Guide to Vulnerability Assessment and Local Early Action Planning (VA-LEAP)

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Contents

What is the Purpose of the Guide to Vulnerability Assessment and Local Early Action Planning?

This guide is designed to support a community-based or local level management and adaptation planning process. It can be used to explore the non-climate change and climate change threats within a defined geographic area or community in which there is a clear governing structure and decision-making process. The area can be large or small as long as the planning team involved in facilitating the process has decision-making authority or has the support from the governing authority of the area. For example, the area might be defined as a small coastal community that has land and sea tenure. Or, the area might be a small region of the coastline with several communities that is governed by a central agency or group. However, this tool is not designed for urbanized or densely populated areas with complex social and governance systems.

What Does This Guide Provide?

This document is a step-by-step guide for the development of a Vulnerability Assessment (VA) and a Local Early Action Plan (LEAP) for climate change adaptation.

The VA-LEAP includes the following 6 steps:

1) Getting organized
2) Raising community awareness
3) Assessing non-climate threats
4) Developing a local climate story
5) Assessing vulnerability to climate change
6) Finalizing your local early action plan for climate change adaptation

A LEAP is a simple planning document that practitioners can use to guide critical actions that need to be taken to improve management of important resources while taking climate change impacts into consideration. Developing a LEAP includes identification of priority social and natural resources, identification of threats, characterization of the vulnerability of priority resources to climate change impacts, identification of potential solutions to address threats and to reduce vulnerability to climate change impacts, identification of desired results and measurable objectives, and development of an action plan to achieve those results. The LEAP document can be used by community members and local government and/or NGOs to begin to implement immediate actions that are feasible for natural resource management climate change adaptation at the local level.

Developing a LEAP will allow your team to carry out a "qualitative" vulnerability assessment through community discussion and with local experience and knowledge. A qualitative assessment is based on descriptive information. Therefore, this guide is focused on collecting local knowledge and information to understand the perceived status of target natural and social resources, and the vulnerability of these resources to climate changes based on existing non-climate threats, past and current experience, and future predictions. The LEAP was designed this way to allow communities to explore how climate change may

impact resources that are important to them and develop "early actions" to address these threats without the need for extensive technical assistance and capacity.

Instructions are provided for each step of the LEAP process including the following information:

1. Purpose – a description of information to be captured and why it is important
2. Participants – recommendations on who should carry out or be involved in the exercise
3. Materials needed – what materials are needed to complete the exercise
4. Time requirement – approximately how much time is needed to complete the exercise
5. Worksheet – instructions on how to carry out the exercise and an example of what information will be collected in this exercise for the LEAP

What this Guide Does Not Provide

This guide does not provide complete guidance on community entry and engagement processes nor does it provide guidance on how to address major multi-stakeholder conflicts. This guide assumes that the individuals involved in the planning processes have carried out necessary community and stakeholder engagement and trust building activities and that they have the authority to complete the plan. By all means, a process for gaining community trust and stakeholder input is absolutely essential. We are only able to cover some very basic ways to do this and suggest that practitioners seek more complete guidance if they have not yet built trust with their partner community or if they are in a situation of major stakeholder conflict.

In addition, individuals who use this guide should have a basic understanding of facilitation. This guide does not provide facilitation training.

How was VA-LEAP Guide Developed?

This document was based off a process that was primarily focused on understanding and abating man-made threats to target marine resources. It has been expanded to now include understanding the vulnerability of targets to climate change impacts. Additionally, this process has been modified to explore climate change threats/impacts to all target terrestrial and marine resources, (for example, coral reefs and upland forests) and target social resources (e.g., houses and agriculture). However, given the foundation of the original document, there is a strong focus on "nature-based adaptation planning". It is therefore important that various agencies/organizations are included throughout the process that can provide more detailed information and input on aspects important for adaptation planning such as hazard management, health, food security, and education.

The VA-LEAP Guide is based on products developed by the Micronesia Conservation Trust and the Pacific Islands Managed and Protected Area Community who allowed CTI-CFF access to the source documents and graciously allowed for their modification for the Coral Triangle Region. The VA-LEAP Guide builds on lessons learned and input from CT6 partners to make the tools relevant to the CT region.

How is the VA-LEAP Guide intended to be used?

While this guide provides a specific series of steps to develop a LEAP, it should be adapted to meet local needs. Your team should review and decide on which steps and associated exercises are most appropriate for your community. For example, if your community has already been through participatory and learning activities (mapping, historical timeline, etc) or a resource management planning process (such as problem/solution tree), information and products from those activities can be used in this process. You should collect and review the information from earlier planning efforts as a foundation for the exercises in this document. In some cases, you might need to collect additional information while in other cases you may find that you already have enough information and can skip an exercise instead of doing it again.

This guide is designed to support a community-based or local level management and adaptation planning process. It can be used to explore the non-climate change and climate change threats within and defined geographic area or community in which there is a clear governing structure and decision-making process. Worksheets included in this document include examples.

Who is the audience for the VA-LEAP Guide?

This guide is designed for practitioners working within and with local governments and communities that normally facilitate capacity development at the community or local level.

This guide can be used by practitioners who generally work with local stakeholders and/or community groups. No specific technical expertise in climate change adaptation is required to carry out the basic process. However, specific expertise may be required to best understand appropriate adaptation strategies for specific issues (fisheries, erosion, agriculture, etc). Therefore, your team should consider bringing in experts before finalizing the plan to help determine feasible and positive actions to consider within the local context.

An Overview of The Local Early Action Planning and Management and Adaptation Planning Process

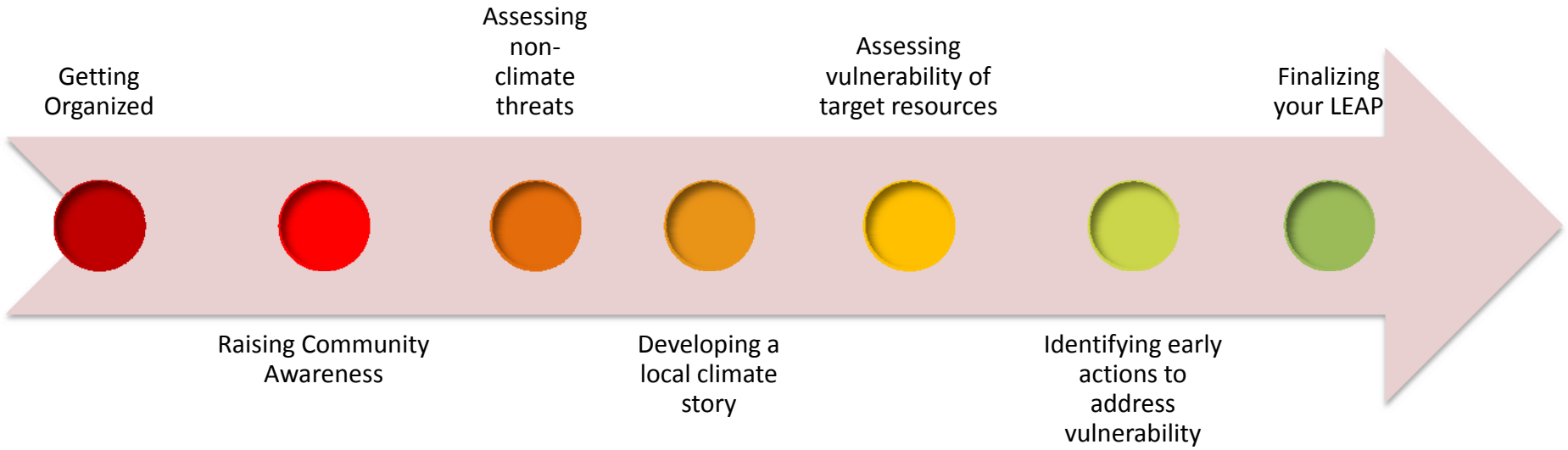


Table 1: Overview of the LEAP process:

Key Steps & Purpose	Activities/ Worksheets	How?
1. Getting Organized		
Purpose: To prepare your team to facilitate a community based LEAP process	• Review the LEAP template - *Worksheet One* • Organize your team – *Worksheet Two* • Identify Stakeholders – *Worksheet Three* • Developing your Community Profile – *Worksheet Four*	Planning Team Meetings & Meetings with Key Informants
2. Raising Community Awareness		
Purpose: To foster an understanding of climate change impacts, adaptation approaches, and other key information needed for your stakeholders to make informed decisions	• Raising Community Awareness Checklist –*Worksheet Five*	Community Meetings
3. Assessing Non-Climate Threats		
Purpose: To identify the most important natural and social resources in your community and explore the main threats to them as well as what you can do to better manage the area.	• Map the community – *Worksheet Six* • Identify and map natural resource and social targets – *Worksheet Seven* • Identify and map threats and impacts & Identify causes of threats – *Worksheet Eight* • Identify potential early actions to address threats and/or better manage natural resource and social targets – *Worksheet Nine*	Community Meetings
4. Developing a Local Climate Story		
Purpose: To understand which climate hazards and related impacts are most important for the community to address through early actions based on historical and present knowledge and future predictions.	• Conduct a historical timeline exercise – *Worksheet Ten* • Conduct a seasonal calendar – *Worksheet Eleven* • Walk through the community to ground truth the map – *Worksheet Twelve* • Explore the strength and weaknesses of the community – *Worksheet Thirteen* • Develop your local climate hazard story– *Worksheet Fourteen*	Community Meetings
5. Assessing Vulnerability to Climate Change		
Purpose: To assess which targets are most vulnerable to the impacts of climate change based on exposure, sensitivity, and adaptive capacity and refine or develop actions to address vulnerabilities	• Complete the Vulnerability Matrix – *Worksheet Fifteen* • Refine and identify additional early actions – *Worksheet Sixteen* • Prioritize your actions – *Worksheet Seventeen*	Community Meetings

6. Finalizing Your Local Early Action Plan for Climate Change Adaptation

Purpose: To finish your LEAP into a simple plan to address priority climate and non-climate threats to the most targets within your community	• Develop Objectives - *Worksheet Eighteen* • Developing a Work-plan - *Worksheet Nineteen* • Complete information for the LEAP template – *Worksheet One*	Planning Team Meetings

Facilitation Tips

Many of the exercises in the LEAP process should be carried out through community or stakeholder meetings to collect local perceptions and knowledge needed to inform various sections of the plan as well as involve the stakeholders in the process. These exercises have been labeled "community meeting" in the participant section. Additionally, many of these exercises benefit from good facilitation skills and a "neutral facilitator" who will not influence the results of the discussion but capture the views of the participants. A neutral facilitator can be a member of your team and/or community who is well respected for being fair or it can be someone from outside your community who can be viewed as neutral. This section provides some tips that your planning team should consider to facilitate these meetings:

- To capture input from the whole community, it is critical to include participants that can represent various groups such as women, men, various ages (including young and old), various income levels and occupations, various ethnic groups, and any other "groups" who are part of the community.

- You may need to adjust how you facilitate each step depending on how many people are present. If your meeting has several participants (more than 12 people) you may find it useful to divide into one or more small groups, which allow more people to talk and share ideas. In general, dividing into small groups to discuss the focal topic (such as the threats and their causes) may be helpful. Typically more people will speak in small groups. If you choose to discuss each topic in small groups it's important to review the results as a large group.

- Facilitation requires preparation for success. It is important to come to each meeting with a clear understanding for what will be accomplished. To do this, you should collect, prepare, and review materials and exercises needed for the meeting ahead of time so that you are clear about how the meeting will flow. Additionally, you should let the participants know what the objectives of the meeting are in the beginning and how long the meeting will be. Therefore, it is important to have a "time-keeper" to keep track of the time and progress that is being made.

- Exercises in this guide document can be modified and adapted to best meet your team's and community needs. Your team should decide on how best to facilitate and carry out the exercises to achieve the best outcomes for the local situation.

Local Early Action Plan Template Overview

Purpose: This section provides a template for your LEAP, which you can fill in as you move through the planning process. It provides an overview of the LEAP and the information that will be included in the completed document.

Participants: The Action Planning Team only (the core group of individuals who are involved in the management of your area and who will work with the community to facilitate the LEAP process)

Materials Needed: Computer

Time Requirement: The time it will take to complete the LEAP process will depend on how much activity has already been carried out in your community. For example, if you have already completed awareness programs, and some participatory planning activities you will not need to repeat them for this process and your time will be shorter. It also depends on how much time is needed to conduct a series of community meetings. Therefore depending on the previous work in your community, the whole LEAP process could take anywhere from a few weeks to several months.

WORKSHEET ONE: WRITING YOUR LOCAL EARLY ACTION PLAN (LEAP) FOR CLIMATE CHANGE ADAPTATION

Instructions: After completing specific exercises, you will be directed to take the information you have captured and insert it directly into this LEAP template so that at the end of the process your LEAP will be complete and ready to use.

LEAP Template

Community Name:

Community Profile (Worksheet Four):

Targets (social and natural), their Existing Condition, Non – Climate Threats and Impacts, and Root Causes of Threats (found in Worksheets Six - Nine):

Local Climate Story (climate change impacts and hazards of most concern to your community): (found in Worksheet Fourteen)

Describe which Resources are Highly Vulnerability to Climate Change Impacts and Why: (found in Worksheet Fifteen)

Existing Resilience/Adaptation Strategies & Community Strengths to Maintain or Build upon (found in Worksheet Ten & Thirteen)

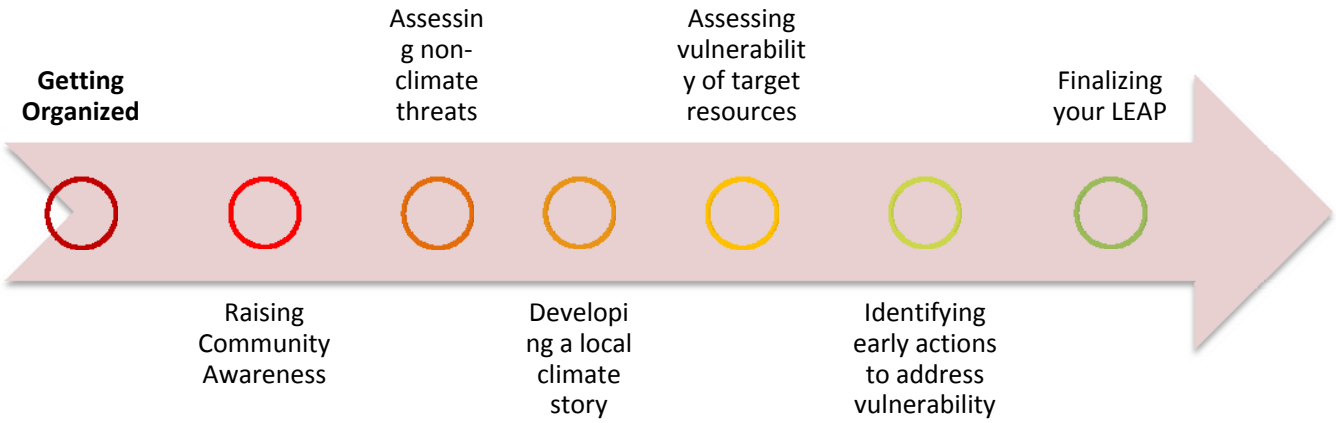
Early Actions to Address Climate Change Impacts and Non-Climate Threats (found in Worksheet Nine & Eighteen)**:**

Objectives and Actions to Address Climate Change Impacts and Non-Climate Threats:

Objective One:						
This objective will: Reduce Exposure Reduce Sensitivity Increase Adaptive Capacity						
Management Actions	**Who**	**Due Date**	**Cost**	**Indicator**	**Tasks to Complete the Action**	**Status as of_(date)_____**
Action One:					1. 2.	
Action Two:					1. 2.	
Objective Two:						
This objective will: Reduce Exposure Reduce Sensitivity Increase Adaptive Capacity						
Action One:					1. 2.	
Action Two:					1. 2.	

