

Reflecting on the past: Diverse agroecology practices/perspective and integration into agricultural production

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Introduction

- Current food systems have failed to provide adequate, safe and nutrition food for all
- Inequality, environmental degradation and climate change remain major concerns in Africa
- Food systems in Africa are facing various shocks and risks that require building resilient agroecosystems
- Africa lagging behind in the realization of the right to food
- Africa Agrilandscapes are dominated by agroindustrial food systems that are largely monoculture - oriented

In 2020, 281.6 million Africans were undernourished, an increase of 89.1 million in 2014 (FAO 2021)

<https://www.fao.org/3/cb7496en/cb7496en.pdf>



Introduction

- ❖ **Agroecology is a holistic and integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of sustainable agriculture and food systems (FAO, 2018)**
- ❖ **It's a practice as well as a social movement that are promoting the transition to fair, just, and sovereign food systems (FAO, 2018; Gliessman, 2015)**
- ❖ “..... builds climate resilience in durable and affordable ways; reduces reliance on expensive chemical inputs; builds on farmer-to-farmer and intergenerational knowledge exchange, and, generates employment in rural areas.....”
(Gliessman, 2021)



Agroecology Transition

- ❖ Agroecological transitions (AET) are systemic transformations that involve application of ecological and social approaches to food systems
- ❖ AET must capture how power relations, justice, and participation are debated and practiced in AE
- ❖ AET Must empower food systems actors to self-organise



Photo: Mukhovi

Why Does Africa Need Agroecology Transition?

SDG 1: Poverty alleviation

SDG 2: Zero hunger, food security, nutrition and health

SDG 5: Gender self-determination

SDG 8: Youth engagement

SDG 10: Human rights

SDG12: Responsible production and consumption

SDG 13: Climate change resilience

SDG 15: Biodiversity and agrobiodiversity



Principles of Agroecology

- Recycling
reduction
 - Soil health
health
 - Biodiversity
 - Economic diversification
 - Social values and diets
 - Connectivity
 - Participation
 - Land and natural resource governance
 - Co-creation of knowledge
- Input
-Animal
-Synergy
-Fairness



Wezel et al 2020 <https://doi.org/10.1007/s13593-020-00646-z>

<http://www.fao.org/3/i9037en/i9037en.pdf>

Agroecology Practices

- ❖ Crop rotation
- ❖ Polyculture several crops planted in same field (increased diversity in the farming systems)
- ❖ agroforestry
- ❖ cover crops and mulching
- ❖ Green manure and maintaining soil cover
- ❖ crop-livestock systems
- ❖ Conservation Agriculture
- ❖ Food forests (integration of cover crops, grasses, trees, crops, tubers)
- ❖ Organic agriculture
- ❖ Shift from conventional pesticides to Organic and biopesticides

See also <https://doi.org/10.1186/s40066-022-00356-7>



Photos: Mukhovi

Agroecology Movements and Impacts in Africa

- ❖ Create and strengthen existing social movements that create political will among policy makers

Examples

- ❖ South America –global- La Vía Campesina
- ❖ Senegal-Association of Senegalese Peasant Seed Producers
- ❖ Uganda- Africa-Alliance for Food Sovereignty in Africa
- ❖ Kenya-Kenya Organic Agriculture Network
- ❖ Collective action e.g cooperatives

- **Agroentrepreneurs**
- **Advocacy**
- **Capacity building**
- **Trade campaigns**
- **Information dissemination**
- **Market information**
- **Land and territorial campaigns**
- **Seeds autonomy**
- **Food sovereignty**

ETC

Examples of transition pathways

- ❖ Learning from the resilience and robustness of Africa's smallholder farms
- ❖ Transition to agroecology requires significant structural changes and farmer-to-consumer solidarity



Traditional shared meal- "Apthapi"- promoting agroecology in urban environment by using ancestral knowledge to grow and prepare potatoes and other tubers-Sucre (Bolivia) **Photo: Lianque A.**

In a food systems research in Kenya, Both agribusiness and smallholder farms were found to use Highly Hazardous Pesticides (HHP) with ingredients such as Glyphosate, Imidacloprid Chlorpyrifos, and Mancozeb (Ottiger et al 2019)

<https://boris.unibe.ch/132116/1/Policy%20Brief%20Kenya%20Layouted.pdf>

Smallholders use less pesticides but exposure risks are much higher



Photo : Mukhovi

Cont. Transition pathways

- ❖ Restore diversity in large scale monoculture (IPES, 2018) through intergation of agroecological practices e.g. crop rotation, use of biopesticites, integrating vegetation
- ❖ Empowering women and young people to drive transition to agroecology through intergenerational knowledge sharing
- ❖ Promoting farmer-to-farmer knowledge sharing



Wheat monoculture in Kenya rotated it with carnola and green peas and integates livestock and vegetation



Photos: Mukhovi

Cont. Transition pathways

- ❖ Technological innovation that is appropriate
- ❖ Transdisciplinary co-creation and sharing of research knowledge that has influence on not only science but also policy and practice (see <https://doi.org/10.1016/j.envsci.2019.10.003>)
- ❖ Promote traditional African foods especially among the youth



Women Poultry project started through transdisciplinary research in Zambia
Photo: Kantashula E.



CA technology Photo: Mukhovi



Co-production and sharing of knowledge and design of community project as part of transdisciplinary research in Kenya
see Jacobi et al 2022

DOI: [10.1016/j.envsci.2021.12.017](https://doi.org/10.1016/j.envsci.2021.12.017)

Photo: Mukhovi

In summary agroecology transitions Requires;

- ❖ Changes in production practices
- ❖ Changes in social- economic relations
- ❖ Changes in knowledge co-production and sharing
- ❖ Changes in institutional frameworks
- ❖ Political will
- ❖ Change of mindset



Consumer-Producer
networks/solidarity
Photo: Mukhovi

Thank you for listening

