Mango Production and Climate Change in Shan State/Myanmar



Participatory Climate Risk Assessment

WHITE WAREN WAY

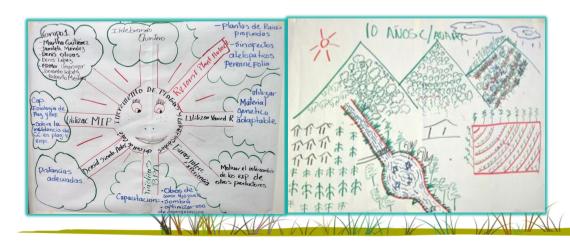


What is a participatory climate risk assessment?

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



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How is a participatory climate risk assessment working?

Research scientific data on cc for target region

Research available technical information on impacts and adaptation options Map climate risks
(frequency and severity
of cc effects in
threatened regions)

Assess people's vulnerabilities, risks, effects and adaptation options

Link scientific data, technical knowledge with participatoryly assessed results

Site-specific solutions to confront climate change

 $(adaptation\ and\ mitigation\ based\ on\ traditional\ knowledge\ and\ local\ capacities)$

Prioritize climate risks, adaptation needs and urgent action

Evaluate adaptive capacity, feasibility and effectiveness

Map supportive key actors

Train experts on climate risk assessment and adaptation

3

Implementation strategy of site-specific adaptation measures (empowered people to take action)



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

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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 Mango is sensitive to less rainfall during this period of fruit growing (W. Spreer)	large areas in Pindaya, Lawksawk, Taunggyi, Naungshwe	drough 2015 Secretary Costs Teld loss Transportation Trans					
Decreasing rain during Jul/Aug	Poor yield quality due to inability to absorb fertilizer, less yield	All over the region	by extreme events Beauty ordends Companyor ordends Beauty Significant Significa					
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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	Participa- tory assess.		Scientific studies	Vulnerability		Dama	Damages			Risk		
		tea	man go		Yes	No	None	Uncerta in	few	serio us	Low	Mediu m	high
Drought	Х	Х	Х	?	XX					Х			Х
Decreasing rain in Jul/Aug	-	-	X	X	X					Х		X	
Irregular rain dry season	X	-	X	?	XX				Х			X	
Frost	X	-	X	-	XX					Х		X	
Hailstorm	Х	Х	Х	-	XX					Х			Х
Increasing temp. Mar – Dec	-	X	X	X	X			Х			Х		
Floods	-	-	Х	X	Х				Х		Χ		

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 ochard 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

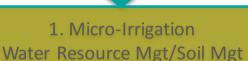


Proposed Implementation Concept

Model Farms

Mango Value Chain

Public/Governmental Organizations



1. Micro-Irrigation
Water Resource Mgt/Soil Mgt

1. Regional planning

- 2. Climate-resilient mixed farming systems
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2. Sensitization and capacity building

3. GAP trainings/orchard mgt techniques

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3. Weather forecasting

- 4. Grafting/selection of mango plant material
 - 5. Frost prevention
- 6. Mini-weather stations/assessment of production data