RESEARCH PROGRAM ON Water, Land and Ecosystems

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Opportunities in building resilience in degraded watersheds: experience from the field in African context

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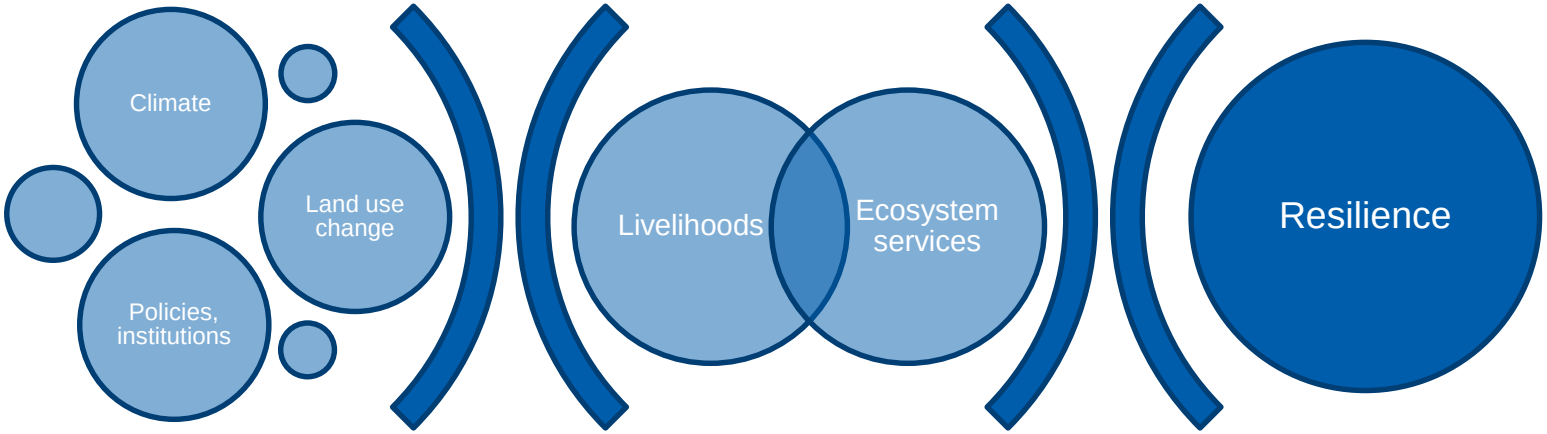
IN PARTNERSHIP WITH:

Bioversity International, CIFOR, CIAT, CIP International Potato Center, FAO, ICARDA, ICRISAT, IFPRI, ILRI, RUAF Foundation, World Agroforestry Centre, WorldFish

Building climate resilience for people in landscapes: a complex systems approach!



Pressures and changes

Landscape/watershed (social-ecological system)

Adaptability
Transformability

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Study of enabling resilience in development and climatic change at landscape scale

Objective

- Develop pragmatic and locally ‘owned’ tool for implementation
- Focus on agriculturally dominated watershed with recurring water scarcity and shocks

Methods

- Review of existing tools and experiences
- Testing a protocol in 4 watersheds in Ghana and Ethiopia, assessing climate and environmental indicator
- Participatory development of local action plans for community-landscape resilience

Results: A review show a plethora of tools shaped by creator discourse with little impact assessments (yet)

- <50 tools and approaches evaluated
- No tool specific to agriculturally dominated livelihoods and landscapes in developing context
- Tools are highly diverse in theory grounding, methods and data
- Capacity, time and costs (data and analysis) challenges implementation
- There are very few consistent use of tools, weakening evidence of actual resilience strengthening

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Research paper

Monitoring and evaluation of climate resilience for agricultural development – A review of currently available tools

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ARTICLE INFO

ABSTRACT

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TECHNICAL BRIEF

Monitoring and evaluation of climate resilience for smallholder farming systems: a review of tools and approaches

KEY MESSAGES

- Few of the many existing tools that assess resilience in low-income communities and households produce an actionable pathway to well-being and a resilience to climate change.
- There is a need to continually monitor and evaluate resilient pathways in vulnerable communities to ensure that development pathways are moving in the intended direction.
- An ideal toolkit for community assessment of resilient pathways in development would have a clear development outcome, with social and biophysical approaches to assess the current state, be smart and flexible enough to work in different development contexts.

