Key Findings: Community Vulnerability Assessment

Name of village	Tha Mein Pale Village, 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 2000 (200 HHs)
Total number of VA participants: i) during assessment mission; ii) during validation mission	(i) 50
Gender	Total male: 932 Total female: 1068

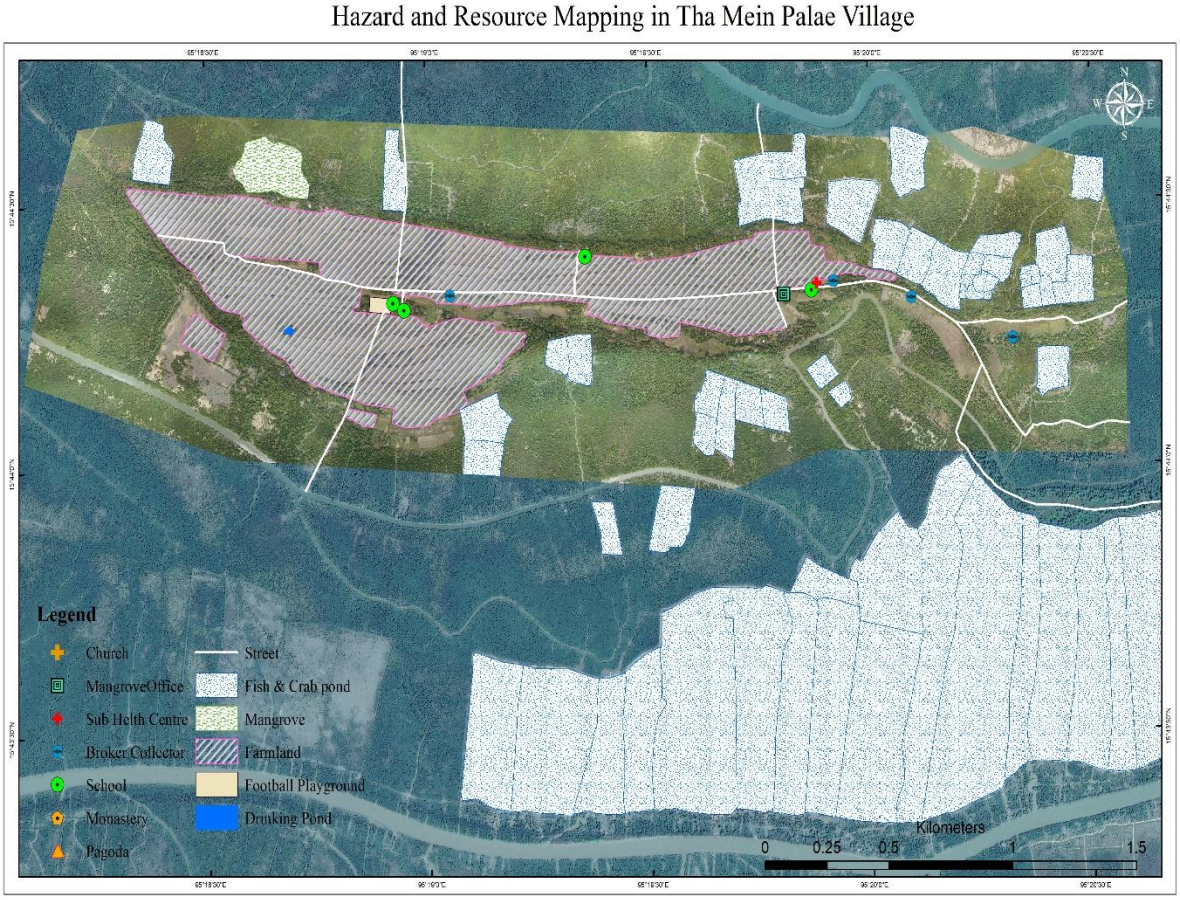

Fig.1. Hazard & Resource Mapping of Auk Seik Kwin Village

Fig.2. Auk Seik Kwin Village Fishing Ground Map (still working on it)

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) Tornado
	Int:	Com:	Int:	Com:		Int:	Com:						Int:	Com:	
Livelihoods/ Sector															
Fishing	H	M	L	H	M	M	L					L	H	M	H M (High Tide wave) L (High Temperature) L (Cold Wave)
Aquaculture	H	H		M		H	L						L	L	L H (High Temperature) L (Poisoning Fishing)
Agriculture / Farming		H		H			M							M	L
Small Businesses															
Grocery Store		M		H			L							M	H
Fish processing															x
Tailor Shop		M		H			L							L	M
Fishmonger		M		H			L							L	M
Government Services															
Electricity															X
Water supply															X
Public transportation															X
Others (specify)															x