Estimated Cost:

Local Early Action Planning Process - Getting Organized



Organize the Action Planning Team

Purpose: This activity will help prepare your team to efficiently develop a local early adaptation plan (LEAP). The key question that you want to answer is: Why do we want to develop a local early action plan at this time and are we ready? If you decide that you are ready to develop a LEAP, there are several questions found in Worksheet Two that you should answer to get ready to start the process.

Participants: The Action Planning Team

Materials Needed: None

Time Requirement: The checklist itself will require only an hour. However, after completing the list your team will need to decide if more time is needed to organize the team, information, or the community before moving forward.

WORKSHEET TWO: GET ORGANIZED FOR ACTION PLANNING

Instructions and Example: Review the statements below. Check the boxes YES or NO for all statements and fill in the blanks for those that apply to your situation. It is recommended that all of the getting organized activities at least be discussed and ideally be completed before moving forward.

	Organization Statement	**YES/ NO**	**Example Answer**
1	We have clearly defined the results we would like to achieve from developing a local early action plan for climate adaptation at this time.	*YES*	What is your reason? *We are noticing changes that might be related to climate change and want to understand how our community might be impacted and what we can do.*
2	People in our community really want to develop a local early adaptation plan.	*YES*	*There have been several meetings with the community leadership and key representatives and they are supportive of having more discussions to better prepare for CC and manage resources.*
3	We have identified the geographic boundaries of the area that will be included in the planning process.	*YES*	The area is: *The entire community area from ridge to reef*
4	We have identified a strong team of local leaders and experts that have agreed to develop the local early adaptation plan. Who are they and what skills to they bring? (For example representatives from the following sectors: traditional or municipal councils, natural resources, hazard management, health, water resources, food security/ agriculture)	*YES*	Team members: o *Traditional leader – lead community in discussions and decisions* o *Representative of Women's Group – will help organize meetings and women's voice* o *2 members of our community based organization – will provide support in organizing the community meetings, keeping records, and providing outreach* o *Representative from government natural resource agency – will facilitate process*
5	We have identified a neutral person who will lead the local early adaptation plan process.	*YES*	Who? *Representative from government natural resource agency – will facilitate process*
6	We have the authority to carry out a local early adaptation plan process.	*YES*	*Yes we have both traditional leaders and government leaders engaged and supporting this effort*
7	We have a clear plan for who will use the local early adaptation plan and how it will be used.	*YES*	When? *This will guide the community based organization activities as well as local government planning agencies that will support this effort.*
8	We have a target date for finishing the plan.	*YES*	*November 2012*

9	We know how the plan will be approved and who has authority to approve it.	*YES*	How? *Members of the planning team will sign off after community meetings to endorse the proposed activities*
10	We know how the plan will be integrated into existing community plans and projects.	*YES*	The existing plan(s) are: • *Management plan for local marine managed area.* • *Local government hazard management plans* • *Mangrove conservation project*
11	We have collected existing information about the area (e.g. management plans, maps, historical photos, social or biological studies, information on climate).	*YES*	This includes: • *Some basic studies were done by the community college on forest species and coral reef species* • *Culturally important areas have also been mapped*
12	We have collected information about national and regional climate change and we know how to use it	*YES*	*We have the "Adapting to a Changing Climate outreach tool and Regional Climate Information Brief for the Coral Triangle"*
13	Our team has sufficient time and financial resources to complete our local early adaptation planning process.	*YES*	List financial sources: *There is sufficient time in the community if the process is carried out on weekends. We do not have many financial resources but have support from a local community based organization.*

After reviewing the statements in the checklist, your team should decide if you are prepared with the right information and if now is the right time to initiate the development of a local early adaptation plan OR if you need to carry out more activities to get organized. If most or all of the boxes are checked YES and you decide that you are ready, fill out Worksheet Three to understand how to involve stakeholders in the development of your local early adaptation plan.

Identify Stakeholders

Purpose: You should involve key stakeholders in the development of your LEAP. This exercise is extremely important because it will help you identify the individuals and organizations that have a stake in your area and involve them in creating your local early action plan. The way you engage your stakeholders can either help or hinder your work!

Participants: The Action Planning Team (including a neutral facilitator)

Materials Needed: Flipchart, markers, and tape

Time Requirement: 1-2 hours

Stakeholders are the main groups of people in your area that have who have an interest, or "stake", in your community and its natural resources.

WORKSHEET THREE: IDENTIFYING AND INVOLVING STAKEHOLDERS

Instructions and Example:
Tape several pieces of flipchart paper on the wall with the five following columns written like the example worksheet below. Review the questions below. Working with your neutral facilitator and your Action Planning Team, fill in the boxes in the table.

What are the main groups of people involved in the area?	Describe their interest in the area	Describe the validity of their interest or "stake"?	How important is this group to the planning process?	How and when would you like to involve them in the planning process?
Local community members (including men, women, and youth)	Clan ownership of many of the resources. Recognized resource use rights	Highly valid. They have had a role in the area for generations	Very important	From the very beginning of the process. Involve them in community visioning process, all regular community meetings, quarterly feedback opportunities.
Fishermen from other villages on the island	Historically they would fish in the area only by asking permission. Now they often fish without asking permission	Low. Historically we would not deny them access as long as the stock was healthy. Now they come in without asking.	Medium. They may choose not to follow the rules unless they are involved. But they have little valid stake in the area.	Inform them that the process is going on and ask for their input after the community has carried out the planning process. Ask them for their input on the activities and the rules and consider revisions if appropriate. Inform them of our decisions, pointing out how we have involved their concerns.
Illegal fishermen from far outside the area	Sharking fining, tuna fishing, catching turtles, etc.	None. They are fishing completely illegally in the area	Not important	Inform them of the rules once established. Enforce when necessary.
Enforcement agency	They are mandated to enforce the rules of the area	High. Once rules are law, they must enforce them.	Very important. They can help determine what is practical in terms of enforcement.	Inform them early on about the process. Ask for their input early on and invite them to key meetings. Ask them to have a focus group after the community has gone through Steps One to Three.

Developing a Community Profile

Purpose: This exercise can be used by the planning team as an "entry point" into your community to begin discussions about climate change. The aim is to capture and understand some basic information about the community situation and the problems they are facing. This information will form the foundation for outreach discussions and future planning activities. If you already began working with the community used another exercise (e.g., problem-solution tree), you can continue to use that method to capture this information.

Participants: The planning team and key informants in the community. It is important to talk to representatives from various stakeholder groups such as men, women, elders, youth, and major occupational groups (e.g., fisher, farmers, etc).

Materials: Worksheet and pen and paper to capture notes

Time requirement: 1-2 hrs per stakeholder group

WORKSHEET FOUR: DEVELOPING A COMMUNITY PROFILE

Instructions and Example: Information for your community profile can be captured through guided discussions with representatives from various stakeholder groups. You can carry out this discussion in one meeting if key informants will be comfortable speaking about their concerns together. If not, you can have separate discussions with various key informants and the planning team can then compile the information together to develop the community profile.

You can use the questions in the table below to guide the discussion and form your community profile. After talking with the various stakeholder group representatives, your planning team can compile all the information into one statement.

Community Profile Questions	***Example Answer***
About how many people live in your community?	*250*
What are the major occupations (income generating and subsistence activities) of community members?	*Fishing, farming, teaching, government*
What local resources does your community depend on? Explain why.	• *Reef fish- food and income* • *Coastal land – homes and agriculture* • *Rivers – fresh water for drinking, bathing and crops* • *Mangroves – food (crabs) and wood for building and cooking*
How are decisions made in your community? Who has authority?	*Combination of traditional management (chiefs) and local government. Traditional management is still respected in the community but legally needs to be backed by local government.*
What social groups are currently active and what purpose do they serve?	• *Council of Chiefs – make major decisions regarding land and marine resources and other plans in the community* • *Women's Group – ensure women's input is provided to decision making process* • *Youth Group –ensure youth input is provided to process and function as community "surveillance" for marine managed area*
What are the main strengths of your community? What aspects of resource management and quality of life are working well?	*Our community works well together and supports one another. When someone is in need, others will help. Our resources are still able to provide many of us with food and income.*

Please explain 1-3 major problems your community is facing. Provide details.	*We are noticing changes to our resources. Our fish populations are declining and the coastline is eroding. We are experiencing more flooding during king tides.*
Please explain 1-3 social problems your community is facing. Provide details.	• *Health/sanitation – water resources are contaminated from piggery waste and no longer safe to drink – people/children have gotten sick from this.* • *Loss of traditional practices – young adults are moving away and traditional practices are not being passed down to new generation* • *Lack of job opportunities – there are not many jobs available for young adults and they have to move to more urbanized areas*
Do the problems listed above affect different groups of community members equally?	*Less fish, and lack of jobs are mostly impacting youth especially those that would like to be fishermen. People living on the coastline experienceg more flooding of their homes during king tides. The whole community is facing loss of traditional knowledge and sanitation problems as these problems spread throughout the entire population.*
Are there any new community improvement initiatives planned? (e.g., development, capacity, transportation)	*A new health center is being built in the next two years to provide more immediate access to health care in the area.*

COMMUNITY PROFILE STATEMENT – Write a brief statement that includes the information captured through your discussions.

The community of _xxx_ has a population of about 250 people and is located in the northern area of the island of _xxx_. The decision making structure is made up of traditional management that is supported with the government legal system. The major occupations within the community are farming and fishing. The strengths of the community are that the community is well organized with strong leadership. Most people are able to earn income and/or harvest food from local resources. The resources the community members are mostly dependent on and concerned about are

- *Reef fish - food and income*
- *Coastal land – homes and agriculture*
- *Rivers – fresh water for drinking, bathing and crops*
- *Mangroves – food (crabs) and wood for building and cooking*

The main problems they are facing are:

1) *Coastal erosion of low-lying coastal areas where many homes and farms are located*
2) *Loss of mangroves over time*
3) *Decline in fish populations and loss of income for fishermen, especially young fishermen*
4) *Polluted water resources that are no longer healthy for human use*
5) *Lack of job opportunities for youth*
6) *Loss of traditional knowledge and practice in the new generation*

Existing actions the community is taking to address these problems:

- *Many fishermen are starting to do more farming to supplement income*
- *Moving farms away from coastline where salt water inundation has occurred in the past*

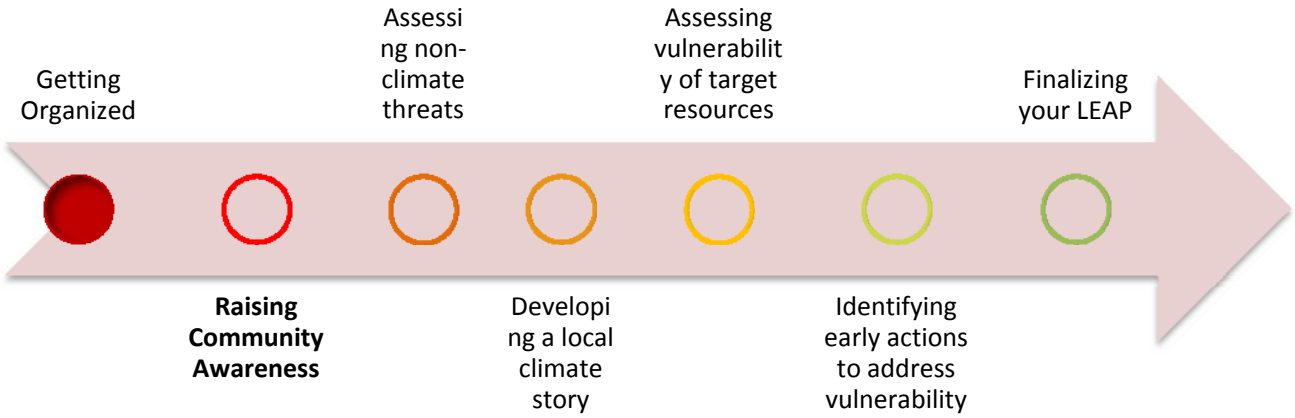
New community improvement initiatives include:

- *A new health center being built to provide access to health care to the area*

Upon completing the information above, add the "community profile statement" into the LEAP template.

This exercise completes the "Getting Organized" Step!

Local Early Action Planning Process - Raising Community Awareness



Community Awareness Checklist

Purpose: It is important that your community understand climate change, its potential impacts, and the reason for developing a LEAP. Efforts to raise awareness are used to provide key information to stakeholders so that they can make informed decisions. This activity will help your team review what information has been provided to the community and what outreach may still be needed.

Participants: The Action Planning Team

Materials Needed: None

Time Requirement: The checklist itself will require only an hour. However, after completing the list your team will need to decide if more time and materials are needed to carry out awareness raising activities with your community on specific topics.

If you determine that you need to engage in outreach efforts within your community, you can use Tool 2: Outreach Toolkit: Adapting to Climate Change in the CTI CCA LEAP Toolkit.

WORKSHEET FIVE: COMMUNITY AWARENESS CHECKLIST

Instructions: Review the statements below. Check the boxes and fill in the blanks for those that apply to your situation. While all of these outreach activities are not required to complete a successful LEAP, they will help ensure that your community has important information to support the decision making process. For boxes that are not checked, the team should discuss and decide if additional outreach is needed in the community prior to carrying out a LEAP process. If so, the group should decide on who and how the information will be shared with the community.

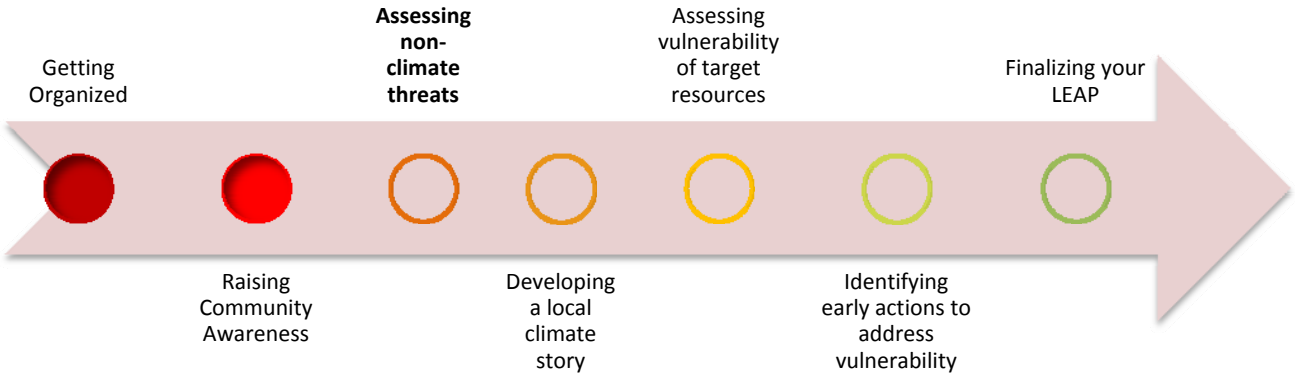
Review the statements below and check the boxes for those that apply to your situation.

	Community Awareness Activity	YES/ NO	Example Answers
1	We have carried out outreach in the community about tropical island ecology to ensure stakeholders are familiar with key ecosystem processes and services.	*YES*	When? *July 2010 – we began working with this community in early 2010 and carried out several community meetings and with local school groups to share information about ecology*
2	We have carried out outreach in the community about the benefits of managing resources	*YES*	When? *July 2010 – part of our meetings at this time was a discussion about resource management and best management practices that are options.*
3	We have carried out outreach in the community about climate change, potential impacts, and possible adaptation strategies to ensure there is a basic understanding of these concepts before developing a local early action plan. (NOTE: Tool 2: Outreach Toolkit: Adapting to Climate Change in the CTI CCA LEAP Toolkit can be used for to provide this information)	*NO*	When? *We have not provided information about climate change and there have been many questions about this issue. We now have the tools to carry out this work and will do so in April 2012*
4	We have carried out outreach in the community about the purpose and benefits of developing a local early adaptation plan	*NO*	When? *Our discussions about CC will include options for adaptation planning*
5	Other relevant outreach has been		What topics and when?

	carried out in the community	*YES*	*Our partners carried out awareness programs on maintaining safe and healthy water catchments. There have also been some meetings about emergency procedures in case of extreme events such as tsunamis*
6	Our community still needs to learn and understand more information	*YES*	What topics and when will this occur? *What other communities are doing to address climate change* Who will provide the information? *We will carry out a learning exchange with another local community leader who has been doing work on this.*
7	Our Action Planning Team still needs to learn and understand more information	*YES*	What topics and where will this information be found? *We need to understand more information about climate predictions and past climate events (when they occurred) such as El Nino's and major typhoons.*

This exercise completes the "Community Awareness" Step!

