

### Key Findings: Community Vulnerability Assessment

Name of village	Kha Yaing
Date of assessment missions	29 <sup>th</sup> -30 <sup>th</sup> April 2019
Date of validation mission	23-June-2019
Total population of the village	2304
Total number of VA participants: i) during assessment mission; ii) during validation mission	(i)40
Gender	Total male:na      Total female: na

Hazard and Resource Mapping in Kha Yaing Village

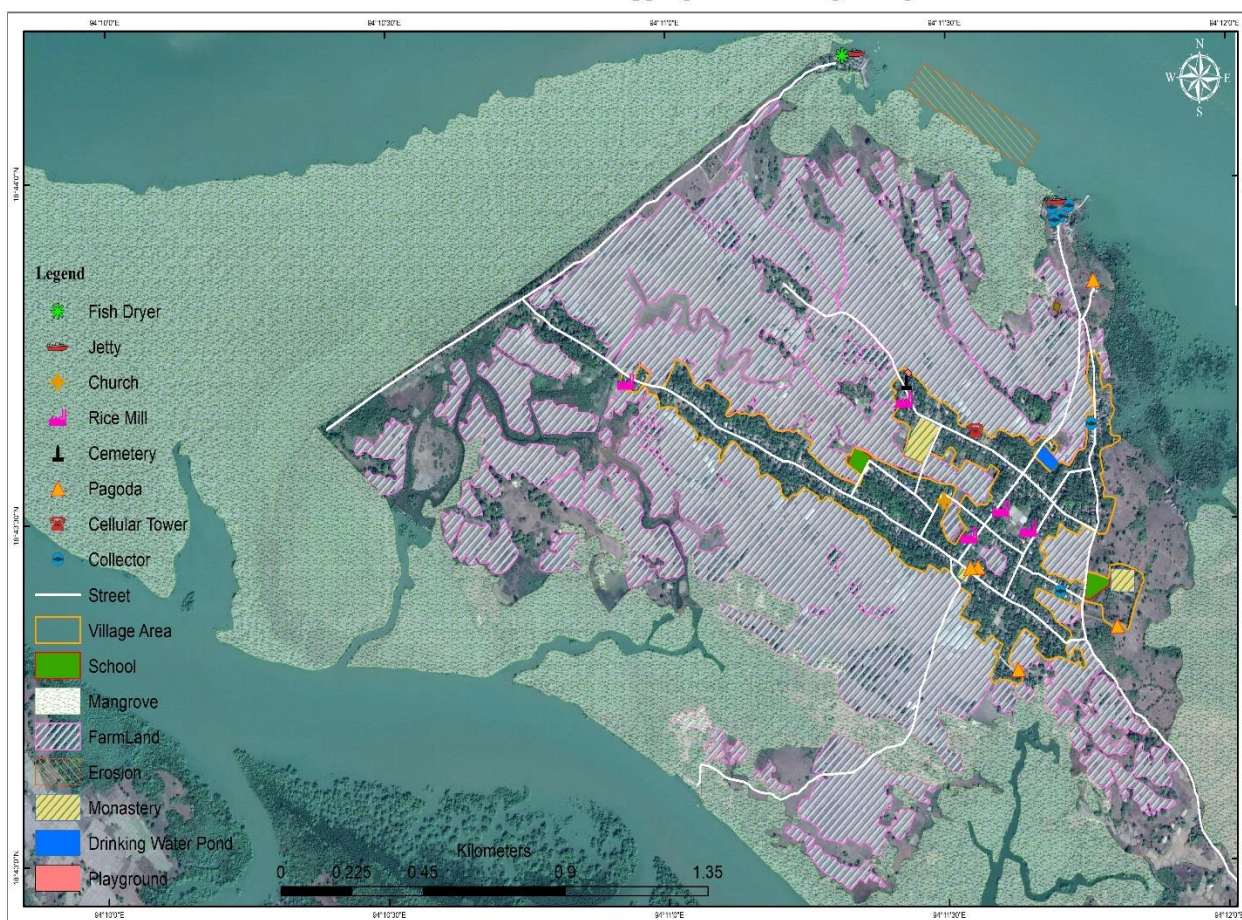
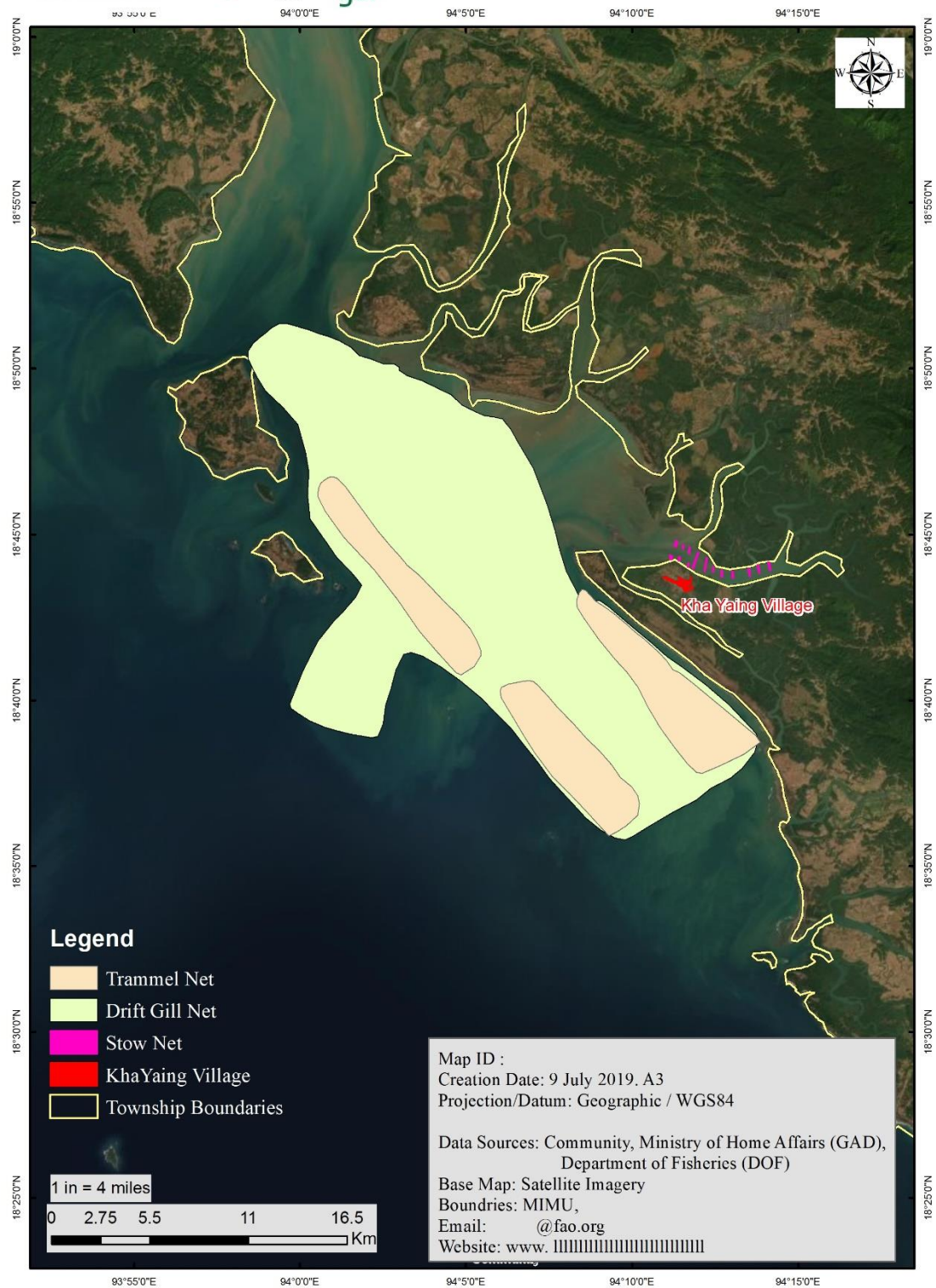


