Easing and de-risking the transition to agroecology for self-reliance and resilience in humanitarian contexts

Barbara Adolph, Sidsel Koordt Vognsen, Rigendra Khadka, Mirna El-Sabbagh, Geofrey Murithi, José Morell-Ducós, Pratik Adhikari, Joseph Lobeyo Erot, Rikke Fabienke, Aoife Keniry, Patricia Keshishian, Duaa Khashan, Beatrice El Khoury, Victor Kipruto, Ghassan Makaram, David Ndwiga, Bashar Abu Saifan, Sara Salloum, Mette Lund Sørensen and Karin Wied Thomsen

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Abbreviations

Agrimovement	The Agricultural Movement in Lebanon
agromet	Agrometeorological
CAET	Characterisation of agroecological transition
DCA	DanChurchAid
FAO	Food and Agriculture Organization of the United Nations
FGD	Focus group discussion
FSA	Food system assessment
HAI	Himalayan Agroecology Initiative
HDP	Humanitarian–development–peace (nexus)
IDP	Internally displaced person
IIED	International Institute for Environment and Development
KII	Key informant interview
LI-BIRD	Local Initiatives for Biodiversity, Research and Development
M&E	Monitoring and evaluation
MIRA I	Multi-Cluster/Sector Initial Rapid Assessment
NGO	Nongovernment organisation
OCHA	(United Nations) Office for the Coordination of Humanitarian Affairs
TAPE	Tool for Agroecology Performance Evaluation
UN	United Nations

Summary

Purpose and scope

This report documents and synthesises learning from the project 'Easing and de-risking transition to climate-resilient food production for enhanced self-reliance in humanitarian contexts in Nepal, Lebanon and Kenya', which explored how to support an agroecological food system transition in contexts affected by acute or protracted humanitarian crisis.

The study is grounded in three learning pilots implemented by DanChurchAid and partners in markedly different crisis-affected contexts: Turkana county in Kenya, which is host to large refugee populations and faces recurrent drought; Saida district in southern Lebanon, which is affected by economic collapse, conflict and displacement; and Barbardiya municipality in western Nepal, which is exposed to climate stress and environmental degradation. These pilots were part of ongoing agrifood system development initiatives, also referred to as 'case studies' in the report. The study shared experiences from these pilots through a structured learning process and conducted a document review and key informant interviews with humanitarian and development practitioners. The objective was to identify how agroecological approaches can contribute to food security, resilience and longer-term food system transformation in humanitarian settings, and how to recognise and manage the risks of transition.

Agroecological food system transition

This report adopts a food systems perspective. It recognises that food security and nutrition outcomes are shaped not only by agricultural production, but also by interactions between natural resources, markets, institutions, social relations, power dynamics and consumption patterns, which are profoundly disrupted in crisis contexts. For example, markets may collapse or become inaccessible, public services may weaken, land and water access may become contested, and households' risk-bearing capacity may be sharply reduced.

We understand agroecology to be a set of principles for designing and managing food systems that enhance ecological integrity, social equity, economic resilience and local agency. Drawing on the Food and Agriculture Organization of the United Nations' (FAO) 10 Elements of Agroecology, and the Committee on World Food Security's High-Level Panel of Experts on Food Security and Nutrition's 13 Principles of Agroecology, we treat it not as a fixed package of practices, but as a transition pathway away from high external input, environmentally degrading, socially exclusionary models towards more diverse, locally adapted, knowledge-intensive systems.

In humanitarian contexts, we must reconcile this transition with the humanitarian imperative to save lives and alleviate suffering. As such, the report situates agroecology within the disaster management cycle and architecture of humanitarian response — including the cluster system and Sphere standards (Sphere Association, 2018) — emphasising that immediate relief, early recovery and longer-term transformation represent different but overlapping phases with different entry points. We do not present agroecology as a substitute for emergency assistance, but rather, as a framework for aligning short-term response with longer-term resilience and self-reliance.

Methods and learning approach

The project followed a continuous learning cycle that combined action, reflection, conceptualisation and adaptation. Each country team conducted an initial food system assessment to map key actors, resources, constraints and power relations, and identify the extent to which agroecological elements were already present. On this basis, we designed, implemented and reviewed context-specific pilot activities through regular cross-country learning exchanges and a joint workshop in Turkana.

In parallel, we interviewed experienced humanitarian and food security actors to explore the perceived opportunities, risks and institutional constraints associated with agroecological transition in crisis settings, as well as donor priorities and policy dynamics. Our analysis also drew on existing literature on food system transformation, agroecology, climate adaptation and disaster risk management.

Main findings

Can agroecology work in a humanitarian crisis context?

Across the three pilots and expert interviews, there was strong convergence on the added value of agroecological approaches in contexts of fragility and protracted crisis.

We found that agroecology is particularly relevant where markets for inputs and outputs are disrupted, and where dependence on external supplies exposes households to price volatility and supply chain failures. Practices that build soil fertility, conserve water, diversify production and rely on local seed and knowledge can reduce exposure to external shocks and lower recurrent costs, strengthening the coping and adaptive capacity of crisis-affected farmers.

Agroecology aligns closely with climate adaptation and disaster risk reduction objectives. Increased biodiversity, livelihood diversification and landscape-level management buffers production systems against drought, floods and pest outbreaks, while contributing to ecosystem restoration in degraded environments.

The social and institutional dimensions of agroecology — including farmer-to-farmer learning, collective action, recognition of local knowledge, and attention to equity and power relations — are highly relevant in contexts marked by displacement, social tension and weakened public services. For example, in the Kenya and Lebanon pilots, initiatives that deliberately worked with both host and displaced communities and built local platforms for dialogue and joint planning helped reduce mistrust and anchor food system interventions in local priorities.

Agroecology also offers a bridge between humanitarian response and longer-term development. Emergency assistance often prioritises speed and standardisation, which can unintentionally undermine local markets, knowledge systems and ecological sustainability. The pilots demonstrated that, even within short timeframes, it is possible to introduce agroecological entry points — such as diversified seed distributions, support to home and market gardens, low-input soil and water management, and local procurement for food assistance — that meet immediate needs, while also laying foundations for recovery and transition.

