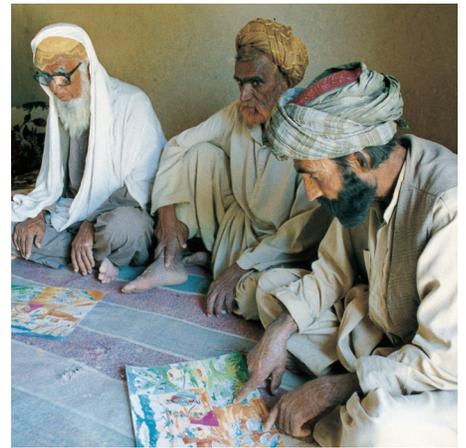




Advancing Adaptation through Communication for Development



**Proceedings of the technical session on Communication
Third International Workshop on Community-Based Adaptation to Climate Change
18-24 February 2009 Dhaka, Bangladesh**

Prepared by
Communication for Sustainable Development Initiative – CSDI
Research and Extension Branch
Office of Knowledge Exchange, Research and Extension





Advancing Adaptation through Communication for Development

**Proceedings of the technical session on Communication
Third International Workshop on Community-Based Adaptation to Climate Change
18-24 February 2009 Dhaka, Bangladesh**

Prepared by
Communication for Sustainable Development Initiative – CSDI
Research and Extension Branch
Office of Knowledge Exchange, Research and Extension

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 2010

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

All rights reserved. Reproduction and dissemination of material in this information product for educational or other non commercial purposes are authorised without any prior written permission from the copyright holders provided the source is fully acknowledged. Reproduction of material in this information product for resale or other commercial purposes is prohibited without written permission from the copyright holders.

For further information about this document please contact:
CSDI@fao.org

© **FAO 2010**

Acknowledgement

The present document has been produced by the Communication for Sustainable Development Initiative (CSDI) in the context of the Third International Workshop on Community-Based Adaptation to Climate Change held in Dhaka, Bangladesh, from 18-24 February 2009.

CSDI would like to acknowledge the International Institute for Environment and Development (IIED), the Bangladesh Centre for Advanced Studies (BCAS) and the RING Alliance of Policy Research Organizations for the opportunity to co-organize a specific session on Communication during the event.

The document has been prepared by Dr. Cleofe S. Torres and Prof. Ma. Stella C. Tirol, under the supervision of Mr Mario Acunzo, FAO CSDI Lead Technical Officer. Special thanks also go to Mr Simone Sala and Ms Marzia Pafumi for their revisions to the text and to Ms Flora Da Silva for the layout.

Table of Contents

Acronyms	vi
List of Tables	vii
List of Figures	vii
Introduction	1
I - The Third International Workshop on CBA	3
II - Advancing Adaptation through Communication for Development	5
1. Seeking Livelihood Adaptation through Communication for Development by Mario Acunzo	5
2. Voices for Climate Change Adaptation in Natural Resource Management: The Need for Communication by Maria Protz	11
3. Communication for Development, Community Knowledge Systems: A Project on Livelihood Adaptation to Climate Change in Bangladesh by Dr. Cleofe S. Torres	17
4. Communication for Technology Adaptation in the Democratic Republic of Congo by Esperance Bayedila	22
5. ComDev in the Caribbean: A Small Island Developing States (SIDS) Perspective on Climate Change by Maria Protz	26
6. Building Capacity in Communication and ICT Applications for Community-Based Adaptation by Simone Sala	33
7. Building Capacity in ComDev for CBA through CSDI by Federica Matteoli	36
III - Conclusions and Way Forward	41
Highlights and recommendations	41
Towards a global partnership on ComDev for CBA	43
About the Panelists	45

Acronyms

CARIMAC	Caribbean Institute of Media and Communication
CBA	Community-Based Adaptation
CC	Climate Change
CCA	Climate Change Adaptation
CCCD	Caribbean Centre for Communication for Development
CDMP	Comprehensive Disaster Management Program
C/FFS	Climate/Farmer Field School
CFS	Climate Field School
CI	Communication Initiative
COL	Commonwealth of Learning
ComDev	Communication for Development
COP	Conferences of Parties
CSDI	Communication for Sustainable Development Initiative
DAE	Department of Agricultural Extension
DFID	Department for International Development
DRC	Democratic Republic of Congo
DRM	Disaster Risk Management
EC	European Commission
FAO	Food and Agriculture Organization
FFS	Farmer Field School
FGD	Focus Group Discussion
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
ICT	Information and Communication Technology
ICT4Dev	Information and Communication Technologies for Development
IPCC	Intergovernmental Panel on Climate Change
IPM	Integrated Pest Management
IT	Information Technology
LACC	Livelihood Adaptation to Climate Change
MoA	Ministry of Agriculture
NARES	National Agricultural Research and Extension Systems
NGOs	Non-Government Organizations
NID	Networked Intelligence for Development
NRM	Natural Resource Management
PRCA	Participatory Rural Communication Appraisal
PMC	Population Media Centre
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
REAFOR	Rehabilitation Programme of the National Agricultural and Forestry Research System of the Democratic Republic of Congo
SAAOs	Sub-Assistant Agricultural Officers
SIDS	Small Island Developing States
SMS	Short Message Sending
UNESCO	United Nations Educational, Scientific and Cultural Organization

List of Tables

No.	Title	Page
1	Impact of hurricanes on the agricultural sector in Jamaica	27

List of Figures

No.	Title	Page
1	Knowledge interface where climate change adaptation is possible	13
2	Knowledge interface expanded through ComDev	13
3	Knowledge interface when ComDev is fully active	14
4	ICT application domain for climate change adaptation	33
5	Elements and processes of ICT application to climate change adaptation	34
6	Framing the application of ICTs for CBA within the ComDev domain	35
7	Three main components of the CSDI project	39

Introduction

Documented experiences and lessons in the field indicate that community-based adaptation (CBA) yields far more encouraging results than any other approaches. CBA to climate change involves multistakeholder action, innovation and social learning. Usually, it involves small-scale, low-cost and simple technologies made possible by whatever resources local communities have.

People empowerment, both as a means and as an end, is at the heart of CBA. It emphasises the need to build local capacity and begins with the identification of adaptation practices by the affected communities themselves. This is done through the use of participatory learning methodologies that link sound local knowledge with scientific knowledge, as well as with rural services: a process that is most appropriately facilitated by Communication for Development (ComDev).

ComDev is central to the CBA approach to climate change. It combines participatory communication methods and processes with a variety of media and tools ranging from rural radio to information and communication technologies (ICTs). In the context of community-based adaptation to climate change, ComDev involves the systematic design and use of participatory communication processes, strategies and media to share knowledge and information among all stakeholders in a particular agro-ecological context. It aims to enhance people's resilience and capacity to cope through diverse livelihood options.

The Food and Agriculture Organization of the United Nations (FAO), through the Communication for Sustainable Development Initiative (CSDI), has consolidated a framework on ComDev as a CBA approach to climate change. To enrich ComDev for CBA as a technical field and discipline, FAO-CSDI has piloted programs and projects on communication strategies and services. These programmes and projects are being implemented in the rural areas of the Democratic Republic of Congo, Jamaica (as a focal point for the Caribbean region), Bangladesh and Bolivia.

The CSDI project strategy is three-fold, including: a) normative activities; b) field components; c) networking and partnerships. Within this framework, CSDI chose the Third International Workshop on Community-Based Adaptation to Climate Change, held in Bangladesh in February 2009, as the venue for mainstreaming ComDev into the international climate change adaptation agenda. It was decided, together with the workshop organizers, that a special session on "Advancing Adaptation through Communication for Development" would be held during the event.

During the technical session, CSDI specialists shared the experiences they were documenting in their countries and discussed findings on good practices in the use of ComDev for CBA. The main purpose of this session was to assess and fully illustrate the role of ComDev in expanding the scope for stakeholders' participation, dialogue and decision-making and to draw up a common framework on communication for CBA.

Lessons learned from the analysis of ongoing efforts indicated that the ComDev approach in CBA to climate change can facilitate participatory research and horizontal knowledge sharing; improve the quality of advisory services for technology innovation; enhance adaptation processes and disaster risk management; bridge the gap between

global environment information and local communities' knowledge, and strengthen policy dialogue between institutions and small farmers.

The words of one participant best captured the essence of the session:

“People live the impact of climate change hence they need knowledge and communication to better cope with it”.

I - The Third International Workshop on CBA

The Third International Workshop on Community-Based Adaptation to Climate Change was organized jointly by the International Institute for Environment and Development (IIED), the Bangladesh Centre for Advanced Studies (BCAS) and the RING Alliance of Policy Research Organizations. The workshop was held in Bangladesh, from 18 to 24 February 2009, starting with three days of field visits to observe community-based adaptation initiatives led by local organizations. After the field visits, three days of discussions were conducted in Dhaka, bringing together almost 150 participants from a variety of governmental and non-governmental organizations, research institutions, UN agencies and development organizations, with the ultimate goal of sharing and disseminating knowledge on community-based adaptation planning and practices.

One of the technical sessions of the workshop was fully devoted to the discussion of ComDev for CBA to climate change. Participants highlighted CBA as a social learning process involving multistakeholder action that, in turn, requires improved knowledge sharing. This technical session addressed the particular need for communication and improved knowledge sharing, which was also recognized during previous sessions, and proposed to mainstream communication within the CBA approach.

The next section of this document examines seven contributions on ComDev for CBA presented at the technical session, namely:

1. Seeking Livelihood Adaptation through Communication for Development
(presented by Mario Acunzo)
2. Voices for Climate Change Adaptation in Natural Resources Management:
The Need for Communication
(presented by Maria Protz)
3. Communication for Development, Community Knowledge Systems: A
Project on Livelihood Adaptation to Climate Change in Bangladesh
(presented by Cleofe S. Torres)
4. Communication for Technology Adaptation in the Democratic Republic
of Congo
(presented by Esperance Bayedila)
5. ComDev in the Caribbean: A Small Island Developing States (SIDS)
Perspective on Climate Change
(presented by Maria Protz)
6. Building Capacity in Communication and ICT Applications for Community-
Based Adaptation
(presented by Simone Sala)
7. Building Capacity in ComDev for CBA through CSDI
(presented by Federica Matteoli)

II - Advancing Adaptation Through Communication for Development

1. Seeking Livelihood Adaptation through Communication for Development

by Mario Acunzo, Communication for Development Officer at the UN Food and Agriculture Organization (FAO)

Knowledge and Communication: Assets in Community-Based Adaptation

It is generally agreed that the most vulnerable regions and communities are those that are highly exposed to hazardous climate change and who have limited adaptive capacity. These usually include countries with low levels of technology, poor information systems and weak rural knowledge institutions. Oftentimes, they also have little capacity to conduct scientific investigation, assess risks and develop and disseminate useful adaptation strategies and practices.