Local Early Action Planning Process - Assessing Non-Climate Threats and Developing Early Actions



To complete this step of assessing non-climate threats and developing early actions you will carry out two main exercises:

1. **Mapping your community** – the mapping exercise will provide your group with a foundation map will then be modified as you move through the next exercise.

2. **Developing a Threat/Action Model** – the threat/action model will be developed in a series of three meetings to build the whole model.

Map the Community

Purpose: This mapping exercise will allow your community stakeholders to identify the places they use, value, and need. *If your community has already completed a mapping exercise in the past, you can use the existing map and just review the information captured on that map to see if you need to make any additions. You can also develop a 3D map as described in Tool 6: Methods to Monitor Climate Impacts and Effectiveness of Adaptation Actions of the CTI CCA LEAP Toolkit.* This activity will lay the basis for further mapping activities. Your map should cover the entire area where the community has some role or where they access resources. The location of these elements can be approximated. You will have future opportunities to draw more precise maps.

Participants: This activity should be carried out through a community meeting with representatives from various groups or with community groups individually with an opportunity for the whole community to come together at the end of the meeting to discuss the results.

Materials Needed: Large flipchart paper, markers, and tape. The action planning team can have an outline of the community area and coastline already drawn on the paper to begin. You may find it helpful to tape two or more sheets together so your map can be large enough to go into detail.

Time Requirement: 2-4 hours

WORKSHEET SIX: MAPPING YOUR SITE

Instructions: Prepare your map on large sheets of flip chart paper.

Then, with your community, answer the questions below and use the answers to draw features on your map. If you have a very large group you may want split up into two or more groups and each draw maps and then compare and come up with an agreed to final map. Be sure to create a legend so the definitions of any symbols are clear. Keep the map safe for future use. If possible, take digital pictures of your map to capture the details.

What are and where are the key habitats and species within your community area? Include terrestrial, aquatic, and marine habitats and species (e.g. mangroves, coral reefs, forests, grouper, etc)?	
Please identify habitat quality of each key habitat (e.g. good reef areas, damaged reef, healthy streams, polluted streams, etc).	
Where are the areas that are important for key species (e.g. turtle nesting beaches, dugong feeding areas, bird nesting, spawning aggregations)?	
Where are important social and cultural features such as fishing shrines, houses, fishponds, churches, etc?	
Where are the roads, bridges, buildings, schools, hospitals/clinics, churches, evacuation routes, water reservoirs or tanks, etc?	
Where are key social and economic activities carried out (farming (including type), fishing (including type), harvesting, boating, diving, snorkeling, etc)?	
Include any other features that are important to your community	

Threat/Action Model Example

Purpose: Creating a Threat/Action model will help you identify the most important information about what is going on at your site and about what you can do to better manage the non-climate threats in the area.

The Threat/Action model will be developed through three exercises and associated worksheets:

1. Identifying natural resource and social targets in your community and the location where each target is in on your community map (Worksheet Seven)
2. Identifying threats that are preventing you from managing/conserving your targets. The location where each threat is taking place, and the impact and causes of each threat (Worksheet Eight)
3. Identifying early actions to address issues (Worksheet Nine)

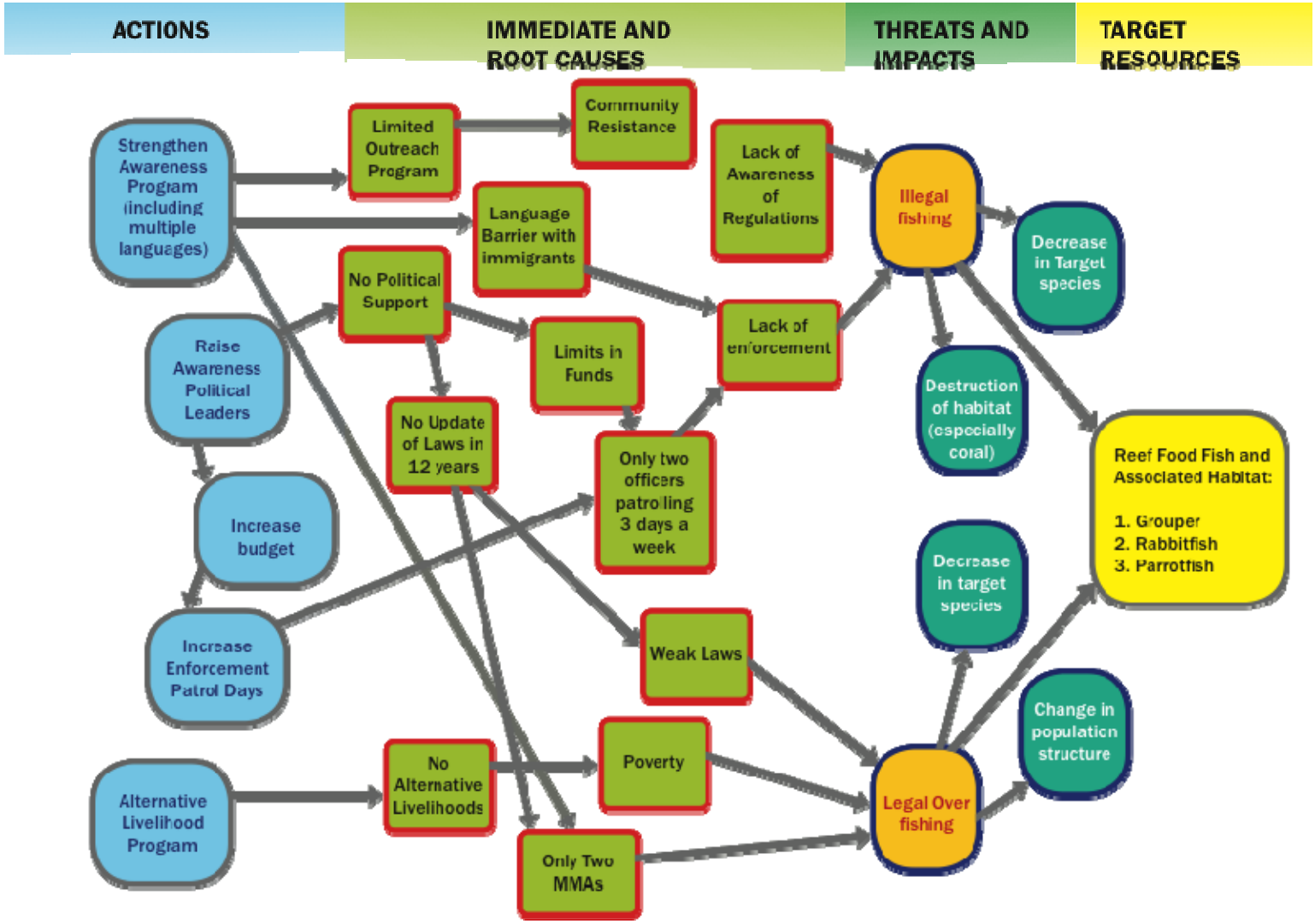
Participants: This activity should be carried out through community meetings with representatives from various groups or with community groups individually with an opportunity for the whole community to come together at the end of the meeting to discuss the results.

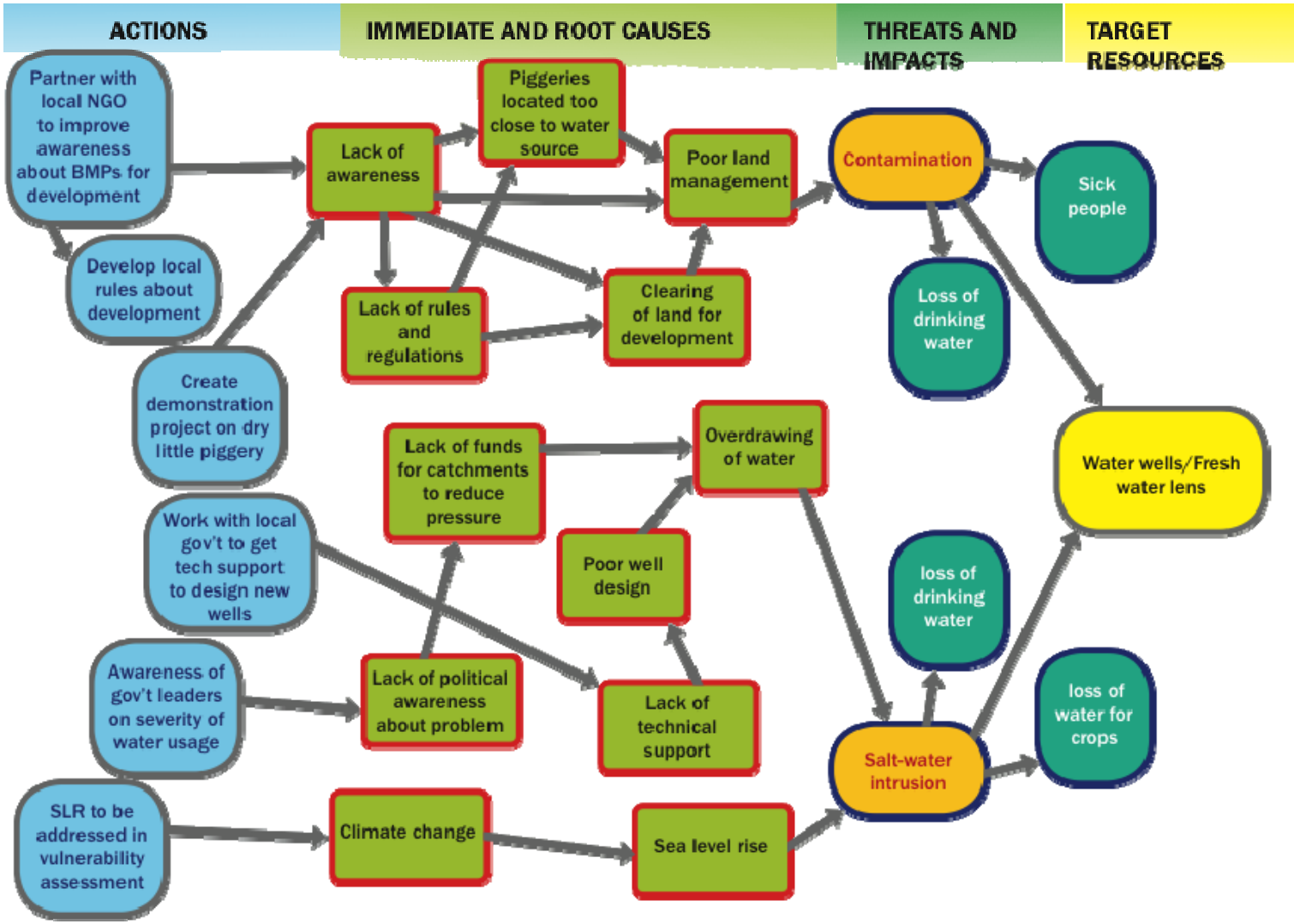
Materials Needed: Large flipchart paper, markers, and tape.

Time Requirement: The entire Threat/Action Model Step will require several meetings to complete. Your planning team should decide how to break up the model into different sessions depending on how much time you have for each community meeting. The model will include:

1. Identifying and Mapping natural resource and social targets (3-4 hours) - Worksheet Seven
2. Identifying and Mapping threats, impact and causes (3-4 hours) - Worksheet Eight
3. Identifying early actions to address issues (2-3 hours) - Worksheet Nine

The examples below show you what a completed Threat/Action model looks like for two targets (reef food fish and water resources) and what type of information is collected in this exercise.




ACTIONS
IMMEDIATE AND ROOT CAUSES
THREATS AND IMPACTS
TARGET RESOURCES
Partner with local NGO to improve awareness about BMPs for development
Develop local rules about development
Create demonstration project on dry little piggery
Work with local gov't to get tech support to design new wells
Awareness of gov't leaders on severity of water usage
SLR to be addressed in vulnerability assessment
Lack of awareness
Piggeries located too close to water source
Lack of rules and regulations
Lack of funds for catchments to reduce pressure
Lack of political awareness about problem
Climate change
Poor land management
Clearing of land for development
Overdrawing of water
Poor well design
Lack of technical support
Sea level rise
Contamination
Loss of drinking water
Salt-water intrusion
Sick people
loss of drinking water
loss of water for crops
Water wells/Fresh water lens

Identify and Map Natural Resource and Social Targets

Purpose: To support the Threat/Action model, this exercise will help you identify important natural resource and social targets that your community wants to manage. These targets will be included in your Threat/Action model and drawn on to your community map.

Examples of important natural resource targets include:

- A specific habitat type (seagrass beds, coral reefs, mangroves, rivers and streams, etc)
- A specific population of a species (migratory birds, grouper, parrot fish, sea cumbers, etc)

Examples of important social targets include:

- Fresh water supply (catchments, aquifers, etc)
- Agricultural fields or gardens
- Infrastructure (homes, school, churches, community buildings, roads, etc)
- Emergency facilities (health centers, evacuation areas, etc)
- Income-generating activities (fishing, farming, alternative job opportunities, etc.)

Participants: This activity should be carried out through a community meeting with representative from various groups. Various groups are important to include as they may have different perceptions on which resources are important. You can also work within these individual groups then bring them all together to discuss their work and combine their results.

Materials Needed: Large flipchart paper, markers, and tape.

Time Requirement: 3 – 4 hours

WORKSHEET SEVEN: IDENTIFYING AND MAPPING NATURAL RESOURCE AND SOCIAL TARGETS

Instructions and Example:

1. **Identifying Important Natural Resource and Social Targets:** You may want to facilitate this session in one larger group or by having participants form small groups of three to six and asking them to fill out the tables below. Small group facilitators can also be used to capture information on flipcharts.

2. Begin the session by reviewing the "Community Profile" developed in Worksheet Four. Specifically, review the information that describes the resources that the community is dependent upon, and natural resource and social problems facing the community. Using this information as a starting point, each group should begin by listing social and natural targets that are important to them and then complete each column of the table for each resource.

   Measuring Resource Status and Trend: Many factors can influence the status of your targets. For example, areas of coral reefs that have not experienced coral bleaching and that have lots of different types and sizes of fish may be in good condition while reefs that are subject to lots of sediment flowing off the land, dynamite fishing, etc would be in poor condition. In addition, a road that is in good condition but has started to be submerged during king tides may be fine now, but declining due to the damage done during king tides.

