

COASTAL CONSERVATION AND EDUCATION
FOUNDATION, INC.
AND
PATH FOUNDATION PHILIPPINES, INC.

AWARENESS OF SELF



IPOPCORM YOUTH CAMP

INTRODUCTION

“I hear and I forget, I see and I remember, I do and I understand” – Confucius

This training module is designed to be a tool for youth empowerment and leadership development in the important aspects of Coastal Resource Management (CRM). Due to the multi-faceted nature of CRM, the users of this module are encouraged to modify the content according to the following but not limited to:

- Cultural norms of the training participants
- Educational level of the training participants
- Average age of the training participants
- Overall physical capability of the training participants
- The training venue
- Budget available for the training

The rationale behind paying special attention to the youth sector is that the younger generation today will be the leaders of tomorrow. Exposing the youth to CRM at this early stage will develop them to be responsible leaders in the future. Exposure to group dynamics and the intricacies of team-work and leadership will prepare each participant for the real world of organizational work. A background to basic ecological concepts, especially coastal and marine ecology will give the participants a “feel” of the coastal environment and the organisms therein, and, at the same time it is hoped that a sense of personal responsibility to the environment in general and the coastal environment in particular will be developed in each participant.

To further reinforce the sense of responsibility, key concepts in reproductive health, widely recognized as a very important aspect of CRM will be reviewed using both new and tested approaches to enhance the learning process.

OBJECTIVES:

1. To orient and train selected Youth to become catalysts in the stewardship of life and the environment;
2. To facilitate sharing of Youth learnings and plans in their peer education network;
3. To develop camaraderie and leadership skills among Youth;
4. To develop action plans, program interventions, and networking to answer to the needs of the young people pertaining to their sexuality and involvement in CRM/RH activities;
5. To institutionalize actions plans formulated by the Youth Camp participants;
6. To follow through the action plans at the municipal level.

^a **Note to the facilitators:**

Emphasize that the IPOPCORM YOUTH CAMP will reinforce the responsibility of the YPEs and the youth in general in protecting life and the environment.

That through the Youth Camp, the lessons learned as YPEs will be shared to others especially the strategies and approaches that they use in educating the members of their family and their peers.

As YPEs, they are trainers and models of their fellow youth in the community and that they

should set a good example. Therefore, it is important to develop camaraderie among them and share their talents and skills as leaders of today and in the future.

As youth peer educators and leaders, they will be given the skills in formulating action plans for their barangay after identifying issues and problems of youth.

Action plans will be presented to the barangay officials and leaders in the community. With the assistance of the CHOWs, the action plans will have to be implemented considering the availability of resources and capacity of the youth in coordination with LGU and NGO

IPOPCORM YOUTH CAMP PROGRAM OF ACTIVITIES

DAY 1

8:30 – 9:00	Registration
9:00 – 9:15	Opening program Welcome Address
9:15 – 9:30	Introduction of training team, partners and collaborators
9:30 – 9:50	Pre-test
9:50 – 10:10	Ice-breaker Introduction of participants Inspirational message from collaborating institutions
10:10 – 10:20	House rules
10:20 – 10:35	Introductory Activity : Peculiar Shapes
10:35 – 11:20	Self-development Exercise : Trust Fall
11:20 – 12:10	Team-building : Game on cup-stacking / Web of fire
12:10 – 1:00	Lunch
1:30 – 3:00	Knowledge Review : Missing Link : Human and Resource Integration Knowledge Review : Basic Ecology, CRM and RH Integration
3:00 – 4:30	Information Gathering and Exposure : Blue Lagoon Snorkeling Beach Walk Beach Walk Interview
4:30 – 5:30	Processing of data
5:30 – 6:15	Presentation of data
6:15 – 7:15	Dinner
7:15 – 8:15	Knowledge Review and Sharing : Hop the Isles
8:15 – 9:00	Family Management Activity : Pelimon's Family
9:00 – 10:00	Bonfire: sharing and role playing/presentations

DAY 2

6:00 – 6:15	Morning exercise and reflection
7:00 – 7:45	Breakfast
7:45 – 8:15	Recap Activity : Follow-up on expectations Partner NGO : Presentation of local demographics
8:15 – 9:15	Knowledge Review : Coastal Charade
9:15 – 11:00	Team-building and Planning : Fear factors in the Amazing Race Narrative and discussion: Wale's Mice
11:00 – 12:00	Team-building and Planning : Build me a better world
12:00 1:00	Lunch
1:00 – 1:45	Planning : Personal Action Plan and presentation
1:45 – 2:45	Planning : Community Action Plan
2:45 – 3:45	Presentation of action plans, feedback, and validation
3:45 – 4:15	Post-test Evaluation
4:15 – 4:45	Closing ceremonies

Objectives	Activity	Time Required	Materials Needed	Activity Content/ expected output	Persons Responsible
To register the participants, assign them to their rooms, and other administrative concerns	Registration	8:30-9:00 (30 minutes)	Registration forms ID cards w/ jackets Training kits	Participants are registered, assigned to their respective rooms and groups, and administrative concerns settled	Partner NGO
To formally open the youth camp	Opening Program (Welcome address)	9:00-9:15 (15 minutes)	Sound system	Host NGO executive director or SCHOW welcomes participants and formally opens the camp	Partner NGO
To introduce the cofacilitators from the partner NGOs and the invited facilitators.	Introduction of the Training Team	9:15-9:30 (15 minutes)	Sound system	The members of the training team are introduced to participants.	Secretariat
To level off knowledge on basic ecology/CRM and RH Integration	Pre-test	9:30 – 9:50 (20 minutes)	Test questionnaire Paper pens	Participant's knowledge on selected topics measured	Implementing team
To allow the participants to get to know each other and meet the YPE members from other barangays.	Ice breaker and speech by partner NGO	9:50 – 10:10 (10 minutes – ice breaker; 10 minutes – speech)	Sound system	The participants get to know each other and gained some new friends. Speaker should give a speech on locating the Youth in the overall RH program)	Partner NGO Implementing team
To orient the participants with the house rules of the youth camp.	House Rules Orientation (working snacks)	10:10-10:20 (10 minutes)	Visual aid of the House rules	The participants are aware of the house rules.	Implementing team
To know the expectations of the participants and leveloff with the camp objectives.	INTRODUCTORY ACTIVITY: PECULIAR SHAPES	10:20-10:35 (15 minutes)	Pre-constructed material for writing expectations	Participants' expectations from the training are drawn-out, processed and leveled off with the camp	Implementing team
To help the participants develop self confidence and trust to others	SELF DEVELOPMENT: TRUST FALL	10:35-11:20 (45 minutes)	Elevated platform	Participants will develop self confidence and trust	Implementing team Partner NGO

Objectives	Activity	Time Required	Materials Needed	Activity Content/ expected output	Persons Responsible
To develop teamwork among the participants applying the principles of proper planning	TEAMBUILDING: WEB OF FIRE	11:20-12:10 (40 minutes)	Rope/Net	Participants will develop teamwork and appreciate its importance in all group activities	Implementing team Partner NGO
To develop coordination and teamwork among the participants.	TEAMBUILDING: CUP STACKING		Plastic cups Rubber bands "Pamo" nylon string	Participants will develop group coordination and enhance teamwork.	Implementing team Partner NGO
	LUNCH BREAK	12:10-1:30 (80 minutes)			
To reinforce the participants' understanding on coastal ecosystems, dynamics of human population, and its effects on CRM.	KNOWLEDGE REVIEW: SELF DEVELOPMENT: MISSING LINK – HUMAN AND RESOURCE INTEGRATION Game: Marine Ecosystems Human Ecosystem Human Population CRM Process (working snacks) LECTURE: BASIC ECOLOGY/CRM AND RH INTEGRATION	1:30-3:00 (90 minutes)	Sound system Visual aids Metacards Marking pens	Participants' understanding and status of the coastal environment will be reinforced and they will be able to relate this with the effects of increasing human population. Furthermore, they will become more aware of the general aspects of coastal resource management	Implementing team
* To expose the participants to a simplified ecological impact assessment * To expose participants to the sea-coast interface and urge them to discover the relationship between organisms and their environment	INFORMATION GATHERING AND EXPOSURE: BLUE LAGOON (Snorkeling, beach walk, and beach walk interview)	3:00-4:30 (90 minutes)	Masks and snorkels Underwater slates with pencils Data forms	The participants will get a chance to experience first hand being able to observe the coastal ecosystems of a specific locality, record their observations, and discuss them with the group	Implementing team Partner NGO

Objectives	Activity	Time Required	Materials Needed	Activity Content/ expected output	Persons Responsible
<p>* To give the participants a chance to share and discuss their observations with the group</p> <p>* To compare the observation of the two groups and emphasize further the relationship of the organisms and their environment.</p>	<p>* Freshen-up/Data processing</p> <p>* Group sharing and processing of Blue Lagoon activity</p> <p>* Giving assignments for bonfire activity</p>	<p>4:30-6:15 (105 minutes)</p>	<p>Sound system Manila paper Marking pens</p>	<p>The participants will be able to share their observations with the group who will validate it. The observations will also be discussed in relation to human population.</p>	<p>Implementing team Partner NGO</p>
	<p>DINNER</p>	<p>6:15-7:15 (60 minutes)</p>			
<p>To review participants in RH concepts and to give them a venue to share their understanding of such concepts and experiences concerning such</p>	<p>KNOWLEDGE REVIEW AND SHARING: HOP THE ISLES</p>	<p>7:15-8:15 (60 minutes)</p>	<p>Hop the Isles board game</p>	<p>The participants will be able to play and brush up on their RH concepts. This also allows them to discuss certain issues they have encountered concerning RH issues and how they are dealt with.</p>	<p>Partner NGO Implementing team</p>
<p>To expose participants to actual family basic needs in relation to family size</p>	<p>FAMILY MANAGEMENT ACTIVITY: PELIMON'S FAMILY</p>	<p>8:15-9:00 (45 minutes)</p>	<p>"groceries cards" Manila paper Marking pens Play money</p>	<p>Participants will be able to experience budgeting and the effort of family size on resource sharing</p>	<p>Implementing team Partner NGO</p>
<p>To promote solidarity among the participants and facilitator</p>	<p>BONFIRE Group Presentations & Sharing</p>	<p>9:00-10:00 (60 minutes)</p>	<p>Fire wood Hotdogs</p>	<p>Participants will be able to share their personal experiences as YPEs and realize their roles as YPEs to their own families.</p>	<p>Implementing team Partner NGO</p>