Climate change implies new challenges for research and technology development as well as knowledge and information exchange. It brings with it the need to identify suitable adaptation options in response to food crises. Despite the obstacles, there are human and institutional capacities which enable those involved to investigate vulnerabilities and adaptation options and effectively communicate them to the farming communities and the public at large in some developing countries. While limited at present, these capacities in research, extension and communication applied to climate change should become strategic assets for enhancing adaptive capacity. These assets can then be tapped to improve food production systems and natural resource management and thereby lessen vulnerability to climate change and food crises among the developing nations. Enhancing rural knowledge institutions to adequately generate knowledge and information related to these new challenges, and then share this with the affected people is, therefore, a strategic path for reducing vulnerability to climate change.

Community-based adaptation to climate change involves a process of socio-institutional learning that calls for various uses of information and knowledge, at various levels, by a variety of stakeholders. Adaptation strategies in many cases require support for decision-making and capacity building efforts through social learning processes. For example, successful local adaptation to climate variability and change requires multiple pathways with well planned, interrelated, short- and long-term measures, most of which are considered “knowledge intensive.” They include:

- a. adopting physical adaptive measures (e.g. storage facilities for retaining rain water);
- b. improving existing agricultural practices (e.g. adjustment of cropping patterns, selection of drought-tolerant crop varieties);
- c. adjusting socio-economic activities such as livelihood diversification and market facilitation;
- d. strengthening local institutions through self-help programmes and capacity building;

- e. creating awareness of and advocacy for climate change and adaptation issues;
- f. strengthening linkages between research, extension and farmers; and
- g. providing access to adequate knowledge and communication services.

Within this framework, capacity building efforts are essential to enable knowledge institutions to assist small farmers in confronting the new challenges of climate change adaptation. But selecting among livelihood options for different agro-ecological and farming systems often stretches the “adaptive-response” capabilities of research institutions, extension services and producer organizations. Hence, local adaptation practices should involve communities through communication and dialogue. These adaptation practices should also include working with the farmers to test technologies and livelihood options, generate sound economic and marketing practices and disseminate knowledge. This requires the use of a range of extension and communication methods such as demonstrations, orientation meetings, field days, workshops and farmer field schools.

A holistic approach to rural knowledge institutions should likewise be promoted to enable local communities to deal with issues related to climate change in a coherent and integrated manner. The approach also implies the integration of local knowledge with scientific know-how, the active involvement of community leaders and key stakeholders in decision-making as well as capacity building efforts on communication approaches and methods applied to climate change. Communication aspects can very well include the use of the new information and communication technologies (ICTs).

Communication: A Key to Community-Based Adaptation

Within the context of social learning for adaptive livelihoods, communication plays a key role. Communication for Development or ComDev is a participatory approach that integrates the use of communication strategies, media and processes to enable people and institutions to share knowledge and information and reach consensus towards common action. As promoted by FAO and other development agencies, ComDev combines participatory communication methods and processes with a variety of media and tools ranging from rural radio to ICTs. Its strategies focus on responding to knowledge and information needs of rural audiences, including both rural knowledge institutions and vulnerable groups.

A community-based adaptation approach to climate change requires a multidisciplinary, multistakeholder action and process of social learning for adaptive livelihoods. Within this framework, communication plays a key role in addressing the complex dimensions of vulnerability. As such, communication must be taken into account in the early part of the intervention. This calls for a holistic approach based on two-way communication processes integrating the use of various media according to the characteristics and needs of the audience with regard to climate change.

Communication Approach to Livelihood Adaptation

In the context of community-based adaptation to climate change, ComDev involves the systematic design and use of participatory communication processes, strategies and media to share knowledge and information among all stakeholders in a particular agro-ecological context. It aims to enhance people's resilience and capacity to cope through varied livelihood options. ComDev initiatives answer to a series of key functions related to climate change such as:

- a. assess and agree on needs and priorities;
- b. improve negotiation and coordination;
- c. support good governance;
- d. share knowledge and information; and
- e. foster multistakeholder dialogue and action.

ComDev methods facilitate the definition of priorities and content based on the needs of the local audience through a participatory and iterative process, as follows:

- a. situation/problem assessment;
- b. participatory rural communication appraisal;
- c. participatory communication strategy and message design;
- d. development of communication materials;
- e. implementation and monitoring of strategic, targeted communication interventions; and
- f. evaluation of outcomes/impacts in terms of changes in attitudes, knowledge level and practices.

Based on the experiences of several field projects, the main areas related to climate change that need communication support are those listed below:

- technology innovation/adaptation
- sustainable NRM
- disaster risk management
- livelihood options for adaptation
- environmental/local governance

Role of ComDev in Community-Based Adaptation

The increasing role of rural knowledge institutions and their need to incorporate the application of ComDev strategies and ICTs to deal with community-based adaptation to climate change are becoming evident. New opportunities to strengthen rural communities through knowledge and information are provided by the use of participatory ComDev approaches that comprise the use of the new ICTs. Nevertheless, there is still a need to conceptualize the role of these strategies and proceed to develop a strategic framework for enhancing their application to community-based adaptation to climate change. One

of the main activities that must be carried-out in this regard is to assess how knowledge institutions address climate change in their work with rural communities and how they can be strengthened, in terms of their human and methodological capacity, to cope with issues that include, among others:

- a. facilitating participatory research and horizontal knowledge sharing;
- b. improving the quality of advisory services for technology innovation;
- c. enhancing adaptation processes and disaster risk management;
- d. bridging the gap between global environment information and local communities' knowledge; and
- e. strengthening policy dialogue between institutions and small farmers.

It has become evident that the systematic use of ComDev approaches and ICT applications in CBA is strategic in coping with climate change. Within this context, fundamental ComDev criteria apply also to community-based adaptation to climate change, as follows:

- a. start by assessing people's knowledge, perspectives and expectations;
- b. build on existing communication systems;
- c. ensure equitable access;
- d. promote local content;
- e. use realistic technologies;
- f. ensure financial sustainability; and
- g. build local capacities.

Nevertheless, one of the main priorities in this area is to identify best options and a strategic framework for strengthening rural knowledge institutions (research, extension, education) and communication systems in their capacity to address the new challenges related to climate change. Special attention should also be given to the development and validation of appropriate communication strategies to climate change at the field level.

The Communication for Sustainable Development Initiative

FAO pioneered the launching of the first global programme focused on the application of ComDev strategies and tools for climate change and sustainable natural resource management through the Communication for Sustainable Development Initiative or CSDI. Through CSDI, FAO is documenting and sharing good practices on the use of ComDev in climate change adaptation. It is piloting ComDev strategies and services in the rural areas of Congo, Jamaica, Bangladesh and Latin America. These services will later be scaled-up and institutionalized as part of the national research and extension system of the countries involved.

Another strategic initiative to advance ComDev services and build capacities is the implementation of regional communication platforms. The positive results of this initiative demonstrate that sharing knowledge on good practices among peers fosters horizontal collaboration, capacity building and networking. CSDI also advocates the need for adequate institutional and financial support to achieve equitable access to knowledge and information on climate change issues, while reaffirming the right of the rural population to access communication services.

Lessons Learned

Based on the experience and knowledge generated concerning the application of ComDev in community-based adaptation to climate change in many parts of the world, the lessons listed below are worth noting.

- a. focus on social processes rather than on media;
- b. build on existing knowledge and communication systems;
- c. ensure equitable access to knowledge and information;
- d. promote local content;
- e. use appropriate technologies;
- f. ensure financial sustainability; and
- g. enhance local communication capacities;

Way Forward

As ComDev establishes its niche in community-based adaptation to climate change through livelihood intervention, it is recommended that a number of efforts be undertaken to make it sustainable.

a. Integrate ComDev approaches and strategies in community-based adaptation

A deliberate effort to integrate ComDev in community-based adaptation is the first step. As in any strategic effort, this entails planning to ensure that communication becomes a constitutive part of the adaptation process at the very beginning. The iterative and participatory process for achieving this has been discussed earlier.

b. Document best practices and showcase results

Pockets of successful cases illustrating how ComDev helps provide added value to community-based processes of livelihood adaptation to climate change are certainly available from many institutions all over the world. Practitioners don't need to reinvent the wheel. However, these cases have to be properly documented and eventually shared with others to maximize their educational value. ICTs can help considerably in this respect.

c. Assess options for new ComDev services for Community-Based Adaptation

As adaptation strategies of local communities evolve in response to the level of climate change occurrences and impact, it will be necessary to assess where ComDev practices can appropriately fit. Such assessment should take into account varied local contexts and identify opportunities for adequately appropriating ICTs.

d. Build capacities in ComDev

ComDev in the context of community-based adaptation entails additional knowledge and skills in communication planning and in the appropriate use of methods and tools, including ICTs. Hence, a program for strengthening ComDev capacities should be put in place and be made accessible at the national, regional and global levels.

e. Support communities of practices and partnerships

Climate change and adaptation to its impacts are global phenomena. Thus, as varied experiences and lessons are generated all over the world, the need for knowledge sharing and partnership becomes an ever more significant part of a set of solutions for addressing adaptation. The current revolution in ICTs also provides new opportunities to share experiences in the application of ComDev to livelihood adaptation to climate change, and to move towards collaborative change.

2. Voices for Climate Change Adaptation in Natural Resource Management: The Need for Communication

by Maria Protz, Senior Associate at the Caribbean Centre of Communication for Development, University of the West Indies

Introduction

To fully appreciate the need for Communication for Development in the context of community-based adaptation for climate change, it is useful to consider first some of the many questions and issues raised about it. How do we best communicate what technologies work for community-based adaptation? How can we better link local, farming knowledge with scientific knowledge? How can community-level conflict resulting from climate change be better managed? How can we bridge the gap between the limit of what communities can do on their own and what government and other services need to do?

It is recognized that the need for climate change adaptation is urgent. But longer-term approaches are also needed as there is no “quick fix” for climate change. There is also a need to see climate change adaptation within the context of social change and sustainable development in the broad sense. It is further recognized that a wealth of community-based experience already exists out there with sound methodologies and tools from community natural resource management, forestry management, protected area management, coastal zone management and integrated rural development. There is really no need to reinvent the wheel. The challenge lies in drawing from existing best practices and leveraging resources and experiences.

A plea has been voiced for urgent communication messages through the use of billboards, public service announcements and comprehensive public awareness campaigns. Other recommendations include the need to experiment with participatory video and drama as a way to perhaps reach and engage community groups more effectively. Others suggested that sustainable climate change initiatives need to be built on a foundation of Action Research, Action Learning and Participatory Rural Appraisal or PRA (using Venn diagrams, transects, community mapping, etc.) for problem analysis, prioritization and problem solving with communities.