   Measuring Management Effectiveness: Many factors can influence the management effectiveness. Factors that indicate effective management include:
   - Outreach programs
   - A management plan or action plan
   - An engaged and supportive community
   - Strong leadership and/or political will for management efforts
   - Sustainable financing
   - Enforcement of rules and regulations

Natural Resource Target	Why is this target important?	Level of community dependence on this resource. (low, moderate, high)	Current Status (poor, fair, good, very good)	Trend Over Time (improving, no change, declining)	Management Agency/ Group and Existing Management Plans or Activities	Level of Management Effectiveness (poor, fair, good, very good)
Coral Reef	*Habitat for important fish*	*high – there are several fishermen and this is the only*	*good*	*declining*	*none*	*poor*

Natural Resource Target	Why is this target important?	Level of community dependence on this resource. (low, moderate, high)	Current Status (poor, fair, good, very good)	Trend Over Time (improving, no change, declining)	Management Agency/ Group and Existing Management Plans or Activities	Level of Management Effectiveness (poor, fair, good, very good)
		source of income – it is also a main source of food for many families				
Coastline	*Only land available for homes on atoll*	*High – there is very limited available land for homes*	*fair*	*declining*	*EPA – regulates development*	*Poor – lack of capacity and regulations*

Social Target	Why is this target important?	Level of dependence on this resource. (low, moderate, high)	Current Status (poor, fair, good, very good)	Trend Over Time (improving, no change, declining)	Management Agency/ Group and Existing Management Plans or Activities	Level of Management Effectiveness (poor, fair, good, very good)
Water Wells	*Needed for Drinking water*	*High – no other sources of drinking water in the community*	*fair*	*declining*	*No plan*	*poor*
Taro Patches	*Food and culture*	*Medium – have access to other foods but is a loss of culture and nutrition from local foods*	*poor*	*declining*	*Local community member*	*fair*
Airport	*Brings cargo and tourist*	*High – needed for emergency events and local economy*	*good*	*Improving – resources available to make improvements to protect runway*	*Local gov't, federal gov't*	*good*
Health	*Well being of people*	*High – need health to function*	*good*	*Declining – lack of local*	*Local Health Clinic/*	*fair*

Social Target	Why is this target important?	Level of dependence on this resource. (low, moderate, high)	Current Status (poor, fair, good, very good)	Trend Over Time (improving, no change, declining)	Management Agency/ Group and Existing Management Plans or Activities	Level of Management Effectiveness (poor, fair, good, very good)
		well		*food and water resources - affecting health*	*Organization*	
Income generating activities	*Needed to pay for school fees, and other necessities*	*moderate*	*poor*	*Declining – declining fishery resources has made it hard for youth to enter the fishery*	*Local community and government resource management agency*	*fair*

3. **Agreeing As a Large Group:** If you divided into small groups, you can get everyone back together and ask them each to present their findings. You can then summarize the findings on a flip chart sheet that is in the same format as the worksheet.

   If more than ten targets have been identified, look to see where you can lump resources into one bigger category. As a general rule you can lump resources that will have the same basic strategy used for protection or management. For example, if the community lists several types of coral reef food fish (e.g. rabbit fish, surgeon fish, parrot fish) and the main strategies used to help protect them are to eliminate destructive-fishing practices and create a local managed area (LMA), then all these fish can be lumped into one resource called "reef food fish". If a particular species needs a special management activity to protect it, then it should be split out as a separate important resource.

4. **Mapping Targets:** Once you have identified priority natural resource and social targets, the location where they exist and their current status (poor, fair, good, very good) should be drawn onto the community map. Be sure to create a legend so the definitions of any symbols are clear. Keep the map safe for future use. If possible, take digital pictures of your map to capture the details.

Upon completing the information above, add these tables into the LEAP template.

Identify and Map Threats and Impacts & Identify Immediate and Root Causes

Purpose: The next section of the Threat/Action Model is to explore threats to your targets. You will identify threats and impacts to your targets and causes of those threats. It allows your community to thoroughly explore what threatens the conservation or management of the resources that are important to them and why these threats are occurring which will lead to how they must be addressed to be successful. Finally it will also allow you to show where the threats are located on the map.

Participants: This activity should also be carried out through a community meeting with representative from various groups. Various groups are important to include as they may have different perceptions on what the specific threats to the various targets exist. You can also work within these individual groups then bring them all together to discuss their work and combine their results.

Materials Needed: Large flipchart paper, markers, post-it notes or index cards, and tape. The community map will also be needed to add threats to it.

Time Requirement: 2-3 hours

WORKSHEET EIGHT: IDENTIFYING AND MAPPING THREATS, IMPACTS, AND CAUSES

Instructions:

1. ***Advance Preparation:*** Prepare a very large piece of paper (as much as 8 to 10 feet in width) as the "Canvas" on which your Threat/Action model will be developed. You can prepare the "Canvas" by writing the following across the top of the Canvas:

Possible Action	Causes (trace back to the root cause)	Impact	Threats	Target (natural resource or social)

2. ***Advance Preparation:*** You should fill in the target column from the previous exercise (Worksheet Seven).

3. ***Advance Preparation:*** On a separate wall, hang up a large map of the community with the natural and social resources drawn onto the map. Be sure that the map is located where the majority of participants can easily see it. You can use the map that you created in the previous session. At this stage, the map should already include all key ecosystems, infrastructure, social activities, and the location of the targets.

4. Now identify all threats to your community's targets with participants. If the group is large it is best to divide into small groups. First, ask the participants to brainstorm threats that are preventing them from managing or protecting their targets. These can include both climate and non-climate related threats. For example if the target is "streams", a non-climate threat might be pollution, while a climate threat might be drought from changing precipitation patterns. Ask them to also include the impacts to the natural and social resources that each threat causes. Building off the previous example of stream, the impact from these threats might be un-safe drinking/bathing water, loss of water for crops, and loss of habitat for important species. They can write each threat and each impact on post-it note or index cards and tape them on the canvas as discussed above. You should then help to organize the threats so they are in line with the targets that are threatened by them.

5. If climate change is brought up as a threat, explain that they must identify the specific threats of concern (e.g. sea level rise, increased ocean temperature, etc and not just say "climate") then write the impacts from that threat to natural and social resources. However, you should let them know that climate change threats will be explored in much greater detail in the vulnerability assessment. Therefore, time should not be spent thoroughly discussing these threats and the main focus should be on the non-climate threats.

6. At this point, add the threats to your map. You can use the original map that you created in your first mapping session. At this stage, the map should already include all key ecosystems and their condition, infrastructure, social activities, and the location and condition of the target. We recommend that you

add threats to the map as one large group. Be sure that the map is located where the majority of participants can easily see it.

Indicate the area and resources that the threat is impacting. Some threats may impact the entire area and some threats may be more concentrated. For example, under normal circumstances sedimentation may only be a threat close to a river mouth and in the very near-shore waters. Illegal fishing may be concentrated at a particular area where the villagers are not able to easily see the illegal boat.

7. **Conduct a threat analysis:** After all the threats are mapped it is important to identify the causes of all of the non-climate change threats. The climate change threats do not have to be analyzed for causes since we know that climate change is the cause, which is a global problem and is not something that can be addressed solely by your community. You may choose to do this as one large group with one person facilitating the process and an assistant helping by writing cause on post-it notes or index cards and handing them to the facilitator to be pasted on the model. Or if you have a lot of people, it may be better to split into small groups and assign each group one or more threats for them to analyze.

   NOTE: When exploring the causes and root causes of a threat, consider:
   - How modern practices and/or technology have potentially increased pressures on targets.
   - How loss of traditional knowledge/management systems have impacted the status of resources.

Whichever way you choose to facilitate this process you should be sure to first identify the immediate cause of each non-climate threat and then identify the cause of that cause. With each new cause, keep asking "why does this cause occur" until you can't go back any further. In some cases you may identify a very long string of causes. This will help to better understand the root causes of the threats the better be able to address them. The majority of solutions will be focused on overcoming the causes of the threats. This in turn will reduce or eliminate the threat.

Identify Early Actions to Reduce Threats

Purpose: In this section of the Threat/Action Model your community will develop immediate actions that they would like to implement to help reduce non-climate threats and impacts.

Participants: This activity should also be carried out through a community meeting with representatives from various groups. You can also work with these groups individually then bring them all together to discuss their work and combine their results.

Note: If feasible, having technical expertise available for specific targets (fisheries, agriculture, water resources, etc) is beneficial. These experts may come from government or non-governmental agencies or organizations that focus efforts on specific resources and activities. These experts can help provide community members with information about different actions that can reduce threats and protect targets.

Materials Needed: You should continue to build on the Threat/Action model. Large flipchart paper, markers, post-it notes or index cards, and tape.

Time Requirement: 3 – 5 hours

WORKSHEET NINE: IDENTIFYING EARLY ACTIONS TO REDUCE THREATS

Instructions:

1. Have each group develop possible actions that will help to overcome each of the causes of the threats. Again you can do this as one large group or divide into small groups and assign one or more threats (and its causes) to each group. You should always check and make sure that you have a logical set of actions that have a high probability of overcoming the causes of the threat.

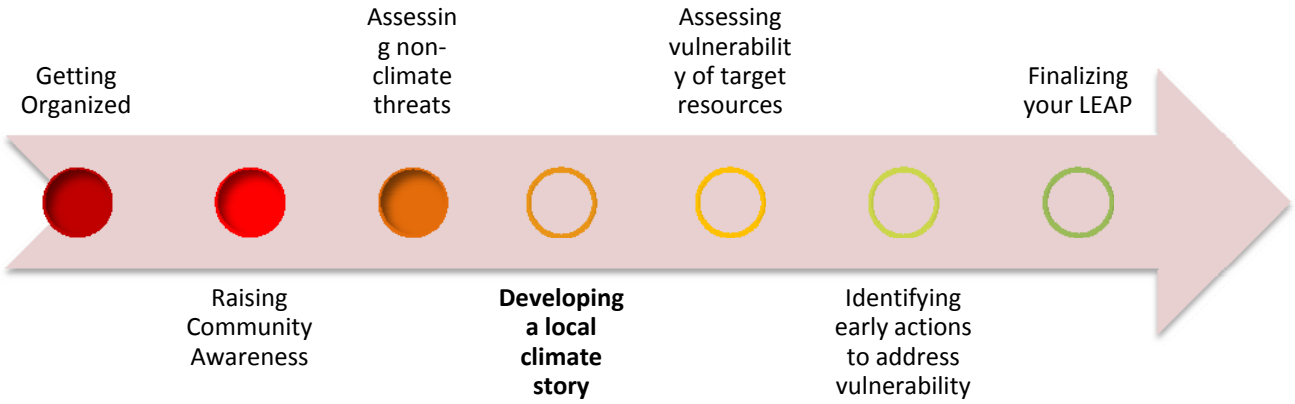
2. Have each group discuss and write the actions they developed in detail on flipchart paper. Details can include specific information about the actions. For example, rather than just stating "outreach", discuss who will provide the outreach, who will receive the outreach, and what information will be relayed. Then use index cards to capture the action (in a few words) and place it under the "actions" column of the threat/action model.

3. If the root cause of the threat is a very difficult challenge such as poverty, or hunger, then the group can either decide to develop solutions to the direct threat or impact or to develop actions to help address the root cause. For example, if the root cause of destructive fishing is lack of job opportunities, the group could explore the option of increasing enforcement and/or looking into development of alternative livelihoods. Mainly, the facilitator should help the group discuss these issues and to work at addressing the threats and impacts in a way that is feasible and meaningful. There may be certain root causes that cannot be addressed by the community. In that scenario it may be necessary to seek assistance from organizations that focus on those issues.

Upon completing the threat/action model, add the threats, impacts, and actions into the LEAP template.

This exercise completes the "Assessing Non-Climate Threats" Step!

Local Early Action Planning Process - Developing a Local Climate Story



The Local Climate Story

Purpose: Now that you have explored non-climate threats and impacts, it is time to look more thoroughly at potential impacts from climate change to your targets. This step is aimed at summarizing past, present, and future climate scenarios of your community into a short story that describes the local situation. The following exercises can be used to gather local information:

- A Historical timeline – will collect information on past climate events that occurred, their frequency and impacts, and ways the community and resources recovered successfully or not. (Worksheet Ten)
- A Seasonal calendar – will collect information on normal and changing trends in yearly seasons and associated events such as spawning, fruiting, or harvesting periods. (Worksheet Eleven)
- A Community Walk – will help to ground truth the community map and review which areas were most impacted by which past climate events. (Worksheet Twelve)
- A Strength/Weakness Analysis – will explore the ability of the community to successfully prepare for or recover from climate events. Also, it will help identify what challenges the community faces to cope with climate events. (Worksheet Thirteen)

Additionally, the "How will climate change impact your region?" from the Tool 2: Outreach Toolkit: Adapting to Climate Change and Tool 3: Regional Climate Information Brief for the Coral Triangle can also be used to review regional climate observations and projections. Based on the local information and known regional climate projections your community can discuss which climate hazards and associated impacts they are most concerned about adapting to in the near future.

Participants: The Action Planning Team can write The Local Climate Story but the information to fill in the template in Worksheet Thirteen should be collected through community meetings.

Materials Needed: A computer. Additional information that should be used to inform this story are the "How will climate change impact your region?" section of the Tool 2: Outreach Toolkit: Adapting to Climate Change, Tool 3: Regional Climate Information Brief for the Coral Triangle, and results from the mapping activity, historical timeline, seasonal calendar, and strength/weakness analysis

Time Requirement: 1-2 hours

The example below shows a completed local climate story:

LOCAL CLIMATE STORY

Coastlines
The coastlines of Majuro have been impacted by and continue to be threatened by storm surges which cause erosion of the beaches and loss of land for living space. Changes in weather patterns (increased storm intensity and frequency) could worsen the frequency and impacts of these threats.

Water Resources
The water resources on Majuro have been impacted by and continue to be threatened by 1) drought which causes lack of catchment water and salt water intrusion to the fresh water lens, and 2) storm surges which damage the fresh water lens and crops with salt water that leads to loss of water and food sources for people. The impact of these threats is a loss of available freshwater for people and crops from both catchments and the fresh water lens. These impacts are creating a greater dependence on imported food and water. Changes in weather patterns (extended dry periods and increased storm intensity and frequency) and sea level rise could worsen the frequency and impacts of these threats.

Coral Reefs
The coral reefs of Majuro have been impacted by and continue to be threatened by 1) coral bleaching which causes a reduction habitat for important food fish, and 2) Storm surges, which can break corals and cause a reduction in habitat for important food fish. Changes in sea-surface temperature and changes in weather patterns (increased storm intensity and frequency) could worsen the impacts of these threats.

Historical timeline

Purpose: To understand how future changes in climate might affect your community, it is first important to review how past events (typhoons, floods, drought, etc) have impacted your community. This is done by creating a historical timeline. The historical timeline reviews major social and natural events that have happened in your community over a long period of time. It will help you to understand trends in frequency, impacts, and responses to those impacts. This exercise also can help your community think about climate change projections in the region to understand what hazards may occur more frequently and which climate change threats may be most important to adapt to. When you understand the likely threats and impacts, you will be in a better position to develop adaptation strategies. This information will be used later in the vulnerability assessment (Worksheet Fifteen).

Participants: This activity should be carried out through a community meeting with a mix of community members including elders, adults and youth (both females and males). It is particularly important that elders be present, as they will have the most historical knowledge of the community and past climate events and impacts.

Materials Needed: Large flipchart paper, markers, and tape. Additionally, before you begin this exercise with the community, your planning team should collate relevant information. This could include historical documents for the community, aerial photos, historical data sets, etc. Your planning team should be familiar with the material prior to holding a community meeting and can utilize this information as part of the discussion if appropriate. It is also very good to bring the community map to this project to use in the discussion.

Time Requirement: 2 – 3 hours

WORKSHEET TEN: HISTORICAL TIMELINE

Instructions & Example: Begin the exercise by explaining the purpose of doing a historical timeline. It is good to emphasize that the community has been dealing with hazards such as drought and flooding forever (this is not new) and that the aim of this step is to understand the events that occurred in the past and how the community was impacted and dealt with them. This historical knowledge can inform how to best prepare for future hazards that are similar and may be more frequent or powerful due to climate change.

1. Begin by placing pages of flip chart paper on the wall and drawing a horizontal line across the paper. Note: People tend to know more about more recent events so the timeline may get full toward the right hand section. If needed add more paper to allow for room to write events and associated information.

2. Start the discussion by asking people to identify key events in history (typhoons, floods, drought, death of an important community member, etc). As each event is identified, record it along the line in the order that each event happened. Add flip chart paper as needed to go back as far as the community can remember. Be sure to write in large letters so that the whole group can see and mark down the year (and month if possible) with each event.

3. Use the questions below to prompt discussion and memory of specific events. Record these answers and discussion points on the flipchart timeline and separately on a piece of paper.*

What climate change impacts or hazards (typhoons, flooding, drought, salt-water intrusion, coastal erosion, etc) has your community experienced and when?		
Questions to consider:	**Answer**	**Explain any known or perceived relationship to climate change impacts or hazards**
What major impacts to natural resource have occurred in your community and when (mass mortality of fish, failing crops, bleaching events, crown of thorns (COTS) outbreak, etc)?		
Has your community experienced any health-related epidemics and if so when?		
Were there any specific times when natural resources were affected by human activities (introduction of specific fishing methods, removal of coastal vegetation or upland forest, etc)?		