Natural Resources															
Beaches		H		H			L							M	M
Coral Reefs															X
Marine Protected Areas															X
Protected Areas – Terrestrial															X
Mangroves		L	M	H			L							L	M
Seagrass															X
Water table/ freshwater lens															X
Others (specify)															
Assets/ Infrastructure															
Fishing center/ landing site															x
Fishing boats/ gear – nets, pots, etc.		M	M	H			L						M	H	M
Village bazaar															X
Port / jetty/ bridge															X
Major road		H		H			L							M	L
Processing centers															X
Ice plants															X
Drying facilities															X
Hatcheries/ Nursery															X
Religious building		L		H			L							M	M
Schools		L		H			L							M	M
Sub-RHC/ RHC/ Clinic		L		H			L							M	M
House		M		H	M		L						M	M	M

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 (if possible)**	**Remarks**
Hazard Analysis					
Coastal erosion and related flooding (e.g. higher tides or sea levels)	**H**	**M**	Hazard and Resource Mapping, Matrix ranking of hazard, Disaster and Climate Risk Assessment, Livelihood and Hazard Calendar	**23**	**Community suggestion**
Changing ocean currents and conditions (e.g. acidity, higher temperatures, salinity)					**x**
Drought/dry spells					**x**
Forest fires					**x**

Heavy rainfall and flooding events	**M**	**M**	Disaster and Climate Risk Assessment,	**25**	
Cyclones and storms	**M**	**H**	Matrix ranking of hazard	**30**	
Tide wave		**L**		**44**	
Landslides and erosion					**X**
Saltwater intrusion					**x**
Tsunami	**L**	**L**	Matrix ranking of hazard	**41**	
Tornados		**M**		**22**	
Strong wind/Squall	**H**	**M**	Livelihood and hazard calendar, Matrix ranking of hazard, Disaster and Climate Risk Assessment	**25**	
Low pressure area		**M**		**21**	
Others (specifcy)					
Exposed areas and group to the above hazards					
At-risk groups (e.g. children, disabled or elderly)		**H**		**24**	
Coastal and marine ecosystems (e.g. coral reefs, seagrass and mangroves)		**M**		**27**	
Farms and related facilities (e.g., irrigation system)		**H**		**26**	
Fishing grounds	**M**	**M**	Fishing ground mapping, Semi Structure interview	**27**	

Fishing facilities (e.g. landing sites, market, boat storage)					**x**
Forest and terrestrial ecosystems		**M**		**28**	
Key housing areas or settlements	**M**	**H**	Transect mapping, Wealth Ranking, Disaster and Climate Risk Assessment	**23**	
Key commercial or industrial areas					**X**
Public infrastructure (e.g. power station/lines, water system, cellphone towers, main roads, bridges)					**X**
Social services (e.g. monasteries, community centre, fire and police stations, hospital/health centre, schools)		**M**		**37**	
Others (specify)					
Overall Exposure Assessment	**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
Ecological sensitivity					
coastal and marine ecosystems (e.g. coral reefs, seagrass and mangroves) and related biodiversity		**L**		**28**	
forest and terrestrial ecosystems and related biodiversity					
Soil quality and fertility	**M**	**L**	Asset pentagon	**27**	
Status of fisheries resources	**M**	**M**	Semi structure interview, Asset Pentagon	**27**	
Status of mangrove forest resources	**M**	**L**	Asset Pentagon	**28**	
Aquaculture water quality	**M**	**L**	Semi structure interview, Asset Pentagon	**20**	
Domestic Water Quality	**L**	**L**	Hazard & resource mapping, Asset Pentagon	**24**	
Drinking Water Quality	**M**	**M**	**Asset Pentagon**	**19**	
Aquaculture pond temperature		**H**		**24**	

Others (specificy)					
Socio-economic sensitivity					
Awareness of climate change		**M**		**23**	
Quality housing	**H**	**H**	Wealth ranking & resource mapping, transect mapping	**27**	
Financial resources (e.g. regular household income, insurance, loans/credit)	**M**	**H**	Venn diagram	**31**	
Public utilities (safe drinking water, electricity and fuel)	**H**		Resource matrix & mapping		**x**
Dependence on non-climate sensitive sectors and related livelihoods (rather than farming, fishing (e.g tourism)	**H**	**M**	Livelihood and Hazard Calendar, SWOT Analysis	**23**	
Gender equality	**L**	**M**	Gender role	**21**	
Level of education and literacy	**M**	**M**	Asset Pentagon, SWOT	**42**	
Level of migration worker		**M**		**30**	
Presence of social networks and safety nets	**H**	**H**	Venn diagram and Asset Pentagon	**23**	
Working age population (between 18-60 years)		**L**		**38**	
Access to public and private extension services	**H**	**H**	Venn diagram	**38**	
Market information	**M**	**L**	Asset Pentagon	**21**	