All of these indicate that certainly a lot of work is being done. And it is precisely these same questions, issues, activities and junctures with which ComDev is concerned and where its own area of expertise has been focused over the past 30-40 years. More importantly, it is with regard to these same issues that ComDev can bring significant value added to community-based adaptation processes.

What ComDev Is, What it Is Not

With climate change being such a pressing issue and many communities truly needing to adapt to it NOW, not later, it is important to understand what ComDev is and what it is not.

First, ComDev is not just a matter of getting the message right or of mounting public awareness campaigns, although public awareness is crucial. Second, ComDev is not only technology transfer or diffusion of innovations, although the development of appropriate technologies and practices is central. ComDev is not a one-way, top-down transfer of information. Information alone does not solve problems. In fact, years of communication research and evidence show that message-based approaches almost always achieve limited results.

Third, ComDev is not just engaged in “persuasion” or “social marketing” efforts that promote the adoption of new behaviour, even though certain social marketing principles can be useful in the community-based adaptation process. Rather, ComDev is a discipline in its own right. It supports a process that is at the very heart of ensuring that all of the stakeholders and relevant areas of expertise are included in climate change adaptation efforts. In employing PRA and social learning, ComDev is similar to other participatory approaches except that it also employs a variety of media tools and techniques. These are meant not only to capture and document CBA possibilities, but to facilitate the production of localized messages that can further deepen and authenticate community-based adaptation options. Somehow, all of these voices must be brought into the adaptation process, and how this happens will vary depending on local specificities.

Whose Voices Count in ComDev for Community-Based Adaptation?

When we examine who the key stakeholders are in the community-based adaptation process and whose voices must be counted, we see that the list includes several critical entities including most vulnerable communities, groups and households; rural knowledge institutions and technical services (e.g. extension services, research organizations); scientific researchers, policy makers and government; NGOs and other local stakeholders.

What Areas of Knowledge can ComDev Support?

In looking at these voices more closely, we further see that community-based adaptation requires an appreciation of many different types of knowledge domains and areas of technical expertise. All of these in turn need to be acknowledged and need to play a role. Although not exhaustive or conclusive, this list of expertise includes:

- a. technology innovation sector;
- b. sustainable NRM practitioners;
- c. disaster risk management and preparedness expertise;
- d. sustainable livelihood assessment workers;
- e. indigenous knowledge (including gender-differentiated knowledge);
- f. environmental/local governance expertise; and
- g. scientific knowledge on climate change and NRM.

The problem is that each of these areas of expertise is often quite busy working to address adaptation from its own perspective and they do not necessarily communicate

or work with one another effectively. Without ComDev, the connection among the different knowledge areas needed for community-based adaptation would remain unclear, disorganized or too technical. As a result, viable adaptation options would be much harder to identify, confirm and sustain. All the parties may not even be aware that miscommunication is taking place.

To better understand how these dynamics occur, it is useful to illustrate what occurs when no ComDev is employed and then what can happen when ComDev is used properly.

Figure 1 illustrates the usual areas among these different knowledge domains and areas of expertise that are most commonly involved in the community-based adaptation process and shows just how limited this overlap area is in reality.

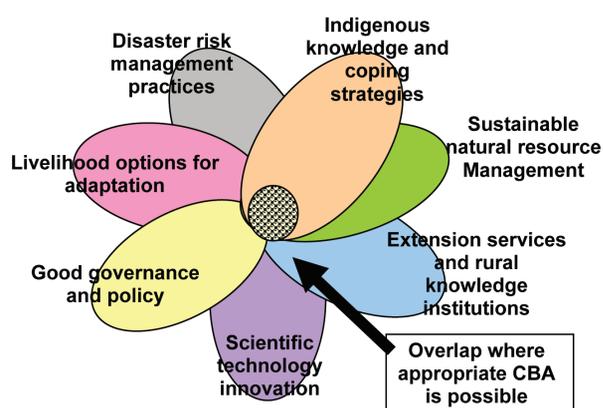


Figure 1. Knowledge interface where climate change adaptation is possible

The highlighted area in **Figure 2** illustrates how the scope for knowledge sharing is enlarged and deepened with an explicit and strategic ComDev approach that brings value added to these processes.

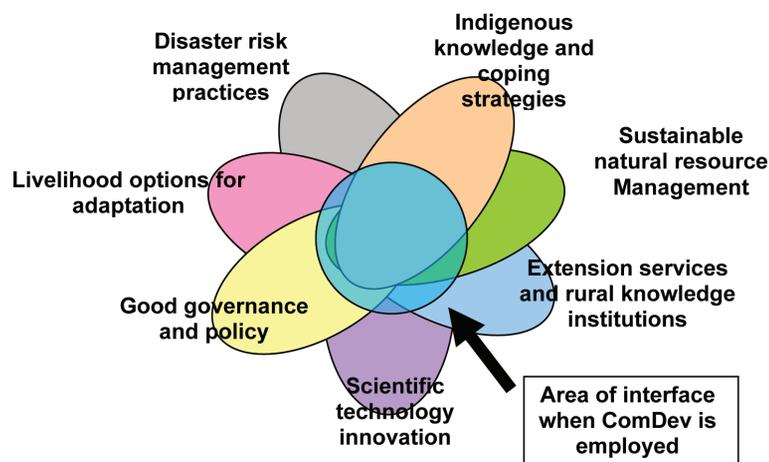


Figure 2. Knowledge interface expanded through ComDev

Lastly, it must also be acknowledged that the interaction among the various knowledge domains is not a static process, but is dynamic and can sometimes be confrontational. With ComDev, this dynamism can be better facilitated and encouraged as shown in **Figure 3**.

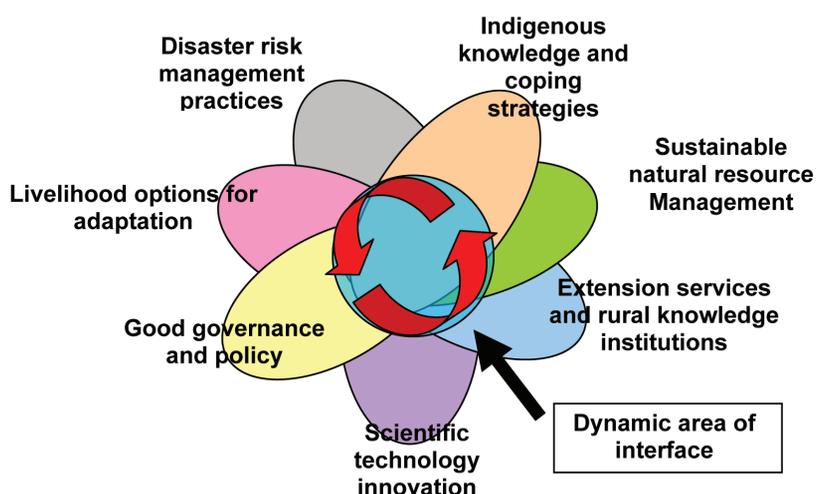


Figure 3. Knowledge interface when ComDev is fully active

Value Added of ComDev to Community-Based Adaptation

Now that the role of ComDev has been located as being within the very heart of the sustainable community-based adaptation technology generation process, we can now ask exactly how it works, what exactly it does and what type of specific value added ComDev can bring to the community-based adaptation process. By widening the scope for exchange, ComDev can make it easier to identify a wider range of possible adaptation options and technologies. It can enhance sharing and integration of all the knowledge needed for CBA. It also helps improve the quality of advisory services for technology innovation and strengthens linkages among agencies and stakeholders.

Given the fact that climate change adaptation will involve negotiation of scarce resources, ComDev can greatly help flag and bring to light potential areas of conflict that will require further resources/steps to address. It can foster multi-stakeholder dialogue, negotiation, decision-making and action in advance of potential conflicts and through conflict resolution. ComDev approaches can also greatly enhance adaptation processes and disaster risk management and can strengthen policy dialogue between institutions and small farmers. Through all this, ComDev can enhance participation, ownership and buy-in, all of which are necessary to encourage sustainability and action.

Guiding Principles of ComDev

The ComDev approach is further guided by some very specific principles. As a process, it always starts with peoples' existing local knowledge, local practices, perspectives and expectations, but uses media formats to help document these dimensions. A second principle is that it ensures equitable access to communication processes and gives priority to vulnerable groups whose voices may not always be heard.

Another ComDev principle is the need to build on existing communication systems and

to strengthen existing communication capacities and resources that will lead to long-term sustainability. In this respect, it always seeks to promote and use local content, skills and talent and aims to deepen the skills that local human resources can provide.

Likewise, additional media technologies are encouraged if they are deemed essential and appropriate for ensuring desired goals and objectives. ComDev is also guided by the principle of financial sustainability. That is, it seeks to leverage resources through partnerships and collaboration.

Overall, the ComDev approach is guided by the premise that strategic and participatory communication planning is needed not only to ensure targeted message design and public awareness, but to sharpen the very identification of community-based adaptation options that are likely to be appropriate and sustainable. It also helps to enhance buy-in ownership, foster participatory monitoring and evaluation and work towards measurable outcomes and impacts that will make a difference in the lives of the stakeholders involved.

When is ComDev Used in the Community-Based Adaptation Process?

How exactly does ComDev do this? The value added that ComDev can provide is also better appreciated when seen as an essential component throughout the entire CBA process. This means that it is critical to employ ComDev at specific junctures or moments in the community-based technology generation process such as in:

- a. situation analysis or problem identification;
- b. observation, documentation of indigenous techniques and livelihood survival options; validation of scientific and indigenous knowledge;
- c. prioritization of livelihood adaptation options (pros and cons);
- d. communication of information to vulnerable groups in order to make sound decisions; development of participatory communication strategies and message design to support community-based adaptation activities and interventions;
- e. implementation and monitoring of strategic, targeted communication interventions to support community-based adaptation choices; and
- f. evaluation of outcomes/impacts in terms of changes in attitudes, knowledge level and practices.

What Media does ComDev Employ?

Throughout these phases in the community-based adaptation process, ComDev can employ a range of media including ICTs and traditional media such as:

- a. rural and community radio;
- b. edutainment, drama and community theatre;

- c.** print media (cartoons, booklets, newsletters, brochures, flyers, fact sheets);
- d.** public service announcements;
- e.** internet and ICTs (You Tube, mobile phone text messages);
- f.** community television;
- g.** DVDs and CD-ROMs; and
- h.** face-to-face interpersonal communication such as farmer field days and extension visits.

And for each of these, ComDev offers a wealth of experience with regard to their specific pros and cons, advantages and disadvantages and expertise in how to use such media effectively, efficiently, strategically and in ways that will bring measurable results.

