Workshops on seasonal food availability and diversification for climate change resilience

Gennifer Meldrum, Dunja Mijatovic and Jessica Raneri

IFAD-EU NUS Steering Committee Meeting and Workshop

The need to diversify: climate adaptation

- Literature points to diversification as a key strategy to build resilience against climate change
- There is little information to guide farmers or NGOs on how to diversify their production systems (with what/how)
- NUS are allies for diversification but which ones?
- Developing a simple framework/tool to assess major gaps in the resilience portfolio of farm systems and identify crops that can support adaptation

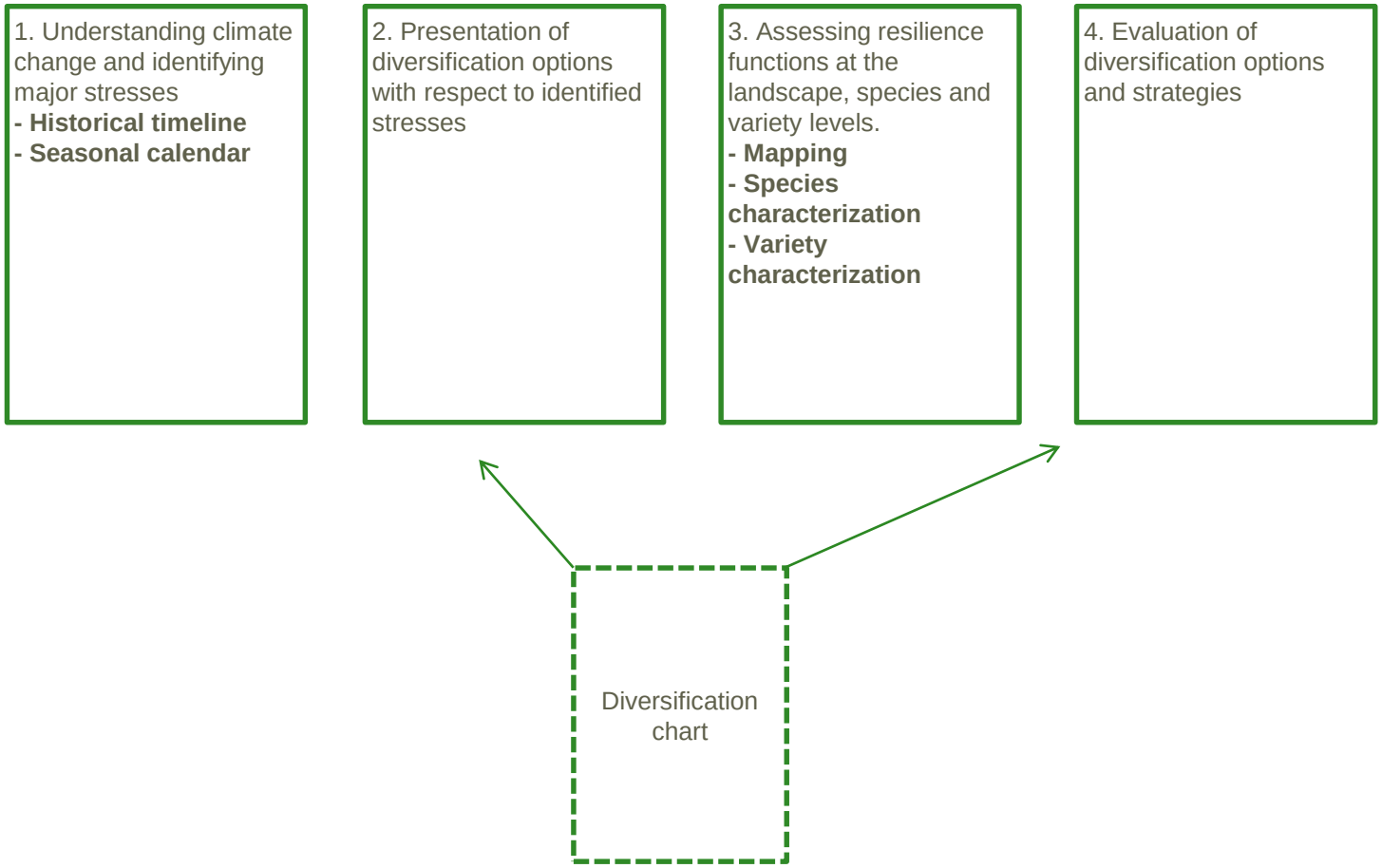
The need to diversify: nutrition

- Literature also points to diversification as a critical action to enhance nutrition of food systems
- Production of more nutrient-dense foods and less staple cereals
- NUS can support better nutrition in seasons of shortage for important food groups
- In the project, we are looking to promote our target staples in a whole-of-diet approach, in recipes that include other locally available NUS (i.e. not just millets or fonio as the key to good nutrition)

