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BRIEF SERIES | 07

Agroecological Territories and Integrated Landscape Approaches to Advancing Food Systems Transitions in Africa

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SUMMARY

Africa faces deep interconnected and systemic socio-economic and environmental challenges. Formal economic activity tends to be extractivist, causing biodiversity loss, land degradation and water and soil pollution. Integrated responses are required if effective and restorative natural resource management (NRM) and sustainable agricultural production are to be implemented. The core framing for the briefing is 'agroecological territories' that comprise three domains: the adaptation of agricultural practices, the conservation and sustainable use of biodiversity, and the development of embedded food systems.

Key emerging approaches include agroecology, agroforestry, integrated landscape management, territorial markets and participatory multi-actor platforms and systems of governance. There is evidence of positive environmental and socio-economic impacts arising from these approaches. Key constraints to their realisation include limited financial and material resources, knowledge and skills, institutional and policy support, adverse environmental conditions, and social and cultural factors.

The recommendations for priority funding include short- and long-term support for the emerging practices and integration in wider participatory and multidisciplinary NRM; diverse local markets for fresh produce and participatory guarantee systems; participatory action research for gaining a deeper understanding to inform practice and to monitor and measure impacts; capacity development of technical content and processes, especially targeting practitioners, women, youths, extension officers and local authorities; the promotion of farmer field schools and other peer-to-peer learning exchanges; processes of policy development; and comprehensive monitoring and evaluation (M&E) and communications to track, package, and share results and lessons.

INTRODUCTION

The impacts of farming practices extend beyond the boundaries of individual farms, affecting the soil, water, biodiversity and land. Conventional agricultural methods that emphasise the use of synthetic fertilisers and toxic pesticides alongside land-use changes from natural ecosystems to cultivated areas are major contributors to soil and land degradation, reduced water quality and availability, biodiversity loss and climate change. Poor environmental management and natural resource management (NRM) beyond farming similarly undermine agricultural productivity and sustainability. Recent efforts have therefore been initiated to connect agricultural production to broader landscape management, but they remain marginal and consequently widespread environmental damage persists.

The key concepts in this briefing include landscapes, ecosystems and agroecological territories. 'Landscapes' refer to physical areas defined by natural features such as topography and riparian systems, incorporating 'ecological infrastructure' such as water catchments and ecological corridors. 'Ecosystems' encompass the interactions between living entities and their environment, which function as cohesive units. Ecosystem services are vital to human existence, providing resources such as food and water, purifying air and water, regulating floods, cycling nutrients, pollination, pest and disease control, temperature modulation and disaster risk reduction.

'Agroecological territories' are defined as 'places where a transition process towards sustainable agriculture and food systems is engaged' (Wezel et al. 2016:132). These territories consist of three domains: the adaptation of agricultural practices; the conservation of biodiversity and natural resources; and the development of embedded food systems.

'Adaptation of agricultural practices' entails transitioning from conventional to sustainable methods that integrate ecological processes and ecosystem services across multiple levels. This includes applying agroecological principles to recycling and using renewable resources; enhancing soil health; reducing harmful inputs; promoting on-farm biodiversity, mixed farming and synergies between on-farm elements; and interfacing with non-cultivated areas.

Poor environmental management and natural resource management beyond farming similarly undermine agricultural productivity and sustainability

'Conservation of biodiversity and natural resources' focuses on the governance of land and resources, emphasising the restoration, sustainable use and management of both on-farm and off-farm biodiversity.

'Development of embedded food systems' involves initiatives that root food systems in specific landscapes and ecosystems and which integrate both farm and non-farm activities to foster local economies and promote food security.

Across these domains, local actors can play a central role by adhering to agroecology principles of participation, knowledge co-creation and fairness. A territorial approach offers principles and practices for context-specific ecosystem regeneration, iterative learning and local knowledge to enhance resilience.

Key stakeholders include farmers, communities, landowners, consumers, government officials, traditional authorities and financial institutions.

MOTIVATION

Why does this issue matter?