3. Communication for Development, Community Knowledge Systems: A Project on Livelihood Adaptation to Climate Change in Bangladesh

by Cleofe S. Torres, Professor and Dean at the College of Development Communication, University of the Philippines Los Baños

Project Background

The Livelihood Adaptation to Climate Change (LACC) project is a subcomponent of the Comprehensive Disaster Management Program (CDMP) being funded by the United Nations Development Programme (UNDP), the Department for International Development (DFID), and the European Commission (EC). It aims to improve the adaptive capacity to climate change for sustainable livelihoods in the agriculture sector among farmers in drought-prone and saline coastal areas of Bangladesh. It is implemented by the Department of Agricultural Extension (DAE) of the Ministry of Agriculture (MoA) with technical support from FAO.

LACC covers 10 pilot sites, four of which are located in the northwestern drought-prone areas and six others in the highly saline coastal areas in the southwestern region of Bangladesh.

Adaptation and Communication

Adaptation is a human behaviour that depends largely on one's knowledge. What one does to adapt is to a large extent a manifestation of what one has learned about phenomenon such as climate change. Hence, adaptation starts with awareness; but it should not end there. Awareness does not ensure that one is knowledgeable about the topic. People might have seen and heard about climate change but they may not necessarily know about nor have an in-depth understanding of the processes behind the event. To move people from awareness towards better understanding, and eventually to gaining the knowledge that is necessary to make the right decisions or take adaptation actions, we need ComDev as the enabling process or mechanism.

The LACC project demonstrates how ComDev may be deliberately applied to promote the proper blending of local knowledge systems with the scientific knowledge, without creating too much disturbance in the social system. In the context of the time-tested Farmer Field School (FFS), LACC beautifully integrates the development of long-term livelihood options that enable local communities to effectively adapt to adverse impacts of climate change.

Added Value of ComDev in Climate/Farmer Field School

a. Facilitates experiential learning

The Climate/Farmer Field School (C/FFS) is basically patterned after the

typical FFS. The latter is a discovery-based learning process developed particularly for the Integrated Pest Management (IPM) program in rice farming. At the heart of the C/FFS is the experiential learning process or “learning-by-doing” approach. Here, the farmers as a group undergo a cyclical process of getting exposed to an “experience” (actual or simulated) which they observe and reflect upon (analysis), derive lessons and principles from and then plan for actual application of such lessons and principles to immediate or future problems. ComDev is the facilitating process within this learning process.

b. Transforms short-term adaptation behaviour to long-term ones

C/FFS is designed to train the farmers towards more effective adaptation. Lessons are structured to enable them to read and understand climate information and data so that they can better plan their farming activities. Eventually, the series of C/FFS sessions on weather, climate variability, climate risks and impacts, mitigation, adaptation, early warning and other climate-related topics can help bring about the transformation of their short-term adaptation behaviour into longer-term behaviour.

c. Merges local knowledge with scientific knowledge

As practiced in the LACC project, local adaptation options are identified by the farmers. The project field monitoring officers and/or the Sub-Assistant Agricultural Officers (SAAOs) facilitate the process. The identified adaptation option (e.g. homestead garden, improved stove, potato farming, etc.) is then piloted voluntarily on the farmers’ lots with the guidance of the project field officer and/or SAAOs. During piloting, the farmers keep track of key information (such as seed, fertilizer, amount of water, etc.) and this is discussed and analyzed by them and the project field officer and/or SAAOs. Scientific guidelines and prescriptions sourced by SAAOs from allied research institutions are then infused with the farmers’ data and observations to enable them to see the performance of the crops with the application of this additional knowledge.

Hence, an overlap between the local and scientific knowledge is created and this then evolves as “enhanced local knowledge.” During the pilot testing, the upazila agricultural office (similar to a town level office) also provides inputs such as a venue for meetings, seeds, fertilizers and technical advice. This guided testing process of various adaptation options then leads to a menu of viable adaptation practices that are suitable to local conditions, sustainable and eco-friendly, economically feasible, socio-culturally acceptable and are easily integrated with local community development.

d. Facilitates and strengthens participation

As farm problems and possible solutions are discussed in the C/FFS, farmers see the need to discuss and learn together even beyond the C/FFS walls. In Nachole, Bangladesh for example, farmers shared that C/FFS has enabled them to appreciate the value of consulting with one another. Whereas before,

they were used to do just doing their own thing and keeping their problems only to themselves, now they see each other more often, even informally, to discuss matters of common concern.

e. Generates more proactive stance

Farmers in Nazirpur, Bangladesh have become more proactive seekers rather than passive receivers of information. Acting on their own initiative, they request more information from the upazila agriculture office about compost preparation and inquire where services on this may be sought. Similarly, they exert efforts to acquire additional information on how dried water hyacinth can be used more effectively as potato mulch.

f. Integrates ICTs as tools for better learning

Use of low-cost ICTs such as flipcharts made of locally-made cloth, framed photos and illustrated charts made of styrofoam contributes to better understanding of concepts and processes. For example, the host-parasite relationship at various stages of plant growth cannot be seen at one time in the farmer's field. So these stages are shown instead by simple and locally-made illustrated charts. Similarly, climatic variability can be explained more vividly through simple timelines and charts.

High-end ICTs such as photo and video cameras and mobile phones can be eventually integrated into the learning process. Farmers can be empowered to use cameras to shoot diseased plants and other problematic issues on their farms and then bring the shots to the school for discussion and analysis. These can add variety to the learning process and help lessen "learning fatigue". Short message sending or SMS through mobile phones would enable farmers to also share immediate concerns for which they need assistance with the project field officer/SAAOs and thus extend the learning opportunities beyond the usual school and class hours.

g. Promotes messages about climate change through folk media

ComDev promotes messages about climate change through the use of folk media such as folk songs and drama. Local knowledge is usually embedded in these cultural media. In Nachole and Bhandaria, Bangladesh, folk songs like gambhira and jarikan take on new lyrics incorporating climate change and adaptation messages and are sung during community gatherings or field days. They not only serve as media for climate change messages. An added dimension is the symbolism attached to them as expressions of social inclusion and participation among the local folks.

Features of ComDev Approach in C/FFS

a. Starts from local knowledge

The ComDev perspective is to start with local knowledge and build upon it through the participation of farmers and the local community in the process. It is planned deliberately so as not to alienate the locals by bringing in new concepts or practices all at once. ComDev participatory approaches have a way of weaving additional scientific knowledge into what the local people already know. The process of piloting the adaptation options discussed earlier demonstrates how this is done.

b. Decentralized but coordinated and guided

While experiential learning and pilot testing in C/FFS are decentralized to where the farmers are, the processes are systematically coordinated through the guidance and facilitation of the project field officers and SAAOs. This is to ensure that learning is focused and leads to the accomplishment of desired objectives.

c. Enables farmers to make evidence-based decisions

ComDev can deepen the process of learning-by-doing in C/FFS by engaging the farmers in analyzing the data they themselves observe in the field and integrating the scientific basis for such observations with the help of the project field officer, as facilitator. Based on this, farmers then make informed decisions on the steps they have to take to address the problems observed on their farms.

d. Focuses on collective learning

For risk-related phenomenon like climate change, the impacts of which are community-wide, decisions for adaptation need to take into account the entire community and not just the context of the individual. ComDev, as applied in the C/FFS, facilitates dialogue and group discussions that hopefully bring about collective learning among farmers.

e. Uses variety of communication methods and tools

ComDev uses a variety of appropriate communication methods and tools to enrich learning. In addition to the technical content, methods like group dynamics, team building, games and group exercises are used together with flip charts, specimens and photos, among others, to enrich the learning process.

Lessons Learned

The use of ComDev in C/FFS as shown in the experience of LACC project generates the lessons listed below.

a. Planned use of ComDev enhances collective learning. The benefits of ComDev as a constitutive aspect of any learning process can only be maximized and made more effective if it is planned at the very start. Hence, strategic ComDev planning is a must for its full integration in C/FFS.

b. Use and benefits of ICTs can provide new and better learning experiences in a local setting as well as help capture and record local knowledge. Photo and video cameras and audio recorders are communication tools that can be used to capture the local knowledge which otherwise would remain only in the farmers' heads. Learning exchanges in C/FFS, folk songs and dramas can be documented and written so that they form part of the repositories of local knowledge which the local community can access, store, control and use for sharing with others and for future learning activities.

c. More than the technology content, C/FFS enables the farmers to engage in critical and analytical thinking thus preparing them to make more informed decisions. The learning process itself, in addition to the learning content, is a mechanism for capacity building of farmers towards empowerment.

d. Validation of local adaptation practices by the farmers themselves with the merging of local and scientific knowledge yields long-term adaptation options. This makes knowledge bloom and grow within the local knowledge system itself.

4. Communication for Technology Adaptation in Democratic Republic of Congo

by Esperance Bayedila, Associate Professor at the Institute Facultaire des Sciences de l'Information et de la Communication (IFASIC)

Climate Change Impacts in Congo

For some time, a number of changes in climatic patterns have been observed in various parts of Congo. The average annual temperature has increased by nearly 0.5 °C. This increase in average temperature affects the rate of precipitation and could have positive and negative effects on crops.

The climatic parameters, particularly in the province of Bas Congo, have been experiencing notable disruption. In 1978, drought prevailed throughout the province. This caused damage to the tree growth of coastal forests in the western part of the country. Since then, precipitation has never returned to its normal level. In recent years, other important changes have been noted such as changes in the rhythm of the seasons and in annual rainfall.

During years of heavy rainfall, flooding caused destruction to crops. In the Territory of Mbanza Ngungu, the total rainfall exceeded 2000 mm in 2003. This high rainfall, especially during the months of November and December, caused immense flooding that destroyed the crops. The swamping of soils resulted in tuberous root rot of cassava and sweet potatoes and eventually led to poor crop development due to lack of oxygen in the soil.

Climate change also greatly disrupts the growing cycles of crops. In the province of Bas Congo, there are three different cropping seasons. The first, so called season A, lasts from September 15 to January 15; the second season, or season B, from February 15 to May 15 and the last season, or season C, is the dry season covering the period between May 15 and September 15. The duration of these seasons has already shifted due to climate change.

In recent years, season A tends to start during the second half of October already, a reduction of almost a month from its previous course. Meanwhile, during season B, rain stops in April which corresponds to a reduction of 15 to 30 days from its previous pattern. Each year, season B has become shorter. In some parts of Bas Congo, the month of April is completely dry. Season C has become a little longer than usual. It runs from late April to mid-October and now covers about a period of 5–6 months.

The climatic disturbances have great impact on the performance of crops and some cultivars. In several parts of the province of Bas Congo, crops like rice, maize and groundnuts have been abandoned during season B. This is due to the uncertainty of having a good harvest due to erratic rainfall and the reduction of the rainy period which results in a significant reduction in yields. This further causes a reduction in food availability and household income.

