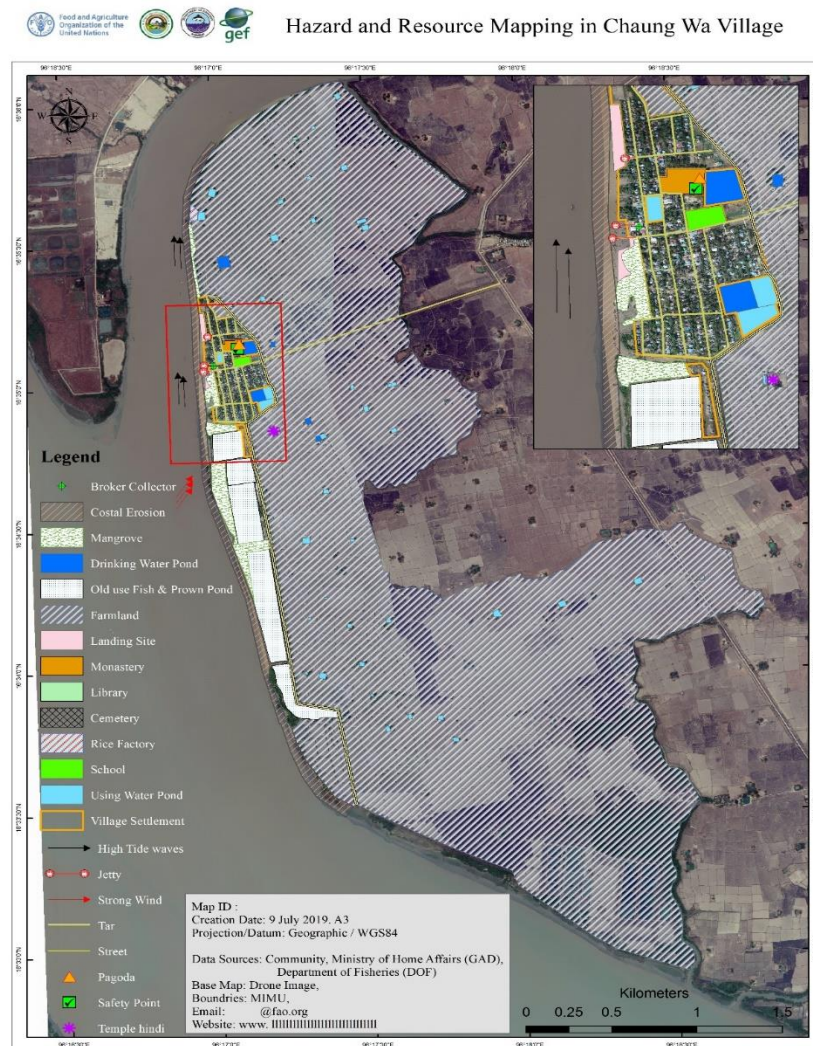


## Key Findings: Community Vulnerability Assessment

Name of village	Chaung Wa
Date of assessment missions	28 <sup>th</sup> February -1 <sup>st</sup> March 2019
Date of validation mission	29 <sup>th</sup> June 2019
Total population of the village	2285
Total number of VA participants: i) during assessment mission; ii) during validation mission	(i) 80 (ii) 85
Gender	Total males: 46, Total females: 40



*Fig.1. Hazard & Resource Mapping of Chaung Wa Village*



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## Fishing Ground Map of Chaung Wa Village, Kyauktan Township in Yangon Region