Diversification with NUS to address diet and resilience gaps

- Project is following a two-prong approach to perform intensive value chain interventions for target NUS identified at the start of project, while investigating other local NUS that would be relevant to enhance nutrition and climate change adaptation
- Workshops this summer have been conceived to help in identifying such local NUS, while testing tools and approaches that are being developed for wider application
  - Tanvi (thesis) and Gennifer in India
  - Dunja and Gaia in Mali
  - Rose (thesis) in Guatemala

Workshop flow: Diversification for adaptation

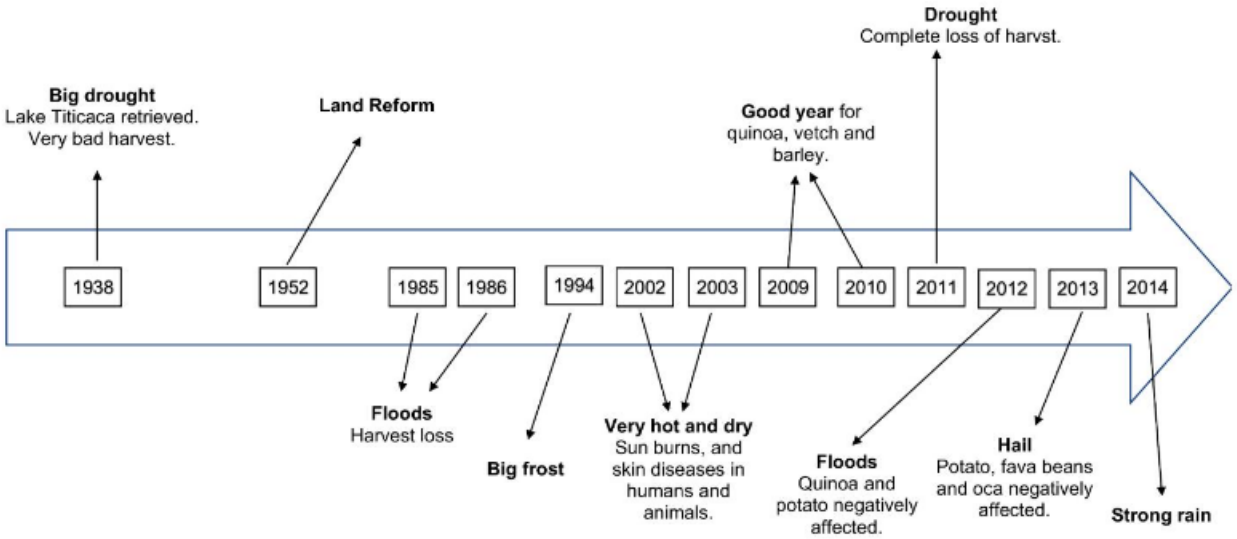


Workshop flow

1. Understanding farmers' perceptions and experience of climate change

Climate change timeline

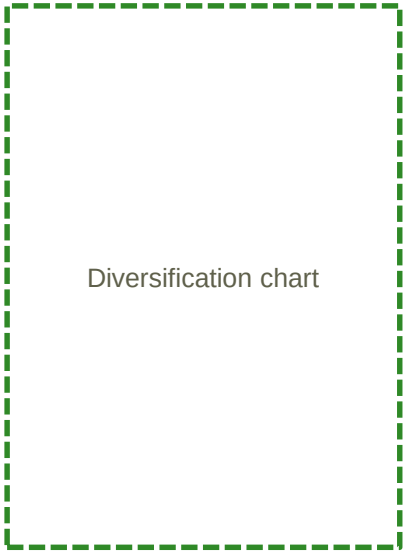
Seasonal calendar



Workshop flow

2. Presentation of diversification options with respect to identified stresses

Use the chart to present how different diversification options can help address identified stresses



