

STRENGTHENING COASTAL COMMUNITIES:
A Workshop on Coastal Community Vulnerability and Adaptation
February 20-21, 2006
Belize City, Belize

FINAL REPORT
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HOSTED BY:

The MACC Project



**MAINSTREAMING ADAPTATION
TO CLIMATE CHANGE**

The United Nations Development Programme (UNDP)



in association with

**Belize Association of Conservation Non-Government
Organisations (BACONGO)**



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EXECUTIVE SUMMARY

The Strengthening Coastal Communities workshop was held on Monday, February 20 and Tuesday, February 21, 2006 at the Best Western Biltmore Plaza in Belize City, Belize. It was hosted and sponsored by the Mainstreaming Adaptation to Climate Change (MACC) Project, in collaboration with the United Nations Development Programme (UNDP) and the Belize Association of Conservation Non-Government Organisations (BACONGO). The goal of the workshop was to provide a forum and accompanying facilitation for participants to jointly develop a model that addresses the vulnerability of communities at risk in Belize (and the Caribbean in general) through the promotion of sustainability, adaptation, and community involvement.

The workshop was attended by 45 participants representing a wide spectrum of stakeholders, including representatives from communities at risk, environment, fisheries, tourism, government, media, and more. A series of presentations gave participants the required information on climate change and an introduction to tools that could be of use, such as pre-existing models and sources of funding.

Participants divided into six groups in order to discuss the development of a model for sustainable communities tailored to Belize and the Caribbean, including inputs and outputs of the model. Groups were also expected to identify six potential pilot communities in Belize in which to begin the model, as well as stakeholders that should be part of a committee or task force to oversee this initiative in Belize. The discussions led to the identification of four important follow-up steps that are outlined in this report. They are:

1. Forming a Committee
2. Implementing Pilot Communities
3. Evaluating Progress (Follow-Up Workshop)
4. Unrolling the Model in the Caribbean

Participant feedback indicates that the workshop was a success. However, the real success will be demonstrated in what occurs as a result of the workshop. All participants indicated some role that they could play in this initiative, and it is of vital importance that they remain dedicated to realising their commitment. For its part, the MACC Project is committed to its role as a coordinating body and facilitator for this initiative, which will ultimately lead to the establishment of a model for sustainable communities, the piloting of this model in Belize in 2006, and rollout of this model throughout the Caribbean by 2008.



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OVERVIEW

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Goal

The goal of the workshop was to provide a forum and accompanying facilitation for participants to jointly develop a model that addresses the vulnerability of communities at risk in Belize (and the Caribbean in general) through the promotion of sustainability, adaptation, and community involvement.

The model initiated at this workshop will be piloted in six communities in Belize, and subsequently unrolled through the rest of the Caribbean.

Rationale

It is widely recognised that small island developing states are among the most vulnerable regions to climate change. Several initiatives have focused on enhancing adaptation to climate change in such regions, most notably the Community Vulnerability and Adaptation (CV&A) Assessment developed by the South Pacific Regional Environmental Programme (SPREP). To arrive at a model that is specifically tailored to the needs and circumstances of the Caribbean, it is important to apply new ideas and perspectives to existing concepts. This can be accomplished through collaboration with representatives from non-government organisations (NGOs) and other organisations who specialise in areas such as tourism, fishing, and environmental issues.



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This workshop was conceived as the ideal setting in which to allow these representatives to collaborate, sharing knowledge and ideas in order to arrive at a model that is tailored to Belize and the Caribbean.

Purpose

The major purpose of the workshop is to provide the information and tools that participants need to:

1. Work with their communities to develop an analysis and priority listing of the vulnerabilities and risks from phenomena related to climate change which these communities face;
2. Work jointly through umbrella environmental NGO organisations with the MACC Project and its partners to develop community responses to the risks and threats identified; and
3. Eventually, through these responses, provide the basis for a model that can be customised and applied to any coastal/fishing village in the Caribbean.

Objectives

Primary:

1. To expose participants to the concepts of climate change and community vulnerability;
2. To enable participants to interact in a group setting to pool areas of expertise and to share ideas; and
3. To facilitate the identification of risks and adaptive measures for implementation by participants.

Secondary:

1. To involve NGO and community stakeholders in the field of climate change in the Caribbean; and
2. To encourage inter-Caribbean partnerships and collaboration.



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ACTIVITIES

For a schedule of activities, please refer to the agenda in Appendix B.

Monday, February 20, 2006

The workshop commenced after lunch on Monday, February 20, 2006, with a Formal Welcome by Mr. Carlos Fuller, Climate Change National Focal Point (NFP) for Belize, on behalf of the MACC Project. Dr. Kenrick Leslie, Executive Director of the Caribbean Community Climate Change Centre (CCCC), spoke on the role of the CCCCC in reducing risks and vulnerability associated with climate change. Ms. Diane Wade-Moore, Environmental Programme Officer of UNDP Belize, welcomed participants on behalf of UNDP and spoke briefly on the role of the UNDP in Belize.

The workshop was introduced by Mr. Tony Deyal, Workshop Facilitator and Public Education and Outreach (PEO) Specialist of the MACC Project. He invited each participant to stand and introduce themselves, their organisations, and any thoughts they had regarding the workshop. He also outlined the objectives, guidelines, expectations, and anticipated results of the workshop. Participants were asked to ensure that they had completed the pre-workshop surveys included in participant registration kits.

The next portion of the workshop consisted of presentations designed to give participants background information and context required to attain the goals and objectives of the workshop. Presentations were about 30 minutes each and were followed by discussion periods. Slides of all presentations can be found in Appendix C, and presentations can be found on the Final Report CD-ROM. These presentations included:

- ***Impacts of Climate Change on the Coastal Communities of Belize – Mr. Carlos Fuller, Climate Change NFP for Belize and Chief Meteorologist of Belize’s National Meteorological Service.*** This presentation provided an overview of climate change and its observed and/or anticipated effects in general and on Belize.
- ***Community Vulnerability and Adaptation Assessment – Dr. Ulric O’D Trotz, Programme Manager of the MACC Project.*** This presentation introduced the Community Vulnerability and Adaptation (CV&A) approach

- developed by SPREP, providing suggestions on how it could be applied to Belize and the Caribbean. (Note: The Guidelines for Community Vulnerability & Adaptation Assessment Action Plan completed by SPREP can be found on the Final Report CD-ROM or at http://www.sprep.org.ws/climate/documents/Community_VA_Guideline.pdf.)
- **Communities At Risk Initiative – Ms. Jennifer Tipple, Public Education and Outreach (PEO) Intern of the MACC Project.** This presentation provided context for the workshop, positioning it as the first step in the Communities At Risk initiative. It also outlined the rationale for this initiative, which is largely based on Knowledge, Attitude, and Practice (KAP) studies that have been conducted in five countries in the Caribbean thus far. (Note: The proposal for the Communities At Risk initiative and the summary report of the KAP studies can both be found on the Final Report CD-ROM.)
 - **Community-Based Resource Management in Coastal Communities – Dr. Robert Richardson, Assistant Professor at Galen University.** This presentation provided information on coastal economies and community-based management approaches, with a specific focus on the fisheries.

After these presentations, the participants were divided into six breakout groups led by facilitators (for a list of group participants, refer to Appendix D). The first task of the groups was to determine the outputs of a model that answers the question “What does a sustainable coastal community look like?” In particular, groups were asked to address the following areas:

1. Elements and Issues in Sustainable Development and Adaptation – What are the main issues?
2. Community Involvement – Who and how?
3. Goals, Key Success Factors, and Measurables – How will you know if you have succeeded?
4. Self-Sufficiency – How will the model be maintained?

After dinner, a representative of each group delivered a brief presentation on their group’s discussions regarding outputs of the model. (For a summary of the group presentations, refer to the Outcomes of Group Discussions section of the report.) The workshop was then adjourned for the evening.



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Tuesday, February 21, 2006

The next day began with two presentations designed to inform communities of potential opportunities for funding assistance. They were:

- ***Opportunities for Funding: UNDP GEF*** – Ms. Diane Wade-Moore, Environmental Programme Officer, UNDP. This presentation provided information on the Global Environment Facility (GEF), funding available for adaptation to climate change, and how to access these sources of funding.
- ***Global Environmental Facility Small Grants Programme and Community Management of Protected Areas Conservation Programme (COMPACT)*** – Mr. Philip Balderamos, National Coordinator, GEF SGP. This presentation described the principles and focal areas of the GEF SGP and COMPACT, how they apply to coastal communities, and how to access funding and assistance.

Following these presentations, participants again divided into their groups to discuss the inputs of the model, answering the question “How will coastal communities become sustainable?” Specifically, the following areas were addressed:

1. Priority Listing of Communities (and criteria for selecting these communities)
2. List of Stakeholders and Their Roles
3. Resources Required (time, budget, etc.)
4. Implementation Plan

In addition, participants were also asked to identify who they thought should be represented on a committee or task force to oversee implementation of this project.

Again, a representative of each group briefly presented their group’s conclusions. (A summary of these presentations can also be found in the Outcomes of Group Discussions section of this report.)

Following the group presentations, Mr. Deyal discussed what would result from the workshop, asking each participant to outline what action they would take upon conclusion of the workshop. With concluding remarks, the workshop was adjourned.



OUTCOMES OF GROUP DISCUSSIONS

Participants divided into six groups for the purpose of discussions that were expected to contribute to the development of a model for sustainable communities tailored to Belize and the Caribbean. Two separate breakout sessions concentrated on two areas: outputs and inputs. This is based on the idea that groups could first determine what a sustainable community looks like, and then work backwards to figure out what inputs are needed to arrive at the group's idea of a sustainable community.

At the end of each discussion period, groups were asked to present their ideas. A summary of these group presentations follows in this section of the report.

Outputs

As mentioned, groups addressed four questions in their discussion of model outputs. The three main points addressed by the groups for each question, in terms of overall importance and frequency of being mentioned, are discussed below.

Question 1: Elements and Issues in Sustainable Development and Adaptation – What are the main issues?

1. ***Environmental issues*** – Environmental issues such as the destruction of ecosystems, improper waste management, and lack of environmental law enforcement are considered a primary threat to the sustainable development of communities. These issues pose great risks to communities, as they lead to negative effects such as erosion, flooding, and habitat loss.
2. ***Community responsibility and empowerment*** – Groups were very concerned about who has control in communities at risk. Land ownership was one example, since foreign interests often overwhelm local interests at the expense of the community. Corruption, nepotism, and lack of enforcement were also identified as issues. Groups indicated the need for effective leadership and motivation of community stakeholders through education and outreach. The groups recognised that economic benefits must be identified to generate “buy-in” among all community stakeholders.

3. **Need for planning** – It was acknowledged that long-range planning must take place for communities to become sustainable. There must be continuity in planning, so that the initiative is not seen as simply a “project.” Also mentioned was the need to plan for economic diversification in order to generate alternative livelihoods for community residents. Overall, long-term vision is required.

Question 2: Community Involvement – Who and how?

