Learning from farmers: case study on Senegal

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Global FFS Platform
Webinar series on Climate Change and Farmer Field School
Session 2: Equipping farmers for climate action: key concepts and tools for FFS
Date |20th February 2025| Time: 3:00pm – 4:30pm

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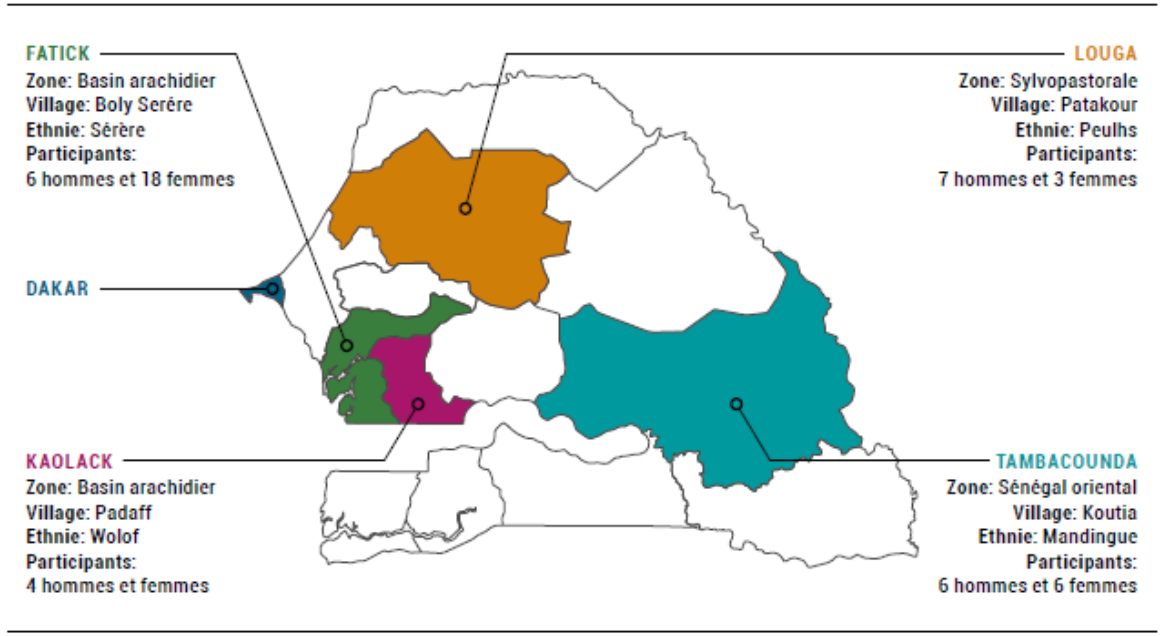
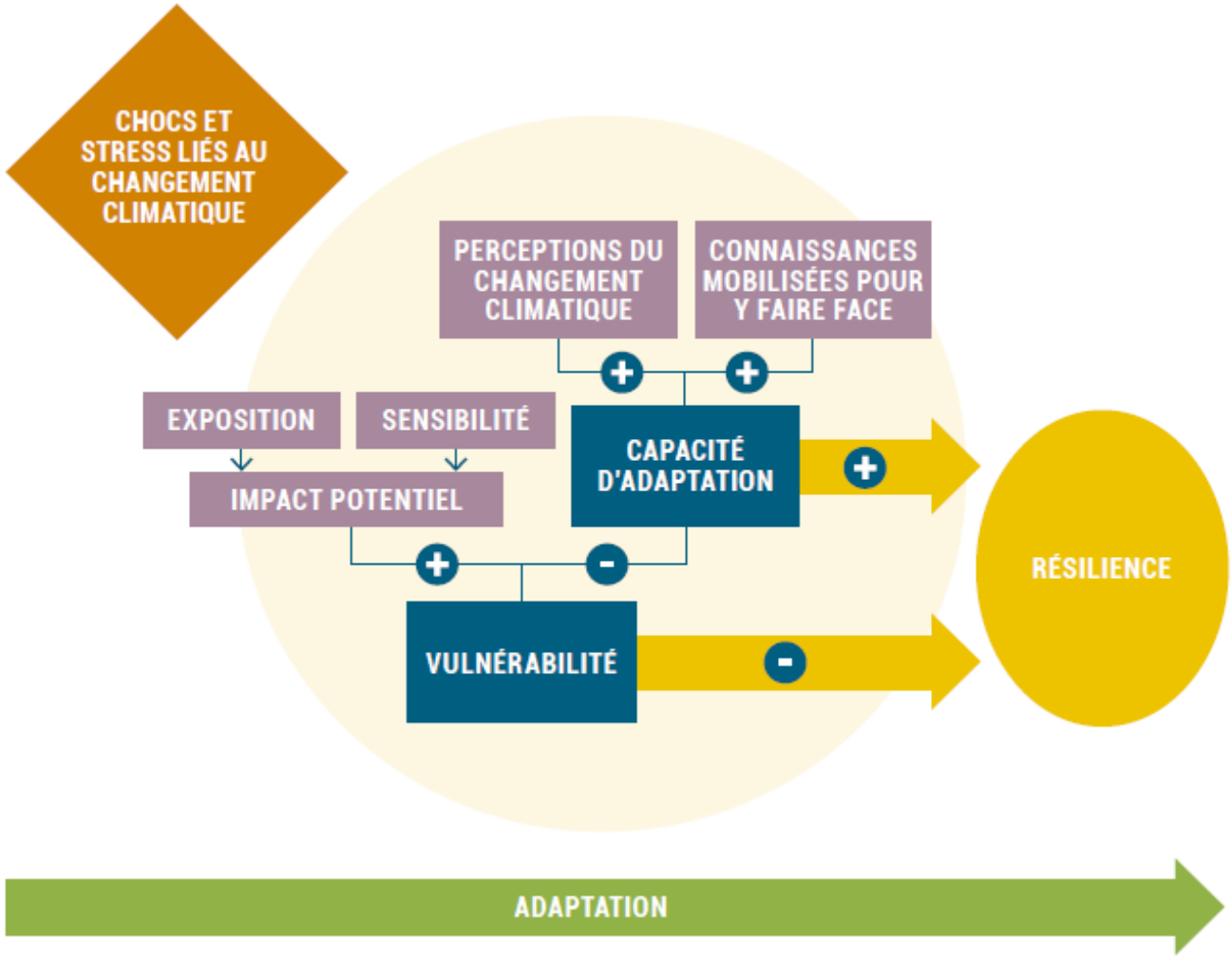