The ecological foundation of agricultural production needs to be strengthened, as must be the reciprocal relationships between agricultural production and the ecosystems within which it is embedded. This includes restoring and protecting the basic natural conditions for food production and sustainable production practices while maintaining and enhancing the ecosystem services provided by nature. A territorial approach to agroecology can synergistically respond to the key challenges to food systems transformation, landscape management and ecosystem functioning – offering opportunities to scale transitions for impact and to foster inclusive and cross-sectoral dialogue about participatory transformation.

What is the relevance to climate change adaptation and resilience?

The discourse on climate change resilience is increasingly being centred on ecosystem-based adaptation (EbA), with an emphasis on environmental protection. Agroecology integrates EbA but it also extends it by incorporating social justice and economic democratisation so as to focus on processes and practices that together produce food and other ecosystem services. Agroecology therefore offers a holistic approach to climate change adaptation and resilience. An agroecological territories approach provides a comprehensive framework within which to reconnect agriculture, environment, food and health across scales and social–ecological domains. Territories constitute a relational space in which networks, alliances, and resources can be brought to bear on specific locally relevant issues (Losch & May 2023).

Why should philanthropies be interested?

There is an enormous potential to transform both food systems and environmental protection through integrated and participatory approaches. Sectoral and technological solutions in isolation have typically proven inadequate to address the interconnected challenges of natural resource degradation, food insecurity and climate change. However, there are gaps between interventions that focus on large-scale and longer-term change and those which support localised practice – which interventions face the challenges of scaling out beyond the locality and short-term project cycles. Philanthropies can fill the gaps between these geographies and economies of scale by adopting a territorial approach to investment in feasible, locally driven solutions that can be scaled to meet regional and global commitments to promoting sustainable and just transformations of food systems.

CONTEXT

Large parts of Africa face economic stagnation, rising poverty, hunger and food insecurity. Population growth, urbanisation and forced migration place pressure on natural resources and threaten critical ecosystems. Disputes over land use and access are key points of tension. Multiple interrelated sociocultural practices exist to conserve and manage natural resources, but there is a lack of popular participation in decision-making and governance structures.

The environmental threats facing Africa include:

- land degradation and soil erosion;
- habitat fragmentation and destruction;
- biodiversity loss (especially through deforestation, bush encroachment and alien invasive species), resulting in reduced plant cover and fodder availability and quality; and
- reduced water availability, access and quality.

Land-use change – especially the expansion of agriculture, mining and urban settlement – is a major cause of climate change and biodiversity loss (Assèdé et al. 2023; Birhanu et al. 2024; Geißler et al. 2024; NEPAD 2015).

Africa has highly varied climate, soil and landscape conditions that require context-specific analysis and response. However, overall, a pattern exists of stagnant agricultural productivity and yields, and dry-season feed shortages, all intensified by climate change. The causes of declining productivity include unsustainable agricultural practices such as monocropping, excessive use of synthetic inputs, nutrient mining, overgrazing by domestic livestock, and fire suppression. Smallholder farmers have few resources with which to improve practices and they are marginalised by policies that prioritise intensive production for export and cash crops over local food systems.

Conventional agriculture may lead to some short-term yield increases, but could also increase social inequality and environmental degradation. Agroecological practices rooted in traditional practices are widespread but poorly supported in government policies and programmes. Local markets still underpin diverse food systems, but they are under threat of being displaced by corporate value chains and supermarkets.

Key practices arising

Key responses to the context are agroecology, agroforestry, integrated landscape approaches (ILAs), territorial markets and participatory multi-actor governance systems.

Diverse agroecological practices are widely used in Africa, strongly rooted as they are in traditional and indigenous knowledge systems (Table 1). These are not simply fringe elements; they are often deeply embedded in a wide range of African farming systems.