1. **Need for leadership** – Leadership is a crucial component of the model. This leadership should be formal and acknowledged by all stakeholder groups. Groups indicated that this leadership should emerge at the local government level (for example, the village council) to ensure the best interests of the community are observed.
2. **Involvement of all community stakeholders** – It was acknowledged that a sustainable community needs to involve *all* community stakeholders, and a wide range of stakeholders was mentioned. The core stakeholders were mentioned by all – government (local and national), non-governmental organisations (NGOs), and community-based organisations (CBOs). Various groups also emphasised involvement of the private sector (particularly fishers and farmers), youth/schoolchildren (the “leaders of tomorrow”), churches, and women’s groups.
3. **How-to approach** – Groups mentioned the need to understand the social dynamics of the community in generating “buy-in” and thus involvement by community stakeholders. The primary approach suggested was public education and outreach in order to build awareness and understanding. Groups also suggested tactics such as community participatory programs, mobilisation programs, and small groups to generate greater community involvement.

Question 3: Goals, Key Success Factors, and Measurable – How will you know if you have succeeded?

1. **Need for baseline** – The identification of a baseline measure was seen as vital to the model’s success, so that the model can be properly measured and evaluated in future stages. Such a baseline can be established through studies and surveys such as Knowledge, Attitude, and Practice (KAP) studies.
2. **Measurables** – Groups mentioned a number of measurables that fell into various categories. Economic indicators, used to determine how “well off”

- the community is, included income level, employment level, and poverty level. Environmental indicators mentioned include reforestation, fish levels, and violations/enforcement. Other indicators may vary according to the distinct features of the community.
3. **Keys to success** – Groups recognised that goals must be realistic and measurable. It was seen as important to generate awareness of these goals, and to ensure that they are endorsed by the community. Segmentation (for example, dividing the community's population on the basis of schoolchildren, housewives, etc.) was also deemed useful in successfully measuring results.

Question 4: Self-Sufficiency – How will the model be maintained?

1. **Participatory management** – As mentioned, groups indicated that the long-term success of the model rests heavily on the buy-in of local participants in the community. This is defined primarily by stakeholder involvement – encouraging people and organisations to get involved and stay involved. In order to achieve this, communities must have capable leadership and the empowerment necessary to make their own decisions. One group mentioned that self-policing is a good indicator of self-sufficiency.
2. **Monitoring** – For a community to see its progress, groups said that it is important to use a model with an incremental nature so that indicators can be assessed at each step. The model must also be recognised by government so that it is seen as legitimate and so that the required support can be secured in order to conduct proper monitoring.
3. **Human resource requirements** – Groups strongly felt that there needs to be core group of stakeholders to ensure the long-term survival of the model, such as a committee or task force for each community. Suggestions included regular meetings and periodic updates to a coordinating body such as the MACC Project.

Inputs

Question 1: Priority Listing of Communities

1. **Criteria for determining risk** – Groups discussed various criteria for determining a priority listing of communities. Important criteria that were mentioned targeted vulnerability to risks and threats, both in terms of the

- environmental issues faced by the community and the socio-economic structure of the community.
2. **Identified stakeholder groups** – It was also mentioned that certain stakeholders need to be present in order for the model to work, such as local government and community-based organisations. These stakeholders are critical in ensuring adequate leadership and buy-in.
 3. **Shortlist of communities** – Most of the communities in Belize identified by the groups were small coastal communities on mainland Belize. While many communities were mentioned, the most common ones were Gales Point (Belize District), Monkey River (Toledo District), Sarteneja (Corozal District), Hopkins/Sittee River (Stann Creek District), and Barranco (Toledo District). This forms a shortlist of communities from which the six pilot communities will likely be chosen.

Question 2: List of Stakeholders and Their Roles

1. **Community-based organisations** – Local organisations such as village councils, churches, and special interest groups are crucial stakeholders in this process. Representatives of such organisations are considered the people “on the ground,” who are familiar with the community and its nuance and who are able to generate buy-in from other local stakeholders, especially the public-at-large.
2. **Key regional and national organisations** – Organisations such as the MACC Project, the CCCCC, NEMO, various government ministries and departments, industry associations, funding agencies such as UNDP, and umbrella organisations such as BACONGO were also identified as vital stakeholders. These organisations are required in order to provide coordination, leadership, access to resources, and other forms of support, and to assist in applying the model on a national and regional level.
3. **Committee composition** – Groups were also asked to identify who they thought should be part of a core committee or task force that would provide overall guidance and direction for implementation of the model. Representatives from the above-mentioned organisations (community and regional/national) are expected to form part of this committee, along with at least one representative from each of the chosen pilot communities.

Question 3: Resources Required (time, budget, etc.)

1. **Coordination and collaboration** – Groups identified many of the resources that would be required for the organisation and coordination of

- the process, such as meetings and site visits. Costs would be incurred for items such as transportation, accommodations, food, facilities, and materials. Some groups also mentioned the possible need for incentives and rewards for stakeholders in order to encourage buy-in for certain groups.
2. **Data collection and dissemination** – Groups identified the need to dedicate resources to research and data collection in order to establish a baseline and to measure progress. Costs would be incurred to conduct surveys and analyse results. In order to disseminate this information and communicate with stakeholder groups, public education materials are also required. Groups mentioned materials such as presentations, literature, and “toolkits” for stakeholder groups.
 3. **Need for funding** – Groups recognised that communities will require resources, financial and otherwise, to see these initiatives through and to implement the model. Coordinating organisations such as the MACC Project and the UNDP are expected to provide assistance in funding, either directly through funding programs or indirectly through guidance and networking.

Question 4: Implementation Plan

1. **Context (priority)** – The first step in implementation, as identified by some groups, is to establish criteria for vulnerability in order to identify and diagnose communities that are particularly at risk. This was seen as crucial to ensuring that communities are addressed on a priority basis.
2. **Key success factors in implementation** – As mentioned, there is a need for an overall task force to oversee this initiative. There must also be a public education component in order to raise stakeholder awareness and generate publicity throughout the country and the region. Access to necessary resources is critical. Groups also mentioned timing, as they feel that it is important to be sensitive to certain conditions (such as the fishing season) in certain communities. Unanimously, groups felt that the implementation timeline should begin as soon as possible.
3. **Evaluation** – Groups also indicated that the timeline should allow for appropriate evaluation along the way in order to ensure that implementation is occurring successfully. This can be done through conducting community surveys (for example, KAP studies), measuring pre-established indicators, and reporting to a coordinating body (such as the MACC Project) on a regular basis.



SURVEY FEEDBACK

Participants were asked to complete two surveys: a pre-workshop survey and a post-workshop survey. These surveys determined the knowledge, opinions, feedback, etc. of participants. It also allowed for certain variables to be compared before and after the workshop. The original surveys and an analysis of survey results are included in Appendix E.

General Feedback

Overall, feedback on the workshop was largely positive. Participants especially liked the wide cross-section of invitees and the resulting range of perspectives, which made for some interesting discussions and plenty of learning. This was mentioned formally in the post-workshop survey by 14% of participants and informally through discussions and conversations by many more. The wide range of backgrounds could be seen in the results of the pre-workshop survey. Participants, who were asked which areas they represented (all that applied), indicated the environment (58%), community (52%), fisheries (39%), coastal issues (39%), tourism (33%), and climate change (24%). They also represent a variety of different entities, including NGOs (77%), government (15%), international (8%), and the public at large (4%). While most participants were from Belize, there were also three representatives present from on behalf of Council of Presidents for the Environment (COPE) in Trinidad and Tobago.

Participants also appreciated the interactive nature of the workshop, as the group sessions enabled deeper discussion of key issues. This also allowed for greater networking opportunities. The relevance of the information and presentations was also referenced by participants, many of whom felt they learned a lot about climate change, sustainable development, and other pertinent topics. By the end of the two days, participants seemed to have gained a much better understanding of the initiative as a whole and to look forward to what would result from the workshop.

The main dislike was the time constraint placed on the workshop, as participants were expected to contribute a lot in a short time period, including some late hours. Some participants would have liked more time to discuss certain issues, both after presentations (question and answer sessions) and in groups. One suggestion was that each group should have its own computer for ease of taking

notes. These suggestions will be taken into account when planning future workshops.

Pre- and Post-Workshop Survey Comparisons

Some of the most interesting survey findings were revealed upon comparison of pre- and post-workshop survey questions. These questions were geared toward knowledge of issues pertaining to the workshop, attitude toward communities at risk, and involvement in working in this field. These findings are discussed below, and can be viewed in greater detail in Appendix E.

Q1. Please indicate your knowledge/understanding of the following issues (rated on a scale of 1 to 5, where 1 was lowest and 5 was highest):

- Community vulnerability and risk
- Environmental issues
- Adaptation to climate change
- Fisheries management
- Coastal issues
- Sustainable development
- Community involvement initiatives

In the pre-workshop survey, participants indicated a medium to medium-high level of knowledge and understanding of all issues mentioned. The average response for all issues ranged between 3.0 (for adaptation to climate change) and 4.1 (for environmental issues) out of 5. Participants knew the most about environmental issues, with all participants rating their knowledge 3 or higher. Participants knew the least about adaptation to climate change and fisheries management (3.1). The results from the post-workshop survey indicated that the knowledge of participants had improved for most issues mentioned. The issue of adaptation to climate change and community vulnerability and risk experienced the highest jumps, with 0.7 and 0.8 respectively.

Q2. In your opinion, how important are issues related to communities at risk?

Issues related to communities at risk were important to all participants, with 100% answering either “somewhat,” “very,” or “extremely” important in the pre-

workshop survey, and 94% answering either “very” or “extremely.” In the post-workshop survey, responses indicated a slight increase in importance, with more respondents choosing “extremely” (54% versus 49%). These figures indicate that participants take these issues very seriously, and that the workshop experience generally raised the importance of these issues in the minds of participants.

Q3. What level of interest do you have in participating in initiatives geared toward communities at risk?

In the pre-workshop survey, 97% of respondents indicated a “moderate,” “high,” or “very high” level of interest in participating in initiatives geared toward communities at risk. The post-workshop survey indicated a modest increase in the already-high interest level, as all 100% chose one of these three options and 11% more respondents chose “high.”

Q4. (Pre) What level of involvement do you currently have in addressing issues related to communities at risk?

(Post) As a result of this workshop, what level of involvement will you have in addressing communities at risk?

In the pre-workshop survey, participants indicated varying levels of involvement in addressing issues related to communities at risk. Some 24% of respondents indicated a “low” level of involvement and another 24% indicated a “moderate” level, while the highest number of respondents (38%) indicated a “high” level. Only 11% indicated a “very high” level of involvement. However, after the workshop, 32% of respondents indicated they would have a “very high” level of involvement, the biggest increase in any of the responses. There was also a 5% increase in respondents who indicated that they would have a “high” level of involvement, to 43%.

Participant Expectations and Other Feedback

Participants indicated their expectations in the pre-workshop survey by answering the question “What do you expect will result from this workshop?” While responses varied to this open-ended question, several key themes emerged. The most popular expectation was a better understanding and/or awareness of climate change, related risks, adaptation, and other such topics,



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mentioned by 46% of respondents. Another 14% mentioned that they expected enhancement of stakeholder roles or ways in which they could help. Many respondents were interested in the follow-up to and outcomes of the workshop, with strategies, recommendations, frameworks, and other such outputs mentioned by 19%, development of the model in the pilot communities referenced by 14%, and development and implementation of an action plan by another 11%.

Upon conclusion of the workshop, participants were given the opportunity to provide feedback in the post-workshop survey through several open-ended questions. Feedback provided indicates that many respondents feel that the workshop met their expectations; however, several participants indicated that they will be unable to gauge whether their expectations were met until they see future results. In other words, the success of this workshop largely hinges on the success of the initiative as a whole – what happens next?