Fig.1. Hazard & Resource Mapping of Kha Yaing Village

### Fishing Ground Map of Kha Yaing Village



*Fig.2. Kha Yaingb Village Fishing Ground Map*

## I. Summarizing Livelihoods, Sector, Assets Vulnerability Vis-à-vis hazards and drivers of change

[illegible]



Assets/ Infrastructure											
Fishing center/ landing site		H	H	H			L		M		L
Fishing boats/ gear – nets, pots, etc.		H	H	H			M		M		H
Village bazaar											
Port / jetty/ bridge		L		L			L		L		L
Major road		H		L			H		H		H
Processing centers			H								
Ice plants		L		H			L		M		H
Drying facilities		H	H	H			L		H		L
Hatcheries/ Nursery											
Religious building		L		H			L		L		L
Schools		M		H			L		M		L
Sub-RHC/ RHC/ Clinic		L		H			L		L		L
House	L	H	M	H			L		H		L
Others (specify)											
Others (specify)											

## II. Summarizing Community Vulnerability and Capacity in terms of Exposure, Sensitivity and Adaptive Capacity

Round 1: As an internal exercise based on our analysis of available data (this will help us interpret and check community perspectives later on...)

Round 2: To be conducted during the validation exercise after presenting and reviewing with the community the results of the VA

Note: these variables we can further refine/ increase if needed for more precise conceptualization... though it might be helpful if we could have a ‘standardized’ set of variables that would be applicable across all communities to facilitate comparisons across areas... not absolutely needed though and we can determine later....

## Exposure to Climate Change and Related Hazards

Factor/ Area of concern	Rating (by internal team)	Rating (by participants)	VA tool used	Number of participants (HIGHEST VOTED)	Remarks
<b>Hazard Analysis</b>					
Coastal erosion and related flooding (e.g. higher tides or sea levels)		<b>L</b>		<b>19</b>	
Changing ocean currents and conditions (e.g. acidity, higher temperatures, salinity)		<b>L</b>		<b>25</b>	
Drought/dry spells		<b>M</b>		<b>26</b>	
Forest fires					
Heavy rainfall and flooding events	<b>M</b>	<b>L</b>	Matrix ranking of hazard, Disaster and Climate Risk Assessment	<b>17</b>	
Cyclones and storms	<b>M</b>	<b>H</b>	Livelihood and hazard calendar, Matrix ranking of hazard, Disaster and Climate Risk Assessment	<b>28</b>	
Tide wave		<b>M</b>		<b>13</b>	
Landslides and erosion					
Saltwater intrusion		<b>M</b>		<b>18</b>	
Tsunami	<b>L</b>	<b>L</b>	Livelihood and hazard calendar, Matrix ranking of hazard, Disaster and Climate Risk Assessment	<b>24</b>	
Tornados		<b>L</b>		<b>23</b>	
Strong wind		<b>M</b>		<b>28</b>	

Low pressure area		<b>L</b>		<b>20</b>	
Poison Fishing	<b>M</b>		Disaster and Climate Risk Assessment		
Others (specifcy) Squall	<b>H</b>		Matrix ranking of hazard and Livelihood and hazard calendar, Disaster and Climate Risk Assessment		
<b>Exposed areas and group to the above hazards</b>					
At-risk groups (e.g. children, disabled or elderly)		<b>L</b>		<b>15</b>	
Coastal and marine ecosystems (e.g. coral reefs, seagrass and mangroves)		<b>M</b>		<b>17</b>	
Farms and related facilities (e.g., irrigation system)		<b>M</b>		<b>20</b>	
Fishing grounds	<b>H</b>	<b>M</b>	Fishing ground mapping	<b>23</b>	
Fishing facilities (e.g. landing sites, market, boat storage)	<b>H</b>	<b>M</b>	Hazard and resource mapping, Disaster and Climate Risk Assessment	<b>26</b>	
Forest and terrestrial ecosystems					
Key housing areas or settlements	<b>M</b>	<b>H</b>	Transect mapping	<b>28</b>	
Key commercial or industrial areas		<b>M</b>		<b>16</b>	
Public infrastructure (e.g. power station/lines, water system, cellphone	<b>M</b>	<b>M</b>	Transect mapping, SWOT analysis	<b>17</b>	

towers, main roads, bridges)					
Social services (e.g. monasteries, community centre, fire and police stations, hospital/health centre, schools)	M	M	Hazard and resource mapping	17	
Others (specify)					
<b>Overall Exposure Assessment</b>	M	M			

#### Guide for exposure rating:

Low	Medium	High	Not assessed
impacted rarely (e.g. every 10+ years) / only a few people or areas impacted	impacted from time to time (e.g. every 5-10 years) / a number of people or areas impacted	Impacted frequently (e.g. every 1-4 years) / a large number of people or areas impacted	Factor not assessed

### Sensitivity to Climate Change and Related Hazards

Factor/ Area of concern	Rating by internal team	Rating (by participants)	VA tool used	Number of participants (if possible)	Remarks
<b>Ecological sensitivity</b>					
coastal and marine ecosystems (e.g. coral reefs, seagrass and mangroves) and related biodiversity		H			
forest and terrestrial ecosystems and related biodiversity		H			

