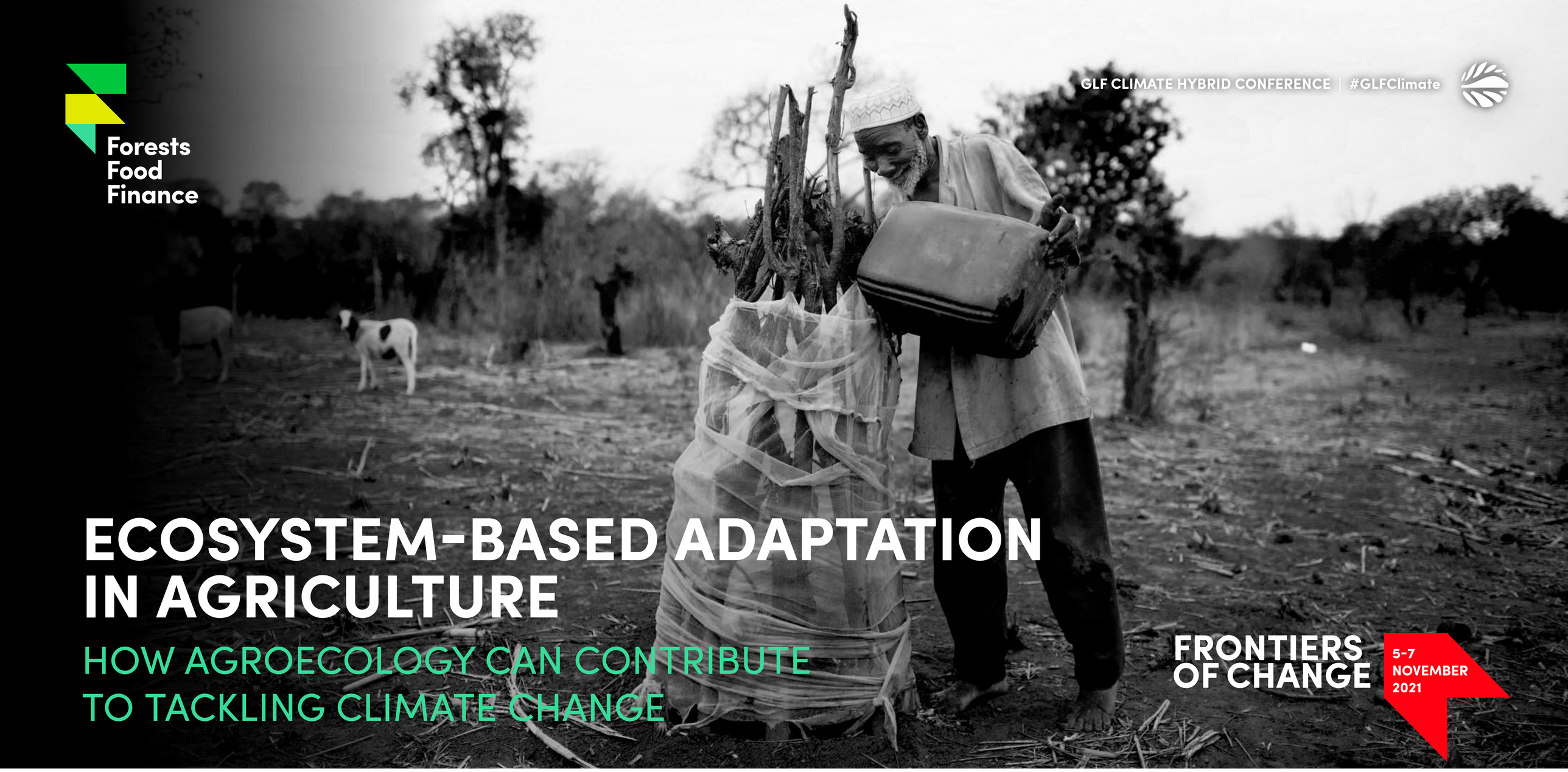


Forests
Food
Finance

GLF CLIMATE HYBRID CONFERENCE | #GLFClimate

ECOSYSTEM-BASED ADAPTATION IN AGRICULTURE

HOW AGROECOLOGY CAN CONTRIBUTE TO TACKLING CLIMATE CHANGE

FRONTIERS OF CHANGE

5-7 NOVEMBER 2021

CIFOR

World Agroforestry

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

(TMG) ThinkTankforSustainability Töpfer Müller Gaßner

WHITE PAPER

Authors

- Jes Weigelt
- Fergus Sinclair
- Friederike Mikulcak
- Harald Lossack

© Patrick Shepherd/CIFOR

Rationale: Food system transformation for climate change resilience

Climate-resilient food systems are food systems1 that address and overcome the following challenges:

- **The global food system did not eliminate hunger and contributes to increasing levels of malnutrition.** Smallholder farmers continue to be those who suffer the most from hunger and poverty. The reason is structural inequalities in the food system. Prevailing high levels of food loss and waste are another indicator of unsustainable food systems.
- **Agriculture is both a casualty of, and driver of, climate change.** Agriculture is responsible for about a quarter of global greenhouse gas emissions, and at the same time it suffers from the impacts of climate change. Agriculture-induced land use changes are also responsible for biodiversity loss. Further, agriculture accounts for the bulk of freshwater use – and contributes to its pollution.
- **Systemic responses are needed to adapt to climate change and to achieve the Sustainable Development Goals.** Climate change poses systemic risks to food systems. It is not sufficient to address only individual factors of the food system, such as agricultural productivity.
- **Sustaining and up-scaling projects and programmes for climate-resilient food systems require an adequate enabling environment.** This enabling environment consists of responsible land and natural resource governance, responsive rural service delivery, market access, access to financial services and inclusive knowledge systems for innovating responses for climate-resilient food systems.

In short, achieving climate-resilient food systems means transforming food systems. The current food systems fail to address these four fundamental concerns. They need to be transformed so that they become climate resilient, mitigate climate change and provide access to nutritious food for all.

1 "A food system gathers all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the output of these activities, including socio-economic and environmental outcomes" (HLPE 2014).

The opportunity: Creating alliances for change between the climate and agriculture communities

Responses to the related challenges of achieving food security and climate resilience too often remain in silos. This applies to strategic approaches, as well as to financing for climate and agriculture. At the Paris Conference of the Parties to the UN Framework Convention on Climate Change, parties acknowledged the importance of addressing food security and climate in relation to joint approaches by climate and agriculture communities. Such approaches are emerging.

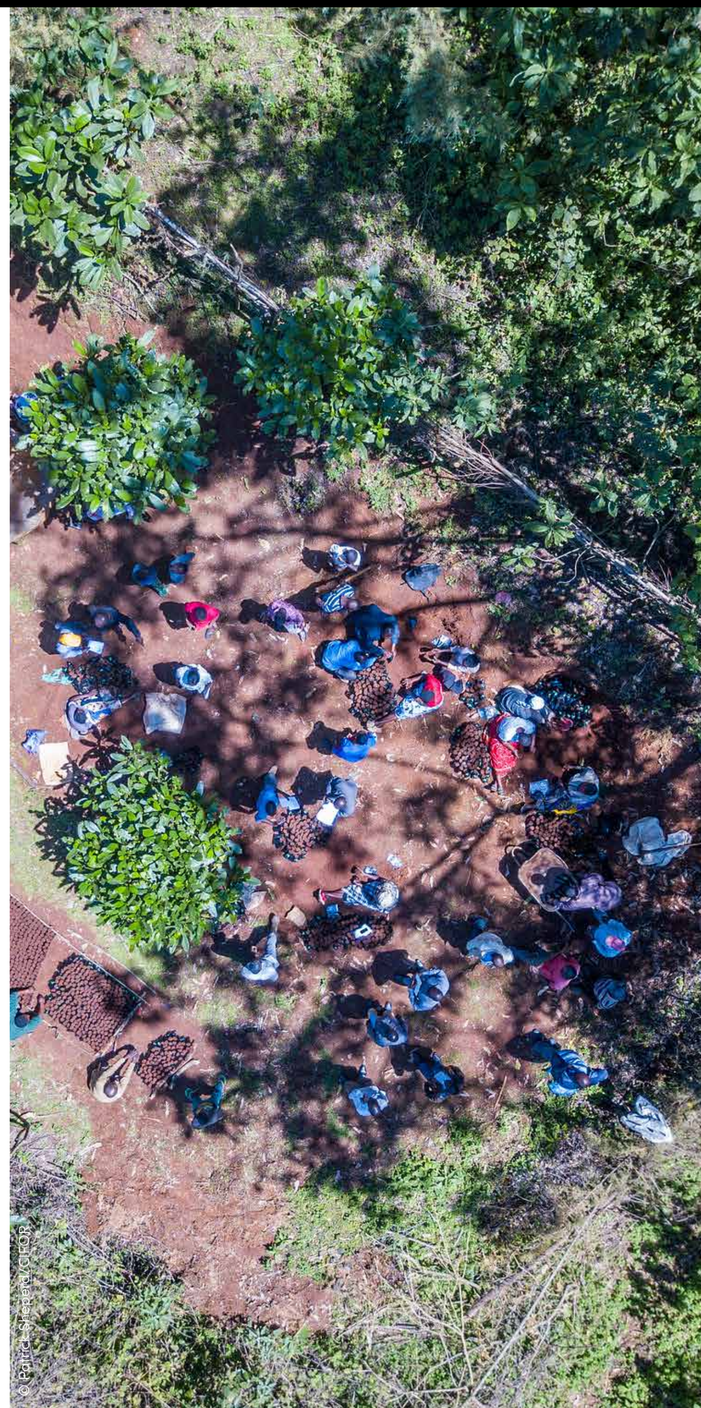
Agroecology is a highly promising, yet insufficiently acknowledged, ecosystem-based adaptation (EbA) strategy in agricultural landscapes. While EbA programmes and projects often apply agroecological practices, there are no systemic linkages between the two policy communities. This paper argues that there is a significant opportunity and potential to sustain and up-scale both approaches, if the two communities would capitalize on the similarities of the two approaches.