To this end, many comments pertained to workshop follow-up. As a result of workshop feedback, all participants will receive a CD-ROM containing a final report, a list of participants and contact information, analysis of survey feedback, a copy of all presentations, and all materials referenced (such as the CV&A report and the KAP summary report). Participants will also receive information on the next steps in this initiative, both in this report and in future correspondence. In future initiatives, the list of correspondents will also be expanded to include other parties that workshop participants felt should be involved, such as other government ministries and departments, farmers, the National Emergency Management Organisation (NEMO), various NGOs, and village councils of identified villages.

Participant Roles and Contributions

In the pre-workshop survey, participants answered the question “**What do you think you and/or your organisation can contribute to this initiative?**” (Participants were given a list of responses and were able to choose all that applied.) All participants indicated that they were able to contribute something. The most popular responses were ideas (68%), networking and contacts (65%), facilitation and leadership (54%), and information such as reports (51%). Lesser numbers of respondents were able to contribute physical resources such as meeting space and equipment, financial resources, and administrative support.



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Other respondents indicated contributions such as data, research, and legal support.

Throughout the workshop, it was stressed that the future of this initiative depends on the participation of what stakeholders, including the organisations that those present were representing. Thus, it was encouraging that workshop participants demonstrated what seemed to be an even higher level of commitment toward the end of this workshop. In wrapping up the workshop, Mr. Deyal asked all participants to stand up and state what action they will take upon conclusion of this workshop. The tone of this portion of the event was overwhelmingly positive, with all participants contributing something of value. Many participants responded that they will return to their organisations and communities to spread information and teach stakeholder groups about climate change and its impacts on sustainable development in communities. The workshop ended on a high note with the level of commitment so elevated among participants.

These oral commitments were supported by comments provided in the post-workshop survey, answers to the question “What are you prepared to do or what do you plan to do to further this initiative?” Some 32% said they would perform education or outreach activities to share what they learned at the workshop, 18% said they would assist in coordinating future events, 14% said they would encourage more support on behalf of the organisation they represent, another 14% said they would offer consultative services or support, and 7% said they would collaborate with other organisations. Another 14% offered general support to the MACC Project, and 18% provided some other response. Not a single participant left this question unanswered.

Overall, there are high expectations for what participants will be able to contribute toward the future of this initiative. Indeed, if what participants were able to bring “to the table” at the workshop itself is any testament, the future of this initiative as a whole will greatly benefit from what these people and their organisations have to offer.

FOLLOW-UP

As mentioned, one of the critical success factors of this workshop is the action that follows as a result of it. This section outlines the next few steps that must be taken to ensure that the workshop, and the initiative as a whole, is successful.

They include:

5. Forming a Committee
6. Implementing Pilot Communities
7. Evaluating Progress (Follow-Up Workshop)
8. Unrolling the Model in the Caribbean

Step 1: Forming a Committee

The first step to follow up from the workshop is to establish a committee or task force to oversee this initiative. As discussed in the Outcomes of Group Discussions section of this report (Inputs Question 2), this group should consist of representatives from community-based, regional, and national organisations as well as at least one representative from each of the pilot communities. After allowing for sufficient time to distribute this report and give participants the opportunity to review it, the MACC Project will initiate the formation of this committee. Members will be recruited based on participation in the workshop and feedback from participants. This process is expected to begin approximately one month from the date of the initial workshop (late March 2006). This committee will finalise the model to be used for this initiative, adapting the CV&A model developed by SPREP and incorporating the findings and discussions included in this report.

Step 2: Implementing Pilot Communities

The committee established in Step 1 will be responsible for the shaping the details of the six pilot communities in Belize. It must select which communities will be the pilot communities (given the suggestions made in Inputs Question 1), determine when to begin each pilot (they may not all start the same time depending on a wide range of factors), and outline how to initiate stakeholder involvement in each community so that each community has its own committee or task force. Workshop participants expressed that they would like to begin the



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pilot communities as soon as possible, and so the MACC Project expects all the communities to begin within six months from the date of the initial workshop (late August 2006).

Step 3: Evaluating Progress (Follow-Up Workshop)

As stated in the initial workshop, there will be a follow-up workshop approximately six months from the date of the initial workshop (September 2006). The purpose of this workshop is to update all interested parties on the initiative, presenting the finalised model and the progress in the pilot communities. Workshop participants will be able to review and evaluate progress on this initiative thus far, and offer suggestions for improvement. All participants in the initial workshop will be invited, as well as all individuals and organisations that were suggested by participants. Representatives from other Caribbean countries will also be present to further the rollout process. The follow-up workshop will also be used to map out the future of the initiative from that point.

Step 4: Unrolling the Model in the Caribbean

Representatives from other Caribbean countries will be kept informed on the initiative's development in Belize so that they can initiate the process in their own countries. Three representatives from Trinidad and Tobago were present at the initial workshop, and they have committed to playing a significant role as this initiative unrolls in their country starting with a workshop. As mentioned in Step 3, representatives from other Caribbean countries will be present at the follow-up workshop. In addition to Trinidad, St. Vincent and the Grenadines is expected to take on this project early. This will enable them to adapt the model used in Belize, which will have already been tested on several pilot communities, to their own countries. The best practices developed through the course of planning this initiative in Belize can be applied to other Caribbean countries, with modifications made to accommodate country differences. The workshop in Trinidad is expected to take place within one year, followed by a similar workshop in St. Vincent. The rest of the Caribbean is expected to follow within a period of two years.



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CONCLUSION

The Strengthening Coastal Communities workshop is but the first step in a very important initiative concerning communities at risk in the Caribbean. As a first step, this workshop accomplished its goals and objectives. It proved to be successful in providing a forum for interested stakeholders in Belize and the Caribbean to begin development of a model for addressing communities at risk, with facilitation provided by the MACC Project and other organisations that can provide assistance. It enabled participants to work together to identify communities and stakeholders that are ideal for the pilot phase of this initiative, and a timeline has been established to ensure that implementation of these plans is accomplished. The workshop was also successful in exposing participants to concepts in climate change and community vulnerability and in allowing participants to share expertise and ideas with each other. Overall, the atmosphere of collaboration and common interest in pursuing this initiative was evident throughout the workshop, both in formal and informal settings.

However, the real success of this workshop is not reflected in what has already been done, but rather what remains to be accomplished. Thus, in conclusion, it is of vital importance to ensure that all participants acknowledge the role that they have committed to playing in this initiative and remain dedicated to seeing it through to completion. Much of this initiative's progress will depend on the committee formed to oversee the initiative in Belize, as well as the committees for each of the six pilot communities. For its part, the MACC Project is committed to its role as a coordinating body and facilitator for this initiative – the success of which ultimately lies at the community level.



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APPENDIX B: AGENDA

Monday, February 20, 2006

12 noon	Lunch
1 p.m.	<p>Formal Welcome and Introductions – Mr. Carlos Fuller, Climate Change National Focal Point for Belize, on behalf of MACC Project</p> <p>The Role of the Caribbean Community Climate Change Centre (CCCCC) in Reducing Risks and Vulnerability Associated with Climate Change – Dr. Kenrick Leslie, Executive Director, CCCCC</p> <p>The Role of the United Nations Development Programme (UNDP) in Belize – Ms. Diane Wade-Moore, Environmental Programme Officer, UNDP Belize</p>
1:30 p.m.	Networking Break
1:45 p.m.	<p>Strengthening Coastal Communities: An Introduction – Mr. Tony Deyal, Workshop Facilitator</p> <p>Introductions Workshop Outline and Objectives Ground Rules Participant Roles – <i>What can you contribute?</i> Expectations and Anticipated Results (Return pre-workshop surveys)</p>
2:30 p.m.	<p>Introduction to Climate Change – Mr. Carlos Fuller</p> <p>Impacts of Climate Change in Belize on Coastal Communities Discussion</p>
3:00 p.m.	<p>Introduction to Community Vulnerability – Dr. Ulric O'D Trotz, Programme Manager, MACC Project</p> <p>Introduction to Community Vulnerability and Risk Assessment Introduction of South Pacific Regional Environmental Programme (SPREP) Model Concepts for a New Model – Adaptation to Belize/Caribbean Discussion</p>
3:45 p.m.	<p>Introduction to Knowledge, Attitude, and Practice (KAP) and Communities At Risk – Ms. Jennifer Tipple, MACC Project</p> <p>Introduction to Communities At Risk Initiative</p>



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	Rationale Based on KAP Studies Discussion
4:15	Community-Based Resource Management for Coastal Areas – Dr. Robert Richardson, Galen University
4:45 p.m.	Breakout Groups – Output of Model: What does a sustainable coastal community look like? <ol style="list-style-type: none"> 1. Elements and Issues in Sustainable Development and Adaptation – What are the main issues? 2. Community Involvement – Who and how? 3. Goals, Key Success Factors, and Measurables – How will you know if you have succeeded? 4. Self-Sufficiency – How will the model be maintained?
6:00 p.m.	Dinner
7:00 p.m.	Group Presentations and Discussion – Outputs of Model
9:00 p.m.	Adjourned

Tuesday, February 20, 2006

6:30 a.m.	Breakfast
8:00 a.m.	Presentation by Event Partners UNDP Funding Programs Available to Communities – Ms. Diane Wade-Moore, UNDP Global Environment Facility (GEF) Small Grants Programme and COMPACT – Mr. Philip Balderamos, GEF SGP Discussion
9:00 a.m.	Breakout Groups – Inputs of Model: How will coastal communities become sustainable? <ol style="list-style-type: none"> 1. Priority Listing of Communities 2. List of Stakeholders and Their Roles 3. Resources Required (time, budget, etc.) 4. Implementation Plan (Refreshment break ongoing)
10:30 a.m.	Group Presentations and Discussions – Inputs of Model
12 noon	Conclusion and Wrap-Up – Mr. Tony Deyal, Facilitator Presentation of Model Implementation and Next Steps (Return post-workshop surveys)
12:30 p.m.	Meeting Adjourned
	Lunch



MAINSTREAMING ADAPTATION
TO CLIMATE CHANGE



APPENDIX C: PRESENTATIONS

Impacts of Climate Change on the Coastal Communities of Belize

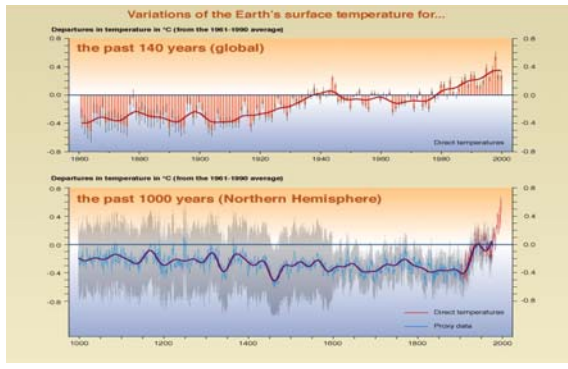
Carlos Fuller
Chief Meteorologist

Climate Change

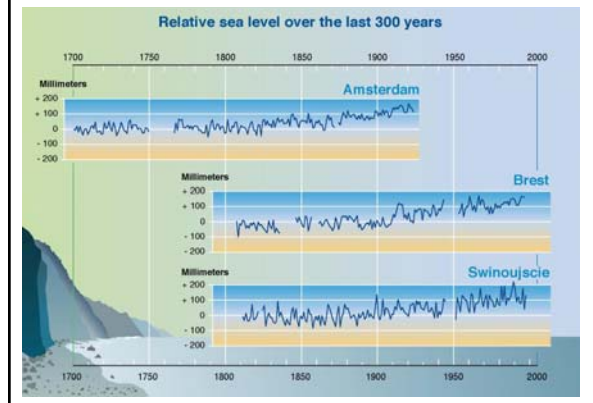
- Temperature rise
- Change in rainfall patterns
- Sea level rise



