Drawing the Future Together

Adapting to Change and Creating the Community and Environment That We Envision

By Nathan J. Bennett, Alin Kadfak & Philip Dearden

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Marine Protected Areas Research Group

The Marine Protected Areas Research Group (MPARG) focuses on all aspects of the establishment and management of marine protected areas within the context of integrated coastal management. We believe that interaction amongst committed individuals from different backgrounds and perspectives provides an enriched environment for advancing knowledge regarding MPAs. The group undertakes research on all aspects of MPAs, ranging from institutional assessments and social surveys through to basic bio-geographical studies on marine and coastal ecosystems. Active research programs have been or are currently underway in Canada and throughout much of the developing world including Southeast Asia, Africa, and Latin America. For more information on the Marine Protected Areas Research Group, please visit http://mparg.geog.uvic.ca/ or contact Dr Philip Dearden at pdearden@office.geog.uvic.ca

Project IMPAACT

The Andaman Bioregion of Thailand is one of the most abundant and diverse marine ecosystems in the world and is home to 18 marine protected areas. The region is a center of tropical marine biodiversity, but the reefs and other key ecosystems are deteriorating due to a wide range of pressures. The 2010 year witnessed the most severe coral reef bleaching ever and climate change will have an increasing impact on marine ecosystems in the future. At the same time there are many communities that are dependent upon marine and coastal resources for their livelihoods. These dependencies range from traditional and commercial fishing activities through to more recent dependence on coastal tourism. These activities will also see significant changes as coastal ecosystems change. The goal of Project IMPAACT is to provide further understanding of likely climate-change induced changes in coastal ecosystems and communities and suggest interventions that can increase the resilience of ecosystem conservation and the adaptive capacity of livelihood dependent communities in the future. The IMPAACT acronym stands for Improving Marine Protected Areas on the Andaman Coast of Thailand. IMPAACT is a project of the Marine Protected Areas Research Group at the University of Victoria, Canada. For more information about Project IMPAACT or this publication please visit http://projectimpaact.asia or contact Nathan Bennett via http://nathanbennett.ca or nathan.bennett@ubc.ca

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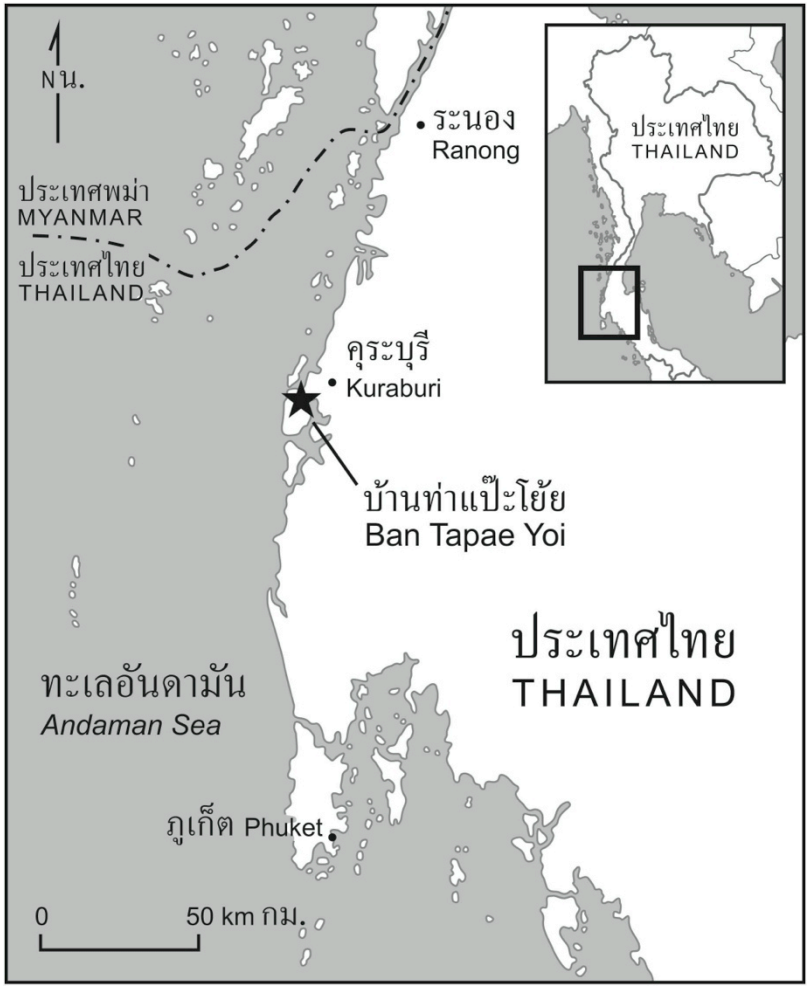
Introduction

The Broader Context: Communities and Change

Coastal fishing communities everywhere in the world are experiencing significant environmental and social changes. In many places, the health and productivity of the marine environment is threatened by overfishing, coastal development, and pollution. Fisheries are often in decline. The climate is changing – bringing rising sea levels, warmer temperatures, changing seasons and rainfall patterns, and more severe storms. These environmental changes bring about changes in livelihoods, quality of life and customs. Communities are also subject to the whims of global economies, national politics and demographics. Broader environmental, political and economic changes can also lead to new policies and programs that impact communities. Change is constant. Whatever the root cause of change, communities have no choice but to adapt. The manner in which adaptation occurs can be proactive or reactive and results can be beneficial or detrimental.



