Training modules in ecosystem approach to fisheries, climate change and communication for fisherfolk in the Caribbean

Prepared for the Caribbean Network of Fisherfolk Organisations (CNFO) by the Caribbean Natural Resources Institute (CANARI) with funding from the ACP Fish II Programme

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INTRODUCTION

The ACP Fish II Programme undertook a project **to develop the capacity of fisherfolk leaders and organisation members of the Caribbean Network of Fisherfolk Organisations (CNFO) to participate in fisheries policy and other discussions on mainstreaming of the ecosystem approach to fisheries (EAF) and climate change into small-scale fisheries at the national and regional levels**. This targeted members from Antigua and Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago. The Caribbean Natural Resources Institute (CANARI) was contracted to conduct a needs assessment and conduct training of the fisherfolk. These training modules serve as the comprehensive record of the training which may be used in future by the participants at national level as part of advocacy campaigns and raising awareness.

The training modules below are designed to be used by the workshop participants to share basic information about EAF and climate change with others.

Objectives

The training objectives, and objectives of these modules, are to:

1. Build awareness of climate change impacts on fisheries and potential adaptation actions
2. Build awareness of EAF and the role of fisherfolk
3. Build skills to communicate and develop relationships for advocacy, policy influence as part of governance
4. Build capacity of participants to act as trainers and in turn build capacities of their member FFOs including through developing an action plan for participants to implement workshop recommendations
5. Facilitate strategic visioning of CNFO members

How to use the modules

The three modules cover the three main content areas of the training. Each module has four components:

1. Snapshot: summarises key information on the topic and designed so that they can be pulled out and given as a separate handout
2. Communication and training materials: supplementary materials such as slides or links to videos
3. Hands on activities: instructions for interactive activities that were conducted as part of the training workshop
4. Useful resources: references for other useful sources of information on the topic

The modules are designed so that they can be used by the fisherfolk who participated in the training workshop to assist them with communicating what they learnt to fisherfolk and other stakeholders.

Ecosystem approach to fisheries

Module 1

1 SNAPSHOT ON THE ECOSYSTEM APPROACH TO FISHERIES (EAF)

1.1 Definition of EAF

An ecosystem approach to fisheries (EAF) is a holistic and integrated approach to fisheries management that takes into account all of the components of the ecosystem[1] as well as the set of human activities taking part in the ecosystem. EAF strives to balance diverse societal objectives, by taking account of the knowledge and uncertainties of biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries (FAO 2003).

Simply explained, EAF is "**fishing in balance with nature**". It takes into account that fish are part of ecosystems that are impacted by fishing as well as other human activities (e.g. a hotel being built on the coastline, logging in the forest, seismic surveys at sea). These other human activities may have negative impacts on fishing and on the ecosystem. Fishing may also have a negative impact on other human activities and on the ecosystem. When fish stocks are managed in isolation, they do not take these impacts into account. EAF seeks to address this by managing the entire ecosystem as a strategy to manage fishing.

Traditionally, fishing authorities in the region have managed fishing separate from other sectors. Despite many efforts, fish stocks are still depleting. Fishing authorities have tried to manage this by setting regulations for (examples) **when** we fish, **what** we use to catch fish or, **where** we can fish. These measures do not take into account that pollution from the land for example, may be contributing to the depleting fish stocks. Other agencies such as the water authorities or the forestry authorities may be responsible for management of the source of pollution. These other agencies and their stakeholders must be included in management if we are to manage the fish stocks.

1.2 Features of EAF

There are several features of EAF. EAF...

- Is a holistic approach to fisheries management
- Includes stakeholders from various sectors in strategies
- Promotes sectoral integration
- Uses multiple management measures
- Applies the precautionary approach and uses the best available knowledge
- Takes both scientific and traditional information into consideration
- Uses ecological boundaries and emphasises ecological health
- Stresses the sustainability of resources

[1] An ecosystem is the collection of living (plants, animals including humans, microbes) and non-living components (e.g. nutrients, air, water, soil, minerals) and the interactions between them.

- Ensures an equitable approach
- Acknowledges multiple objectives and values of ecosystem services
- Builds on previous policies

1.3 Basic objectives of EAF

Given all the features of EAF described above, EAF has three basic objectives:

- Maintaining ecosystem integrity/ ecological well being **(ecosystem well-being)**
- Maintaining/ improving human well-being and equity **(human well-being)**
- Promoting/ enabling good governance **(governance)**

1.4 Issues to consider under EAF

Several management measures should be taken into consideration for the management of EAF. These issues were identified by fisherfolk[2] by looking at impacts. The first table describes the impacts of fishing on the ecosystem while the second describes the impacts of other activities on fishing. These impacts are issues that need to be considered under EAF.