Agrobiodiversity-rich practices for resilience

Practices	Contribution to resilience
Increasing land use/cover diversity	
Land-use mosaic **Community institutions for ecosystem (wetland, forest, riparian areas) protection, e.g. sacred forests** **Grazing and fishing plans** **Restoration activities (e.g. tree planting)**	- Flood regulation - Drought mitigation - Storm moderation - Soil erosion control - Recovery after extreme events
Diversification of cropping and production systems	
Intercropping, rotation and cover crops **Agroforestry** **Integrated crop-livestock production** **Cultivation of species with traits such as early maturing, drought tolerance, pest tolerance and diseases resistance**	- Moderating the effects of extreme weather events and irregular rainfall patterns - Pest and disease control - Soil erosion control - Improved soil productivity - Fodder and shade for animals
Increasing crop varietal diversity	
Planting multiple varieties **Planting varietal mixtures** **Use of varieties with traits such as early maturing, drought tolerance, pest tolerance and diseases resistance**	- Adaptation to climate-related stresses - Moderating the effects of extreme weather events and irregular rainfall patterns - Pest and disease control

Bioversity International

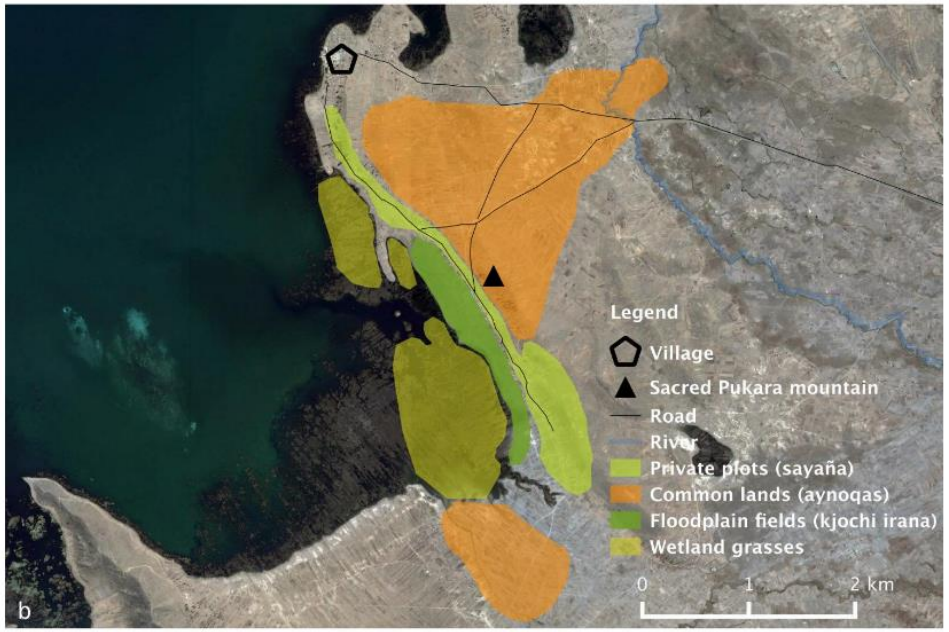
Workshop flow

3. Assessing resilience functions at the landscape, species and variety levels

- Mapping land use
- Assessing species portfolio
- Assessing varietal portfolios

Participatory mapping

Land uses/cover	Resilience functions						
	Water sources	Wild foods, fodder, medicine	Drought mitigation	Flood regulation	Soil erosion control	Pest and disease control	Other
Forest	√√	√√	√	√	√	√	
Garden							
Permanent fallow	√			√		√	
Crop fields							
Village							



Source for map: Platform for Agrobiodiversity Research

Crop evaluations

Land uses/cover	Resilience functions						
	Drought tolerance	Tolerance to intense rainfall events and storms	Pest resistance	Disease resistance	Adaptability to poor soil	Soil fertility enhancement	Income provision
Cereals							
Sorghum							
Millet							
Fonio							
Pulses							
Cowpea							
Peanut							
Voandzou							
Livestock							
Bees							
Chickens							
Cows							

Variety evaluations

Land uses/cover	Resilience functions						
	Drought tolerance	Tolerance to intense rainfall events and storms	Pest resistance	Disease resistance	Adaptability to poor soil	Soil fertility enhancement	Income provision
Sorghum							
Variety 1							
Variety 2							
Variety 3							
Cowpea							
Variety 1							
Variety 2							
Variety 3							
Millet							
Variety 1							
Variety 2							
Variety 3							

Workshop flow

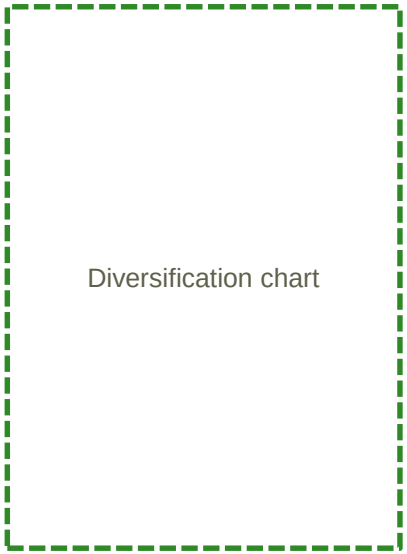
4. . Evaluation of diversification options and strategies

Which crops stand out as resistant to climate stresses faced?