The Community Context: Ban Tapae Yoi

There are more than 600 fishing villages on the Andaman coast of Thailand. Located on the island of Koh Phrathong in Kuraburi district, Ban Tapae Yoi is a small coastal community that relies primarily on fishing, agriculture and tourism. In 2013, the community had a population of 119 people of Thai and Moken heritage. Similar to coastal communities elsewhere in the world, Ban Tapae Yoi has changed drastically over the last few decades. Southeast Asia, Thailand and the Andaman region have also transformed rapidly. Some of these changes have been good, some neutral and others negative.

Planned Adaptation through Scenario Planning

This report presents the results of a community-based scenario planning workshop that occurred in Ban Tapae Yoi in June 2013. Scenario planning is a facilitated community development process that was used to: investigate the types of social and environmental changes that are being experienced in Ban Tapae Yoi from the perspective of local community members, to explore the hopes and dreams of local community members for the future of their community and the local environment, and to propose and prioritize actions that will help the community to adapt to these changes.

The Scenario Planning Workshop

What is Scenario Planning?

Scenario planning is a group visioning process that is used to explore solutions to a central issue or question. The central question of this workshop was: "*How can coastal communities achieve good outcomes for community development and the environment in a changing climate?*" There were four stages in the scenario planning workshop:

- Stage 1 – Identifying the problem and purpose of scenario planning
- Stage 2 – Describing the system and types of change
- Stage 3 – Generating possible future scenarios
- Stage 4 – Proposing and prioritizing adaptations

Each stage of the scenario planning workshop was guided by a series of key questions and different activities were used to facilitate the discussion and produce results. These stages are explained in more detail on the following page. The remainder of this report will present results from the discussions and activities.

Who Participated in the Workshop?

The workshop took place over 2 days in June 2013 in the community hall of Ban Tapae Yoi. There were 58 people from the community who participated, including 19 males and 39 females. Males had an average age of 34 and females had an average age of 38. The youngest participant was 12 and the oldest participant was 59.

Who Facilitated and Supported the Workshop?

The workshop was organized and led by Dr Nathan Bennett (Khun Nate) from the University of Victoria (Canada) and a group of Thai facilitators including Alin Kadfak (P'Alin), Piyawich Budhagesorn (P'Mai) and Panjai Sparks (P'Pom). The project was part of Project IMPAACT, which was supported financially through a research grant from the Bay of Bengal Large Marine Ecosystem Project. Additional logistical support was provided by Mangrove Action Project, Andaman Discoveries, and the Northern Andaman Community Tourism Network. Several additional attendees from these organizations attended the workshop.

Stage 1 – Identifying the problem and purpose of scenario planning

During this stage, we made introductions, introduced scenario planning, and provided an overview of the workshop.

Key questions	Activities
Who are we and why are we here? What is scenario planning? How can coastal communities achieve good outcomes for community development and the environment in a changing climate?	Introducing facilitators. Introducing the problem: Communities, change and adaptation. Introducing the central question of scenario planning workshop. Overview of stages of scenario planning workshop.

Stage 2 – Describing the system and types of change

During this stage, we discussed indicators for community and environment as well as social and environmental changes and controllability.

Key questions	Activities
What components of the environment and community are important? What environmental and social changes has the community experienced? How much control does the community have over these changes? What is climate change and how does it impact the community and environment	Defining the system: community and environmental components. Exploring types of social and environmental change. Determining level of community control over changes. Discussion on climate change causes, effects, and potential impacts.

Stage 3 – Generating possible future scenarios

During this stage, small groups drew three possible scenarios – worst-case, business-as usual and desired - and presented them to the larger group.

Key questions	Activities
What might the future look like for this community and the local environment? What does a desirable future look like for the community and the environment? Are these possible futures consistent with what we know about current trajectories of social and environmental change?	Drawing 3 scenarios - Worst-case, business-as-usual, and desired scenario – in small groups. Presenting and narrating scenarios to the larger group.

Stage 4 – Proposing and prioritizing adaptations

During this stage, we identified and prioritized local actions and outside policies and programs to achieve desired outcomes and adapt to change.