Table 1.1 The positive and negative impacts of fishing on other activities

Activity	*Positive impacts*	*Negative impacts*
Tourism Coastal development Beach mining Forestry Agricultural production Industry (power and manufacturing) Shipping Cruise tourism Oil spills	Provide quality seafood Sport fishing Provides cultural fishing experience Strengthen socio-economic development of rural communities	Fish refuse along coast (rivers, beaches) is unattractive for other coastal users Compete for space with other coastal development Harvest boat and gear materials from forest Fishing boats and gear (FADs etc.) interferes with passage of other boats

Table 1.2 Impacts of other human activities on fishing

Activity	*Impact on fishing*
Oil drilling and storage	Seismic surveys damage and chase away fish Pollution (oil spills) kills and damages reefs – no reefs, no fish Positive impact – rigs act as FADs so attract fish

[2] Identified by fisherfolk during the ACP Fish II training workshop in EAF and climate change held in St. Kitts and Nevis in October 2012

Activity	*Impact on fishing*
Agriculture	Soil runoff kills reefs, fertilizers cause moss and algae
Human activities (ships, houses, fisherfolk, etc)	Cause garbage which gets into the sea – plastic bags kill fish and turtles
Ships (cruise and other)	Anchors damage reefs, dispose waste into sea, destroy fish traps
Coastal development	Sewerage and sediment kills reefs, less fish Destroys mangrove Displaces fisherfolk from coastal areas
Quarries	Causes deforestation, which results in soil erosion, sedimentation causes damage to reefs and other habitats of fish
Spear fishing	Damages reefs, juvenile fish
Water skis	Frighten away fish
Harvesting charcoal from mangrove unsustainably	Destroy mangrove – lose nursery for fish More soil and nutrients are washed into the sea – causes sedimentation of reefs
Recreation (e.g. yachts)	Anchor on reefs and destroy reefs Disturb fisherfolk from catching fish in areas where recreation is taking place
Dynamite fishing	Destroys almost everything in the area
Yacht marinas	Displace fishermen

1.5 Management options under EAF

Several management measures are used in fisheries management using EAF. These include:

- **Technical measures** including fishing gear regulations (e.g. mesh size restrictions, bycatch reduction devices, lost gear measures)
- **Spatial controls** (e.g. using marine protected areas to control where fish can be taken)
- **Temporal controls** (restricting fishing activity at certain times and seasons so that the fish can be certain size)
- **Catch and effort control measures** (e.g. through the use of fishing licences)
- **Ecosystem manipulation** through habitat modifications (e.g. preventing habitat degradations, creating artificial habitats) and population manipulation (e.g. restocking and stock enhancement)

1.6 Basic steps to implement the ecosystem approach

The steps below are general ones that can be used to implement the ecosystem approach to fisheries management.[3]

1. Set high level policy goals (social, economic, environmental)
2. Define the ecosystem area, determine the key stakeholders, develop the relationships between them; develop and implement strategies to engage them in management.
3. Characterise the structure and function of the ecosystem
4. Determine the likely interactions between the ecosystem and adjacent ecosystems.
5. Identify the important economic issues that will affect the ecosystem and its inhabitants.
6. Identify broad objectives relevant to the fishery or the area
7. Break the objectives into smaller ones that can be addressed by management measures
8. Identify and set the management strategies/mechanisms in place to achieve the objectives.
9. Regularly monitor and evaluate performance and achievement of long term goals and management objectives, and adapt management strategies for reaching them based on learning.

1.7 The role of the fisherfolk in EAF

Fisherfolk are key stakeholders in any EAF plan and must play an integral role in governance. Governmental fisheries authorities are usually the ones with the responsibility to develop and implement the laws for enacting EAF. There are things that fisherfolk can do:

- Join or form a fisherfolk organisation and become an active member in it
- Advocate for a change in management strategy to EAF. Point out the benefits of EAF to the fishing authority in your country.
- Seek to understand the impacts on fishing in your country and in the region. Use these impacts to understand who the stakeholders are that should be included in the any EAF plan.
- As far as possible, take personal responsibility to implement sustainable fishing practices (e.g. use low-impact gear that will limit the negative impacts of fishing on the ecosystem).

[3] Information adapted from (FAO, 2005) and (Shepherd, 2004)

1.8 Communication and training materials

Possible slides for use during session on EAF

Definition of an ecosystem 

- A functional unit that is made up of the living beings (plants, animals including humans, micro organisations), non-living things (air, soil, water, minerals, etc.) the environment and their interactions.