How could they be leveraged to enhance adaptation?

Portfolio designs: ensuring multiple functions covered

Where are gaps in the portfolio?



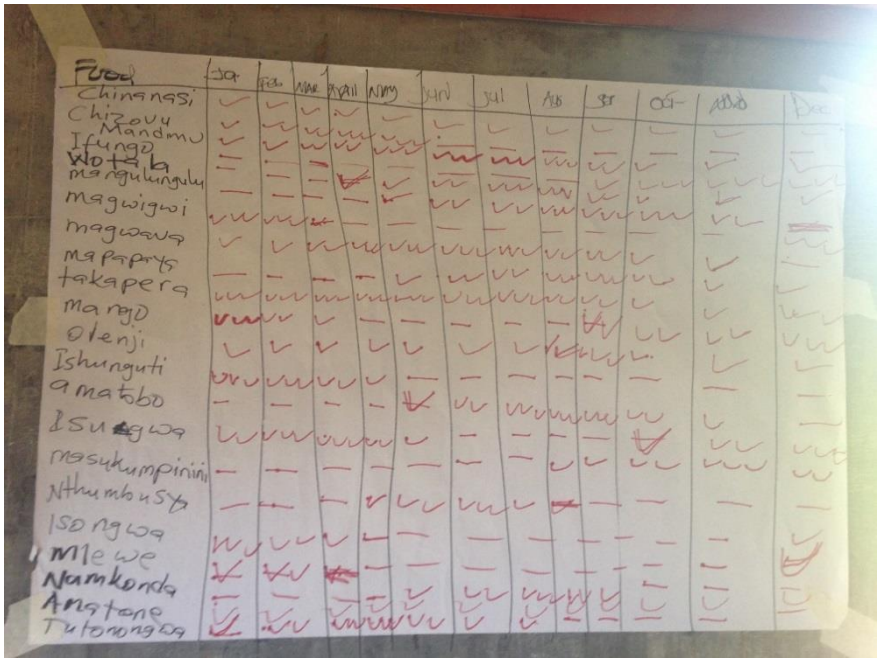
Workshops: Seasonal availability of foods

Simpler than those focused on resilience

Working by food group, evaluating availability of different foods

Also can evaluate storage, source of foods

Question whether to focus initially on season diet patterns or seasonality in crops in the field, but ultimately will come to same result



Credit: Molly Ahern, Chitipa, Malawi

Objective

How can we ensure availability of NUS from under-consumed food groups all year round

1. Documenting availability
2. Options to increase availability (seasonally)
3. Facilitate planning of production to ensure seasonal availability.

		tháng 1	tháng 2	tháng 3	tháng 4	tháng 5	tháng 6	tháng 7	tháng 8
Rau lá xanh đậm									
Cải xanh (trồng và thu quanh năm)									
Rau ngót (thu quanh năm)									
Rau muống (thu quanh năm)									
Mùng tơi (tháng 3- tháng 9)									
Rau củ quả giàu vitamin A									
Đu đủ (trồng và thu quanh năm)									

GFRAS brief

Developing approach for prioritizing and leveraging NUS for nutrition as a brief for GFRAS -Global Forum for Rural Advisory Services

The Global Good Practices (GGP) Initiative was initiated by GFRAS partners to provide a knowledge platform for practitioners, in which theoretical and practical know-how on extension and practical experiences is collected and systematised in an easily accessible and usable form as a public good. It is aimed at field extension agents and managers. The collection of GGP Notes on these pages is continuously enlarged and updated.

Project outputs/indicators

- 3-5 improved, stress-tolerant crops per country with market potential **identified** and used by women and men farmers and other value-chain actors in target communities
- At least 3 to 5 projects adopting methods and tools developed by the Programme
- 300-500 farmers per country, of which at least 40% women, from target communities **enabled to document** stress tolerant crops for their better use in their production systems
- At least 30% **increase in demand, over baseline, for nutritious crops/products** of stress-tolerant crops in local markets linked to target sites

Thank you

g.meldrum@cgiar.org

www.bioversityinternational.org

Bioversity International

CGIAR

Science for a food secure future