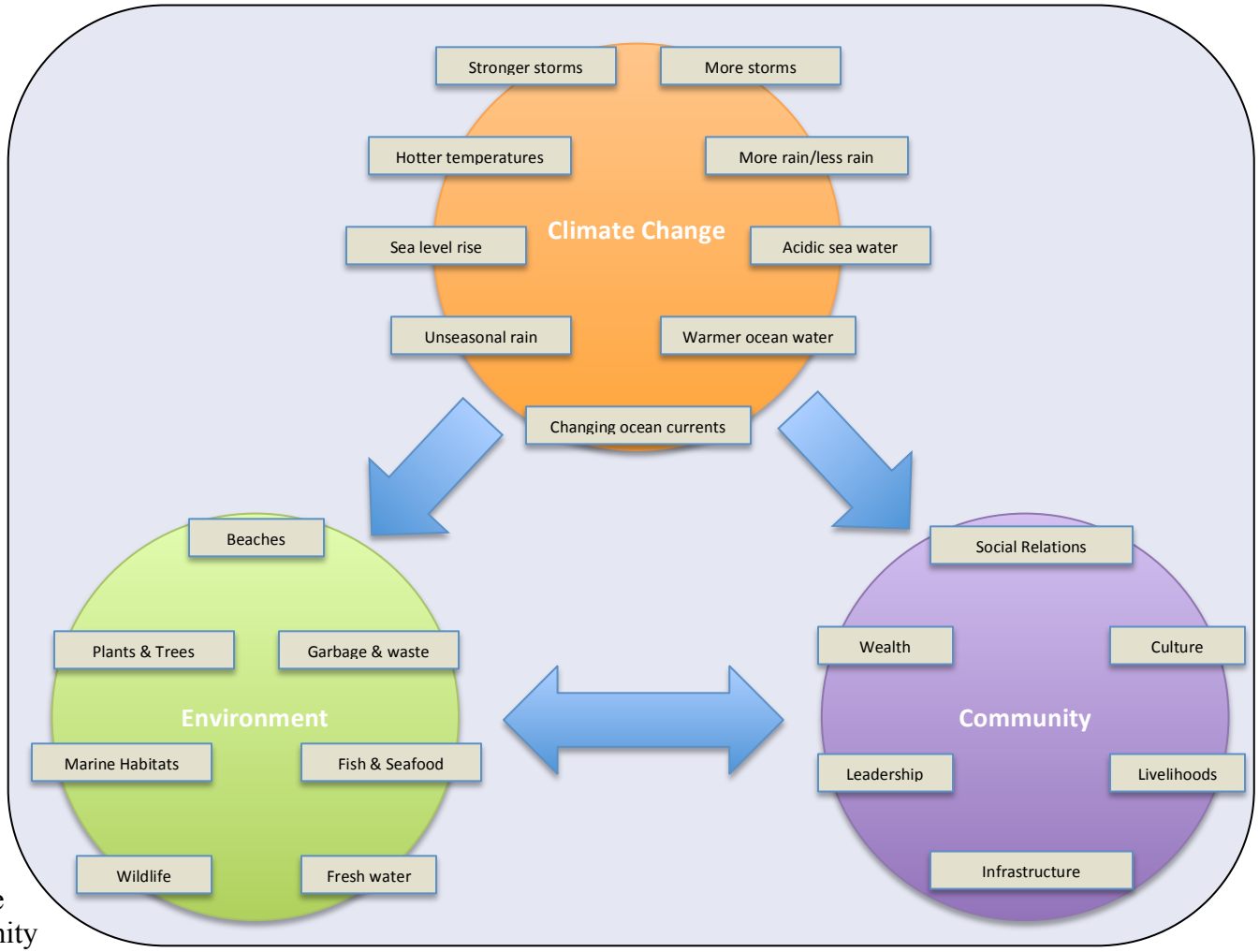
Key questions	Activities
What actions can be taken within the community to help achieve desirable environmental and community outcomes and adapt to climate change? What outside policies and programs would help the community to achieve desirable environmental and community outcomes and adapt to climate change?	Identifying actions and policies or programs to adapt to changes using a "Coffee Parliament" brainstorming and sharing process. Voting to prioritize adaptation actions and policies. Review of workshop and closure.

Workshop Activities and Results

Results 1: Defining the System

The central question of the scenario planning workshop was "How can coastal communities achieve good outcomes for community development and the environment in a changing climate?" To develop indicators for environment and community, we asked workshop participants two questions:

