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**External Evaluation Report
Development Account Project ROA 126:
“Integrating Climate Change into National
Sustainable Development Strategies and Plans
in Latin America and the Caribbean”**

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Cover photo credit: Page 23 of the Grenada project's national report (see footnote 28).

Table of Contents

List of Acronyms.....	iv
Executive Summary	v
1. Introduction	1
1.1 Background.....	1
1.1 Project Purpose, Objectives and Outputs	2
1.1 Evaluation Scope and Approach	2
2. Project Methodology	4
2.1 Description of Project Methodology.....	4
2.2 Limitations	5
3. Findings	7
3.1 General Framework	7
3.1.1 Overall Project Concerns	7
3.1.2 The AIM Methodology	10
3.2 Performance Assessment	12
3.2.1 Grenada.....	12
3.2.2 Guatemala.....	14
3.2.3 Bolivia.....	18
3.3 Other Assessment Criteria.....	20
3.4 Performance Assessment Summary	21
4. Lessons Learned/Conclusions	25
5. Recommendations	28
Annexes	31
I. Management Response	32
II. Project AIM Matrices Results	33
III. Terms of Reference for the Evaluation	35
IV. List of Documents Reviewed	45
V. List of Interviewees.....	47

List of Acronyms

ABER	Asociación Boliviana de Energías Renovables
AIM	Action Impact Matrix
BAP	Bali Action Plan
CBA	Cost-benefit analysis
CDM	Clean Development Mechanism
CER	Certified Emissions Reduction
CICC	Comision Interinstitucional de Cambio Climatico, Guatemala
COP	Conference of the Parties
DEV	AIM matrix mapping impacts of development goals/policies onto vulnerable areas
DNA	Designated National Authority
DRR	Disaster risk reduction
DSD	Division for Sustainable Development (of UNDESA)
EA	Environmental Assessment
ECLAC	Economic Commission for Latin America and the Caribbean
EST	Environmentally Sound Technologies
GEF	Global Environment Facility
GHG	Greenhouse gases
GIRH	Gestión Integrada del Recurso Hídrico
GRENLEC	Grenada Electricity Services Ltd.
ICT	Information and communications technology
IPCC	Intergovernmental Panel on Climate Change
IRENA	International Renewable Energy Agency
IWRM	Integrated Water Resource Management
LDCs	Least Developed Countries
LEED	Leadership in Energy and Environmental Design
MARN	Ministerio de Ambiente y Recursos Naturales, Guatemala
MINFIN	Ministerio de Finanzas Publicas, Guatemala
NGO	Non-governmental organization
NSDS	National Sustainable Development Strategies
PNCC	Politica Nacional de Cambio Climatico, Guatemala
PPCR	Pilot Program for Climate Resilience (for Climate Investment Funds)
RES	Renewable energy systems
RWH	Rain water harvesting
SA	Social Assessment
SEGEPLAN	Secretaria de Planificacion y Programacion de la Presidencia, Guatemala
SIDS	Small island developing states
SNP	Sistema Nacional de Planificacion
TOR	Terms of Reference
UK	United Kingdom
UNDAF	UN Development Action Framework
UNDESA	UN Department of Economics and Social Affairs
UNFCCC	UN Framework Convention on Climate Change
VED	AIM matrix mapping impacts of vulnerable areas and climate change onto development goals/policies
VMEEA	Viceministerio de Electricidad y Energías Alternativas, Bolivia

Executive Summary

This report provides an evaluation of a project entitled “Integrating Climate Change into National Sustainable Development Strategies and Plans in Latin America and the Caribbean,” a Development Account project designed to assist the countries of Bolivia, Grenada and Guatemala incorporate climate change into their national planning systems. The project was developed in response to the Bali Action Plan (BAP) of the UN Framework Convention on Climate Change (UNFCCC), which called for enhanced national and international action on 1) mitigation; 2) adaptation; 3) technology development and transfer supporting both mitigation and adaptation; and 4) financial resources and investment similarly supporting both mitigation and adaptation. The project was conducted over the period December 2009 – December 2012.

Project Objective

The project’s stated objective was to strengthen the capacity of countries to integrate climate change concerns into their National Sustainable Development Strategies and other planning processes, particularly with regard to technology transfer.

Methodology

The project held an initial Expert Group Meeting at the University of Manchester in the UK in December, 2009 to explore analytical approaches, and chose the **Action Impact Matrix (AIM) methodology** to define and prioritize subsequent project activities. AIM is a participatory process which established two matrices: one defining the impact of policies and actions on vulnerable areas (Matrix DEV); and the second defining the impact of climate change in vulnerable areas on the country’s development policies and actions (Matrix VED). Together, these matrices enable participants to identify and prioritize areas requiring special attention and planning. The AIM methodology was employed in two countries in this project (Grenada and Guatemala). Bolivia similarly followed a participatory process, but it was constructed within an energy framework designed by the project’s host.

Country activities

- ***Grenada***

Based upon target areas identified within AIM, Grenada conducted a nationwide program addressing three areas: 1) an assessment of water resources in Northern Grenada; 2) the restoration of coastal ecosystems; and 3) the use of renewable energy for medical and community centers, enabling them to quickly respond after natural disasters. After a comprehensive and thorough evaluation of these topics, the Grenada project also included the preparation of project proposals (in Global Environment Facility [GEF] format) in these three areas – an especially useful output that the country is already using to explore potential funding sources, for follow-up efforts in these areas. This evaluation suggests that such an approach would similarly be useful in other such projects. Grenada also conducted an analysis which developed a “roadmap” for implementing a ‘green economy’ on the islands of Carriacou and Petite Martinique. Implementing such a ‘green economy’ was a major theme of the Rio + 20 Conference, which was held during the project’s duration -- and Grenada made a presentation at the conference about its roadmap strategy. It illustrated, for example, how integrated

water-energy-waste systems could be designed that would meet the needs of expanding sectors of the economy, and concluded that such an integrated framework could create the “necessary value added” to make such approaches feasible.

- ***Guatemala***

Guatemala similarly conducted an AIM analysis, and focused considerable attention on the institutional arrangements that would be required to incorporate climate change into its national planning system. It also targeted two major areas of attention: 1) food security; and 2) the national energy matrix. Guatemala already has one of the highest levels of chronic under nutrition for infants in the western hemisphere, and climate change threatens to make an already-dire situation even worse. The project explored the concept of “food balance” (seeking to quantify both the supply and demand at the family, community and other levels); the potential use of a ‘carbon index’ indicator in developing electric system expansion plans; and integrated water resource management (IWRM) that would link agriculture and energy sector requirements. Realizing that not all could be done at once, Guatemala’s project suggested that the short term focus should be on disaster risk reduction (DRR) and food security. The medium term would address IWRM and improving infrastructure to better handle the changes associated with climate change; and the longer term would address education and awareness of climate change impacts, along with the land management and natural resource/sustainable consumption activities that would help the country deal with significant environmental change.

- ***Bolivia***

Bolivia did not employ the AIM process, but nonetheless developed a participatory strategy, in a three step approach. The first step included the preparation of a report addressing alternative energy policies for the country. It identified various technologies suitable for the country, maps of potential resource strength, and the political-institutional organization of the sector -- but also problems, including access rules concerning the use of natural resources, administrative and bureaucratic processes concerning funding, and especially concerns about the impacts of natural gas pricing. Well-attended national and regional workshops were then held in a second step, and areas of specific concerns were identified. These included the water situation in the country (including the loss of glaciers and the loss of water storage in the glacier ice); the expansion of alternative energy approaches identified in the initial policy report; and potential means of integrating these concerns, through such measures as micro-hydro applications, which could be developed locally, creating jobs, and contributing to local economic development.

The final stage of the project included a project report addressing all of these concerns. It concluded with a series of eleven proposals designed to help the country respond and adapt to climate change, including institutional realignments; energy efficiency measures and the use of renewables to displace diesel; policies to integrate renewables into the national grid; steps to ensure the sustainability and continued operation of renewable energy systems (RES) in rural areas; and the development of the human resources necessary to tackle these tasks. Bolivia’s project also included a novel high school contest organized by the Bolivian Association of Renewable Energy (ABER) designed to develop skills and enhance RES knowledge in public high school students. The contest received 150 enquiries, and 80 papers were presented – and the winning students received cash prizes, renewable energy equipment, and visits to RES companies as awards. The results of the overall project in Bolivia were incorporated into the country’s UN Development Action Framework (UNDAF), and the UNDESA

Under-Secretary General was subsequently invited to sign that document (in addition to the country's President).

Project Outputs

- **One Expert Group Meeting** in Manchester, UK to select the appropriate project methodology, and **instructional materials and lectures** about the methodology for country participants;
- **Four workshops in Grenada**, the first employing the AIM methodology to select topics for further analysis; the second a follow-up workshop narrowing the topics to be analyzed; the third a workshop addressing the 'green economy' analysis; and the fourth in St. George's addressing the final national report;
- **One national report in Grenada**, addressing an assessment of water resources in Northern Grenada, the restoration of coastal ecosystems, and the use of renewable energy for medical and community centers after natural disasters; and **one sub-national report** addressing the islands of Carriacou and Petite Martinique, establishing a 'roadmap' to develop a 'green economy' in these islands;
- **Three workshops in Guatemala**, the first employing the AIM methodology, and the latter two narrowing the topics to be addressed successively in political and then technical terms, to ensure they could be integrated into the national planning system;
- **One national report in Guatemala**, addressing the means of incorporating planning for climate change within the existing institutional structure, as well as a detailed analysis of food security/nutrition and the national energy situation;
- **One national workshop in Bolivia** prioritizing the principal climate change concerns in the country, plus working group meetings, interviews with experts; and **eight local/regional workshops**, four exploring relevant alternative energy technologies and policies, and four more designed to disseminate project results to various parts of the country;
- **Two national reports in Bolivia**, the first addressing alternative energy technologies and policies for the country, and the second building on this to address the water situation in the country, as well as energy access for improved lighting, communication and education in rural areas (including eleven specific proposals for the country to implement);
- Bolivia also conducted a **high school contest** addressing energy access in rural areas; the final project results were incorporated into the **country's UNDAF**;
- UNDESA personnel conducted **technical assistance missions** in all three countries, including field visits and the provision of specialized experts for technical support;
- **A regional/international workshop** in Panama, where the results of each country study were described and disseminated to the other two participating countries, as well as others from Central and Latin America;

- **Three final dissemination workshops** at the Rio + 20 Sustainable Development Conference (one workshop for each country, each with two sessions on two different days).

Conclusions

- This evaluation concluded that the AIM methodology was especially well suited for a project of this nature, and contributed significantly to its success;
- Analytically, AIM enables planners to address ‘resilience’ concerns which have heretofore received insufficient attention within the planning process in most countries (both developed and developing);
- The specific projects activities were **relevant** to the individual country’s needs, since the project management defined boundaries for the overall study, but then: a) utilized local input within the AIM methodology; and b) required that all decisions concerning topics for analysis be made at the country/local level. The participants prioritized and targeted the topics most important to them, and in evaluation discussions praised UNDESA’s management constant effort to address the individual country needs;
- The project was **effective**, with outputs from all three participating countries that were comprehensive; professionally prepared and edited; and useful for the planning and development efforts within these countries;
- The project was **sustainable**, given that individual proposals on topics addressed were prepared as part of task assignments; that project results were incorporated into UN Development Action Framework (UNDAF) plans; and that individual countries have already sought additional follow-up financing to implement proposed actions and projects;
- The project clearly made significant contributions in two of UNDESA’s five priority areas in capacity development (i.e., ‘sustainable development including climate change mitigation and adaptation, and forests’; and ‘social integration and inclusion of vulnerable groups’), and also provided positive influence in the other three (i.e., statistical capabilities; macro-economic advice; and public administration and ICT);
- The AIM methodology results and other prioritization efforts led the countries to focus on food security, energy and water – and these adaptation concerns are fully consistent with the Rio + 20 Conference follow-up and the post-2015 process, since they represent three of the eleven thematic areas being addressed in those efforts;
- The original project design initially focused on National Sustainable Development Strategies (NSDS), but the project shifted over time towards national planning approaches. This was due to the relatively minor role that NSDS play within the participant countries, and an on-going shift within the UN system towards the application of sustainable development goals after the Rio + 20 meeting;
- One of the key goals of the project was to pilot test “methodologies and indicators” for integrating climate change concerns into the national planning efforts in the three countries. The application

of the AIM methodology was definitely a success in this area. However, considerably less attention was paid to the role of indicators;

- While the individual country reports address certain technology transfer concerns (such as difficulties associated with using desalination in Carriacou), and also note numerous difficulties associated with implementing alternative technologies within the individual countries, the role of technology transfer barriers was not addressed within the project at the level of specificity included in the original proposal;
- Despite the lack of inclusion of an analytical paper about technology transfer barriers, the project far exceeded the outputs outlined in the Project Document in terms of publications, with five printed professional reports. The fact that these were printed and available for distribution (and not just available in electronic form) was viewed as particularly helpful when dealing with rural dissemination;
- The Project Document promised the “creation of an interactive web platform” to disseminate the reports, methodologies, indicators, etc. Such a dissemination platform was initially created, but there were problems with computer viruses, and it was discontinued. UNDESA has made some individual reports available on the Sustainable Development Knowledge Platform, however.