https://openknowledge.fao.org/items/87cf3e95-7ddd-4548-acac-b202bf8caab6

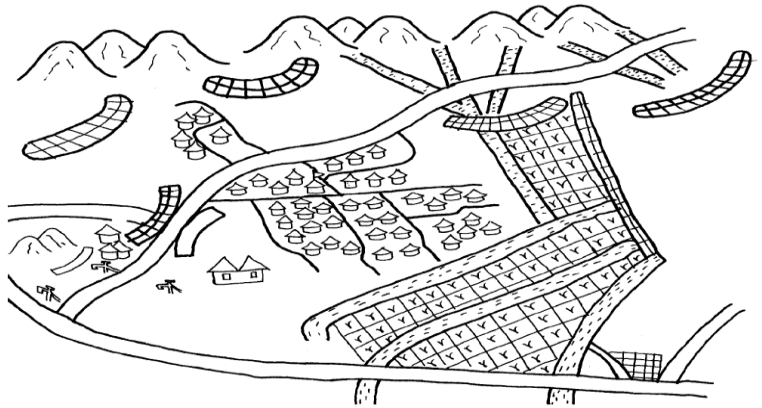
Theoretical framework

Earth and Atmospheric Sciences

Social Anthropology



Methodology: main steps



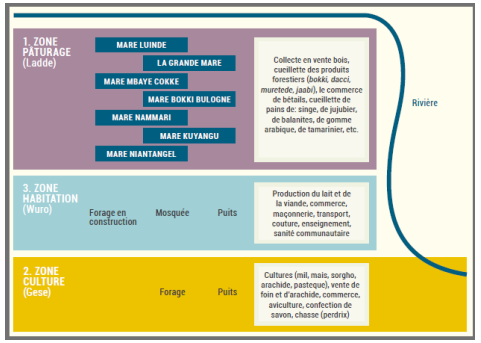
Focus groups, transect and individual interviews

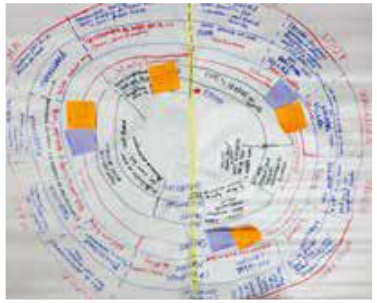
Vulnerability analysis:

- Map of the village: present and past
- List and chronology of climatic events
- Climate vulnerability mapping: impact in the village

Assessment on adaptation capacity:

- Adaptation measures/practices
- Resilient species
- Climate predictors (biophysical elements, plants, stars, animals/insects)





Climate impacts in the village of Patakour

Climate event	Impacts on the cultivation area	Impacts on the grazing area
Strong winds	Destruction of sorghum, peanut, and millet crops	
Bush fires	Loss of important microorganisms for soil fertility Loss of crop residues from millet, sorghum, cotton, peanut, and maize	Death of certain animal species and escape of other animals.
Early stop of rain	Destruction of peanut crops during the fruiting period, sorghum during the heading period, and maize during the flowering period	Lack of forage, early drying up of waterholes, death of calves aged 3 to 4 days, and increased feed expenses for livestock.
Rainfall break	Destruction of maize and sorghum after sowing, and abortion of peanuts	Absence of grass cover and pressure on trees in terms of aerial forage. Drying up of water sources and disappearance of certain species.

