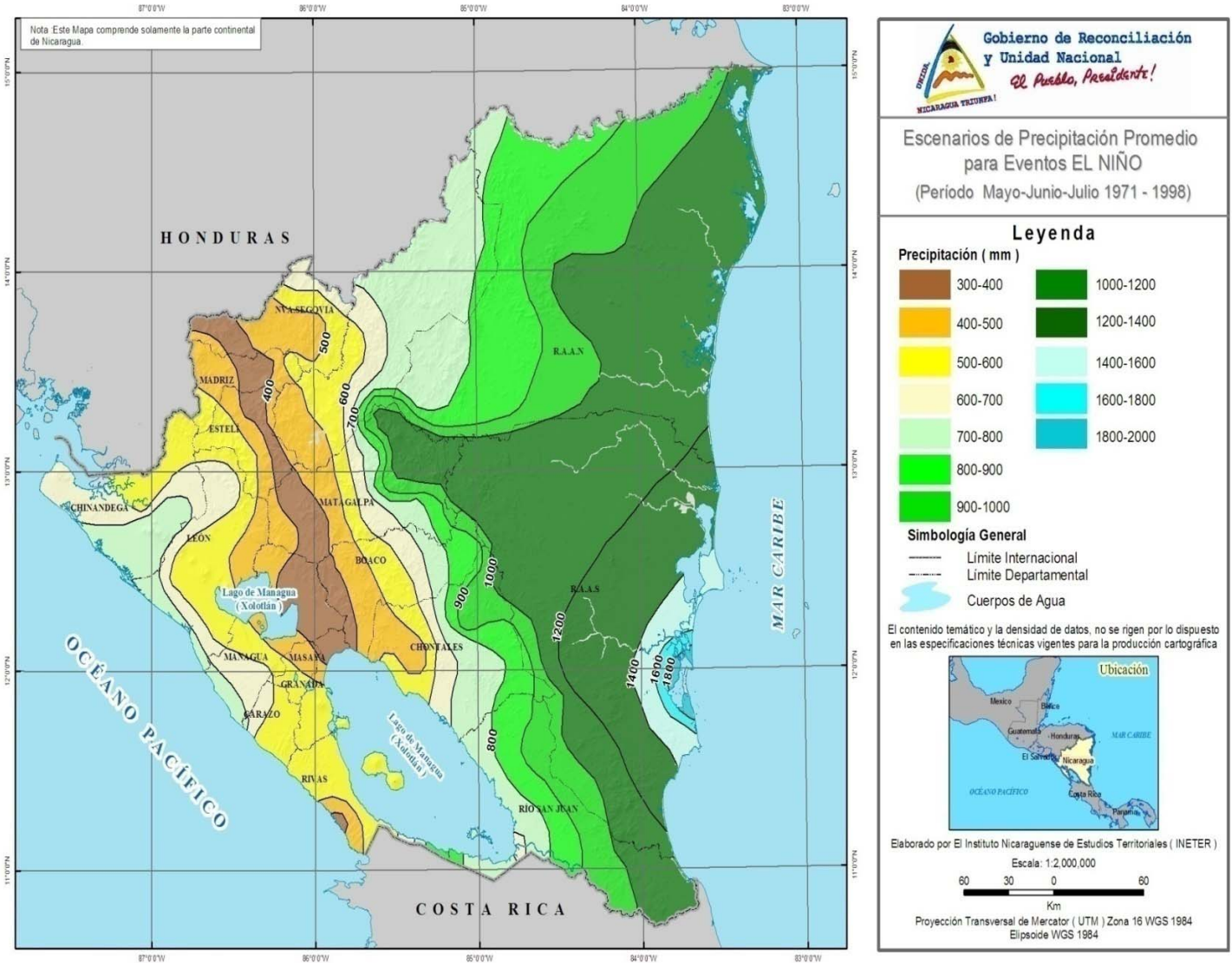
2010: La Niña, Flooding in first and second crops, insufficient rain in third crop, Tropical Storm Matthew

The Nicaraguan Ministry of Agriculture and Forestry has identified the loss of 386,400 hectares of basic grains (corn, beans, rice, sorghum) in the period 2005-2010 due to climate change. This represents 9% of the areas planted and a loss of an average of US\$206.3 million per year which in turn represents 3.5 GDP points per year on average in this period. Nicaragua's development is already seriously compromised by climate change.

When the phenomenon of "El Niño" is present there is draught in the Pacific and copious precipitation in the Caribbean region, while in the presence of "La Niña" there is flooding on the Pacific Coast and less precipitation on the Caribbean region. See Maps A and B in which the brown, tan and yellow color codes represent low precipitation while the greens, grays and blues denote increasingly higher levels of precipitation.