Recommendations

- While the individual country efforts identified numerous projects that would provide useful results and improve resiliency in the face of climate change, a major problem in all developing countries is the lack of financial, technical and other resources necessary to actually accomplish them. The Grenada effort explicitly developed project proposals – in Global Environment Facility (GEF) format – which have been used to explore future funding opportunities for the key topics addressed in this project. The preparation of such proposals can be readily included in the Terms of Reference (TOR) for local consultants, and this would have been extremely useful for the other two countries, as well as for future UNDESA and Development Account projects;
- Efforts should be undertaken in future projects to more closely link adaptation project efforts to mitigation ones, allowing the projects to tap into the institutional support already developed for mitigation. For example, all three countries in this project have Designated National Authorities under the Clean Development Mechanism of the Kyoto Protocol, and these organizations have already developed sustainability criteria for clean technology projects undertaken within the country – but this project did not incorporate such previous mitigation efforts into the project design;
- UNDESA and Development Account projects should pay increased attention to defining and incorporating ‘resilience’ concepts, including the development of suitable indicators and methodologies, and integrating these with disaster risk reduction and sustainable development approaches.
- The discontinued website should be re-established to disseminate information about this adaptation project (including project methodologies, results, published reports, etc.), given the

success of the project's efforts, the quality of its outputs, and its current importance to other developing countries.

1. Introduction

This report provides an evaluation of a project entitled “Integrating Climate Change into National Sustainable Development Strategies and Plans in Latin America and the Caribbean,” which was executed by the Division for Sustainable Development (DSD) of the United Nations Department of Economic and Social Affairs (UNDESA), and implemented by DSD in conjunction with the governments of Bolivia, Grenada, and Guatemala; and in cooperation with the Economic Commission for Latin America and the Caribbean (ECLAC), the United Nations Industrial Development Organization (UNIDO), and the United Nations Development Programme (UNDP); and various other regional, academic and other organizations, as well as persons with relevant specialized expertise.

The project was funded by the Development Account, a capacity development programme of the United Nations Secretariat designed to enhance the capacities of developing countries in priority areas of the organization’s development agenda, and financed from Secretariat’s regular budget.

It began activities in December, 2009, with an Expert Group Meeting in Manchester, UK to discuss the analytical tools to be employed, and concluded with local workshops in one of the three countries (Bolivia) in December, 2012. Importantly, workshops were convened by each of the three countries at the Rio + 20 sustainable development conference in June, 2012, where the principal findings and conclusions of the project were outlined and disseminated.

1.1 Background

DSD has considerable experience in capacity development in developing countries addressing a wide range of concerns, and this project was designed to focus on climate change. Developing countries are expected to bear the brunt of future environmental changes, since many of their economies are heavily dependent on agriculture (and hence depend upon climatic factors such as ambient temperature, soil moisture, precipitation, etc.) and usually lack the necessary socio-economic resources required to deal with extreme events and disasters.

The United Nations Framework Convention on Climate Change (UNFCCC) recognized that fact, and in 2007 issued a report calling for additional capacity building in these countries, noting that “Incorporating or integrating adaptation to climate change into planning processes is a necessary strategy for sustainable development over the long term.”¹

More prescriptive was the Bali Action Plan (BAP) developed later that year at the 13th session of the Conference of the Parties (COP) to the UNFCCC. In calling for a shared vision for long-term cooperative action on the climate change problem, the BAP called for enhanced national and international action on 1) mitigation; 2) adaptation; 3) technology development and transfer supporting both mitigation and adaptation; and 4) financial resources and investment similarly supporting both mitigation and adaptation. The BAP was particularly concerned that adaptation measures be supported “taking into account the urgent and immediate needs of developing countries that are particularly vulnerable to the adverse effects of climate change”², including small island developing states (SIDS).

¹ UNFCCC, *Climate Change: Impacts, Vulnerabilities and Adaptation in Developing Countries*, Bonn, Germany, 2007, p. 44.

² FCCC/CP/2007/6/Add.1, p. 4.

In developing a proposal over the following eighteen months, DSD sought to address such needs. While not denying the important role of mitigation, the proposal more clearly focused on the adaptation needs of developing countries. Building upon a previous UNDESA technical report³ and High Level Conference in New Delhi⁴, and mindful of the BAP call for enhanced actions, DSD incorporated technology transfer components into the proposal and sought to integrate these efforts into the National Sustainable Development Strategies (NSDS) developed within the target countries.

An original DSD concept was to select three pilot countries representing Asia, Africa and the Americas, but resource constraints required that the effort be more narrowly targeted. The resulting project focused on the Americas, with three countries, Bolivia, Guatemala and Grenada, representing Latin America, Central America, and the Caribbean respectively. The inclusion of Grenada was important, since SIDS are recognized as being among those parties least responsible for climate change, but nonetheless bearing the greatest impacts.

1.2 Project Purpose, Objectives and Outputs

The purpose of the project was to address the developing country capacity challenges identified in both UNFCCC and BAP documents noted above, utilizing the specific issues and concerns identified in three pilot countries, and providing the support necessary to develop appropriate responses that would provide guidance to other developing countries facing similar challenges.

Its specific objective, identified in a June 2009 Project Document, was “to strengthen the capacity of countries to integrate climate change concerns into their National Sustainable Development Strategies and other planning processes, particularly with regard to technology transfer.”

Expected outputs included a series of technical documents, training programs, web platforms, and other project/expert reports designed to further its expected accomplishments, which included strengthening national sustainable development policies and programmes; increasing awareness and understanding of environmentally sound technologies; and increasing synergies among private and public decision-makers for the development and transfer of such technologies.

1.3 Evaluation Scope and Approach

This evaluation sought to assess the relevance, effectiveness and sustainability of the project, and to make recommendations for future efforts. While a comprehensive evaluation analysis would have encompassed country visits, on-site interviews, and similar undertakings, the limited resources available for this evaluation required a more modest approach. Accordingly, the analysis: 1) reviewed all the technical reports, progress reports, presentations, and similar output developed during the project (as listed in Annex III); 2) visited United Nations Headquarters in New York to conduct personal interviews with project personnel; and 3) interviewed individual country participants by telephone, with additional queries and issues resolved by e-mail communication.

³ UNDESA, *Climate Change: Technology Development and Technology Transfer*, Report No. 08-00077, New York, November, 2008.

⁴ *Climate Change: Technology Development and Transfer*, Background Paper for Delhi High Level Conference, New Delhi, India, 22-23 October, 2009.

Initial contacts with project personnel requested that the discussions specifically focus on the following topics:

1. The AIM methodology employed;
2. The resulting focus areas selected for study;
3. The activities and performance of the project team;
4. The value of the project results; and
5. The status of any follow-up efforts (e.g., proposals to implement potential projects identified in the reports).

These discussions and correspondence subsequently became the basis for the evaluation analysis.

2. Project Methodology

2.1 Description of Project Methodology

Given the extremely wide range of activities that might accompany any attempt to assist developing countries incorporate climate change adaptation into their planning processes, a first – and crucial – necessity for the project team was to develop a sound methodology and analytical approach.

To tackle this problem, an Expert Group Meeting was held at the University of Manchester in the UK in December, 2009, hosted by Professor Mohan Munasinghe, Director of the University's Sustainable Consumption Institute. Prof. Munasinghe has published extensively on energy, environmental and sustainable development issues, and serves as Vice-Chair of the UN Intergovernmental Panel on Climate Change (IPCC). His work on "sustainomics"⁵ addresses the problem by: 1) attempting to "make development more sustainable," thus focusing on process rather than an end goal which is difficult to define; 2) seeking to balance the three (i.e., social, economic and environmental) perspectives of sustainable development; 3) transcending traditional boundaries with new ideas and thinking; and 4) utilizing integrative tools for practical implementation.⁶

One of the tools proposed for this fourth task is the "Action Impact Matrix" (AIM). AIM is defined as a "multi-stakeholder consultative approach that facilitates the integration of the social, economic and environmental dimensions of development, identifies and prioritizes key interactions among them, and determines policies and projects that make development more sustainable." It would thus appear to be especially well-suited for this project.

AIM constructs two matrices with stakeholder inputs, the first (Matrix DEV) showing the effects of development goals and policies on vulnerabilities and concerns; and the second (Matrix VED) the converse, the effects of vulnerabilities and concerns on development goals and policies. Output of the matrices can then be used to help define the tasks and outputs to be developed for further study.

The AIM methodology was employed in both Grenada and Guatemala, in workshops held in each country in August, 2010 and April, 2011 respectively. Thirty-four persons participated in Grenada (24 Grenadians from a wide range of governmental, NGO and private sector organizations, and 10 persons from abroad). Guatemala's had 63 persons in attendance – 43 from in-country; fifteen from the region; and five persons representing international organizations. Prof. Munasinghe began with instructions about sustainomics, and then conducted training outlining the AIM approach. The matrix development then proceeded over a two-day period.

Bolivia joined when the project was already well underway, and while it was able to learn from the Grenada and Guatemala AIM experience, it did not conduct specific AIM workshops or develop matrices. A similar consultative process was undertaken, however, under the auspices of the Vice Ministry of Electricity and Alternative Energy (in the Ministry of Hydrocarbons and Energy). After efforts were made to outline the nature of the project to various stakeholders, and to gain their concurrence with its goals

⁵ Munasinghe, M., *Sustainable Development in Practice: Sustainomics Methodology and Applications*, Cambridge U. Press, 2009.

⁶ See <http://www.mohanmunasinghe.com/sustainomics.cfm>

and implementation approach, a national workshop was held with 76 participants representing 54 different institutions. Working groups were then able to prioritize specific areas for study and review.

2.2 Limitations

Prof. Munasinghe has suggested that AIM requires “up to about 50 experts... drawn from government, academia, civil society and the private sector.... interact[ing] intensively over a period of about two days...” The very scale of such an endeavor -- examining national priorities, with considerable stakeholder input -- means that its use in developing countries has been somewhat limited to date. Developing countries face constraints in both resources and expertise, and the assistance of multilateral projects such as this is obviously helpful in applying the methodology.

It is still a relatively novel methodology, having been introduced at the 1992 Rio Earth Summit. This provides two full decades of experience, but this is a period considerably less extensive than that associated with cost-benefit analysis (CBA), or the World Bank’s Environmental Assessment (EA) and Social Assessment (SA) analyses.

Given the dearth of applications and relatively short period of time, the variability and reliability of end results must also be open to question. Note, for example, the AIM conclusions for Sri Lanka (from a previous analysis), along with the conclusions of the two AIM results in this project:

Sri Lanka: “application of the AIM approach in Sri Lanka showed major climate vulnerabilities arising from food security, agriculture and water.”⁷

Grenada: “The overall conclusion is that vulnerability reduction and adaptation policies and projects should focus first on water resources, with special emphasis on the nexus with economic growth and food security.”⁸

Guatemala: “...looking at both VED and DEV matrices together underlines the overall conclusion that vulnerability reduction and adaptation policies and projects should focus first on the nexus of agriculture, water resources, and food security...”⁹

Obviously, there are a number of ways to interpret the similarity of such results. It might be the case that all three countries have very similar concerns and very similar priorities; it might also be the case that all (or most) developing countries have exactly such concerns; or theoretically, it might even be the case that AIM instructors leading the exercise steered results towards their own preferred outcome. This obviously was a methodological concern, and – as discussed in the Findings section – it was therefore evaluated in

⁷ Munasinghe, M. “Addressing the Sustainable Development and Climate Change Challenges Together: Applying the Sustainomics Framework,” *Procedia Soc. And Behav. Sci.*, 41, 2010, p. 6639.

⁸ *Training Workshop Report; Integrating Climate Change into National Sustainable Development Strategies and Plans in Latin America and the Caribbean*; Hosted by Ministry of Environment, Foreign Trade and Export Development of Grenada; and United Nations Division for Sustainable Development (DSD), Department of Economic and Social Affairs (DESA); St. George’s, Grenada, 4-6 August 2010, p. 8.

⁹ *Training Workshop Report; Integrating Climate Change into National Sustainable Development Strategies and Plans in Latin America and the Caribbean*; Hosted by Ministry of the Environment and Natural Resources (MARN) of Guatemala; and United Nations Division for Sustainable Development (DSD), Department of Economic and Social Affairs (DESA); Guatemala City, Guatemala, 27-29 April 2011, p. 7.

this analysis. The evaluation concluded that the AIM methodology appeared to provide valid and appropriate results for the two countries in which it was applied in this project – and, in fact, contributed significantly to the success of the project. Participants were not unduly influenced by AIM instructors, and significant impacts associated with climate change on these individual country concerns have been identified by other responsible analysts as well.

Finally, the application of such a large-scale participatory approach, with future project tasks only defined after full consultation and discussion with local stakeholders, put stress on the project's ability to deliver on the schedule defined within the Project Document. As discussed below, project participants appreciated that local input and the project's overall management, but not all project deadlines were met.

3. Findings

3.1 General Framework

As noted above, this project was designed to help developing countries incorporate climate change considerations into their national planning efforts. It did not initially make a program design distinction between mitigation and adaptation, but the relatively small emissions of greenhouse gases from the target countries, and their evident needs and interests increasingly shaped the programme to focus more on adaptation than mitigation efforts.

With extensive damage from hurricanes such as Katrina and Sandy, even countries like the U.S. have begun to move in this direction. Former U.S. Vice President Al Gore, who won the 2007 Nobel Peace Prize for his work on global warming, recently wrote:

For my own part, I used to argue many years ago that resources and effort put into adaptation would divert attention from the all-out push that is necessary to mitigate global warming and quickly build the political will to sharply reduce emissions of global warming pollution. I was wrong – not wrong that deniers would propose adaptation as an alternative to mitigation, but wrong in not immediately grasping the moral imperative of pursuing both policies simultaneously, in spite of the difficulty that poses.¹⁰

He goes on to note that the consequences that are already occurring are particularly devastating to low income developing countries.