The bean crop, usually planted during the dry season in certain areas of Bas Congo, is now adversely affected by climate change. Early drought, which is now frequent, has

reduced water availability in recent years thus reducing the yields. The late cultivars, known to be the most productive, are being phased out because they are at risk following the reduction in duration of the various seasons.

However, the effects of climate change could be also positive. In fact, the increase or reduction of the annual rainfall promotes the use of new crops. For example, in the Territory Mbanza Ngungu, which in recent years has seen an increase in precipitation, the cultivation of taro is experiencing rapid growth. This crop, which used to be more present in the coastal area of Bas Congo, has now become popular in the Territory of Mbanza Ngungu due to the increasing amount of rainfall.

Climate change can also lead to the appearance of new crop pests and diseases. The cassava brown streak, which is known to be a disease in zones with high humidity and high temperatures along the coast of the Indian Ocean, has now become a notable disease in the province of Bas Congo. In fact, some areas of Bas Congo have currently been experiencing a similar increase in rainfall.

Other significant changes can be observed in the emergence of new vegetation such as weeds. Very often, weeds grow at a faster rate than crops. This makes the manual maintenance of fields much more difficult. Within this framework, it is obvious that farmers need to have more information about climate change to be able to adapt effectively to its impacts.

ComDev and Climate Change Adaptation in Congo

Scientific research has found varieties of cassava that ensure high productivity and resistance to disease and drought. The same research has identified the importance of agro-forestry in erosion control and in the fight against desertification and the preservation of a natural microclimate. ComDev has a significant role to play in the popularization and dissemination of these technological innovations and scientific knowledge.

The CSDI has identified the need for cooperation in the ongoing project called the Rehabilitation Programme of the National Agricultural and Forestry Research System of the Democratic Republic of Congo (GCP/DRC/036/EC) or REAFOR. The project includes a communication component in support of agricultural and forestry research and extension activities in Congo. A field mission has been undertaken and, among other things, it has confirmed the feasibility and advisability of establishing a communication component. An evaluation workshop on communication needs with the participation of researchers, extension workers, producers, local media and local authorities has identified the basic elements in the formulation of a communication strategy and an action plan for its implementation.

The communication component aims to support the REAFOR project through the elaboration of an Action Plan in communication. This plan is envisioned to support the dissemination of agricultural and forestry techniques; strengthen the collaboration with institutions, NGOs, local organizations and rural radio and elaborate strategic policies for natural resource management, climate change and food security.

ComDev Activities

Activities planned under the communication component of the REAFOR project include the following:

- a.** participatory and qualitative research to identify knowledge, attitudes and practices in cassava production and agro-forestry as well as sources of information and communication channels preferred in the pilot area;
- b.** formulation of communication objectives and development of content based on the problems and needs identified;
- c.** choice of channels and types of media to be used for dissemination to reach all farmers and the population at large;
- d.** production of communication materials and tools in languages accessible to farmers and beneficiaries;
- e.** training of trainers and communication officers in extension methods, radio programming and communication methods and approaches; and
- f.** dissemination of information using appropriate communication, education and extension methods, tools and techniques.

Communication activities already implemented include a workshop that brought the various actors together to identify knowledge needs and priorities as well as create partnerships with key stakeholders (researchers, extension workers, producers, and media) at the local level. The project has conducted a diagnostic study to:

- a.** confirm or validate the participants' need for information/communication;
- b.** develop content, design materials and develop training activities, outreach and communication adapted to the identified needs of target groups;
- c.** understand the real situation on the ground before doing any intervention; and
- d.** use such information as a basis for assessing the impact on behaviour change geared towards better productivity.

Rural Radio for Climate Change Adaptation

Rural radio may be the most extensive, accessible and versatile medium for the project in Congo because it can:

- a.** rapidly disseminate critical information and early warning on issues such as weather, markets, crops and livestock production and natural resources to remote audiences;
- b.** generate local content including traditional knowledge;
- c.** improve coordination and awareness; and
- d.** facilitate participatory approaches.

Radio enables the rapid dissemination of information even to very distant listeners on issues such as climate, market, crops, stocks and natural resources. It also favours the interaction between global and local strategies, between local knowledge and international science, thus enhancing the effects of interventions where they are most needed.

Radio also allows for and facilitates participation that generates the production of local content suited to the realities on the ground. It can help amplify local knowledge and increase the awareness of the effects of climate change on local communities around the world. As such, it can easily disseminate good practices on natural disaster prevention and management as well as the challenges of food security, health, water and sanitation.

Another important aspect is that radio values local knowledge and facilitates critical knowledge exchange at the international level with experts and institutions.

A training workshop for radio professionals in Mbanza-Ngungu on the techniques of radio programming in relation to the needs of farmers in cassava production, agro-forestry practices and adaptation to climate change was conducted. A memorandum of agreement between CSDI and two radio stations (Radio Ntemo and Radio Vuvu Kiet) was signed. Some radio programs have already been produced and aired.

Lesson Learned

The main lesson learned from the experience of the project is that farmers live and feel the impact of climate change. However while having a certain amount of knowledge they can draw on, they feel a strong need to be adequately and fully informed of the realities of climate change to enable them to respond effectively. This implies that there is somehow a gap in terms of information sharing between the researchers and the farmers. This gap can indeed be addressed by ComDev.

5. ComDev in the Caribbean: A Small Island Developing States (SIDS) Perspective on Climate Change

by Maria Protz, Senior Associate at the Caribbean Centre of Communication for Development, University of the West Indies

Climate Change Hot Spots

Germanwatch in its 2009 Global Risk Index analysis ranks countries according to how severely they have been affected by weather-related loss events such as hurricanes and floods. Out of an analysis of almost 150 countries, six Caribbean Islands were ranked as climate change “Hot Spots” as follows:

- Dominican Republic – 12th
- Haiti – 16th
- Martinique – 24th
- Dominica – 25th
- Saint Lucia – 27th
- Jamaica – 34th

The Global Risk Index proves that the Caribbean Small Island Developing States (SIDS) are especially vulnerable to climate change for several reasons. For one, in spite of its small population and the fact that it has made its mark on the world stage in sports (e.g. Usain Bolt) and in music (e.g. Bob Marley), the region still has a hard time getting on the climate change agenda and having its voice heard in this arena. Although it includes several countries, the overall Caribbean population is still small compared to many other regions. As a result, the region usually gets lumped into the category of Latin America and the Caribbean. This is so despite the fact that culturally and economically the needs of the SIDS are extremely unique and climate change is going to affect its people in different ways from Latin American countries. CBA options that may work in Latin America are not necessarily likely to work for the SIDS.

Vulnerability to Climate Change

Caribbean SID economies are also highly vulnerable to climate change impact as they depend largely on agricultural production and tourism, both of which have been experiencing adverse effects for many years already. Known for beautiful beaches, coral reefs, and biodiversity of flora and fauna, these natural resources that draw visitors to the Caribbean Islands are also the same resources that are absolutely critical to the livelihoods of many of Caribbean people. This is especially true for small farmers and fishing folk who depend on these assets for their survival.

The agricultural sector has also been hit doubly hard as many farmers in the region have traditionally been dependent on banana export production for their livelihoods. With international trade restrictions that limit these exports, they are not only faced with adapting to climate change but must also adapt their entire production processes or move out of banana production altogether. Viable production alternatives have not yet

been identified or fully organized in ways that can accommodate all growers (such as the movement to encourage Fair Trade Bananas as an alternative).

Table 1 provides an idea of the type of damage that hurricanes have caused to the agricultural sector in Jamaica alone; and more is expected because of the onslaught of climate change.

Type of Disaster	Date	Sector	Economic Impact
Hurricane Gilbert	1988	Entire agriculture sector	Domestic crop damage at J\$769 million (US\$140million, 1988 exchange rates); banana industry totally destroyed; 60% loss of bearing coconut trees; 30–40% loss of citrus production; 17% loss of sugar cane; trees stripped of foliage; 90% of poultry/broiler stock destroyed; 80% of tourism/hotel sector damaged; major damage to entire island's road network 60% of coffee damaged
Hurricane Ivan	2004	Coconut	Increased costs in insurance for the sector at \$4.50 per \$100 of insurance
Hurricane Dean	2007	Banana	90–100% of banana cultivation devastated in Portland and Saint Mary
Hurricane Dean	2007	Poultry	At least 100,000 day-old chicks dumped
Hurricane Dean	2007	Poultry	20,000 to 30,000 birds lost in the field
Tropical Storm Gustav	2008	Coffee	Damage to crops at J\$108 million (US\$1.52 million) or 6% of total crop value; damage to farm roads at J\$30 million (US\$424,000); damage to private farm roads at J\$ 3.5 million (US\$424,000)
Tropical Storm Gustav	2008	Coffee	5–10% of production damage to coffee trees; high increases in insurance costs and in pesticides and farm chemicals

Table 1. Impact of hurricanes on the agricultural sector in Jamaica

Community-Based Adaptation to Climate Change

In recent years, natural disasters such as floods, landslides, droughts and especially hurricanes have threatened the Caribbean's agricultural livelihood base. Hurricanes Ivan in 2004, Dean in 2007 and Gustav in 2008 all brought incredible devastation to the islands in the last few years.

For this reason, the entry point for climate change and CBA in the Caribbean has to be through disaster risk mitigation and preparedness. While climate change impact will also bring along health risks, drought, plant pests and diseases and other related disasters with which SIDS will need to cope, mitigation of and preparedness for the impact of hurricanes is foremost in the minds of people here and is the 'hook' for engaging SIDS

in the climate change discourse. Everyone now has some type of direct, first-hand experience with the hurricanes that have pounded the region's shores in recent times.

While sustainable CBA to climate change will require testing of new technologies, shifting livelihood activities and weighing of the pros and cons of various options, the region's small farmers cannot wait for long-term results. For the agricultural sector and rural communities whose livelihoods depend on farming, the time is NOW. They cannot wait for science. At present, they are already changing, adapting and putting in place a variety of measures to adapt to climate change impact. For the most part, these measures have been developed through their own trial and error technique and in some cases through discussion with other farmers. Some of these adaptations include:

- a. moving out of banana production and shifting to other types of low-risk tuber crops;
- b. non-traditional banana growing farmers who are in less risky agro-ecological areas are now moving into banana production to meet local demand;
- c. trimming banana leaves off prior to a hurricane to reduce wind damage;
- d. planting only tuber crops such as yam, dasheen and coco that lie close to the ground to reduce wind damage;
- e. planting of dwarf fruit tree varieties (mango, June plum);
- f. cultivation of hedgerows as wind brakes;
- g. use of pineapple barriers and productive hedgerows;
- h. planting of nurseries and extra seedling materials ahead of time in case of hurricanes;
- i. using improved greenhouses that can be taken down easily in the event of hurricanes; and
- j. creating raised beds or platforms to avoid flooding.