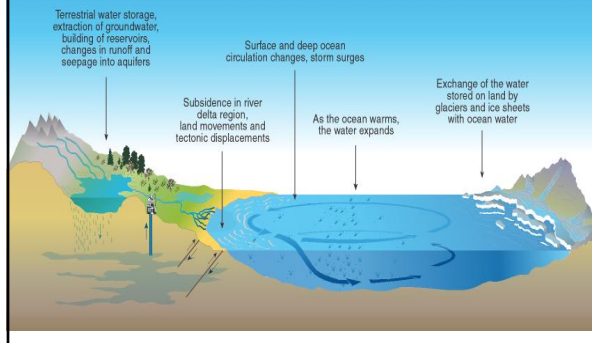
Global mean surface temperatures have increased



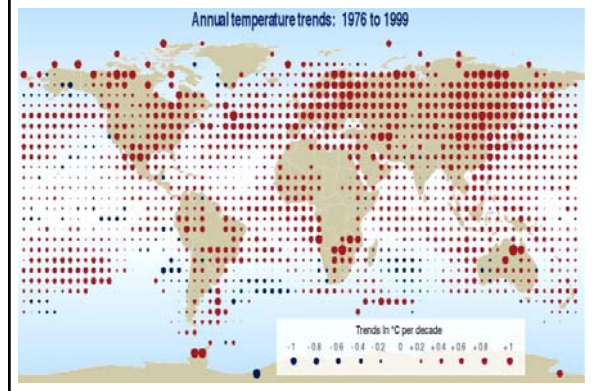
Sea Levels have risen



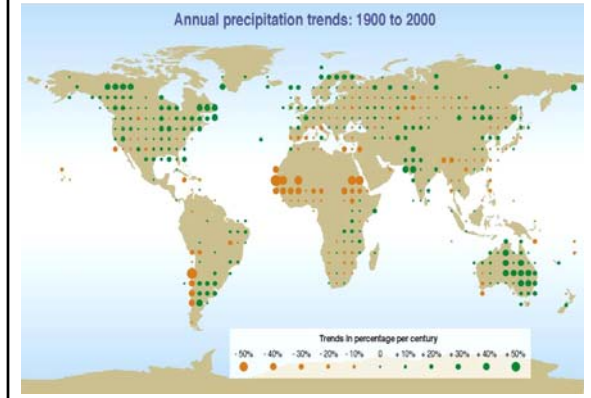
What causes the sea level to change ?



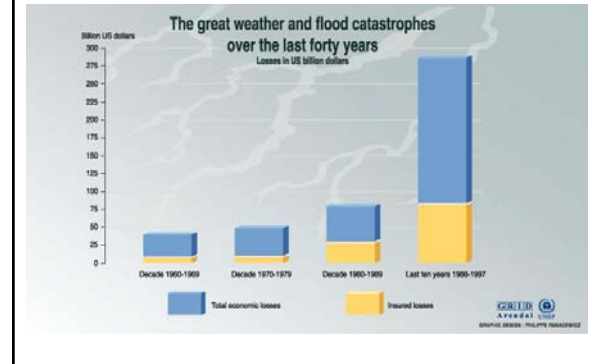
The Land and Oceans have warmed



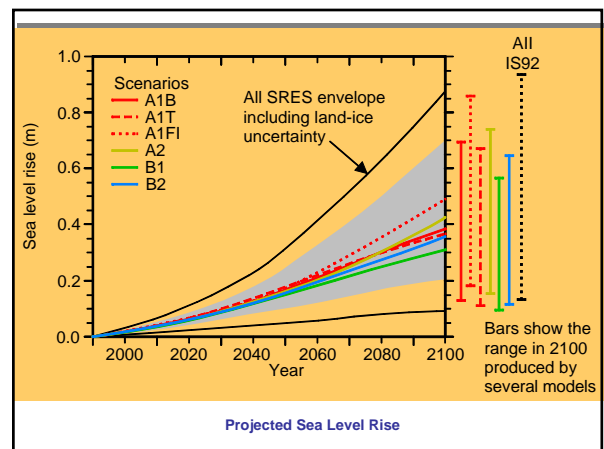
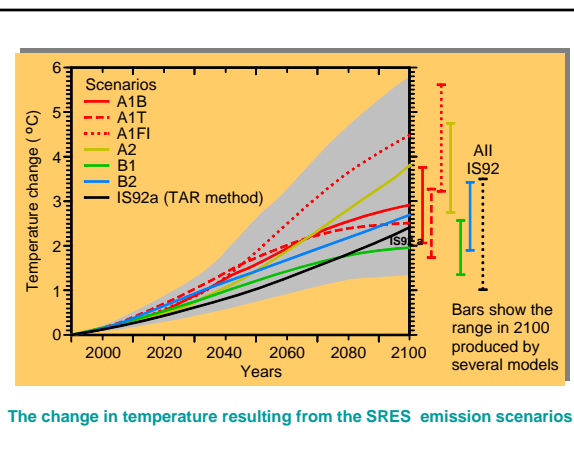
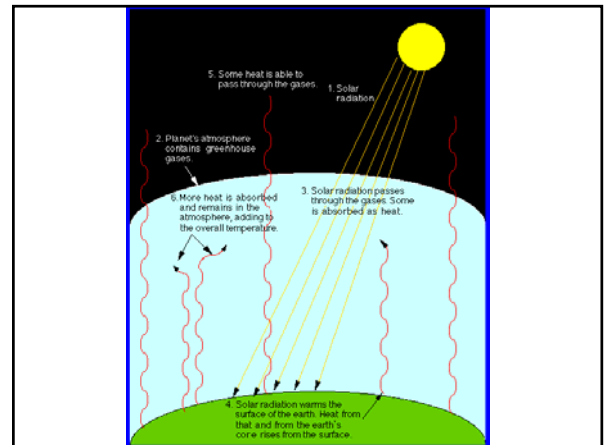
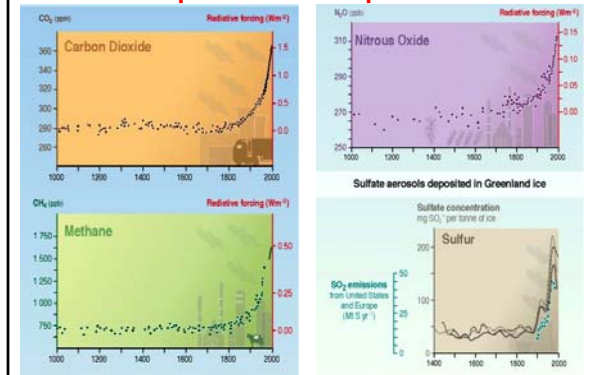
Precipitation patterns have changed



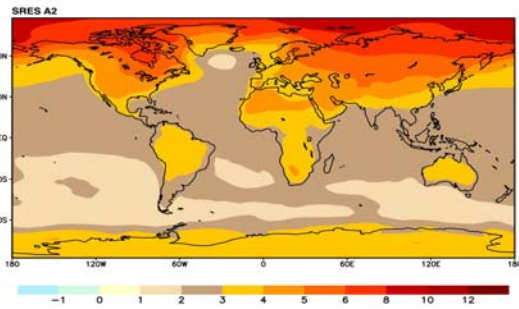
Weather related economic damages have increased



Human activities have changed the composition of the atmosphere since the pre-industrial era

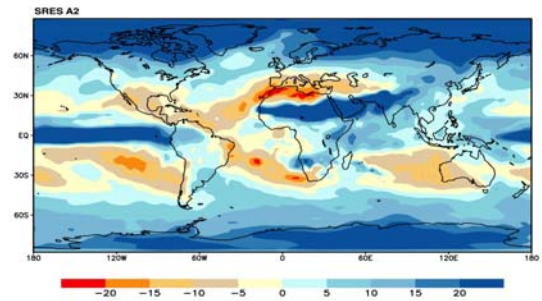


Land areas are projected to warm more than the oceans with the greatest warming at high latitudes



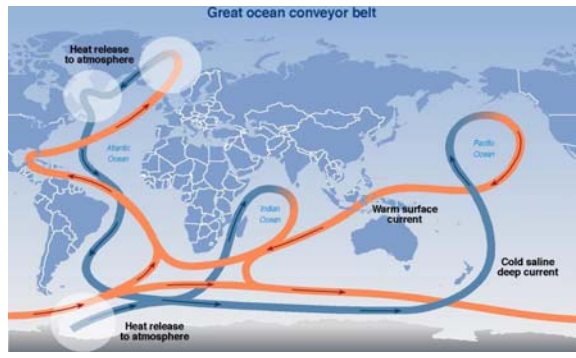
Annual mean temperature change, 2071 to 2100 relative to 1990: Global Average in 2085 = 3.1°C

Some areas are projected to become wetter, others drier with an overall increase projected



Annual mean precipitation change: 2071 to 2100 Relative to 1990

The thermohaline circulation could be disrupted by climate change



Extreme Weather Events are Projected to Increase

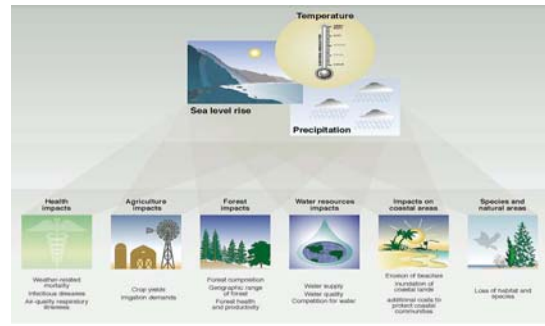
Projected changes during the 21st century

Examples of impacts

- Higher maximum temperatures; more hot days and heatwaves over nearly all land areas (*very likely*)
 - Higher minimum temperatures; fewer cold days and frost days and cold spells (*very likely*)
 - more intense precipitation events over many areas (*very likely*)
 - increased summer drying over some interiors and associated risk of drought (*likely*)
 - increase in tropical cyclone peak wind intensity, mean and peak precipitation intensities (*likely*)
- Increased mortality in old people in urban areas
 - Damage to crops
 - Heat stress on livestock
 - Extended range of pests and diseases
 - Land slides, mudslides, damage to property and increased insurance costs
 - Reduced rangeland productivity, increased wildfires, decreased hydropower
 - Damage to various ecological and socioeconomic systems

Confidence in observed changes (latter half of the 20th century)	Changes in Phenomenon	Confidence in projected changes (during the 21st century)
Likely	Higher maximum temperatures and more hot days over nearly all land areas	Very likely
Very likely	Higher minimum temperatures, fewer cold days and frost days over nearly all land areas	Very likely
Very likely	Reduced diurnal temperature range over most land areas	Very likely
Likely, over many areas	Increase of heat index over land areas	Very likely, over many areas
Likely, over many Northern Hemisphere mid- to high-latitude land areas	More intense precipitation events*	Very likely, over many areas
Likely, in a few areas	Increased summer continental drying and associated risk of drought	Likely, over most mid-latitude continental interiors. (Lack of consistent projections in other areas)
Not observed in the few analyses available	Increase in tropical cyclone peak wind intensities	Likely, over some areas
Insufficient data for assessment	Increase in tropical cyclone mean and peak precipitation intensities	Likely, over some areas

More adverse than beneficial impacts on biological and socioeconomic systems are projected



Water Security:
 -Salt water intrusion
 -Less rainfall
 -More evaporation

Water Supply

- San Pedro
 - Desalination plant
- Placencia
 - Piped across lagoon
- Belize City
 - Supply located 17 miles inland
 - During drought, pumping limited to high tide
 - Salt water intrusion?