In seeking to assist developing countries integrate climate change readiness and adaptation into their planning, however, the UNDESA project sought to operationalize numerous complicated issues – climate adaptation, disaster risk reduction, sustainable development, “green economy,” and social and environmental resilience – into a cohesive framework and project. So it is perhaps best to first examine these issues, their commonalities and differences, to see how the methodological approach enabled it to accomplish this.

3.1.1 Overall Project Concerns

The UNFCCC addresses adaptation needs under the Nairobi Work Programme (NWP), a programme set up in 2006 at COP-12 in that city. Its objective was to assist all countries, in particular developing countries (including least developed countries [LDCs] and SIDS) to improve their understanding and assessment of impacts, vulnerability and adaptation to climate change; and to make informed decisions on practical adaptation actions and response measures. The NWP has nine different work areas, including “adaptation planning and practices.” Technical support for this work area¹¹ pays considerable attention to the close relationship that countries face in adaptation concerns and disaster management – the latter being a concept undergoing its own paradigm shift. Historically disaster management has been a reactive endeavor, with a focus on response management; today it is increasingly viewed as a proactive task, with a focus on risk management. Hence the new attention towards disaster risk reduction (DRR).

¹⁰ Gore, A., *The Future: Six Drivers of Global Change*, Random House, New York, 2013, p. 303.

¹¹ <http://unfccc.int/resource/docs/2008/tp/04.pdf>

DRR and adaptation are not identical concerns. DRR will clearly apply in circumstances where climate is not responsible for the damage (e.g., in cases of earthquakes), and the time-frames as usually viewed differently (e.g., they tend to be longer for climate adaptability). However, there are also many commonalities, including integration (i.e., “both must be integrated into development plans and policies”) and convergence (“the two policy agendas are increasingly being discussed together, including through the Bali Action Plan (decision 1/CP.13) and the Hyogo Framework for Action.”). Notably, the document notes that both are typically underfunded as well. But even more important than these attributes, however, is the fact that both adaptation and DRR share a fundamental, common purpose: “Both aim to build resilience contributing to sustainable development in the face of hazards.”

This UNFCCC guidance thus introduced two concepts – resilience and sustainable development – into the adaptation framework; and like adaptation and DRR, these concepts are related but not identical either.

“Resilience” has become a major topic over recent months (with many believing this to be a result of the media attention given to Hurricane Sandy in late 2012). One *Time* magazine article has suggested that “resilience” would become the “environmental buzzword” of 2013.¹² Popular books now address the topic,¹³ and various organizations have begun to more narrowly focus on specific elements: multilateral agencies focus on resilience in infrastructure development¹⁴, humanitarian groups worry about resilience in emergency capacity building¹⁵, etc.

A recent *New York Times* article pointed out that as a result of 9/11 in the U.S., many of the relatively new buildings in Lower Manhattan might be considered sustainable because of their green design and LEED (Leadership in Energy and Environmental Design) certification -- but when Hurricane Sandy came along and flooded basements, these same buildings had no redundant energy systems. They were clearly not resilient, as their energy systems were forced to shut down.

Much of the thinking about resilience has its roots in the pioneering work of the ecologist C.S. Holling in the 1970s. Resilience has typically been viewed as the capacity of a system to absorb shocks and to “bounce back” afterwards. Holling’s work helped shift the perspective away from efforts to control resource flows in a stable, near-equilibrium system, which might be viewed as a steady-state environment – towards one which focused on a capacity to renew, re-organize and develop in response to change. Ecology provided the original basis for studying such resulting “complex adaptive systems,” but later research efforts expanded this to include anthropology, environmental psychology, human geography, cultural theory, management and a host of other socio-economic sciences.¹⁶

Efforts to link resilience and sustainable development were apparent more than a decade ago, when a scientific background paper for the World Summit on Sustainable Development (WSSD) in Johannesburg

¹² Walsh, B., “Adapt or Die: Why the Environmental Buzzword of 2013 Will Be ‘Resilience,’

<http://science.time.com/2013/01/08/adapt-or-die-why-the-environmental-buzzword-of-2013-will-be-resilience/>

¹³ See, for example, Zolli, A., *Why Things Bounce Back*, Free Press, NY, 2012.

¹⁴ ADB, *Investing in Resilience: Ensuring a Disaster-Resistant Future*, Manila, January, 2013.

¹⁵ Turnbull, M. et al, *Toward Resilience: A Guide to Disaster Risk Reduction and Climate Change Adaptation*, by the Emergency Capacity Building Project; available at: <http://www.ecbproject.org/news/latest-news-library/post/280-toward-resilience-a-guide-to-disaster-risk-reduction-and-climate-change-adaptation->

¹⁶ For a review of this transition, see Folke, C. “Resilience: The emergence of a perspective for social-ecological systems analysis,” *Global Environmental Change*, 16: 253-267, 2006.

reviewed the latest resilience research and case studies, and suggested that “management can destroy or build resilience, depending on how the social-ecological systems organizes itself in response....” It highlighted the fact that rigid control mechanisms could actually erode resilience and promote collapse, while management that could sustain social-ecological systems in the face of surprise, unpredictability and complexity would incorporate the knowledge of local users; provide for flexible collaboration; stimulate ecosystem friendly technologies; and employ economic incentives in policy development.¹⁷

Such research and case study findings have not escaped the attention of sustainable development proponents, who had already sought to utilize them. Zaccai (2012), for example, studied more than two decades of publications and efforts under sustainable development, and found a general shift from ‘command and control’ to market- and collaborative-instruments within the environmental policy arena, as well as a broadening of key group to include stakeholders as well as governments. Today’s knowledge base was “extensive, diffused in many realms of society,” as opposed to earlier superficial knowledge provided by specialists.¹⁸

Importantly for this study, this same view had already become apparent for developing NSDS:

“An NSDS was once seen as a single, new master plan for sustainable development. Today there is increasing consensus that it comprises a set of coordinated mechanisms and processes that together offer an integrated and participatory system to develop visions, goals and targets for sustainable development, and to coordinate implementation and review.”¹⁹

Finally, there is the question of how it might accomplish this within a ‘green economy’ framework, which received particular attention at the Rio + 20 Sustainable Development Conference. A DSD review paper²⁰ prepared for the Rio + 20 meeting notes that the term was first employed in a pioneering 1989 UK report by environmental economists entitled *Blueprint for a Green Economy*,²¹ but that report did not contain a definition of the term, even though it was commissioned by the UK government to advise about the implications of sustainable development on economic progress and the appraisal of projects and policies. The DSD report found at least eight recent definitions, although there is no international consensus on which is the proper one. Many cite a UNEP report which defines a ‘green economy’ as “one that results in improved human well-being and social equity, while significantly reducing environmental risk and ecological scarcities. It is low carbon, resource efficient, and socially inclusive.”²² DSD also noted a succinct definition proposed

¹⁷ Folke, C. et al, *Resilience and Sustainable Development: Building Adaptive Capacity in a World of Transformation*, Scientific background Paper for the WSSD, on behalf of the Environmental Advisory Council to the Swedish Government, April, 2002.

¹⁸ Zaccai, E., “Over two decades in pursuit of sustainable development: Influence, transformations, limits,” *Environmental Development*, 1:79-90, 2012.

¹⁹ International Institute for Environment and Development, “National Sustainable Development Strategy,” London, n.d.

²⁰ Division for Sustainable Development, UNDESA, *A guidebook to the Green Economy; Issue 1: Green Economy, Green Growth, and Low-Carbon Development – history, definitions and a guide to recent publications*, August, 2012.

²¹ Pearce, D., Markandya, A. and Barbier, E., *Blueprint for a Green Economy*, Earthscan, UK, September, 1989.

²² UNEP, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, Nairobi, 2011.

by the Green Economy Coalition as “a resilient economy that provides a better quality of life for all within the ecological limits of the planet.”²³

Thus, UNDESA’s project was required to address issues of social inclusiveness, DRR, sustainability and resiliency. It clearly evolved over time, and this newer, richer overall framework was incorporated into the project for two reasons: a) it met the needs of the individual countries; and b) the project’s AIM methodology encouraged such an approach. A number of topics included in the original Project Document – such as the technology transfer barrier analysis, and the indicator metrics – did not receive the attention envisioned in the original project design. However, the project more than compensated for this by developing a rich and comprehensive approach to the problems facing the individual developing countries, and did so similarly utilizing the latest thinking and research on these matters. It established a series of activities that followed cutting-edge thinking on the individual components (i.e., adaptation, DRR, resilience, sustainable development, and ‘green economy’) discussed above, and subsequently produced a useful and technically sophisticated set of outputs that fully justified the expenditure and resources allocated to the effort.

3.1.2 The AIM Methodology

The principal components of the project’s AIM methodology have already been described in section 2.0, and the process itself was found to play an extremely significant role in the project’s ultimate design and implementation.

Participants in the process received a pre-workshop questionnaire, and the principal steps of the process were summarized in the Grenada Workshop document²⁴:

- a) Determine the most important national goals and policies;
- b) Determine critically vulnerable areas (VA) relevant to climate change;
- c) Incorporate climate change into the AIM;
 - Determine status of VA subject to only natural climate variability
 - Determine impacts of climate change on VA
- d) Identify how development goals/policies might affect VA (Matrix DEV-AIM)
- e) Identify how VA might affect development goals/policies (Matrix VED-AIM)
- f) Prioritize most important interactions and determine appropriate remedial policies and measures.
- g) Perform more detailed studies and analysis of key interactions and policy options identified in step f above.
- h) Update and refine steps c to f above.

There are several factors which should be noted about this methodology which link directly to the discussion above:

- *Its participatory nature.* Perhaps the most important aspect of the AIM methodology is the fact that it brought together a wide range of participants, representing various elements of government, the private sector, academia, and civil society, and sought to utilize local knowledge

²³ See <http://greeneconomycoalition.org/about>

²⁴ Supra note 8.

to define, prioritize and address the most serious concerns facing the individual country. It was inclusive, and subsequent project actions were driven by the individual country's views and needs.

- *Its consideration of sustainable development.* Prof. Munasinghe's AIM methodology has two important characteristics regarding sustainable development:
 - It attempts to balance the three sustainable development pillars, and integrates this into a practical tool; and
 - It adopts what political scientists call an "incrementalist" rather than "rational planning" approach to the problem, by "making development more sustainable" rather than trying to clearly define the sustainable development end goal.
- *Its consideration of resilience.* Prof. Munasinghe addressed resilience in his preparatory lectures, but did so primarily in the context of the environmental pillar of sustainable development, noting that "the environmental domain focuses on protection of the integrity and resilience of ecological systems"²⁵ But more importantly, his AIM matrix approach tackles the problem at a more fundamental level. The *New York Times* article comparing sustainability and resilience addresses the difference quite succinctly: The green-designed LEED buildings "...were designed to generate lower environmental impacts, but not to respond to the impacts of the environment." The AIM matrices do so very explicitly, in a manner utilizing local knowledge.
- *Its consideration of DRR.* Prof. Munasinghe discussed disaster management in both AIM presentations, pointing out, for example, that Hurricane Ivan alone killed 37 people and caused damage estimated at approximately 2.5 x the country's GDP in Grenada. The country's two principal foreign exchange earners – tourism and nutmeg production – were decimated, with 90% of the country's hotels and 80% of its nutmeg trees destroyed. He similarly noted that Guatemala suffered 62 natural disaster events between 1902 and 2005, affecting approximately six million persons. Disaster management was one of the ordinal goals/policies explicitly included within the Granada AIM matrices, and the country's National Disaster Management Agency was represented in the session. Prof. Munasinghe has previously noted that "in most cases, quite modest investments in disaster reduction clearly provide more than commensurate benefits,"²⁶ and the AIM methodology was well designed to capture such benefits.

As noted in Section 2.2., the results of the AIM methodology were broadly consistent in both countries in which it was applied, and so this evaluation was particularly concerned that the session moderators might have influenced the results. This issue was raised in discussions with representatives from both countries who had attended the sessions, and it became clear that this was not the case – the results reflected the position of the local stakeholders, and not any outside influence. The Grenada representative noted, for example, that stakeholders there took strong positions – sometimes going as far as bringing back data to bolster their own individual arguments -- and would not have been easily swayed by outsiders. The fact that these groups paid particular attention to water, food security and agriculture is one that reflects their own concerns – although it is clearly held by outside experts as well. The UNFCCC report addressing worldwide climate impacts (noted in Section 1.1) came to much the same conclusion for this region:

²⁵ Munasinghe Institute for Development (MIND), *Action Impact Matrix (AIM) Application to Climate Change Adaptation – User's Manual*, July 2010, p. 5.

²⁶ Kreimer, A., and Munasinghe, M. "The environment and disaster management," *Land Use Policy*, p. 269, 1991.

“Latin America includes much of the world’s biological diversity, as well as a wide variety of ecosystems, climatic regions, topographies and land-use patterns. Particularly vulnerable to climate change are the water, agriculture and health sectors, the Andean glaciers, the Amazon region and regions vulnerable to extreme climatic events.”²⁷

3.2 Performance Assessment

Despite similarities in the AIM methodology results, and the common Latin America impact threats noted above, the three countries followed quite different paths for the remainder of the project. This was due in large part to the significant differences among them in size, location, economies, institutional structure, and other factors. This section discusses these individual country efforts, addressing them in a rough chronological order; Grenada was the first to complete its AIM methodology; Guatemala second; and as noted earlier, Bolivia did not conduct AIM but followed a slightly different approach.