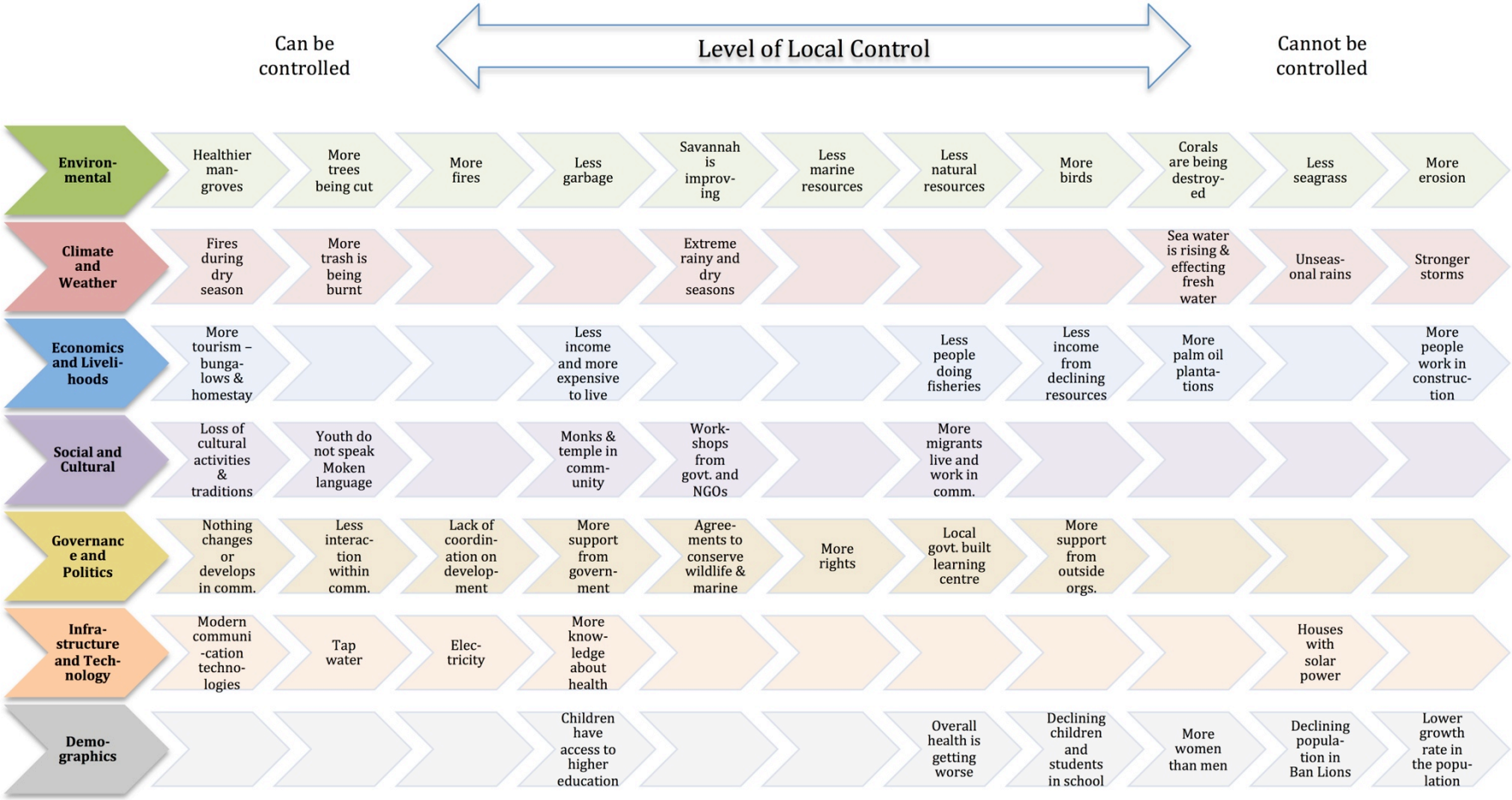
1. What makes this community liveable?
2. What parts of the environment are important to the community?



Answers to these questions were written on cards and pasted on two big circles on the wall representing "Community" and "Environment". For the remainder of the workshop, these components served as reference points for achieving good community development and environmental outcomes. We also briefly discussed how the environment and the community influenced the other sphere. Later in the workshop, we also added the effects of "Climate Change" to a third circle on the wall and discussed how climate change impacts both the environment and the community.

Results 2: Changes and Controllability

The facilitators split the workshop participants into four groups and asked each group to brainstorm changes that have been or are being experienced by the community. Seven categories of change were provided to stimulate group discussions: environment, climate and weather, economics and livelihoods, social and cultural, governance and politics, infrastructure and technology, and demographics. The participants in each group wrote the changes on different colored cards representing the categories of change. The facilitators then collected the cards and shared them with the participants. As the facilitators read each change aloud, workshop participants were asked whether they thought the change could be controlled by the community or not. Groups of two participants discussed each change and voted "yes, it can be controlled" or "no, it cannot be controlled". Facilitators estimated the average and cards were placed on a continuum on a big chart of changes as below.