Are there traditional management approaches that have been used to prevent or minimize negative impacts from climate related events and hazards? Are these still being practiced?		

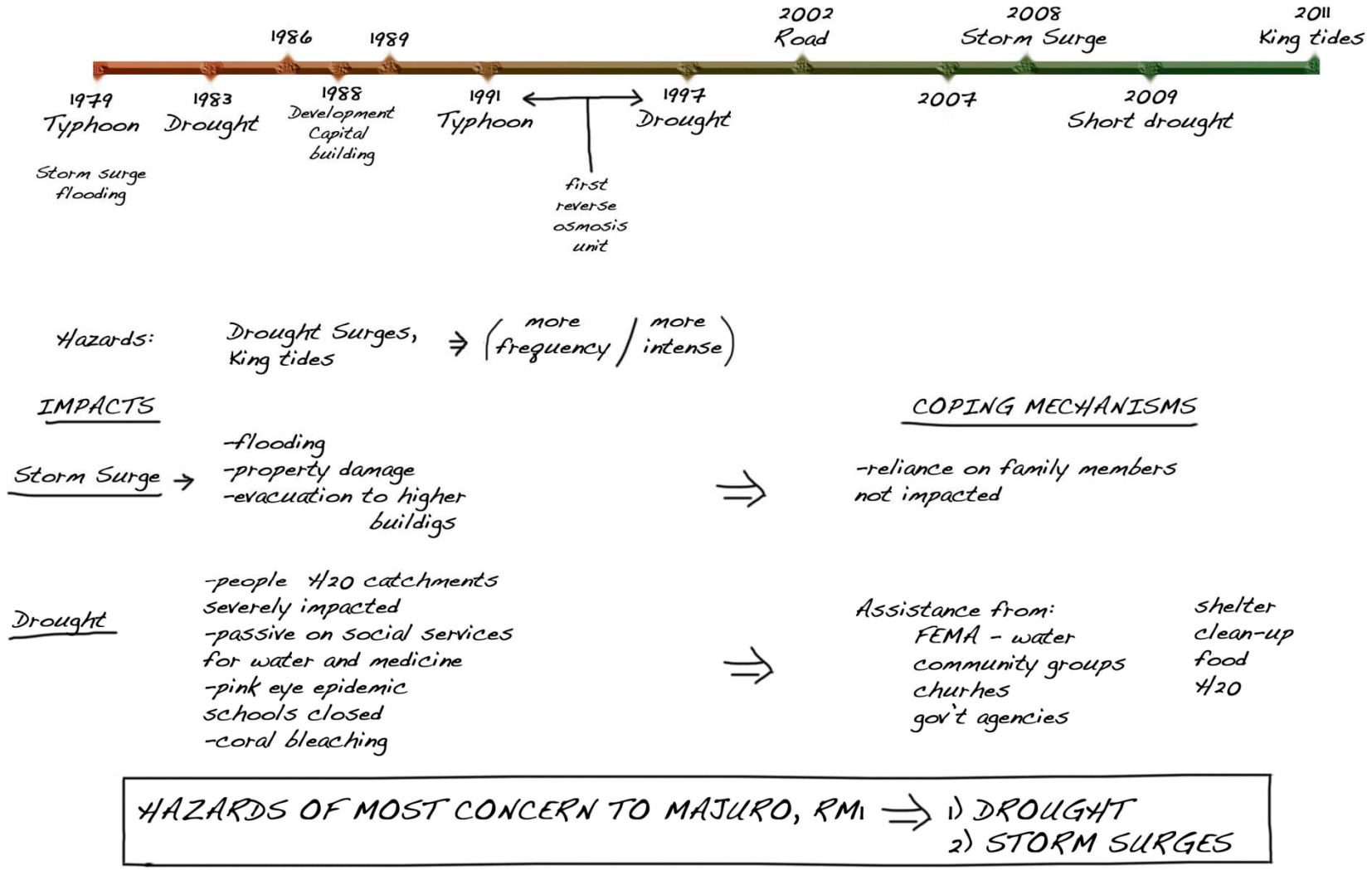
4. Now, review climate change projections for the region with your community and discuss how existing hazards may be influenced by climate change. This information can be found in Tool 2: Outreach Toolkit: Adapting to Climate Change (specifically the section on "How will climate change impact our region?") and Tool 3: Regional Climate Information Brief for the Coral Triangle. Make notes of which hazards and impacts may occur more often or become more intense based on future projections. Questions to consider to prompt discussion about changes in climate hazards over time and socioeconomic and biological impacts and are:

How severely were natural resources affected by past climate hazards?	
What were the socio-economic impacts from past climate hazards and how severe were they?	
Was everyone in the community equally impacted? If not, how and why were individuals or groups impacted differently?	
How did those impacted by past hazards recover from them?	
Do you notice these climate hazards becoming more intense and frequent over time?	
Based on climate projections, which climate hazards and impacts will likely become more frequent or intense?	
Based on past experience and future projections, which climate hazards and impacts are the community most concerned about and why?	

5. If appropriate, add information to the community map identifying specific areas prone to certain climate related impacts (areas that flood, areas that are inundated with salt water, areas of erosion, or areas with bleaching corals, etc)

*If possible take pictures of the timeline to capture this information.

Example of Historical Timeline



Upon completing the historical timeline, add successful existing adaptation/resilience strategies into the LEAP template

Seasonal Calendar

Purpose: To understand possible climate change impacts, it is important for your community to review the normal seasons during the year for major natural and social events and if these are changing. As a community you will review and discuss changes in annual cycles and weather patterns (rainy/dry season, etc) and associated natural seasons (fruiting and spawning periods, etc) and social activities (harvesting periods, etc). This exercise will include a discussion of potential social and natural impacts from climate changes as well as brainstorming on how to deal with changes. This information will be used in the vulnerability assessment.

Participants: This activity should also be carried out through a community meeting with a mix of community members including elders, adults and youth (both females and males).

Materials Needed: Large flipchart paper, markers, and tape.

Time Requirement: 2 – 3 hours

WORKSHEET ELEVEN: SEASONAL CALENDAR

Instructions and Example:

1. Begin by drawing a large circle on flip chart paper. Divide the circle from top to bottom and then into 12 "pie slices". Explain that the top of the circle is the beginning of the year and the bottom of the circle is half way through the year with the top being the end of the year. Depending on the size of the group, you can divide the participants into groups and have each group focus on one section of the seasonal calendar.

2. Ask each group to identify the **normal** weather patterns, natural events (spawning aggregations, fruiting, etc), and social events (harvesting, fishing, etc) that occur during that time or "slice" of the year**. NOTE: Although some communities feel there is "no normal seasons" anymore, they should discuss what used to be "normal or expected". From there, the group can discuss changes they are witnessing currently. It should also be noted how long ago changes to normal seasons began.**

3. Use the questions below to prompt discussion focusing on specific times of the year. Record answers on the flipchart "pie slice" and separately on a piece of paper. Your group can also decide on symbols to represent different seasons or events on the calendar. If using symbols, be sure to draw a key. *

What is the weather like during this time of the year? o Rainy/Dry o Wind direction o Storm events	
What is happening in the ocean (examples below)? o Spawning o Migrations o Turtle nesting o Bleaching o Currents o Tides o Sea-surface temperature o Harvesting of specific species What is happening on land? o Fruiting seasons o Birds/migrations o Agriculture (planting, fruiting, harvesting)	
What time of year do things occur that affect our communities health and why?	

What time of year do various food items harvest or spawn?	

4. Once each group has completed their time of the year, bring the larger group together and review each group's work. Allow other community members to add/revise each section.

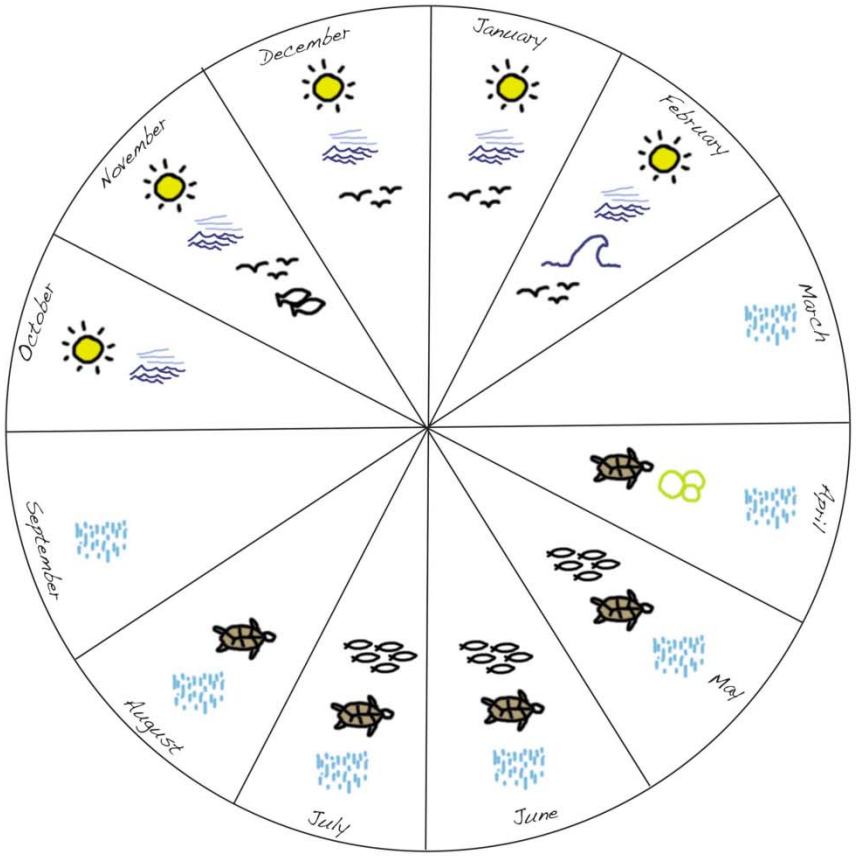
5. Upon completing the small group work and revisions by the larger group, consider discussing changes in seasonal events and activities with questions in the example table below. Capture this information on the seasonal calendar.

Example:

Are we noticing any changes to the seasons or these various events (longer or shorter dry season/ earlier or later fruiting seasons, etc)?	*Longer dry season, breadfruit season later and shorter*
How long have these specific changes in seasons been happening?	*10 years*
What time of year do climate-related impacts/events occur? Based on the historical timeline, are these events likely to increase or decrease?	*Mostly during the dry season - we also get the worst storm surges during this time. This is likely to increase if it is hotter and possible drier over time.*
Will these events possibly occur during peak times of harvesting certain resources?	*Not necessarily but crops are stressed in times of drought.*
How will changes in the seasons or seasonal event impact socio-economic factors (food security, income, health, etc)?	*If crops fail we are dependent mostly on imported foods. Increases storm surges put pressure on the public services such as medical services.*
How might the projected changes in climate influence these seasons?	*If it gets hotter, the dry season may be longer and more intense and storm surges may be more frequent.*
What changes and impacts to normal season are being noticed that are of most concern to your community and why?	*Drought and storm surges – these have had negative social and natural impacts in the past and seem to be getting worse. With CC projections, these events are likely to happen more frequently.*

* If possible take pictures of the calendar to capture this information.

Example of a Seasonal Calendar:



Normal Year
Wind direction East to West

Dry
80°

Wet
Less than 80°
harvest

Changes
- Longer dry season
- Later fruiting and shorter periods
- Past ten years
- Getting drier
- Likely to get hotter in future maybe more drier
- Storm events happen in dry seasons

KEY

- sun - dry season
- turtle nesting
- rain season
- tuna migration
- storms
- grouper spawning
- king tides
- breadfruit season
- bird migration

CC impacts of most concern ⇒ Potential for longer dry season which also includes storm surges

Community Walk/Mapping

Purpose: A transect walk is a simple task of physically walking through the community from the highest point to the lowest point (for high islands) or from lagoon to ocean side (for atolls) to look at the land use zones, key ecological features, and threats in various areas of the community. The primary purpose of this exercise is to ground-truth the community map and ensure that key features have been noted. This exercise explores spatial differences and land use and how climate change and non-climate threats can impact various parts of the community. Physically walking through the community can help community members visualize important sites including danger zones, evacuation areas, land use zones, resources used during emergencies, areas prone to specific hazards, changes to the environment over time (using historical reference) and land tenure.

Participants: This is typically done with a small group (6-10) of informants who can provide key information on the various areas of the community.

Materials Needed: If possible, bring the community map with you on this exercise. Also bring a pen and paper to capture notes from important discussion.

Time Requirement: The time requirement will vary depending on the size of the community and length of time taken to discuss each area.

WORKSHEET TWELVE: COMMUNITY WALK

Instructions: Begin by using your map to identify areas of the community that should be covered. More than one transect walk can be done if there are different areas with different uses/threats that should be included. If this is the case, it is good to divide the community into separate "areas" that will be explored through different transect walks. It is important to take good notes on each area so that they can be used to modify the existing community map. Take time in each area of the community to talk about key features including: land use and tenure, threats to the environment, changes over time, and proneness to being affected by climate events and impacts.

Through the walk the community map should be modified based on new information and to be sure that the map is as accurate as possible in terms of locations of various features. If the planning team is using a geo-referenced map, it can be useful to use a GPS for this exercise, however this is not required.

Answer the questions below while doing the transect walk to inform the vulnerability assessment which will be carried out in future steps. Capture information on the community map and on a piece of paper.

Where are our primary habitats, resources, and infrastructure? Are they already shown correctly on the community map? If not please correct them	
How have resources changed in specific areas over time?	
How has land use changed over time?	
How have past climate events and hazards (for example, storm-related flooding) impacted specific areas?	
Have certain areas been more impacted than others by past climate events?	
Where are the emergency evacuation routes?	

Strength Weakness Analysis

Purpose: To understand vulnerability to climate change, it is critical to understand what resources (emergency response, funds, etc) are available to the community as well as key gaps or needs. A Strength-Weakness Analysis is an assessment of the community's strengths and weaknesses that may affect the community's ability to prepare and adapt to climate change impacts. This exercise is particularly helpful to carry out for climate change adaptation planning to help your community think about long-term threats and explore strengths and opportunities that may help to address these threats. For example, if a community finds they are vulnerable to flooding during storm events, which are likely to become worse with sea level rise, it is important to consider how they have coped with these events in the past (e.g. the strengths and challenges faced during those times) so they can build on strengths and work to overcome weaknesses. Additionally they can explore opportunities that may help them to prepare for future floods. An example may include partnering with local hazard management agencies to explore options for evacuation planning and building homes on stilts.

Participants: This can be done with a small group (6-10) of informants who represent a mix of community members including elders, adults and youth (both females and males).

Materials Needed: Large flipchart paper, markers, and tape.

Time Requirement: 1-2 hours

WORKSHEET THIRTEEN: COMPLETING A STRENGTH WEAKNESS ANALYSIS

Instructions and Example:

1. Before discussing the strengths and weaknesses within your community begin by discussing how your community and specific groups in your community have dealt with past climate change impacts and hazards and how they would cope with potential future impacts to resources on which they depend. Use the following questions to prompt these discussions and capture the answers on a flipchart.