Emerging tools developed for addressing resilience

Despite the growing interest in climate resilience and the release of numerous theoretical papers on the topic, there is still no consensus on how it is defined or should be measured in practice. Because resilience is a system property, it needs a dynamic systems approach to measure, with a range of components and relationships, which complicates the choice of indicators. To date, the majority of cases which aim to assess resilience are ex-post, i.e. after the system has successfully coped, adapted or collapsed. This brief reports the results of a review of tools to assess climate resilience intended for use in smallholder agricultural development, with particular emphasis on coping and adapting to climatic and environmental change.

15

Out of 65 potential tools, 15 were chosen following a predetermined selection criteria.

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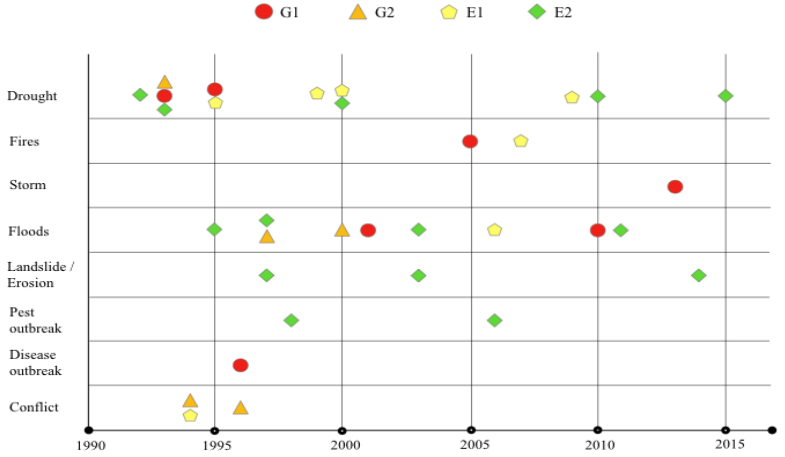
Results: Watershed and livelihood characterisation both confirms and show some surprises

Confirming:

- Recurring multiple risks/challenges in livelihood-landscape systems
- Inherent relative low and/or unclear capacity to cope

Shocks experienced at 4 watersheds (Ghana, Ethiopia) last 25 years



Surprises:

- Trends in rainfall patterns, and internal growing pressure on available resources
- Show stagnant or growing ‘re-greening’

30-year trends of rainfall landuse in 4 watersheds (Ghana, Ethiopia)

	Rain amount	Rain distribution	Vegetation yield	Vegetation trees
ETH1	0	-	(+)	+
ETH2	0	-	(+)	+
GHA1	0	-	(+)	0
GHA2	0	-	(+)	0

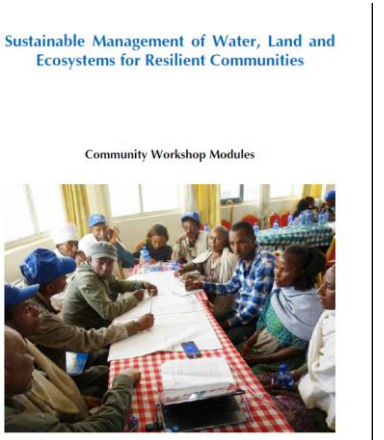
RESULTS: Community developed pathways towards resilience

Protocol modular approach

i. Link livelihoods and landscapes water- ecosystem services (internal and external data)

ii. Map major events, shocks and coping/adaptation strategies

iii. Create a watershed action plan for improve resilience



Analysis of action plans

- Communities proud of plan(!)
- Joint learning of social –environmental linkages
- "*doing more of what is already known*"
- External input needed to make transformative shifts?

Conclusions

- Building resilience is fundamental to stay on sustainability and climate commitments
- …. yet complex and knowledge intensive….
- "*Doing more of what is already known*" is unlikely to be transformative,- innovation, new knowledge and investments are critical
- Whereas policies are supportive, the reframing of SLM/IWRM/ watersheds management needs a '*generation 2.0*' to address resilience in development and climate change

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References

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- Skyllerstedt etal (unpublished) :Building resilience to climate change: Piloting participatory pathways in rural landscapes
- Website http://www.iwmi.cgiar.org/2018/05/the-road-to-climate-resilience/

If you wish to take part in this conversation, please join us at https://wle.cgiar.org/

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ICRISAT International Crops Research Institute for the Semi-Arid Tropics

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