*Fig.2. Chaung Wa Village Fishing Ground Map (Still drawing)*

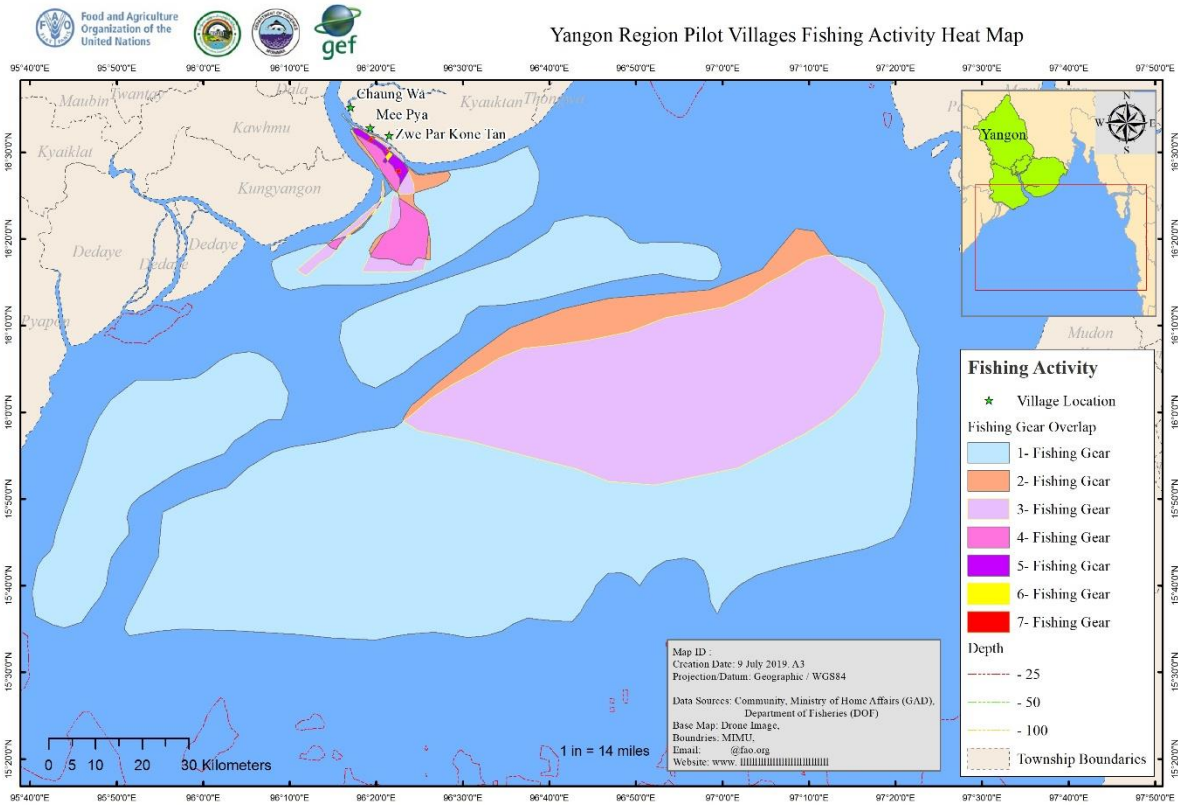


Fig. 3 Heat map for Yangon Region

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

	Floods	Cyclones/ Storms	Heavy/ Extreme rainfall	Coastal erosion/ Sea level rise	High Tide Wave	Tornadoes	Salt water intrusion	Thunderstorm	Tsunami/ Earthquake	Strong Wind	Others (specify)
<b>Livelihoods/ Sector</b>											
Fishing	M	H	H (July, Aug,Sept)	L	M	H		L	M(Tsunami)	H	H (temperature: Mar-Apr)', H (Salt water intrusion; June-July)
<b>No aquaculture activity in this village.</b>											
Agriculture/ Farming	H	H (Note: During post monsoon period)	H (In 2008- One month continuous rainfall)	L	H (High tide wave)- In 1990 (4- 8) feet	L	M	L	L(Earthquake)	M	H(Tornado); M (disease) during Sep- Oct, H (high temperature); High rainfall,

											wind (35-40) mph in monsoon period. In agriculture sector, work on rainy sea because the village has no dam to farm in summer season.
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**Small Businesses, Note: Flood (H) (annually flood occurs especially in Sep-Nov along the coastal line area). Therefore, peoples from coastal line area moved to stay other place in this village.**

Grocery Store	H	H		L	L	M		L		L	
Fish processing	H	H		L	L	M		L		L	
Tailor Shop	H	H		L	L	M		L		L	
Fishmonger	H	H		L	L	M		L		L	
Other	-	-		-	-	-		-		L	

**Government Services**

Electricity	H	H		L	L	M		H		H	
Water supply	M	H		L	H	L		L		L	
Dam	H	H		H	H	L		L		L	
Others (specify)	-	-		-	-	-		-		-	

**Natural Resources**

Beaches	H	H		H	H	L		L		H	
Marine Protected Areas	M	H		M	H	L		L		M	
Mangroves	L	H		H	L	M		L		M	
Seagrass	L	L		H	L	L		L		L	
Others (specify)	-	-		-	-	-		-		-	