Objectives	Activity	Time Required	Materials Needed	Activity Content/ expected output	Persons Responsible
To revive the physical, mental, physical, and spiritual strength to start a new day	Morning exercise and reflection	6:00-6:15 (15 minutes)		Physical exercises & Spiritual sharing will strengthen and rejuvenate the participants	Implementing staff Partner NGO
	BREAKFAST	7:00-7:45 (45 minutes)		Knowledge learned from day 1 reviewed and reinforced	Partner NGO
To review knowledge learned from day 1 activities	RECAP ACTIVITY (see suggested activities)	7:45 – 8:15 (30 minutes)	Manila paper Marker pens Sound system	Human impacts on the coastal environment will be acted out and guessed by participants. Participants become aware of the human activities that have negative impacts to the environment. Facilitator will process each answer and create a web of relationships between the impacts and the coastal environment.	Implementing team
To reinforce the participants' knowledge on the different ways man affects the coastal ecosystems	KNOWLEDGE REVIEW: COASTAL CHARADE	8:15-9:15 (60 minutes)	Metacards Manila paper Marker pens	The participants become aware of the phases in life that they should take before engaging into family life and the effects of premarital sex and unplanned marriages which contribute to the depletion of marine resources that endangers food security.	Implementing team
To present the phases of life and the challenges (peer pressure & mass media) in each phase which may pose threats to imbalance of population and	TEAM-BUILDING AND PLANNING: FEAR FACTORS IN THE AMAZING RACE PROCESSING, NARRATIVE AND DISCUSSION: WALE'S MICE	9:15-11:00 (105 minutes)	Loaf of bread or pack of crackers Glass of water Strips of cloth Pails Coconut husks Skipping rope Pillows	The participants realize the importance of planning in achieving goals for a particular task and more importantly in building family life.	Implementing team

Objectives	Activity	Time Required	Materials Needed	Activity Content/ expected output	Persons Responsible
marine resources brought about by unplanned family life.			Clothing		
To emphasize the importance of planning in achieving life goals and good family life for the attainment of food security.	TEAM-BUILDING AND PLANNING: BUILD ME A BETTER WORLD	11:00-12:00 (60 minutes)	Bubble gum Barbecue sticks		
	LUNCH BREAK				
To give the participants time to make their own life plan and determine their life priorities and aspirations that they want to achieve.	PLANNING: PERSONAL ACTION PLAN	1:45-2:45 (60 minutes)	Metacards Manila papers Marking pens		
To identify the CRM and RH issues confronting the participants' community and challenge them to do their part in marine conservation and management to achieve food security by identifying positive actions that they can do at their level	Presentation of action plans, feed-backing, and validation (working snacks)	2:45-3:45 (60 minutes)	Sound system Masking tape Board	Participants' action plans are validated and improved	Implementing team Partner NGOs
To allow the participants to present their action plans to their fellow participants and facilitators for feedback and validation.	Post-test	3:45-4:15 (30 minutes)	Test questionnaire Paper pens	Participant's knowledge on selected topics measured after the camp for comparison to pre-test results and amount of learning	Implementing team
To assess the knowledge learned by the participants on youth camp topics	Closing ceremony and symbolic ritual	4:15-4:45 (30 minutes)	Sound system Matches	Youth camp activity is formally closed and participants' commitments are declared and	Implementing team Partner NGO

HOUSE RULES

Although the youth camp is intended as an informal and loosely structured activity, there are rules that still have to be followed. The following are viewed as the minimum set of rules that are recommended for the safety and enjoyment of the participants

1. Each participant is encouraged to participate in all activities provided that the participant can cope with and perform the activity without compromising his/her personal safety and the safety of the group in general.
2. Safety should be the prime concern and should be observed by everyone at all times
3. A buddy system will be put in place. Each person will be responsible for his or her buddy in all aspects of the training such as but not limited to:
 - i. Participation in all the activities
 - ii. Learning of important concepts
 - iii. Safety in all outdoor activities
4. Participants are not allowed to entertain visitors in camp except in emergency cases
5. Smoking cigarettes, cigars, chewing snuff and using other tobacco derivatives, drinking alcoholic beverages, and using illegal/controlled substances is strictly prohibited
6. Unruly behavior will not be tolerated. Any participant behaving in a manner that is contrary to the aims and objectives of the camp will be reprimanded at the first offense. A repeated offense will serve as grounds for dismissal from the camp
7. A pre-test and post-test will be administered to gauge the level of awareness of the participants on environmental and RH-related issues. As well as to serve as a measure of the effectiveness of the content of the training module
8. The use of cellular phones shall be limited only to emergencies and during free time
9. Cleanliness of the campsite and the training hall should be maintained at all times
10. Host teams will be formed and will be assigned to do specific tasks during the camp
11. A 10:00 curfew shall be observed. At this hour participants should all be in their sleeping quarters and accounted for
12. Have fun

2 & 3 INTRODUCTORY ACTIVITY: PECULIAR SHAPES

PURPOSE: To allow the participants to express their different individual expectations and desired outputs of the youth camp

TIME: 15 minutes

MATERIALS: Art materials, construction paper, pens

PROCEDURE:

1. The participants shall be asked to group themselves according to the color of their nametags. Each member of the group shall be asked to form a shape from the pieces of colored papers given to them.
2. They shall be given 10 minutes to think and write their expectation on the paper with a distinct shape. After all the members are through writing their expectations, they will be asked to form a single object to represent the group using the different shapes that they created.

3. Each group shall be given time (5 minutes) to share their common expectations.

VARIATION: Participants may simply present their expectations written in the shapes without forming an object, to maximize time

PROCESSING:

Guide processing question

1. What are the common expectations of the members of your group?
2. What are the similarities among all expectations of all the groups?
3. How did the groups make the symbol for the whole group? What does it try to say?
4. What have you learned from the activity?

TRAINER'S NOTES:

1. Discuss to the participants which among their expectations are attainable within the time frame of the youth camp and those that require a longer period of time to attain.
2. Level off the participants expectations to the youth camp objectives.

1 & 3 **SELF-DEVELOPMENT ACTIVITY: TRUST FALL**

PURPOSE: The trust fall is an exercise to develop confidence in one's self and towards others. It allows the participants to discover their mental capacity to overcome a stressful situation and how well they relate to others in times of distress.

TIME: 45 minutes

MATERIALS: Elevated platform (can either be static or dynamic [movable or stationary], 1.5-2.0 meters high and can support the weight of two people (~250-275 lbs.)

PROCEDURE:

Practice _____

4. Have the participants count-off by twos to divide the group equally
5. Ask the groups to form two lines facing the facilitator (a line is when people are standing side by side)
6. The participants are then asked to form 2 concentric circles with the front 1 making-up the inner circle and the rear making-up the outer circle. Both groups should be facing toward the center of the circle and each person in the outer circle should be in line with the person in the inner circle
7. The participants in the inner circle are then asked to cross their arms in front of their chest while those making-up the outer circle will assume the "stopping" motion: hands placed at chest level with the palms facing forward and their feet should also be positioned in such a way to allow for maximum stability (one foot in front of the other)
8. The two groups will then memorize the following dialogue:
 - o Inner circle: Friend, can I trust you with my life?
 - o Outer circle: Yes you can

- Inner circle: I am ready to fall
 - Outer circle: Fall now... (faller's name)
9. Upon hearing his/her name, an inner circle member will then fall backward (like a log)
 10. Each outer circle member will then stop the fall of his/her partner.

Actual

1. Ask the two groups to move to the elevated platform. Have them form two lines, facing each other and at a distance apart to allow for a person to fit. This will be the "catcher" group.
2. The "catcher" group will then be asked to form a "cradle" with their arms. No arms should be interlocked and all jewelry and accessories should be removed to prevent injury
3. A volunteer "faller" will then be asked to climb the platform together with his/her partner. They should both be facing each other and the faller's back should be turned towards the catcher group.
4. After the "faller" has gathered enough courage and motivation, he/she will converse with the "catcher" using the dialogue outlined in the practice session
5. After confirmation to fall is given by the "catcher" group, the "faller" is given 2 seconds to fall backward like a log.
6. The process is repeated until all willing participants shall have fallen.

PROCESSING:

Guide Processing Questions

1. How did you feel while doing the activity?
2. What made it so difficult for you to fall?
3. What have you learned from the experience?
4. Why do you think trusting oneself and other people are important in achieving objectives?

SAFETY NOTES:

1. Safety is the number 1 priority
2. All jewelry and other removable bodily ornaments should be taken off before the activity in order to avoid injury
3. The spotters should be facing away from the sun
4. Spotters' arms should not be interlocked in any manner
5. The faller should keep his/her arms interlocked in front of the chest during the entire falling process
6. Big spotters should be positioned to catch the torso-cervical area of the faller

TRAINER'S NOTES:

- A. In processing, first try to allow the participants to discuss their impressions freely with only a minimal prompting from you. Let them control the flow of the discussion as long as they are still within the context of the guide questions. Bear in mind that you are there to guide them and not to control the discussion
- B. Once all the guide questions have been given sufficient treatment, give the following inputs:
 - a. Ask them how long they thought was the time it took for them to fall before they were caught. ANSWER: less than 1 second! People facing fear and uncertain circumstances tend to overestimate the time. It is therefore imperative that the participants come into terms with this fact and learn to put fear aside and bring out their strength
 - b. Ask the participants how they felt as "catchers", and as "fallers". The usual answer is that the catchers feel that they have the great responsibility of making sure that the faller doesn't hit the ground no matter what happens.

The faller on the other hand would usually answer that they are afraid that the catchers would fail to catch them. People are usually like that, individuals are often afraid/ashamed to ask for help and at the same time, groups are also apprehensive of offering help fearing that they may offend or hurt the ego of an individual. Given this dilemma, the youth (YPE) should be able to know when to ask for and give help. Being active in community and organizational work will help develop this skill.

1 & 3

TEAM-BUILDING ACTIVITY: CUP STACKING

PURPOSE: To develop the participants' ability to work with a group and to develop teamwork as a strategy to facilitate the accomplishment of major tasks.

TIME: 40 minutes

MATERIALS: rubber bands (1 pc/group), string, plastic drinking cups

PROCEDURE:

1. Prior to the activity, cut the needed pieces of string into two to three foot long pieces for each group. Tie each piece to a rubber band as evenly as possible so you finish with a rubber band with pieces of string attached to it, the number of which should correspond to the number of group members (it should look like a sun with rays going out in all directions.) Make one for each group. (Alternately, you can ask the group to make the string and rubber band set-up themselves)
2. The camp participants shall be divided into two groups and will be given time to figure out the strategy they will apply in order to achieve the objective of the activity given the materials available to them. This is a contest between the two groups in terms of speed and quality of the final product.
3. The two groups will each be given 10 cups and will be asked to form a pyramid of plastic cups 10-15 meters from the starting line using only the rubber bands and string to transport the cups from point A to point B. Only one cup at a time can be transported.
4. The first group to complete the activity shall be declared as the winner

PROCESSING:

Guide Processing Questions

1. What made the activity easy/ what were the facilitating factors?
2. What made the activity difficult/ what were the hindering factors?
3. How can you relate this activity to your responsibility as YPEs?
4. What have you learned from the activity?
5. How can you apply these lessons in your day to day life?

TRAINER'S NOTES:

- A. This activity is essentially an exercise in teamwork in its purest form. In the discussion, emphasize the fact that there are times when a task is easier to handle as a team and other times, individual action is sufficient.
- B. When working as a team, individuals should set aside their feelings of pride and submit to collective action for the common good.

- C. Discuss the fact that in constructing the new pyramid, the quality of the foundation determines the outcome of the whole structure in like manner the ability of the group to work well with each other can help a lot for the group to achieve its objectives. Share the Greek proverb: "Well begun is half done", and expound on it. Let the participants share their insights also.
- D. The activity Cup Stacking and Web of Fire shall be done simultaneously in this camp since the participants are divided into two groups. This shall also be processed together as they both emphasize teamwork.