TABLE 1: APPROACHES, PRACTICES AND OUTCOMES

Resource	Approach	Practice	Outcome
Soil	Agroecology	Minimised soil disturbance	Reduced erosion and improved fertility and moisture; carbon sequestration; emission reductions
		Compost, manure, green manures, organic fertiliser use	
		Contour farming	
		Legumes for nitrogen fixation	
		Cover cropping, crop rotation, intercropping	
		Rotational grazing	
		Silvo-pasture	
Water	Agroecology	Earthworks to channel water flow	Improved water supply and quality
		Groundwater recharge	
Agricultural biodiversity	Agroecology	Fallowing	Improved ecological function and reduced failure risk; improved vegetation cover
		Crop, forage and variety diversification	
		Biological pest controls	
	Agroforestry	Multi-use tree and shrub integration	Improved resource sufficiency; nutrient cycling; reduced impacts of wind and drought
Land	Integrated landscape approach (ILA)	Community-based, participatory management	Coherent, connected, and scalable landscape management; increase in availability of cultivable land; improved rights and resource access
		Rangeland rehabilitation	
		Shifts from livestock to wildlife-based land uses	
		Natural regeneration	
		Selective species introduction and diversification	
		Ecological corridors	
		Biomass recycling	
		Invasive species control	
Food products	Territorial markets	Local markets, street vendors, community kitchens	Improved access to nutritious, sustainable and culturally appropriate food and thriving local economies; increased awareness of local food issues; greater agency for producers and consumers; resilience against shocks
		Participatory guarantee systems	

Agroforestry refers to integrating harvestable trees into farming systems, providing benefits such as soil fertility enhancement, water retention, and sources of fodder, fuel and fruits. Agroforestry is typically multi-functional and can be designed and managed to favour the provision of specific ecosystem services, for example, tree selection for erosion control, dry-season livestock feed or soil fertility.

Territorial markets bring producers and consumers closer together and reduce the distances food travels before consumption. Local markets emphasise small-scale producers and vendors, diverse and fresh produce based on local preferences, and multi-actor and participatory planning, implementation, and learning. **Participatory guarantee systems** (PGSs) bring together supply-system actors to certify the organic quality of locally produced foods based on farm visits, building on a foundation of trust, social networks and knowledge exchange. PGSs have expanded in Sub-Saharan Africa (SSA), with groups currently operating in 22 countries.

Participatory multi-actor processes and governance systems ensure the inclusion of all actors, which allows for collective land regeneration and adaptive management based on co-learning and reflective practice. Recognising and working to overcome power imbalances is critical. Context-specific analysis and planning are required because each place has its unique situation. Multi-stakeholder platforms (MSPs) have been developed to facilitate negotiations on trade-offs and synergies between conservation, development, and livelihoods, and to reconcile multiple interests.

Impacts

Agroecology, agroforestry and ILA have shown evidence of improvements in:

- food and nutrition security;
- yield and productivity gains;
- climate and landscape resilience;
- the rehabilitation of marginal and abandoned landscapes;
- below-ground carbon sequestration and emissions reductions;
- soil fertility and soil health;
- coexistence with biodiversity through wildlife-friendly practices and ecological approaches; and
- social cohesion.

MSPs have been shown to narrow policy-implementation gaps at a community level. Customary rules and regulations are often better able to respond to local problems than statutory laws and policies. Participatory NRM has increased women's voice and agency in the governance of natural resources, enabling possible strategic and measurable impacts on women's time and labour allocation.

Integrating agroecological and territorial approaches promotes inclusive and cross-sectoral dialogue for broader transitions of food systems. These approaches provide opportunities to deal with power asymmetries in food systems and empower small-scale farmers, indigenous people, vulnerable groups and women, and they can reconnect diverse farmers with their communities and territories. They also promote dialogue between farmers and facilitate engagement with non-agriculture actors such as rural development, health, tourism and waste management to advance agroecology.

Integrating agroecological and territorial approaches promotes inclusive and cross-sectoral dialogue for broader transitions of food systems

The practical focus of initiatives is primarily at the scales of farm and landscape, with the emphasis on integrating activities at these scales. Landscapes encompass the diversity of land uses and social, ecological, cultural and economic values in an area. However, the most effective programmes integrate multi-level policy and governance processes and structures, a key role being played here by local and national governments. The devolution of agroecological principles and national policy to the landscape context is essential to their effective local uptake.