**Assets/ Infrastructure**

Fishing center/ landing site	M	H		H	H	L		L	H (Tsunami)	M	M (Tornado)
Fishing boats/ gear – nets, pots, etc.	M	H		L	H	L		L	H	H	
Village bazaar	M	H	H	L	H	M		L	M	M	
Port / jetty/ bridge	M	H		H	H	L		L		M	
Major road	M	H		L	H	L		L		L	
Fish storage	M	H		H	H	L		L		M	
Drying facilities	H	H		L	H	L		L		L	
Religious building	L	M		L	M	L		L	M	M	

Schools	M	H		L	M	L		L	M	M	
Sub-RHC/ RHC/ Clinic	M	H		L	M	L		L	M	M	
House	M	H		L	H	L		L	M	M	
Others (Livestock)	-	-	-	-	-	-	-	-	-	-	-
Others (people)	-	-	-	-	-	-	-	-	-	-	-

**Summary**

Dam, beach highly affected due to high tide wave, storm, coastal erosion and flood. Marine protected area highly affected by storm and high tide wave however medium affected coastal erosion, flood and strong wind. For the ecosystem Mangrove and seagrass affected due to the coastal erosion. For the infrastructure (i.e fishing centre, fishing gear, village bazaar and major road) highly affected by the high tide wave, storm and tornadoes. Other infrastructure (i.e fish storage and drying fish areas) are highly affected by high tide wave, storm and coastal erosion. Moreover, religious building, school and public health centre high affected by high tide wave and storm.

**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 (if possible)	Remarks
<b>Hazard Analysis</b>					
Coastal erosion and related flooding (e.g. higher tides or sea levels)	H (Flooding,	H	Hazard and Resource Mapping, Matrix ranking of hazard,		

	high tides)		Disaster and Climate Risk Assessment		
Changing ocean currents and conditions (e.g. acidity, higher temperatures, salinity)	-	<b>M</b>			
Drought/dry spells		<b>M</b>	Disaster and Climate Risk Assessment		
Forest fires	-	-	-	-	-
Heavy rainfall and flooding events	<b>H</b>	<b>H</b>	Matrix ranking of hazard, Disaster and Climate Risk Assessment		
Cyclones and storms	<b>H</b>	<b>H</b>	Livelihood and hazard calendar, Matrix ranking of hazard, Disaster and Climate Risk Assessment		
Tide wave	<b>H</b>	<b>H</b>	Historical timeline; Matrix ranking of hazard; Disaster and Climate Risk Assessment		
Landslides and erosion	-	-	-		
Saltwater intrusion	<b>M</b>	<b>M</b>	Historical timeline		
Tsunami	<b>M</b>	<b>H</b>	Livelihood and hazard calendar, Matrix ranking of hazard, Disaster and Climate Risk Assessment		
Tornados	<b>M</b>	<b>M</b>	Livelihood and hazard calendar, Matrix ranking of hazard, Disaster and Climate Risk Assessment		
Strong wind	<b>M</b>	<b>M</b>	Livelihood and hazard calendar, Matrix ranking of hazard, Disaster and		

			Climate Risk Assessment		
Low Pressure area	<b>M</b>	<b>M</b>	Matrix ranking of hazard, Disaster and Climate Risk Assessment		
Others (specify)	-	-	-		
<b>Exposed areas and group to the above hazards</b>					
At-risk groups (e.g. children, disabled or elderly)	-	<b>H</b>			
Coastal and marine ecosystems (e.g. coral reefs, seagrass and mangroves)	-	<b>M</b>			
Farms and related facilities (e.g., irrigation system)	-	-			
Fishing grounds	<b>M</b>	<b>M</b>	Fishing ground mapping, Problem census		
Fishing facilities (e.g. landing sites, market, boat storage)	<b>M</b>	<b>M</b>	Asset Pentagon, Disaster and Climate Risk Assessment		
Forest and terrestrial ecosystems	-	<b>M</b>			
Key housing areas or settlements	<b>M</b>	<b>M</b>	Transect mapping		
Key commercial or industrial areas		<b>M</b>			
Public infrastructure (e.g. power station/lines, water system, cellphone towers, main roads, bridges)	<b>M</b>	<b>M</b>	Transect mapping, SWOT analysis		
Social services (e.g. monasteries, community centre, fire and police stations, hospital/health centre, schools)	<b>M</b>	<b>M</b>	Hazard and resource mapping		