1 & 3

TEAM-BUILDING ACTIVITY: WEB OF FIRE

- PURPOSE:** To test the ability of a team to work in a well-coordinated manner applying the principles of proper planning and implementation of appropriate strategies
- TIME:** 40 minutes
- MATERIALS:** 150 meters of 5mm diameter nylon rope or a net with holes cut in it
- PROCEDURE:**
1. A day prior to the activity, construct the web out of the rope. Set up the web between two posts or two trees. Make use of what is available on the site. Project the number of holes on the web to the number of expected participants.
 2. On the day of the activity, divide the participants into two groups
 3. One group can be assigned to do another activity (i.e. cup stacking)
 4. Instruct the group to go from one side of the web to another by passing through the holes given the following restrictions:
 - a. A person should not touch the rope with any part of his/her body or clothing
 - b. Team-mates can assist one another provided that those who help should likewise not touch the rope with any part of their body or clothing
 - c. A hole in the web can only be used once. Mark a used hole with masking tape or rubber band.
 - d. A "miss" is committed if any member of the group touches the web. The person attempting to pass through will be allowed to continue to the other side
 - e. After three misses, all members who have reached the other side will be made to go back and the whole group should repeat the process.

PROCESSING:

Guide Processing Questions

1. What made the activity easy/ what were the facilitating factors?
2. What made the activity difficult/ what were the hindering factors?
3. How can you relate this activity to your responsibility as YPEs?
4. What have you learned from the activity?
5. How can you apply these learnings in your day to day life?

TRAINER'S NOTES:

- A. The web can be viewed as a combination of the trust fall and cup stacking. It covers the concepts of team - work, trusting one's self, and trusting others.
- B. One important detail that sets the web apart from the trust fall and cup stacking is the fact that it introduces the concept of the **niche**. The participants should by now have discovered that the holes in the web are of different sizes. If not, point this thing out by asking them what they observed about the web or by just telling them outright.
- C. The concept of niche shall emphasize that in a group each of the members has its own role to play for the good of the group. Tell the participant that there is a "hole" intended for everyone in the web which in like manner shows that every member of a group has its own purpose, has importance and has something to contribute no matter how little it is. Thus it is a challenge for the group to be able to work as one maximizing the potentials of every member and be able to complement each others limitations to be able to accomplish the goals of the group and to attain common good.

1 & 3 **KNOWLEDGE REVIEW: MISSING LINK (RH AND CRM INTEGRATION)**

PURPOSE: Leveling-off of participants' knowledge on basic ecology/CRM that serves as a gauge to the lecturer.

TIME: 10 minutes

MATERIALS: paired photos on coastal ecosystems/human impacts/human ecosystem

PROCEDURE:

PROCESSING: Guide Processing Questions

- 1. Are you familiar with the photos?
- 2. What do you understand about the photos?
- 3. Are the photos connected?

1 & 2 **LECTURE: BASIC ECOLOGY**

PURPOSE: To introduce some basic concepts in general ecology, CRM and how this relates to reproductive health issues and concepts in preparation for the discussions in coastal ecosystems and human impacts on these.

To familiarize the participants to the different coastal ecosystems that can be found in their locality and around the Philippines and the natural and human-induced threats that affect them

To familiarize the participants with the CRM process and the different strategies used in managing municipal waters.

TIME: 20 minutes

MATERIALS: Visual aids, marking pens, manila papers, and cartolina

PROCEDURE:

Introduce ecology as a branch of biology. Introduce and define key terms

- important to the understanding of ecology
 2. Introduce important linkages/connections between and among organisms and their environment
 3. Introduce some basic ecological “laws” (refer to trainer’s notes)
-
1. Role playing (to gauge the participants’ understanding of the basic concepts)
 - a. Prepare metacards and pens
 - b. Divide the participants into three groups and assign each group to tackle one ecosystem.
 - c. Distribute the metacards and pens and ask them write down the elements (living and non-living) that make up the ecosystem assigned to them
 - d. Instruct each group to dramatize the relationship among the elements of each ecosystem
 2. Introduce ecology as a branch of biology. Introduce and define key terms important to the understanding of ecology
 3. Introduce important linkages/connections between and among organisms and their environment
 4. Introduce some basic ecological “laws” (refer to trainer’s notes and annex)

PROCESSING:

Guide Processing Questions

1. What is your own understanding of ecology?
2. What made the activity difficult/ what were the hindering factors?
3. How can you relate this activity to your responsibility as YPEs?

TRAINER’S NOTES:

Base your discussion on the following key concepts:

1. **Vocabulary:** ecology, environment, living things, non-living things, interaction, relationships, dependent relationship, interdependent relationship, symbiotic relationship.
2. **Ecology explained:** Ecology is best understood if the word is broken down into its root words.
 - i. **ECOLOGY= OIKOS**, or the Greek word for house, or the environment we live in.
 - ii. **ECOLOGY= LOGOS**, or the Greek word for study

Simply put, ecology is the study of the house or environment in which we live in.

- A. But this is by no means a complete definition. To come up with a complete definition, we must have a certain understanding of the elements of the environment. In ecology, the place or environment is composed of living and non-living things. **Living things** include plants and animals while **non-living things** include objects like soil, rocks and water. Living and non-living things in any one environment have **interactions** with one another that usually result in a relationship. An **interaction** takes place when one living thing acts on or towards another, and then that other acts back. When this happens a relationship takes place. All places, all environments, have living and non-living things that interact with one another and as a result create a relationship. **The study of the relationships of living and non-living things in an environment is the complete definition of ecology.**

Many times relationships are so important that if they didn't exist the living thing would suffer or die. This relationship is called a **dependent relationship**. The relationship between parents and young children is like this. If parents do not take care of their children, it is possible that the children will suffer. Children are **dependent** upon their parents. When parents grow older they often also need help from their grown children. For this reason, during their lives, children and parents are said to be interdependent upon one another. They have an **interdependent relationship because they need each other**.

Sometimes a relationship exists that is **mutually benefiting** to both living things involved. The relationship between children and parents that live together is mutually benefiting because parents help their children to live and in return children help their parents to live. The result is that both enjoy a better life. In the study of ecology, as in other fields of science, when two different living things live together for the benefit of both we say, they have a symbiotic relationship.

- B. The concept of the ecosystem
1. Ecosystem defined: Self-sustaining, self regulating community of organisms interacting with the physical environment within a defined geographic space (Krebs, 1985.)
 2. Ecosystem explained:
 1. Living organisms and their non-living environment are inseparably interrelated and interact with each other. The "community" or any unit that includes all organisms interacting with the physical environment leading to defined trophic structure, biotic diversity and material cycles in a given area is a ecological system or ecosystem (Odum, 1971)
 2. The ecosystem is the basic functional unit in ecology. It includes living organisms and the non-living environment, each influencing the properties of each other. Both living and non-living components and their interacting properties are necessary for the maintenance of life (Odum, 1971).
 3. The concept of food chains and food webs: The food web is a necessary component of an ecosystem from it's functional standpoint
 - a. Food chain defined: The transfer of food energy from the source in plants through a series of organisms which is repeatedly eating and being eaten. Food chains are not isolated sequences but are interconnected in an interlocking pattern known as a food web. (See annex to understand 'Nature's' Laws)
 - b. Fishing down the food web: "Trophic level" means the number of steps in the food chain above the primary producers (plants/algae). Throughout history, worldwide patterns of decrease in fish abundance, size and average trophic level have indicated over-fishing (Birkeland and Friedlander, 2002). The abundance of fish decreases as the populations of humand increase indicating that humans adversely affect fish populations, more likely by over-fishing. Fishing pressure has reduced many near-shore fish resources to levels below the capacity of the resources to replenish themselves (Smith 1993, Friedlaner and DeMartini 2002).

1 & 2

LECTURE: COASTAL ECOSYSTEMS

PURPOSE: To familiarize the participants to the different coastal ecosystems that can be found in their locality and around the Philippines and the natural and human-induced threats that affect them

TIME: 45 minutes

MATERIALS: Visual aids (see annex), marking pens, manila papers, and cartolina

PROCEDURE:

4. Introduce the different coastal ecosystems that can be found in the Philippines and discuss their basic biology
5. Introduce the participants to the mangrove ecosystem and the unique adaptations of mangrove trees to the marine environment. Also introduce the environmental and economic importance of mangroves, and lastly, the threats to the mangroves.
6. Introduce the participants to the seagrass ecosystem and the unique adaptations of seagrasses to the marine environment. Also introduce the environmental and economic importance of seagrasses, and lastly, the threats to seagrasses.
7. Introduce the participants to the coral reef ecosystem and the unique adaptations of corals to the marine environment. Also introduce the environmental and economic importance of corals, and lastly, the threats to the coral reefs
8. Conduct an open forum so that the participants can ask questions and the facilitator can make the necessary clarifications
- 9.

PROCESSING:

Guide Processing Questions

4. What is your own understanding of ecology?
5. What made the activity difficult/ what were the hindering factors?
6. How can you relate this activity to your responsibility as YPEs?

TRAINER'S NOTES:

MANGROVES

Mangroves are coastal trees or shrubs that are adapted to estuarine or even saline environments. The term **mangrove** refers to the individual plants, whereas **mangal** refers to the whole community or association dominated by these plants. Mangroves have characteristic features that allow them to live in marine waters:

shallow roots that spread widely across the substrate, often with extensions called **pneumatophores** that project from the mud and which allow the absorption of oxygen in an otherwise anoxic (no oxygen) substrate.

Buttresses (prop or stilt roots) from trunks and/or branches for better anchorage during strong winds

Succulent leaves with internal water storage tissue and, in some species, with salt excreting organs or glands which maintain salt/water (osmotic) balance.

Unusual type of seed germination and dispersal the seed germinates while still on the parent plant (**viviparous**), producing an elongated hypocotyl which will become the root, eventually dropping directly into the substrate and planting itself.

Importance of mangroves

Mangroves harbor a diverse assemblage of flora and fauna: small mammals, birds, reptiles, amphibians, and invertebrates.

Mangroves serve as nursery and habitat for fishes and other marine organisms

Mangroves have been traditionally valued for their wood and forest products (e.g., tannins, vinegar)

Shoreline protection from strong waves and wind

Major source of organic matter and nutrients.

Threats to mangroves

Deforestation for fuel and lumber products

Conversion to fishponds
Conversion to residential areas and other developed sites

SEAGRASSES

Seagrasses are flowering grasslike plants which are adapted to saline habitats. A total of 13 species have been recorded in Philippine waters. This represents 27% of the total species recorded worldwide, second only to Australia which has 23 species. Seagrasses are either grass-like or not grass-like in gross external morphology. Except for species of *Halophila*, which have oval or elliptical leaves, the rest of the seagrasses have long, thin strap-like leaves and a monopodial growth form. The plant arises from a creeping underground stem or rhizome. They attach to all types of substrates, occurring most extensively on soft ones. They are found from the intertidal region to depths of 30 meters, but are most conspicuous in the subtidal area.

