

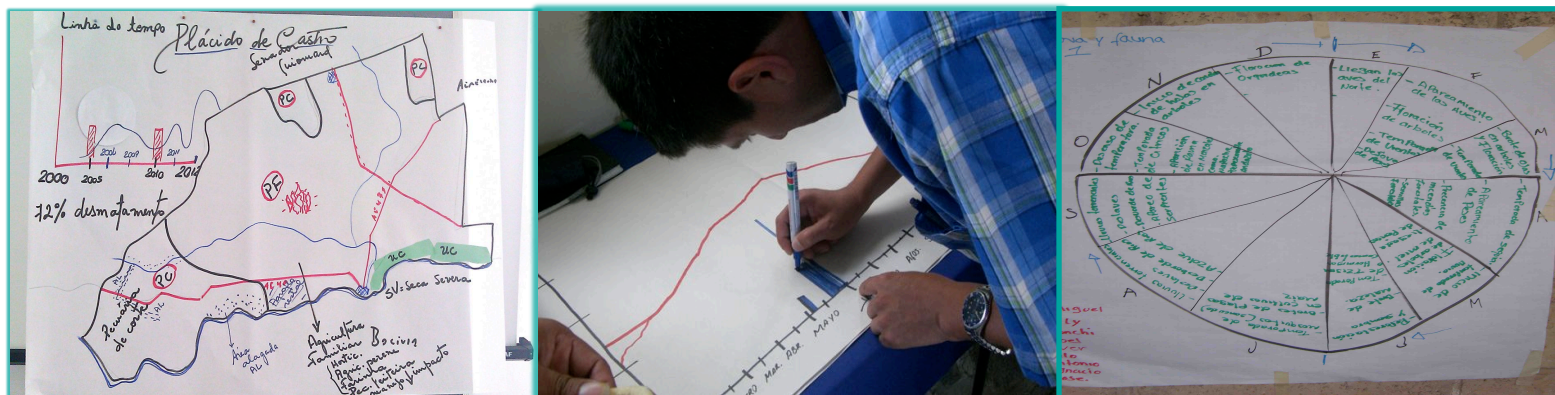
Mango Production and Climate Change in Shan State/Myanmar



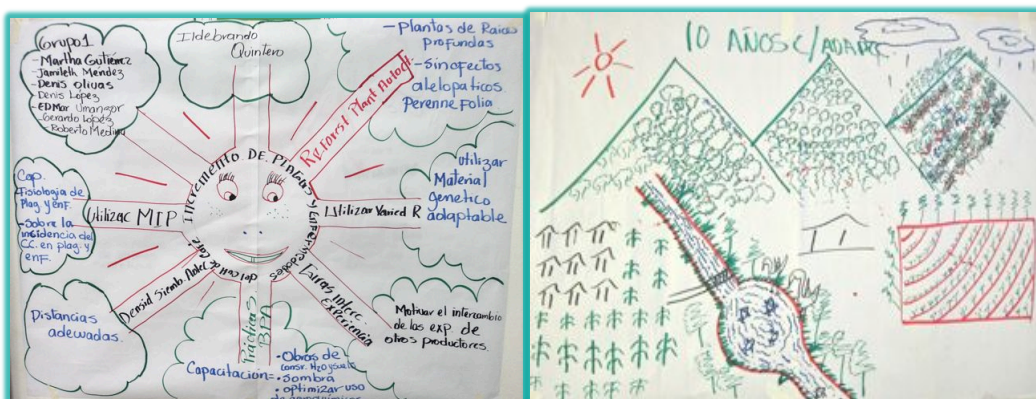
Participatory Climate Risk Assessment

What is a participatory climate risk assessment?