QUESTIONS	***EXAMPLE ANSWERS***
In times of past natural disasters, health epidemics, or other events that had negative socio-economic impacts on your community:	
1. Who does your community look to for assistance in times of need? Were they effective in providing help in the past? Consider: health, natural disasters, changes to natural resource	*Our community relies on traditional leaders to guide the assistance. We also look to the provincial government for immediate assistance. Our leaders have been very effective in organizing local support. Provincial government has provided some support but it has usually been slow to take place and not sufficient for our needs.*
2. What social groups are important to help the community cope with these events?	*The women's group is very important in spreading important information and making changes to individual households.* *The council of chiefs is very important for making decision on how our community resources are allocated to help in response to disasters.*
3. How has your community responded? Did the community make any changes from past experience to be able to better cope with similar future events? Why?	*There was a food crop failure in the past where most farmers lost crops due to a severe dry season. Most families struggled to provide needed income and food. Most families were able to have sufficient food through fishing. Financial support was provided from families in other areas to pay for necessities such as staple foods and school fees. The government did not provide assistance as the whole region was impacted and there was not sufficient preparation for the drought. A few community members have planted several different crops that might be able to withstand a drought since that time but there is little information on how to do this and what crops to use.*
If the future brings more natural disasters, health epidemics, or other events that have negative socio-economic impacts on your community:	
4. Would those community members who are dependent on resources that were severely damaged have an alternative for income or subsistence use?	*If the fisheries were severely damaged by climate, many fishermen would farm for subsistence. If crops failed, farmers would not have an alternative income opportunity.*
5. Would those community members who are dependent on resources that were severely damaged be able to use resources in another	*If the fishery was severely damaged in our community area it would be difficult to move to another area as we don't have tenure in other areas. If crops were damaged in one area, we may be able to move*

area?	*if the land was available within our community although it would require working together among families who traditionally use specific areas.*
6. How would community members cope with severely damaged or destroyed built infrastructure?	*Most people would move in with other family members temporarily and rebuild when possible. If the area was severely damaged, they may look to move the location of their houses up-land in response to coastal flooding and erosion.*
7. How would the community be warned or provided information about up-coming climate change impacts and hazards?	*Our community is only able to receive information from expert sources (through government agencies), through cell phone service, which is not reliable. Some individuals have radios and may use these when cell phones are not available.*

2. Using two pieces of flip chart paper, create two tables with three columns each labeled as follows:

Community Strengths/ Opportunities	**How will we build on this strength?**

Community Weaknesses/ Challenges	**How we will overcome or eliminate this weakness?**

3. To complete the ***Strengths*** column in the first table, consider the discussion you had in the first step and think about everyone (and every organization or stakeholder group) who is (or could be) involved in your community effort to implement adaptation strategies at the site. Identify and discuss the strengths of this group of people and organizations. Write your responses in a bulleted list under the "strengths" column of the table you created and in the box above. Here are a few questions to help you get started:

    - What kinds of resources are available to the group? These could include assets (funding, equipment), people (partners, staff, volunteers, experts), and/or information (data).
    - Does your group have any cultural or behavioral assets that can support adaptation (e.g., local knowledge of dealing with hazards in the past, ability to plan, learn and reorganize in response to disasters, effective individuals/groups in community who can mobilize awareness and resources to address adaptation)?How has the community successfully coped with climate hazards in the past (floods, drought, etc)? Are there traditional management practices that help minimize negative impacts from climate events?
    - Is there local and/or national demand/support for your adaptation actions or conservation services? How effective are these groups/institutions?
    - Are there any existing or new opportunities for beneficial partnerships with local agencies, groups, or other communities?

4. Upon completing the list of strengths, review each strength and determine what the community needs to do to maintain or pursue that strength?

Example:

Community Strengths/ Opportunities	**How will we build on this strength?**
Committed group of community members	*Keep them involved in the process*
Interested partners willing to help	*Continue to meet with them to update them on progress and seek input*
Traditional ownership and management and strong leadership.	*Seek community leaders to help facilitate dialogue with community members and provide decision making about adaptation plans*
Abundance of natural resources and healthy coral reef creates opportunities	*Carry out awareness about importance of healthy resources for long term resilience; continue to manage natural resources effectively to maintain ecosystem health*

5. To complete the ***Weaknesses*** column in the second table, think about, identify, and list any known management weaknesses within your group. Think carefully. The more honest you are, the more useful your results will be. Here are a few questions to get you started:

    - How strong is your group's financial support for adaptation efforts? What about other resources (see above)?
    - How is team/community morale and commitment to adaptation?
    - What were the main challenges the community faced in recovering from climate change impacts and hazards in the past (floods, drought, etc)?
    - Will certain groups of people be more impacted by future climate change hazards than others? Why?
    - Are there any external social, economic, cultural, political, legislative, or behavioral threats that could inhibit adaptation efforts at your site?
    - What gaps are there in the group's abilities to adapt to climate change?

6. Upon completing the list of weaknesses, review each weakness and determine what actions does the community need to take to overcome that weakness?

Example:

Community Weaknesses/ Challenges	**How we will overcome or eliminate this weakness?**
Lack of equipment, "tools", skills and money	*Seek partnerships with government and NGO's to provide technical support and to seek grant funds*
Lack of on going data on status and trends of the reef health	*Anecdotal information is high and enough at this point*
Limited number of people on island and for project implementation.	*Choose immediate activities that are feasible with current capacity*
Limited ability to receive information about potential hazards (warning system)	*Work with hazard management government agency to establish a radio network that can provide more reliable communication about projected hazards*

8. The results of the Strength/Weaknesses analysis can now be used in the vulnerability assessment to better understand the community's adaptive capacity to cope with climate change impacts. Additionally, it can inform the development of early actions by focusing action on ways to maintain or pursue strengths OR to eliminate weaknesses.

Upon completing the strength/weakness analysis, add priority strengths to build on into the LEAP template

WORKSHEET FOURTEEN: DEVELOPING YOUR LOCAL CLIMATE STORY

Instructions and Example:
This worksheet is a template that will help your planning team develop a Local Climate Story. You will use the information collected in the previous four exercises to complete your story. Follow the steps below to develop your story that will be inserted into your LEAP template.

1. Fill in the known predictions about your region in the first section of the table below. Then complete short statements to describe past, present, and future climate scenarios based on what was learned by in the historical timeline, seasonal calendar, community walk, and strength/weakness analysis.

Example:

Climate Change/ Hazard	**Known or likely change over time (increase/decrease/stay the same)**
Air temperature will	*increase*
Sea surface temperature will	*increase*
Sea level will	*increase*
Ocean Acidification will	*increase*
Weather Patterns will	*Change but it is unclear exactly how.*
PAST – **Based on historical trends, what hazards are most frequent and which have the greatest impacts?** (use historical timeline, mapping and SW analysis) *Droughts – lack of drinking water, loss of crops, coral bleaching events, pink eye epidemics* *Storm surges – flooding of homes, solid waste problems, erosion of coastline*	
PRESENT– **Based on current changes to the normal seasons you are noticing, what are the impacts of those changes that are of most concern to your community?** (use seasonal calendar, mapping) *Longer dry seasons – fruiting seasons are later and shorter. We are mostly concerned about longer dry seasons because of an increased likelihood for droughts and loss of crops. We also have increased storm surges in the dry season, which is eroding the coastline and inundating homes.*	
FUTURE – **Based on past experience and future climate change predictions, which changes in climate are likely have the greatest impact to your community?** *Increased Air Temperature – can increase frequency and severity of droughts causing increases in a lack of drinking water, loss of crops and food security, coral bleaching events, pink eye epidemics* *Change in Weather Patterns - Storm surges come with dry seasons and a longer dry season could bring increased frequency of flooding of homes, solid waste problems, erosion of coastline* *Sea Level Rise – impacts from storm surges is already a problem and increased sea level rise could make these impacts even worse*	

2. Complete the table below by asking the following questions for each of your targets:

a. What climate hazards have most frequently or severely impacted this target in the past or present?
b. What future climate change predictions will likely impact this target and how?
c. What will the impacts of these climate hazards be to this target?

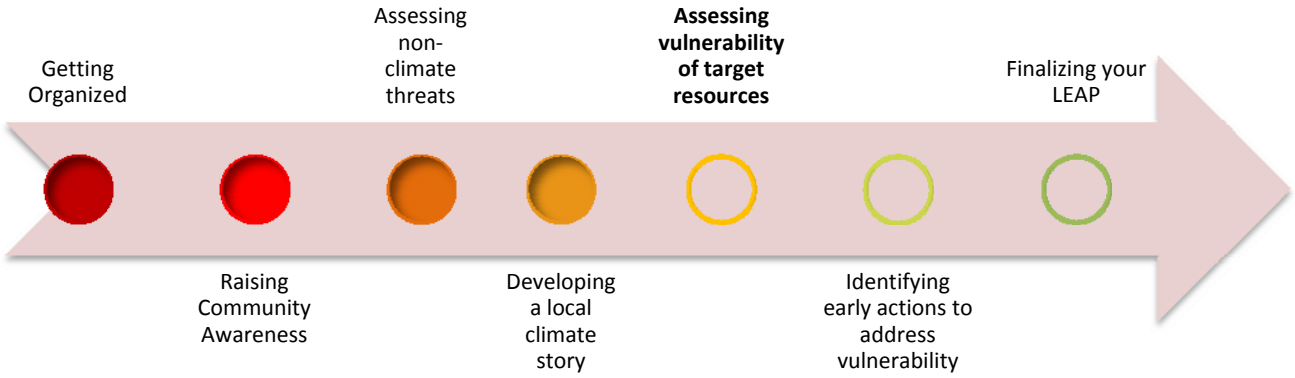
Target	**Most frequent or severe climate change hazard (past, present, or future)**	**Impacts**
Coastlines	• Storm surges • Sea Level Rise	• Erosion of beaches, loss of living space
Water Resources	• Increase Air Temperature • Drought • Sea level rise	• Lack of drinking water and water for crops • Salt water intrusion – loss of crops/food and water
Coral Reefs	• Sea surface temperature • Lack of cloud cover during droughts • Storm surges	• Coral bleaching and loss of habitat for fish • Damage to reefs and habitat for fish

3. Using the table above develop your local climate story by writing a narrative about the which climate hazards and impacts your community is most concerned about based on past and present experience and future predictions.

Upon completing the information above, add this table into the LEAP template.

This exercise completes the "Developing a Local Climate Story" Step!

Local Early Action Planning Process - Assessing Vulnerability to Climate Change



Qualitative Climate Vulnerability Assessment Example

So far your community has explored the non-climate threats and impacts to their targets, and the climate hazards that are most likely to have impacts to the community. It is now time to put this information together and explore how climate change might impact your targets. This next section is aimed at understanding the vulnerability of important social and natural resources to changing climate hazards and impacts

This step will complete your qualitative vulnerability assessment.

The following table will be used to organize this information.

Questions needed to be answered to understand vulnerability:

TARGETS	CURRENT STATUS OF TARGET	THREATS (non-climate)	CLIMATE HAZARDS	EXPOSURE	SENSITIVITY	POTENTIAL IMPACTS	ADAPTIVE CAPACITY (Target and Community)	VULNERABILITY (Target and Community)
What natural resource and social targets are most important to your community and why?	What is the current status of your targets? (poor, fair, good, very good)	What are the non-climate threats to your priority natural resource and social targets?	Which of the projected climate change hazards are of most concern for this target? How do they impact this target?	How much area of this target will come in contact with climate change hazards? Specify which events? (All/ Most/ Some/ Little/ None)	How severely will your targets be impacted by increased climate hazards? And why? (Severely/ Moderately/ Hardly)	What are the current and likely impacts from these hazards to your targets and your community? (Extreme/ High/ Medium/ Low)	How would you rate the ability of your target to cope with impacts climate change hazards and your community's ability to cope with impacts to this target? (High/ Medium/ Low)	Rate the vulnerability of the target itself and your community in relation to this target (High/ Medium/ Low)
Water resources that provide drinking water	*poor*	*contamination, lack of storage*	*Drought sea level rise*	*All - by drought and most by sea level rise*	*Severely by drought because we don't have good storage*	*High –if humans don't manage water resources it not be around during drought due to evaporation and salt water contamination*	*Social - Low – we have experienced emergencies in the recent past. Gov't was needed to support community and provide freshwater*	*Target:* ***High***
							Natural – Low the fresh water lens is not replenishing and precipitation is likely to decrease	*Community:* ***High***

Coral reefs that support income for several fishermen and tourism	*Good away from shore – poor close to shore*	*Dynamite fishing, over fishing*	*sea surface temperature increase*	*All reefs*	*High for the near shore reef because it is threatened by dynamite fishing and overfishing so it is not healthy now*	*Loss of income, loss of food*	*Natural -low – many reefs are still no recovered after last bleaching event 10 yrs ago*	*Target:* ***High***
							Social - Medium – some fishermen are able to farm when fishing is not good	*Community:* ***Medium***
Coastline – support all infrastructure and way of life on atoll	*Fair – many coastlines are eroding*	*Dredging, loss of coral reefs*	*Sea level rise – storm surges*	*All coastline but especially bad on the ocean side*	*Severely – with increases in sea level and storm surges and possibly more frequent*	*High – loss of homes, crops, land*	*Natural – low the coastline cannot adapt to sea level rise*	*Target:* ***High***
							Social –medium – although not socially desirable and expensive, people can move away from areas that are regularly flooded and move to higher ground/structures	*Community:* ***Medium***

Assess Vulnerability

Purpose: At this point, you should take a closer look at how climate change threats will impact your important natural and social resources. This can be done through a vulnerability assessment process (or table). The vulnerability assessment table helps the community to explore, which resources are most vulnerable to climate change, why, and which threats they may want to address through the LEAP. The vulnerability assessment table can also help the community understand specific characteristics that make them vulnerable or not including exposure, sensitivity, and adaptive capacity. Knowing these details can help the community identify key actions.

The community should already be aware of climate change concepts from pre-planning meetings and outreach. However, prior to carrying out the vulnerability assessment, you should review the concepts below and how they relate to vulnerability. If possible, use Tool 2: Outreach Toolkit: Adapting to Climate Change (flip-chart and companion booklets) to explain the terms. While these concepts are critical to understand vulnerability and get accurate information, the table was developed as a series of questions that will get at the information about without complex terminology.

Review the following terminology:

Vulnerability: is the degree to which a human or natural system is susceptible to, or unable to cope with, adverse effects of climate change. Vulnerability is a function of exposure, sensitivity to climate impacts and related adaptive capacity.

Exposure: the extent to which a system comes into contact with climate hazards or specific climate impacts.

Sensitivity: the degree to which a built, natural, or human system is negatively affected by changes in climate conditions (e.g. temperature and precipitation) or specific climate change impacts (e.g. sea level rise, increased water temperature).

Potential Impact: Exposure and Sensitivity combined will tell you how big the potential impact might be or to what degree the community could experience negative impacts from climate change. The greater the exposure and/or sensitivity the great the potential impact may me.

Adaptive capacity: potential, capability, or ability of built, natural, and human systems to adapt to impacts of climate change and variability with minimal potential damage or cost.

Resilience: ecological and social capacity to cope with, adjust to and recover from external stresses and disturbances. It is the flip side of vulnerability. Therefore, if you increase resilience of a community or resources, you will decrease their vulnerability.

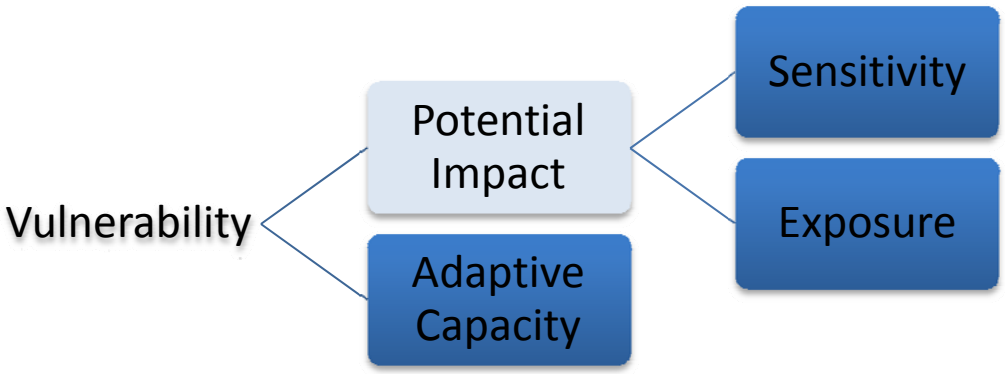


Figure 1. Vulnerability as a function of Sensitivity, Exposure and Adaptive Capacity (Marshall et. al., 2009)

Participants: This activity should also be carried out through a community meeting with a mix of community members including elders, adults and youth (both females and males).

Materials Needed: Flipchart paper, markers, tape. Additionally the outreach toolbox can be used to review concepts, and products from previous exercises should be available. Specifically the threat/action model, and the local climate hazard story, will all provide very valuable insights to help carry out the vulnerability assessment.