Ecosystem-based adaptation and agroecology originate in the climate and agriculture communities, respectively, yet share common principles and approaches that would support joint policies, programmes and strategies:

- **Agroecology is a food systems approach that promotes agriculture based on ecological processes and proactively addresses the various linkages between farmers, consumers and the range of other elements constituting a food system.** Agroecology is based on a set of socio-economic and ecological principles ranging from the plot level to the level of the food system as a whole. Based on these principles, agroecology aims at the progressive realization of the right to food.[2]
- **Ecosystem-based adaptation has emerged from the climate and biodiversity communities as a** systemic adaptation response. EbA is defined as the "use of biodiversity and ecosystem services to help people adapt to the adverse effects of climate change". In a nutshell, EbA could be described as a nature-based solution[3] approach to adaptation.

2 State Parties to the Covenant on Economic, Social, and Cultural Rights have recognized the fundamental right of everyone to be free from hunger.

3 "Nature-based solutions are approaches that work with and enhance nature to address societal challenges. They encompass a broad range of actions that protect, restore, or sustainably manage ecosystems (including natural, semi-natural, or created) to provide benefits to people" (Chaussan et al. 2020).



Agroecology and ecosystem-based adaptation share key principles which provide a basis for them to mutually benefit from each other's strengths. Both approaches are systemic in nature. Yet, agroecology does not explicitly consider existent or projected climate conditions. This creates a clear opportunity to employ agroecological practices within an EbA framework so that they are explicitly used to address specific adverse effects of climate change while also contributing to the overall resilience of agricultural and food systems.

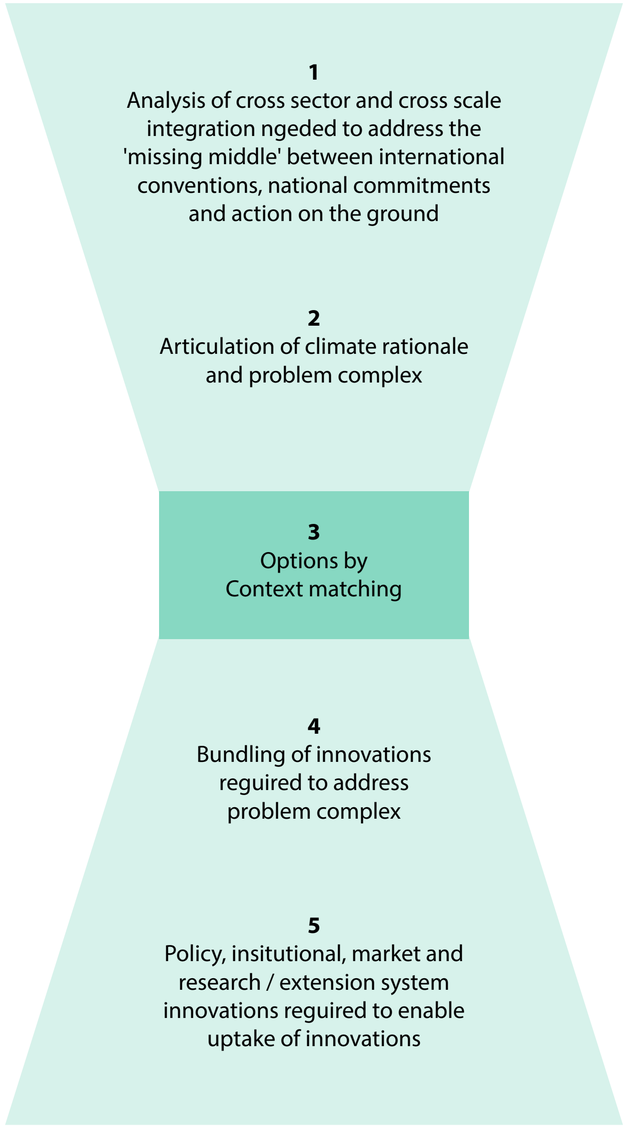
Combining agroecological approaches and EbA can increase the capacity and momentum needed to tackle the gap that exists between international conventions, national commitments and action on the ground. It requires innovative approaches and significant investments to translate national commitments into local-level action. In terms of governance, there is often a missing middle between the capacities of local-level organizations and the capacities of national-level organizations to reach out to the local level. Overcoming this missing middle is key to addressing the wicked problems of rural development that undermine sustainability of EbA and agroecology projects, such as access to finance and markets, responsive rural service delivery or land tenure. The shared principles and practices of agroecology and EbA allow for new co-operations between the two communities to address the challenges of the missing middle.