Negative Coping Strategies to Avoid

In addition to these possible positive indigenous adaptation measures, farmers may also employ measures that would risk the long-term sustainability of their agricultural livelihoods. For instance, they may sell off their livestock to get extra cash in the short-term. They may also begin growing crops whose substances are used for the illicit drug trade.

Some households may move family members to stay with relatives in order to share expenses. But this may limit the amount of household labour that can assist in production. Others may be forced to get extra work to supplement their income and this may take valuable time away from their farming efforts.

Still others may turn to short-term practices that are destructive to the environment and to the natural resource base such as using charcoal or firewood instead of cooking fuel. Most will be forced to delay any capital investments in farm improvement projects and may also reduce needed inputs such as fertilizers and pesticides.

To further reduce costs in the short term, farmers may also share seeds with one another. While this can often be positive and should be encouraged, it is only a good practice if the source is known and verified. Otherwise, there is the risk of increased plant pests and disease which will only exacerbate the harmful impact that climate change can bring.

On the whole, therefore, processes are needed that can help promote positive coping strategies and mitigation practices while also identifying alternative measures that discourage potential negative coping strategies.

Gaps in the CBA Process

To facilitate the positive adaptation practices and to minimize the impact of negative coping strategies that might see farm households move out of agriculture altogether, farmers need timely information and tested knowledge; hence, the importance of ComDev. But this in turn means that several gaps in communication and extension also need to be addressed.

For one, farmers' livelihood adaptation strategies and technologies are not yet being documented, validated and tested. ComDev can help with documentation and observation and then further use this information and data for the promotion of appropriate messages and materials. Proven farmer-based technologies are not packaged and shared across islands or even within island states and ComDev can certainly assist in this regard to help SIDS in the region learn from each other.

For most Caribbean countries, extension staff is limited and face many challenges. Officers cannot reach all affected areas and meet with farmers on one-to-one basis. ComDev can help bridge this gap through the use of ICTs, rural radio, community media centres and innovative communication methods.

At the same time, many extension services are not familiar with participatory techniques. Again, this is where ComDev Participatory Rural Communication Appraisal (PRCA) and participatory communication strategy can be extremely valuable. Training in PRCA and ComDev is needed to make the work of extension officers easier and more effective.

Livelihood adaptation demands a multifaceted approach among a variety of agencies that do not necessarily coordinate efforts even though they are busy working on CBA in their own individual areas of expertise. ComDev can help bring these stakeholders together to explore CBA options in a more organized fashion.

Community expectations of agricultural services are often not realistic about what knowledge-based research centres can provide or what CBA technologies can deliver. ComDev can help clarify what CBA and related services can and cannot do.

On the other hand, CBA is understood as a "technical" matter and is not usually seen within the context of local culture and community dynamics. ComDev can help illustrate the cultural realities and community dynamics that are related to the sustainability of CBA options.

On the other side of the spectrum, participatory qualitative information and data need to be linked to GIS systems imaging and digital formats so that they are more usable for disaster response and for planning mitigation measures. ComDev can help ensure that any PRCA data collected are also packaged into GIS formats so that they can be used by a wide range of stakeholders in the CBA process.

Farmers need to be linked digitally to early response and warning systems and ComDev experience with ICTs, text messaging and rural radio, among other techniques, can greatly help to establish these types of communication systems.

ComDev for CBA in the Agricultural Sector: Some Best Practices

The application of ComDev to CBA is just beginning in the Caribbean region so there are few concrete case studies where it has been applied systematically. However, in addressing the gaps and issues, there are some vibrant examples of best practices communication approaches which can be drawn upon to engage both farmers and the agencies that serve them. Several in fact exist and the examples below are presented because of the diversity and variety of options they offer as a way forward:

- a. Panos - Voices for Climate Change (Jamaica)
- b. RARE Radio - Population Media Centre (St Lucia)
- c. Toco Foundation - (Trinidad and Tobago)
- d. CABI Caribbean - based in Trinidad but regional in scope
- e. ICT4Dev – Jeffrey Town, Jamaica
- f. The “Knowing and Growing” Network

• **PANOS Caribbean**

Under its “Voices for Climate Change”, PANOS Caribbean has been working with artists (musicians and performers) to promote public awareness about climate change through the popular and mass media. Their “Hear, Hear” workshops has allowed Jamaican entertainers to better understand the threats that climate change poses and has encouraged artists to promote climate change messages through their own media. Getting the message out to the public at large through popular reggae and dance hall artists is a critical first step that needs to be sustained on a timely basis.

PANOS has also done considerable communication work at the rural community level and its experiences show how farming communities can also be engaged in the promotion of climate change messages. Through its oral history documentation programme “*Voices from Mocho*” (tales from back beyond), farm families have been involved in recording their observances of climate change impact over the past 20 years or so. Through this, they have also produced regular community newsletters and publications among other types of media and illustrate how media can document positive indigenous practices.

PANOS’ work provides an excellent starting point for exploring ways in which CBA communication can be made culturally relevant and linked to local experiences.

- **RARE Radio**

RARE Radio, a program of the Population Media Centre (PMC) in Saint Lucia, is an excellent example of how culture can be promoted through radio and drama in communicating health (HIV/AIDS, condom use) and environmental behaviour change. Using the Sabado methodology, the PMC has developed a long-running radio drama called “*Coconut Bay*” that uses beloved and credible characters with whom audiences truly connect. When a particular character makes one or another life decision by weighing options the way that their audiences do, people listen and pay attention. PMC always employs “*Knowledge, Attitudes and Practices*” surveys in their work, pre-tests episodes with audiences and consistently monitors and evaluates their results in order to measure behaviour change impact. Their model is one that can truly help bring climate change adaptation measures to a very wide group of audiences in a systematic and strategic way while fully embracing cultural specificities and reflecting community dynamics.

- **TOCO Foundation**

The TOCO Foundation is a community-based, multimedia centre that is in the heart of one of Trinidad’s most active agricultural communities. The centre boasts of online courses in agriculture and the use of ICTs for farmer education. It has an organic pilot farm and offers courses in organic farming, runs an agrotourism centre and also does much of its work through the local television, community radio, newsletters/newspapers and distance learning. TOCO is an excellent example of how hands-on pilot farming techniques can be mixed with ICTs and multimedia applications for CBA.

- **CABI Caribbean**

CABI Caribbean is part of CABI International and has spearheaded the use of FFS in the region, starting with its regional programme in IPM through which most English speaking countries in the region have participated. The FFS approach builds on the face-to-face adult learning process through which farmers learn from each other, are engaged in on-farm experimentation and trials, and are involved in partnerships with knowledge-based institutions. CABI’s approach is critical, because ComDev cannot forego the profound value of face-to-face communication and direct adult learning when it comes to CBA. Documenting successes and sharing these with wider farming audiences through ICTs is also what ComDev can help achieve.

- **ICT4Dev**

The Jeffrey Town multimedia centre is settled in the heart of a rural farming community in Jamaica and has received support from a number of sources, including the Commonwealth of Learning (COL)’s L3 Farmers Lifelong Learning initiative. Here, farmers themselves work to generate rural programming, produce rural newsletters, develop rural dramas and other form of communication that will help engage their fellow farmers in viable natural resource management options. They bring a deeper communication dimension to the more traditional extension approach. If linked with technical content experts and trainers from extension and knowledge institutions, CBA technical knowledge can be packaged in formats with which local communities will truly resonate.

- **Knowing and Growing Network**

Through the services of Networked Intelligence for Development (NID), a group of rural women organic producers all over the English-speaking Caribbean have not only improved their agricultural business and marketing skills and their knowledge of sustainable organic farming production, but also their use of ICTs as tools for accessing information and networking with each other. In the face of climate change realities now impinging on their organic enterprises, they are also focusing their attention on CCA using ICTs.

While still in its infancy, ComDev for CBA in the Caribbean region is at least well placed to draw on these many valuable experiences for the development of appropriate CBA options for the small island states. No doubt, the most important resource will be the resiliency of the Caribbean people themselves who are no strangers to change in the face of pressing need.

In this same spirit, CARIMAC's Caribbean Centre for Communication for Development (CCCD) through CSDI is working to channel indigenous ingenuity and to explore how the above best practices can all be brought together for CBA in the Caribbean region.

Through the CCCD, CSDI will be working to partner with many of the above initiatives. This is to help strengthen existing best practices and mainstream ComDev planning and skills especially among the knowledge institutions and rural services that need to be on the cutting edge of community-based CCA.

6. Building Capacity in Communication and ICT Applications for Community-Based Adaptation

by Simone Sala, ICT for Development and Environment Specialist

ICTs in Climate Change Adaptation

ICT is a broad term that refers to all computer-based advanced technologies for manipulating and communicating information. It is broader than information technology (IT) which is defined as “the study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware” (Information Technology Association of America, 2008).

Within the ICT domain, what is typically stressed by the users’ communities is the great potential of ICT tools regardless of their ultimate goals. Usually, ICT is employed for three major actions: (1) record data and information, (2) transform these data and information into knowledge which can be shared; and eventually (3) communicate these data, information and knowledge.

Looking at the climate change adaptation sector, it is possible to apply these three activities to the development of an adaptation strategy in a specific community. First, data collection is important to constantly monitor the status of the earth’s climate system. Second, it is essential to have tools for processing data and information that can guide the stakeholders in the analysis, planning and implementation of possible adaptation strategies. Finally, communication tools are needed to manage the adaptation process and build on the knowledge which is generated in order to strengthen capacities and relationships among the stakeholders within and outside the given system. Figure 4 provides a visual representation of the application domain of ICT within the climate change adaptation sphere.