Time Requirement: 4-5 hours

WORKSHEET FIFTEEN: ASSESSING VULNERABILITY

Instructions: Carry out the following steps to complete the qualitative vulnerability assessment:

1. Transfer the vulnerability table (above) on to Flip Chart Paper.

2. First, enter your "targets and reason why they are important", "current status" and "non-climate threats" from your Threat/Action model. **Choose only the top 5-6 targets identified by the community that are most important (**Consider social (people, health, social networks), economic (property, infrastructure, income), and ecological (natural resources/ ecological services) targets.**).**

3. Next, review this table with the larger group and explain that during this exercise small groups will explore the "vulnerability" of each of the targets by answering a series of questions.

4. Next, very briefly review the outcomes from previous exercises including: threat/action model, the local climate story and community map. Tell the participants that these products can be used to help them in small groups and are available for more detailed review.

5. Small groups should be formed around each of the targets (this can be done in one large group if there are less than 10 people). Each group should be given a print out with the series of "vulnerability assessment core questions" provided below. Ideally there will be a small group facilitator for each small group.

6. Each small group should answer the core questions for their targets, and rate the level of exposure, sensitivity, adaptive capacity, impact, and vulnerability for each resource. Small groups should use information collected from previous exercises to help determine answers. Ranking tables are also provided to help groups decide how to rank potential impact and adaptive capacity.

7. Upon completing the core questions for each important resource, the small groups should get back together into a larger group. Each group should report back on their answers to the core vulnerability questions with a short description of why it was rated at the level it was. Allow other groups to provide input or ask questions at this point. As each group reports back the facilitator should capture the ranking on the large table on the wall.

8. After each group reports back and agrees on the vulnerability ranking for each resource the vulnerability table is complete.

9. At this point, you can review the results noting specifically which targets were identified as highly vulnerable. The group should discuss the results to explore and confirm that the results are accurate based on the experience of the group.

10. Finally, you should note that the targets that are particularly vulnerable to climate change and their associated non-climate threats should be considered as possibly "high priority" resources and/or threats to address in further planning activities.

11. It is also good to discuss here if there were any "surprises" to what was previously considered a priority to the community. Capture notes from this discussion.

Vulnerability Assessment Core Questions

EXPOSURE	
First answer the following questions to help your group understand the level of exposure of the community and its resources to climate change threats. Information to support answering these questions can be found in results from the following exercises: mapping, historical timeline, transect walk, and seasonal calendar.	
What climate change impacts/hazards have happened in your area?	
Which of these hazards come into contact with this target?	
How frequent have these events been or how often does your target come into contact with these events?	
Are they increasing or decreasing?	
Based on the information collected in the previous 6 questions, answer the following to determine exposure:	
Core Question 1: How much area of this target will come in contact with climate change hazards? Specify which hazards? (if multiple hazards occur, answer exposure for each)	**Pick one: all, most, some, little, none** ***fill this answer into the VA table**

SENSITIVITY	
First answer the following questions to help your group understand the level of sensitivity of the community to climate change threats. Information to support answering these questions can be found in results from the following exercises: mapping, and threat/action model	
How severely were your targets impacted by past climate change impacts and hazards?	
What is the current condition of your natural resource or social target?	
How has this natural resource or social target changed over time?	
What is your current level of dependence on this target?	
What non-climate change threats are impacting your targets? ***And*** how severe are they?	
How might the existing non-climate change threats exacerbate or ameliorate climate risks to your target?	
Based on the information collected about current condition of the target and existing non-climate	

threats to it, answer the following to determine sensitivity:	
Core Question 2: How severely will your targets be impacted by increased climate hazards?	**Pick one: severely moderately hardly** ***fill this answer into the VA table**

POTENTIAL IMPACT	
First answer the following questions to help your group understand the level of potential impact of climate hazards on the targets. Consider that Exposure + Sensitivity = Impact	
How will your target be impacted by climate change hazards based on the level of exposure and sensitivity?	
How will community members be impacted by changes to this target from climate change/ hazards?	
Based on the information collected about potential impacts to your target and community members who are dependent on them, answer the following to determine sensitivity:	
Core Question 3: How would you rate the level of potential impact to your target and the community members that are dependent on them?	**Pick One: Extreme High Medium Low** *** use the table below to help decide on the answer and fill this answer into the VA table**

ADAPTIVE CAPACITY	
First answer the following questions to help your group understand the level of adaptive capacity of the targets (social and natural resource) to climate change threats. Information to support answering these questions can be found in results from the following exercises: historical timeline, seasonal calendar, mapping, strength/weakness analysis, threat/action model. It is important specifically to review the information captured in the strength/weakness analysis to answer these questions.	
Community: Are there any specific community members or groups (fishers, farmers, paid-employment) who would be impacted by negative changes to this target?	
Community: What would you do if these resources are impacted from increased climate change events?	
Community: Are there traditional management practices or local actions that were carried out to prevent or minimize negative impacts from climate change impacts or hazards? Were your actions successful?	
Community: Do community members understand the potential climate change impacts and hazards and are they prepared to adapt to, or cope with future changes to this target?	
Community: Do your community members have access to information/knowledge to cope with climate change impacts/hazards?	
Community: What is available to help your community cope with impacts to this target from increased climate events and how effective are these resources/institutions?	
Community: What alternatives are there to the use of this target?	
Community: Has your community made changes to successfully prepare for future climate change impacts and hazards, based on past experience? Do they have the skills and willingness to plan further for expected changes to this target?	
Target: Have you observed recovery or resilience in your target to past climate change events and impacts? And why?	

Terget: How effectively managed are your current targets?	
Target: Are any of your targets in good enough condition that you feel they are in the best possible condition to be able to cope with and recover from further climate change impacts?	
Based on the information collected in the previous 6 questions, answer the following to determine social adaptive capacity:	
Core Questions 4 (a & b): **a) Target: How would you rate the ability of your target to cope with impacts from increased climate change hazards?**	**A. Pick one: High Medium Low** ***fill this answer into the VA table**
b) Community: How would you rate the ability of your community members who are dependent on this target to cope with impacts from increased climate change hazards?	**B. Pick one: High Medium Low** ***fill this answer into the VA table**

VULNERABILITY	
First explain the difference between vulnerability of targets and vulnerability of community members. Use the information about exposure, sensitivity, impact, and adaptive capacity. Exposure + Sensitivity – Adaptive Capacity = Vulnerability. The level in which the target will be vulnerable is based on the potential impacts to that resource and its innate ability to cope with those impacts. However, the vulnerability of the community is based on the potential impact to your target and the community's ability to cope with those impacts (or adaptive capacity). Use the "Potential Impact" and "Adaptive Capacity" rankings from the previous tables and the table below to answer the following two questions.	
Core Question 5 (a & b): **a) Target: Based on the potential impact of climate change/ hazards on your target and it's ability to adapt to these changes, how vulnerable is the resource?**	**Pick one: Extreme High Medium Low** ***use the vulnerability ranking table below to help fill this answer into the VA table**
b) Community: Based on the potential climate change/hazard impact on your target and the adaptive capacity of your	**Pick one: Extreme High Medium Low**

community to cope with those impacts, how vulnerable is the community?	***use the vulnerability ranking table below to help fill this answer into the VA table**

Vulnerability Ranking Table: Vulnerability = Exposure + Sensitivity – Adaptive Capacity[1]

ADAPTIVE CAPACITY

IMPACT	**Low**	**Medium**	**High**
Extreme	**High**	**High**	**Medium**
High	**High**	**Medium**	**Medium**
Medium	**Medium**	**Medium**	**Low**
Low	**Low**	**Low**	**Low**

[1] Adapted from: Climate Change Risk Management Matrix: A Process for Assessing Impacts, Adaptation, Risk and Vulnerability. (2011) A workbook completed as part of *ClimateQ: toward a greener Queensland* Initiative. Queensland Government, Australia.

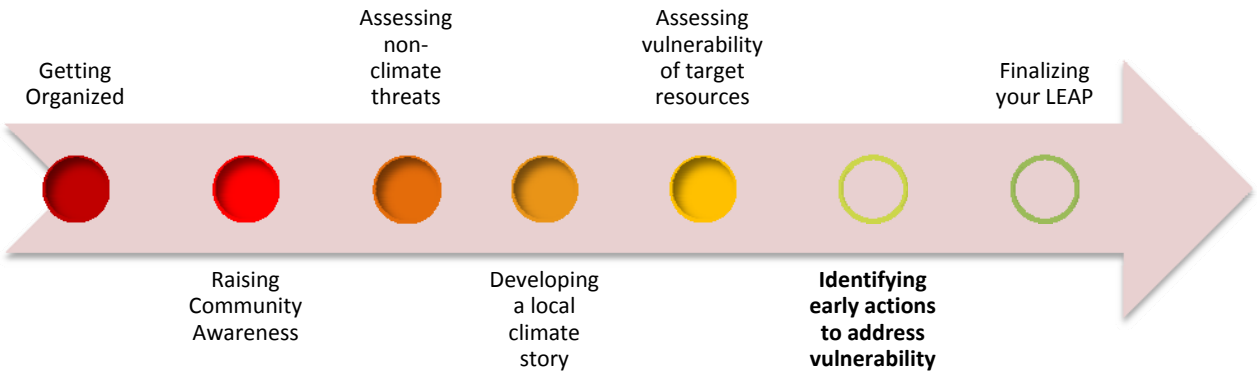
Questions needed to be answered to understand vulnerability:

TARGETS	**CURRENT STATUS OF TARGET**	**THREATS (non-climate)**	**CLIMATE HAZARDS**	**EXPOSURE**	**SENSITIVITY**	**POTENTIAL IMPACTS**	**ADAPTIVE CAPACITY (Social and Natural Resources)**	**VULNERABILITY (Target and Community)**
What natural resource and social targets are most important to your community and why?	What is the current status of your targets? (poor, fair, good, very good)	What are the non-climate threats to your priority natural resource and social targets?	Which of the projected climate change hazards are of most concern for this target? How do they impact this target?	How much area of this target will come in contact with climate change hazards? Specify which events? (All/ Most/ Some/ Little/ None)	How severely will your targets be impacted by increased climate hazards? And why? (Severely/ Moderately/ Hardly)	What are the current and likely impacts from these hazards to your targets and your community? (Extreme/ High/ Medium/ Low)	How would you rate the ability of your target to cope with impacts climate change hazards and your community's ability to cope with impacts to this target? (High/ Medium/ Low)	Rate the vulnerability of the target itself and your community in relation to this target (High/ Medium/ Low)
1.							*Target*	*Target*
							Community	*Community*
2.							*Target*	*Target*
							Community	*Community*

This activity completes a "The Assessing Vulnerability of Targets" Step!

Upon completing the vulnerability assessment, add the targets that have been identified as highly vulnerable directly to the LEAP Template.

Local Early Action Planning Process - Identifying Early Actions to Address Vulnerability



Refine and Identify Additional Early Actions

Purpose: Now the community has a good understanding of which targets are most vulnerable to current climate hazards and future climate change impacts, and which threats might be most important to address. This step is aimed at identifying or revising actions to reduce vulnerability of key targets.

The Threat/Action model previously developed will be reviewed to revise or develop new actions that will address climate vulnerability. It is important to review how the existing actions developed in the Threat /Action model will already reduce some of the vulnerability of the targets. However, with more information about "why" these targets are vulnerable from the vulnerability assessment matrix, the group can now decide if these actions are sufficient or if there are additional actions they would like to carry out to reduce vulnerability.

It is also important to discuss and consider the impacts of carrying out an action to ensure that any approach taken to does not create new problems or make existing problems worse. For example, if a community was considering clearing an area of mangroves and building a hard structure or seawall along one coastal area to address local erosion and inundation, this may address these issues in the short term. However, when considering the immediate and long-term impacts to natural and social resources from this action, they would understand that:

1. Removing mangroves means a loss of habitat for important fish species

2. A seawall would require a lot of financial resources over time and need on-going maintenance
3. A seawall may increase erosion to nearby areas

Upon reviewing these other impacts from the original action that they thought was "positive" they may decide it is actually going to cause more harm than good. For this reason, it is important to discuss the associated and long-term impacts of actions before deciding to implement them.

Participants: This activity should also be carried out through a community meeting with representative from various groups.

Materials Needed: You should continue to build on the Threat/Action model. Large flipchart paper, markers, post-it notes or index cards, and tape. It is important to have the original Threat/Action Model and the Vulnerability Assessment Table available at this time. Additionally, best management practices (BMPs) should be reviewed to help your group brainstorm possible actions you can take to reduce vulnerability of your key targets. [2] This list should be available for review.

Time Requirement: 2 – 3 hours

[2] Tool 2: Outreach Toolkit: Adapting to Climate Change provides a list of Best Management Practices. Additionally Tool 5: Quick Reference Guide for Adaptation Options provides a list of adaptation options.

WORKSHEET SIXTEEN: REFINE AND IDENTIFY ADDITIONAL ACTIONS

Instructions: It is important to have the original Threat/Action Model and the Vulnerability Assessment table available at this time. If possible, put both of these on the wall for the community members to look at during this process.

1. As a first step, you should briefly review the following items:
   - Threat/Action Model – review all actions identified and which threats those actions address and which resources they help to protect
   - Vulnerability Assessment Table – **review highly vulnerable resources** and why they are highly vulnerable (e.g., high sensitivity due to many non-climate threats, and low adaptive capacity due to lack awareness)

2. Next, review the list of best management practices/actions to identify which ones may help to reduce vulnerability of your targets.

3. Next, paste a large flipchart on the wall with the table and headings below written on it. Begin to fill in the first column with the targets you determined through the vulnerability assessment. In the second column add the existing actions from the Threat/Action model for this target. As each action is added to the table have the group discuss and decide which targets that action will help protect, and how that action contributes to decreasing vulnerability (that is, reducing exposure, reducing sensitivity, or increasing adaptive capacity). Check the box under each vulnerability component that each action supports.

Highly Vulnerable Targets	**Actions from Threat/Action Model**	**Additional Targets Addressed through this action**	**Does the Action Reduce Exposure –** (will this action move the target away from the threat?)	**Does the Action Reduce Sensitivity –** (will this action improve the current condition of the targets or reduce the # or severity of threats to the targets?)	**Does the Action Increase Adaptive Capacity –** (will this action help the target cope with the threats?)	**Revisions to Existing Actions or New Actions to address Vulnerability**	**Existing Development Policies, Plans or Programs to Integrate this Action into –** what existing development program or plan can this action be included?

4. It is critical that the group really think through each action and consider any potential negative impacts (immediate or long term) that the action might have to social or natural resources. Some actions can create social problems, and/or threaten other natural resources or areas. Fill in the table below to consider some important questions before deciding if the action provides benefits and sustainability.

Action	**If this action was implemented, could there be any negative impacts to natural resources (immediate or long term)?**	**If this action was implemented, could there be any negative social impacts (immediate or long term)?**	**Does this action require technical expertise or funding to be implemented properly? If so who will provide this expertise or funding? What are the potential impacts if the action is done without proper expertise or funding?**	**Are there any stakeholder groups who would not support this action and threaten its success?**

Upon completing the table above for the existing actions, the group should take a moment to review the entire list of actions and targets that will be addressed. The facilitator should then ask:

- Are there any targets (specifically those identified as highly vulnerable to climate change in the matrix) that are not being address by these actions? If so you should identify those targets develop further actions to address them.
- Can any of the actions your group previous identified to address non-climate threats be revised to further reduce vulnerability of the targets?
- Can any or all of these actions be integrated into existing and relevant development plans, policies, or programs and do they have the support to be implemented in these programs? For example, environmental management plans, national conservation strategies, disaster preparedness and/or management plans, sustainable development plans for specific sectors (e.g., agriculture, forestry, transportation, fisheries)
- Are any of these actions going to create new social or natural resource problems in your community if they are implemented or not implemented properly

Upon finalizing the table above with your community on flipcharts, the information captured should be added directly to the LEAP Template

Prioritizing Early Actions: Balancing Benefit and Feasibility

Purpose: Given limitations in human and financial resources, it is very valuable to prioritize actions by balancing their benefit and feasibility. This exercise will help your group think of which actions may be important to pursue first or early on and which ones may be pursued later. This exercise will also help your community focus your resources by pursuing management actions that address multiple threats and help to protect highly vulnerable resources.