Key levers for the transition of food systems are:

- national agroecology strategies that integrate ecosystem and landscape elements;
- strengthened local markets for environmentally friendly, cheap and easily accessible fresh produce; and
- participatory, inclusive, multi-actor, multidisciplinary and locally driven initiatives to guide planning, implementation and learning.

HURDLES TO TRANSITION

Possible hurdles to the transition to an agroecological approach can be categorised as financial and material resources, knowledge and skills, institutional policy and support, environmental factors, social and cultural factors, and the management of trade-offs. These are expanded upon below.

Financial and material resources: Smallholder farmers lack access to adequate natural resources (especially land and water) and the finances are inadequate to support comprehensive agroecology, agroforestry and integrated landscape approaches (Assèdé et al. 2023; Birhanu et al. 2024; Geißler et al. 2024; Mashele & Auerbach 2019; Nabaggala 2023).

Knowledge and skills: Agroecology is knowledge-intensive. Essential local and indigenous knowledge is being lost amid the processes of agricultural modernisation. External knowledge that could enhance local expertise seldom reaches practitioners due to understaffed, underskilled and poorly equipped extension services. Landscape restoration studies tend to focus on biophysical and environmental aspects, and therefore knowledge exchange across restoration, conservation and agriculture, is lacking. Landscape approaches that integrate multi-actor social–ecological territorial governance offer promise, but remain nascent in their conceptualisation and implementation (Assèdé et al. 2023; Birhanu et al. 2024; Geißler et al. 2024; Mashele & Auerbach 2019; Nabaggala 2023; Siangulube et al. 2023).

Institutional and policy support: Agricultural policies and extension services mostly prioritise conventional agriculture, an export orientation, and large-scale infrastructure. Added to this, agricultural and environmental programmes tend to work in silos. Despite handling 80% of Africa's food, wholesale markets lack government investment. Unstable governance, land-tenure issues, market volatility, unco-ordinated programmes, bureaucratic hurdles, and insufficient adaptation of agroecological principles to local conditions hinder effective policy implementation (Birhanu et al. 2024; IPES Food 2024; Reed 2024; Siangulube et al. 2023).

Environmental factors: Droughts, erratic rainfall, floods and extreme temperatures may hinder the adoption of agroecological practices even though agroecology may be an effective response over time. Environmental threats could possibly lead to an increase in shifting cultivation and synthetic fertiliser and pesticide use as farmers seek solutions to short-term challenges (Assèdé et al. 2023; Geißler et al. 2024).

Social and cultural factors: Behavioural changes by producers and consumers are difficult to instil without consistently demonstrating the benefits and access to information. Social and gender norms restrict the mobility of women, the elderly, and people with a disability in many areas. Entrenched power inequalities can impede the collective action required to make successful agroecological transitions (Birhanu et al. 2024; Geißler et al. 2024; Mashele & Auerbach 2019; Reed 2024).

Management of trade-offs: Trade-offs require prioritisation and management through transparent participatory processes, including those related to technologies, mixed farming and competing uses for crop residues. Trade-offs may involve yield and production reductions in intercropped versus mono-cropped systems, which could possibly affect the income derived from crop sales.

Essential local and indigenous knowledge is being lost amid the processes of agricultural modernisation

Agroecological practices and integrated landscape approaches are receiving greater attention in Africa, although support remains largely project-based and is not yet embedded in public-sector planning. Global initiatives and processes offer support and finance for biodiversity conservation, integrated landscape management and, to a lesser extent, territorial markets. However, funding for grassroots or local initiatives remains both limited and fragmented.

RECOMMENDATIONS TO PROMOTE TRANSITIONS

Donor support should focus on the drivers in the food system that are contributing to ecosystem degradation and biodiversity loss rather than simply individual poverty-reduction projects. A site-level emphasis alone cannot deliver justice or sustainability. Funding support can be divided into short-term direct funding for material practices and longer-term funding of ILA and MSPs. Over time, funding could be well allocated to territorial-scale, place-based initiatives that arise from the ground. Philanthropic funding should be designed as catalytic interventions (initiating processes that can later operate without ongoing donor support), including support to develop principles, systems and tools.