Soil quality and fertility	<b>M</b>	<b>M</b>	Asset pentagon		
Status of fisheries resources	<b>H</b>	<b>H</b>	Semi structure interview		
Status of mangrove forest resources	<b>M</b>	<b>H</b>			
Aquaculture water quality	<b>M</b>	<b>H</b>	By individual interview		
Domestic Water Quality	<b>M</b>	<b>H</b>	Hazard & resource mapping, Transect Mapping		
Drinking Water Quality	<b>M</b>	<b>H</b>	Hazard & resource mapping, Transect Mapping		
Aquaculture pond temperature		<b>M</b>			
Others (specifity)					
<b>Socio-economic sensitivity</b>					
Awareness of climate change		<b>M</b>			
Quality housing	<b>M</b>	<b>M</b>	Wealth ranking & resource mapping, transect mapping		
Financial resources (e.g. regular household income, insurance, loans/credit)	<b>H</b>	<b>H</b>	Asset Pentagon, VENN Diagram		



Public utilities (safe drinking water, electricity and fuel)	<b>H</b>	<b>H</b>	Resource matrix & mapping		
Dependence on non-climate sensitive sectors and related livelihoods (rather than farming, fishing ( e.g tourism)		<b>M</b>			
Gender equality	<b>L</b>	<b>M</b>	Gender role		
Level of education and literacy	<b>L</b>	<b>M</b>	Asset Pentagon		
Level of migration worker	<b>L</b>	<b>M</b>	Problem tree, Asset Pentagon		
Presence of social networks and safety nets	<b>H</b>	<b>M</b>	Venn diagram and Asset Pentagon		
Working age population (between 18-60 years)		<b>M</b>			
Access to public and private extension services	<b>H</b>	<b>H</b>	Venn diagram		
Market information	<b>M</b>	<b>H</b>	Asset Pentagon & Venn		
Others (specify)					
<b>Overall Sensitivity Assessment</b>	<b>M</b>	<b>H</b>			

**Guide for sensitivity rating:**

<b>High/ Healthy Status</b>	<b>Medium</b>	<b>Low/ Poor Status</b>	<b>Not assessed</b>
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## ADAPTIVE CAPACITY FOR Climate Change and Related Hazards

Factor/ Area of concern	Rating by internal team	Rating (by participants)	VA tool used	Number of participants (if possible)	Remarks
Awareness of climate change adaptation strategies		L			
Access to alternative or diversified livelihoods	M	M	Livelihood calendar		
Access to natural resources (e.g. coastal, marine and forest ecosystems and related resources, land, water, fertile soil, good quality water)	M	L	Resource matrix		
Access to financial resources (e.g. regular household income, insurance, loans/credit)	L	M	Asset Pentagon & Venn diagram		
Access to social safety nets and networks	L	L	Venn diagram and Asset Pentagon		
Access to important institutions	L	M	Venn		
Presence of/access to local groups, networks, fisherfolk/fish farmer organizations, producers groups, etc.	M	L	Venn, Asset Pentagon		
Availability of human resources (e.g. trained professionals, adequate workforce)	M	M	Asset Pentagon		
Level of cooperation and collective decision making	M	L	Venn and Asset		

Level of leadership	M	L	Gender roles		
Presence of climate proof infrastructure (e.g. roads, electric grid, water supply) and housing	L	L	Hazard and Resource Mapping, Resource matrix		
Presence of early warning and disaster risk management systems		L			
Others (specify) Presence of fishery management	L		Fisheries mapping		
<b>Overall Adaptive Capacity Assessment</b>	<b>L</b>	<b>L</b>			

**Guide for adaptive capacity rating:**

<b>High</b>	<b>Medium</b>	<b>Low</b>	<b>Not assessed</b>

**Summary of VA Findings (Exposure, Sensitivity and Adaptive Capacity)**

Climate change hazards/ drivers of change	Exposure	Sensitivity	Adaptive Capacity	Overall vulnerability rating	Key vulnerable areas/ groups	Priorities for adaptation* -- this then draws the link to the CBCCA-EAFM process
Cyclone	Medium- Cyclone effects the community during pre-monsoon (May-June) and post	High- Fishery activities are significantly destroy. That is boats, fishing gears,	Low – Community is lacking social safety nets and networks when cyclone affected time. They do not have climate	Medium-	The village located in estuary area. The key vulnerable groups are fisher groups who are	<ul style="list-style-type: none"> <li>- CCA and DRM training</li> <li>- Safety at the sea</li> <li>- Emergency respond</li> <li>- Early warning and early action</li> </ul>