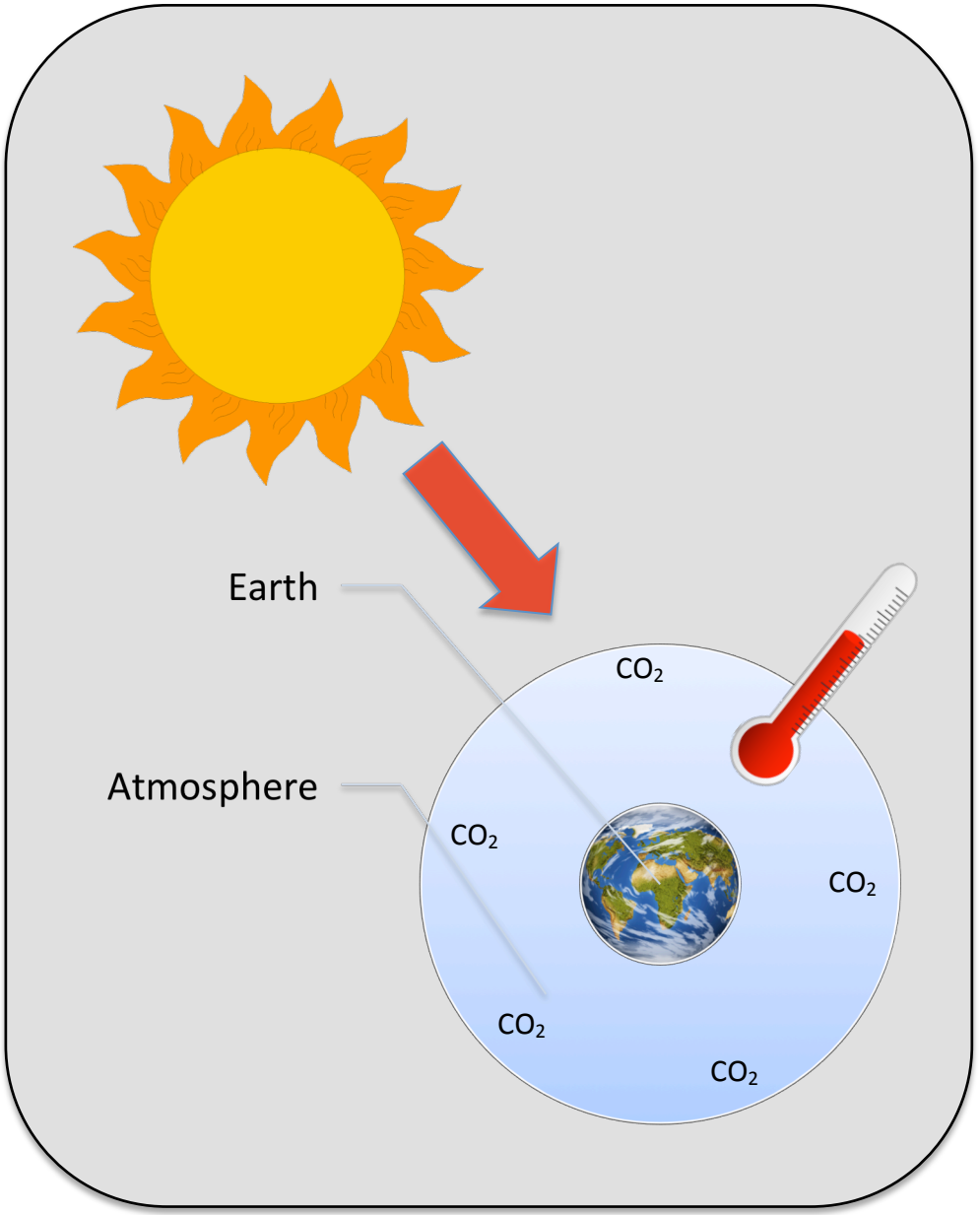
Discussion: Climate Change

After the discussions of social and environmental change, the workshop facilitators gave a brief lesson on climate change. The main points that we discussed were:

1. The earth is surrounded by an atmosphere.
2. Energy from the sun heats the earth's atmosphere.
3. Humans are adding more CO_2 and particles to the atmosphere through burning fossil fuels and removing forest cover.
4. Heat is trapped by Carbon Dioxide (CO_2) and other particles in the atmosphere.
5. This is causing a global warming of the atmosphere which has the following effects:
    a. Warmer temperatures
    b. Warming oceans
    c. More and stronger storms
    d. Changing ocean currents
    e. Sea level rise
    f. Unseasonal rains
    g. More acidic sea water
    h. More or less rain

We added these effects to the "Climate Change" circle as shown on page 8 and discussed how these changes can impact communities, livelihoods, and the environment.

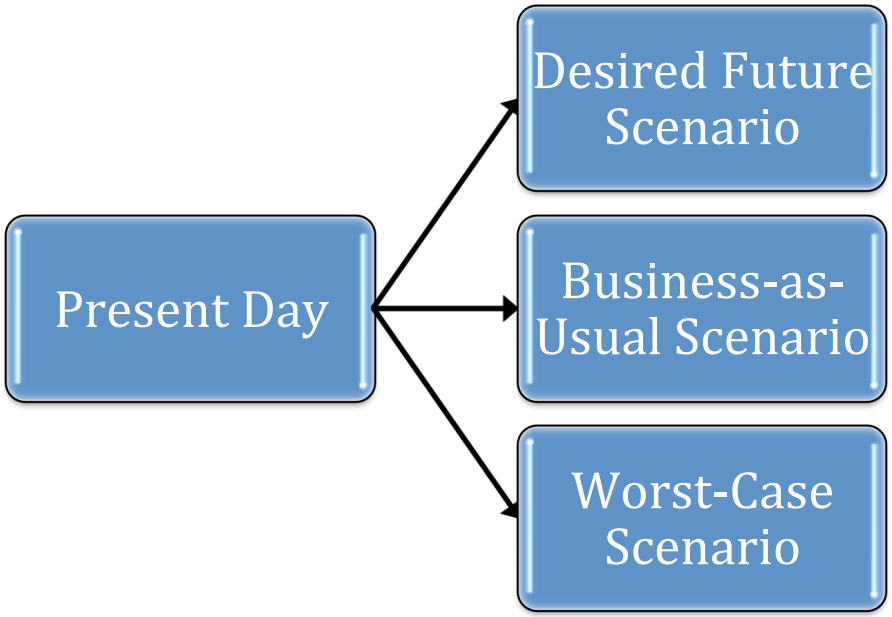
The group acknowledged that they had seen these changes that we identified during the lesson on climate change. When asked whether there were any additional climate related changes that they wanted to add to the chart of changes (p. 9), the workshop participants said that they did not want to add anything as they felt that they had already identified the climatic changes that they were experiencing.