Definition of EAF 

- An ecosystem approach to fisheries (EAF) strives to balance diverse societal objectives, by taking account of the knowledge and uncertainties of biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries within ecologically meaningful boundaries (FAO 2003)
- "Fishing in balance with nature"

Key features of EAF 

- Strategy seeks to include all critical stakeholders and takes human values into consideration
- Uses the precautionary approach because all the data are not known
- Takes both scientific and traditional information into consideration
- Uses ecological boundaries
- Stresses sustainability of resources
- Ecological health is very important
- Equitable approach

Principles governing EAF 

- Governance should ensure both human and ecosystem well-being and equity.
- Fisheries should be managed to limit their impact on the ecosystem to an acceptable level.
- Ecological relationships between species should be maintained.
- Management measures should be compatible across the distribution of resources
- Must take the precautionary approach because we do not know everything about the ecosystem.

Basic objectives of EAF 

- Maintaining ecosystem integrity/ ecological well being
- Maintaining/ improving human well-being and equity

- Promoting/ enabling good governance

1.9 Hands-on activities

Understanding the connections between fishing and other human activities

1.9.1 Activity 1: Mapping

Doing participatory mapping is an excellent way to get people to identify and analyse all of the various activities and resulting issues in an area, which are very complex but made clearer when spatially mapped out and discussed.

1. Draw two maps of the same hypothetical[4] island on two separate large sheets of paper and place certain features on those islands (e.g. sea, forest, rivers, salt pond, housing development, hotel on coast, reef, mangrove forest, marina, town, rural village, etc.). Explain that looking at the land, coastal and marine areas are important in EAF.
2. Divide the stakeholders gathered into two groups. Each group will work with a map. Give each group materials such markers, crayons, Plasticine, Play-Doh, Bendaroos, wool/ twine, etc. Each person must have materials in his/her hands so that they can participate.
3. Ask the stakeholders around the first map to think about the impacts of fishing on those features. Ask them to draw or build craft models to put in additional infrastructure and activities taking place in the area (e.g. models of cruise ships, drawings of hotels on the beach, deforestation on hillsides). Ask them to analyse and represent on the map (by drawings or models) how fishing impacts on ecosystem features, infrastructure, and human activities (e.g. anchoring fishing boats in areas with seagrass beds or coral reefs can destroy the areas).
4. Ask the stakeholders around the second map to think about other activities that are taking place in the area. Ask them to draw or build craft models to put additional infrastructure and activities taking place in the area (e.g. models of cruise ships, drawings of hotels on the beach, deforestation on hillsides). Ask them to analyse and represent on the map (by drawings or models) how other human activities will affect fishing.
5. Ask each group to present their maps and facilitate discussion.
6. Debrief to emphasise that all the activities in the ecosystem are interconnected. Managing fishing alone ignores other activities that may negatively impact fishing. EAF is a strategy to bring these other activities and their stakeholders together to manage the ecosystem for protection of the fisheries.

[4] You may use a map of the country/ area you are in for this exercise as well.

1.10 Useful resources for EAF

CANARI, 2002. *Assessing capacity for participatory natural resource management,* Laventille: CANARI, DFID, European Commission.

Fanning, L., Mahon, R. & McConney, P., 2011. *Towards marine ecosystem-based management in the Wider Caribbean.* Amsterdam: Amsterdam University Press.

FAO, 2003. *Fisheries Management- 2. The Ecosystem Approach to Fisheries,* Rome: FAO.

FAO, 2005. *Fisheries and Aquaculture topics. The ecosystem approach to fisheries management..* [Online]
Available at: http://www.fao.org/fishery/topic/13261/en
[Accessed 18 July 2012].

FAO, 2005. *Putting into practice the ecosystem approach to fisheries,* Rome: FAO.

FAO, 2012. *Implementation of the 1995 FAO Code of Conduct for Responsible Fisheries.* [Online]
Available at: http://www.fao.org/fishery/code/en
[Accessed 12 July 2012].

Nurse, L., 2009. *Incorporating climate change projections into Caribbean fisheries management.* Guadaloupe, Proceedings of the 61st GCFI.

Renard, Y., 2004. *Guidelines for stakeholder identification and analysis: a manual for Caribbean natural resource managers and planners,* Laventille: CANARI, John D. and Catherine T. MacArthur Foundation.

Renard, Y., Brown, N. & Geoghegan, T., 2001. *Stakeholder approaches to natural resource management in the Caribbean. Paper prepared for the Regional Conference on Community-based Coastal Resource Management, Merid, Mexico, 19-21 June 2001,* Laventille: CANARI.

Secretariat of the Pacific Community (SPC), 2010. *A community-based ecosystem approach to fisheries management: guidelines for Pacific Island countries,* New Caledonia: Secretariat of the Pacific Community.