Proposed action at national and global levels

National level

The following five steps can guide country-level implementation of agroecology as an ecosystem-based adaptation approach in agricultural landscapes (hourglass model):

- **Identify relevant national commitments emerging from international agreements and national commitments regarding climate and food security and corresponding programmes and projects designed to achieve those.** To identify synergies between approaches to adapt to climate change and to achieve food security, it is key to strengthen platforms that facilitate co-operation between climate and agriculture communities at national and local levels.
- **Map the current and projected climate change impacts and the contextual factors relevant to developing adapted responses.** This step involves mapping the systemic challenges posed by climate change in a specific landscape (adaptation needs) and the ecological and social conditions that influence the suitability of agroecological and EbA practices. This step should not only consider existing adaptation needs but also the projected changes to ensure that the practices to be identified are also suitable for future climatic conditions.
- **Apply an options-by-context approach to combine ecosystem-based adaptation with agroecological practices.** Different agroecological practices (options) match the social and ecological circumstances that prevail in any given locality (context). An options-by-context approach allows



mapping adaptation needs to agroecological practices that can deliver appropriate adaptation responses in different contexts. It is key that those options are refined locally by linking local, traditional knowledge to state-of-the-art scientific knowledge.

- **Bundle agroecological practices identified through the options-by-context approach to address the systemic challenges posed by climate change.** Given the complexity and ever-changing nature of food systems and climate challenges in different contexts, it is necessary to offer a mix of solutions that can be adapted to changing circumstances.
- **Analyse the necessary steps to address the missing middle in order to create an enabling environment that allows for the up-scaling of agroecology as EbA.** The options identified in the previous step require an enabling environment; they require the missing middle to be addressed. This enabling environment changes slowly. Hence, it cannot be an afterthought but must be part and parcel of interventions right from the beginning.

Global level

Building alliances for change between the agriculture/food and climate communities drives the necessary transformation of the food system. Policy communities are powerful entities. Yet, the challenge of up-scaling ecosystem-based adaptation and agroecological programmes is too big to be taken up by one community alone. This applies to the global as well as the national and local levels. Creating an enabling environment requires new co-operations and partnerships for change that can address persistent challenges to the sustainable use of landscapes. Such partnerships are also key to altering the global financial architecture to provide funding for systemic approaches to achieve climate-resilient food systems.

Forests
Food
Finance

#GLFClimate

GLOBAL LANDSCAPES FORUM

The Global Landscapes Forum (GLF) is the world's largest knowledge-led platform on integrated land use, dedicated to achieving the Sustainable Development Goals and Paris Climate Agreement. The Forum takes a holistic approach to create sustainable landscapes that are productive, prosperous, equitable and resilient and considers five cohesive themes of food and livelihoods, landscape restoration, rights, finance and measuring progress. It is led by the Center for International Forestry Research (CIFOR), in collaboration with its co-founders UNEP and the World Bank and Charter Members.

Charter Members: CIAT, CIFOR, CIRAD, Climate Focus, Conservation International, Crop Trust, Ecoagriculture Partners, The European Forest Institute, Evergreen Agriculture, FSC, GEF, GIZ, ICIMOD, IFOAM - Organics International, The International Livestock Research Institute, INBAR, IPMG, IUFRO, Rainforest Alliance, Rare, Rights and Resources Initiative, SAN, TMG-Think Tank for Sustainability, UNEP, Wageningen Centre for Development Innovation part of Wageningen Research, World Farmer Organization, World Agroforestry, World Bank Group, World Resources Institute, WWF International, Youth in Landscapes Initiative (YIL)

Funding partners

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

Federal Ministry for Economic Cooperation and Development

THE GOVERNMENT OF THE GRAND DUCHY OF LUXEMBOURG

FOLUR Food · Land Use · Restoration

gef

© Olivier Girard/CIFOR

@GlobalLF @GlobalLandscapesForum

bit.ly/GLFClimate2021