Importance of seagrass

Stabilizing and holding bottom sediments even through the enormous stresses of hurricanes and temperate storms

Slowing and retarding water currents and waves, promoting sedimentation of particulate matter and inhibiting resuspension of organic and inorganic matter through leaf action Shelter and refuge for resident and transient adult and juvenile animals, many of which have commercial and recreational importance

Food for grazers, epiphytes, and detritus feeders

Source of organic matter as the plants attain a high production and growth (leaves of some species can grow 5-10 mm per day)

Production and trapping of detritus and secretion of dissolved organic matter that contribute to nutrient cycles within the ecosystem. In addition, it also serves as nursery ground for species that spend their adult life outside the community.

Threats to seagrasses

Increasing human population

- Need increased space for food and food production
- Settlement
- Waste disposal/pollution
- recreation

CORAL REEFS

A coral reef is made up of the shells/exoskeletons of single, small marine animals called coral polyps. When coral polyps grow into a group they are called a coral colony. As polyps die, new ones grow on top of the empty shells/exoskeletons. Over time, the collection of shells/exoskeletons left behind by dead coral polyps and coral colonies build large groups of rock-like structure called a coral reef. Although the entire coral reef looks like a lot of large rocks, the top surfaces are actually covered with new coral colonies that are very much alive.

Importance of coral reefs

Rich fishing ground. Coral reefs provide about 15 percent of the total Philippine fish catch or about 170,000 t/year (Murdy and Ferraris 1980).

Shoreline protection from storm surges

Medicine (antibiotics, anti-cancer compounds) from various invertebrates

Coral sand

Aesthetic appeal. Tourism

Natural Laboratory

Threats to coral reefs

Storms
Global warming
Disease, parasites, and predators (Crown-of-thorns starfish-*Acanthaster planci*)
Destructive fishing methods such as trawling, blast fishing, drive-in nets, and cyanide fishing
Coral mining
Anchor damage
Water pollution

Population Problems in the natural world: The food pyramid will be the basis for this discussion. The shape of the pyramid reflects the normal and ideal numbers of members of each trophic (energy) level (There are more producers than primary consumers which number more than the secondary consumers, and so on) illustrate what will happen if the population in a higher trophic level exceeds that which is directly below it. It will start a chain reaction of wherein higher trophic levels will “eat up” more than the sustainable number of organisms in the lower trophic levels until the pyramid will be inverted and topple over (the apex will be in the bottom)

THE HUMAN ECOSYSTEM (The Present Scenario)

Trainer’s note:

1. Localized data on population and other community demographics is best appropriate in this lecture to present a realistic scenario to the participants.
2. Records on population trend in the community would be of best help for the participants to realize the fast growing number of people in their own community and even globally.
3. In case of unavailable data: See Statistical data on Health and Population attached.

1 & 2 LECTURE: INTRODUCTION TO CRM

PURPOSE: To familiarize the participants with the CRM process and the different strategies used in managing municipal waters.

TIME: 30 minutes

MATERIALS: Visual aids (see annex), marking pens, Manila papers, cartolina

PROCEDURE:

1. Take off from the discussion of threats to coastal ecosystems in the Philippines
2. Introduce the participants to the provisions of the Local Government Code (RA 7160) and the Philippine Fisheries Code (RA 8550) that mandates the local government to manage municipal waters.
3. Introduce CRM as an important tool in addressing threats to and effectively managing municipal waters
4. Introduce the participants to the different strategies used in CRM. Briefly explain the CRM planning process.
5. Put into perspective the role of the YPE as part of the overall CRM process

TRAINER’S NOTES:

To help the participants understand the concept of CRM better, there are terms that should be introduced. These are the key operational definitions for CRM planning (Philippine Coastal Management Guidebook No. 3)

1. **Coastal Resource Management CRM** is a participatory process of planning, implementing, and monitoring sustainable uses of coastal resources through collective action and sound decision-making

2. **Collaborative management or co-management** Collaborative management or co-management is based on the participation of all individuals and groups that have a stake in the management of the resource. Important elements include (White et al. 1994):
 - a. All stakeholders have a say in the management of a resource on which they depend;
 - b. The sharing of the management responsibility varies according to conditions of authority between local community organizations and government. However, in virtually all cases, a level of government continues to assume responsibility for overall policy and coordination functions; and
 - c. Social, cultural, and economic objectives are an integral part of the management framework. Particular attention is paid to the needs of those who depend on the resource and to the equity and participation

3. **Coastal Area/Zone** The coastal zone is a band of dry land and adjacent ocean space (water and submerged land) in which terrestrial processes and uses directly affect ocean processes and uses, and vice versa; its geographic extent may include areas within a landmark limit of one kilometer from the shoreline at high tide to include mangrove swamps, brackish water ponds, nipa swamps, estuarine rivers, sandy beaches, and other areas within the seaward limit of 200-m isobath to include coral reefs, algal flats, sea grass beds, and other soft bottom areas (RA8550).

4. **Municipal Waters** Municipal waters are within the territorial jurisdiction of municipalities to 'include streams, lakes, inland bodies of water, and tidal waters within the municipality that are not within protected areas (defined under RA 7568 the National Integrated Protected Areas System, NIPAS Law), public forest, timber lands, forest reserves or fishery reserves, but also the marine waters included between two lines drawn perpendicular to the general coastline including offshore islands and 15 km from such coastline. Where two municipalities are so situated on opposite shores that there are is less than 30 km of marine waters between them, the third line shall be equally distant from opposite shore of the respective municipalities' (RA 8550).

5. **Municipal/city CRM plan.** A municipal/city CRM plan defines the goals, objectives, policies, and strategies for managing coastal resources over a 5-year or medium-term time horizon consistent with the goals, objectives, and timeframe of the National Medium Term Program Development Plan (MTPDP). Essential elements of a municipal CRM plan include:
 - a. Description of the area
 - b. Maps
 - c. Management issues
 - d. Goals and objectives
 - e. Strategies and actions
 - f. Institutional and legal framework
 - g. Timeline
 - h. Monitoring and evaluation

Annual operations and investment plans are prepared in support of the municipal/city CRM plan to describe yearly program activities and provide budgets. Under certain conditions, such as bays and gulfs, several municipalities may need to join forces in the formulation of the bay-wide CRM plan. The support of communities and involvement of Municipal Fisheries and Aquatic Resources Management Councils is essential to ensure successful implementation of the plan.

6. **Provincial CRM framework Plan.** A provincial CRM framework plan sets the policy framework and development direction of the province. It contains guidelines on how to implement the different coastal management programs and strategies at the provincial and municipal/city levels. It does not enumerate the details of the activities and projects in each of the strategy. Instead, it provides broad policies and guidelines on how to address issues and problems concerning the province and the municipalities/cities. It could also contain guidelines as to how the municipalities and cities could jointly manage a bay or fishing ground used by two or more contiguous LGUs, or any other management areas. It may also serve as framework for the municipalities and cities in the preparation of their respective plans.

The programs and strategies contained in the plan can be directly implemented by the province or by the municipalities or component cities, with technical assistance from the province. The support of the national government particularly the Department of Environment and Natural Resources and the Bureau of Fisheries and Aquatic Resources, academic institutions, NGOs, private institutions, and the general public is very important to ensure success of the implementation of the plan.

Also discuss the five phases of the CRM planning process (tip: use meta cards to illustrate the different phases)

Phase1: Issue identification and baseline assessment

Phase2: CRM plan preparation and adoption

Phase3: Action plan and project implementation

Phase4: Monitoring and evaluation

Phase5: Information management, education and outreach

POPULATION MANAGEMENT as a strategy to CRM

Family planning – strategic intervention to reduce fishing effort

WHY SHOULD POPULATION MANAGEMENT BE A CONCERN?

59% of population resides in the coastal zone

High fertility (TFR 4.7% vs 3.7% national)

High population growth (3.9% vs 2.3% national)

Low CPR modern method (25.5 vs 28.2% national)

Young population structure (> 45% vs under 15yrs)

Large family size (5-8)

Majority of HH are fishers

Low education/literacy (primary schooling only)

Health services are inaccessible

High rate of malnutrition in under-fives

Growing food security problems

WHY IS I-POPCORM needed?

Having too many children can cause social problems like poverty, criminality including illegal fishing, health issues and other problems since the parents resort to whatever means just to feed their children and this will be a cycle because the children, who are not well-educated, will naturally follow their parents footsteps and experience the same hardships.

It is difficult to raise more children since there are more mouths to feed, more to educate and provide for with other basic needs. If the parents are unable to do this, malnutrition, illness and other problems occur.

WHY adopt I-POPCORM in solving population concerns?

DENR & DOH have stated "If the current trends in population growth and coastal resource exploitation continue, the availability and affordability of fish to provide a crucial protein source for the Philippines will be lost" and recommended that "Family planning be strengthened in the coastal areas to reduce fishing effort and population pressures" however, DOH has no plan or agenda to promote integrated P-R-E approach due to political reasons.

FOOD SECURITY HINGES ON THREE CRITICAL RESULTS

1. ILLEGAL FISHING STOPPED
2. CRITICAL HABITATS
3. FISHING EFFORT REDUCED

1, 2 & 3 INFORMATION GATHERING AND EXPOSURE: BLUE LAGOON (SNORKELING, BEACH WALK AND BEACH WALK INTERVIEW)

PURPOSE: To expose the participants who can swim and snorkel to the complexity and beauty of the coral reef ecosystem and non-swimming participants to the sea-coast interface and urge them to discover the relationship between organisms and their environment

TIME: 75 minutes

MATERIALS: Masks and snorkels, slate boards, trash bags (for beach walk), forms

PROCEDURE:

1. Introduce the purpose of the activity
2. Brief the participants of the snorkeling activity on the safety considerations to remember
3. Instruct participants on what to observe. Their observations should be based on the following guide questions:
 - a. What coastal ecosystem can be observed in the area?
 - b. What is the status of that coastal ecosystem?
 - c. What factor could have caused the area to be in the present state that it is in?
 - d. What are the five (5) most common organisms that you observed? List down according to local name or common name.
4. For the beach walk, instruct the participants to follow the coastline and make observations on the following:
 - a. Organisms living on the shoreline
 - b. Human impacts on the shoreline
5. For the beach walk interview, instruct the participants to follow the coastline and pick one or two households along the coast. Tell them to use the form (see annex) to conduct an interview with key members of each household. Tell them to make observations on their surroundings and their interview subjects and the family.
6. All groups should pick up any trash they come across during the activity
7. Discuss the observations of the group on the site in order to facilitate understanding
8. Ask each group to make a presentation of their results/data and for a representative to present it in front of all the groups.

PROCESSING:

Guide Processing Questions

1. What is your appraisal of the general condition of the ecosystems you observed in the snorkeling area?
2. What do you think can young people like you do to help save the marine resources and insure food security?
3. What can you say about the different households you encountered in the area?
4. What is the general condition of the shoreline?
5. How can you connect the population issue to the condition of the coast that you observed today?
6. How can coastal resource management and reproductive health practices help improve the negative conditions that you observed about your surrounding today?
7. Are there any connections that the groups can make about the findings of all the groups in snorkeling, beach walk and beach walk interview?
8. What have you learned from the experience?

Trainer's notes

Suggested further reading: Philippine Coral Reefs by A.T. White PhD. for a comprehensive identification of The common coral reef flora and fauna.