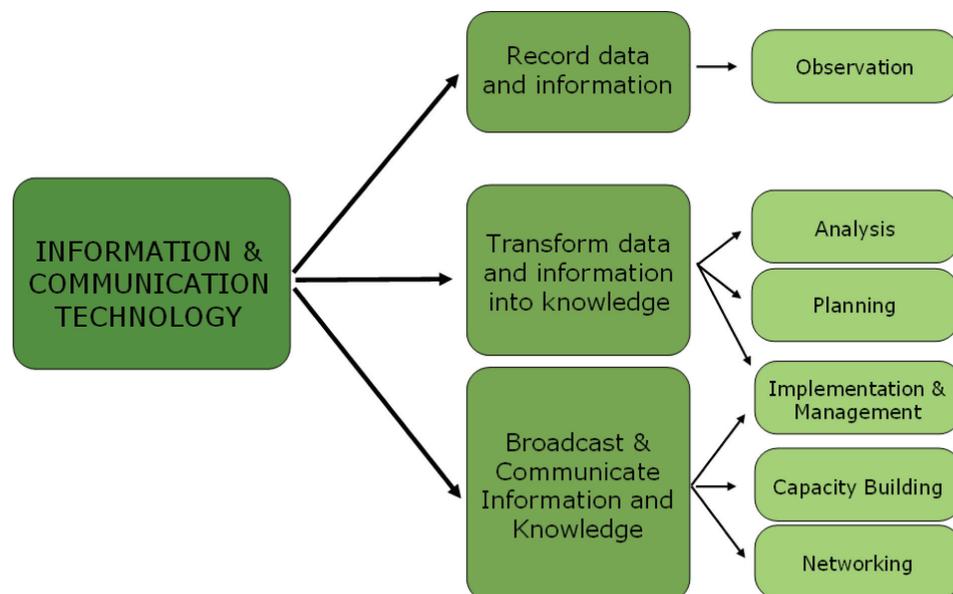


Figure 4: ICT application domain for climate change adaptation

The Role of ICT in Implementing the Steps of Adaptation Processes

Therefore, the adaptation process requires the following steps:

- a. Observation - data collection at global, national and local levels;
- b. Analysis - sharing of data and computing capacity as well as development of climate impact outlook;
- c. Planning - support for decision-making regarding designing climate change adaptation initiatives at different spatial and time scales;
- d. Implementation and management - translation of adaptation strategies into action through appropriate natural resource management practices, information dissemination, monitoring and evaluation and networking;
- e. Capacity building - training and formal education for key system stakeholders who need to adapt to the new climatic conditions; and
- f. Networking - awareness raising and advocacy at different levels.

One of the key challenges is to face the *g/local* information divide – the gap existing between global information systems and local information needs and knowledge systems. These local systems often embed precious information to be capitalized on for promoting and/or strengthening adaptation practices. In addition it should be underlined that climate change is a global phenomenon with local impacts and it is an issue that cuts across various sectors. Local and global systems are interdependent. For this reason, it is fundamental to shape the application of ICTs throughout the adaptation process in a way that will promote fruitful exchanges between the global, regional and national institutional systems and the local ones. **Figure 5** highlights the cyclical model which should drive the main elements and the process itself.

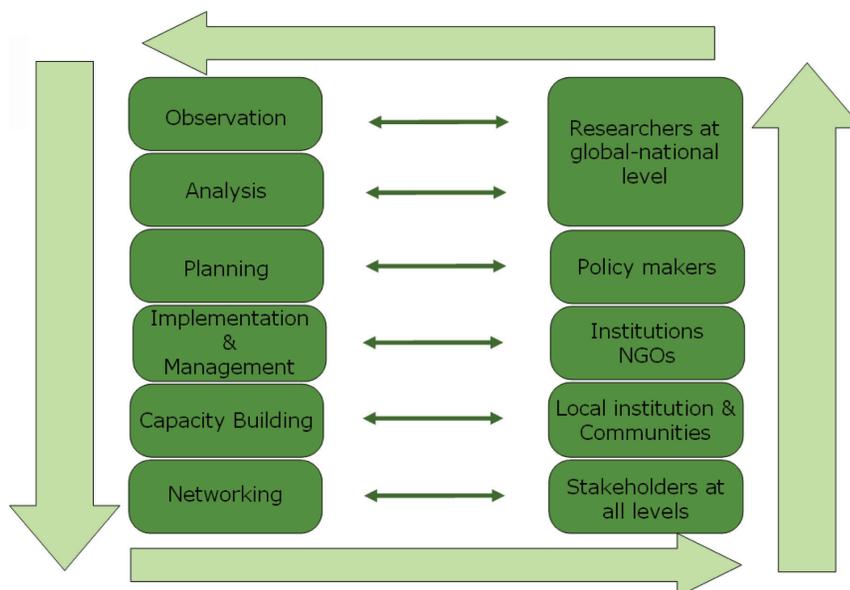


Figure 5. Elements and processes of ICT application to climate change adaptation

Framing the Application of ICTs for CBA in the ComDev Domain

Finally, it should be emphasized that ICT tools per se can't mobilize the social and learning processes that drive the identification of good climate change adaptation practices. This is particularly true for the development of CBA strategies at the local level where communities deal face-to-face with these realities. For this reason, it is important to frame the application of ICTs within the ComDev domain. In the last 20 years, ComDev proves to be an effective way to catalyse local action, keep it participatory and, in most cases, sustainable.

Figure 6 shows how ComDev can facilitate and shape the application of ICTs to CBA, adapting them to local needs, strengths and opportunities. In particular, ComDev can help accomplish the tasks below.

- a. It can facilitate data collection at the local level, making communities sources of data and not mere consumers of information. These data can feed scientists' analysis and help in carrying out monitoring and evaluation of institutional and research outputs.
- b. It can facilitate participatory problem analysis and adaptation planning. In addition, ComDev can play a key role in supporting institutions to translate climate-related uncertainties into policies that can be discussed and made clear to local communities.
- c. ComDev ensures that an interactive and transparent information flow among concerned groups is implemented.
- d. It can empower local people to take control of the adaptation processes, putting communities at the centre of any intervention.
- e. It can promote local information networks among a wide variety of local stakeholders.
- f. It can link rural knowledge and information systems.
- g. It can support the integration of indigenous and scientific knowledge.

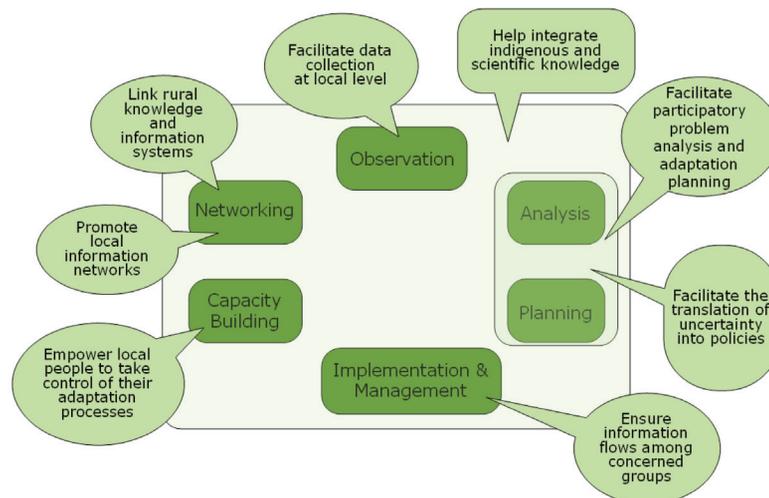


Figure 6: Framing the application of ICTs for CBA in the ComDev domain

7. Building Capacity in ComDev for CBA through CSDI

by Federica Matteoli, Communication for Development Specialist

Background

Positive experiences have been achieved by FAO in ComDev in many countries. The results of the first World Congress on Communication for Development held last October 2006 further boost the significance ComDev in any development undertaking. Hence, FAO and the Italian Ministry of the Environment and Territory have agreed to implement a joint project named Communication for Sustainable Development Initiative or CSDI to support innovative ComDev applications to sustainable natural resource management, climate change adaptation and food security in developing countries. Special attention will be given by the project to the implementation of ComDev services to meet the challenges of CCA in agriculture, fisheries and forestry.

The CSDI has a total duration of 36 months and an overall budget of US\$1,800.000. The main parties involved in project implementation are the FAO Research and Extension Unit, Natural Resources Management and Environment Department, the Italian Ministry of the Environment and Territory, governments, NGOs, communication centres and grass-roots organizations in the participating countries.

ComDev is already integrated in the agenda of many institutions such as World Bank, FAO and UNESCO and it is used from NRM to conflict resolution, and from health to environmental issues. Environmental measures for sustainable development such as CBA, watershed management, disaster risk management and participatory territorial development require communication processes, methods and tools to achieve awareness, knowledge sharing and community participation. However, ComDev has not been integrated in climate change adaptation programmes and approaches. This is despite an increasing demand by institutions, NGOs and organizations to apply ComDev strategies and activities to climate change adaptation projects. Moreover, this demand is strongly voiced by local people who ask for more information about climate change adaptation. Within this framework, FAO has accepted the challenge. Jointly with other parties, it will test ComDev methodologies in the context of climate change through CSDI.

Communication for Sustainable Development Initiative

The ultimate objective of CSDI is to promote sound environmental practices for climate change adaptation through effective ComDev strategies and services. The expected outcomes of the project are:

- innovative applications of ComDev strategies, tools and services to sustainable NRM and rural development in selected countries; and
- improved capacities and partnerships in communication for sustainable NRM both at the national and international levels.

Furthermore, the following are targeted to be achieved through the project:

- innovative communication strategies and services for identified climate change adaptation;
- environmental communication strategies, plans and services implemented;
- improved knowledge and skills in environmental communication (e.g. studies, e-fora, knowledge platforms);
- environmental communication projects and initiatives designed and promoted at the international level; and
- strategic partnerships and environmental communication platforms implemented.

Moreover, the CSDI project will focus on:

- strengthening the capacities of local institutions, extension services, NGOs and other service providers in planning and implementing communication strategies and services for NRM;
- fostering the institutional linkages and other initiatives required to mainstream communication approaches and services into environmental and development policies; and
- develop and make available the methods and experiences gained, through platforms, e-fora and training activities.

Project Activities

The three main components that have been identified in the project approach and strategy are discussed below and are summarized in **Figure 7**.

a. Normative activities

The project is systematizing approaches, best practices, training materials and policies on the application of ComDev to NRM and CCA and making these available at the international level. It is also promoting training and policy advice.

b. Field components

The project foresees the implementation of four field components in support of priority projects and issues. The following field components have been identified following specific criteria for selection:

National Communication Plan for Bolivia. It has requested project assistance at the national level in the design of communication strategies and services to support priority programmes in the areas of sustainable NRM and technology inno-

vation for CCA and rural development. A National Plan will be supported by the project with the intention to institutionalize ComDev for development services at the national level.

Communication Action Plans. Two other field components have been developed through Communication Action Plans based on specific requests and needs regarding issues relevant to the project (e.g. collaborative NRM, DRM, watershed management). The Communication Action Plans are pilot-subject related plans that may also be scaled up from the local to national and/or the regional level to guide the mainstreaming of ComDev services in connection with NRM and CCA initiatives. The following cases for Action Plans have been identified:

- Democratic Republic of Congo - improving agriculture and forestry research and extension in the Democratic Republic of Congo
- Caribbean - support to community-based communication systems for DRM and CCA in the Caribbean
- Bangladesh - support to FAO project related to the issue of livelihood adaptation to climate change at the community level

Technical advice to selected countries/projects. The project will also provide support to selected NRM/CCA projects that are willing to incorporate and fund ComDev activities. The opportunities for assistance will be prioritized based on criteria for success. The CSDI is developing technical assistance for a project in the Andean region to improve ad hoc communication components. Furthermore, there is an increasing demand from projects for technical advice that is required for new ways of working to be identified by the project.

c. Networking and partnerships

As a strategy for capacity building and advocacy for mainstreaming ComDev services, the project supports the implementation of regional and thematic platforms in collaboration with institutions and communication and environmental networks, some of which already have existing collaboration relationships with FAO. These platforms help in: (1) facilitating the sharing of knowledge and experiences in the applications of ComDev to NRM; (2) promoting linkages between normative and field activities; and (3) fostering cooperation among the different stakeholders involved. Consultations will be promoted both at the national as well as inter-regional levels to ensure that lessons learned and best practices are assessed and improved during the process with a view to generate policy recommendations.