Food system transition under conditions of crisis

Transition in crisis contexts is not linear and cannot follow a predefined pathway, as different phases of crisis require different balances between relief, rehabilitation and transformation. In the immediate aftermath of a shock, people may adopt new practices without trusting or fully understanding them, simply because they are linked to food or cash assistance. Although this creates opportunities to introduce new ideas and practices, it also creates risks — of dependency, superficial adoption or unintended harm — if interventions are imposed too rapidly or without adequate support.

To de-risk transition, it is important to recognise that crisis-affected households operate under extreme uncertainty, have limited assets to absorb losses and can face insecure land tenure, labour constraints and volatile markets. As such, transition strategies must prioritise low-risk options, gradual change and strong accompanying measures such as access to information, social protection, market linkages and institutional support.

Contextualising agroecology and building shared visions

All three pilots devoted significant effort to translating agroecological concepts into language and priorities that resonated with stakeholders, from farmers to local authorities, humanitarian actors and market players. Food system assessments and stakeholder mapping exercises helped surface differing perceptions of problems and desired futures, and identify areas of convergence.

In Lebanon, for example, the extreme vulnerability of an import-dependent food system during conflict and economic collapse created a strong entry point for discussing local production, shorter value chains and reduced reliance on external inputs. In Kenya, recurrent drought and the presence of large refugee populations highlighted the need for low-input and collective approaches suited to pastoral and agropastoral livelihoods. In Nepal, climate stress and land degradation provided a basis for linking agroecology with watershed management, disaster preparedness and strengthened local governance.

These processes underscore that agroecological transition is not primarily a technical exercise, but a sociopolitical one that requires negotiation between actors with different interests, mandates and time horizons. Developing a shared,

context-specific vision of the desired food system is a critical step in aligning short-term humanitarian actions with longer-term transformation goals.

Recognising and reducing transition risks in humanitarian contexts

The analysis identifies four broad categories of risk associated with agroecological food system transition in crisis-affected settings.

General risks inherent to the existing food system and crisis context (category 1): these include insecurity, displacement, climate extremes, market collapse, weak public institutions, inequitable land tenure, and social tensions between host and displaced populations, which limit the performance of the existing food system, contributing to unsustainable and/or inequitable outcomes.

Barriers to transition (category 2): these include: limited access to land, water, credit and labour; fragile or distorted markets; low and volatile returns to agricultural labour; weak extension and research systems; and policy incoherence across agriculture, environment, trade, health and social protection. Yet crisis conditions can also create openings for, or **enablers of**, reform, such as heightened awareness of the vulnerability of import-dependent systems, renewed interest in local food production and greater willingness among authorities and donors to consider alternative models.

Risks that arise directly from the transition (category 3): these include temporary yield reductions, increased labour demands, uneven distribution of costs and benefits within households and communities (notably for women and displaced people), the possibility that poorly adapted or prematurely scaled interventions could erode livelihoods or social cohesion, and the perception of agroecology as ideological or incompatible with the urgency of humanitarian response, leading to resistance from practitioners or authorities.

Risks associated with not transitioning (category 4): reducing risks is one of the objectives of agroecological food system transitions, which includes various mechanisms to mitigate or manage risks related to, for example, climate change, market volatility and social exclusion. Maintaining the status quo and not transitioning poses risks that would have otherwise been avoided.

De-risking strategies and enabling conditions

The study identified the following strategies practitioners can adopt to reduce risks and safeguard progress towards agroecological food system transition in crisis contexts, described below.

Careful sequencing and pace change: it is important to align interventions with different phases of the disaster management cycle. During response and early recovery, projects should prioritise measures that meet immediate food and income needs but are also compatible with longer-term transition, such as diversified and locally adapted seed support, soil and water conservation, home and community gardens, and local procurement for food assistance. More systemic changes in value chains, institutions and policies become more feasible as stability increases, but projects should prepare for them from the outset.

Access to critical resources: as well as land, water and inputs, this includes knowledge, social networks and finance. Farmer-to-farmer learning, participatory experimentation and documenting local knowledge are particularly important for building confidence and adaptive capacity under conditions of uncertainty. Targeted support for women, youth and displaced populations helps address structural inequalities in access to assets and decision making.

Labour dynamics: agroecological practices can initially increase labour requirements, which can be a drain, particularly for women or households that are already constrained by displacement and insecurity. To prevent short-term burdens from undermining long-term benefits, transition strategies must therefore consider labour-saving technologies, collective arrangements and links with social protection and cash-for-work schemes.

Market and value chain development: without reliable outlets and fair prices, producers have little incentive to invest in more diverse and sustainable systems. The pilots demonstrated the potential of local and territorial markets, short value chains, aggregation and processing, and public and humanitarian procurement to create demand for agroecological produce, even in contexts where conventional markets are weak or disrupted.

Recommendations

Institutional roles and partnerships

No single actor can drive food system transition in crisis contexts. Progress depends on governments, humanitarian and development organisations, donors, local authorities, civil society, producer organisations and private sector actors working together.

National and local governments are central in creating an enabling environment through coherent policies, regulatory frameworks, public investment and data systems. But their capacity is often severely constrained in crisis settings, and **development** and **humanitarian organisations** need to temporarily fill gaps while also strengthening public systems. This includes supporting extension and advisory services, convening multistakeholder platforms, aligning humanitarian programmes with national recovery and food system strategies, and translating agroecological concepts into the language of humanitarian planning, risk management and donor reporting.

International nongovernmental organisations and **United Nations agencies** can play a bridging role between immediate response and longer-term transformation by piloting crisis-compatible agroecological approaches, generating evidence and reducing the political and technical risks for governments to adopt them. Acting as convenors and knowledge brokers is particularly important in fragmented humanitarian environments where coordination across sectors (agriculture, environment, health, nutrition, social protection and so on) is weak.

Donors and **international finance institutions** also have a decisive influence through their funding modalities and accountability frameworks. Short-term, rigid project cycles with narrow output indicators can discourage investment in systemic change. We therefore call on these organisations to: provide more flexible, multiyear, blended humanitarian-development-climate finance; support institutions and processes rather than discrete projects; accept transition costs and learning curves; and channel funding directly to local organisations and authorities.