3.2.1 Grenada

Grenada is a small island country located in the southeastern Caribbean Sea. It has one large island (Grenada) as well as six smaller islands, and has a population of approximately 110,000 persons. As noted earlier, its economy depends heavily upon tourism and spices (including nutmeg, of which the country provides 20% of the world’s supply).

Country-wide analysis

A project report summarizes Grenada’s AIM analysis as follows:

The overall conclusion was that vulnerability reduction and adaptation policies and projects should focus on: water resources, with special emphasis on the nexus with economic growth and food security; tourism; and infrastructure, transport and communication... Further analysis by Grenadian experts resulted in the selection of three more specific critical priority areas within the main categories selected from the use of the AIM analytical tool. These priority areas included: (1) assessment of water resources in Northern Grenada; (2) restoration of coastal ecosystems; and (3) use of renewable energy for medical and community centres after natural disasters.²⁸

The report then provides a detailed summary of the efforts conducted under the project in these three areas. The water resource section focused on water supply and demand in Northern Grenada – a choice again driven by Grenadian experts-- and considered the vulnerability of water resources under conditions likely to be brought about by climate change (e.g., hurricanes, droughts, sea level rise, and flooding). The report pays particular attention to the opportunity for rain water harvesting (RWH) and steps that might be undertaken under IWRM, including not only RWH and increased storage, but also reducing waste and pollution through changes in production and consumption patterns (e.g., better soil-water management). It notes that, unlike earlier, large –scale projects, IWRM “opportunities are likely to be more successful through small projects that can be managed by individuals or at the community level with the support of

²⁷ Supra note 1, p. 22.

²⁸ *Climate Change Adaptation in Grenada: Water Resources, Coastal Ecosystems and Renewable Energy*, UNDESA in cooperation with the Ministry of Environment, Foreign Trade and Export Development of Grenada, 2012.

central agencies.”²⁹ Recommendations include enhanced promotion of RWH and providing better extension services to farmers through the Irrigation Unit at the Ministry of Agriculture.

The section on coastal ecosystems similarly lays out a comprehensive status analysis of the resource, and notes that “The concept of managing for resilience is based on the premise that unstressed coastal ecosystems are naturally resilient to climate change, but human-induced degradation erodes th[at] ability....”³⁰ The actions needed must therefore address these degradation activities, which include such threats as vegetation loss and deforestation, pollution, litter, and coastal development. The report identifies a wide range of activities to accomplish this, and importantly includes such implementation ideas as ‘best practices compensation’ and the use of partnership agreements with private land owners. It similarly calls for small grants that might be used to support on-the-ground restoration work by local community groups and NGOs.

The third section of the report describes the significant damage done to infrastructure during Hurricane Ivan in 2004, and notes that, while GRENLEC has strengthened its distribution system in the interim, community centers and medical facilities surveyed during the project are still vulnerable, and “prolong outages are expected in the outer parishes after a major disaster.”³¹ The report then examines a range of renewable energy systems available to address this concern, and focuses on grid-interactive solar PV systems with backup batteries, and solar hot water systems to meet hot water demand. It lays out specific costs and benefits from such systems, and identifies projects that might be developed to accomplish this. Importantly, the section also discusses recent policy changes by GRENLEC which have had the effect of decreasing incentives for renewable energy systems (RES) in the country. Customers are no longer allowed to use power from RES and sell their excess; instead they are now required to sell all of the power generated, at a price which is likely to have a negative impact on payback and thus the attractiveness of the RES investment.

Carriacou and Petite Martinique analysis

In addition to this country-wide analysis, the project also generated a second, equally detailed report³² that focused on Carriacou and Petite Martinique, the second and third largest islands in the country. This report similarly came out of the AIM methodology discussions, but also was informed by preparations for the 2012 United Nations Conference on Sustainable Development (the “Rio + 20 Conference”). In March 2010, the General Assembly agreed that green economy in the context of sustainable development and poverty eradication would form one of the two specific themes for that conference (in resolution 64/236). Three months later, the Secretary General’s *Five-year Review of the Mauritius Strategy* noted the special climate adaptation needs of SIDS, and suggested that “The green growth approach may be a useful integrated approach for all small island developing States to reinforce both economic growth and sustainability.”³³ But importantly, the report also noted that an ECLAC survey conducted earlier that same year had found that:

²⁹ Ibid., p. 31.

³⁰ Ibid., p. 45.

³¹ Ibid., p. 71.

³² *Road Map on Building a Green Economy for Sustainable Development in Carriacou and Petite Martinique, Grenada*, UNDESA in cooperation with the Ministry of Carriacou and Petite Martinique Affairs and the Ministry of Environment, Foreign Trade and Export Development of Grenada, 2012.

³³ A/65/115; 6 July 2010.

“63 per cent of Caribbean small island developing States indicated insufficient financial resources for the implementation of the Strategy, one half had only minimal expertise available, and 57 per cent indicated that only limited support had been received from the international community.”³⁴

This project offered an opportunity to address such needs, and to lay out a “Road Map” for accomplishing integrated green economy in such a SIDS setting.

After laying out background information, the analysis addressed energy resources and technologies; water resources; education and jobs; transport; agriculture, fisheries and food security; ecotourism; and environmental sustainability. It laid out potential policy needs and/or changes in these areas, as well as potential projects that might be implemented. It illustrated how integrated water-energy-waste systems could be designed that would meet the needs of expanding sectors of the economy, and concluded that such an integrated framework could create the “necessary value added” to make such approaches feasible. Like the national report, it too thought that it would be necessary to base such a transformation plan on a “‘bottom-up’ approach that incorporates community needs, national priorities and traditional strengths”³⁵ of the country’s population. One of its proposals, for example, laid out a detailed beach monitoring program that would incorporate activities by local secondary school students, environmental wardens working for the government, staff working in marine protected areas, and participating NGOs and community groups, complete with training and certification programs.

Although such groups are key to the green economy road map, the report reiterated that such efforts would have to be supported by international cooperation and technological innovation. The analysis also highlighted the necessity for sound emergency preparedness, “especially in relation to water and energy needs immediately after natural disasters.”³⁶

A number of Grenadian legislators participated in individual project meetings and were kept apprised about on-going efforts, and the final project results were submitted to the country’s Parliament.

3.2.2 Guatemala

Guatemala is a country of 13.3 million persons located in Central America, with a rich biodiversity and cultural heritage (as home to the former Mayan civilization). The agricultural sector accounts for about 40% of exports, and about half of the labor force – but there is a wide income distribution within the country, and more than half the population lives below the poverty line. It is one of the hemisphere’s poorest countries, and Prof. Munasinghe has noted that it ranks fifth among countries in the world with the highest economic risk exposure to three or more hazards.³⁷

The country also employed the AIM Methodology, and reached similar conclusions as Grenada. As mentioned earlier, its summary report noted that “vulnerability reduction and adaptation policies and projects should focus first on the nexus of agriculture, water resources and food security, with special emphasis on impacts on poor communities and human health issues.” But this too is a rather broad range

³⁴ Ibid., p. 13.

³⁵ Supra note 32, p. 128.

³⁶ Ibid., p. 6.

³⁷ Supra note 9.

of concern, and so the Guatemalan project participants decided to narrow the focus in a two stage process.

First, the Política Nacional de Cambio Climático (PNCC) – the political group within Guatemala responsible for directing climate change efforts both within the country and on an international basis – identified the critical components of the AIM findings, knowing national capacities and technology transfer requirements; the key vulnerabilities for adaptation; and mitigation variables. These were then evaluated and ranked by members of the Comisión Interinstitucional de Cambio Climático (CICC) – an inter-institutional organization addressing these topics within the government -- in a workshop following the same general methodology as the AIM process (i.e., ranking from -3 to +3). Finally, in the third-stage of the process, technical experts considered and prioritized the criteria in a manner consistent with integrating the activities into the national planning system, the Sistema Nacional de Planificación (SNP).

Guatemala has a well-developed institutional framework, and not surprisingly a major effort in this project was to incorporate planning for climate change within this already-existing institutional structure. The results of the three stage prioritization process also led to a particular focus on food security and nutrition, and the national energy situation.

Institutional Structure

Like any developing country trying to incorporate the wide range of impacts of climate change into their national planning approach, Guatemala faces a number of constraints, including the lack of resources, the limited supply of technical expertise, the difficulty of collecting sufficient data for monitoring performance, etc. In its analysis of this issue, the project grouped the concerns into three types of barriers: a) structural; b) organizational; and c) situational.

Structural barriers include the fact that the current SNP already incorporates planning for the various concerns associated with climate change, but the current level of understanding and behaviors associated with the process do not accurately reflect the challenges which lie ahead. There is also a structural disconnect between the broad temporal planning horizon employed versus the immediate need for adaptation actions. Organizational barriers relate to the fact that climate change is viewed solely as an environmental issue (to be addressed by the appropriate environmental agency), rather than as an all-encompassing concern facing all components and levels of government. Interagency coordination, monitoring capacities and financial allocations related to climate change similarly need to be addressed. Finally, situational barriers include the fact that there are insufficient preparation and implementation capacities in governmental organizations necessary to deal with anticipated climate change impacts, including insufficient levels of financing.

The project put considerable effort into exploring alternative institutional arrangements which might address these barriers, including reclassifying the role of the PNCC within the government, or generating an alternative methodology which focused primarily on the three way relationship between the environmental ministry (i.e., Ministerio de Ambiente y Recursos Naturales, or MARN); the Presidential Secretariat for Planning and Programming (i.e., Secretaría de Planificación y Programación de la Presidencia, or SEGEPLAN); and the Finance Ministry (i.e., Ministerio de Finanzas Públicas, or MINFIN).

A key element of the institutional analysis was the focus on three integrating themes:

- Addressing the UNFCCC’s “common but differentiated responsibilities” framework in both international and national contexts. This would thus allow Guatemala to meet its international commitments, while at the same time extending the framework to meet domestic requirements (ensuring that all respond based upon both capabilities and needs);
- Utilizing the “polluter pays principle” first introduced at the UN Conference on the Human Environment in Stockholm in 1972. As noted below, this offers opportunities for revenue generation necessary to accomplish the goals of the climate change planning, in a manner that economists favor since it “internalizes the externalities”; and
- Acting in a ‘proactive’ rather than ‘reactive’ manner. This is fully consistent with the earlier discussion about designing resilient systems, and meeting DRR and sustainable development goals in the climate change area.

One significant factor facing the institutional analysis was a change in the national government during the period this project was being undertaken. A new Congress was elected in September 2011, and a new President two months later in a runoff election. Since many of the initial project participants were members of governmental agencies run by the previous government, any institutional recommendations proposed by this project face an uncertain future.

Food security

Guatemala has one of the highest levels of chronic under nutrition for infants in the western hemisphere, with 49% of children under 5-years-old facing chronic undernourishment. Rates are even higher among the indigenous population, with food insecurity concentrated in the Western Highlands and the Eastern dry areas – also corresponding to Guatemala’s poorest territories.³⁸ Climate change thus threatens to make an already dire situation even worse. As Dr. Luis Ferrate, Guatemala’s former Environment Minister, noted in an interview during this evaluation: “Climate change is not an addition to current problems – it is a multiplier!”³⁹

The country has instituted a wide range of plans and policies over recent decades to address this situation, but unfortunately there is little to show for them in terms of actual results. The project explored this situation, and found a variety of issues contributing to this dearth of meaningful results: a lack of coordination between national agencies; a similar lack between national agencies and international donors; a lack of action by the beneficiaries and affected groups themselves; and a lack of institutional leadership. The newly elected government launched two new initiatives during the project period -- but it is still too soon to know the results of these new programs.

This project introduced the concept of “food balance” to incorporate climate change impacts in the national planning process. Such an approach would essentially seek to quantify both the supply and demand at the family, community and other levels – and then seek to estimated quantity modifications associated with climate change impacts. It would use a zero baseline (i.e., unchanged climate) as a reference point, and then incorporate various scenarios and their effect on supply within the planning process.

³⁸ <http://www.mcgill.ca/globalfoodsecurity/research-initiatives/guatemala>

³⁹ Personal communication, 28 January 2013.

National Energy Matrix

Schaeffer et al (2012) have conducted a comprehensive review of the ways in which the energy sector can be vulnerable to climate change, including impacts on resource endowments (e.g., hydropower, wind, power, biofuels, etc.); impacts on energy supplies (e.g., impacts on oil and gas operations in coastal areas, etc.); impacts on transmission, distribution and transfers; impacts on energy use (e.g., heating and cooling in buildings); impacts on infrastructure siting; and cross-sectoral impacts (e.g., competition for water resources).⁴⁰ One of the significant challenges that the authors identify is how to assess the impacts which may occur as a consequence of extreme weather events. They note that “the majority of current methodologies rely on past experience but this may not be sufficiently good guide for planning and operational activities in the coming decades.”⁴¹

Guatemala’s consideration of the country’s energy matrix in this project was based on the fact that the variability of such factors has not been explicitly considered within the country’s energy planning. Since the design criteria, operation, maintenance and infrastructure planning have not taken either adaptation (or mitigation) concepts into consideration, the country has an overly confident view of the robustness and resilience of its energy system. Further, the project found that criteria used for the expansion of the electric power system were based on short-term economic considerations that did not internalize environmental costs, or consider the impact of increased GHG emissions.

The project therefore proposed the use of a ‘carbon index’ indicator in developing electric system expansion plans. It also sought to link the energy issue to the food security one, offering an integrated approach that would also seek to reduce fuelwood consumption (e.g., by introducing more efficient stoves); improve health (by reducing the impact of particulate from inefficient combustion); and also improve the environment (by offering alternatives to the local biomass destruction caused by the poor).

