Key Findings: Community Vulnerability Assessment

Name of village	Ahmar Ward 1, Ahmar Sub-township, Pyarpon Township
Date of assessment missions	26th and 27th of March 2019
Date of validation mission	
Total population of the village	Over 1000 (330 HHs)
Total number of VA participants: i) during assessment mission; ii) during validation mission	(i) 50
Gender	Total male: na Total female: na

Fig.1. Hazard & Resource Mapping of Ahmar Village

Fig.2. Ahmar Village Fishing Ground Map

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		Storm surge	Pollution (Water)	Salt water intrusion	Drought / heatwaves	Tsunami	Strong Wind/ Squall		Others (specify)
	Int:	Com:	Int:	Com	Int:	Int:	Com:						Int:	Com:	
Livelihoods/ Sector															
Fishing	M	M	M	M		M	M					L	H	M	L/L(Tornado) L/L (Thunder storm) H (High Temperature) M (Strong Wave)
Aquaculture	M		M		M	M					M	L	H		L(Tornado)

Agriculture / Farming	M	H	M	H	M	M	L			M	M	L	H	H	L/L(Tornado) L (Thunderstorm) H (High Temperature)
Small Businesses															
Grocery Store		H		H			L							L	L(Tornado) L (Thunderstorm) H (High Temperature)
Fish processing		L		H			L							H	L(Tornado) L (Thunderstorm) H (High Temperature)
Tailor Shop		H		H			L							L	L(Tornado) L (Thunderstorm) H (High Temperature)
Fishmonger		M		L			L							H	L(Tornado) L (Thunderstorm) H (High Temperature)
Government Services															
Electricity		L		H			L							H	L(Tornado) H(Thunderstorm) L (High Temperature)
Water supply															
Public transportation															
Others (specify)															
Natural Resources															

Beaches															
Coral Reefs															
Marine Protected Areas															
Protected Areas – Terrestrial															
Mangroves		L		H			M							M	L(Tornado) L(Thunderstorm) L (High Temperature)
Seagrass															
Water table/ freshwater lens															
Others (specify)															
Assets/ Infrastructure															
Fishing center/ landing site	L		M										M		
Fishing boats/ gear – nets, pots, etc.		L	M	H		M	L						M	H	M(Tornado) M(Thunderstorm) M (High Temperature)
Village bazaar		L		H			L							H	M(Tornado) L(Thunderstorm) M (High Temperature)
Port / jetty/ bridge															
Major road		L		L			L							M	L(Tornado) L(Thunderstorm) L (High Temperature)
Processing centers															
Ice plants															

Drying facilities															
Hatcheries/ Nursery															
Religious building		L		H			L							H	H(Tornado) L(Thunderstorm) M (High Temperature
Schools		L		H			L							H	H(Tornado) L(Thunderstorm) M (High Temperature
Sub-RHC/ RHC/ Clinic		L		H			L							H	H(Tornado) L(Thunderstorm) M (High Temperature
House		H		H			H							H	M(Tornado) L(Thunderstorm) L (High Temperature
Others (specify) Domestic and Drinking water ponds	M										M				
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 (if possible)	Remarks
Hazard Analysis					
Coastal erosion and related flooding (e.g. higher tides or sea levels)	**H**	**H**	Hazard and Resource Mapping, Matrix ranking of hazard, Disaster and Climate Risk Assessment, Seasonal Calendar)	**37**	
Changing ocean currents and conditions (e.g. acidity, higher temperatures, salinity)					
Drought/dry spells					
Forest fires					
Heavy rainfall and flooding events	**H**	**H**	Matrix ranking of hazard, Disaster and Climate Risk Assessment, Problem Census, Livelihood and Hazard Calendar calendar	**34**	
Cyclones and storms	**M**	**H**	Livelihood and hazard calendar, Matrix ranking of hazard, Disaster and Climate Risk Assessment	**41**	
Tide wave		**L**		**29**	
Landslides and erosion	**H**		Matrix ranking of hazard and Disaster and Climate Risk Assessment		