Scaling, sustainability and lasting impact

Achieving change at scale in crisis-affected contexts requires attention not only to scaling up successful practices, but also to scaling out across territories and scaling deep through shifts in norms, capacities and power relations. The three pilots illustrate that although small, context-specific initiatives can serve as laboratories for learning and advocacy, their influence depends on effective communication, coalition-building and integration into policy and planning.

Working through champions within government, research institutions, farmer organisations and civil society is an effective way to feed evidence and lessons into decision making. Broad multistakeholder alliances allows actors to work at different levels, with some focusing on grassroots experimentation and service delivery while others engage in policy dialogue and public communication.

Monitoring and learning systems that go beyond yield and production to capture changes in soil health, biodiversity, nutrition, resilience, equity and agency are essential for demonstrating the value of agroecological transition and informing adaptive management. Promising approaches include the FAO's Tool for Agroecology Performance Evaluation, outcome harvesting and participatory assessment, though applying them in insecure environments requires simplification and flexibility.

Conclusions

Agroecological food system transition is not a luxury to be postponed until a crisis is over; rather, it is a relevant and often necessary pathway in contexts of protracted humanitarian stress. By reducing dependence on external inputs, strengthening ecological functions, diversifying livelihoods and reinforcing local knowledge and institutions, agroecology can simultaneously contribute to immediate coping, medium-term recovery and long-term resilience.

At the same time, transition in crisis contexts is inherently risky and must be approached with humility, patience and a strong commitment to 'do no harm'. Success depends on recognising and managing trade-offs, aligning short-term humanitarian imperatives with longer-term transformation goals, and investing in the social, institutional and political processes that underpin sustainable change.

Experiences from Kenya, Lebanon and Nepal demonstrate that, even under conditions of conflict, displacement and climate stress, it is possible to take meaningful steps towards more resilient and equitable food systems. These are most effective when grounded in a food systems perspective, guided by agroecological principles, and supported by coherent action from governments, humanitarian and development actors, donors and local communities.

Glossary of terms and concepts

Although this glossary uses definitions from internationally recognised sources where possible, some concepts have no globally agreed definitions.

Agroecology: 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, no date). Agroecology seeks to optimise interactions between plants, animals, humans and the environment while also addressing the need for socially equitable food systems within which people can exercise choice over what they eat and how and where it is produced.

Agroecological transition: the process of moving from an external input-dependent system based on monocultures to a biodiverse system centred around agroecological principles (McKay et al., 2025).

Agrometeorological (agromet) advisory services: services that help farmers make informed decisions on water and nutrient management, pest and disease control, sowing and harvesting schedules, and other on-farm practices. They include weather forecasting — from nowcasting to seasonal prediction — which, when combined with monitoring farm conditions, can help produce and communicate practical farming advice to actors across the agrifood system (WMO, 2024).

Anticipatory action: taking early action to protect people before a disaster strikes, based on early warnings or forecasts. To be effective, it must involve meaningful engagement with at-risk communities (IFRC, no date).

Climate-resilient agriculture: practices that create flexible, diverse and self-reliant farms that can withstand shocks and stresses. These practices are largely compatible with agroecology, but the agroecology elements also integrate aspects of social justice, responsible governance and food system transformation.

De-risking: more commonly used to describe the phenomenon of financial institutions terminating or restricting business relationships with clients or categories of clients in order to avoid, rather than manage, risk. In the context of this project, de-risking simply means reducing or managing risks.

Food system: the entire range of actors and their interlinked value-adding activities involved in producing, aggregating, processing, distributing, consuming and disposing of food products that originate from agriculture, forestry or fisheries, and parts of the broader economic, societal and natural environments in which they are embedded (FAO, 2018a).

Humanitarian crisis: a situation in which an armed conflict, natural disaster, epidemic, famine or other event — or series of events — has resulted in a critical threat to the health, safety, security and wellbeing of a community or other large group of people, overwhelming the community's coping capacity so it needs external assistance (UNTERM, no date).

Safeguarding: generally refers to protecting from harm or damage, but in the context of this report, it refers to protecting or preserving the functionality of food systems faced with shocks and stresses.

1 Introduction

1.1. Background and purpose

In a global food system hit by multiple crises, an estimated 8.2% of the global population faced hunger in 2024 while 28% experienced moderate or severe food insecurity (FAO, 2025), and many communities are just one shock away from food insecurity. Despite some progress in recent years, these figures are still far above pre-pandemic levels, and deepening humanitarian crises increase acute food insecurity in the areas of the world most affected by conflict, climate change and displacement (FSIN and GNAFC, 2025). At the same time, the drastic decline of humanitarian aid is forcing humanitarian aid organisations to reduce or cut emergency food assistance, underscoring the need to strengthen self-reliance and food system resilience in acute and protracted crises.

A growing international body of research points to the positive effects of applying climate-resilient and sustainable farming approaches, including agroecology, at small and large scales to enhance productivity, protect and restore agroecosystems, strengthen the resilience of food production to climate shocks and stresses, and enhance socioeconomic equity (HLPE, 2019; 2025). But, although the gains of transitioning to agroecology are well described in relatively stable development settings, the potentials of integrating agroecology approaches in response and recovery approaches in at-risk or humanitarian crises situations are less understood. There is increasing focus, however, on the potential of agroecology to provide solutions to displaced populations through the creation of vegetable gardens and practices adapted to precarious contexts, more sustainable reconstruction, and capacity sharing for future livelihood opportunities for at-risk individuals.

As a humanitarian actor, DanChurchAid (DCA) has integrated elements of agroecology in humanitarian contexts to enhance self-reliance and reduce the risk of food insecurity and hunger. But it is important to underscore that, under the humanitarian imperative, the primary obligation is to prevent harm, protect life and uphold dignity (see Section 2.3). As such, these are only included where they demonstrably contribute to these obligations under crisis conditions, and DCA programming does not assume that agroecology is appropriate in all humanitarian phases or contexts.

Based on lessons learnt and identified knowledge gaps in its own practice and the wider humanitarian sector, DCA set out to strengthen the evidence base and explore concrete models to find out how to:

- Ease the transition to sustainable, climate-resilient agroecology-based food production in humanitarian settings
- Reduce risks to and of the transition in less predictable humanitarian situations, and
- Protect food system functionality and reduce the risk of food insecurity from climate shocks and stresses by applying anticipatory action.