Another key component of an integrated approach discussed in the project’s plan of action is *Gestión Integrada del Recurso Hídrico* (GIRH) – or what in English is known as IWRM. Guatemala is blessed with considerable water resources, and supply abundantly exceeds demand – but water issues permeate all aspects of both the agriculture and energy sectors, and are likely to be considerably modified in the future as climate change impacts increase in severity. Water availability also plays a crucial role in sanitation and public health. Given its multipurpose nature, and its necessity as a means of supporting life, there are numerous competing users, which include domestic, industrial, irrigation and hydropower applications. SEGEPLAN has previously determined that the country has weak institutional capacity for water storage, and found that fully 98% of surface runoff is not collected. The abundance of water in the rainy season is accordingly not stored -- and cannot supplement supplies in times of drought.

Guatemala’s project thus determined that an integrated approach to planning for climate change made the most sense – but also realized that everything could not be done at once. It therefore prioritized activities, suggesting that in the short term, the focus should be on DRR and food security. The medium term would address IWRM and improving infrastructure to better handle the changes associated with climate change. The longer term would address education and awareness of climate change impacts, along with the land management and natural resource/sustainable consumption activities that would help the country deal with significant environmental change.

⁴⁰ Schaeffer et al, “Energy sector vulnerability to climate change: A review,” *Energy*, 38: 1-12, 2012.

⁴¹ *Ibid.*, p. 1.

3.2.3 Bolivia

Bolivia is a land-locked country in South America with a multi-ethnic population of approximately 10 million persons. It has a diverse geography, including Andean mountains, cold deserts, and tropical forests. The country has considerable mineral wealth and natural resources (including natural gas), but also has a young population, with almost 60% of the country's citizens being less than 25 years old.

As noted earlier, Bolivia's did not employ the AIM methodology, but had an opportunity to learn from the results obtained in the other two countries. However, its project efforts were also influenced by the fact that the project was coordinated through the Vice Ministry of Electricity and Alternative Energy (VMEEA). The project conducted a workshop that included representatives of 54 different institutions, and – as discussed below – spent a considerable effort addressing the effects of climate change on the water cycle. But the project results nonetheless had a much stronger energy component than those in the other two countries.

The project began with a mission by UNDESA personnel, presenting an overview of the project's goals and objectives to a range of stakeholders within the country. This was an important step—essentially seeking a “buy-in” on the part of potential participants –because the energy situation in Bolivia is exacerbated by the fact that more than half a million households do not have access to electricity, and approximately 800,000 households use firewood as their primary energy source.

Further, Bolivia has undergone considerable institutional change in recent years, with a significant increase in state intervention in the economy (including energy concerns), while simultaneously focusing on the plight of the poor and disadvantaged, aimed at increasing their standard of living and reducing both extreme poverty and illiteracy. The project thus sought to address many of the same issues in the “Sustainable Energy for All” program, an initiative launched by the United Nations Secretary-General and designed to bring all key actors to the table to make sustainable energy for all a reality by 2030.

While the Secretary-General's initiative obviously differs on a country-by-country basis, some common themes in implementing such a program include, among others: a) a broad, high-level commitment by a country's political leadership to the objective of energy access; b) a realistic energy access strategy and clear implementation plans linked to overall national development and budget processes; c) strong communication campaigns to inform stakeholders of planned changes and related benefits, and d) a legal and regulatory framework that encourages investment.⁴² This project had similar goals, seeking to address them in a context of on-going climate change, and fostering the use of clean, renewable energy technologies to tackle emerging problems related to water supply and rural energy access for lighting, communication and education.

The project took three distinct steps in doing so:

- *Preparation of a report on Alternative Energy Policies.* This report, entitled (i.e., *Alternative Energy Policies for the Electric Power Sector in the Plurinational State of Bolivia*), was prepared by members of the Ministry of Hydrocarbons and Energy (which includes VMEEA), and was published in December 2011. It identifies various technologies suitable for the country (e.g., solar, wind, biomass, hydropower, etc.); maps of their potential resource strength; the political-institutional

⁴² *Sustainable Energy for All*, Technical Report of Task Force 1 in Support of the Objective to Achieve Universal Access to Modern Energy Services by 2030, United Nations, New York, April, 2012, p. 2.

organization of the sector; and their significant potential, given the country's natural and geological resources. However, it also notes problems, including access rules concerning the use of natural resources; administrative and bureaucratic processes concerning funding; and insufficient research and technological development. Perhaps most importantly, however, it recognizes that the pricing of natural gas within the country distorts competition, and makes thermoelectric generation comparatively less expensive than that generated by alternative, renewable technologies.

The report outlines a series of important characteristics that energy policies must address (e.g., energy sovereignty, energy security, efficiency, etc.) and strategic objectives (e.g., contribute to diversification of the energy matrix, contribute to energy access, etc.). It then lays out four proposed programs: 1) increasing alternative energy alternatives to a level of at least 10% of the energy matrix over a period of five years; 2) achieving universal energy access in urban areas by 2015, and in rural areas by 2025; 3) creating an institutional regulatory framework to accomplish such goals; and 4) creating a national infrastructure for research, development and technology transfer in these areas.

- *National and Regional Workshops.* This document then became the basis for an outreach program, with the participation of 76 persons representing 54 institutions at a national workshop, as noted earlier. Working groups provided considerable comments about all of the topics noted above, pointing out specifically the lack of technical capacities at the local level; the duplication of uncoordinated efforts amongst different levels of government; and the need for information about access to public funding. A key question was the role of state subsidies, electricity pricing, and the proper form for integrating the public and private sectors into the energy access effort. These discussions, along with independent research and interviews with key stakeholders, formed the direction for the next step – focusing on both the issues of water and energy, and dealing with climate change within the country. Four local/regional workshops were then held promoting specific topics about governmental policies for alternative energies, and their potential role within the country; and four more were conducted at various locations around the country to disseminate the results of the final project report noted below.
- *Final Project Report.* The final report of the Bolivian project effort was entitled *Cambio Climatico, Agua y Energia en Bolivia* (i.e., *Climate Change, Water and Energy in Bolivia*), and was published in December 2012. This provides a comprehensive overview of the water situation in the country, including the loss of glaciers, the inability of some rivers to handle increased glacier melt (leading to floods), and the loss of water storage in the glacier ice. The study also discusses the manner in which climate change impacts – changes in rain disturbances, sun intensity, frost, hail and wind – all affected the agricultural communities around Lake Titicaca. Residents felt that weather over the past five years had become much less predictable, which influenced agricultural activities and made planning considerably more difficult.⁴³

The final report also built upon the data about alternative energies technologies and resources contained in the original (December 2011) Ministry report. It provides information, for example, about NGOs and international donors who are active in this area, and the role they are playing. It also links the water and energy areas by discussing the potential role of micro-hydro applications, which can be developed locally, create jobs, and contribute to local economic development.

⁴³ *Cambio Climatico, Agua y Energia en Bolivia*, UNDESA, ONUDI and Energética, Oct., 2012, p. 10.

The final report concludes with a series of eleven proposals designed to help the country respond and adapt to climate change. These include an institutional realignment of the office of the National Climate Change Program to not only consider routine operational activities (as is typically done today), but also to generate strategic thinking about these topics for the country. It points out that current governmental policies are increasing fossil fuel consumption within the country – and hence GHG emissions. Energy efficiency measures and the use of renewables to displace diesel could help address these emissions. Importantly, the report addresses the pricing of natural gas, urging the government to increase the use of hydropower and gradually “normalize” the natural gas price to shift the relative cost of the two options. It also includes other proposals addressing factors such as integrating renewables into the national grid; taking steps to ensure their sustainability and continued operation in rural areas; and developing the human resources necessary to tackle these tasks.

In addition to these efforts, the Bolivian project had two other important elements. In support of the “Sustainable Energy for All” program noted above, Asociación Boliviana de Energías Renovables (ABER) conducted a Nationwide Intercollegiate Contest to develop skills and enhance RES knowledge in public high school students. There were three categories of competition, addressing access to electricity, cooking technologies and water heating. The entries were evaluated based upon their diagnostic considerations (i.e., collecting data from primary sources); their technical solution; and their applicability to access concerns in rural Bolivia. The contest received 150 enquiries, and 80 papers were presented – and the contest was judged to be a success by all concerned. The winning students constructed a solar water heater from waste materials, and provided innovative solar cookers and solar panel designs – and received cash prizes, renewable energy equipment, and visits to RES companies as awards. And finally, the work conducted in this project was integrated into the county’s UN Development Action Framework (UNDAF), the programme document between the government and the United Nations country team describing collective actions and strategies designed to achieve national development. Mr. Sha Zukang, UNDESA’s Undersecretary General, was invited to sign this document, which was also signed by Mr. Evo Morales, Bolivia’s President.

3.3 Other Assessment Criteria

Two of UNDESA’s five priority areas in capacity development are ‘sustainable development including climate change mitigation and adaptation, and forests’ and ‘social integration and inclusion of vulnerable groups.’⁴⁴

The former was clearly met (by definition), since the entire project was aimed at helping countries incorporate climate change into their national planning systems and their NSDS.

The latter also played a key role, however, in a number of ways. The AIM methodology clearly meets UNDESA’s goal of “provid[ing] training on inclusive policy making and planning, and the use of participatory research methodologies.”⁴⁵ In both Grenada and Guatemala, for example, the AIM sessions included NGO participants, and representatives at the national workshop in Bolivia were similarly broad-based (i.e., representing 54 different organizations). The project’s focus on water supply, food security, and energy access issues ensures that the beneficiaries are likely to include indigenous natives, the poor,

⁴⁴ <http://www.un.org/esa/cdo/>

⁴⁵ <http://rconline.undg.org/wp-content/uploads/2011/11/Social-integration-and-inclusion-of-vulnerable-groups1.pdf>

and other economically disadvantaged groups. Bolivia’s high school energy contest noted above specifically targeted the young.

Hence it is apparent that the project was conscientiously designed to meet UNDESA’s capacity development goals, and accomplished that in its implementation.

Similarly, the project’s AIM methodology in Grenada and Guatemala and the national workshop in Bolivia resulted in attention being focused on food security, water and energy – a result noted in Section 2.2. These three topics represent three of the eleven thematic areas being addressed as a follow-up to the Rio + 20 Conference and the post-2015 process.⁴⁶ The UN is seeking input in these areas in a series of on-going thematic consultations with academia, the media, the private sector, employers and trade unions, civil society and decision-makers. Thus, the project’s results are especially well suited for providing input to UNDESA for these next steps.

3.4 Performance Assessment Summary

The main activities that were identified to achieve the project objectives and expected accomplishments were successfully completed during the 3-year course of project implementation, as illustrated in the table below:

Overall Objective: To strengthen the capacity of countries to integrate climate change into their NSDS and other planning processes	
EA1: Strengthened national sustainable development policies and programmes	
Main Activities	Qualitative Results achieved
A 1.1 Convening one international expert group meeting to refine, review and validate methodologies and indicators for integrating climate change into development plans.	<ul style="list-style-type: none"> • An Expert Group meeting was held in Manchester, UK, December 2009 at the invitation of Prof. Mohan Munasinghe, Director of the Sustainable Consumption Institute of the University of Manchester; • The Action Impact Matrix (AIM) methodology approach was selected for implementation in the project; • AIM instructional materials were prepared for participants in Grenada and Guatemala.
A 1.2 Convening three regional workshops, one in each selected country, to explain the methodologies, indicators and implementation procedures and to review expected climate change impacts and possible actions and policies	<ul style="list-style-type: none"> • National workshops were held in Grenada (August 2010) and Guatemala (April 2011) presenting the AIM methodology; • A national workshop was held in Bolivia (December 2011) to prioritize areas of concern for future study; • Workshop attendance included 34 persons in Granada’s workshop; 63 persons in Guatemala’s session; and 76 in Bolivia (representing 54 different organizations); • Participants engaged in a multi-day effort to define and prioritize areas of concern for further analysis in the project.
EA2: Increased awareness and understanding of environmentally sound technologies (EST)	
Main Activities	Qualitative Results achieved
A 2.1 Providing technical assistance to strengthen regional and national	<ul style="list-style-type: none"> • Technical assistance to the individual countries was provided by UNDESA, as well as other outside organizations, including the University of

⁴⁶ See www.worldwewant2015.org

<p>capacities (capacity building) in the areas of economic, social and environmental impacts of climate change, technology transfer, possible national course of actions and policy options.</p>	<p>California (Berkeley); the University of Manchester (UK); Energetica (Bolivia);the Caribbean Community Climate Change Centre (Belize); and OLADE (Ecuador), addressing relevant project areas.</p>
<p>A2.2 Convening three regional workshops (one in each country) to discuss analytical issues and implementation of methodologies for the integration of adaptation measures into national strategies and processes and to review progress reports.</p>	<ul style="list-style-type: none"> • A follow-up workshop in Grenada narrowed the AIM results to the three topics addressed in the nationwide study, and a third workshop targeted the Carriacou/Petite Martinique ‘green economy’ road map; • A second workshop in Guatemala narrowed the AIM results in political terms, and a third workshop addressed these results in technical terms, resulting in the institutional , food security and energy topics addressed in the final report; • Bolivia conducted four local/regional workshops, promoting specific topics about governmental policies for alternative energies, and their potential role within the country;
<p>A2.3 Convening three regional workshops (one in each country) to discuss the results and lessons learned from the integration of adaptation measures into national strategies and processes and to finalise the analytical reports.</p>	<ul style="list-style-type: none"> • A final workshop in St. George’s discussed the results and lessons learned from the Grenada national report; • Four local/regional workshops in Bolivia disseminated the final project results and report within that country; • A regional meeting in Panama disseminated results from all three projects for countries throughout Central/Latin America; • All three countries disseminated their project results, in two individual sessions over a two day period, at the Rio + 20 Conference on Sustainable Development.
<p>EA2: Increased synergies among private and public decision makers for the development and transfer of EST</p>	
<p>A 3.1 Creation of an interactive web platform where all the activities, lessons learned, methodologies, indicators and results will be documented and shared.</p>	<ul style="list-style-type: none"> • A project web platform was established at: http://www.un-dsd.org/cclac/; however, this site had considerable problems with computer viruses, and was shut down prior to the Rio + 20 Conference. Certain of the national reports were subsequently added to the Sustainable Development Knowledge Platform, at: http://sustainabledevelopment.un.org/
<p>A3.2 Preparing an analytical paper on climate change technology transfer barriers and potential solutions, based on experiences gained during the implementation of the other project activities.</p>	<ul style="list-style-type: none"> • While technology transfer and barriers were noted within certain country technical project reports, the AIM methodology focused on other topics relevant within these countries, and the analytical paper was not prepared; however, the project prepared five comprehensive publications addressing the AIM methodology topics, an effort far exceeding levels proposed within the Project Document, and consistent with the needs and objectives of participating country stakeholders.