1, 2, 3 &
4

KNOWLEDGE REVIEW AND SHARING: HOP THE ISLES

- PURPOSE:** To give participants a review of the reproductive health and coastal management issues and concepts. To allow a venue for the Youth to ask questions about such issues and to share experiences with other Youth concerning such issues.
- TIME:** 15 minutes
- MATERIALS:** Hop the Isles Board Game (by PATH Foundation) (2 boxes)
- PROCEDURE:**

TRAINER'S NOTES:

Throughout the activity the trainers are encouraged to discuss the answers, wrong or right, with all the participants and to encourage the Youth to give their personal views and experiences involving such issues and concepts presented in the game. This game gives the participants a good venue to clear up misconceptions about certain CRM and RH concepts as well as review themselves on these concepts for further internalization.

1,2 & 3

FAMILY MANAGEMENT ACTIVITY: PELIMON'S FAMILY

PURPOSE:	To promote solidarity among the participants and the facilitators and allow the participants to experience real family life experience in terms of budgeting and priority setting. To practice and experience what they can do as educators for their own families.
TIME:	45 minutes
MATERIALS:	Play money, metacards, manila paper, markers
PROCEDURE:	

VARIATION:

1. The participants shall be asked to group themselves according to the color of their nametags. Each group shall pick a rolled paper prepared by the facilitator.
2. Groups who pick the rolled papers with situations will answer the question through a drama form/creative presentation. The members of the group who picks the blank rolled paper shall be asked to answer special questions and share their answers to the whole group.
3. The following questions can be used as scenarios per group:
 - a. You belong to a family of nine (9) including your mother and father. The main and only source of income in the family is fishing. Your mother at present is bearing the 8th child of the family and both parents are still at the highly reproductive age. Your father on the other has always been complaining for his decreasing to almost zero fish catch everyday. What do you think is the future for this family especially to their children? Do you think you can do something as a member of the family?
 - b. What are the possible consequences teenagers (Ara & Christian) would suffer when they engage into pre-marital sex? Both of them are still in

their second year high school and at the same time the eldest in their families with 5-7 younger siblings. Ara dreamt to be a nurse while Christian would have wanted to be a lawyer. What do you think their parents would feel?

- c. A group of friends are in their third year high school. All of them have been practicing unprotected pre-marital sex (PMS) with multiple partners except Peter. Peter has always refused to engage in sex because he still wants to reach his ambition in life which is to be a doctor but then his friends were teasing him and even call him "bakla". What do you think would happen to Peter as his friends continue to tease him? To his friend as they continue engaging in multiple unprotected PMS?
- d. Marina and Rouge are childhood lovers. They are now in their senior years in HS. One time Rouge asked Marina to sleep with him but Marina strongly refused she told him that it's only for their own good and for their futures sake, indeed Rouge respected her decision. Four years after they graduated in college, both of them land to a good job and thus settled down. What kind of family do you think would they have? How do you think can you make your own future family like that of Marina & Rouge?

Suggested questions/situations for group creative presentation:

1. Why did your family make certain purchases over others? What are the items within the "non-optional" commodities that your family considered a priority?
2. Did you have any savings? Did you make any loans? How did you feel about making a loan? Did you think that it was important that you make a loan, or could you have done without it?
3. Did your family purchase luxury items? Why do you think your family needed these luxury items?
4. After this activity, what are your impressions on family size and its impact on a limited budget? What are your impressions on how your own parents handle family expenses in your household every day?
5. What do you think would happen to the family life especially to the children in a family whose parents were married at a very young age without having finished their high school because of engaging into pre-marital sex? Do you want this to happen to your own family? (Show all the possibilities in a creative presentation)

Suggested questions for sharing:

1. Have you tried talking to your parents about human sexuality or any reproductive health related topics? How did you feel and how did they respond to you?
2. Have you tried conducting IPC to someone of the opposite sex? What was his/her reaction?
3. Have you tried being invited by your barkada to engage into sex? How did you handle it?
4. In your personal family life, have you experienced problems related to CRM/RH/Food security? What did you do to help?
5. Have you tried educating your own siblings (family in general) about sexuality, RH and CRM? How did they respond to you?
6. Have you tried educating a friend who is sexually active? How did you handle it?
7. Is there anything about you that has been changed since you become a YPE? What are those?
8. What do you think is the greatest lesson you learned being a YPE and in what way do you think it will help you in your own life and family?
9. What do you think is your greatest accomplishment as a YPE? How about the most difficult experience? What inspired you to continue being a YPE?
10. Do you believe that the youth sector has an important role to play in protecting our marine resources to help ensure food security? How do you think can you contribute in your own ways?

PROCESSING:

Guide Processing question

1. What did you notice in the experiences presented by your co-participants?
2. Why do you think your parents/people involved in the situations reacted that way in those scenarios?
3. Do you think your knowledge as peer educators helped you formulate the solutions?
4. Do you think you can do something to help your families as peer educators? Why do you think it is important to educate our own families?
5. What have you learned from the entire activity?

TRAINER'S NOTES:

1. Take note of the different priorities that each participant makes in spending the family budget. Remind them that this situation happens every day as compared to the fifteen minute budgeting activity they are currently doing. Remind them that their parents are faced with similar situations every day.
2. The number of situations to be used may vary according to the number of participants which number of groups created would also depend.
3. Give ample time for the sharing and discussions in order to sufficiently process the issues/experiences so that the participants can internalize the lessons.
4. Rules for group sharing should be emphasized especially in keeping confidentiality to family planning problems of the participants. The facilitator may or may not give all the questions instead choose only what you think is most appropriate to the group

1 & 3

KNOWLEDGE REVIEW: COASTAL CHARADE

PURPOSE: To reinforce the participant's knowledge on the different ways man affects the coastal ecosystem and to strengthen the importance of population management.

TIME: 45 Minutes

MATERIALS: Strips of

paper, pens PROCEDURE:

1. Give each participant a strip of paper and pen. Ask them to think of human activities that have effects towards the coastal ecosystems and write this activity on the strip of paper.
2. The participants should be given the freedom to choose/describe any activity regardless of its effect either positive or negative. After writing down, let the participants roll the strip of paper and drop it in a box provided by the facilitator.
3. Divide the group then into two subgroups with at least 7 members in

each group. If there are too many participants, divide them into four or six groups but they still have to play the elimination round so that only two groups will remain in the end for the final round.

4. Each of the group has to choose a representative one at a time to be the model of the group. The model shall be tasked to pick a strip of paper from the box and act out the description of a human activity while the rest of the group are to guess the action.
5. Each group shall be given 45 seconds to guess, failure of the group to guess within 45 seconds shall make them loose their turn and give the chance to other group.
6. The group who can gain more points shall win but preferably this is a best of five games. Extra situations should be prepared in case of tie scores.

PROCESSING:

Guide Processing Questions

1. What did you notice with the human activities presented?
2. What are usually the effects of these activities to our coastal ecosystems?
3. What do you think would happen if these activities will not be stop?
4. As youth peer educators what can you do to stop those destructive activities?
5. What have you learned from the activity? How can you apply these learning's.

TRAINER'S NOTES:

1. A poster showing human impacts on coastal ecosystems shall be discussed by the facilitator
2. Draw out personal experiences of the participants with different destructive human activities in the coastal zone and let the participants discuss these in detail

1,2 & 3

TEAM-BUILDING AND PLANNING: FEAR FACTORS IN THE AMAZING RACE

PURPOSE: To present different phases/forces of life and the challenges (peer pressure, media, early pregnancies, unplanned families) which pose threats to food security.

TIME: 90 minutes

MATERIALS: Loaf of bread, Glass of water, skipping rope, Strips of cloth, Pails, Empty soft drinks bottle, Drinking straw, Coconut husks, Clothing, Pillows, Drinking straws
Outdoor area preferably seashore

PROCEDURE:

1. The group shall be divided into two groups only. If there are more participants, they may be divided into four groups. Instructions should be explained to the participants and blind folds should be put on before going out to the field.
2. The members of the group shall fall in one line in the starting area. The first member in the line shall be considered as the first player.
3. The first player shall go through the series of tasks to be accomplished but great obstacles are present to add more pressure and difficulty. The main goal of the player is to reach the finishing

line with the least time they could but accomplishing the tasks in every post.

The Race proper:

1. The player shall be blind folded. He/she shall be asked to walk a distance without stepping the X marks on the floor/ground. The rest of the members shall give the player the direction but they are not allowed to walk with the player. When the player reaches the end of the first post, he/she may remove now the blinds and continue the next task.
2. The second task is to plant the drinking straws on the empty soft drink bottles using the coconut husks as footwear. The player must follow the direction indicated for planting the straws. These tasks will end upon reaching the third post but the player should continue to the next task to be done.
3. When the second task is completed, the player will now complete the third task, which is to fill an empty bottle with water using only a small cup in transferring the water from a pail to the bottle. (If seawater is not available, sand will do.) When this task is complete, the player shall proceed to the next task.
4. The fourth task is to dress like a pregnant woman. The player has to change his/her clothing into a costume that of a pregnant woman putting a pillow on his/her stomach as the baby. Then the player has to walk like a pregnant woman until reaching the finishing line where a task must be completed. The dress-like- pregnant player should play skipping rope for five times without having the pregnant costumes fall. If the pillow/costume fell, the player should start counting from 0 until 5 without any part of its costume falling.
5. The last task is to eat bread and drink water that will satisfy the hunger and thirst of the player after the series of tasks. After satisfying oneself, the player shall return to the starting point and give a tap on the shoulder of the second player as a sign to begin his journey. The rest of the players shall do the same until all the members of the players are able to go through the journey.

PROCESSING:

Guide Processing Questions

1. How do feel while doing the activity?
2. What did you notice among the members of the group when they were on the race?
3. What do you think is the connection of your experiences in the game to our real life experiences? Is there parallelism?
4. Was there enough food to satisfy all the hungry members of the group until the last player?
5. Do you think, youth who become parents at an early age will be able to give enough food and comfortable life to their children?
6. What do you think is the game trying to teach us about balance of population and resources?
7. What have you learned form the activity?

TRAINER'S NOTES:

1, 2 & 4

Discuss the symbolisms of the different phases of the game emphasizing the inter-connectedness of the human population to coastal resource management. This can be better explained with the **Wale's Mice Narrative** wherein the trainer can use props (e.g. Disney characters) and create scenario of how a boy and a girl meet, get pregnant early, marry, continue to have children, increase in family size and experience a decrease in budget which throws their lifestyle and

family health out of proportion resulting in a very difficult family scenario. The following should also be discussed to support the narrative:

Phase I: Peer pressure and Media promoting sex

These factors are identified as the strongest factors influencing the young people to engage in PMS. Stress the importance of strong family values and the quality of friends that they should have. A real friend is someone who:

- C – concern for our welfare & future
- A – Advice us what is just, good, & right
- R – respects life & individuality
- E – encourage us to realize our dreams

Phase II: Our Roles in Life

As we learned from the web of fire we all have different roles to play in this life. These roles are usually identified for us by our elders (parents and grandparents) these roles are not necessarily those that we want for ourselves but our parents and elders are convinced that this is what is good for us. The important thing to consider in this aspect is the fact that our elders want the best for us and that we are not really obligated to follow what they want but to follow what we think is right, live a happy life, and be an asset to society by being involved in all environment management activities especially CRM

Phase III: Individual Dreams & Visions

Emphasize the importance of outlining their priorities at present including their goals and aspirations in life. Point out also the need to focus on the things that will help them achieve and realize their dreams and not on those that can possibly hinder them, like becoming a parent at a very early age.