			& Venn Diagram		
Others (specify)					
Overall Sensitivity Assessment	**M**	**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		19	
Access to alternative or diversified livelihoods	L	M	Livelihood and Hazard calendar	32	
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	30	
Access to financial resources (e.g. regular household income, insurance, loans/credit)	L	M	Asset Pentagon & Venn diagram	21	
Access to social safety nets and networks	L	L	Venn diagram and Asset Pentagon	28	
Access to important institutions	M	L	Venn Diagram	28	

Presence of/access to local groups, networks, fisherfolk/fish farmer organizations, producers groups, etc.	M	M	Venn Diagram, Asset Pentagon	22	
Availability of human resources (e.g. trained professionals, adequate workforce)	L	H	Asset Pentagon	24	
Level of cooperation and collective decision making	M	M	Venn Diagram and Asset Pentagon	26	
Level of leadership (only for Women)	M	L	Gender roles	28	
Presence of climate proof infrastructure (e.g. roads, electric grid, water supply) and housing	L	L	Hazard and Resource Mapping, Resource matrix	44	
Presence of early warning and disaster risk management systems		L		46	
Others (specify)					
Overall Adaptive Capacity Assessment	**L**	**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	High- Flood effects community July to October especially in raining season	High- Flood effects the aqua-ponds, farmer and fishing gears	Medium- Rare of mangrove forest and lack of embankment	High	Aqua-farmer, farmer and fishers	- CCA and DRM training - EWEAS - Ecosystem Approach Aquaculture / Fisheries Management (EAA,EAFM), Co-Management
Coastal Erosion	High- Coastal erosion mainly effects on July to Oct	High- Destroy embankment for aqua pond and rice field, living area erosion, salt water intrusion, livelihood assets destroy	Low- The aqua-farmer do not have approval to dig embankment in the forest area to protect erosion.	High	Aqua farmer are mainly effected and community who are staying along the river bank.	-CCA and DRM training -Ecosystem Approach Aquaculture/ Fisheries Management (EAA,EAFM), Co-Management
Heavy/ extreme rainfall	Medium-- Effects the community at pre monsoon and post monsoon annually	Medium- Heavy rainfall effects the transportation, cultivation, fishing and culturing	Low- All livelihood activities do not work properly.	Medium	Aqua-farmer, Fisher and Agri-farmers	- CCA and DRM training

Strong wind/ Squall	High- Squall effects May to Nov annually	High- Effect the fishing gears and living household.	Low- Lack of adequate knowledge and information about squall and does not have well preparation.	High	Fisher	- CCA and DRM training - EWEAS - Safety at the Sea
High Temperature	High- High temperature effects during Feb to Jun annually.	High- That cause livestock, increase mortality rate in aqua-ponds and community health problem	Low- Lack of adequate knowledge and does not have well preparation	High	Fisher, Aqua-farmer and small livestock firm	- CCA and DRM training - -Ecosystem Approach Aquaculture / Fisheries Management (EAA,EAFM), Co-Management

*(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** -**High Temperature**	-Depletion of fisheries resources -Having poor quality housing -Lack of financial support	-Links with institution for better management options -Lack of skillful Human resources	Tha Main Palae village is high vulnerable to different kinds of natural disasters/hazards and climate change impact,

	- Lack of alternative livelihood opportunity		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)		-Forest department do not allowed to dig enough depth and wide for mangrove friendly aquaculture.		
Issues raised by a particular community	Lack of capacity for buying tender area for fishing.	Lack of technical knowledge		
Trends	decline fish catch, spend more fishing time	Difficult to collect post larvae for culturing		

Major differences among participants' answers	Matrix ranking of hazard, disaster and climate risk assessment and livelihood and hazard calendar has different answers on same question.	Matrix ranking of hazard, disaster and climate risk assessment and livelihood and hazard calendar has different answers on same question.	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	DoF, FD, GAD, Fish Collector	GAD, DoF, FD

Which stakeholders do not have many relationships with other stakeholders	DoF and FD should develop more relationships with community.	DoF and FD 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, FD 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.**
- **This community already has community forestry (CF) and also implementing mangrove friendly aquaculture (MFA). EAA , MFA and mangrove reforestation activities are suitable 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