1. **Adapting agricultural practices:** Practitioners require immediate technical and material support to consolidate and extend agroecological practices and to shift from conventional on-farm practices over time. In the longer term, comprehensive agroecosystem redesign is needed, placing emphasis on participatory and integrated land and natural-resource governance that will link on-farm practices to wider landscape management and territorial food systems. Secure land tenure and access to natural resources underpin any long-term success.

2. **Conservation and sustainable use of biodiversity and natural resources:** Community-based NRM can ensure the inclusion of local context and knowledge. Ecological and socio-economic knowledge should be integrated into transdisciplinary processes. Promoting sustainable management and use as a response to bush encroachment and alien invasive plants may be more successful than eradication and it can generate income from biomass value addition (e.g., conversion into compost, furniture construction, chipping for energy production).

3. **Developing embedded food systems:** To achieve this goal, invest in territorial markets, including local fresh produce markets (municipal and farmer-led), public procurement from local producers, PGS, market information systems, and participatory governance processes and structures. Investments are needed in local low-technology storage, transport and processing infrastructure.

4. **Enhancing social organisation and governance:** Landscape approaches do recognise the different users of the landscape and there is a need for governance to convene different landscape users. Implement multi-actor, multi-level, transdisciplinary, gender responsive, socially inclusive and participatory processes at the landscape level, emphasising the key role that local actors should play in context-specific analysis, planning and implementation. These can facilitate the development of shared visions and common goals, dialogue, negotiation and collaborative action and learning. Resources are required for process design and facilitation, secretariat functions and stakeholder meetings. Technical and advisory groups can support the co-creation of knowledge. Invest in leadership by youths and women.

Evidence is needed on the ecological and socio-economic dynamics and impacts of these approaches. **Participatory action-oriented research** driven by stakeholder needs and priorities can deepen our understanding of complex relationships, inform and support practice, and measure diverse impacts. This research requires long-term and transdisciplinary approaches and partnerships that prioritise process, inclusion, structured experimentation, learning and adaptation. Fund research focusing on practices which offer multiple benefits, including environmental protection, climate mitigation and adaptation, health and nutrition, and on negotiating trade-offs and realising synergies. Develop systems for recognising and integrating local/indigenous and formal/scientific knowledge. 'Innovation sites' or place-based initiatives can root practice and learning and generate high-quality data that can underpin decision-making. Support is needed for their design and implementation.

Capacity development: Invest in:

- building technical know-how and complex understandings of landscapes, spatial processes and the interconnections with food systems;
- managing and implementing interdisciplinary approaches;
- curriculum development at multiple levels and institutions;
- reskilling and strengthening extension services;
- ongoing training and mentorship for practitioners, including targeted training for women and youths;
- building the capacity of local authorities in the areas of content and managing complex institutional processes; and
- implementing participatory learning processes, including farmer field schools and peer-to-peer exchanges.

General awareness-raising includes promoting the techniques and benefits of agroecological and integrated landscape approaches for diverse audiences, including consumers and the general public.

Supportive policies are required to promote and resource these approaches. Cross-sectoral multi-scale public policies aligned with agroecology and territorial approaches that link rural and urban policy and planning are needed. International and continental agreements form a strong basis from which to build domestic policy support, but they require 'domestication' and integration into existing policies. Central and local government support is essential to attaining positive results. Investments are needed for civil society advocacy and for policy development processes, which require content and process expertise and multi-actor meetings.

Investment in **M&E and communications** in diverse formats to a range of audiences is essential for all of the above to allow for learning, sharing and adaptive management.