Sea Level Rise

- Erosion
- Coastal flooding
- Inundation
- Saltwater intrusion
- Mangroves
- Tourist destinations
- Human settlements
- Water supply
- Agriculture
- Aquaculture
- Fisheries

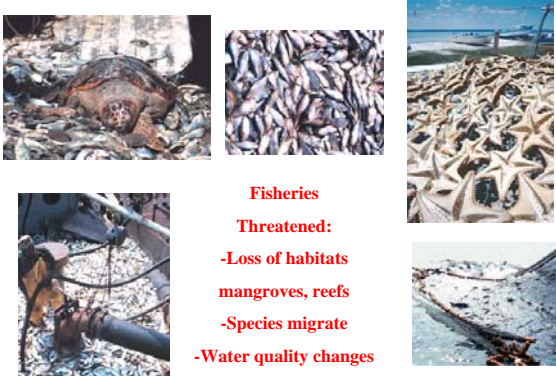
AVVA Vulnerability Analysis

- Entire coastline videotaped and analyzed in 1995
- Sea level rise of 4, 30 and 50 cm.
- Time periods of 25,50 and 100 yrs.
- Little impact in 25 yrs
- 50-100% of beaches lost in 100 yrs

Branching coral Brain coral

coral bleaching events are expected to increase

Loss of Biodiversity



Fisheries
Threatened:
 -Loss of habitats mangroves, reefs
 -Species migrate
 -Water quality changes



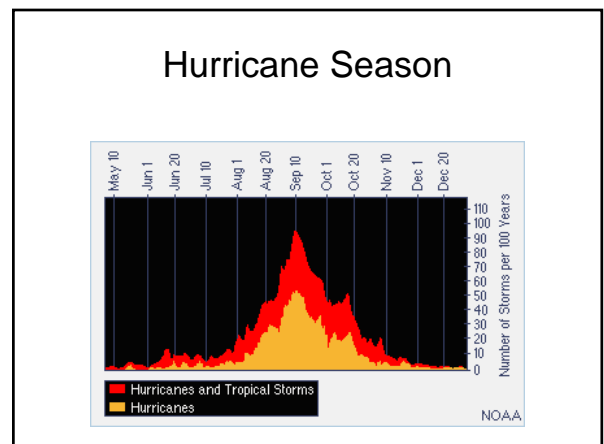
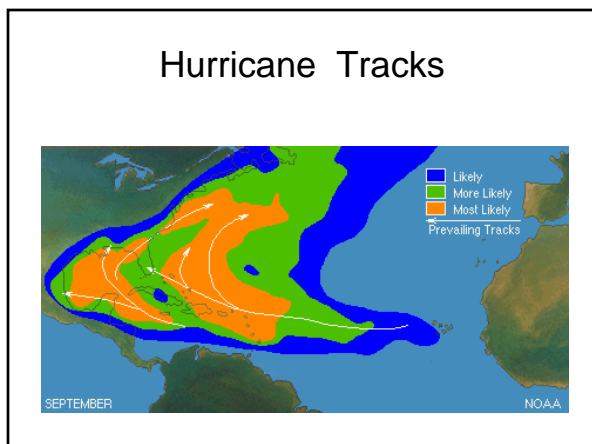

Climate change is projected to decrease agricultural productivity in the tropics for almost any amount of warming



Food Security

Vulnerability Studies in Agriculture

- 1995
- DSSAT
- Beans, corn and rice
- 1-2°C rise in temp
- ± 10-20% change in precip
- Result: 10-20% decline in yields



Storm Surge



Developing countries are the most vulnerable to climate change

- **Impacts are worse** - already more flood and drought prone and a large share of the economy is in climate sensitive sectors
- **Lower capacity to adapt** because of a lack of financial, institutional and technological capacity and access to knowledge
- **Climate change is likely to impact disproportionately upon the poorest countries and the poorest persons within countries**, exacerbating inequities in health status and access to adequate food, clean water and other resources.
- **Net market sector effects are expected to be negative in most developing countries**



Adaptation has the potential to reduce adverse effects of climate change and can often produce immediate ancillary benefits, but cannot prevent all damages

- Numerous adaptation options have been identified that can reduce adverse and enhance beneficial impacts of climate change, but will incur costs
- Greater and more rapid climate change would pose greater challenges for adaptation

CONCLUSION

- Climate change is a reality
- There is little Belize can do about it
- Belize is extremely vulnerable to the adverse effects of climate change
- Climate change processes provide Belize a new opportunity for development.

Community Vulnerability and Adaptation Assessment

Workshop
Belize City
Monday 20th February 2006
U.O.TROTZ

CV&A

- Hazard – Volcanoes, hurricanes
- Vulnerability – Exposure
- Hazard + Vulnerable Element = Risk
- Hazard – Climate Change
 - Changing weather patterns
 - Hurricanes
 - Sea level rise
 - Extreme weather events

CV&A

What is CV&A?

- Systematic approach to assessing communities' vulnerability to climate change
- Work with community to identify climatic conditions which impact on communities
- Devise appropriate responses
- Use **CV&A** for facilitators and community workers to help communities through process

CV & A

Six Main Phases

1. Setting the context phase
2. Diagnostic phase
3. Assessment and evaluation phase
4. Development phase
5. Implementation Phase
6. Monitoring Phase

Phase 1

- Define policy framework that will guide CV&A work in community
- Linkages - community > to national planning process

Tasks:

- Identification of policy framework and links to decision making system
- Information dissemination
- Management issues

Management Issues

- Formation of core multidisciplinary team and facilitation
- Develop methodological framework for data collection
- Compilation of information on community
- Analysis of peculiarities of community (cultural sensitivities)
- Familiarisation with tools to ensure full participation (e.g.KAP)

PHASE 2

Identification of current risks

- Identify target groups
- List well-being indicators – housing, food, education etc.
- What types of things affect well-being?
- Gender and professional biases re vulnerability to CC
- Existent social capital – how are they organised to deal with emergencies?

PHASE 2

Prioritisation

- Determine which vulnerabilities to address
 - Utilise available tools for ranking issues e.g. (frequency + area impact) + potential damage magnitude = total score
- F, AI, PDM defined by scale of numbers from 1-5
1 = low
5 = high

PHASE 3

Assessment of current and future risks

- Analyse challenges through dialogue with community
- Identify actions that may increase vulnerability (e.g. slash and burn on hillsides, deforestation, mangrove depletion)
- Systems in place to cope?
- Failures to cope in past – why?
- Remedial actions needed
- Identification of future risks

PHASE 4

Development and evaluation of adaptation options

- In consultation with community identify solutions
- Assess solutions re appropriateness, cost effectiveness, affordability

PHASE 5

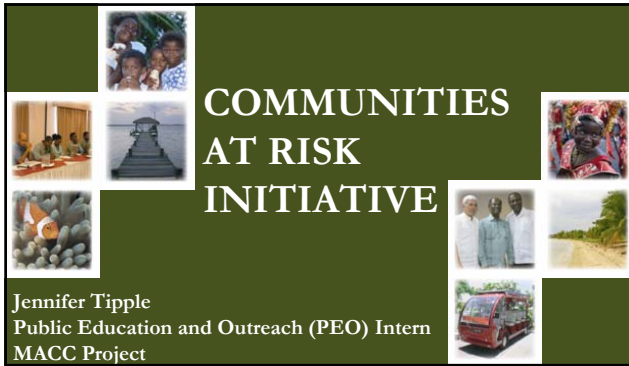
Implementation

1. Proposal development
 - What needs to be done? (action)
 - By whom? (responsibility)
 - Requirements (resources & cost)
 - Schedule for implementation (time)
2. Mainstream activity into ongoing processes e.g. local development plan
3. Organise implementation with maximum community participation

PHASE 6

Monitoring

- Ongoing monitoring to ensure implementation in keeping with plan
- Determine effectiveness of intervention
- Prepare for adjustments if new climate risks arise during implementation phase



COMMUNITIES AT RISK INITIATIVE

Jennifer Tipple
Public Education and Outreach (PEO) Intern
MACC Project

INTRODUCTION

- Pilot project specifically for communities at risk
- Provides guidance for communities to become sustainable in short and long term
- Total cost US \$110,000
- Why now?



COMMUNITIES AT RISK

- Caribbean composed of 7,000+ islands, cayes, reefs, etc.
- Home to over 40 million people
- Est. 70% live on the coast
- Many communities considered “at risk”
 - Especially coastal communities




ECONOMIES OF COMMUNITIES AT RISK

- Often one industry forms economic backbone
- Long histories in traditional industries
- Particularly tourism, agriculture, and fishing




PROCESS

- First stage: Belize – 6 communities (2006)
- Next stage: Trinidad & Tobago, St. Vincent & the Grenadines (2007)
- Final stage: Caribbean rollout (2008)



FIRST STAGE: BELIZE

- Strengthening Coastal Communities Workshop
 - Develop methodology for determining vulnerability
- Communities then assess their own vulnerability (6 months)
- Follow-up workshop to choose 6 communities at risk (August 2006)
 - Action Plan, KAP Studies



KAP STUDIES

- Knowledge, Attitude, and Practice (KAP)
- Coordinated by PEO component of MACC Project
- So far, 6 studies in 5 countries:
 - St Vincent & the Grenadines (May 2005), followed up by study on communities at risk (August 2005)
 - Jamaica (June 2005)
 - Belize (August 2005)
 - Dominica (December 2005)
 - Barbados, with specific focus on farmers (January 2006)



KAP PUBLIC SURVEYS



- Based on information obtained from public opinion surveys of key stakeholder groups
- Residents, private sector, public sector, hotels, etc.



KAP OVERVIEW

- KAP study findings indicate that public recognises threat of climate change
- Knowledge doesn't necessary equal behaviour (KAP gaps)



KAP KEY FINDINGS

- Residents have noticed effects of climate change
 - References to rainfall, flooding, tropical storms
- 87-99% “very” or “moderately” concerned about climate change



PRIVATE SECTOR ATTITUDE

- Climate change recognised as serious issue
 - Private sector: 81% in Belize and 71% in Jamaica said it was “extremely” or “very” immediate issue
- St Vincent: 98% of hotels have “very” or “moderately” high level of concern
- Barbados: 95% of farmers aware of changes in weather patterns



KAP GAP EXAMPLES

- Knowledge-Attitude:
 - Residents have noticed effects of climate change (references to rainfall, flooding, tropical storms)
 - Indifference in Jamaica, religion in Barbados



KAP GAP EXAMPLES CONT'D



- Attitude-Practice:
 - Who is responsible? Most countries said government, not public (ex. St. Vincent – 72% vs. 4%)
 - Belize is exception – only 23% said government, 57% said everyone



KAP GAP EXAMPLES CONT'D

- Knowledge-Practice:
 - Caribbean residents do not feel their countries are prepared (only 4% of Belizeans, 6% of Dominicans)
 - Less than half have home insurance against climate-related threats (15% of Jamaicans, 39% of Belizeans)



WHY KAP GAPS?