Shepherd, G., 2004. *The ecosystem approach: five steps to implementation,* Gland, Switzerland and Cambridge, UK: IUCN.

Climate change

Module 2

2 SNAPSHOT ON CLIMATE CHANGE[5]

2.1 What is climate change

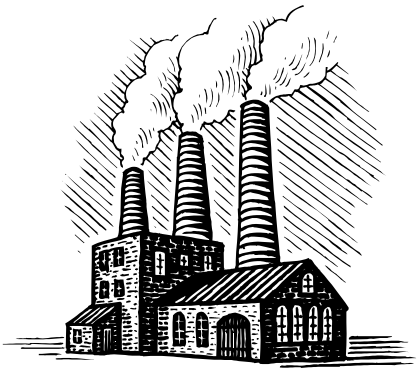
Box 1 The difference climate and weather

Climate describes the average weather of a place or the total weather occurring over a period of years in a particular place. It refers to what you should expect at that location. For example, if you live in the Guyana, there should be hot, sunny and wet weather throughout the year. The weather may however change daily.

Weather is what is happening outside at a given time in a given place. It is constantly changing.

Climate change is happening. Global warming of the Earth's atmosphere is taking place because human activities are producing more greenhouse gases.

Greenhouse gases (carbon dioxide, methane, ozone, nitrous oxide, water vapour) are naturally present in the Earth's atmosphere. They allow the Sun's energy to enter the Earth and release a fraction of the energy back into space. The energy in the form of heat that remains in the atmosphere warms the Earth.



Human activities such as the burning of fossil fuels (natural gas, oil, coal) and the production and dumping of material like plastic have released more greenhouse gases into the atmosphere. Less energy is returned to space. The extra greenhouse gases trap more heat and this produces global warming.

2.2 General projections for how climate will change in the Caribbean and how this will impact us

Because the Earth is warming, both land and water are expanding. The ice in the colder regions of the world is melting, adding extra water in lakes, rivers and streams. The water eventually terminates in the world's oceans. This results in **sea level rise** and **changing ocean circulation patterns** (currents). Sea level rise will cause flooding in coastal areas. This will have a huge impact on Caribbean populations and infrastructure, which largely are in coastal areas.

[5] Information adapted from http://www.eschooltoday.com/climate-change/effects-of-climate-change.html . Accessed October 08, 2012.

Weather also changes because of global warming. **Rainfall patters are changing** so the wet and dry seasons are shifting shift, the rainy season is becoming generally drier, the dry season is becoming generally more rainy, and some areas of the Caribbean may become drier and experience more drought. **Extreme weather events such as storms and hurricanes may become more intense**. Droughts will cause drinking water to become scarce and sanitation will be affected. Storm events will damage infrastructure and natural habitats.

Rising sea surface temperature will also cause changes in ecosystems. Corals for example live in water within a narrow range of temperature and salinity. When the water becomes warmer, the corals lose their symbiotic zooxanthellae that give them their colour and the coral bleaches. The region-wide bleaching event in 2005 was caused by above average water temperatures. Similarly, fish tend to migrate to areas where temperatures are more favourable for them.

2.2.1 Climate change projections for fisheries in the Caribbean

Common projections for climate change and the implications for the fishing industry in the Caribbean.

Parameter	Discussion/ projections	Impact/ implication for fishing
Temperature	1.4 ºC and 3.2 ºC by the end of the 21st century[6] Sea surface temperatures will increase during the summer and in the cooler seasons. The diurnal and seasonal ranges of temperature will decrease.	• Coral bleaching, e.g. 2005 Caribbean wide coral bleaching event • Fish migrating to water with temperatures that are more suitable. This can mean a northward migration or migrating to deeper waters
Changing ocean acidity	The oceans absorb carbon dioxide. Carbon dioxide is acidic. Increasing carbon dioxide in the atmosphere means that more carbon dioxide is absorbed in the ocean leading to acidification.	• Limits the development of organisms that use carbonate ions such as corals and conch.
Sea level rise	0.18m to 0.59m (~0.5ft to 2ft) by the end of the 21st Century[7]	• Loss of coastal lands and infrastructure through coastal erosion

[6] http://www.cepf.net/where_we_work/regions/CaribbeanIslands/ecosystem_profile/Pages/climate_change_assessment.aspx . Accessed October 13, 2012

[7] http://www.cepf.net/where_we_work/regions/CaribbeanIslands/ecosystem_profile/Pages/climate_change_assessment.aspx Accessed October 13, 2012

Parameter	Discussion/ projections	Impact/ implication for fishing
		• Landward migration of mangrove forests that may be restricted by coastal development
Hurricanes/ storms	Expected increase in intensity of 5-10% by 2050 Reaching high intensity over shorter time frames	• Loss of infrastructure (jetties, equipment, vessels, homes) • Increased storm surge effects when coupled with sea level rise • Reduced timeframes for securing vessels and equipment • Loss of income

2.3 Addressing climate change impacts (adaptation)

Adaptation and mitigation measures are used to address the impacts of climate change. These classified under the three basic objectives of EAF. Some adaptation measures[8] include:

Table 2.1 Effects of climate change and adaptation strategies to address them.