Others (specify)	-	-	-	-	-
<b>Overall Exposure Assessment</b>	<b>M</b>	<b>M</b>			

**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	-	M			
forest and terrestrial ecosystems and related biodiversity		M			
Soil quality and fertility	M	H	Asset pentagon		
Status of fisheries resources	H	H	Historical time line; Semi structure interview		
Status of mangrove forest resources		M			
Domestic Water Quality	H (no freshwater)	H	Hazard & resource mapping;		



			SWOT Analysis		
Drinking Water Quality	<b>H (no freshwater)</b>	<b>H</b>	Hazard & resource mapping; SWOT Analysis		
Others (specify)	-	-	-		
<b>Socio-economic sensitivity</b>					
Awareness of climate change	<b>M</b>	<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>M</b>	<b>H</b>	Venn diagram		
Public utilities (safe drinking water, electricity and fuel)	<b>H</b>	<b>M</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>M</b>	<b>M</b>	Gender role		
Level of education and literacy	<b>M</b>	<b>M</b>	Asset Pentagon		
Level of migration worker (or) level of rare worker	<b>M</b>	<b>L</b>	Problem tree		
Presence of social networks and safety nets	<b>M</b>	<b>M</b>	Venn diagram and Asset Pentagon		

Working age population (between 18-60 years)		M			
Access to public and private extension services	M	M	Venn diagram and Asset Pentagon		
Market information	M	M	Asset Pentagon & Venn		
Others (specify)					
<b>Overall Sensitivity Assessment</b>	<b>M</b>	<b>M</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**

<b>Factor/ Area of concern</b>	<b>Rating by internal team</b>	<b>Rating (by participants)</b>	<b>VA tool used</b>	<b>Number of participants (if possible)</b>	<b>Remarks</b>
Awareness of climate change adaptation strategies	L (no awareness for CCA, DRM)	M	Disaster and Climate Risk Assessment		
Access to alternative or diversified livelihoods	L	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	M	Resource matrix /Asset Pentagon		
Access to financial resources (e.g. regular household income, insurance, loans/credit)	L	L	Asset Pentagon & Venn diagram		

Access to social safety nets and networks	L	M	Venn diagram and Asset Pentagon		
Access to important institutions	M	M	Venn		
Presence of/access to local groups, networks, fisherfolk/fish farmer organizations, producers groups, etc.	M	M	Venn, Asset Pentagon		
Availability of human resources (e.g. trained professionals, adequate workforce)	L	M	Asset Pentagon		
Level of cooperation and collective decision making	L	H	Venn and Asset		
Level of leadership	M	M	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	M	Historical time line		
Others (specify) Presence of fishery management	L	-	Fisheries mapping		
<b>Overall Adaptive Capacity Assessment</b>	<b>L</b>	<b>M</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	High – cyclone highly affected in fishing and small scale livelihood sector.	High – house and fishery sector is significantly destroyed such as boats, fishing gears, domestic and drinking water sources. And also loses the fishery resources.  (120) house destroyed, died (20) draught cattle, a lot of livestock, (60) boat (small, big), moreover (20) small boat can't use again. House rooftop destroyed, damage of fishing net, store rice.	Medium – community has very limited awareness and technology knowledge, lacking social safety nets and networks. No climate proof infrastructure	High	The child, old persons, disable persons, social organization are highly vulnerable for cyclone.	<ul style="list-style-type: none"> <li>- The community group mention, they have very limited awareness and technology about natural disaster in pre-disaster, during and post-disaster. They didn't received any training about natural disaster and they would like to attend the training like CCA and DRM.</li> <li>- CCA and DRM training for awareness and technology</li> <li>- Safety at the sea</li> <li>- Emergency respond</li> </ul>

						<ul style="list-style-type: none"> <li>- Early warning and early action</li> <li>- Ecosystem based Fisheries Management (EAFM)</li> </ul>
High Tide wave	High-affected Fisheries, mangrove and Agriculture sectors.	High-destroyed drinking water pond, house, and paddy field in the community.	Low- The community has low capacity in awareness and prevention and no climate proof infrastructure. Very less mangrove in the community.	High	The peoples who stayed in near coastal and fisheries livelihood sectors are the most vulnerable community.	<ul style="list-style-type: none"> <li>- CCA and DRM</li> <li>- EAFM</li> <li>- To grow more mangrove in the community</li> </ul>
Flood	High – It occurs annually especially in July and August.	Medium – however it is highly affected soil quality and fertilizer, drinking and usage water.	Medium – they do not have any awareness knowledge capacity for flood, climate proof infrastructure, and social safety net. And low financial resource.	Medium	The whole community is impacted by the flood almost annually.	<ul style="list-style-type: none"> <li>- CCA &amp; DRM</li> <li>- EAFM</li> </ul>
Heavy rainfall	Medium-several fisher businesses were affected	Medium – it highly affects to medium small scale processors and fishers,	Low – They do not have any climate proof infrastructure or materials (e.g boat,	Medium	The fisheries and agriculture sector are the most	<ul style="list-style-type: none"> <li>- CCA and DRM</li> <li>- EAFM</li> </ul>