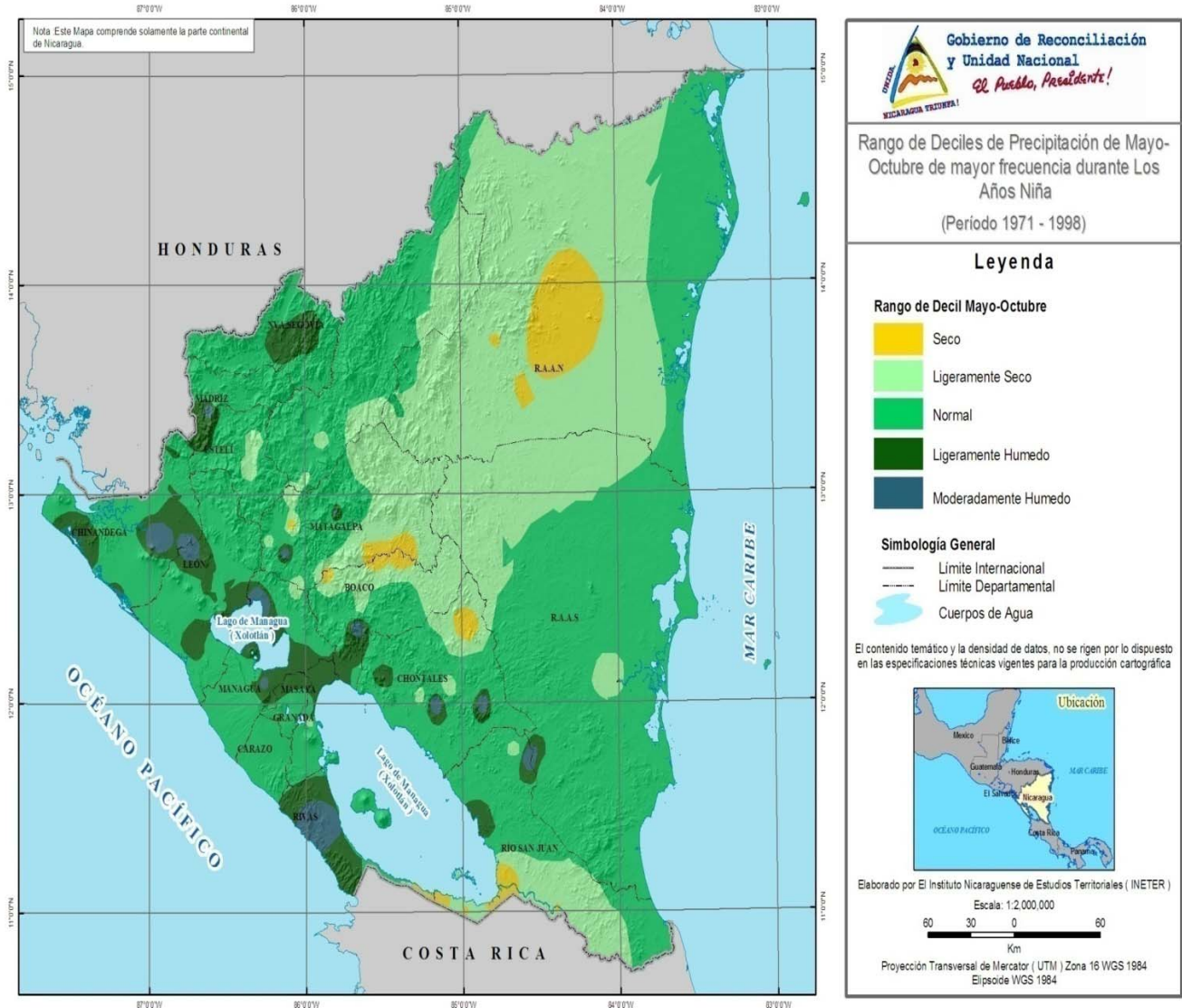
Map A

PRECIPITACIONES PROMEDIO PARA EVENTOS EL NIÑO (MAYO-JULIO)



Map B

RANGO DE DÉCIL DE PRECIPITACIÓN (MAYO-OCTUBRE) AÑOS LA NIÑA



Recent tropical storms and hurricanes and their trajectories are presented in Map C below.



NICARAGUA'S CLIMATE CHANGE CHALLENGES AND RESPONSES

The Nicaraguan Government is still attending cumulatively victims of Hurricane Felix in 2007 and some from Hurricane Ida in 2009, as well as draught victims in the “Dry Zone” and flood victims from 2010. The yearly nature of these types of events in the context of climate change makes it predictable that they will continue to accumulate.

Climate change floods and draughts due to the acceleration of the alternation of the Niño/Niña cycle, as well as frequent extreme weather, require agile and flexible contingency planning, decision making, public finance, public administration and the organization and mobilization of the population to meet these challenges. President Daniel Ortega yearly leads the exercises that mobilize the government, the military and the Nicaraguan population to enhance citizen security and rapid response to successive disasters. The responses include basic decisions on food security, including where and when to direct government support for key crops, as well as decisions on imports and exports of foodstuffs. Structural decisions are also increasingly in the mix as climate change advances.

All of these policies and administrative arrangements require great creativity and innovation, especially considering that finance for adaptation to climate change is not yet readily available. Nicaragua does benefit from policies of complementarities, recognition of symmetries and compensation for them through just investment and just trade, as well as solidarity for poverty reduction programs from the Bolivarian Alternative for our America, best known by its Spanish Acronym ALBA.

The addition of ALBA above and beyond the country's traditional economy has permitted Nicaragua to confront climate change disasters of the magnitude of Hurricane Felix which was Grade 5 on the Saffer-Simpson

scale. It has also permitted that despite climate change, Nicaragua has resumed growth after the Great Recession of 2008-2009 (GDP +4.5% in 2010), and expanded exports (+32% in 2010) as well as foreign direct investment (from US\$500 million in 2010 to US\$1039 million in 2011), while at the same time reducing poverty and extreme poverty between 2005 and 2009. The country's GINI index for consumption was reduced from 0.41 to 0.36 in that period, denoting greater equality. The consolidation and acceleration of these advances require adapting the nation, including the public administration, to the new realities of climate change, as well as international finance for that purpose that prioritizes poor, developing countries.