EAF objective	Effects of climate change	Adaptation strategy
Ecosystem well being	Coral bleaching Loss of habitats (mangrove) Loss of land space Coastal erosion Migration of fish species	Artificial reef development MPAs Relocating infrastructure Adaptation in fishing gear and methods
Human well being	Conflict Loss of income Increase in cost of production Displaced families Rise in insurance	Employment diversification Aquaculture / mariculture development Mental coping strategies Education
Governance	Conflict / piracy Loss of infrastructure	Cross-sectoral collaboration Land use policy

[8] Identified by fisherfolk during the ACP Fish II training workshop in EAF and climate change held in St. Kitts and Nevis in October 2012

EAF objective	Effects of climate change	Adaptation strategy
	Coastal erosion	Marine protected area development

2.4 Communication and training materials

Possible slides for use in climate change sessions

Weather vs. climate

- Weather is the temperature, rainfall, humidity etc at a given place and a given time.
- Climate is the sum of all weather happening over a number of years in a specific place.

Climate change defined

- Climate change refers to the short and long term effects on the Earth's climate as a result of human activities such as deforestation and burning fossil fuels such as oil, natural gas and coal.

Impacts of climate change on the fishing industry

- Sea level rise (0.18m-0.59m)
- Increased sea and surface air temperature (1.4^{o}C-3.2^{o}C)
- Increased intensity of storms (5%-10% increase in intensity)
- Change in weather patterns
- Increased acidity of the oceans
- Change in ocean circulation

Definition: climate change adaptation

Climate change adaptation refers to the actions that are taken in the anticipation of or in response to a changing climate. http://weadapt.org/knowledge-base/oxfam

Links to climate change videos produced by the CNFO:

The CNFO talks about the importance of adapting to climate change in this link.
[http://www.youtube.com/watch?v=MaO0K-jLgTw]

2.5 Hands-on activities

Identifying possible climate change impacts

2.5.1 Activity 1: Mapping climate change impacts

1. Draw a map of an island on a large sheet of paper. Include resources on that map (e.g. sea, forest, rivers, salt pond, housing development, hotel on coast, reef, mangrove forest, marina, town, rural village, etc.).
2. Give each stakeholder materials such markers, crayons, Plasticine, Play-Doh, Bendaroos, wool/ twine, etc. Each person must have materials in his/her hands so that they can participate.
3. Remind the stakeholders of the projected impacts of climate change. Ask them to use the materials to put the likely effect of these on the ecosystems, infrastructure and human activities map.
4. Debrief by emphasising that:
    a. Climate change is already impacting us in the Caribbean.
    b. Humans are already negatively affecting the environment and climate change will worsen these effects.

Identifying possible adaptation strategies

2.5.2 Activity 2: Mapping climate change adaptation

1. Return to the map with the climate change impacts.
2. Give each stakeholder materials such markers, crayons, Plasticine, Play-Doh, Bendaroos, wool/ twine, etc. Each person must have materials in his/her hands so that they can participate.
3. Ask participants to brainstorm the strategies that can be used to adapt to climate change and represent these on the map using the materials (e.g. building sea walls, planting trees).
4. Debrief by emphasising that:
    a. Many of the adaptation strategies are things that we should be doing to manage resources (e.g. developing and enforcing stricter land use policies, using low-impact fishing gear)
    b. Many of the strategies are designed to give the natural resources opportunities to increase their resilience (e.g. developing no-take zones to allow coral reefs and fish populations to recover)

2.6 Useful resources for climate change

Cambers, C., Claro, R., Juman, R., & Scott, S. (2008). *Climate change impacts on coastal and marine biodiversity in the insular Caribbean: Report of Working Group II, Climate Change and Biodiversity in the Insular Caribbean.* Laventille: CANARI Technical Report No. 382.

CANARI. (2009). *Climate change in the Caribbean: the case for greater investment in research and adaptive policies.* Laventille: CANARI.

Cochrane, K., De Young, C., Soto, D., & Bahri, T. (eds). (2009). *Climate change implications for fisheries and aquaculture: overview of current scientific knowledge.* Rome: FAO Fisheries and Aquaculture Technical Paper. No. 530.