This formed the basis for the humanitarian innovation and learning project 'Easing and de-risking transition to climate-resilient food production for enhanced self-reliance in humanitarian contexts', which received DKK5 million in funding from the Novo Nordisk Foundation's humanitarian research, innovation and learning grant programme.

Box 1. DanChurchAid mandate and approaches

DCA, established in 1922, is a humanitarian, nonprofit organisation based in Copenhagen. With roots in the Danish Evangelical Lutheran Church, it works to empower the world's poorest people and those in need in their struggle for a dignified life, based on a world view of respect for human rights and the equal worth of all human beings.

As an organisation with multiple mandates, DCA operates across the humanitarian-development-peace (HDP) nexus and works with local faith-based and secular partners to help save lives, build resilient communities and fight extreme inequalities in areas affected by overlapping crises.

Alongside a historically strong focus on addressing acute food insecurity in humanitarian crises, DCA has increasingly emphasised promoting transformative change in food systems. Based on its 2023–2026 strategy, it integrates agroecology approaches across HDP efforts to produce healthy, nutritious food while protecting the land. Its market systems development approaches emphasise fair, sustainable and locally anchored value chains, and DCA is a strong advocate for responsible business conduct, for example by advancing business due diligence in the high-risk agriculture sector. It is a member of the Agroecology Coalition.

In crisis situations, DCA links short-term humanitarian cash and voucher assistance for immediate food security with support for local market actors, helping them recover and return to business when the situation improves. It is also introducing agroecology approaches for resilient food production and self-reliance in contexts impacted by conflict, climate shocks and protracted displacement — for example, promoting agroecological farming practices and shared natural resource management among pastoral groups in the borderlands of Kenya, Ethiopia and South Sudan to enhance resilience. It has also piloted cash-for-agroecology grants among small-scale farmers in Uganda and Zimbabwe to incentivise uptake and provide support during the transition.

In contexts affected by armed conflicts between state and nonstate armed groups, the contamination of explosive remnants of war poses severe risks and livelihood constraints to local populations. DCA undertakes survey and clearance activities to release productive land and key infrastructure, combining this humanitarian mine action with livelihood support where possible, including agricultural production. For example, in Lebanon, it has piloted linking mine clearance activities to restore farmland with promoting sustainable agroecology approaches.

In communities that host refugees and internally displaced persons (IDPs), DCA aims to integrate food and market system support with actions to support social cohesion and coexistence. For example, in northern Uganda, it has introduced land-sharing agreements, promotes agroecological practices at farm level, and undertakes ecosystem system restoration actions with refugee and host communities.

It is important to note that, when introducing agroecology in high-vulnerability contexts through cash-for-work, food-for-assets or cash-for-agroecology, these approaches are always based on communities' own interest to take up agroecology and designed to avoid coercive effects.

The project assessed external and internal evidence, good practices and lessons learnt to design and test solutions in three contexts with distinct humanitarian, food security and climate risk profiles:

- In Kenya, DCA worked with pastoral host communities and refugee communities in and around refugee camps in Kakuma on diversifying food production and adopting agroecology. Host communities' pastoral livelihoods are impacted hard by increasingly variable rainfall and more severe drought and flooding, while refugee communities face drastic aid cuts, including for food security assistance. This pilot explores how to ease the transition to more resilient and sustainable agroecological food production in a protracted refugee crisis, where humanitarian aid is declining and climate shocks are intensifying.
- In Nepal, DCA, nongovernmental organisation (NGO) Local Initiative for Biodiversity Research and Development (LI-BIRD) and spatial data management company NAXA partnered with local government and communities to develop an agrometeorological (agromet) advisory system and anticipatory action model to protect food production from drought and flood risk. Floods and droughts cause major economic losses for farmers, forcing many households to rely on government and humanitarian agency food assistance. This pilot explores how best to protect agroecological food production as climate-related disaster risk grows, reducing the humanitarian impact of droughts and floods before they occur or the most acute impacts are felt.

- In Lebanon, DCA and The Agricultural Movement in Lebanon (Agrimovement), a grassroots organisation working on the right to food and food sovereignty, explored how to support marginalised small-scale farmers to transition towards climate-resilient and sustainable food production systems in the face of protracted crises, including economic instability, climate shocks and humanitarian pressures. When many were displaced and farming was disrupted during the 2024 conflict, the project focused on delivering the emergency response to address food insecurity, while simultaneously integrating considerations on how to involve local food producers in the response. This pilot explores how to ease the transition to agroecology in a protracted crisis situation for marginalised small-scale farmers, and how to integrate agroecology considerations in crisis response and post-crisis advocacy to rebuild more self-reliant, equitable food systems.

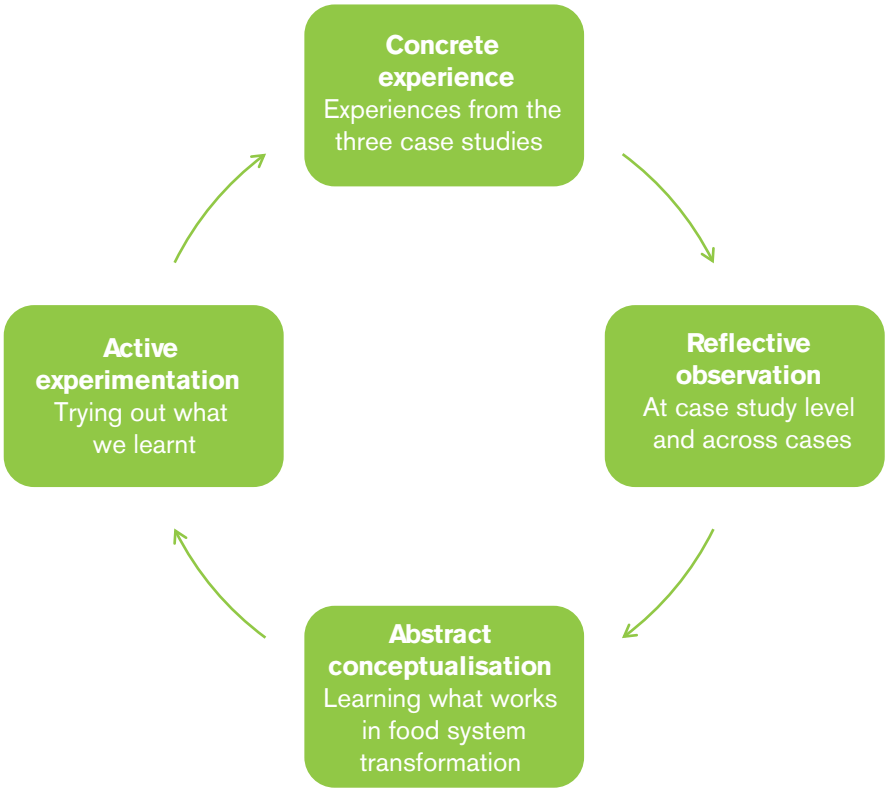
The International Institute for Environment and Development (IIED) undertook the literature review and key informant interviews (KIIs), and supported learning and the documentation of lessons.