- Discrepancies in Knowledge, Attitude, and Practice
- Why? What factors?
 - age? –income? –education?
- How do you bridge these gaps?
- What stakeholders can influence attitude? (ex. FBOs)
- Do they understand risks and rewards?



PUBLIC INTEREST AND INVOLVEMENT

- Lack of faith in government
- Public education and awareness top suggestion to address adaptation to climate change
- 80%+ interested in more news stories



CONCLUSION – CALL TO ACTION

- Many communities are at risk
- Public ready to act
- Stakeholders need guidance



OPPORTUNITY TO HELP COMMUNITIES HELP THEMSELVES



THANK YOU

WHO HAS THE FIRST QUESTION?



Community-Based Resource Management in Coastal Communities

Strengthening Coastal Communities:
Workshop on Coastal Community Vulnerability and Adaptation
20 February 2006

Robert B. Richardson, Ph.D.
Galen University
San Ignacio, Cayo District, Belize

Coastal Economies

- Economic vulnerability
- Coastal tourism
 - BZ\$200+ million 10% of GDP
- Fisheries
 - BZ\$100+ million 5% of GDP
- Threats to sustainability
 - External (e.g., temperature, sea levels)
 - Internal (e.g., overfishing, tourism impacts)

Coastal Tourism

- Cayes, beaches, reef tourism
- Greatest source of foreign exchange earnings
- Government tax revenue
- Most vulnerable sector of Belize tourism industry
- Vulnerability to resource impacts
 - Resource-dependent tourism (e.g., reef recreation)
 - Economic contributions, labor
- Vulnerability to climate change
 - Sea level rise, erosion
 - Storm frequency - infrastructure, property damage
 - Coral bleaching
- Tourism as source and effect of vulnerability

Fishing

- Products: shrimp, deep-sea fish, shellfish
- 80% - 90% of harvest value exported
 - BZ\$107 million in 2004 (more than doubled since 2002 [shrimp])
 - White shrimp – 79% of value
 - Spiny lobster – 14% of value
- Employment: 1,672 fishing, 1,059 farm, 123 other
- Vulnerability to resource impacts
 - Overfishing, inland pollution
 - Resource dependence for subsistence, exports, labor
- Vulnerability to climate change
 - Erosion, turbidity → decline in water quality
 - Storms, sea level rise
 - Coral bleaching, loss of coral reef cover
 - Disease rates, algal blooms for aquaculture

Coastal Vulnerability

- Physical
 - Storm frequency, intensity
 - Erosion
- Economic
 - Coral bleaching, fish populations
 - Economic impact (e.g., tourism demand)
 - Costs of adaptation, mitigation, reconstruction
- Social
 - Disease rates, human health
 - Sustainability of communities
- Environmental
 - Biodiversity
 - Water availability, quality

Adaptation or Reconstruction?

- Historical record of perverse economic incentives
- Tendency towards reconstruction
 - Donor contributions
 - International support
- More costly than adaptation measures
- Matter of prioritization
 - Proactive
 - Reactive

Resource Management

- Hindered by complex, dynamic information
- Historically regulatory (top-down)
- Human dimension often overlooked
- Inter-industry impacts as fishing and tourism compete for limited space
- Objectives
 - Sustainable yield of resources
 - Contribution to production (GDP) and foreign exchange earnings

Management Alternatives

- Economic (market-based)
 - Production-, profit-oriented
- Ecological (systems-based)
 - Conservation-, preservation-oriented
- Integrated (community-based)
 - Participatory
 - Recognition of rights of non-user groups
 - Implications for sustainable development

Community-Based Management

- Stakeholders at all levels
 - Industries
 - Government
 - NGOs
 - Scientists
 - International concerns
- Leadership across sectors
- Involvement determined by stake, interest, risk
- Cooperation through shared goals
- Applicable to fisheries, tourism, other resources

Community-Based Fisheries Management (CBFM)

- Shift from *production* focus to *integrated* focus (ecological, economic, human)
- Fosters sustainability, stewardship
- Emphasizes local control
- Power-sharing based on common interest
- Facilitates incorporation of complex information
- Focus on *ecosystem*, not species, fishery

CBFM Activities

- Coastal zone hazard mapping
 - Local knowledge for identifying areas of high risk of flooding, erosion, landslides
- Prioritize restoration projects
 - Mangrove restoration site location, execution
- Prioritize adaptation projects
 - Economic impact, data sharing
 - Sea wall construction, upgrading
 - Protection of water supplies, quality

CBFM Activities (*continued*)

- Regulation and monitoring
 - Fishing, Tourism
- Community planning
 - Vulnerable residential areas, relocation
 - Development planning
 - Storm warning systems
 - Evacuation routes
- Community education
 - Awareness, communication

Participatory Management

- Partnerships (cooperatives, NGOs)
- Joint management (marine protected areas)
- Bacalar Chico Reserve Advisory Committee – representatives from
 - Industry, government, associations, NGOs, academic institutions
- Sarstoon-Temash National Park
 - Indigenous community participation (SATIM)

Factors To Consider

- Isolation of community (dependence)
- Access to vessel maintenance, fish processing facilities, storage
- Fleet, gear composition
- Role of fishing in community (social, cultural fabric)
- Economic contribution of fishing
- Economic diversification
- Resource rights (community access, lease, ownership)
- Availability of information

CBFM and Vulnerability Assessment

- Holistic approach to vulnerability assessment
- Centralized data collection, knowledge-sharing
- Participatory decision-making
- Ownership and accountability
- Equitable distribution of income
- Reduction of conflict
- Sustainable development
 - Economic benefits
 - Ecological benefits
 - Social benefits



Opportunities for funding UNDP/GEF



The Global Environmental Facility

- The Global Environment Facility (GEF), established in 1991, helps developing countries fund projects and programs that protect the global environment.
- GEF grants support projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants.
- The International Environmental Conventions provide guidance to the GEF




The GEF cont'd



Management of GEF Projects

- GEF projects are managed by GEF [Implementing Agencies](#)
 - the United Nations Environment Programme
 - the United Nations Development Programme
 - the World Bank
- Seven other international organizations, known as GEF [Executing Agencies](#), contribute to the management and execution of GEF projects.

Climate Change Operational Programmes




Climate change projects fall under the following categories of Operational Programmes (OP). Each OP describes an aspect of the focal area and includes eligibility criteria:

- [OP 5: Removing Barriers to Energy Conservation and Energy Efficiency](#)
- [OP 6: Promoting the Adoption of Renewable Energy by Removing Barriers and Reducing Implementation Costs](#)
- [OP 7: Reducing the Long-Term Costs of Low Greenhouse Gas Emitting Energy Technologies](#)
- [OP 11: Promoting Environmentally Sustainable Transport](#)
- [OP 12: Integrated Ecosystem Management \(Multifocal\)](#)


Funding Opportunities to Support Climate Change Adaptation

- UNDP/GEF currently utilizes four different adaptation funds
 1. Special Climate Change Fund (SCCF)
 2. Least Developed Countries Fund (LCDF)
 3. GEF Strategic Priority funded under the GEF climate change focal area
 4. The Kyoto Protocol Fund



Special Climate Change Fund

- Development focuses fund concerned with sectors most adversely affected by climate change (agriculture/ food security, management and quality of water resources, public health, disaster risk management, coastal zone planning and development)
- **Objective:** To implement long-term adaptation measures that increase the resilience of national development sectors to the impacts of climate change. Projects must focus on long-term planned response strategies, policies, and measures, rather than short-term (reactive) activities.



Special Climate Change Fund

The SCCF offers an opportunity to link climate change adaptation with socio-economic sectors, including:

- Water resources management;
- Land management;
- Agriculture;
- Health;
- Infrastructure development.

Linkages with fragile ecosystems, integrated coastal zone management and disaster preparedness are also encouraged.

Projects must focus on 'additional costs' imposed by climate change on the development baseline. It is not necessary to generate global environmental benefits. Local benefits can be generated by SCCF projects, as long as the case for 'additionality' can be made.



Special Climate Change Fund

Activities: Project activities to be supported include:

- Integration of climate change risk reduction strategies, policies, and practices into sectors;
- Implementation of adaptation measures;
- Institutional and constituency capacity building, and awareness raising.
- Activities should fall within the scope of the sectors above. For example, eligible activities could include: improved monitoring of diseases, early warning systems and responses, disaster planning, preparedness for droughts and flood in areas prone to extreme climate events. Projects must include elements of at least two of the above three activities (i.e., integration, implementation and/or capacity building).

Please note that activities which are considered as part of the development baseline are not eligible for funding. For example, improvement of public health and education systems, infrastructure for rural development, and water sanitation are not eligible. Funding will be provided only to address impacts of climate change on a vulnerable socio-economic sector that are above and beyond the baseline.



Least Developed Countries Fund

Objective: To support the (a) preparation of National Adaptation Programmes of Action (NAPAs) for identifying urgent and immediate adaptation needs in [Least Developed Countries](#); and (b) implementation of NAPAs.

Scope:

LDCs only;
Priority sectors likely to be water resources, agriculture, coastal zones and health;
Development (not global environmental) benefits are required;
Incremental reasoning required for medium- and full-sized projects;
Policy paper under development (October/November 2005).

Activities:

Preparation and implementation of NAPAs.

Belize does not qualify for funding through this window as Belize is not considered an LDC (Belize is however listed as a SIDS)



GEF Strategic Priority on Adaptation

- **Objective:** To increase the resilience and adaptive capacity of those ecosystems and communities vulnerable to the adverse effects of climate change. Projects must focus on reducing vulnerability to climate change impacts as their primary objective.
- **Scope:** the SPA focuses on particularly vulnerable regions, sectors, geographic areas, ecosystems and communities. The selection of particularly vulnerable sectors will be based on information contained in national communications to the [United Nations Framework Convention on Climate Change](#), National Adaptation Programmes of Action (NAPAs) and other major national or regional studies.
- Projects must generate global environmental benefits in one or more of the GEF's focal areas of biodiversity, international waters, land degradation, persistent organic pollutants and climate change.
- Multiple global environmental benefits across the focal areas are desirable, but not necessary.



GEF Strategic Priority on Adaptation

- **Activities:** The activities to be supported will largely prioritize capacity building for managing and ensuring the sustainable use of natural resources under climate change. Funding for investments will be eligible to the extent that incremental reasoning is applied.

A successful project is one where:

- Adaptive capacity of communities has been created and/or enhanced;
- Resilience of ecosystems has been enhanced, over and above the 'without-adaptation' baseline of the project;
- Global benefits can be demonstrated in one or more of the GEF focal areas.



Accessing Funds

- Since accessing the three active adaptation funds can become complex, to simplify the process the following steps are suggested
- 1st Step, the Country Office prepares a project concept for rapid appraisal
- 2nd, comes into play only if the proposal concept passes the eligibility screening, at this point a full project using project preparation funds (PDF-A, PDF- B) is developed.



Closing Quote

- “UNDP- as one of the GEF Implementing Agencies- is now faced with the urgent challenge of working with Governments and other partners to develop adaptation projects.”
- “Since the rate of replenishment for he funds depend on country demand, rapid project pipeline build-up is urgently required.”