Curtis, L., Beveridge, M., el-Gamal, A., & Mannini, P. (. (2011). Adapting to climate change: the ecosystem approach to fisheries and aquaculture in the Near East and North Africa Region – Workshop Proceedings. (p. 130). Rome: FAO Fisheries and Aquaculture Circular. No. 1066.

Day, O. (2009). *The impacts of climate change on biodiversity in Caribbean islands: what we know, what we need to.* Laventille: CANARI.

Nurse, L. (2008). Incorporating climate change projections into Caribbean fisheries management. *Proceedings of the Sixty-First Annual Gulf and Caribbean Fisheries Institute* (pp. 130-138). GosierGuadeloupe: GCFI.

Communication for policy change

Module 3

3 SNAPSHOT ON COMMUNICATION[9]

3.1 Developing a communication plan

Setting out to strategically develop a communication plan helps you think ahead to how you will achieve and how you will communicate the desired impacts of your work.

A communication plan helps you to be clear about:

- what change you want to bring about using communication (objectives);
- which individuals or groups you want to influence (target audiences);
- what you want to say (key messages);
- who or what are the most effective messengers or champions;
- what are most effective products and activities for each target audience (pathways and channels);
- how you will accomplish your objectives (activities and timetable);
- what outcomes you desire and anticipate; and
- how you will measure the results of your project (evaluation).

The following are the seven steps you should follow in developing a communication plan.

Step 1: Identify the objective of your communication

Your objective links ahead to desired outcomes and the change you would like to see effected. Consider your objective, identifying whether it is:

- to raise awareness,
- to share knowledge,
- to effect a change in behaviour, or
- to advocate for 'action' (can further define the action).

Step 2: Identify your audience(s)

Be very clear to whom your communication will be directed. For example is your audience a key stakeholder, decision maker, resource user, or media representative? Ask yourself the following questions:

- What are the interests, beliefs and agenda of this audience?

[9] Excerpt from: CANARI. 2012. *A communication toolkit for Caribbean civil society organisations working in biodiversity conservation.* Laventille: CANARI. *Available at* http://www.canari.org/documents/CANARICommunicatingforConservation-toolkit2012.pdf

- Do I know the background of the audience so that I can fine tune the approach I take?

Step 3: Develop your message(s)

Consider carefully your objective and what you hope to achieve by the delivery of your message.

Frame your message in a way that engages the target audience — connect with where the audience is now and guide your message to where you want it to go.

Ensure you observe "the 5Cs" of communication: be clear, concise, correct/credible, comprehensive and consistent in your message.

Step 4: Decide on the product and channel or pathway for delivery of message(s) to each target audience

Selection of the mechanism for delivery of your message (product, pathway) will be linked to the audience's interests and preferences so you need to determine:

What media, forums etc. your target audience accesses

Who influences the audience (i.e. who might be an intermediary messenger or champion)

The pathway you select must also take into account the need to evaluate the achievement of desired outcomes by assessing reaction/response. Your selection is also dependent upon your available resources, practicality, opportunities, networks and your budget.

Step 5: Decide on timeframe to effect

Clarify the sequence of activities required for your communication, what activities need to be done in tandem, etc.

Step 6: Decide on means of evaluation

You want to ensure that your communication has been received and that it has had a positive *outcome*, therefore you need to identify indicators that can be used to measure effectiveness.
Identify some checkpoints at which you can monitor progress.
Factor in opportunities to troubleshoot and improve your communication plan.

Step 7: Implement and evaluate

Carry out your communication plan and assess its progress and *outcomes*. Use the lessons you learn to improve the plan and to develop better plans for future communication planning. Your ability to develop a good plan should improve with experience!

3.2 Developing messages

Once you are clear on the objective of your communication, you must be clear in what you communicate. What you want to say defines your message. The message 'sells' your objective and therefore it needs to be crisp and clear, conveying the hard facts that are of relevance to your objective and that can convince your audience and motivate the change you desire.

Messaging is a critical aspect in the development of your communication plan and you will need to reflect carefully when crafting your message. Your message should be a concise and unambiguous statement which is transmitted in one or several ways to your target audience to fulfil your objective.

You can eliminate ambiguity and achieve 'sell', by observing the 5Cs of communication in developing your message: be *clear*, *concise*, *correct/credible*, *comprehensive* and *consistent*. The following tips will provide elaboration of the 5Cs.

1. The message must be clear.

The language used must be simple, consider the age range, literacy level and interest of your audience when you are developing your message. How do you make the message clear? Consider communicating your message visually, in writing or verbally to give clarity. The message should not be ambiguous, but easily understood.

2. The message must be concise.

Do not get your audience lost in a fog of information. If you use too many words or your information proceeds on a long and winding path, you lose your audience's interest and its understanding of your message. Keeping the message brief helps with uptake.