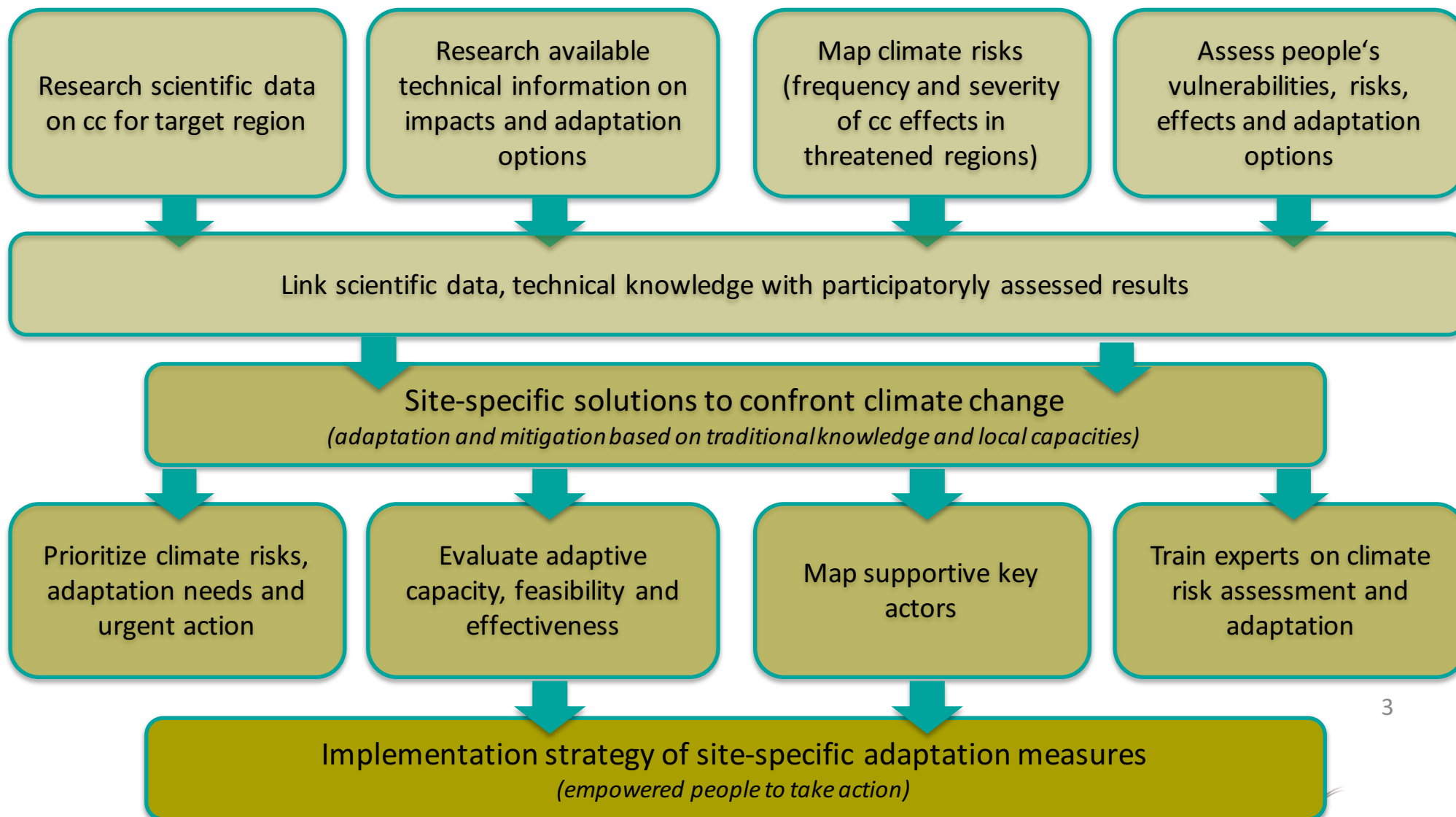
Objective: assessing and evaluating predicted and perceived *climatic changes, vulnerabilities and effects* in a specific region/on a production system



in order to *identify adaptation needs and plan suitable solutions*



How is a participatory climate risk assessment working?



Which are the most serious climatic risks and vulnerabilities for mango farmers in Shan State?

VULNERABILITY MATRIX

climatic factor ဘေးအန္တရာယ် အခြေခံအချက်	မိုးမခါးခြင်း 1. drought	မိုးနည်းခြင်း Jul/Aug decreasing rain 2.	အချိန်အညီလွတ် မိုးရွာခြင်း irreg. rain 2.	ခွင်းခါး frost 3.	Priority
water resources ရေအရင်းအမြစ်	3	2	0	0	5
technology နည်းပညာ	3	2 <small>for mango STL</small>	3	1	8-9
investment market	3	2 <small>for corn & other seasonal crop</small>	3 <small>for mango & herbs</small>	1	7-9

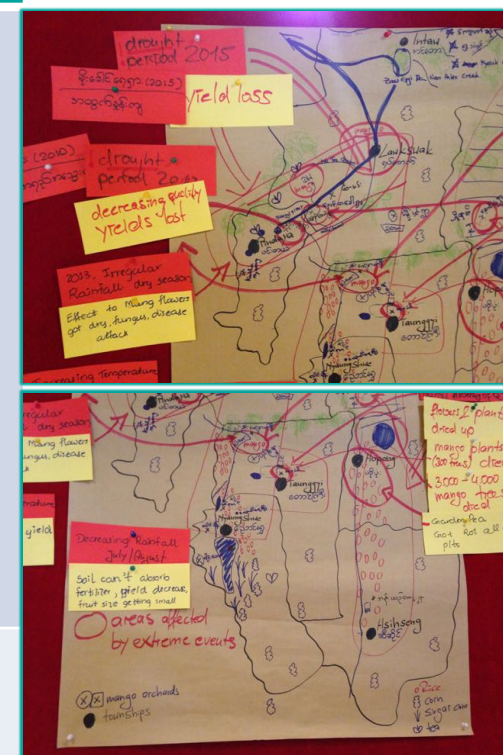
0 = no impact
0 = သက်တောင့်သက်သာ
1 = low impact
1 = အနည်းဆုံးသက်တောင့်သက်သာ
2 = medium impact
2 = အလယ်လောက်သက်တောင့်သက်သာ
3 = severe impact
3 = ပြင်းထန်ဆုံးသက်တောင့်သက်သာ