Results 3: Drawing Future Scenarios

A group drawing exercise was used to explore possible scenarios for the community and for the local environment. The workshop participants were split into three groups – 1 group of men and 2 groups of women. Each group was asked to draw three scenarios – a worst-case scenario, a business-as-usual scenario, and a desired future scenario.

While the groups were drawing the scenarios, facilitators asked questions to ensure that the scenarios were plausible based on the changes that we had discussed previously and that they considered the different components of the community and the environment as well as climate change.



Afterwards, each group selected several presenters to tell everyone about the three scenarios that they had drawn. As the presenters told the story of each scenario, facilitators documented the narrative and the main points. These are presented on the following pages.

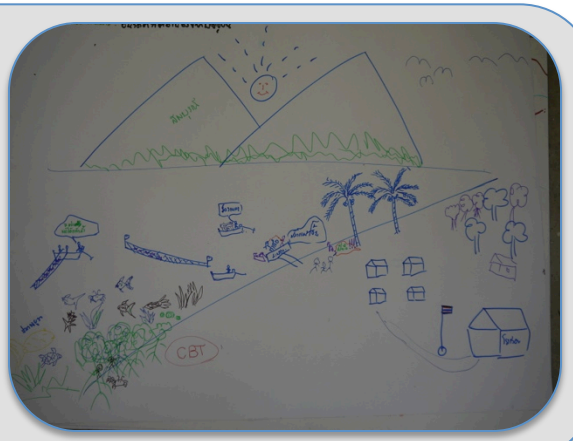


The Worst-Case Scenarios

"In the worst case future, the roofs of the houses will be broken. Water will run through the roof. The roads are not in good condition. All the corals are dead already. There is plenty of waste and garbage. And the forest and the trees are burnt. There are fires burning the forest. The people in the community are fighting against each other for food. The temple pagoda is broken." – First Group of Women

"The hopeless future is when everything is hot. Too dark water. Too big waves. We don't catch any fish, only garbage. All the houses are falling down because no one is taking care of them. And then the people have disagreements and they fight right away. They built a canned fish factory on the island and the pollution is causing the air to be bad." – Second Group of Women

"This is the hopeless future that we do not want to see. We do not want to see skyscrapers on Koh Phrathong. We do not want to see drugs. We do not want to see the community deserted like Ban Lions. There are lots of cut trees. There is a skeleton of a deer, so no animals. There is a sala where people are playing cards. If the parents are playing, the kids will play after. It will lead to no money. There are no mangroves left. This is a boat, trying to get fish. It did not get any fish. All the fish in the sea are gone. Because in the water, it is full of waste and pollution. Even the fishermen get mostly garbage and a little bit of fish. The water level is rising so even the sun is frightened. Even the clouds are starting to go away." – Group of Men

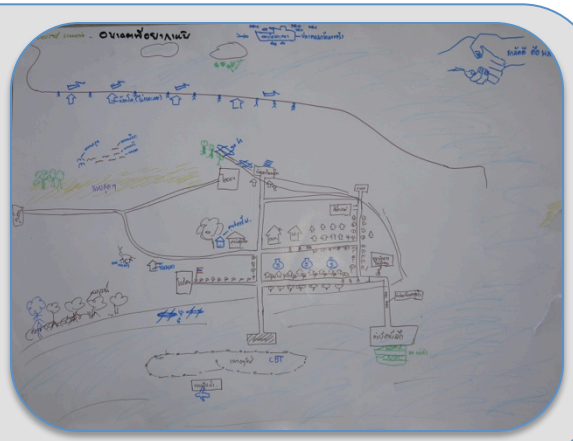


The Business-as-Usual Scenarios

"The future as usual. There will be more fires as now. The school will be getting worse and worse. Not too many students. The monks are not doing any good things so the people are not respecting them. The bridge is not being taken care of so it is hard for the people. A lot of people go and find construction work in hotels and resorts elsewhere. And because no one is coming to help, we have to beg." – First Group of Women

"The business as usual future. There is lots of seafood still. The fish are fat. People have houses. The sun is shining. The mangroves are healthy. There will be more students coming to school here. There are people doing vegetable garden. The temple is in good condition. The paddleboats will be turned into engine boats. And because people are happy, they have time to take care of their vegie gardens." – Second Group of Women

"The future as usual. We see the sun smiling as it is happy. We have healthy mangroves still. Our community is living like brothers and sisters. We have close relationships. We have tour boats bringing tourists. Catching fish, we get 7 baskets. It is easy to get fish. One fisherman says, "You got 7 baskets of fish!" There are dugonngs and sea turtles. There are crabs because the mangroves are healthy. There is a community-based tourism group." – Group of Men



The Desired Future Scenarios

"What we want to see, we want the ship sunk in the sea so that there can be diving spots. We want a bridge from Koh Phrathong to the mainland. We want to see healthy natural resources. There are shells and lots of fish. If natural resources are healthy, we will have shells for a shell factory. The sinking of the battleship will be good for tourism and natural resources. There will be a karaoke here. There will be a 7/11 because there is electricity and we will be owners of the hotel." – First Group of Women