1.2. Methods used

The project used three case studies (see Case studies) piloting some elements of agroecological food system transition, as well as a literature review and expert interviews, to reflect and learn about the risks and opportunities in a humanitarian context.

The literature review focused on unpacking the concepts and frameworks associated with agroecology, food systems and their transition, risks and risk management, and humanitarian contexts. It examined the global narratives on agroecological transition and risks, the barriers for transitions in challenging contexts and attempts to overcome these barriers.

Figure 1. Project learning cycle



Source: based on Kolb's learning cycle (Kolb, 1984)

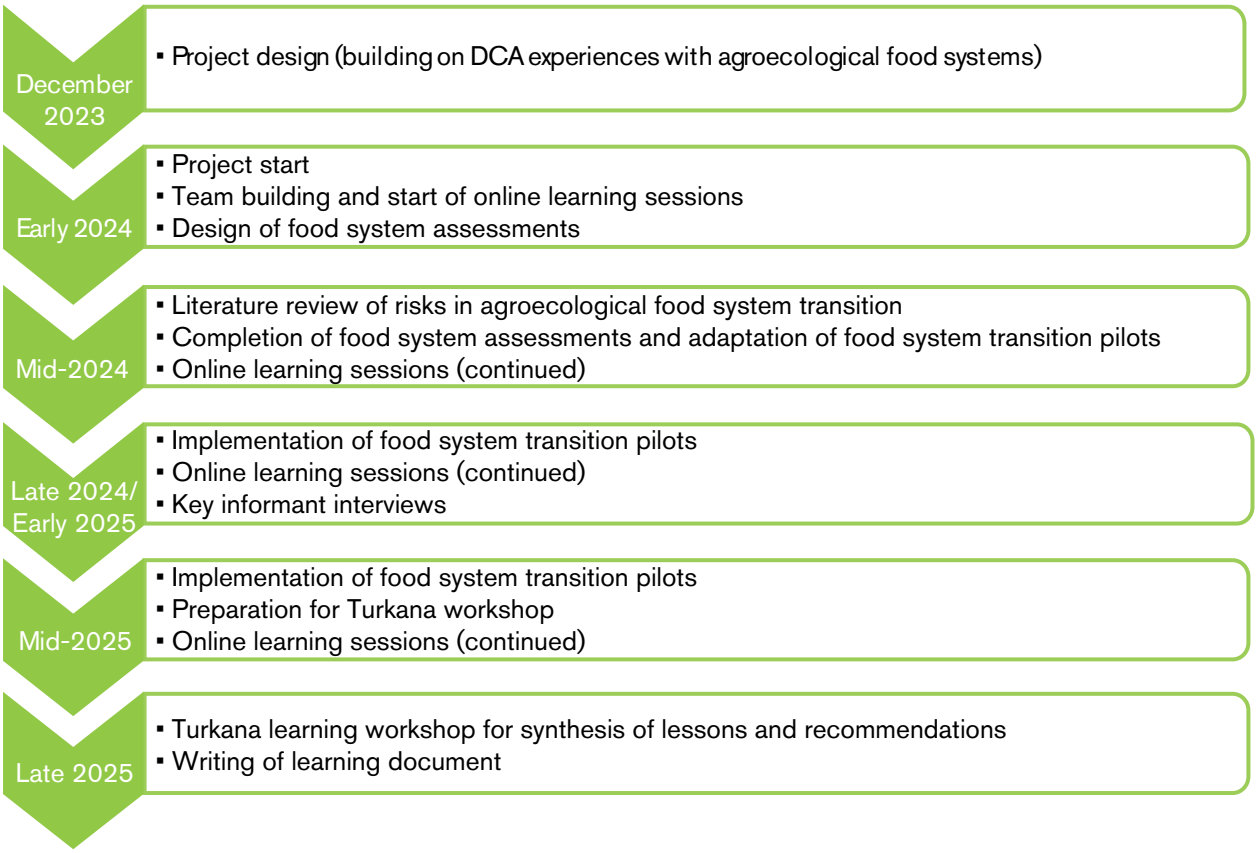
The four semi-structured interviews with experts from organisations working on agroecological transitions in regions affected by humanitarian crises covered multiple topics. These included their perceptions of, and experiences with, the benefits of integrating agroecological approaches into humanitarian programmes, the potential for building food systems 'back better' after a disaster, the main challenges and risks of promoting agroecology in humanitarian settings and recommendations for best practices, strategies, and enabling factors for successfully integrating agroecology into different phases of humanitarian response (see Appendix 1).

The three case studies (also referred to as 'pilots', where the emphasis is on the specific interventions under this project) from Nepal, Lebanon and Kenya provided the backbone of the project, with three experienced teams of DCA staff and partners working, in quite different ways, on bringing about 'baby steps' towards an agroecological food system. The context and entry points in each country varied significantly, but the shared conceptual understanding that was developed through the project provided a strong basis for reflection and learning. The project followed a continuous learning cycle approach (see Figure 1), with country teams experimenting, reflecting on these experiments within and between teams, conceptualising learning with DCA and IIED support, and applying learning in their local contexts.

Each country team started with a food system assessment (FSA) (see Section 3.3) to create a snapshot of the main components of the food system and the extent to which agroecological elements and principles are included. They then used the FSA findings to fine-tune the food system transformation activities, which had been broadly identified during the project design stage. Regular online learning sessions supported reflection and conceptualisation, with teams giving short presentations to share experiences and discussing their experiences in breakout groups to identify common challenges and opportunities, capture lessons through visualisation, and agree next steps.