Phase IV: Family Life

Family is not easy because along with it goes so many responsibilities. The more difficult it will be for those who enter into family life without enough preparation. Emphasize the possible consequences of unplanned families and which most of those are young teenagers who become parents by accident and at a time when they are least prepared (e.g. Economically unstable & the children's future is at risk)

Phase V: Food Security

Relate the effort that the participants exerted in completing the race to the current reality that fishermen are experiencing today: CPUE or catch per unit effort is very low, meaning fishermen are spending more time and energy in their fishing and are still catching very few fish. This is due largely to the increasing number of users of coastal resources as a result of rapid population growth.

1,2,& 3

TEAM-BUILDING AND PLANNING: BUILD ME A BETTER WORLD

- PURPOSE:** To emphasize the importance of planning in order to achieve goals and attain food security.
- TIME:** 60 minutes
- MATERIALS:** 25 pcs. Of Barbecue sticks / group
15 pcs. Of Bubble gum/ group
- PROCEDURE:**

2. Each group shall be given 2 minutes to build a house using the sticks and the gum. They are to build the most beautiful, tallest, strongest and the most creative house.
3. The participants shall not be given any time to plan prior to the action. They should not also be allowed to talk while working on the activity
4. Any group caught violating the rules will automatically be disqualified.
5. The facilitators shall test the quality of the houses after all the groups are done.

PROCESSING:

Guide Processing questions

1. Do you think, planning was important before building the house? Why?
2. What difference would it make if you were given time to plan?
3. Do you think every member was important in the group in building the house? Did everybody cooperate?
4. Why do you think planning is important before engaging into the activity?
5. How important do you think is life planning/family planning?
6. What he you learned from the activity? How can you apply these learnings in your day to day life?

TRAINER'S NOTES:

1. The method of testing the quality of the house should be processed well to avoid hurting the feelings of the participants when you get to destroy the house while testing.
2. Relate the two previous discussions to the planning process. Emphasize the importance of planning in building the houses despite the limited means of communication that they have. Bring them to realize that planning is not only important in building structures but more so in building ones family.
3. Discuss the importance of being able to work with materials that are available without altering their state. There will always be groups that will chew the gum before using it as well as groups that use the gum as is.
4. Simple but durable should be a principle that should be followed by the participants. Explain engineering and architectural concepts wherein the simplest structures and shapes are the strongest. (ex. 1.The pyramids that lasted for 4 thousand years despite being hollow and filled with chambers inside 2. The arch, which is the basic shape of long-lasting bridges and the shape of the foundation of the Eiffel tower and the bottom of the human foot)

1,2,3,4,5
& 6

PLANNING: PERSONAL AND COMMUNITY ACTION PLANNING

(Personal Life Planning & Community Action Planning)

PURPOSE:

Personal Life Planning:

To give time for the participants to ponder their own plans for their future and determine their life priorities.

Community Action Planning:

To allow the participants to identify community based CRM and RH issues in their own locality and come up with actions to address such issues that they can work on in their level

TIME:

120 minutes (60 minutes for each planning)

MATERIALS:

Personal Life plan forms

Community Action plan forms
Metacards, manila paper, marking pens, BMS data, other relevant information

PROCEDURE:

1. Give each participant a life plan form and give them the freedom to choose their own nook where they can be alone and reflect for an hour.
2. As soon as time is up for the life planning, gather the participants again in the training hall and divide them according to the barangays they represent. Assign them to specific areas of the training hall where they can work with minimum disturbance
3. Ask the CHOWS of the respective barangays to guide the participants.
4. Explain the basic steps of the planning process. Include the format/matrix of the action plan (attached)
5. Ask the groups to identify the CRM and RH related issues in their barangays. Supervise the activity by going to the different groups to answer their concerns.
6. Once the issues are all identified, instruct the groups to prioritize these issues by ranking them from most important to least important (they can do this by voting or by tallying frequency of occurrence)
7. Once the issues are prioritized, ask the group to take the top 1 or 2 issues from each category (CRM & RH) and from these issues formulate an action plan using the matrix.
8. Have the groups present their action plans to the whole forum (tip: invite representatives from the BLGU and the MLGU for the plan presentation so that they can comment on the plans and also give their commitment to assist in the fruition of the action plans).

PROCESSING:

Guide Processing questions

1. What did you learn from the planning activity?
2. Are the plans you made realistic? Why or why not?
3. How can you apply the lessons you learned from this activity to your tasks as YPEs?

TRAINER'S NOTES:

1. Discuss the SMART guideline in coming up with effective plans:
 - a. SPECIFIC
 - i. Issues should be clear and strategies to address them should be specific
 - b. MEASURABLE
 - i. The success indicators of strategies should be measurable in order to have a quantitative basis of the success for future reference/counter-checking
 - c. ATTAINABLE
 - i. Answer this question: Can it be done with the resources we have and the amount of time at our disposal?
 - d. REALISTIC
 - i. Don't build a bridge to the moon
 - e. TIME BOUND
 - i. Remember: weeks, years, months...keeps planners focused on the goal
2. Check the quality of the action plans based from the SMART guideline.

REFERENCES

- Aliño, P., E. Miclat, C. Nañola, H. Quiaoit, R. Campos 2002. **Atlas of Philippine Coral Reefs**. Goodwill Trading Co. Inc., Philippines.
- Evans, A.D. 1973. *Children and Youth: Psychological Development*. Dryden Press, Illinois, U.S.A. 368 p.
- Birkeland, C. and A.M. Friedlander. 2002. The importance of refuges to reef fish replenishment in Hawaii. *Hawaii Audobon Society*. 19p.
- Fajardo, A. S. 2004. Peculiar Shape, Pelimon's Family and Fear Factor in the Amazing Race. **In: I-POPCORM Youth Camp Manual**. CCE Foundation.
- Friedlander, A.M. and DeMartini. 2002. Contrasts in density, size, and biomass of reef fishes between Northwestern Hawaiian Islands and Main Hawaiian Islands: the effects of fishing down apex predators. **Mar. Ecol. Prog. Ser.**
- Hernandez, R. 2004. Personal Life Planning. **In: I-POPCORM Youth Camp**
- Krebs, C.J. 1985. *Ecology: The Experimental Analysis of Distribution and Abundance*. Harper and Row Publishers, New York. 800 p.
- Leatherman, D. 1994. **The Training Trilogy: Assessing Needs**. Richard Chang Associates, Inc., U.S.A. 115 p.
- Odum, E.P. 1971. **Fundamentals of Ecology**. W.B. Saunders Co., Philadelphia and London. 574p.
- Newman, P. and Newman, B. 1998. **Childhood and Adolescence**. Brooks Publishing Co., Pacific Grove, U. S. A. 496 p.
- Rotary Youth Leadership Training 2003. Rotary Club of Cebu.
- Smith, M.K. 1993. An ecological perspective on inshore fisheries on the Main Hawaiian Islands. **Mar. Fish. Rev.** 55: 34-49.
- White, A.T. 2001. **Philippine Coral Reefs: A Natural History Guide**. The Book Mark, Hong Kong, -p.
- White A.T. and A. Cruz-Trinidad. 1998. **The Values of Philippine Coastal resource: Why Protection and Management are Critical**. Coastal Resource Management Project, Cebu City, Philippines, 96 p.
- Wilkinson, C. (ed.). 2002. **Status of Coral Reefs of the World**. Australian Marine Institute, Townsville, Queensland. 378 p.

ANNEX 1. Forms for Participant background, Blue Lagoon activity and Personal and Action planning.

I-POPCORM YOUTH CAMP

BASIC INFORMATION

NAME:
AGE:
ADDRESS:
EDUCATIONAL ATTAINMENT:

YOUTH CAMP EXPERIENCE

First environmental youth camp attended?	YES	NO
If NO, please write the title, date, and organizing body of the youth camp attended.		

TRAINING EXPERIENCE

Other Coastal Resource Management and Reproductive Health trainings attended (please write title, date, and organizing body.	
Reasons for attending this youth camp.	I was required to attend.
	It was at my own personal interest to attend
	I attended because I am curious about it.
	Others (specify):

SPECIAL CONSIDERATIONS

Swimming skills (Please make an honest assessment. This is for your safety.)	I am an excellent swimmer. I learned how to swim when I was _____. I am very comfortable in water.
	I am a good swimmer. I swim often. I am comfortable in water.
	I am a fair swimmer. I swim often. I am fairly comfortable in water for short periods of time.
	I am a poor swimmer. I haven't been swimming often or recently, only occasionally. I am rarely comfortable in water.
	I cannot swim.

BEACH WALK INTERVIEW SUMMARY FORM

NAME	TIME
Sitio & Barangay:	Municipality:
Family Name:	
Mother's name:	
Occupation:	
Educational attainment:	
Father's name:	
Occupation:	
Educational attainment:	
Number of children?	
Number of children under 18 years old?	
Number of people in household?	
Number of relatives outside immediate family in household?	
How many fishers in the family?	
What is their average fish catch?	
What type of gear do they use to catch fish?	
How many boats are owned by the family?	
How many in the household are employed?	
What is the average income of the household?	
How far from the waterline is the house?	
How many rooms are in the house?	
What kind of toilet do they have? Water-sealed?	
How many bedrooms in the house?	
Are any of the children over 18 years old working?	
If yes, as what?	
Are any of the children under 18 years old working?	
If yes, as what?	
Who looks after all the children?	
How many of the children are in school?	
Where do they dispose of their trash?	
Do they know what destructive fishing methods are?	
If so, what exist in the area?	
Name their diet for one day:	
Breakfast:	
Lunch:	
Dinner:	
Other observations:	
Other questions:	
1.	
2.	
3.	
4.	

ANNEX 2. Suggested Icebreaker and Recap activities

Ice breaker activities

1. Reproduce and cut out animals and put them in a hat. Each participant gets one piece of paper from the hat and will make the sounds that the animal makes to find other participants with the same animal. Similar animals group together and introduce each other as a group.



2. Ask participants to form two lines. The participant will tap the person's back in front of him/her as the facilitator dictates the strength of tapping required. Three kinds of tapping are done. When the facilitator says "drizzle" (light tapping around the back like soft raindrops). When the facilitator says "rain" (harder tapping on back with more force). When the facilitator says "typhoon" (a chop-chop action of the hands should be done on the back). Go through a few rounds of this. After three rounds, ask participants to turn around and do this to the person on the other side of them.
3. A game of charades can be done by dividing the groups into smaller groups of five. As groups they can "make a scene" wherein they are given a particular scenario wherein they have to create a picture to depict the scenario. For instance, if the facilitator asks for a "funeral", the group has ten seconds to arrange the group to show the makings of a funeral. Other scenarios are: wedding, giving birth, arrest of an illegal fisher, etc.
4. Human Bingo. Pass the following matrix to all participants and ask them to fill them out by mingling with the whole group and finding out if each box can be filled by a person with the corresponding talent/object/personality that is being asked for in each box. One person cannot fill more than one box. The first person to fill the whole sheet (or most of it) in the allotted time, will present his/her sheet, thus also introducing the people who filled out his/her boxes.