Further, indicators were identified in the Project Document to measure each of the Expected Accomplishments (EA) of the project. The following are findings of the quantitative assessment of the project performance against the project indicators:

Indicators	Quantitative Results achieved
EA 1: Strengthened national sustainable development policies and programmes	
Indicator 1.1: Increased number of climate change measures and adaptation strategies integrated into NSDS	<ul style="list-style-type: none"> • The project shifted its focus to national planning systems instead of NSDS; • Grenada proposed national changes in three areas (water resources, coastal ecosystems, and renewable energy); and seven ‘green economy’ areas in Carriacou and Petite Martinique; • Guatemala proposed three types of adaptation changes, in institutional arrangements, food security and national energy matrix strategies; • Bolivia similarly proposed three types of adaptation changes, in institutional arrangements, water availability and rural energy access;
Indicator 1.2: Increased number of measures to overcome barriers to technology transfer; increased assessments of vulnerabilities; increased number of adaptation measures identified.	<ul style="list-style-type: none"> • Grenada’s AIM methodology resulted in national assessments in three vulnerability areas; specific proposals (in GEF format) identified for adaptation measures were prepared for two of these areas, and a Log-Frame analysis for the third; • Grenada’s ‘green economy’ analysis in Carriacou and Petite Martinique outlined 8 proposed energy projects; 7 water projects; 7 eco-tourism projects; and 2 environmental sustainability projects (i.e., beach monitoring and hillside erosion); • Guatemala’s AIM methodology resulted in national assessments in two areas, food security and the national energy matrix, and proposed policy changes in these areas; • Bolivia’s national report assessed adaptation vulnerabilities in two areas (i.e., water availability and rural energy supply); the final report included 11 specific proposals to implements changes to address such concerns.
EA 2: Increased awareness and understanding of environmentally sound technologies (EST)	
Indicator 2.1: Increased number of national experts and policy makers that report increased knowledge and understanding of EST.	<ul style="list-style-type: none"> • All three countries addressed EST (such as renewable energy systems, rainwater harvesting, etc.) in their individual projects, but the project’s focus shifted towards increased knowledge and a broader understanding of climate change adaptation measures; • All three countries introduced an inclusive, participatory program to set adaptation priorities, and hence reached a wide national audience of stakeholders; 34 persons attended the Grenada AIM session, 63 attended that in Guatemala, and 76 attended Bolivia’s national session; • Grenada conducted three additional workshops; Guatemala two additional sessions; and Bolivia eight additional local/regional workshops, guaranteeing even further expansion of this knowledge base.
Indicator 2.2: Increased number of national experts that report increased knowledge and understanding of methodologies and indicators	<ul style="list-style-type: none"> • This number was not quantitatively measured; anecdotal evidence in the evaluation analysis suggests it is significant.
EA 3: Increased synergies among private and public decision makers for the development and transfer of EST.	

Indicator 3: Increased access and participation in the web-based network on climate change information exchange strategies.

- The project's web platform established at: <http://www.un-dsd.org/cclac/> was **shut down** because of computer viruses;
- Certain national reports are currently available on the **Sustainable Development Knowledge Platform**, at: <http://sustainabledevelopment.un.org/>, but the number of downloads and/or URL hits has not been ascertained.

4. Lessons Learned/Conclusions

This project began with the broad idea of providing capacity development assistance to developing countries, in order that they might better incorporate climate change considerations into their national planning. As noted in the Introduction, the BAP called for enhanced action on both mitigation of GHGs and adaptation, as well as technology transfer and financial resources to support both.

Developed countries have tended to focus on mitigation, while developing countries – with significantly less GHG emissions, as well as considerably fewer resources available to deal with disasters – have tended towards adaptation. This project did not prescribe either approach – but the nature of the countries involved and their capacity needs delivered a project heavily oriented towards adaptation. As the BAP notes, technology transfer and financial resources are required for both mitigation and adaptation, and this project was initially designed with a “special focus... on identifying technological needs and technology transfer barriers.” It also sought to develop “methodological approaches and indicators” to monitor achievement of the NSDS.

Given the very wide range of issues at hand, and the disparate conditions found within the three countries, this evaluation analysis concluded that:

- This evaluation concluded that the AIM methodology was especially well suited for a project of this nature, and contributed significantly to its success. Similarly, Prof. Munasinghe’s AIM materials and lectures were considered to be well developed and were appreciated by country participants.
- Analytically, AIM enables planners to address ‘resilience’ concerns which have heretofore received insufficient attention within the planning process in most countries (both developed and developing). By addressing not only the effect of actions and policies on the environment (matrix DEV), but also the impact of the environment on such actions and policies (matrix VED), it was able to tackle the distinctions that some commentators have raised between sustainable development efforts and those designed to accomplish resilience. It was determined that the topic selection in the AIM results was not unduly influenced by instructors, but rather reflected the preferences and final choices of the individual country participants.
- While Bolivia did not employ the AIM methodology, it was nonetheless aware of its findings in the other two countries; similarly sought to use a participatory approach for defining the tasks to be undertaken in latter stages of the project; and arrived at similar conclusions, although this country had a stronger focus on energy due to the institutional characteristics of the project’s domestic host.
- The specific projects activities were **relevant** to the individual country’s needs, since the project management defined boundaries for the overall study, but then: a) utilized local input within the AIM methodology; and b) required that all decisions concerning topics for analysis be made at the country/local level. The participants prioritized and targeted the topics most important to them, and in evaluation discussions praised UNDESA’s management constant effort to address the individual country needs;

- The project was **effective**, with outputs from all three participating countries that were comprehensive; professionally prepared and edited; and useful for the planning and development efforts within these countries. In Bolivia, as noted above, the work conducted in the project was integrated into the country's UN Development Action Framework (UNDAF). Similarly, Mr. George Prime, who played a leading role in coordinating the "green economy" report for Carriacou and Petite Martinique islands in Grenada, was subsequently appointed as head of the Ministry of Environment, Foreign Trade and Export Development for the entire country. He has been able to use the document in international forums as a means of describing the country's "green economy" vision, and – as discussed below – a starting point for exploring potential financing arrangements.
- The project was **sustainable**, given that individual proposals on topics addressed were prepared as part of task assignments; that project results were incorporated into UN Development Action Framework (UNDAF) plans; and that individual countries have already sought additional follow-up financing to implement proposed actions and projects.
- The project clearly made significant contributions in two of UNDESA's five priority areas in capacity development (i.e., 'sustainable development including climate change mitigation and adaptation, and forests'; and 'social integration and inclusion of vulnerable groups'), and also provided positive influence in the other three (i.e., statistical capabilities; macro-economic advice; and public administration and ICT);
- The AIM methodology in Grenada and the national workshop in Bolivia led these countries to focus on food security, energy and water – and these adaptation concerns are fully consistent with the Rio + 20 Conference follow-up and the post-2015 process. These three areas represent three of the eleven thematic areas being addressed in those efforts;

As with any project covering such a broad range of topics and seeking localized input and direction, however, the project deviated from the original Project Document in a number of significant ways. These included:

- *The focus on National Sustainable Development Strategies (NSDS).* NSDS were a major component of the initial project design – they were literally included within the project's title – but as the project evolved, efforts moved more towards national planning systems (also added to the title) rather than the NSDS. This was due to the relatively minor role that NSDS play within the participant countries, and the recognition, even within the UN system, of "a continued disconnect between those who create strategies for sustainable development [i.e., NSDS] and those who are responsible for implementation."⁴⁷ The Rio + 20 conference, which took place during the projects duration (and in which all three countries reported their project findings), significantly re-defined the role of the Commission on Sustainable Development (which received the NSDS), and set up instead an alternative institutional arrangement relying on the development of Sustainable Development Goals which will replace the Millennium Development Goals when they expire in 2015. In the future, countries will monitor and report the status of their efforts to achieve these common goals. As noted earlier, there has been recognition that the process has been undergoing change in any event -- away from a view of the NSDS as a single master plan, and

⁴⁷ Incheon Communique, *Strengthening Planning and Implementation Capacities for Sustainable Development in the Post Rio Context*, UNOSD, 16 November 2012.

towards a view of it serving as an integrated, participatory planning scheme. This project sought to integrate climate change into national planning, and found that the national planning programs were more appropriate for doing so than the NSDS.

- *The focus on indicators.* One of the key goals of the project was to pilot test “methodologies and indicators” for integrating climate change concerns into the national planning efforts in the three countries. The exploration of analytical approaches in the Manchester UK meeting early in the project, and the application of the AIM methodology was definitely a success in this area. However, considerably less attention was paid to the role of indicators. UNDESA has already undertaken substantial efforts in this area, with three sets of sustainable development indicators (in 1995, with revisions in 2001 and 2006),⁴⁸ as well as other energy-specific ones (in 2005 and 2007)⁴⁹ Recently, however, given the sustainable development/resilience debate noted earlier, attention has increasingly focused on how resilience indicators might be developed. Approaches have been proposed, for example, for electricity⁵⁰, transport⁵¹ and water⁵² systems. Such indicators might warrant additional attention in the future by both UNDESA and developing countries.
- *The focus on technology transfer.* Similarly, UNDESA had previously analyzed and conducted workshops on technology transfer for sustainable development⁵³, and these were instrumental in developing the proposed project. Notably, the BAP identified technology development and transfer as one of the key areas requiring enhanced actions and commitment. This topic received particular attention in Project Document, including such tasks as the preparation of an analytical paper addressing climate change technology transfer barriers, and potential solutions that might be employed. While the individual country reports mention such concerns, the specific topic was not addressed within the project at the level of specificity included in the original proposal.
- *Project results dissemination.* As noted above, the country reports prepared under this project were comprehensive, professional and well edited – and there were five of them, a level well above that anticipated in the Project Document. The results were presented at a dissemination workshop in Panama (for regional countries), as well as at the Rio +20 Conference for an international audience. Each of the three countries made two presentations in a Rio + 20 side event, in addition to a UNDESA overview presentation. Thus, this project made efforts to ensure that other countries were able to obtain the project results. The Project Document promises, however, the “creation of an interactive web platform where all the activities, lessons learned, methodologies, indicators and results will be documented and shared.” Such a platform was indeed created, but it apparently had problems with computer viruses, and was discontinued.

⁴⁸ UN CSD Secretariat, *Current Ideas on Sustainable Development Goals and Indicators*, Rio 2012 Issue Brief No. 6

⁴⁹ IAEA et al, *Energy Indicators for Sustainable Development: Guidelines and Methodologies*, Vienna, 2005; and UNDESA/UNESCAP, “Background Document for Discussion on Defining a Potential Set of Sustainable Development Indicators for the Power Sector and Corresponding Methodologies,” 31 August 2007; available at: http://www.roger-raufer.com/documents/Background_Doc_SDIPS_Final.pdf.

⁵⁰ Molyneaux, L. et al, “Resilience and electricity systems: A comparative analysis,” *Energy Policy*, 47:188-201, 2012.

⁵¹ Reggiani, A., “Network resilience for transport security: Some methodological considerations,” *Transport Policy*, 2012.

⁵² Milman, A. and Short, A., “Incorporating resilience into sustainability indicators: An example for the urban water sector,” *Global Environmental Change*, 18:758-767, 2008.

⁵³ Supra notes 3 and 4.

5. Recommendations

This evaluation analysis found a well-managed project designed to incorporate climate change concerns in developing countries through the national planning process, utilizing appropriate methodologies (e.g., the AIM methodology), in a participatory manner, addressing relevant concerns in a comprehensive manner, with results that appear fully relevant for the participating countries.