3. The message must be correct and credible.

You should validate your information and obtain it only from credible sources. Wikipedia is a quick reference but you must remember that the upload comes from a variety of sources. Websites mentioned in *Section 1: Getting the facts right and keeping them current* are more reputable sources of information. Misconceptions should be dealt with directly. Understand the issues before you pass them on to others.

4. The message must be comprehensive and make a connection.

Use plain language and eliminate technical words that may not be widely understood. Consider your audience: scientists may use scientific jargon among other scientists, but communication with the layman requires adjustment. If technical terms are introduced, explain them with the support of examples that are familiar to your audience as far as possible.

5. The message must be consistent.

Particularly when you use a host of communication products are used, ensure that your message stays the same to reduce confusion and to assist in emphasis. Particular products can

be used for specific audiences, but also, a variety of products may be understood by each audience. It is imperative that there is consistency among the products so that misinterpretation is lessened.

Ensure that you observe these 5Cs in developing your messages when relating to any audience and when using any communication product and pathway. If you pay correct attention to messaging, you will improve the opportunity for achieving the intended uptake by the audience.

3.3 Audience types

Think about the audience with which you want to communicate. Start with the people where they are and make a case with them in mind. Ask three key questions:

- What do they already know?
- What do they want to know?
- What do you want them to know?

3.4 Communication channels and pathways

You can use a variety of channels (tools), activities and materials to get your information out to various audiences. What you use will depend on the resources available to you, including your budget, manpower, opportunities and networks.

Your choice of channel will also be determined by the type of result you wish to obtain from your communication. Remember, your communication has an objective – to educate, build awareness or to advocate – which should result in a change (improvement, enhancement, positive action). Choosing the appropriate channel is influenced by the type of outcome you wish to achieve.

The following table gives examples of various channels that can be used for communication.

Table 3.1: Examples of channels used for communication

Channels	Activities	Materials
Mass media such as articles in the Press and popular magazines	Meetings e.g. with policy makers, community groups, key stakeholders	Brochures Information briefs
Guerrilla marketing[10]	Presentations at various fora e.g.	Flyers

[10] Guerrilla marketing: The use of unconventional means to promote a product or idea by creating a unique, thought-provoking and engaging concept to generate buzz among your audience.

Channels	Activities	Materials
Internet including social media networks like Facebook, YouTube, blogs, e-mail Places of religious worship Transportation hubs Face-to-face communication Libraries Commercial sites: banks, hotels, fishing depots, agricultural shops, sport shops Educational institutions - schools and universities	seminars, conferences, meetings Exhibitions in communities, at malls, at your own location, for special days related to biodiversity (e.g. International Day for Biological Diversity, Earth Day, World Environment Day, World Food Day) Workshops Media opportunities e.g. interviews by reporters for the Press, appearances on television talk shows, radio call-in programmes	Billboards Exhibits Video documentaries Case studies Public service announcements Songs Websites Letters to the editor Skits and illustrations

3.5 Communication and training materials

Step 1: Identify the objective of your communication

Your objective links ahead to desired outcomes and the change you would like to see effected. Consider your objective, identifying whether it is:

i. to raise awareness,
ii. to share knowledge,
iii. to effect a change in behaviour. Or
iv. to advocate for 'action' (can further define the action).

Possible communication objectives?

- To raise awareness and share knowledge among all fisherfolk about how they can apply EAF and CC adaptation principles.
- To encourage fisherfolk to take action to apply EAF and CC adaptation principles.
- To encourage fisherfolk to work with policy makers and managers in government to input into decisions about fisheries management.

Possible communication objectives?

- To raise awareness of policy makers and managers in government about the needs and ideas of fisherfolk in making decisions about fisheries management and CC adaptation.
- To encourage policy makers and managers in government to work with fisherfolk in making decisions about fisheries management and CC adaptation.

Step 2: Identify your audience(s)

Be very clear to whom your communication will be directed. For example is your audience a decision maker, resource user, or media representative? Ask yourself the following questions:

i. What are the interests, beliefs and agenda of this audience?
ii. Do I know the background of the audience so that I can fine tune the approach I take?

Step 3: Develop your message(s)

Consider your objective carefully and what you hope to achieve by the delivery of your message.

i. Frame your message in a way that engages the target audience — connect with where the audience is now and guide your message to where you want it to go.
ii. Ensure you observe “the 5Cs” of communication: be clear, concise, correct/credible, comprehensive and consistent in your message.