Saltwater intrusion	**M**	**M**	Disaster and Climate Risk Assessment	**35**	
Tsunami	**L**		Livelihood and hazard calendar, Matrix ranking of hazard, Disaster and Climate Risk Assessment		**x**
Tornados	**M**	**M**	Livelihood and hazard calendar, Matrix ranking of hazard, Disaster and Climate Risk Assessment	**38**	
Strong wind	**M**	**H**	Livelihood and hazard calendar, Matrix ranking of hazard, Disaster and Climate Risk Assessment	**25**	
Low pressure area	**L**	**M**	Matrix ranking of hazard, Disaster and Climate Risk Assessment	**30**	
Others (specifcy) High Temperature		**M**		**20**	
Exposed areas and group to the above hazards					
At-risk groups (e.g. children, disabled or elderly)		**M**		**33**	
Coastal and marine ecosystems (e.g. coral reefs, seagrass and mangroves)		**M**		**29**	
Farms and related facilities (e.g., irrigation system)					**x**

Fishing grounds	**M**	**M**	Fishing ground mapping, Semi Structure interview	**28**	
Fishing facilities (e.g. landing sites, market, boat storage)	**M**	**L**	Hazard and resource mapping, Matrix Ranking of Hazards, Disaster and Climate Risk Assessment	**19**	
Forest and terrestrial ecosystems					**x**
Key housing areas or settlements	**M**	**M**	Transect mapping, Wealth Ranking	**38**	
Key commercial or industrial areas					**x**
Public infrastructure (e.g. power station/lines, water system, cellphone towers, main roads, bridges)	**M**	**M**	Transect mapping, Disaster and Climate Risk Assessment	**23**	
Social services (e.g. monasteries, community centre, fire and police stations, hospital/health centre, schools)	**M**	**H**	Hazard and resource mapping, Matrix Ranking of Hazards	**26**	
Others (specify)					
Overall Exposure Assessment	**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	Impacted frequently (e.g. every 1-4 years) / a large number of	Factor not assessed

	people or areas impacted	people or areas impacted	

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
Ecological sensitivity					
coastal and marine ecosystems (e.g. coral reefs, seagrass and mangroves) and related biodiversity					**x**
forest and terrestrial ecosystems and related biodiversity					**x**
Soil quality and fertility	**M**	**M**	Asset pentagon	**28**	
Status of fisheries resources	**M**	**H**	Semi structure interview, Asset Pentagon	**39**	
Status of mangrove forest resources	**H**	**H**	Disaster climate risk assessment	**37**	
Aquaculture water quality			Semi structure interview, Asset Pentagon		**x**
Domestic Water Quality	**H**	**M**	Hazard & resource mapping,	**32**	

			Asset Pentagon		
Drinking Water Quality	**H**	**M**	Asset Pentagon, Disaster and climate risk assessment	**43**	
Aquaculture pond temperature	**H**		Disaster and climate risk assessment		**x**
Others (specificy)					
Socio-economic sensitivity					
Awareness of climate change		**M**		**46**	
Quality housing	**M**	**M**	Wealth ranking & resource mapping	**31**	
Financial resources (e.g. regular household income, insurance, loans/credit)	**L**	**M**	Venn diagram	**42**	
Public utilities (safe drinking water, electricity and fuel)	**M**	**H**	Resource matrix & mapping	**44**	
Dependence on non-climate sensitive sectors and related livelihoods (rather than farming, fishing (e.g tourism)	**H**	**H**	Livelihood and Hazard Calendar, SWOT Analysis	**50**	
Gender equality	**M**	**M**	Gender role	**34**	
Level of education and literacy	**L**	**M**	Asset Pentagon, SWOT	**50**	
Level of migration worker		**M**		**38**	

Presence of social networks and safety nets	**M**	**M**	Venn diagram and Asset Pentagon	**41**	
Working age population (between 18-60 years)		**M**		**36**	
Access to public and private extension services	**M**	**M**	Venn diagram	**49**	
Market information	**M**	**M**	Asset Pentagon & Venn Diagram	**50**	
Others (specify)					
Overall Sensitivity Assessment	**M**				

Guide for sensitivity rating:

High/ Healthy Status	**Medium**	**Low/ Poor Status**	**Not assessed**

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		**M**		**45**	
Access to alternative or diversified livelihoods	**M**	**L**	Livelihood and Hazard calendar	**33**	
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, SWOT Analysis	**48**	