"In the best-case scenario, we want to have a road around the island. We want to have a speedboat to the island for emergencies and tourists and the convenience stores will be turned into 7/11s. The school will go until high school, maybe even college or university. Also, there will be more buildings. The main occupation will be tourism, because there will be a road around the island. From the increasing tourism, we are already aware that the environment will be affected and we need to think about that. In this scenario, people will work much more in tourism because the fisheries are not doing well. People will not go so much to destroy mangroves." – Second Group of Women

"In the future that we want to see, more roads will be built. There will also be a bridge to connect the community to the mangrove areas, to the other side. There will be about 50 boats taking tourists to see the mangroves. There will be a deep sea port so other types of boats can park here. There will be more tourists. With more guests, there will be more financial benefits for the island. We will not see the electricity because it will all be under the ground. There will be a sea airport for guests. And we want to see trees being planted all over the community even more than now. There will be a lot of birds as well. No garbage as you see nowadays. And along the beach you will see some bungalows and there will be boats taking guests to the bungalows. In order to come to this, we have to be unified. There will be kayak activities. It will be supported partially by the authorities and partially by the private sector. There are kayak routes to Lions and the other side of the island. They will separate the zones on the island so that the tourism is along the beach. There will also be outsiders coming to invest but not too much. There will also be roads connecting to Tung Dap. The community-based tourism will also be expanded. For culture and social, we will use the traditional life but also maintain solidarity. The commercial fishery will be less in this area so there will be more fish for locals." – Group of Men

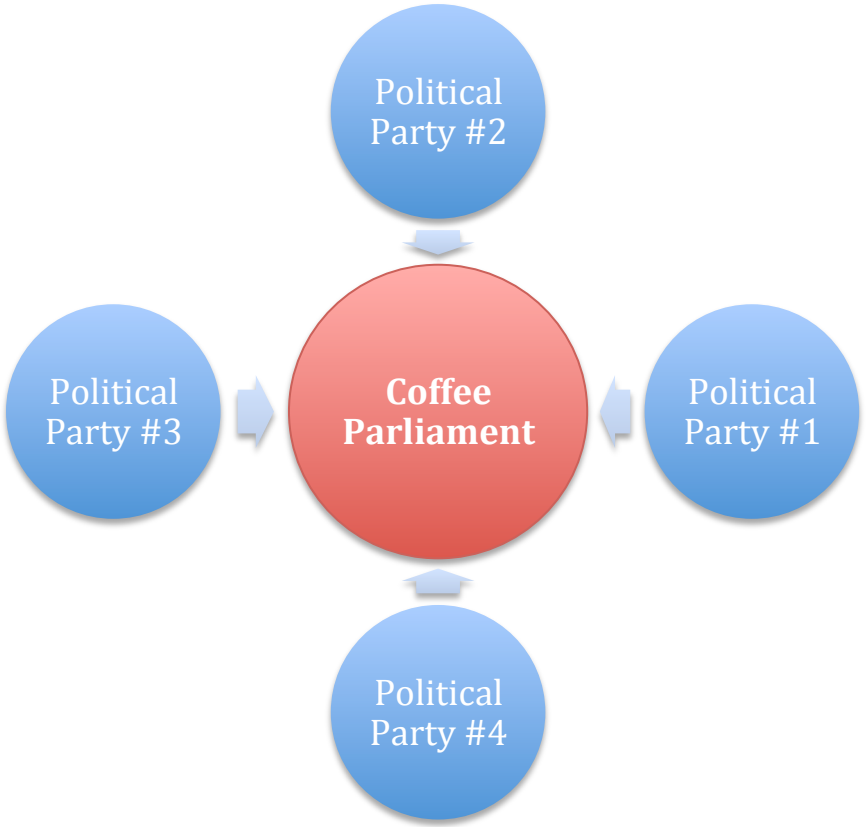
Results 4: Coffee Parliament

In the final stage of the workshop, we aimed to identify and prioritize local community actions and policies or programs from outside the community that would help to achieve the desired future scenarios while adapting to the changes that are occurring.

To do this, we used an activity that we called "Coffee Parliament". We named the activity after the groups of mostly elderly men who drink coffee and discuss politics in the morning on street corners and in cafes all over Thailand. For this activity, we split workshop participants into 4 groups - which we called different "political parties". During three rounds of discussion, each group was asked to reflect on *actions created by the community* and *policies or programs supported from outside the community* to:

1. adapt and achieve desired outcomes for the environment;
2. adapt and achieve desired outcomes for the community and livelihoods; and,
3. to adapt to climate change.

After each round of discussion, each "political party" sent a representative forward to the central "coffee parliament" to propose solutions that had been discussed in their group. A facilitator moderated the discussion while coffee was served. All proposals that were discussed during the coffee parliament were written down on chart paper.






Results 5: Voting on Adaptations

To prioritize adaptations, all workshop participants were given 6 stickers each and asked to vote on solutions identified in the "Coffee Parliament" by placing 2 stickers in each category: environment, community and climate change. Prior to voting, we reviewed with the participants the proposed *actions created by the community* and *policies or programs supported from outside the community* for each of the categories. The proposals are listed below along with the number of votes (stickers) that each received.