	which occurred in July, Aug and Sept.	while it also affects to small and large fisher communities.	houses) and are also lacking climate information.		vulnerable community.	
Salt water intrusion	Medium-affected in livelihood and Agriculture sector.	Medium-Destroyed drinking water ponds. More affected in Agriculture sector (paddy field).	Low- capacity and technology	Medium	Especially vulnerable in Agriculture	- CCA and DRM - EAFM

\*(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
-High tide wave -Cyclone/Storm -Flood -Coastal erosion -Tsunami -Tornado -Strong wind/ Squall	- Depletion of fisheries resources - Soil quality - Housing - Water quality - Access to private and public extension services - Financial resource	- Do not have alternative livelihood activities - Low Climate proof infrastructure - Poor cooperation and collective decision making - Lack of early warning system - Low financial resource	Highly vulnerable to different kinds of natural disasters/hazards and climate change impacts, especially occurring at fishing and agriculture, livelihood dependent households.

- Are there unexpected answers? Or answers that you expected but are missing? Why do you there are unexpected questions or answers?
  - Due to the deterioration or closure of irrigation/drainage canal, flooding was occurred almost every year and damaged to crop production.
  - Pest and diseases infestation to crop production was occurred due to the increasing temperature.
  - Due to increasing labor scarcity, the fish farmers have to pay 500000 Kyat in advance to the workers, where small fishers pay 200000 Kyat in advance to their workers. Mostly, they have to take loan in advance to be able to pay cash in advance to workers.
- 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)?
- Are there particular themes or issues raised by a particular community group in the VA (e.g. fisheries, aquaculture, small scale processors, etc.?)
- 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?
- 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)	They are lacking technical support. They reported that lacking storage facilities. Scary of fish catch in July and August, small boat stop to catch fish.	N/A	After disaster, the participation of women in different number of activities (fisher) is still remain the same.	N/A
Issues raised by a particular community	No fresh water in the community.	n/a	Women take responsibilities in fish processing and selling at the market	Along the coastal area peoples moved to stay the safe place every year.

Trends	decline fish catch, spend more fishing time  high temperature and high tide wave	N/A		
Major differences among participants' answers				

- 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)
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Which stakeholders have the most relationships	DOF, MFF	N/A (there is no aquaculture)
Which stakeholders do not have many relationships with other stakeholders	GAD	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?
  - Government support electricity on 2011, concrete on to connect with other community on 2014.
- 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**)
  - Fishermen using stow nets for fishing even though prohibited.
- 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.

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

**Linking to EAFM and EAA**

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

- The fishing ground is closely situated near the village.

- They have a huge potential (good soil and water quality) to implement the aquaculture sector in their village.
- Because the village is located near the sea, it is often impacted by the different natural disasters and hazards (such as storm surge, coastal erosion, etc). In addition, strong wind is also often occurring and highly affected to the whole community, most noticeably for fisher community where they cannot do fishing due to frequent strong wind. The village is also situated in low lying coastal areas, and thus often suffered from high tide. 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.
- In addition, mangrove forest area has been declined and thus the community is often highly impacted from the storm surge and high tide than before. Therefore, the community (not only fisher but also fish farmers) are impacted by the deterioration of the ecosystem and mangrove deforestation. Therefore, EAA and EAFM training are relevant 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 (coastal erosion, storm, flooding, strong wind, 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?

- Community aware that their surrounding ecosystem and environment are badly damaged and deteriorated by the enormous exploration of fishery resources and mangrove deforestation. 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:	<p>Community development CCA plan should be developed with experts or technicians</p> <p>Early warning and early action practices</p> <p>Access to market information</p> <p>DOF, DDR and DMH should collaborate and work together to empower technical supports to the affected community</p>
Institutional priority:	<p>Safety at sea</p> <p>Disaster risk management (planning + actions eg. Drill for cyclone and Tsunami)</p> <p>Mangrove reforestation</p> <p>Improve legal framework and supporting activities</p>