Access to financial resources (e.g. regular household income, insurance, loans/credit)	M	L	Asset Pentagon & Venn diagram	47	
Access to social safety nets and networks	M	M	Venn diagram and Asset Pentagon	22	
Access to important institutions	M	M	Venn Diagram	38	
Presence of/access to local groups, networks, fisherfolk/fish farmer organizations, producers groups, etc.	M	M	Venn Diagram, Asset Pentagon	42	
Availability of human resources (e.g. trained professionals, adequate workforce)	L	M	Asset Pentagon	46	
Level of cooperation and collective decision making	M	H	Venn Diagram and Asset Pentagon	28	
Level of leadership (only for Women)	M	M	Gender roles	46	
Presence of climate proof infrastructure (e.g. roads, electric grid, water supply) and housing	M	M	Hazard and Resource Mapping, Resource matrix	48	
Presence of early warning and disaster risk management systems		L		37	
Others (specify)					

Overall Adaptive Capacity Assessment	**M**		

Guide for adaptive capacity rating:

High	**Medium**	**Low**	**Not assessed**

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**
Flooding	Medium - flood effects community annually especially in rainy season with low intensity	Medium – flood effects especially on aquaculture ponds and farmers because of sea water pass over the embankment.	Low- community lack of sufficient embankment and safety network.	Medium	Aqua-farmers, farmers and fisher	- CCA and DRM training - Ecosystem Approach Aquaculture/ Fisheries Management (EAA,EAFM)
Cyclone	Medium- Small cyclone effects the community 15 times per annually especially in rainy season	Medium- Community livelihood activities which fishing does not work properly and destroy fishing equipment.	Medium- Community have not enough good infrastructure.	Medium-	Fisher, Fish-Farmer	- CCA and DRM training - Ecosystem Approach Aquaculture/ Fisheries Management (EAA,EAFM)
Coastal Erosion	High- Effects the community July-Oct annually	High- Destroy living area and fishing gears.	Medium- Ahmar ward (1) where located the	High-	Fisher, Aqua-farmer	-CCA and DRM training -Ecosystem Approach

	and last year they riverbank erosion about 24ft during raining season.		erosion area is effected the community directly. They don't have enough capacity for mangrove forest management.		and Agri-far	Aquaculture/ Fisheries Management (EAA,EAFM), Co-Management
Strong wind/ Squall	High- Effects the community several times per monthly especially in rainy season	High - No fishing, destroy fishing gears and aqua-farm embankment	Medium- They don't have well prepare plan for strong wind/squall	High	Fisher and aqua-farmer	- CCA and DRM training - EWEAS - Safety at the Sea

*(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
-**Flood** -**Coastal Erosion** -**Squall** -**Cyclone**	-Depletion of fisheries resources -Having poor quality housing -Lack of financial support -Lack of climate proof infrastructure -Destroy the aqua pond embankment	-Have a little alternative livelihood activities -Links with institution for better management options -Lack of skillful Human resources	Ahmar ward (1) village is medium vulnerable to different kinds of natural disasters/hazards and climate change impact, especially occurring at fishing and aquaculture livelihood

			dependent households.

- 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. Because life under water (sea) was difficult to monitor and even though some people may perhaps know that information, we didn't get 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)?
- 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)	Illegal fishing			
Issues raised by a particular community	No fish collector inside the village	No fish collector inside the village		
Trends	decline fish catch, spend more fishing time	Mangrove Deforestation and extension of paddy field in the mangrove area,	No shelter No embankment	No shelter No embankment
Major differences among participants' answers			Answer on gander role are difference between fisher and community group even	

			the questions were same.	

- 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	Grocery shop, Fish collector, Fishing gears shop	Village GAD, broker, crab collector, community co-operative, machinery shop, Fertilizer shop, Fuel shop,
Which stakeholders do not have many relationships with other stakeholders	DoF should develop more relationships with community.	DoF should develop more relationships with community.

- 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.**

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?

- **Fishermen who stay in coastal and river bank area effected erosion. In addition, squall is also often occurring and medium affected to the whole community, most noticeably for fisher community where they can do fishing due to frequent squall. 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.**
- **This community has lower fish farming management as well as not having sufficient human resources (i.e knowledge and technology) to reduce the impacts of flood and extremely rain fall on aquaculture ponds. In addition, mangrove forest area has been declined. 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, cyclone, flooding, squall, extremely rainfall, 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 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