Frank Pinto
Executive Coordinator
UNDP/ GEF





GLOBAL ENVIRONMENTAL FACILITY SMALL GRANTS PROGRAMME



3 PRINCIPLES

- Environmental Protection
- Poverty Reduction
- Community Empowerment

GEF FOCAL AREAS

- CLIMATE CHANGE
- BIODIVERSITY
- INTERNATIONAL WATERS
- PERSISTENT ORGANIC POLLUTANTS
- LAND DEGRADATION

CLIMATE CHANGE OPs

- OP5: Removing barriers to energy efficiency and energy conservation
- OP6: Promoting the adoption of renewable energy
- OP11: Promoting environmentally sustainable transport
- OP12: Crosscutting issues related to energy, climate change, & integrated ecosystem management

GLOBAL PRIORITIES for COMMUNITY CC ADAPTATION INITIATIVES

- Develop community capacity
- Fund adaptation projects
- Document & disseminate community level lessons

NATIONAL CONSIDERATIONS for COMMUNITY CC ADAPTATION INITIATIVES?

- Community adaptation to climate change
- Tree planting and wood lots
- Alternative energy to remote communities




**COMMUNITY MANAGEMENT
OF PROTECTED AREAS
CONSERVATION PROGRAMME
(COMPACT)**




COMPACT

- COMPACT - worldwide programme funded by the GEF Small Grants Programme and the United Nations Foundation
- Belize, Mexico, Dominica, Tanzania, Kenya, and Philippines

What is the goal of the COMPACT Programme in Belize?

COMPACT seeks to preserve the integrity and character of the **Belize Barrier Reef Reserve System –World Heritage Site (BBRRS-WHS)**


HOW?

by developing and supporting a range of conservation and sustainable livelihood activities through transparent and democratic partnerships with coastal communities and other stakeholders.

The Belize Barrier Reef Reserve System – World Heritage Site

The **BBRRS-WHS** is comprised of seven marine protected areas

- Bacalar Chico Marine Reserve & National Park,
- Blue Hole Natural Monument,
- Half Moon Caye Natural Monument,
- Glovers Reef Marine Reserve,
- South Water Caye Marine Reserve,
- Laughing Bird Caye National Park, and
- Sapodilla Cayes Marine Reserve



Objectives of COMPACT

- Increase local awareness of and concern for the **BBRRS-WHS**.
- Involve local communities in the conservation and sustainable use of the biodiversity of the **BBRRS-WHS**.
- Demonstrate how communities can reduce threats to protected areas.
- Enhance capacities of NGOs and CBOs involved in the conservation of the **BBRRS-WHS** or whose existence is linked to it.
- Promote and support partnerships between communities and protected areas managers.
- Provide grants for community-based activities.
- Share lessons from project experiences at the local, national and global levels.

CONSULTATIVE PROCESS & DOCUMENTS

- Baseline Assessment
- Conceptual Model
- Site Strategy

PROJECT CATEGORIES

- Alternative Livelihoods
- Sustainable Fishing
- Tourism Services
- Development of Co-management Capacity
- Public Awareness and Education
- Programme Support

How This Relates to Coastal Communities

- Economic Incentives
- Natural Resources Management
- Training and Capacity Building
- Empowerment and Advocacy
- Conflict Resolution
- OTHERS?





APPENDIX D: BREAKOUT GROUP PARTICIPANTS

GROUP 1:

Dr. Ulric O'D Trotz (Facilitator)

Mr. Seleem Chan
Mr. Colin Gillett
Mr. Rennick Jackson
Mr. Don Thompson
Ms. Debbie Wang
Ms. Hyacinth Ysaguierre

GROUP 2:

Dr. Kenrick Leslie (Facilitator)

Ms. Merlene Clarke
Mr. Mike Green
Ms. Ann Gordon
Ms. Nadine Nembhart
Ms. Maria Vega
Mr. John Watler

GROUP 3:

Mr. Carlos Fuller (Facilitator)

Mr. Daniel Castellanos
Ms. Heather duPlooy
Mr. Demetrio Martinez
Mr. Peter Shol
Ms. Virginia Vasquez

GROUP 4:

Ms. Diane Wade-Moore (Facilitator)

Mr. Carrall Alexander
Mr. Timothy Flores
Ms. Candy Gonzalez
Mr. Mustafa Toure
Mr. Jaime Villanueva

GROUP 5:

Dr. Rob Richardson (Facilitator)

Mr. David Itch
Mr. Orlando Jimenez
Ms. Ellen McRae
Mr. Lincoln McSweaney
Ms. Patricia Turpin
Mr. Michael Salton

GROUP 6:

Mr. Philip Balderamos (Facilitator)

Mr. Godsman Ellis
Mr. Earl Green
Mr. Charles Heusner
Ms. Sharon Laurent
Mr. Wil Maheia
Mr. Lyndon Rodney
Ms. Shermadine Samuels



MAINSTREAMING ADAPTATION
TO CLIMATE CHANGE



APPENDIX E: SURVEYS AND SURVEY ANALYSIS



MAINSTREAMING ADAPTATION TO CLIMATE CHANGE



PRE-WORKSHOP SURVEY

This survey is designed to explore the knowledge and opinions of workshop participants prior to the workshop. Please answer the following questions at the start of the workshop.

Please indicate which of the following you represent at the workshop (all that apply).

- Environment
- Fisheries
- Tourism
- Climate change
- Coastal issues
- Government
- Non-governmental organisation (NGO)
- Community
- International
- Public at large
- Other, please specify: _____

1. Please indicate your knowledge/understanding of the following issues:

	Low					High
	1	2	3	4	5	
Community vulnerability and risk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Environmental issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Adaptation to climate change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fisheries management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Coastal issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sustainable development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Community involvement initiatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2. In your opinion, how important are issues related to communities at risk?

- Not at all
- Not very
- Somewhat
- Very
- Extremely

3. What level of interest do you have in participating in initiatives geared toward communities at risk?

- Very low
- Low
- Moderate
- High
- Very high

4. What level of involvement do you currently have in addressing issues related to communities at risk?

- Very low
- Low
- Moderate
- High
- Very high

5. What do you think you and/or your organization can contribute to this initiative? Indicate all that apply.

- Ideas
- Information (reports, etc.)
- Facilitation and leadership
- Networking and contacts
- Financial resources
- Physical resources (meeting space, equipment, etc.)
- Administrative support
- Other, please specify: _____

6. What do you expect will result from this workshop?



MAINSTREAMING ADAPTATION TO CLIMATE CHANGE



POST-WORKSHOP SURVEY

Please answer the following questions after having participated in the workshop, taking into account all presentations, discussions, and other activities.

1. Please indicate your knowledge/understanding of the following issues:

	Low				High
	1	2	3	4	5
Community vulnerability and risk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adaptation to climate change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fisheries management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coastal issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sustainable development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community involvement initiatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. In your opinion, how important are issues related to communities at risk?

- Not at all Not very Somewhat Very Extremely

3. What level of interest do you have in participating in initiatives geared toward communities at risk?

- Very low Low Moderate High Very high

4. As a result of this workshop, what level of involvement will you have in addressing communities at risk?

- Very low Low Moderate High Very high

5. What are you prepared to do or what do you plan to do to further this initiative?

6. Are there any areas that you feel have been ignored or that require further investigation or attention?

7. Is there anything else you would like to know or information you feel should be made available that will add value to the process?

(see next page)



**MAINSTREAMING ADAPTATION
TO CLIMATE CHANGE**



Post-Workshop Survey continued...

8. Is there anyone else that you think should be involved? Please provide names and contact information if possible.

9. What did you like/dislike about the workshop?

10. Do you have any other comments, feedback, or suggestions regarding the workshop or the overall Communities At Risk initiative?

PRE-WORKSHOP SURVEY ANALYSIS

Please indicate which of the following you represent at the workshop (all that apply).

	#	%
Environment	18	58%
Fisheries	12	39%
Tourism	10	33%
Climate change	7	24%
Coastal issues	11	39%
Government	4	15%
NGO	20	77%
Community	13	52%
International	2	8%
Public at large	1	4%
Other	7	32%

Q1. Please indicate your knowledge/understanding of the following issues:

	1	2	3	4	5	Mean	Mode
Community vulnerability and risk	1	4	15	12	3	3.3	4
Environmental issues	0	0	7	16	12	4.1	4
Adaptation to climate change	1	12	9	11	1	3.0	4
Fisheries management	6	3	10	11	4	3.1	4
Coastal issues	1	5	14	7	7	3.4	3
Sustainable development	1	2	13	11	9	3.7	3
Community involvement initiatives	1	3	14	12	7	3.6	3

Q2. In your opinion, how important are issues related to communities at risk?

	#	%
Not at all	0	0%
Not very	0	0%
Somewhat	2	6%
Very	16	46%
Extremely	17	49%
Total	35	100%

Q3. What level of interest do you currently have in participating in initiatives geared toward communities at risk?

	#	%
Very low	0	0%
Low	1	3%
Moderate	7	19%
High	16	43%
Very high	13	35%
Total	37	100%

Q4. What level of involvement do you currently have in addressing issues related to communities at risk?

	#	%
Very low	1	3%
Low	9	24%
Moderate	9	24%
High	14	38%
Very high	4	11%
Total	37	100%

Q5. What do you think you and/or your organisation can contribute to this initiative? Indicate all that apply.

	#	%
Ideas	25	68%
Information (reports, etc.)	19	51%
Facilitation and leadership	20	54%
Networking and contacts	24	65%
Financial resources	5	14%
Physical resources (meeting space, equipment, etc.)	10	27%
Administrative support	4	11%
Other	2	5%

Q6. What do you expect will result from this workshop?

	#	%
Better understanding/awareness of climate change, risks, adaptation, etc.	17	46%
Strategies, recommendations, frameworks, etc.	7	19%
Enhancement of stakeholder roles/how to help	5	14%
Pilot communities/development of model	5	14%
Action plan and implementation	4	11%
Other	3	8%
Don't know/no response	5	14%

POST-WORKSHOP SURVEY ANALYSIS

Q1. Please indicate your knowledge/understanding of the following issues:

	1	2	3	4	5	Mean	Mode
Community vulnerability and risk	0	0	5	16	7	4.1	4
Environmental issues	0	1	5	14	8	4.0	4
Adaptation to climate change	0	2	4	18	3	3.8	4
Fisheries management	1	7	6	10	4	3.3	4
Coastal issues	0	3	8	8	9	3.8	5
Sustainable development	0	1	10	11	6	3.8	4
Community involvement initiatives	0	1	10	11	6	3.6	4

Q2. In your opinion, how important are issues related to communities at risk?

	#	%
Not at all	0	0%
Not very	0	0%
Somewhat	1	4%
Very	12	43%
Extremely	15	54%
Total	28	100%

Q3. What level of interest do you currently have in participating in initiatives geared toward communities at risk?

	#	%
Very low	0	0%
Low	0	0%
Moderate	3	11%
High	15	54%
Very high	10	36%
Total	28	100%

Q4. As a result of this workshop, what level of involvement will you have in addressing communities at risk?

	#	%
Very low	0	0%
Low	1	4%
Moderate	6	21%
High	12	43%
Very high	9	32%
Total	28	100%

Q5. What are you prepared to do or what do you plan to do to further this initiative?