Step 4: Decide on the product and channel or pathway for delivery of message(s) to each target audience

Selection of the mechanism for delivery of your message (product, pathway) will be linked to the audience's interests and preferences so you need to determine:

i. What media, forums etc. your target audience accesses
ii. Who influences the audience (i.e. who might be an intermediary messenger or champion)

3.6 Hands on activities

3.6.1 Introducing communication through analysing examples

1. In order to get people to start thinking about effective communication, select examples (e.g. videos, newspaper articles, reports, flyers, posters, fact sheets, newsletters, radio programmes, art, plays) to study as communication cases.

2. For each example, discuss:
    - What were the authors trying to get across?
    - Who were the authors trying to reach? (target audiences)
    - What did the authors want them to do?
    - What did the authors use to communicate their message?
    - How did the authors get their communication to reach their target audiences?

3. Debrief to draw out that in doing any communication you need to first think about:
    - Why you want to communicate – your communication objective
    - Who you are trying to reach – your target audiences
    - What do you want them to do as a result of the communication – your desired behaviours and actions
    - What information do you need to get across – your communication messages
    - What types of communication will be most effective with each target audience – your communication products and pathways

4. Emphasise that pulling this together in a communication plan will provide and important guide to ensure that your communication is effective.

3.6.2 Understanding target audiences – role play

1. In order to build understanding that it is essential to understand the interests, beliefs, and agenda of your target audiences so that you can develop an effective approach to communicate to them, do a role play.

2. Assign different people to play the role of different stakeholders who are some of the different target audiences for your communication (e.g. government policy maker, government technocrat, academic researcher, private sector, civil society organisation, community member, etc.).

3. Explain that the role play will be of the different stakeholders being interviewed for a panel discussion on the television or radio.

4. Choose one of the controversial issues that your communication needs to address where the stakeholders will have very different perspectives.

5. Conduct the role play by doing the panel discussion with questions and responses from the panellists.

6. Debrief to draw out how different target audiences have different perspectives and therefore how you communicate to each of them will need to be different and will need to respond to their individual interests, beliefs and agenda.

3.6.3 Choosing communication products and pathways

1. In order to get people to start thinking about choosing the most effective communication product and pathway for different audiences, get them to do a selection from a variety of choices.

2. Prepare cards each listing a different communication product and pathway.

3. Ask participants to identify which communication products and pathways would work best with each of your target audiences.

4. Discuss why these were selected, based on the types of audience.

5. Discuss the pros and cons of each product and pathway, considering criteria such as cost, skills needed to develop, technical and equipment requirements, effectiveness with the target audience, ability to be used with multiple target audiences.

6. Based on this, select priority products and pathways that you will use for each of your target audiences.

3.7 Useful resources

CANARI. 2012. *A communication toolkit for Caribbean civil society organisations working in biodiversity conservation.* Laventille: Caribbean Natural Resources Institute (CANARI). *Available at* http://www.canari.org/documents/CANARICommunicatingforConservation-toolkit2012.pdf

CANARI. 2009. *Communicating climate change: A toolbox for local organisations in the Caribbean. Port of Spain, Trinidad and Tobago.* Caribbean Natural Resources Institute (CANARI). *Available at* http://www.canari.org/documents/CommunicatingclimatechangeAtoolboxforlocalorgansationspdf.pdf

Brown, N.A. 2009. *Addressing Climate Change in the Caribbean: A Toolkit for Communities.* Kingston, Jamaica: Christian Aid (Caribbean). *Available at* http://www.canari.org/documents/CAtoolkitEnglish.pdf

Links to other organisations

4 LINKS TO REGIONAL ORGANISATIONS

Below are the links to partners in the region who can assist fisherfolk in EAF, climate change and communication efforts.

- Caribbean Catastrophe Risk Insurance Facility (http://www.ccrif.org/)
- Caribbean Institute for Meteorology and Hydrology (http://www.cimh.edu.bb/?p=home)
- Caribbean Natural Resources Institute (www.canari.org)
- Caribbean Network of Fisherfolk Organisations (http://www.caricom-fisheries.com/Default.aspx?alias=www.caricom-fisheries.com/cnfo)
- Caribbean Sea Commission (http://www.acs-aec.org/index.php?q=csc)
- Caribbean Sea Large Marine Ecosystem Project (http://www.clmeproject.org/portal/default.aspx)
- CARIBSAVE Partnership (http://caribsave.org/)
- Centre for Resource Management and Environmental Studies (http://www.cavehill.uwi.edu/cermes/)
- Disaster Risk Reduction Centre, UWI-Mona (http://www.uwi.edu/drrc/default.aspx)
- Food and Agriculture Organisation of the United Nations (http://www.fao.org/fishery/en)
- Gulf and Caribbean Fisheries Institute (http://www.gcfi.org/index.php)
- Organisation of Eastern Caribbean States (http://www.oecs.org/)
- Panos Caribbean (http://panoscaribbean.org/home)

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