Although the differences in context and entry points between the three country experiences were challenging at times, making it hard to identify commonalities, they also made the learning experience more interesting. This was particularly evident during the Turkana workshop (see Box 2), a face-to-face event towards the end of the project that brought together members from the three country teams, with DCA and IIED staff acting as learning facilitators.

Figure 2. Timeline of main project activities



Box 2. The Turkana learning workshop

From 18 to 21 November 2025, project participants from the three case study areas met in Kakuma, Turkana county for a learning workshop. This was the only face-to-face meeting during the project due to the high travel costs and carbon footprint and long travel times required to bring people from five countries together.

The workshop objectives were to:

- Discuss the main findings from the three pilots supporting agroecological transformation
- Visit field activities to draw joint learnings and recommendations from conversations with stakeholders in the field
- Synthesise the main lessons so far and develop recommendations (in-country, across countries and to other actors) about de-risking, easing and protecting agroecology-based food systems transformation in humanitarian crisis or shock-prone contexts, and
- Discuss how to use these learnings to develop a second phase of programming and bring them into other projects to improve quality and scale.

Three participants attended from Nepal (representing DCA, LI-BIRD[i] and NAXA[ii]), two from Lebanon (both DCA),[iii] two from the UK (IIED), two from Denmark (DCA), and six from Kenya (DCA).

Ahead of the workshop, each country team produced a summary of reflections and emerging findings on the learning questions: how to ease the transition to sustainable, climate resilient agroecology-based food production in humanitarian settings? How to reduce risks to and of the transition to agroecology in less predictable humanitarian situations? How to protect food system functionality and reduce the risk of food insecurity from climate shocks and stresses by applying anticipatory action? These were shared before the event, allowing participants to familiarise themselves with the experiences in the different sites, so the workshop could be used for further reflections and discussions rather than presentations. Participants also visited several of the DCA Turkana project sites, providing deep dives into aspects of the learning questions and allowing them to compare and contrast findings from the different pilots.

The participants were very positive about the workshop experience but commented that it would have been more useful had it been organised earlier — for example, after the FSA, but several months before the project end date.

Images: Turkana learning workshop programme (top left), discussion (top right) and participants (bottom), Kenya. Credit: © Rikke Fabienke/DanChurchAid

i For information, see https://libird.org/; ii For information, see https://naxa.com.np/; iii The participant from Agrimovement was unable to obtain a visa.

1.3. Country contexts

The three pilots were implemented in extremely different contexts with different starting points (see Table 1). While this made the development of a coherent approach for the project more challenging, it also resulted in a wider range of insights and learning.

The food system in the **Nepal** pilot was highly vulnerable to climate change impacts such as floods and droughts in river basin areas. The pilot involved introducing a package of agroecological farming practices suitable for the river basin areas, and testing an agromet advisory service and locally led anticipatory action protocols in case of flood and droughts to reduce disaster risk and humanitarian impact. The focus was on agroecology-based food production and to a lesser extent, on value chains.

The agroindustrial food system in the **Lebanon** pilot had been severely disrupted by war and the protracted crisis, providing an opportunity use the remnants of traditional agricultural knowledge and social capital to 'build back better' or 'bounce forward' (see Box 5), working across the food system (in production, processing, marketing and consumption) and using both practice and policy advocacy.

The food system in the **Kenya** pilot was highly compartmentalised, with pastoral host communities threatened by climate change impacts on one side and refugee communities seeking to earn a living in the face of restricted access to natural resources and declining aid on the other. Drastic cuts in funding to food and nutrition security responses, including cash and voucher assistance to refugees, had increased food insecurity and had knock-on effects in local markets and trade between refugee and host communities.

Table 1. Case study summaries

Characteristic	Sadia town and vicinity, Lebanon	Barbardiya municipality, Nepal	Kakuma town and refugee camps, Turkana, Kenya
Farming system	Smallholder farming for home consumption, local markets and export (olives, horticulture) Increasing dependency on external inputs	Mixed farming system (agro-silvopastoral system) Largely reliant on local inputs	Livestock based (pastoralism) Some extensive dryland crop farming Emerging irrigated horticultural production Limited processing
Main threats to the food system	Conflict/War Climate change impacts Cheap food imports from neighbouring countries Enforced new policies and laws by international actors Excessive use of synthesised chemicals	Climate change impacts (droughts, floods) High use of cheap chemicals and food items from India	Climate change impacts (droughts) and conflict in other countries resulting in a protracted refugee crisis Drastic aid cuts resulting in lower purchasing power within the local food economy
Focus of transition pilot (in terms of food system components)	Production Processing Distribution Consumption	Sustainable production	Production Distribution/Trade Co-creation, knowledge sharing and co-existence between refugee and host communities based on land-skills sharing
Type of agroecological transition needed	Radical	Incremental	Incremental

For more details about each country context, see Case studies.

2

De-risking agroecological food system transition in a humanitarian context

Drawing on the literature review, KIIs and country team perspectives, this chapter summarises the scope of the project, outlining the main components, concepts, challenges and opportunities.

Figure 3. The project's three overlapping dimensions

2.1. Food systems vs production systems

A **food system** is "the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products that originate from agriculture, forestry or fisheries, and parts of the broader economic, societal and natural environments in which they are embedded" (FAO, 2018a). A **sustainable food system** delivers food security and nutrition for all without compromising the economic, social and environmental bases to generate food security and nutrition for future generations. This means that it remains profitable (economic sustainability), has broad-based benefits for society (social sustainability) and has positive or neutral impacts on the natural environment (environmental sustainability).