	#	%
Perform education/outreach activities to share information learned	9	32%
Assist in coordinating future events	5	18%
Provide assistance to MACC Project (in general)	4	14%
Encourage more support on behalf of organisation	4	14%
Offer consultant services/support	3	11%
Collaborate with other organisations	2	7%
Other	5	18%

Q6. Are there any areas that you feel have been ignored or that require further investigation or attention?

	#	%
More information on/examples of climate change	2	7%
More information on fisheries/community-based fisheries management	2	7%
More emphasis on community mobilisation/support	2	7%
Other	13	46%
No response	7	25%

Q7. Is there anything else you would like to know or information you feel should be made available that will add value to the process?

	#	%
Copies of presentations	3	11%
Information that can be used for awareness/education	2	7%
More data and information available from surveys	2	7%
Other	10	36%
No response	9	32%

Q8. Is there anyone else that you think should be involved? Please provide names and contact information if possible.

	#	%
Various NGOs	8	29%
Government ministries and departments (particularly Agriculture and Fisheries)	3	11%
Private sector representatives (particularly fishers and farmers)	2	7%
Villages/Village Councils	2	7%
NEMO	2	7%
Other	7	25%
No response	9	32%

Q9. What did you like/dislike about the workshop?

<i>Like:</i>	#	%
Selection of participants	4	14%
Information and presentations	3	11%
Group interaction	3	11%
Other likes	4	14%
<i>Dislike:</i>		
Time constraints	3	11%
Late hours	2	7%
Room too cold	2	7%
Other dislikes	7	25%
No response	5	18%

Q10. Do you have any other comments, feedback, or suggestions regarding the workshop of the overall Communities At Risk initiative?

see Feedback section of report in general

PRE- AND POST-WORKSHOP SURVEY COMPARISONS

Q1. Please indicate your knowledge/understanding of the following issues:

	Pre Mean	Post Mean	Change
Community vulnerability and risk	3.3	4.1	0.7
Environmental issues	4.1	4.0	-0.1
Adaptation to climate change	3.0	3.8	0.8
Fisheries management	3.1	3.3	0.2
Coastal issues	3.4	3.8	0.4
Sustainable development	3.7	3.8	0.1
Community involvement initiatives	3.6	3.6	0.0

Q2. In your opinion, how important are issues related to communities at risk?

	Pre %	Post %	Change
Not at all	0%	0%	0%
Not very	0%	0%	0%
Somewhat	6%	4%	-2%
Very	46%	43%	-3%
Extremely	49%	54%	5%
Total	100%	100%	

Q3. What level of interest do you currently have in participating in initiatives geared toward communities at risk?

	Pre %	Post %	Change
Very low	0%	0%	0%
Low	3%	0%	-3%
Moderate	19%	11%	-8%
High	43%	54%	10%
Very high	35%	36%	1%
Total	100%	100%	

Q4. What level of involvement do you currently have in addressing issues related to communities at risk?/As a result of this workshop, what level of involvement will you have in addressing communities at risk?

	Pre %	Post %	Change
Very low	3%	0%	-3%
Low	24%	4%	-21%
Moderate	24%	21%	-3%
High	38%	43%	5%
Very high	11%	32%	21%
Total	100%	100%	



APPENDIX F: MEDIA INVOLVEMENT

The MACC Project has made a consistent effort to keep media partners abreast of climate change information and related events. Most recently, media representatives in Belize were given a copy of *Concepts and Issues in Climate Change: A Handbook for Caribbean Journalists*, released by the MACC Project in 2005. This handbook is expected to enhance understanding of climate change among journalists and allow them to provide better information to their audiences.

All major media outlets in Belize, as well as many community media outlets, were sent a press release (see next page) and related information prior to the workshop. Many local radio stations were also contacted, given the community-based nature of this initiative.

Two media representatives participated in the opening portion of the workshop – Ms. Carla Vernon from Channel 5 and Mr. Rene Mendez from FM 2000. The workshop received television news coverage on both Channel 5 and Channel 7 news. The workshop was also featured in radio newscasts, including FM 2000 and LOVE FM.



MAINSTREAMING ADAPTATION TO CLIMATE CHANGE



FOR IMMEDIATE RELEASE

BELIZE TO HOST REGIONAL WORKSHOP ON COMMUNITY SUSTAINABILITY Will Tackle Vulnerability of Coastal Communities in the Caribbean

The Mainstreaming Adaptation to Climate Change (MACC) Project and the United Nations Development Programme (UNDP) are hosting a workshop designed to address the sustainability of coastal communities in the Caribbean. The workshop, entitled **Strengthening Coastal Communities: A Workshop on Coastal Community Vulnerability and Adaptation**, will be held on February 20 and 21, 2006, at the Belize Best Western Biltmore Plaza in Belize City.

The goal of the workshop is to provide a forum and support for non-governmental organisations (NGOs) to develop a model to address the vulnerability of coastal communities in the Caribbean through the promotion of sustainability, adaptation, and community participation.

This initiative is the first of its kind in the Caribbean. "The approach we are using is to help these communities to help themselves and eventually to help one another," says Mr. Tony Deyal, Public Education and Outreach (PEO) Specialist of the MACC Project. "Community representatives know what works best in their communities – we are just here to help them obtain access to the knowledge, tools, and other resources they need to become sustainable."

"Belize's First Communications to the Conference of the Parties of the United Nations Framework Convention on Climate Change, which was presented in 2000, identified the vulnerability of our country and its natural resources based industries to climate change," adds Ms. Diane Wade-Moore, UNDP Environmental Programme Officer. "Belize has since made some strides to buffer these industries from the potential impacts. What the MACC project is proposing will step up national efforts by taking interventions to the base – the communities."

The model created through this workshop will be piloted in six communities in Belize, and then unrolled throughout the Caribbean.

Participants include representatives from environmental NGOs in Belize and Trinidad & Tobago; representatives from coastal industries, in particular the fisheries; government officials; and other interested organisations and individuals.

For more information, please contact:

Ms. Jennifer Tipple, Public Education and Outreach (PEO) Intern
Mainstreaming Adaptation to Climate Change (MACC) Project
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News 5. Full article found at <http://www.channel5belize.com/> in the Archives for February 20, 2006.

ENVIRONMENT

Climate change project to target coastal communities



TONY DEYAL

Climate change: it's a term that for many conjures up images of deserts or snow storms ... not anything we have to worry about right. Well not necessarily. Every day scientists are discovering that the tiny changes occurring in our environment could add up to a dramatic shift in our natural resources and resulting quality of life. Today, local environmentalists and members of Belize's coastal community gathered in the old capital to discuss strategies for survival. News Five's Karla Vernon reports.

Karla Vernon, Reporting

Some came to the coastal community workshop seeking answers to issues such beach erosion, or as in the case of Timothy Flores of Dangriga, what appears to be a mysterious drop in the water table.

Timothy Flores, Gragra Lagoon Conservation Group

"When we go into the Gragra Lagoon National Park, we always go in a canoe. And many times when you are paddling you would touch the mud, now at this time. Before that, you could paddle with ease. So we know that something is happening; the water level is falling."

Karla Vernon

"But you are not sure what?"

Timothy Flores

"We are not sure what."

Timothy Flores

"It's a wetland area, approximately twelve hundred acres of wetlands. And the area is important for Dangriga for more than one reason. One, it is important because it is the general area that excess water in Dangriga Town drains to. The second reason is that it is also an area where fish lay their eggs, the shrimp also lay their eggs in there. And so they are protected there because the roots of the mangrove can protect them from predators."



MAINSTREAMING ADAPTATION TO CLIMATE CHANGE



The Mainstreaming Adaptations to Climate Change, MACC Project, is seeking to work with community groups like the Gragra Lagoon Conservation Group through specially designed projects. The goal is to focus on public education about the bigger issues of global warming and climate change and how they affect things right in front of them: rising sea levels, coral bleaching, droughts, floods and other disasters.

According to public education officer, Tony Deyal, such information is critical to the survival of vulnerable communities.

Tony Deyal, Public Education Officer, MACC Project

"The idea of this workshop is to bring people together; develop an index so that any community, any individual can say "Hey, you know these are the risks, this is why I'm vulnerable to," and get a sense of what the risks are and we will then be able to—we plan to have six pilot communities—work with these communities for them to help themselves. To see if we can mobilise resources, provide some ideas, but essentially, what we are asking them for is what we call sweat equity; put your own resources at your own disposal, work to help yourself."

Candy Gonzalez represents the Belize Institute of Environmental Law and Policy based in San Ignacio. Her organisation networks with international agencies, but also speaks out on local environmental issues.

Candy Gonzalez, BELPO

"I'm attending this workshop because I see a lot of times that people talk about climate change and adapting or changing ways of doing things to climate change, but it never seems to get done. We do reports, we do studies, and we attend workshops but there is no action that comes out of it. And I'm here because I hope that I'll help to be an incentive for action because nothing is really gonna change unless we act upon all of the recommendations and the things that come out of the workshop."

Gonzalez says BELPO is already taking action on a climate change issue. In 2004, it filed a joint petition with Peru and Nepal asking the UNESCO to put the world heritage sites in these countries—in our case the Belize Barrier Reef—on an endangered list. The reason? The damaging effects of climate change.

Candy Gonzalez

"Next month, March, they are having a meeting in Paris to have experts from the three different countries come and try and educate more on how climate change and global warming impact world heritage sites; which we are supposed to be preserving for future generations, that's part of the convention."

Tony Deyal

"We have to get people to see that there are opportunities, benefits, there are risks and vulnerabilities that they have to deal with. And this hopefully is a start in Belize. The next stage is to have in each of the geographical areas, a big meeting of some of the communities, and we'll meet with them, talk with them again. And then, with their help, identify six pilot communities in Belize."

Reporting for News 5, I am Karla Vernon.

The Climate Change Centre in Belmopan is the headquarters for the CARICOM project. The initiative is financed by the Global Environmental Facility and implemented by the World Bank.

Channel 7 News, February 20, 2006. Full article found at <http://www.7newsbelize.com/archive/02200607.html>.

FROM THE CHANNEL 7 NEWS NEWS ARCHIVES Belize & Climate Change

posted (February 20, 2006)



Jennifer Tipple

International climate change experts say that 98 percent of the world's mountain glaciers are melting, and that will push sea levels three feet higher in 100 years. They predict that eventually rising seas will flood the low lands of virtually every country of the world. That's the global reality and locally, representatives of six coastal communities along with other local and regional stakeholders in climate change are in a 2 day workshop discussing the consequences of climate change. It's an attempt to bring the message of climate change into the mainstream and project coordinator Jennifer Tipple explains that they are looking to educate those most at risk.

Jennifer Tipple,

"This workshop like I said is the first step in this entire process so a lot of this workshop is just getting together some of the key people that can make this happen and educating them now. That is what

we're doing here now which is having a few presentation just the general times on climate change and how it affects the country and the Caribbean and so it's a lot of preparations. And from there, we expect these groups to go back and to work with each other to further actually do the action, to enroll the plans that they developed here at this workshop. We want community groups to have supports and resource they need to help themselves. Once they've themselves as communities at risk, we want them to have the resources they need to implement an action plan to become sustainable communities and to encourage this throughout their communities so essentially the communities are helping themselves and each other."

The workshop concludes tomorrow evening.

Find this article at: <http://www.7newsbelize.com/archive/02200607.html>.