	monsoon (Sep-Nov)	landing side and processing center.	proof infrastructure.		staying near the estuary.	- Ecosystem Approach Fisheries Management (EAFM)
Flood	Low-  Flood effects the community during in June-July only.	Low-  During the flooding, a lot of garbage (such as branches, piece of wood, waste of the forest) flow with water current.	Medium-  Community do not have sufficient climate proof infrastructure and they need to improve safety nets and network.	Low	Key vulnerable groups are community who are situated in low laying area.	- CCA and DRM training - Emergency respond - Early warning and early action
Squall	High-  Squall effects the community annually. When squall effected, their main livelihood activity such as fishing activities do not work properly.	High-  Squall effected the community livelihood activities, which means fishing, small scale and processing are stopover.	Low-  Community does not have other non-climate related alternative livelihood opportunities.	High-	Key vulnerable groups are fisher group who are working in the open sea and small scale processor who are rely on fisheries.	- CCA and DRM training - Safety at the sea - Emergency respond - Early warning and early action -
Poison Fishing	Medium-  Poison fishing effected the ecosystem but a few person are	Medium-  That can be effect the biodiversity of benthic layer.	Low-  They don't have enough capacity for the cause and effect on that	Medium	Key vulnerable groups are fisher group who are working in	- Ecosystem Approach Fisheries Management (EAFM) -

	using this method.		fishing practice.		the open sea and small scale processor who are rely on fisheries.	-
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\*(this one to be really determined during EAFM/EAA and CBCCA planning).. but if there are things mentioned during the VA process, they can be noted here already)

### III. Broader thematic and cross-thematic analyses of Community Vulnerabilities

(can be answered as bullets, or short paragraphs, or diagrams)

- Are common themes emerging from participants' answers in terms of exposure, sensitivity, adaptive capacity and overall vulnerability?

Exposure	Sensitivity	Adaptive capacity	Overall VA
Squall effect to the community livelihood activity	Financial resource are less and fisheries resource are decline gradually	Scare of fisheries resource	Weak embankment
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- Are there unexpected answers? Or answers that you expected but are missing? Why do you there are unexpected questions or answers?
  - **We are expecting to get more information about impacts of climate change and natural hazards on agriculture, and ecosystem, but we missed that information.**
- Are there particular themes or issues raised within a specific demographic (e.g. people of a specific age, gender, livelihood type, income bracket or level of education)?
  - N/A

- Are there particular themes or issues raised by a particular community group in the VA (e.g. fisheries, aquaculture, small scale processors, etc.?)
  - Migrant fishing from the other area
  - Fire-wood cutting from Mangrove forest
- Are there any significant trends (e.g. increasing or decreasing focus on an issue based on location or over a time period)? Any issue repeatedly discussed or mentioned?
  - Less of Fisheries Resources
- Are there any major differences among participants' answers (e.g. community leaders or resource managers holding a different view from the majority of households or resource users)? Or are there differences in findings from other sources (e.g. findings from resource mapping compared to interviews or existing or other related documents)?

	Fishery	Aquaculture	Women Group	Small scale processor
Issues raised within a specific demographic (Livelihood type)	Decline labor source	Community said that aquaculture is working in their village but in VA time there is nothing		Lack of storage facilities  Higher interest rate (moneylender)
Issues raised by a particular community		N/A	In processing activities, women are more participate	
Trends	decline fish catch, spend more fishing time	N/A		
Major differences among participants' answers		N/A		

- What questions are still not answered? What additional information should be gathered or checked during the validation mission?
  - **Coastal marine ecosystem condition (good, damage) and impacts of climate change and disaster. (note: we have acquired information where these resources located and we know whether climate change and disaster has impacted on these resources. Thus, we will upgrade our questions especially when we do fishing ground analysis)**
  - **Awareness of climate change (Note; we will add this questions in their semi-structured questionnaires).**



- Agriculture sector (Note: we will invite farm households who are doing agriculture for their livelihood. In some village, we have invited but we do not have questions whether the natural hazards has impacted to their sector or not. Therefore, we owe to update our questionnaires)
- Forest and terrestrial ecosystems and related biodiversity
- Mangrove condition (Why, when, how,...etc)
- Presence of early warning system (Note: this will be part of our implementation processes)
- Working age population (Note: we do not have this information at the village level).
- Dependence on non-climate sensitive sectors and related livelihoods (rather than farming, fishing ( e.g tourism) (note: we will ask the community when we do validation of the results).