RANKING CLIMATE RISKS

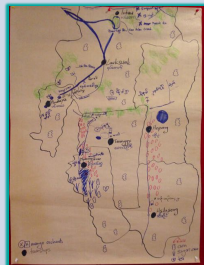
climatic factor ဘေးအန္တရာယ်	drought periods မိုးမခါးခြင်း	hail မိုးဒီး	flood ရေကြီးခြင်း	decreasing rain မိုးနည်းခြင်း	frost ခွင်းခါး	irregular rain အချိန်အညီလွတ် မိုးရွာခြင်း
drought periods မိုးမခါးခြင်း	4	drought periods မိုးမခါးခြင်း	drought မိုးမခါးခြင်း	drought မိုးမခါးခြင်း	drought မိုးမခါးခြင်း	irregular rain အချိန်အညီလွတ် မိုးရွာခြင်း
hail မိုးဒီး	1	/	hail မိုးဒီး	decreasing rain မိုးနည်းခြင်း	frost ခွင်းခါး	irregular rain အချိန်အညီလွတ် မိုးရွာခြင်း
flood ရေကြီးခြင်း	0	/	/	decreasing rain မိုးနည်းခြင်း	frost ခွင်းခါး	irregular rain အချိန်အညီလွတ် မိုးရွာခြင်း
decreasing rain မိုးနည်းခြင်း	4	/	/	/	decreasing rain မိုးနည်းခြင်း	decreasing rain မိုးနည်းခြင်း
frost ခွင်းခါး	2	/	/	/	/	irregular rain အချိန်အညီလွတ် မိုးရွာခြင်း
irregular rain အချိန်အညီလွတ် မိုးရွာခြင်း	4	/	/	/	/	/

Which impact has climate change on mango production in Shan State?

Climatic event	Impact	Exposure
Drought periods	Yield loss mango Decreased quality yield loss seasonal crops, poor yield quality due to inability to absorb fertilizer, less yield	large areas in Pindaya, Lawksawk, Taunggyi, Naungshwe
Decreasing rain during Jul/Aug	Poor yield quality due to inability to absorb fertilizer, less yield	All over the region



Which impact has climate change on mango production in Shan State?

Climatic event	Impact	Exposure
Irregular rain during dry season	Early budding, but mango flowers got dry due to hot temperatures in this time of the year, surviving flowers set fruits of less quality, fungus disease attacks 3x flowering, without any fruit setting	Pindaya Hopong 
Frost	Flowers and plants dried up, get burnt due to being frosted and the intensive and hot daylight, 300 plants in Taunggyi, 3.000 – 4.000 trees North of Hopong lost, garden pea got rot all the plots, in large areas in Hopong rice, corn, vegetables were affected	Taunggyi, Pindaya, Hopong, Hsihseng, specifically in valleys
Hail	Mango fruit fell down flowers, fruits, leaves damaged,	North of Taunggyi, serveral areas in Lawksawk
Floods	Roads, bridges and paddy fields destroyed	Large area in Hopong

Which are the most serious risks?

Climatic stimuli	Climate Proofing	Participatory assess.		Scientific studies	Vulnerability		Damages				Risk		
		tea	mango		Yes	No	None	Uncertain	few	serious	Low	Medium	high
Drought	X	X	X	?	XX					X			X
Decreasing rain in Jul/Aug	-	-	X	X	X					X		X	
Irregular rain dry season	X	-	X	?	XX				X			X	
Frost	X	-	X	-	XX					X		X	
Hailstorm	X	X	X	-	XX					X			X
Increasing temp. Mar – Dec	-	X	X	X	X			X			X		
Floods	-	-	X	X	X				X		X		

What are the most urgent mango farmers' adaptation needs in Shan State?

- water management system, drip/micro irrigation, access to water, rainwater harvesting, drainage system to channel runoff through the mango plot
- soil management, mulching to avoid evaporation, manure to increase storage capacity
- adapted orchard management practices (IPM, pruning, fertilization, etc.) increasing resilience of production system
- prevention measures from frost attacks and hailstorms, strong winds
- information, weather forecasts, appropriate know-how, expertise, technology
- training and sensitization, extension service
- investment und funding
- environmental protection, sustainable use of natural resources

Proposed Implementation Concept