Actions to Adapt and Achieve Desired Outcomes for the Community and Livelihoods

Actions created by the community	***Policies and programs supported from outside***
Make livelihoods group to work on tourist souvenirs, to be able to work in the community (15)	Need rain water collecting tank (32)
Conserve fishing livelihoods (15)	Help to make toilet for the kindergarten (10)
Continue to improve homestay program in the community, through making the houses cleaner, working on marketing, and continuing to expand to Khaolak market (12)	Want someone to come to teach foreign languages to improve language skills, which will support other livelihoods (6)
Create a tourism center and promote different livelihood activities and tourism sites on Koh Phrathong (3)	Improving Bang Dad Pier on the mainland
Fisheries is decreasing, therefore, we need to develop tourism (1)	Asking for expert to learn about growing seaweed and marketing it
Create more home gardens. Work in a group to grow more vegetables and aim to sell them to nearby hotels (1)	
Continuing to do community-based tourism - Homestay might become the main livelihood. Both adult and youth who are interested can join and learn to be guide, which leads to trying to preserve local culture (1)	
We should make a Koh Prathong t-shirt as a symbol of community	
Start new subsistence livelihoods, such as Nipa palm harvesting and weaving	
Create a crab bank - to have sustainable number of crab for the future	
Start a community restaurant	
Fish farming - both salted and fresh water	
Farming seaweed	

Actions to Adapt and Achieve Desired Outcomes for the Environment

Actions created by the community	*Policies and programs supported from outside*
Improve waste management by community. For example, community can run waste collecting day once a month. (36)	Need help trying to get rid of denge fever, by smoking every household every 15 days (2)
People should help to monitor and observe for deer in the savanna and for wildfires (30)	Ask for budget for youth training to learn more about local natural resources and to buy equipment for nature-based tourism. For example, we could take children to learn about their own local plants and animal names (1)
To create educational fieldtrips to host students from outside to come and learn about the environment and nature on Koh Prathong (4)	Ask for outside expert support for learning how to do waste management, how to separate waste (1)
Plant mangroves (4)	Support to provide solar cell for each household
Preserve the savannah area of the island and do not throw trash while visiting the field (3)	Asking budget from outsider for marking border of the community's marine protected area
Increasing the size of marine protected area to protect marine resources (2)	Building a waste/garbage incinerator
Planting mangrove to protect from erosion (1)	
Planting mangrove activities by community and tourists	
Creating poster or sign for wild fire warning, also installing fire protection equipment in the areas that might be at risk of having forest fires.	



Actions to Adapt to Climate Change

Actions created by the community	*Policies and programs supported from outside*
To improve how people spend money on things, try to live the sufficiency economy as the King of Thailand has taught. (44)	Outside organizations can support by giving small plants to grow on the island.
Need to find alternative livelihoods because fishing is not a workable livelihood anymore. (19)	Need support from government agencies outside the community to work on infrastructure.
Regrow mangroves near the community. (12)	
Community should prepare for disasters. (8)	
Plant more trees to make the island warmer. (5)	
Start farming seaweed to replace fisheries. (5)	
The shifting of rain patterns, makes it difficult to do fisheries. (1)	
Create housing that is ready to handle climate change. (1)	

Conclusion

This report provides an overview of the results of a community-based scenario planning workshop that was held in Ban Tapae Yoi, Kuraburi, Phang Nga, Thailand in June 2013. Through the workshop we asked 58 community participants "*How can Ban Tapae Yoi achieve good outcomes for community development and the environment in a changing climate?*" The different stages of the scenario planning process:

1. Identified components of the community and of the environment that were important to participants;
2. Investigated the types of social and environmental changes that are being experienced by the community;
3. Discussed the causes and effects of climate change and how climate change impacts communities and the environment;
4. Explored worst-case, business-as-usual and desired future scenarios for the local community and the environment; and,
5. Identified and prioritized potential actions by the local community and policy and program supports from outside organizations or agencies to adapt and achieve the desired community and environmental outcomes and to adapt to climate change.

Coastal communities everywhere will always experience different types of social and cultural, economic and livelihoods, demographic, political and governance, infrastructure and technology, environmental and climatic changes. Adapting to these constant changes can be challenging but it also provides communities with an opportunity to identify and achieve desired future social and environmental outcomes. This scenario planning process has helped to identify proactive actions that can be taken by the community and policies and processes from outside the community that could facilitate community adaptation.

Community participants told us that they enjoyed the scenario planning process and that it was useful. Of course, taking action to achieve the desired future will be much harder work than this workshop. It will require solidarity and strong leadership in the community. There are also many additional ideas, dreams and actions that were not discussed during the stages of scenario planning process. We encourage the people of Ban Tapae Yoi to continue having community meetings to define their desired future community and environment and identify actions to achieve the desired future scenario and to adapt to climate change.

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Additional Project IMPAACT Publications

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Bennett, N., Dearden, P., & Peredo, A.M. (2014). Vulnerability to multiple stressors in coastal communities: A study of the Andaman Coast of Thailand *Clim. Dev.*

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Dedicated to the children and the sea turtles of Koh Phrathong