Central and local government support is essential to attaining positive results

Overall, a shift is needed from project-based to wider programme funding that considers locally driven multi-actor territorial processes. Align different sources of funding for territorial approaches, with the right balance between public and private investment, avoiding the duplication of effort or investment at cross-purposes in the same space. Development approaches are likely to have different orientations and strategies are therefore likely to be contested, especially by corporate or big-food interests. Resourcing is needed for territorial coalitions to challenge such dynamics over the mid-to-long term. Resources are required to prepare financing frameworks and to build capacity in investment management and coordination. Transitional financial support may be needed to repurpose and reallocate government subsidies from conventional agriculture and extractivist activities towards environmentally friendly practices.

Are there current initiatives that require greater recognition and support?

A 2014 review for NEPAD documented 87 integrated landscape initiatives in 33 countries (NEPAD 2015), but it is evident that fully realised forms of landscape governance are not common. There are some big continental initiatives, for example, NEPAD's African Resilient Landscapes Initiative (ARLI), the African Forest Landscape Restoration Initiative (AFR100) and the Great Green Wall Initiative. There are some potential dangers of greenwashing and worse (e.g., land-grabbing, forced removals), especially in initiatives based on financialising nature, such as REDD+, carbon and biodiversity offset programmes, and payment for ecosystem services. But many smaller bottom-up initiatives may offer greater innovation and sustainability as they are rooted in local practice and driven by local agents. Currently, these receive limited support. Intermediary organisations or networks may play an important role in facilitating the connection between larger donors and smaller initiatives.

CASE STUDIES

COLANDS

The 'Collaborating to Operationalise Landscape Approaches for Nature, Development and Sustainability' (COLANDS) initiative undertakes multi-stakeholder research and action using an ILA approach. It has three main locations, namely, the Kalomo District in Zambia, the Western Wildlife Corridor in Ghana, and watersheds in West Kalimantan in Indonesia. In Africa, COLANDS convenes platforms for participatory research and decision-making, dealing with land-use change, conflict resolution and social inclusivity in landscape management in order to support biodiversity and human livelihoods. The work spans the domains of laboratory-based research on improving soil health and plant genetic resources; developing natural resource value chains; enabling energy transitions and climate resilience; and facilitating good governance for human well-being and environmental health. This holistic approach to stakeholder engagement and research to action translation provides valuable insights into collaborative natural resource management.

Key features

1. Food and nutrition security transcends traditional agricultural landscapes to natural resource systems such as forests and rangelands, calling for their collaborative and sustainable management by involving multiple institutional and resource-user stakeholders.
2. Diversification can improve agricultural productivity through agroforestry, alternative crops and off-farm livelihoods such as natural resource harvesting (including game-meat and non-timber forest products) for local food and nutrition security.
3. The implementation and uptake of agroecological practices is highly dependent on local contexts, requiring local stakeholder participation in defining landscape priorities and developing circular economies for sustainable value chains, which constitute territorial markets.

Meat Naturally Africa

Meat Naturally Africa (MNA) is a regenerative agriculture initiative that promotes sustainable pasture-based livestock farming across African communal rangelands by incentivising and tracing regenerative red meat value chains. The initiative started in Alfred Nzo District in South Africa based on the work by Environmental and Rural Solutions (ERS) and it has expanded to other locations. By collaborating with local pastoralist communities and traditional authorities, MNA integrates traditional grazing with defined rangeland restoration activities so as to increase the quality of livestock and enhance biodiversity. Participants who adopt restoration practices are linked to mobile auctions to sell environmentally friendly meat into formal markets. MNA aims to create a self-sustaining model of meat production that is ecologically sound, socially responsible and economically viable for rural communities.

Key lessons

1. Regenerative grazing combats land degradation, improves ecosystem and climate resilience, and enhances carbon sequestration.
2. Financial incentives and market access encourage sustainable practices, rendering conservation economically viable.
3. Building the skills and knowledge of small-scale producers, along with working alongside traditional governance institutions, ensures yield and community buy-in.
4. Developing value chains that prioritise ethical, sustainable sourcing creates consistent market demand, supporting long-term conservation viability.
5. Implementing a remote-sensing traceability system and mobile abattoirs has the potential to revolutionise red meat consumption and production patterns.

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