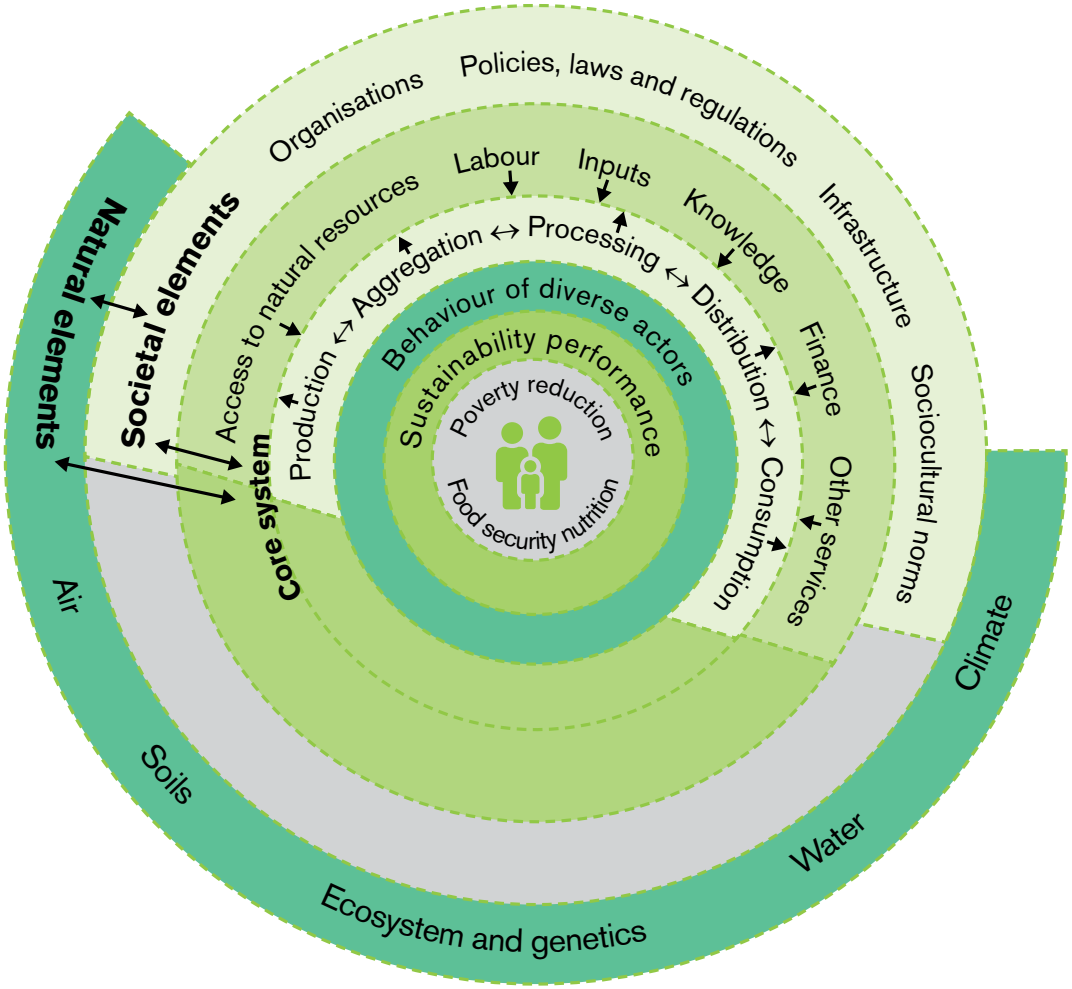
Like many other organisations in the sector, DCA has embraced the concept of food systems in its development work, moving away from a primary focus on agricultural production to include market systems, sustainable consumption, and

all stages in between. Of particular importance are the interactions between environmental and societal factors, which influence the extent to which activities can achieve key outcomes such as poverty reduction and food nutrition security for all (see Figure 4).

While food systems thinking has become mainstream, there is still a shortage of lived, documented experiences on how to make food systems more sustainable. Most government, academic or private sector professionals have trained as specialists in a specific field or sector (such as agriculture, environment or health) and a range of institutional barriers hinders work across disciplines or sectors (Foran et al., 2014).

There is broad agreement that current food systems are not sustainable and fail to deliver for both the poor and the environment. The quest to increase food production in line with population growth and consumer preferences, while keeping food prices low, has resulted in an unsustainable agricultural production model. The EAT-Lancet Commission report concluded that "because much of the world's population is inadequately nourished and many environmental systems and processes are pushed beyond safe boundaries by food production, a global transformation of the food system is urgently needed" (Willett et al., 2019). Similarly, Benton et al. (2021) argue that the 'cheap food' paradigm drives an industrialised model of agriculture and is responsible for biodiversity loss. Concluding that "a fundamental transformation of agricultural and food systems in needed", GIZ (2024) proposes that agroecology can support such a transformation. The Committee on World Food Security's High-Level Panel of Experts on Food Security and Nutrition outlines how agroecology can buffer shocks, stresses and vulnerabilities that affect the food system, increasing its resilience and capacity to 'bounce forward' — that is, transform food systems so they specifically nurture equity and justice and realise human rights, while remaining within planetary boundaries (HLPE, 2025).

Figure 4. The food system wheel



Source: FAO (2017)

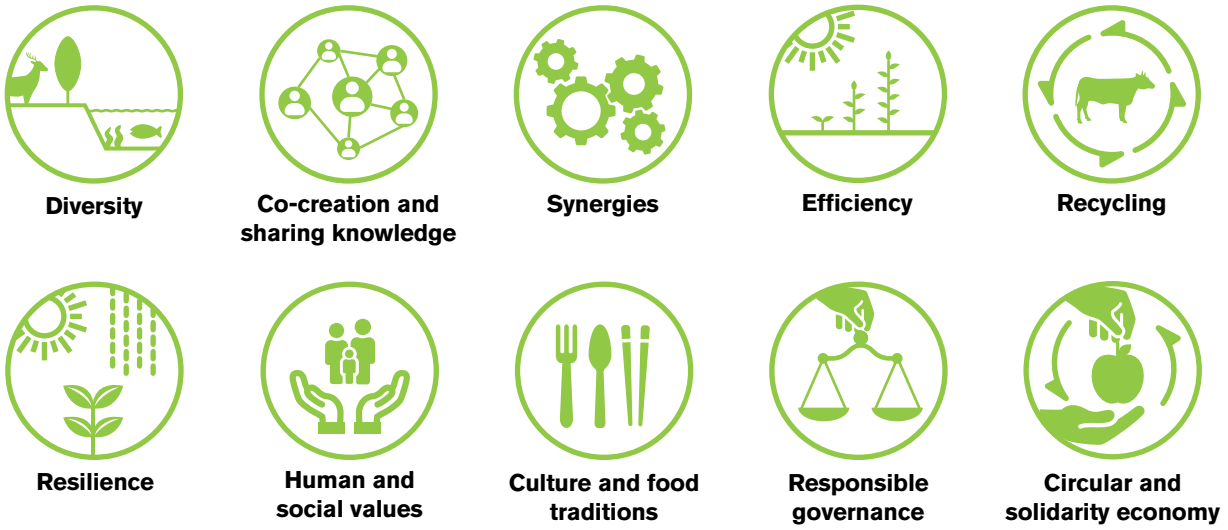
2.2. Agroecology and food system transitions