Seasons perception of the communities

	janv.	févr.	mars	avril	mai	juin	julliet	août	sept.	oct.	nov.	déc.
	Dry season					Rain season				Harvest season		
Koutia	Sandiano		Tilikando			Sandjifolo		Sama			Sandiano	
Padaff	Lolli		Noor				Nawette				Lolli	
Patakour	Dabbunde		Ceedu			Ndunggu				Dabbunde		
Boly	Lid					Ndiig				Ceek		

Resilient species to cope with various climatic events

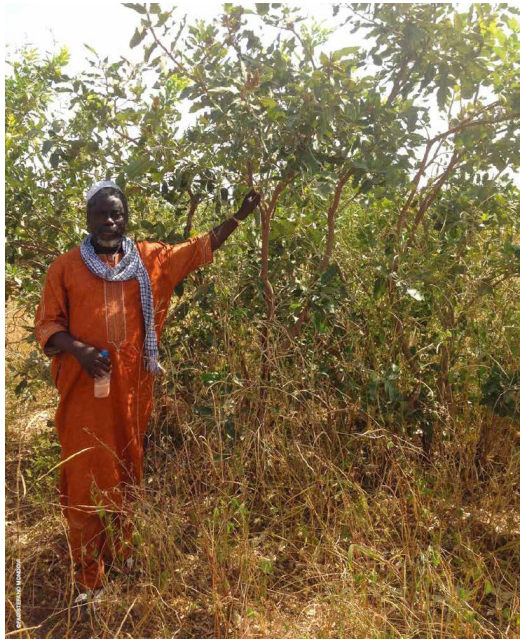
Climatic event	Species	Community			
		Koutia	Padaff	Patakour	Boly
Strong winds	*dimb* tree (deep roots, rigid trunk structure)	X	X		X
	neem tree (deep roots, rigid tree, evergreen leaves)	X	X		
	eri tree (protective roots and leaves)		X	X	
	eucalyptus tree (long pivot)		X		X
Flooding	donkeys	X	X		X
	cows		X		X
	dimb (deep roots, rigid tree)		X		X
	peanuts	X	X		X
	soto (rigid tree, leaves and roots)	X	X		
Delayed rainfall, rainfall breaks, early rainfall cessation	peanut (flower 11, 73 days - short cycle, long pivot)	X	X		
	maize (variety “early thai” - short cycle)			X	X
	cowpea (short-cycle variety)		X	X	X
	souna 3 (short-cycle variety)	X	X		
	millet (short-cycle)			X	X
	cows	X		X	

Adaptation strategies implemented by the four communities

Climatic event	Adaptation measure	Community			
		Koutia	Padaff	Patakour	Boly
Early cessation of rains and rainfall deficit	*Short-cycle varieties*:				
	Groundnut variety fleur 11, millet variety, souna 2 or 3, sorghum (65 days)				
	Early Thai maize variety (60 days)				
	Cowpea melakh variety (45 days)	X	X		X
	Groundnut variety (75 days)				
Late cessation of rains	Local varieties:				
	groundnuts (90 days), souna millet (70 days), maize (70 days), cowpea (70 days)	X	X		
Water erosion and flooding	*Installation of local gabions*	X	X		
	Eucalyptus reforestation	X			X
	Assisted natural regeneration (jujubier and baobab), tree nursery		X		X
	Crop association (cowpea and millet)				X
Strong winds	Reforestation with neem, mango, eucalyptus, spleen, soto, bembo, gnanigno	X		X	X
	Mulching with crop residues		X	X	
	Installation of windbreaks and hedges using sidéme, wongko, dimb	X	X		X
	Crop rotation	X	X		
Drought	Farmers remove bark from the tree bokki and mix millet cobs with water to feed cattle when fodder is poor		X	X	
	Social rules based on relationships of solidarity, and reciprocity				
	Ban on cutting of trees such as the sass as social norm to safeguard soil fertility				
Salinization	Spraying phosphogyne				
	Reforestation and assisted natural regeneration (ndomb, daaf, ngobop, model, yay, cassia and ngayokh)		X		X
	Spreading peanut shells, millet threshing residues and yay leaves				

Traditional climatic predictors

Climatic event	Community			
	Koutia	Padaff	Patakour	Boly
Early start to winter	Baobabs and other trees regain their foliage	Birds build their nests at the bottom of trees	Hatching of bird's eggs daakal	Appearance of groups of stars (group of five towards the west)
Rain on the way	Fruits of the dimb	Stars shape of an elephant the sky: when the trunk is pointing south	The star *jungo gniwa* is positioned in the northwest at sunset during the rainy season	Presence of black ants and large
Drought	The dimb and the rate (trees) blossom height	The ants fill their burrows with food	Appearance of a star towards the east	



Conclusion

- We have a lot to learn from farmers
- Local communities have much to tell us about living in balance with nature
- Take time (no waste time) to collect data on local knowledge
- From UN Conference on Environment and Development (Rio 1992): it is crucial the co-production of knowledge between local communities and researchers

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