While it would certainly be appropriate to incorporate such positive attributes into future efforts, there were also areas -- as in any project -- which might be improved upon, and which warrant further attention. These include the following:

- *Financial support for follow-up efforts.* While the individual country efforts identified numerous projects that would provide useful results, improve resiliency in the face of climate change, and further the goals of this project, a major problem in all developing countries is the lack of financial, technical and other resources necessary to actually accomplish them. A previous analysis of NSDS from nineteen countries found that the NSDS process “has little influence on national budget expenditures and revenue generation.”⁵⁴

One important output of this project in Grenada was the development of specific project proposals – in Global Environmental Facility (GEF) format – from the consultant assisting with the national report. Two detailed proposals were prepared, for a community-based coastal ecosystem restoration project (including mangroves, sandy beach, rocky beach and estuarine ecosystems), and for renewable energy sources for medical and community centers in the country. A logical framework (“Log-frame”) was also developed for a rainwater harvesting project in Northern Grenada. Obviously, these three projects are designed to build upon the findings of the three areas examined in the national report, and officials in the country have already begun to explore funding opportunities with IRENA, GEF and potential bilateral donors. Such a requirement can be readily included in the Terms of Reference (TOR) for local consultants, and this would have been extremely useful for the other two countries, as well as for future UNDESA and Development Account projects.

- *Stronger links between climate change adaptation and mitigation.* While the focus of this project was adaptation rather than mitigation, the countries did address such topics as the reduction of GHG emissions, the increased use of renewables (such as at the medical and community centers noted above), and other elements of planning that might be considered mitigation-oriented. The considerable efforts that have already been expended in the international community on GHG mitigation might offer additional means of strengthening adaptation efforts considered in this project.

For example, while the financial value of Certified Emissions Reductions (CERs) under the Clean Development Mechanism (CDM) of the Kyoto Protocol is currently very, very low, the international carbon market nonetheless offers an opportunity of funding such projects – perhaps

⁵⁴ Volkery, A. et al, “Coordination, Challenges and Innovations in 19 National Sustainable Development Strategies,” *World Development*, 34(12):2047-2063, 2006.

through newer ‘programmatic’ CDM projects, or those associated with other carbon trading efforts currently underway at the national, state, and regional levels at locations around the world.⁵⁵ Similarly, the CDM program was unique because it not only had the goal of GHG reductions, but also the fostering of sustainable development goals in developing countries. In order to host a CDM project, a country had to establish a Designated National Authority (DNA), which then had the responsibility for establishing sustainable development criteria (which CDM project developers have to meet). Some countries (e.g., India) used their NSDS to help establish these criteria; others (e.g., Brazil) didn’t.⁵⁶ All three countries in this project have DNAs, but their work and sustainable development criteria requirements for such mitigation efforts were not incorporated into this project. Closer linkages between the adaptation and mitigation efforts within the participating countries are clearly warranted.

- *Increased focus on resilience.* As noted earlier, resilience has been receiving increased attention in recent years in the international community, in academia, and in multilateral institutions. It is noteworthy that two of the three countries – Grenada and Bolivia – are also participants in the Pilot Program for Climate Resilience (PPCR), a program funded by the Climate Investment Funds which “funds technical assistance and investments to support countries’ efforts to integrate climate risk and resilience into core development planning and implementation.”⁵⁷ Projects implemented under the PPCR are country-led, and are designed to address national development priorities. They focus on four areas: agriculture; climate services (e.g., monitoring of extreme weather); water security; and infrastructure. Such areas are obviously closely related to the efforts found in this project, although the country participants in both countries made clear in the evaluation discussions that there was no duplication of effort (i.e., the targets for this project were specifically chosen with the PPCR efforts already in mind).

As noted earlier, this project essentially evolved towards a resilience framework over time, because of the participatory analytical approach employed (i.e., the AIM methodology) and because of the needs of the individual participating countries. It seems appropriate that UNDESA and the Development Account – as well as the individual countries – should attempt to foster increased attention to such a ‘resilience’ approach. They should increase attention to methodologies, indicators, and other analytical tools necessary to better define its characteristics, a Such a platform would be a valuable resource for other developing countries currently seeking information about this project, and climate change adaptation approaches –and with climate change evident in this project, they should do so promptly.

- *Increased dissemination efforts.* As noted above, the Project Document promised the creation of a website for the dissemination of project results, but this was shut down because of computer viruses. UNDESA has made some individual country reports available on the Sustainable Development Knowledge Platform,⁵⁸ but a more concerted effort should be made to summarize the adaptation efforts in this project (including information about the AIM methodology and its

⁵⁵ See, for example, carbon trading efforts listed at: <http://www.eesi.org/fact-sheet-carbon-pricing-around-world-17-oct-2012>

⁵⁶ *Progress Toward Developing Sustainability Criteria for the Clean Development Mechanism*, Report prepared for UNDESA, Columbia University MPA Program in Environmental Science and Policy, April 30, 2004; available at: http://www.roger-raufer.com/Columbia_2004_CDM_SD.pdf

⁵⁷ <https://www.climateinvestmentfunds.org/cif/ppcr>

⁵⁸ <http://sustainabledevelopment.un.org/>

application, the individual country efforts, all of their final reports, Rio + 20 presentations, etc.), and to make such information available electronically. Such a platform, as originally envisioned, would be a valuable resource for other developing countries currently seeking information about climate change adaptation approaches –an important area of current concern and research. Given the success of the individual country efforts as well as the resources already expended in this project, broader electronic availability of project output is warranted, given its relatively modest cost.

Annexes

- I. Management Response
- II. Project AIM Matrices Results
- III. Terms of Reference for the Evaluation
- IV. List of Documents Reviewed
- V. List of Interviewees

Annex I. Management Response
(to be completed by UNDESA Project Team and Management)

Annex II: Project AIM Matrices Results

A. Grenada Matrix DEV

		Vulnerable Areas (VA)								
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Water resources	Agriculture	Human Settlements / Poor communities	Human health & Safety	Infrastruct., transport & communications	Industry, commerce & tourism	Wetlands & coastal zones	Forest Resources	Biodiversity (flora & fauna)
(S0)	Status (No CC impacts)*	-1	-1	-1	0	1	0	-1	-2	0
(S1)	Status (+CC Impacts =>)**	-2	-3	-2	-2	-2	-2	-2	-2	-2
Dev. Goals/Policies (+CC Impacts) =>										
(A)	Economic growth	-2	2	2	2	2	-1	-2	-2	-2
(B)	Poverty alleviation	1	-1	2	1	2	1	1	1	0
(C)	Reducing unemployment	0	1	2	1	2	-1	-1	1	0
(D)	Food Security	-3	-1	2	2	2	1	2	1	2
(E)	Reducing Debt & Budget deficit	-1	-1	-1	1	1	1	0	0	0
(F)	Improving Trade & Business	-1	1	1	0	2	2	-1	-1	0
(G)	Education & Social Dev.	1	2	2	2	1	1	1	1	1
(H)	Health	-1	0	2	2	1	1	1	0	1
(I)	Disaster Management	1	1	2	2	1	1	2	2	2
(J)	Natural Resource Management	-3	2	2	2	1	2	2	2	2
		Wat	Agr	Sett	Heal	Inf	Tour	Coast	For	Biod

* Row (S0) is used ONLY as the baseline to estimate Row (S1).

** Row (S1) is used to estimate impacts on vulnerable areas in the matrix cells below it

B. Grenada Matrix VED

		Vulnerable Areas (VA)								
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Water resources	Agriculture	Human Settlements / Poor communities	Human health	Infrastruct., transport & communications	Industry, commerce & Tourism	Wetlands & coastal zones	Forest Resources	Biodiversity (flora & fauna)
(S0)	Status (No CC impacts)*	-1	-1	-1	0	1	0	-1	-2	0
(S1)	Status (+CC Impacts =>)**	-2	-3	-2	-2	-2	-2	-2	-2	-2
=> Dev. Goals/Policies (+CC Impacts)										
(A)	Economic growth	-3	-3	-2	-3	-3	-3	-2	-2	-2
(B)	Poverty Reduction	-3	-2	-2	-2	-2	-3	-2	-1	-2
(C)	Reducing unemployment	-1	-2	0	0	-2	-3	-2	-1	0
(D)	Food Security	-3	-3	-1	-3	-3	-2	-2	-2	-2
(E)	Reducing Debt & Budget deficit	-1	-1	-2	-2	-3	-3	-1	-1	-1
(F)	Improving Trade & Business	-1	-2	-1	-2	-1	-2	-2	1	-1
(G)	Education & Social Dev.	-2	-1	-2	-2	-2	-1	0	0	0
(H)	Health	-3	-1	-3	-2	-2	-2	0	-1	-1
(I)	Disaster Management	-1	0	-2	-2	-3	-1	-1	-1	-1
(J)	Natural Resource Management	-2	0	-2	-2	-2	0	-2	-1	-1
		Wat	Agr	Sett	Heal	Inf	Tour	Coast	For	Biod

C. Guatemala Matrix DEV

		Áreas de Vulnerabilidad, Impactos & Adaptación (VIA)									
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Agricultura / Ganadería	Asentamientos humanos / Comun. pobres	Salud humana	Recursos hídricos (excl. hidroeléctrica)	Recursos forestales	zonas costeras (incluyendo la biodiversidad)	Infraestructura, transporte y comunicación	Energía hidroeléctrica	Industria y comercio	Degradación de la tierra - desertificación
(S0)	Estatus (Sin impactos CC)*	-1	-2	-1	-1	-1	-1	-1	0	-1	-1
(S1)	Estatus (+Impactos CC =>)	-2	-3	-2	-3	-3	-2	-2	-2	-2	-3
Metas y Políticas de Desarrollo + Impactos CC =>											
(A)	Seguridad alimentaria	1	1	2	1	1	1	0	0	1	1
(B)	Reducción de la pobreza	2	2	2	1	1	1	2	1	2	1
(C)	Reducción de desempleo	2	3	2	-1	2	1	1	1	2	2
(D)	Reducción de la deuda/deficit presupuesto	-1	-2	-3	-1	-2	-1	-3	0	-1	-2
(E)	Crecimiento economico	2	3	2	-1	-1	-2	3	0	3	-2
(F)	Mejoramiento de comercio y negocios	1	1	1	-2	1	1	3	0	3	-2
(G)	Infraestructura	2	3	3	2	2	2	3	1	3	1
(H)	Ambiente	1	1	1	1	1	1	1	1	1	1
(I)	Gobernanza	3	3	3	3	3	3	3	1	3	3

* La línea (S0) es usada SOLO como base para estimar línea (S1)

D. Guatemala Matrix VED

		Áreas de Vulnerabilidad, Impactos & Adaptación (VIA)									
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Agricultura / Ganadería	Asentamientos humanos / Comun. pobres	Salud humana	Recursos hídricos (excluyendo energía hidroeléctrica)	Recursos forestales	Humedales y zonas costeras incl. biodivers.	Infraestructura, transporte y comunicación	Energía hidroeléctrica	Industria y comercio	Degradación de la tierra/desertificación
(S0)	Estatus (Sin impactos CC)*	-1	-2	-1	-1	-1	-1	-1	0	-1	-1
(S1)	Estatus (+impacts CC =>)**	-2	-3	-2	-3	-3	-2	-2	-2	-2	-3
=> Metas y Políticas de Desarrollo + Impactos CC											
(A)	Seguridad alimentaria	-3	-3	-2	-3	-3	-1	0	0	0	-3
(B)	Pobreza	-3	-3	-3	-3	-2	-1	1	-1	-2	-3
(C)	Desempleo	-2	-2	-2	-1	-1	-1	0	1	-2	-1
(D)	Deuda/deficit presupuesto	-2	-2	-3	-3	-1	0	-3	-2	-1	0
(E)	Crecimiento economico	-1	-3	-3	-2	-1	0	-3	-2	-2	0
(F)	Mejoramiento de comercio y negocios	-2	-1	-1	-2	-1	0	-2	-1	-2	0
(G)	Infraestructura	-1	-2	-1	-3	0	0	-2	-2	0	0
(H)	Ambiente	-3	-3	-1	-2	-3	-2	0	-1	-1	-2
(I)	Gobernanza	-2	-3	0	1	-2	-2	0	-2	-1	-2
(J)											

* La línea (S0) es usada SOLO como base para estimar la línea (S1)

Annex III. Terms of Reference for the Evaluation

1. INTRODUCTION

1.1 Background of the Evaluation

The Division for Sustainable Development (DSD) of the United Nations Department of Economic and Social Affairs implemented a project entitled “Integrating climate change into national sustainable development strategies and plans in Latin America and the Caribbean” during the 2010-2012 time period.

The project sought to strengthen the capacity of countries to integrate climate change policies and actions, especially with regard to adaptation, into their national sustainable development strategies (NSDS) and other planning processes. The project considers impacts on ecosystems, water resources, infrastructures, agriculture, coastal zones, human health, and energy systems. The project strengthens the capacity of countries for the assessment of impacts, and improves coordination of adaptation initiatives across relevant organisations and various levels of government. In order to assist countries in addressing climate change impacts, a systematic approach and analytical tools were implemented in three pilot countries in the Latin American and the Caribbean regions. The countries were: Grenada, Guatemala and Bolivia.

A list of documents that summarize the activities and accomplishments of the project in these three countries is presented in Annex 2. More information on the Project can be found in its website at:

<http://www.un-dsd.org/cclac/>

An expert consultant is needed to lead and conduct the external evaluation of this project.

1.2 Purpose, Objectives and Deliverables

The purpose of the evaluation is to review, document and assess the programmatic, and strategic processes of the Project in order to identify lessons learned and best practices, and to formulate recommendations which will inform future interventions by UNDESA and the project partners in this area of work.

The specific objectives of the evaluation are:

- i. To assess the relevance, effectiveness, and sustainability of the project results and the strategy used in implementation
- ii. To formulate concrete recommendations to inform future work in this area

The evaluation will be undertaken by a qualified consultant.