Eldest in the family	Has more than 5 siblings	Has had experience diving	A student leader	Wants to marry at 25
Owns a banca	Youngest in the family	Has a 'close-up' smile	Wants to be a lawyer	Has a lover
Has a fisherman Dad	Born diva	FREE	Can play a musical instrument	Fan of Sarah Geronimo
Honor student	Has a pet dog/cat	SK official	Videoke king	Basketball player
Knows the Totoy Bibo dance	Fan of "Marina"	Participated in a coastal clean-up	Has tried fishing	Danced in a disco

Recap Activities

1. Put guide questions on pieces of paper. Stick papers together into a ball. Ask participants to form a circle and to pass the ball around with music playing. When music stops, whoever is holding the ball can peel a question off it and answer it in front of the group.
2. Within the venue of the camp, stick questions at random underneath the seats of the participants. When the time of the activity comes up, ask participants to look beneath their seats. Those with questions can answer them in front of the group.
3. Divide the whole group into two and make a trivia game using guide questions, especially those pertaining to the lectures, giving points to those that answer correctly for their group. Let the point system be a race to ten correct answers.
4. Pass a hat around the room with guide questions written and rolled up in the hat. This can be done to music, and whoever is holding the hat when the music stops can pick a question out of the hat and answer it in front of the group.

ANNEX 3. Pre-test and Post-test Questionnaire

IPOPCORM YOUTH CAMP Pre/Post Test

Name: _____
Barangay and Municipality: _____

Date: _____
Age: _____

Part 1. Encircle the letter of the correct answer(s) in each item

Section A: BASIC ECOLOGY/CRM (20 pts)

1. The study of the relationships between living things and non-living things and the environment is called:
 - a. Biology
 - b. Ecology
 - c. CRM
 - d. Sociology
2. The collective term used to describe organisms at the base of the food web is:
 - a. Producers
 - b. Consumers
 - c. Decomposers
 - d. Reducers
3. Which of the following is/are coastal ecosystem(s):
 - a. Forest
 - b. Seagrasses
 - c. Coral Reefs
 - d. Mangroves
4. Corals are:
 - a. Rocks
 - b. Animals
 - c. Plants
 - d. Seaweeds
5. What coastal ecosystem(s) holds/traps sediments thus preventing siltation
 - a. Forest
 - b. Seagrasses
 - c. Coral Reefs
 - d. Mangroves
6. The following are threat(s) to our coastal environment:
 - a. Coastal development
 - b. Siltation
 - c. Dynamite fishing
 - d. Improper waste disposal
7. What is the number one threat to coral reefs:
 - a. Typhoons
 - b. Human impact
 - c. High surface water temperature
 - d. Strong waves
8. What are the benefit(s) from protecting/managing our coastal ecosystems:
 - a. income
 - b. food
 - c. knowledge
 - d. security

Section C. INTEGRATION (20 pts)

1. One possible result of implementing CRM and Family planning is:
 - a. increase in the number of children
 - b. There is food security
 - c. Decrease in coastal resources
2. People and the environment are:
 - a. Separate
 - b. Connected
 - c. Not compatible
3. Increase in human population will likely lead to:
 - a. More demand in food b.
Lesser demand in food
 - c. Increase in fishing effort
4. Coastal resources are exhaustible thus need:
 - a. more pressure through harvesting
 - b. management
 - c. no management
5. What is the possible outcome of the following scenario: high CRM effort, no family planning:
 - a. Increase in food supply
 - b. CRM efforts are cancelled in terms of food security
 - c. Decrease in the number of children
6. Why do we need to protect coral reefs?
 - a. It is a source of livelihood
 - b. It feeds our family
 - c. We can learn from coral reefs
7. When a factory dumps its waste in the river it is likely to affect:
 - a. Only the river
 - b. The fish in the river
 - c. The mangroves, seagrasses, coral reef and the associated organisms
8. Possible result(s) of cutting trees in the upland is/are:
 - a. landslide
 - b. siltation
 - c. death of coral reefs
9. The likely reason(s) of people resorting to destructive fishing practices like dynamite fishing is/are:
 - a. Greed
 - b. Less fish to catch
 - c. Poverty
10. Why do we teach and learn CRM and Reproductive Health?
 - a. To participate in managing our degraded coastal habitats
 - b. To contribute in population management
 - c. To make sure that our children's children can eat

ANNEX 4. BASIC ECOLOGY LECTURE AND VISUAL AIDS

LAWS OF NATURE

Ecosystems throughout the world follow a set of laws that are enforced naturally. These laws of nature occur regardless of the efforts of humans to change or bend them. There are a number of laws in nature, some are specific to individual ecosystems and some apply to ecosystems around the world. They contain concepts and vocabulary that should be understood when studying ecology.

LAW # 1

Every living thing is part of continuing transfer of food energy called a **food chain**. This means that all plants produce and provide food while animals get food, a process of eating and being eaten. It will help us if we look at an example: a man eats a big fish that eats a little fish that eats small ocean animals that eat small ocean plants that grows using air, water, and sunlight.

In this example, it is often true, man is at the top of the food chain, while the small ocean animals and plants are considered to be at the bottom of the food chain. Even though animals at the top of a food chain do not directly eat plants or animals at the bottom of a food chain, those at the top rely on those at the bottom for the food that they ultimately supply to them.

LAW # 2

All the living things in a food chain are either **producers** or **consumers**. This means that all living things either to get their energy to live and grow from 1) non-living things as plants do, by making (producing) plant material from water, nutrients and carbon dioxide and using sunlight in a process called photosynthesis, or 2) the eating (consumption) of other living things, as most animals do. Among living things, plants are producers and exist at the bottom of the food chain. Animals are consumers and usually occupy the middle or top of the food chain.

LAW # 3

All consumers in a food chain are either **predator** or **prey**. This means that all animals are either eating (as a predator) or being eaten (as prey) at different times depending on who is eating what. Most animals are both predator or prey. The big fish in the example above is a predator when it captures its prey, a small fish. However, when the man, the ultimate predator, captures this same big fish, it becomes prey.

LAW # 4

The relationships between the producers and consumers, and the predators and prey, that make up the food chain are interdependent, and form an interconnecting pattern known as the food web. The interlocking nature of food chains and food webs makes each part of the chain or web vital to the existence of the whole. If a single plant or animal that is part of a food chain or web is destroyed or removed, the entire chain or web can be destroyed.

LAW # 5

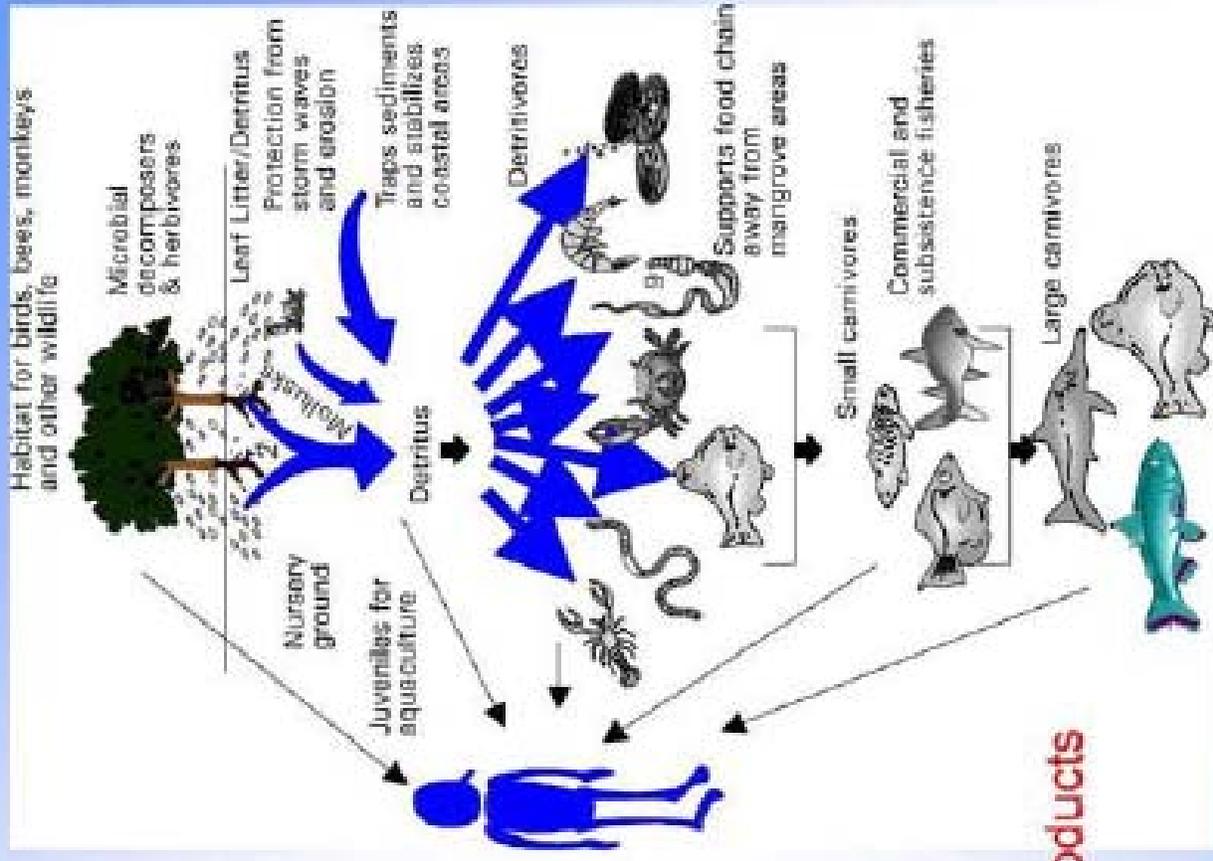
All natural ecosystems on earth have fragile arrangements of food webs and environmental conditions that are in ecological balance. This balance allows the ecosystem to support plants, animals and humans. Small changes in the food web, or changes in the environmental conditions, for example, changes in temperature or the amount of pollution, can cause the ecological balance to be disturbed. When this happens, the ecosystem often can no longer support the plants, animals and humans that are living there.