Within this framework, a virtual consultation on NRM, CCA, food security and DRM in Latin America was held in collaboration with two platforms. Moreover, the project will carry-out a similar consultation on communication in NRM and CCA through a platform on ComDev and NRM for the Near East. Furthermore, strategic partnerships at different levels should ensure the sustainability of

project activities. Special attention is given to the collaboration with FAO technical divisions and working groups, especially those dealing with NRM, forestry, climate change, DRM and food security issues. At the same time, linkages with UN agencies, international environmental organizations and donors are being established to ensure project visibility and sustainability in NRM and CCA in particular. Through the platform of Indigenous Peoples in Latin America, a virtual consultation was held and contributed to a special session during the 7th session of the United Nations Permanent Forum on Indigenous Issues in New York. The project is preparing a strategic document for the use of platforms in order to reinforce advocacy, capacity building and information in developing countries.

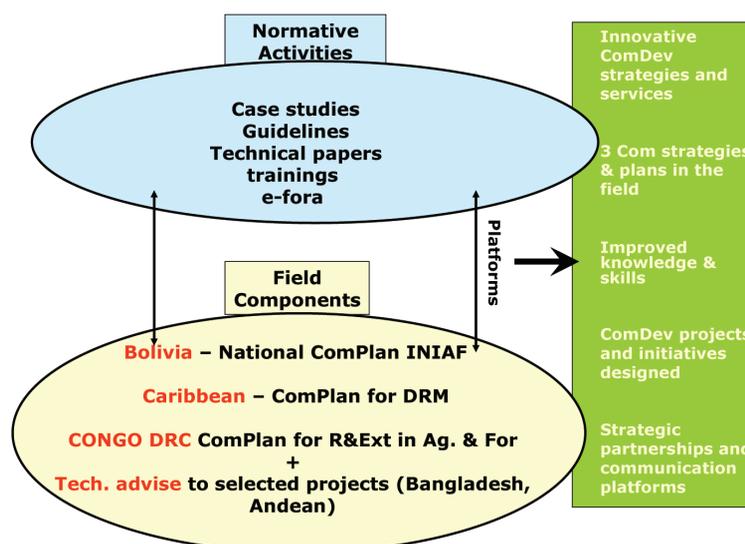


Figure 7. Three main components of the CSDI project

Next Steps

To reinforce the partnerships and the strategy, the following steps will be undertaken:

- a. Develop and test ComDev approaches and methods to be used for CBA to cope with climate change.
- b. Systematize lessons learned and best practices in ComDev
- c. Strengthen capacity through knowledge networks (Central America, Indigenous People, South America, Near Asia) and regional consultations on ComDev for CCA.
- d. Consolidate and expand the CSDI partnerships.

A virtual consultation on Communication for CBA will be held in September 2010 to identify ComDev approaches and methodologies to support CCA through CBA. This will be done by strengthening information and knowledge sharing among policy makers, funders and practitioners engaged in ComDev for CCA.

The virtual consultation aims to improve understanding of what is being done, learn from experience, identify trends and discuss emerging issues and challenges. A global community of practice on ComDev for CBA will also be established for sharing knowledge, lessons learned and best practices.

III - Conclusions and Way Forward

Highlights and Recommendations

The session on “Advancing Adaptation through Communication for Development” concluded with a plenary session where the main issues were reported and discussed. Within that context, a number of remarks and recommendations were agreed upon:

- a. CBA, being a local phenomenon, should take into account the local wisdom of the people or the ways they view their reality and well-being in the context of climate change adaptation. ComDev can help in tegrate this in CBA by enabling people to become aware of what they can do by themselves.
- b. ComDev is defined as a participatory communication approach that integrates strategies, media and processes that enable people and institutions to share knowledge and information and to reach consensus towards common action. The key principles of ComDev are: participatory knowledge and information sharing, dialogue and mediation, as well as convergence and appropriation. ComDev is the communication approach proposed to serve CBA.
- c. ComDev brings value to CBA by enhancing knowledge, improving the quality of services, strengthening language and fostering multi sectoral dialogue and participation.
- d. Country experiences in climate change adaptation demonstrate the importance of mainstreaming ComDev in technology adaptation (Congo), experiential climate field schools for livelihood adaptation, the merging of local and scientific knowledge (Bangladesh) and disaster risk mitigation (Caribbean).
- e. ICTs have great potential and use in collecting, analyzing, planning and disseminating information on climate change and capacity building in CCA.
- f. Recognizing the need to integrate ComDev in CCA, FAO launched CSDI as a global program to assist countries and provide the platform for capacity building and partnerships on innovative communication strategies for CCA and NRM.

Main Issues and Concerns

During the technical session on ComDev for CBA, a number of issues and concerns were raised by the participants on the appropriateness and effectiveness of ComDev in CCA. The major ones are listed below.

- a. Current efforts in promoting climate change awareness are implemented on a piecemeal or ad hoc basis. This can be addressed by using ComDev's strategic planning methodology.
- b. Communities of practice among CBA practitioners and researchers can be established and co-creation of knowledge can be one of their activities. This can be expanded to cover other concerns of CBA. FAO has started this through the CSDI project.
- c. Mass communication, ICTs and interpersonal communication can be used to complement each other for ComDev on the basis of their strengths and weaknesses.
- d. One of the means for scaling up CCA awareness is through the development of curricula that integrate climate change concepts.
- e. Social mobilization may be used as an approach for enhancing horizontal knowledge sharing among farmers.
- f. A variety of tools can be used for ComDev. These may include low-input communication technologies and whatever others are available in the community.
- g. Some concepts of social marketing may have value for communicating climate change especially in the light of social responsibility.
- h. There is a need to include mechanisms for accountability in information sharing.
- i. Communities should be involved in monitoring and evaluating strategies in ComDev.

Recommendations

The presentations, open forum and discussions on ComDev for CBA to climate change during the workshop yielded a number of recommendations that are worth looking into if CBA to climate change is to be scaled up:

- a. Mainstream ComDev as a key process central to CBA. Integrate ComDev systematically in CBA from the very beginning. Document best practices and showcase results of ComDev as applied to CBA.
- b. Build capacities in ComDev. Recognize that ComDev for CBA requires expertise, skills, time and resources.

- c. ComDev should integrate the use of ICTs for CBA. If needed, these and other media should be used wisely and strategically for CBA.
- d. Assess options for new ComDev services for CBA.
- e. Support communities of practice and partnerships. Support CSDI initiatives.

Towards a Global Partnership on ComDev for CBA

The technical session on ComDev at the Third International Workshop on CBA set the groundwork for the development of a global partnership on the application of Communication for Development to climate change, with a focus on community-based adaptation processes.

The workshop made explicit the needs of CBA practitioners in terms of communication as well as the participatory application of ComDev methods and tools for the successful implementation of CBA initiatives and their replication.

As a follow up to the workshop, the CSDI project organized an expert meeting, inviting all the experts who shared their case studies on ComDev at the CBA Workshop. The expert meeting was held in Dhaka, from the 26 to 27 February 2009, and it was hosted by the FAO Representation in Bangladesh.

During the expert meeting, a possible framework for the development of a global partnership on ComDev for CBA was discussed, particularly in terms of the preliminary identification of partners involved in the topic and the analysis of various strategies for setting up the partnership. The experts agreed on the necessity to develop a two-fold strategy comprising: (a) the development of ad-hoc training modules for capacity strengthening on ComDev for climate change adaptation; and (b) the implementation of a global information sharing/dissemination mechanism.

For the development of training modules on ComDev for CCA, it was proposed that a collaboration framework be established among universities and training centres from both developed and developing countries. The centres preliminarily identified by the experts were the following:

- College for Development Communication (University of The Philippines, Los Baños), The Philippines
- Institute Facultaire des Sciences de l'Information et de la Communication, Democratic Republic of Congo
- Caribbean Institute of Media and Communication (University of the West Indies), Jamaica
- University of Roskilde, Denmark
- University of Malmö, Sweden
- University of Ohio, United States of America
- American University of Beirut, Lebanon

In order to implement a global information sharing mechanism, it was proposed that a global focal point for the creation of the networking platform be identified. It was also proposed that The Communication Initiative join the partnership and begin developing a thematic page on its web portal.

To further build up, refine, and improve the concept and practice of ComDev, an expert virtual consultation will also be conducted by the end of 2010.

Final remarks

ComDev is an evolving discipline and field of study focusing on the use of communication processes, methods and tools to help people advance towards full awareness of their situation and their options for change. Its role becomes more significant in the context of climate change, and especially in the context of community-based adaptation, where the exercise of people's ability to analyze their current situation and opportunities for coping with inevitable impacts of changing climate is pivotal. An opportunity to maximize the value added of any climate change adaptation effort is provided by the inclusion of ComDev activities from the very beginning. These activities support information sharing, learning and participatory decision-making towards collaborative change in community-based adaptation.

Mainstreaming ComDev in CBA to climate change still has a long way to go. But it is now being actively promoted by FAO through CSDI. Various ComDev applications are being piloted in the context of climate change in several countries and shared through platforms and communities of practice.

About the Panelists

Mr **Mario Acunzo** is Communication for Development Officer, Office of Knowledge Exchange, Research and Extension, Food and Agriculture Organization of United Nations and CSDI lead technical officer..

Dr **Maria Protz** is Senior Associate, Caribbean Centre of Communication for Development, The University of the West Indies, Jamaica.

Dr **Cleofe S. Torres** is Professor and Dean, College of Development Communication, University of the Philippines Los Baños, and CSDI focal point for South-East Asia.

Dr **Esperance Bayedila** is Associate Professor, Institut Facultaire des Sciences de l'Information et de la Communication (IFASIC), Democratic Republic of Congo and CSDI focal point for the country..

Mr **Simone Sala** is ICT for Development and Environment Specialist and CSDI consultant

Ms **Federica Matteoli** is Communication for Development Specialist and CSDI assistant coordinator.



“People live the impact of climate change hence they need knowledge and communication to better cope with it”.