The evaluator is expected to (i) provide inputs to finalize the evaluation framework and plan and (ii) to produce an evaluation report including a set of action-oriented recommendations for UNDESA/DSD. A tentative outline for the report is attached in Annex 1 and illustrates expectations, but the consultant will ultimately shape the format of the report independently and dependent upon the finalized evaluation framework.

The draft evaluation report, including findings and recommendations, will be shared with the management prior to finalization. The final report, which will include a management response, will be made available in accordance with the implementing entities evaluation dissemination policy.

The deliverables will include:

1. A desk review of documents, activities and methodologies, and a report outline
2. A draft report for discussion
3. A final report

1.3 Scope

The evaluation will cover the project duration from 2009-2012, and will address several questions in the context of the three pilot countries: Grenada, Guatemala and Bolivia.

1. Did the project activities provide support for the evaluation of climate change priorities and assessment of natural resources including renewable energy, water and ecosystems?
2. Did the project activities allow better understanding of the issues and priorities relative to climate change and sustainable development?
3. Did the project help to define specific actions and policies necessary to induce implementation of adaptation measure and that support a move towards sustainable development.

The following main indicative evaluation criteria and evaluation questions will be addressed:

Relevance

- How relevant and timely was the project to pilot countries in the context of building tools for improving the integration of sustainable development planning into national strategies?

- To what extent was the project, its objectives and the methodology relevant at the national and regional level in light of the work that has already been done or is being carried out in this thematic area? Did the project offer a cutting edge in this field of work?
- How relevant and timely was the project to countries in the context of building tools for improving official statistics at the national level, and also in assisting countries narrow down their choices with respect to the diversity of survey tools that have been used?

Effectiveness

- To what extent have the expected objectives of the project been achieved?
- How effective was the project strategy to implement the project activities? To what degree was the strategy adopted and the activities consistent with the project objectives?
- Did the project strategy, process and activities adequately and effectively address existing country and regional variations such as the work programme of these countries, their policy priorities, and also variations in terminology, criteria and definitions? How successful was the project in cutting across such variations to give shape to a methodology which can be globally beneficial?
- Were the combination of trainings organized, advisory services provided, and technical papers, written as part of this project, beneficial in enhancing the capacity of the pilot countries for the integration of sustainable development principles into development strategies?
- What was the achieved degree and effectiveness of collaboration and interactions between the various project partners and stakeholders during the course of implementation of the project?
- Did the project build on earlier initiatives; did it make effective use of available scientific and / or technical information? Wherever possible, the evaluator should also compare the cost-time vs. outcomes relationship of the project with that of other similar projects.
- To what extent were the project schedules met and activities implemented within reasonable time parameters? How appropriate was the original timeframe established for accomplishment of the project's goals?

Sustainability

- Are the proposed activities sustainable at the national level? What are the limitations or barriers in countries which may prevent sustainability? What are the possible ways in which member states can be assisted by the implementing entities to overcome these barriers?
- Is there adequate support from project and non-project countries, partners, and other stakeholders to take forward the project outcomes?

2. METHODOLOGY

The evaluation will cover the following:

- (i) A desk review of documents, activities and methodologies including, but not limited to: project documents, technical papers, progress reports, workshop reports and evaluation, questionnaires, Action Plans, country reports, project report, publications, etc.
- (ii) Assessment of project indicators provided in the Project Document.
- (iii) Phone interviews with selected representatives of UNDESA, and national partners or Country Teams and other project partners and stakeholders.
- (iv) Review of publications that resulted from the project implementation in the three countries.

The limitations of the evaluations include:

- Ideally the evaluator should travel to at least some of the project countries. But since the budget may not permit this, face-to-face interaction with project focal points, project partners and other stakeholders may only be possible via telephone or during the final workshop.

3. TIME REQUIREMENTS AND TIMELINES

3.1 Time Requirements

The evaluation should start on **15 December 2012** and be completed by **15 January 2013**.

EVALUATION ELEMENT	Working Days
Desk study of background documents	5 days
Design interview protocols and overall evaluation framework, outline of report	2 days
Conduct interviews with the project manager and country partners and other stakeholders;	3 days
Drafting of report	10 days
Finalization of report	2 days
TOTAL	22 days

3.2 Timelines

TASK	RESPONSIBILITY	WHEN (insert date)
Desk study of background documents	Evaluator	December 2012
Refine evaluation framework, plan and methodology	Evaluator with input from UNDESA Project Manager	
Conduct of interviews (phone)	Evaluator	December 2012
Conduct the evaluation	Evaluator	December 2012
Submit draft evaluation report to UNDESA for comments	Evaluator	
Submit final evaluation report to UNDESA	Evaluator	January 2012
Dissemination of the findings and posting on project's website	UNDESA Project Team	January 2012

4. DELIVERABLES AND SCHEDULE OF PAYMENT

Two payments will be made according to the following schedule: 50% after desk study and outline of the report and 50% after presentation of the draft report and final report.

5. CONSULTANT EXPERIENCE AND QUALIFICATIONS

The consultant should be an expert in the fields of climate change, sustainable development, renewable energy and environmental issues. The candidate should have several years of experience in environmental issues and priority areas identified for Latin America and the Caribbean. The consultant should also be familiar with policy options being implemented or considered in the region to address impacts from climate change as well as the costs and benefits related to potential courses of actions. Familiarity with the UN development programmes and other international capacity building programmes is also necessary.

ANNEXES

I. EVALUATION REPORT

A. Contents of the Evaluation Report

The suggested content is as follows:

CONTENT	PAGES (estimate)	COMMENTS
Title page	1	Title, date of publication Names of the evaluator Name of UNDESA or division that commissioned the evaluation, web page address where report can be found electronically
Acknowledgments	1	Information provided by the UNDESA Evaluation Team
Table of contents	1	List of chapters, sections and annexes
List of acronyms	1-2	In alphabetical order; these are written out in full the first time they are used in the report
Executive summary	1-2	Background of the evaluation Purpose, objectives, outputs Scope Methodology Main conclusions Recommendations Other comments

CONTENT	PAGES (estimate)	COMMENTS
1. Introduction	1	<ul style="list-style-type: none"> • 1.1 Background of the evaluation and the topic being evaluated • 1.2 Purpose, objectives and outputs • 1.3 Scope (including evaluation questions)
2. Methodology	1-2	<ul style="list-style-type: none"> • 2.1 Description of methodology: activities, timeframe, changes compared to TOR, and reasons for selecting sample reports, countries, sites, case studies, and interviewees as a representation of the topic being evaluated • 2.2 Limitations: limitations of the methodology and scope and problems encountered
3. Findings	Varying length	<ul style="list-style-type: none"> • 3.1 General: supporting information for the performance assessment and assessment of strategy • 3.2 Performance assessment: assessment against relevant evaluation criteria (relevance, effectiveness and sustainability) • 3.3 Other assessment: assessment against relevant additional criteria (gender, rights-based approach, UNDESA priority countries etc.)
4. Lessons learned and conclusions	1-2	<ul style="list-style-type: none"> • Lessons learned • Main conclusions, both positive and negative, of the evaluation that follow logically from the findings • Ratings table with ratings for standard evaluation and additional criteria and a brief justification (optional)
5. Recommendations	1-2	<ul style="list-style-type: none"> • Recommendations based on the conclusions, which can be addressed to UNDESA management and staff, project partners, donors and other relevant stakeholders. Also emphasize recommendations for future work which can help to build upon the project.
Annexes		<p>I. Management response (to be completed by UNDESA Project Team and Management)</p> <p>II. Terms of reference for the evaluation</p> <p>III. List of documents reviewed</p> <p>IV. List of interviewees</p> <p>Other annexes as required (e.g. schedule of work undertaken by the Evaluator, reports of meetings, interview summaries, questionnaires etc.)</p>

B. Quality criteria used to review Evaluation Reports

The draft and final draft evaluation reports will be assessed against the quality criteria listed below.

	Quality Check	Description
	The report meets the scope, purpose and objectives of the evaluation as stated in the TOR	<ul style="list-style-type: none"> • The report is tailored to the information needs of UNDESA and/or other entities that commissioned the evaluation • The report does not deviate from the scope outlined in the TOR • The report can be used by UNDESA for the intended purpose as stated in the TOR • The objectives, as outlined in the TOR have been met, including: the assessment against relevant performance criteria (relevance, effectiveness, sustainability, etc.) is complete, i.e. evaluation questions under each criterion have been answered
	The report is structured logically	The report follows the suggested table of contents outlined in the TOR and includes the relevant annexes
	The evaluation methodology and its application are explained transparently and clearly	<ul style="list-style-type: none"> • The evaluation methodology is clearly explained and has been applied throughout the evaluation process • Amendments to the methodology compared to what was proposed in the TOR have been clearly explained <p>The limitations of the evaluation methodology, including problems encountered during the conduct of the evaluation, and their implications for the validity of the findings and conclusions have been clearly explained</p>
	The findings and conclusions are credible	<ul style="list-style-type: none"> • Relevant qualitative and/or quantitative sources of information have been considered • Analysis is done rigorously: triangulation is employed (cross-checking of findings against other relevant sources); cause-and-effect relationships are explained • Findings are adequately substantiated, balanced and reliable The relative contributions of stakeholders to the results are explained • Limitations are explained • The conclusions derived from the findings are clear
	The recommendations are useful	<ul style="list-style-type: none"> • The recommendations are clear and follow logically from the conclusions • The recommendations are impartial • Recommendations are realistic, concrete and actionable

		<p>within a reasonable timeframe</p> <p>Recommendations for UNDESA should be clearly within the mandate of UNDESA</p>
	<p>The report is well written</p>	<ul style="list-style-type: none"> • The executive summary is brief but highlights the key findings, conclusions and recommendations • The report is written in good English and is easy to read • The report uses consistent grammar and spelling (in accordance with UN rules) • Main messages are clearly distinguished from the text • The subject of evaluation (programme, project, other) is clearly described including its logic model or results chain <p>The stakeholders of the programme or project are clearly identified</p>

Annex IV. List of Documents Reviewed

1. *Integrating Climate Change into National Sustainable Development Strategies and Plans in Latin America and the Caribbean*, Project AG 0607, Development Account Project, UN Department of Economic and Social Affairs, June 2009 (i.e., Project Document)
2. Progress Report 2011 DA Project ROA-126-AG 31 Jan 2012 REV
3. Final Report 2012 DA Project ROA-126-AG December 2012.
4. *Training Workshop Report; Integrating Climate Change into National Sustainable Development Strategies and Plans in Latin America and the Caribbean*; Hosted by Ministry of Environment, Foreign Trade and Export Development of Grenada; and United Nations Division for Sustainable Development (DSD), Department of Economic and Social Affairs (DESA); St. George's, Grenada, 4-6 August 2010.
5. *Training Workshop Report; Integrating Climate Change into National Sustainable Development Strategies and Plans in Latin America and the Caribbean*; Hosted by Ministry of the Environment and Natural Resources (MARN) of Guatemala; and United Nations Division for Sustainable Development (DSD), Department of Economic and Social Affairs (DESA); Guatemala City, Guatemala, 27-29 April 2011
6. *Informe de Ejecución: Taller Nacional "Generación de Electricidad con Energías Alternativas y su Implicación con el Cambio Climático y el Desarrollo,"* Elaborado por: ENERGÉTICA, ENERGÍA PARA EL DESARROLLO, Cochabamba, Diciembre de 2011.
7. *Marco de Cooperación para el Desarrollo entre Las Naciones Unidas y el Estado Plurinacional de Bolivia: 2013-2015* (UNDAF document).
8. *Climate Change Adaptation in Grenada: Water Resources, Coastal Ecosystems and Renewable Energy*, UNDESA in cooperation with the Ministry of Environment, Foreign Trade and Export Development of Grenada, 2012.
9. *Road Map on Building a Green Economy for Sustainable Development in Carriacou and Petite Martinique, Grenada*, UNDESA in cooperation with the Ministry of Carriacou and Petite Martinique Affairs and the Ministry of Environment, Foreign Trade and Export Development of Grenada, 2012
10. *Equipo Responsable del Informe: INTEGRACIÓN DEL CAMBIO CLIMÁTICO EN LA PLANIFICACIÓN DE GUATEMALA: Análisis del Proceso de Desarrollo Sostenible y sus Principales Relaciones con el Cambio Climático*, UNDESA, 26 de Agosto del 2012.
11. *Cambio Climático, Agua y Energía en Bolivia*, UNDESA, ONUDI and Energética, Cochabamba, Bolivia, Septiembre, 2012.

12. Viceministerio de Electricidad y Energías Alternativas, La Paz, Bolivia, Diciembre de 2011.
13. Bolivian HS Contest Results (English translation).
14. Munasinghe Institute for Development (MIND), *Action Impact Matrix (AIM) Application to Climate Change Adaptation – User’s Manual*, July 2010.
15. Munasinghe Institute for Development (MIND), *Action Impact Matrix (AIM) Application to Climate Change Adaptation: Pre-Workshop Questionnaire*, 2010.
16. Grenada Community-based Coastal Ecosystem Restoration project proposal.
17. Grenada Renewable Energy Sources for Medical and Community Centers project proposal.
18. Log-frame for Rainwater Harvesting in Northern Grenada project proposal.

Annex V. List of Interviewees

United Nations	Dr. Ivan Vera Project Manager UNDESA New York, NY
Bolivia	Miguel Fernandez, Director of ENERGETICA, Cochabamba, Bolivia
Grenada	Aria St Louis, Head of Environmental Unit Ministry of Environment, Foreign Trade and Export Development St. George's, Grenada
Guatemala	Dr. Luis Ferrate, Former Minister of Environment and Natural Resources Guatemala City, Guatemala