Multiple Use and Human Impacts on Philippine Coastal Environment

Environment



MANGROVES



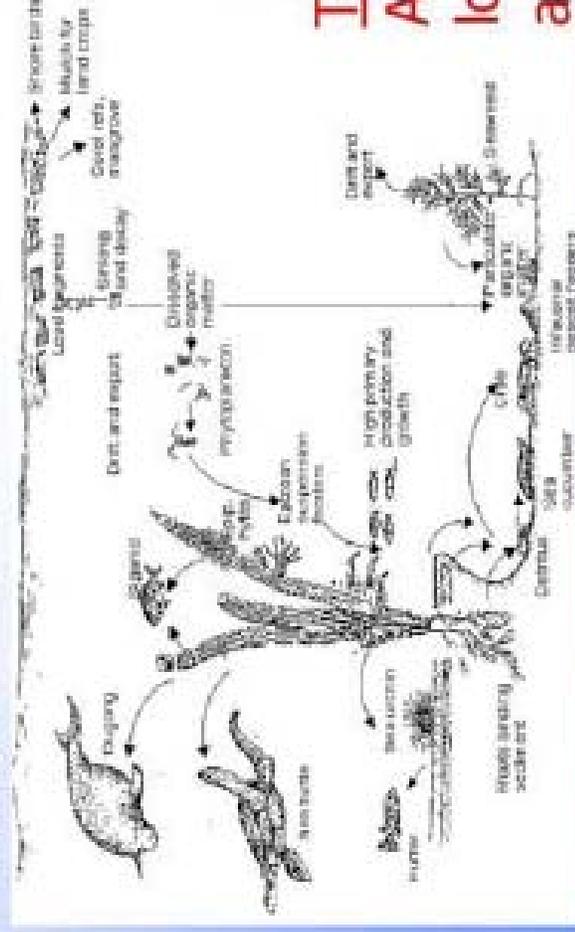
Threats:

- Deforestation for fuel and lumber products
- Conversion to fish ponds
- Conversion to residential areas

SEAGRASSES



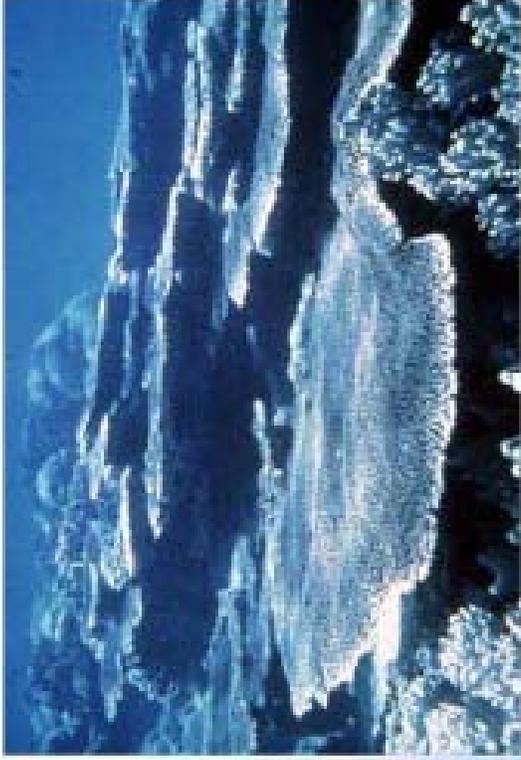
- Stabilizes soft bottom communities and holds sediments
- Slows and retards water currents & waves promoting sedimentation of particulate matter
- Serves as a nursery ground for many fish and invertebrate species
- Provides food for many marine organisms
- Produces and traps detritus, secretes dissolved organic matter that contributes to nutrient cycling



Threats:

Approximately 30 to 50% lost due to heavy siltation and coastal development

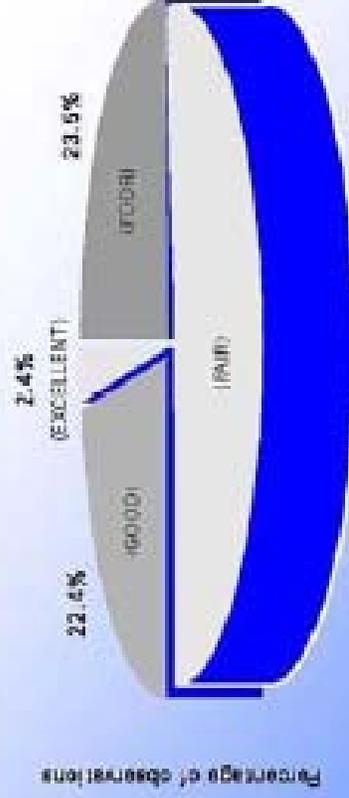
CORAL REEF



- Provide 15% of the total Philippine fish catch (170,000 t/year; Murdy and Ferraris 1980)
- More than 50% animal protein consumed is derived from marine fisheries & aquaculture
- More than 1M small-scale fisher dependents (food & income)
- Protects shoreline from surges
- A source of medicine, coral, sand
- Aesthetic appeal: Tourism
- Natural laboratory

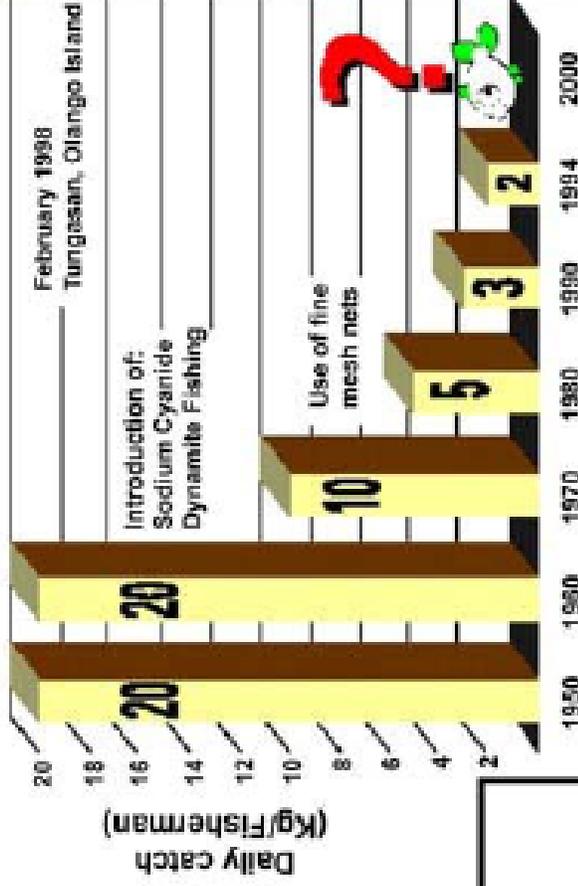
Threats:

- **Human impacts and destructive fishing practices**
- **Storms**
- **Global warming**
- **Diseases, parasites, predators**

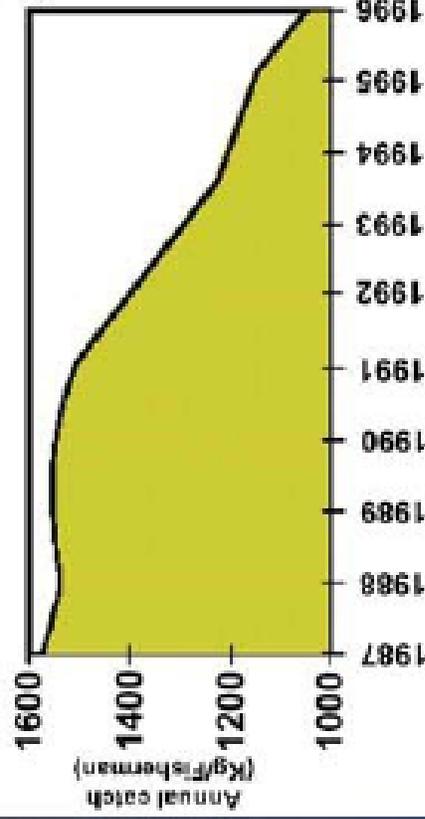


Declining catch per fisherman

- **Municipal fishers are catching fewer fish each year and sinking deeper into poverty**

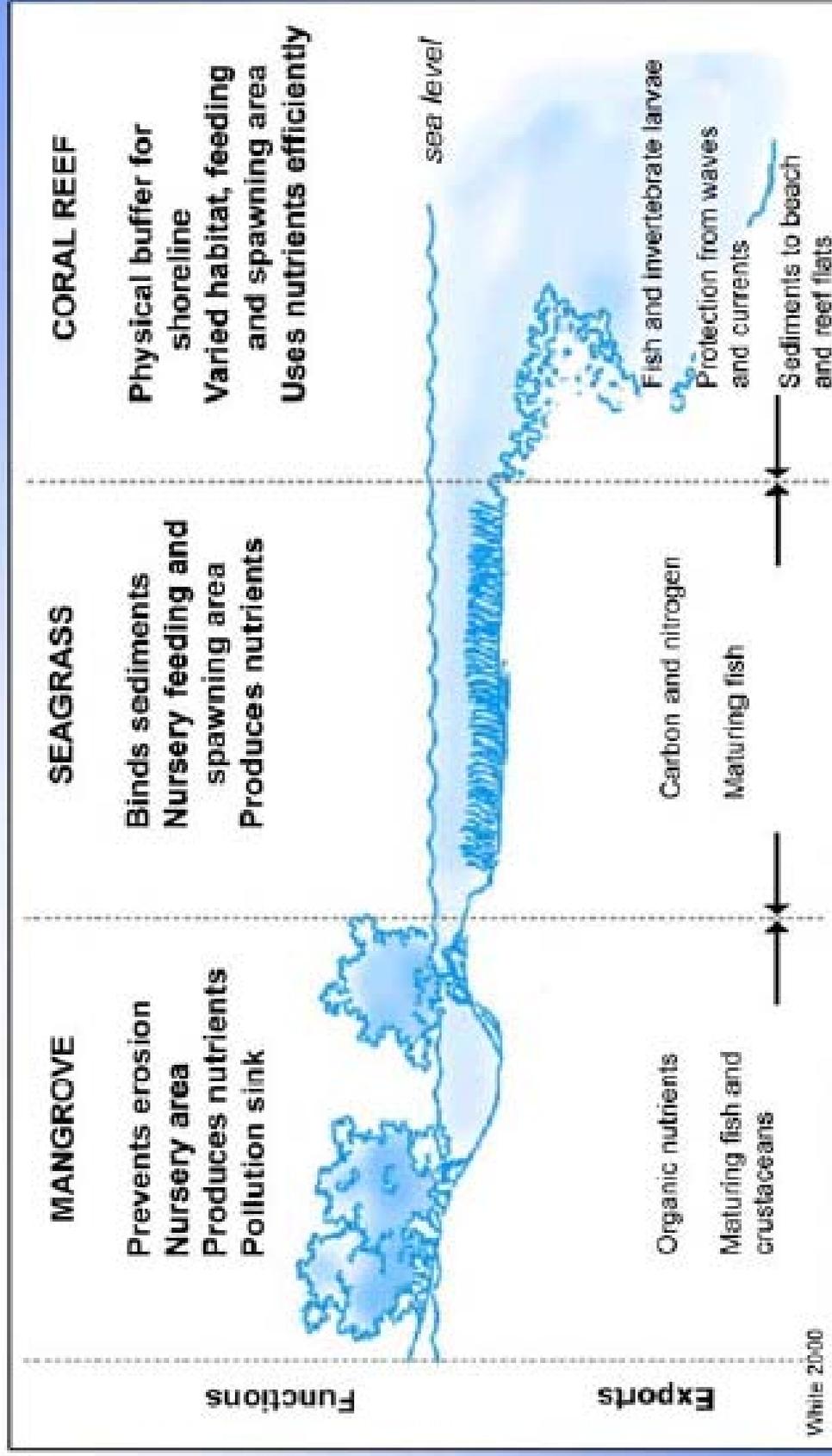


Trend of catch per unit effort for one barangay, Olango Island, Cebu
 (Result of community assessment of coastal resources, Coastal Resource Management Project, 1998.)



Estimated Average Catch Per Municipal Fisherman 1987-1996 (BFAR 1997; BFAR 1992; Bernascek 1994)

Mutual benefits among coastal ecosystem



The Coastal Zone