#### Specific to institutional and stakeholder dimensions and dynamics of the VA:

- Which stakeholders have the most relationships and why?
- Which stakeholders do not have many relationships with other stakeholders and why? Should they develop more relationships and, if so, with whom?

	Fisher	Fish farmers (Aqua)
Which stakeholders have the most relationships	Department of Fisheries	N/A
Which stakeholders do not have many relationships with other stakeholders	N/A	

- Who is providing money and other material resources and to whom? Are there stakeholders who are excluded? Are there other potential sources of support?
  - **No one is providing money for their community but moneylender and PACT microfinance gave loans to the community.**
- Is information flowing between stakeholders and in both directions (vertically and horizontally)? If not, why? How can this be improved?
  - **Market information sharing between collector and community was occurred.**
  - **Information flowing should be improved between DoF and respective community for technical, legal, policy, etc....**
- Are there overlaps or gaps in the policies and laws governing the institution? How can this be improved? Are there policies and laws that affect (either positively or negatively) relationships among stakeholders or institutions? (**\*\*\*this can then be a link/input to Component 1**)

- **There may be overlaps or gaps in the policies and laws,**
- **Need to improve policies and law awareness cooperate with the institution.**
- What are the strategic points to intervene to improve decision-making or relationships across stakeholders?
  - **More collaboration among stakeholders (eg. DOF and community) and strengthening public-private partnership are essentially required.**
  - **The outcomes of the VA assessment and community planning should be carefully reviewed by the respective stakeholders so that the community can be enable to implement the necessary adaptation options and the decision makers could understand which sectors or actions should be prioritized.**
  - **Co-management activity is a one of the strategic points to intervene to improved decision-making and built good relationship with other stakeholders.**

## IV. Identifying Linkages to EAFM/EAA and Community-based CCA Planning and Implementation

### Linking to EAFM

Which findings, factors, variables in the VA have relevance to EAFM?

- **Low-lying coastal area and one side effected erosion and other side accretion. In addition, strong wind is also often occurring and highly affected to the whole community, most noticeably for fisher community where they can do fishing due to frequent strong wind. Furthermore, the fishermen reported that they have to spend more time for fishing as the fish resources have been declined and there are no specific boundary lines amongst fishermen. Therefore, EAFM training and Safety at the Sea are required for this community.**

### Linking to CBCCA (and DRM) Planning and Implementation

What are the main concerns, issues, weaknesses, etc. that should be addressed before launching the CBCCA process? Any weaknesses or threats that should be noted?

- **The community is located low lying coastal area and often affected by different kinds of natural hazards and disasters (flooding, cyclone, squall, etc.). In addition, this community is neither well organized nor collaborate each other. They do not have any community group to tackle the impacts of climate change and are generally lacking strategies/action plans to reduce the impacts of natural hazards on their livelihood dependent sectors. They are also lacking efficient human resources and technological knowledge. Even though individual know that their dependent sectors are increasing vulnerable but as a whole community, they are ideally lacking community adaptation planning and disaster management. Moreover, they do not have any social safety nets and networks where this village is not easily accessible to market information, access to important institution, early warning system and even opportunity to get higher price for the fish products. Therefore, CBCCA and DRM implementation are necessary for this community.**

What are the entry-points for launching the CBCCA process? Any strengths or opportunities that could be tapped?

- They know that fishing resources have depleted in their fishing grounds. In addition, they are increasing vulnerable in terms of socially and economically to the impacts of climate change and natural disasters where these natural phenomena has been frequently occurred and they are facing increasing challenges on their livelihood dependent sector. But, they are lacking knowledge and do not know how to implement the strategic DRM and CCA planning. Therefore, CBCCA process could be implemented in this community.

As in the summary table, are there any priorities for CCA/DRR that were explicitly mentioned or discovered during the VA process that could be taken forward or used as a kick-off point?

Area of priority	Action needed
Technical priority:	More extension services on advanced technology and processing activities Easy access to market information
Institutional priority:	Early warning and early action practices Safety at sea Disaster risk management (planning + actions) Mangrove reforestation