It is important to review the vulnerability assessment at this point. It can help you to identify which targets are most vulnerable to climate change impacts and identify which actions are most important to increasing resilience. Additionally it can help the group see where multiple threats need to be addressed to increase resilience of priority targets. In many cases, it may only be feasible to address non-climate threats as a strategy build long-term resilience of targets.

Participants: This exercise can be carried out through a community or larger group meeting. In this way, everyone has a chance to provide input.

Materials needed: Flipchart paper, markers, and the vulnerability assessment results.

Time requirement: 2-3 hours

WORKSHEET SEVENTEEN: PRIORITIZING EARLY ACTIONS: BALANCING BENEFIT AND FEASIBILITY

Instructions: Carry out the following steps to identify which actions are highest priority balancing benefit and feasibility.

1. Review the Vulnerability assessment results paying specific attention to those highly vulnerable targets and their threats.

2. Using flipchart paper, create a table with eight columns and a row for each identified management action. At the top of the table, label each column from left to right as follows:

Early Action	Non CC Threats & Climate Change Impacts	Highly Vulnerable Targets	Capacity	Enabling Environment	Funding	Support	Total Score

3. Under "early actions" list all of the management actions you have identified to address non-climate and climate change threats, one management action per row. Use short hand if necessary.

4. Use the following six criteria to determine which management actions are the most important and feasible for you to try and address in the immediate future. As a group, discuss and choose a ranking for the first four criteria. Rank the criteria using the following scales:

a) "Threats" – the number of your top five threats/ CC impacts addressed by this action.

b) "Targets" - the number of highly vulnerable targets that benefit from this action.

c) "Capacity" – the ability of those involved in the management of your site to implement the action now. (Do we have the time, qualified personnel, equipment, and non-monetary resources that will be needed to do this action?)

"Capacity" ranking:
1 = little to no capacity to implement action
2 = some capacity to implement action

3 = fully capable of implementing action

d) "Enabling environment" – the authority to implement this action and the political will to support it. (Do we have permission to do this action? Does the government or other necessary authority approve? Can this action be integrated into an existing and relevant development policy, plan, or program?)

"Enabling environment" ranking:
1 = do not currently have authority to do the action; not approved by government or other authority or not able to be integrated into existing policy, plan, or program
2 = have authority to do action; somewhat approved by government or somewhat able to be integrated into existing policy, plan, or program
3 = have authority; strong approval and support of government or able to be integrated into existing policy, plan, or program

e) "Funding" – the potential for funding this action based on both the immediate availability of funds as well as the ability to raise new funds. (Do we have funds to implement this action, or do we need to raise funds? If we need to raise funds, do we have ideas for how we can **quickly** raise funds to support this action?)

"Funding" ranking:
1 = little to no funding; little potential to raise funds quickly
2 = some funding; existing mechanisms to raise funds quickly
3 = funding readily available

f) "Support" – the amount of public support that exists for this type of management action and the level of conflict that may result among the involved stakeholders. (Will the local community support this action? Will anyone find this action controversial or feel that it threatens their livelihood and/or values?)

"Support" ranking:
1 = little to no support; likely to cause conflict
2 = some support; not likely to cause conflict
3 = good support; little to no conflict

5. Across each action listed, determine the total score of all six criteria by adding up the six numbers listed in that row in the table. Check your math.

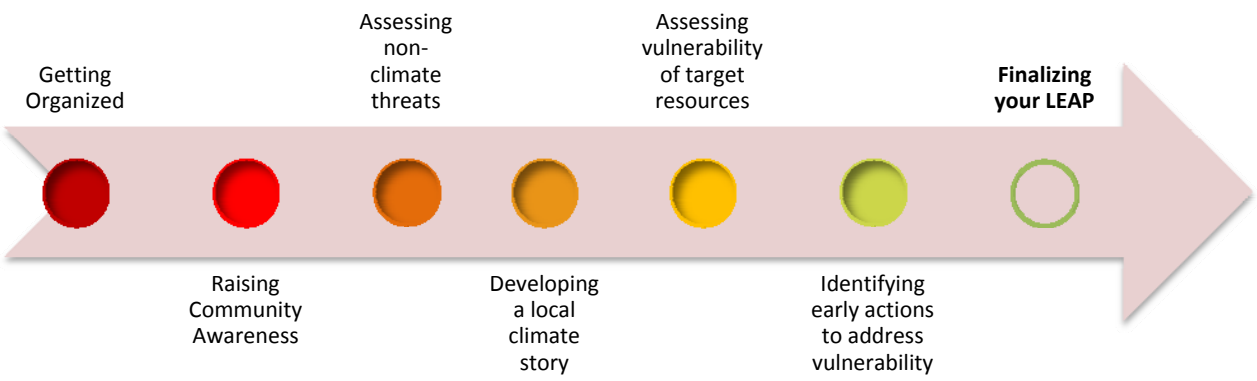
6. When all of the total scores have been listed and checked, identify the actions with the highest total scores in the table. Note that more than one action may share the highest score. These highest-scoring actions are the highest priority actions you will want to implement in the immediate future. On a flip chart, list these top priority actions (in order from highest to lowest or alphabetically) and corresponding scores in a table with three columns labeled as follows:

Highest Priority Early Actions	Total Score
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

This exercise completes the "Identifying Early Actions to Address Vulnerability" Step!

Upon completing this step, add your priority actions into your LEAP Template

Local Early Action Planning Process - Finalizing your Local Early Action Plan for Climate Change Adaptation



Now that all of the information has been gathered from the community, the planning team can finalize the LEAP Template. This step includes:

1. Developing SMART Objectives
2. Developing a Work Plan
3. Finalizing the LEAP Template
4. Integrating LEAP actions into existing plans and program

Developing SMART Objectives

Purpose: This exercise will help you to translate your activities and expected results into measurable objectives. Objectives are practical translations of the medium-term and in some cases short-term results that you wish to achieve. If you achieve your objectives you will overcome your threats. Each result can be translated into an objective by using the table below.

After you have developed all the objectives that you think you need, you should go back and make sure that if you achieve these objectives you will overcome the threats to the resources that you are trying to manage.

NOTE: If your community is undergoing the planning process for the first time and will only be using this process to decide on some immediate actions to prepare for climate change, then your team can skip this step. In this case, your team can move straight into creating a work plan for the actions only developed in the previous step. However, if the community has undergone a planning process before and will use this document to implement actions over time and raise funds for this work, it is best to include SMART objectives in the work plan.

Participants: It is typically easier to develop objectives with a small group than with all your stakeholders. As a result, we recommend developing the objectives with your planning them and then holding a review workshop to get feedback from the larger community and key stakeholders.

Materials: Worksheet and pen and paper to capture notes

Time requirement: Approximately 4 to 6 hrs depending on the number of desired results you have identified

WORKSHEET EIGHTEEN: DEVELOPING SMART OBJECTIVES

Instructions:

1. Review your actions and lump the actions together that are aimed at achieving the same result. Develop a list of the results you hope to achieve through all of your actions.

2. Answer the questions in the table for each of the results to develop a SMART objective like the example below.

	Result You are Trying to Achieve	**Where?**	**When?**	**Target Level of Change**	**Threat/Problem you are addressing**
1.	*- Increase abundance of target fish species*	*- In three villages where there is good fish habitat*	*In the next three years*	*Any Increase over baseline level*	*Overfishing and decline in fish populations*
2.	*- Reduction in violations of marine resource regulations*	*- In the waters surrounding our community*	*In the next year*	*50%*	*Illegal fishing and other violations*

3. Use the table above to draft an objective and then test it against the SMART criteria below.

Example: *OBJECTIVE #1: A 50% reduction in illegal fishing and other violations of marine resource regulations in the waters surrounding our community.*

Is it Specific?	*Yes*	*In the waters surrounding our community*
Is it Measurable?	*Yes*	*50% Reduction in violations*
Is it Achievement or Outcome Oriented?	*Yes*	*Reduction in Violations*
Is it Realistic?	*Yes*	*Yes, we have sufficient funding to carry out enforcement*
Is it Time Limited?	*Yes*	*In the next year*

IT IS A SMART OBJECTIVE!

Developing a Work Plan

Purpose: This exercise will help you to organize management actions from your LEAP to ensure that achieve your objectives. It will also help you to identify if you need any additional actions to achieve your objectives.

During the development of the LEAP, you identified actions that need to be taken to help achieve your targeted solutions. You also developed results that you want to achieve and finally in the first step of you developed SMART Objectives. Now that you have developed the objectives, you should make sure that you have the right actions to achieve each objective or you should develop new actions.

In this session, we will use a simple Work Plan format to organize and add any actions that must be taken to achieve each objective.

It is not enough, however, to simply list all of the activities that need to be done under a specific objective. To be useful for implementation you also need to identify the following:

- Who specifically will be responsible for getting the action done (or making sure that it gets done);
- When the action needs to be completed by (due date);
- What estimated amount of financial resources, if any, will be needed to complete the action; and
- Who (stakeholders, groups) needs to be involved (if anyone).
- Status of the actions can be updated periodically through review of the plan.

On a monthly or quarterly basis, you can also use this same work plan to develop tasks that must be undertaken to complete each activity.

Participants: It is typically easier to develop a detailed work plan with a small group than with all your stakeholders. As a result, we recommend developing the work plan with your planning them and then holding a review workshop to get feedback from the larger community and key stakeholders.

Materials: Worksheet and pen and paper to capture notes

Time requirement: Approximately 4 to 8 hrs depending on the number of desired objectives you have developed

WORKSHEET NINETEEN: DEVELOPING A WORK PLAN

Instructions: Write down your objectives and as a group discuss and list all of the associated management actions that need to be taken in order to achieve the selected objective. As you identify each, also fill in the other information under the relevant columns in the table. The Status column can be filled out periodically as a part of monitoring the progress of the implementation of the LEAP.

Objective	**Management Action**	**Who**	**Due Date**	**Cost**	**Tasks to Complete the Action**	**Status as of_____**
Objective One						
	Action One:				1. 2. 3.	
	Action Two:				1. 2. 3.	
Objective Two						
	Activity One:				1. 2. 3.	
	Activity Two:				1. 2. 3.	

Upon completing your Work Plan add it into the LEAP Template

Finalizing the Local Early Action Plan

It is now time to complete your LEAP! Review the template below and ensure that your planning team has filled in each section.

LEAP Template

Community Name:

Community Profile (Worksheet Four):

Target (social and natural), their Existing Condition, Non – Climate Threats and Impacts, and Root Causes of Threats (found in the Threat/Action Model):

Local Climate Story (climate change hazards and potential impacts of most concern to your community): (found in Worksheet Ten)

Describe which Resources that are Highly Vulnerability to Climate Change Impacts and Why: (found in Worksheet Fifteen)

Existing Resilience/Adaptation Strategies & Community Strengths to Maintain or Build upon (found in Worksheet Eleven & Fourteen)

Early Actions to Address Climate Change Impacts and Non-Climate Threats (found in Worksheet Nine & Eighteen)**:**

Objectives and Actions to Address Climate Change Impacts and Non-Climate Threats:

Objective One:						
This objective will: Reduce Exposure Reduce Sensitivity Increase Adaptive Capacity						
Management Actions	**Who**	**Due Date**	**Cost**	**Indicator**	**Tasks to Complete the Action**	**Status as of_(date)_____**
Action One:					1. 2.	
Action Two:					1. 2.	
Objective Two:						
This objective will: Reduce Exposure Reduce Sensitivity Increase Adaptive Capacity						
Action One:					1. 2.	
Action Two:					1. 2.	

Estimated Cost:

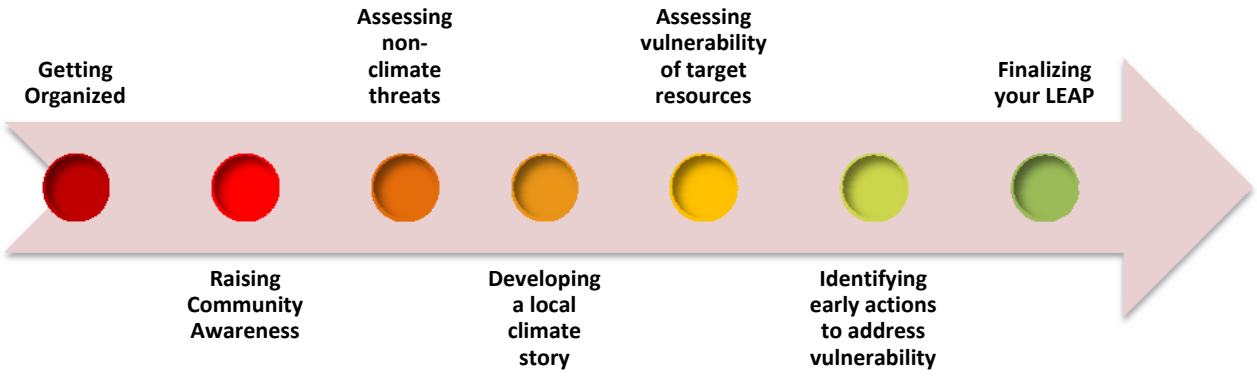
Upon completion of the LEAP, the team can carry out the appropriate protocol for approving the plan and/or incorporating the plan into existing efforts as identified in the "Getting Organized" section. The plan can be used to guide early actions within the community to adapt to climate change and to identify support for implementation.

Your team should also consider adding additional sections to your LEAP depending on the overall purpose. For example, your team might want to include a zoning scheme, rules and regulations, and an enforcement plan if your LEAP is specific to a marine managed area. Additionally most teams should consider including a monitoring plan to collect socioeconomic and biological information that will help measure the progress toward meeting your objectives. There are several monitoring guides available to support the development of a monitoring plan and you can also consult Tool 6: Methods to Monitor Climate Impacts and Effectiveness of Adaptation Actions.

Finally, the action planning team should also decide at this point if there is an interest and/or need to carry out a more technical, science driven quantitative vulnerability assessment. If so, they team should begin to explore resources and partners that may be able to support a more thorough assessment.

Integrating Your LEAP into Existing Plans or Programs

Congratulations, you have completed your LEAP and are on your way to implementing immediate actions to help your community build resilience to climate change impacts! Your last task is to review how best to incorporate these new actions into existing plans or programs to ensure that they are implemented. For example, environmental management plans, national conservation strategies, disaster preparedness and/or management plans, sustainable development plans for specific sectors (e.g., agriculture, forestry, transportation, fisheries). These may include local agency or NGO programs that have a specific focus on an area included in your LEAP, for example food security or water resources. Working with these agencies/organizations from the beginning of the process will help to ensure that the actions developed are "adopted" into their plans and programs. Ideally these actions could be integrated at multiple levels of planning including local, provincial, and national scales. Where possible, your LEAP should be shared with different levels of government agencies to be influence and be "mainstreamed" into larger efforts.



Glossary

Vulnerability: is the degree to which a human or natural system is susceptible to, or unable to cope with, adverse effects of climate change. Vulnerability is a function of exposure, sensitivity to climate impacts and related adaptive capacity.

Exposure: the extent to which a system comes into contact with climate hazards or specific climate impacts.

Sensitivity: the degree to which a built, natural, or human system is negatively affected by changes in climate conditions (e.g. temperature and precipitation) or specific climate change impacts (e.g. sea level rise, increased water temperature).

Potential Impact: Exposure and Sensitivity combined will tell you how big the potential impact might be or to what degree the community could experience negative impacts from climate change. The greater the exposure and/or sensitivity the great the potential impact may me.

Adaptive capacity: potential, capability, or ability of built, natural, and human systems to adapt to impacts of climate change and variability with minimal potential damage or cost.

Resilience: ecological and social capacity to cope with, adjust to and recover from external stresses and disturbances. It is the flip side of vulnerability. Therefore, if you increase resilience of a community or resources, you will decrease their vulnerability.

Stakeholders are the main groups of people in your area that have who have an interest, or "stake", in your community and its natural resources.

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