Elements, principles and application

Agroecology has been variously defined as: a scientific discipline involving the holistic study of agroecosystems, including human and environmental elements; a set of principles and practices to enhance the resilience and ecological, socioeconomic and cultural sustainability of (food and) farming systems; and a movement seeking a new way of considering agriculture and its relationships with society (Silici, 2014; HLPE, 2019). We can apply all three interpretations to food systems, with different implications. When considering agroecology as a science concerned with agroecosystems, it becomes more relevant to agricultural production than to other parts of the food system. When considering it a social movement, it shifts into the domain of ideology and politics rather than science. Agroecology as a set of principles to be applied to food systems is the most relevant interpretation for this project and aligns with the thinking of an increasing number of actors, including national and local government agencies, civil society organisations and research institutions.

DCA understands agroecology as defined by the 13 Principles of Agroecology (HLPE, 2019; see Appendix 2). These are informed by the Food and Agriculture Organization of the United Nations' (FAO) 10 Elements of Agroecology (see Figure 5), which a range of actors promoting a food system transition or transformation have adopted.[1] The 10 Elements of Agroecology give DCA operational entry points for project design and advocacy. Rather than groups of interventions that can be implemented, these elements are broad, loosely defined outcome categories related to food systems, and DCA does not explicitly consider potential trade-offs between them. But the principles and elements address all dimensions of food systems, and their widespread use is helpful in forming a global alliance for a transformation towards sustainable, agroecological food systems (see Figure 6).

Figure 5. The 10 Elements of Agroecology



Source: FAO (2018)

FAO, the International Panel of Experts on Sustainable Food Systems (IPES-Food), members of the Agroecology Coalition,[2] some research organisations such as the Centre for Agroecology, Water and Resilience and parts of the CGIAR, and a range of international NGOs such as ActionAid, Mercy Corps and Groundswell International have all hailed agroecology as the most promising way to increase the social and environmental sustainability of food systems (FAO, no date; IPBES Food, 2022; Coventry University, no date; CGIAR, no date; Wijeratna, 2018; Mercy Corps, no date; Groundswell International, no date). The main challenge so far has been scaling out agroecological approaches to achieve lasting, systemwide changes. Most evidence on the impacts of such approaches on economic, environmental and social dimensions is based on (mostly small-scale) case studies (GIZ, 2024; Agroecology Coalition, no date), with limited evidence of changes at scale, beyond the duration of a project intervention (Snapp et al., 2021).

There is an ongoing debate on whether agroecological approaches can produce enough food at affordable prices to feed a growing global population, particularly in sub-Saharan Africa. Supporters cite evidence of increased crop yields

1 We use the terms 'transition' and 'transformation' synonymously in this report.
2 For information, see https://agroecology-coalition.org/

and improved nutrition outcomes, while sceptics point to the small scale of such pilots, the risks of yield reduction and the increase in labour requirements (IJOEAR, no date). One systematic literature review analysing the narratives around agroecology identified three positions — supportive, sceptical and pragmatic — noting that a characteristic of the supportive narrative is its confidence in the potential of agroecology "to solve global challenges across ecological, social, and political dimensions, reflecting the growing recognition of agroecology as a holistic approach to sustainable development" (Mockshell et al., 2025).

There are both synergies and trade-offs between different agroecological principles and approaches (see, for example, Albanito et al., 2022). In practice, trade-offs make it impossible to maximise all the agroecological elements or principles — for example, leaving crop residues on, or incorporating them into, cropland to increase soil organic matter, soil health and erosion control competes with objectives around diversification and crop–livestock interaction, when crop residues are a major source of livestock feed. So, any agroecological system will need to seek a compromise between potentially competing objectives, considering local context and needs. At the same time, agroecological practices can address multiple issues due to synergies, whereby a practice contributes to multiple desirable outcomes, which reinforce each other (Bezner Kerr et al., 2023).

Most studies on agroecology support and actively promote the approach, and few critical studies are available. According to these supportive studies, agroecological approaches are expected to increase resilience and reduce:

- Dependency on external inputs, which may be subject to price fluctuations or increases as a result of excessive market power of agroindustrial manufacturers and traders (see, for example, Agroecology Infopool, no date)
- Risk of crop failure resulting from climate shocks and trends, by encouraging a diversity of produce with different needs, promoting soil protection and enhancement, and increasing biodiversity (Hauser, 2023)[3]
- Risk of income loss from market price fluctuations, by prioritising local markets and collective marketing channels, and
- Risk of malnutrition, by increasing the quality and diversity of food produced and consumed, including fruit and vegetables.

Studies promoting agroecology suggest that, without a transition to this approach, food systems would be less resilient and less able to withstand risks, particularly those associated with global economic trends and climate change (Altieri et al., 2015; HLPE, 2019). But projects that promote agroecology rarely undertake a detailed risk analysis of the different components of a food system during the design phase and risk management strategies are not normally an integral part of the transition agenda (Fonseca et al., 2024). More importantly, assuming that agroecology reduces risk by default — particularly in relation to climate change impacts — without specifying the type, level and extent of risk (before and after interventions) can lead to missed opportunities in understanding how to best to manage risk in different contexts and for different types of people. Similarly, the term 'resilience' is commonly used to describe the ability to cope with risks and shocks, but agroecological interventions do not always clearly define the types of shock and risk that are relevant to different food system actors or how their activities will increase resilience to these shocks.

Analysing context-specific barriers and risks would aid our understanding of how agroecology can help increase the resilience of — and reduce risks for — food systems actors, and which approaches do and do not work.

Food system transition through agroecology

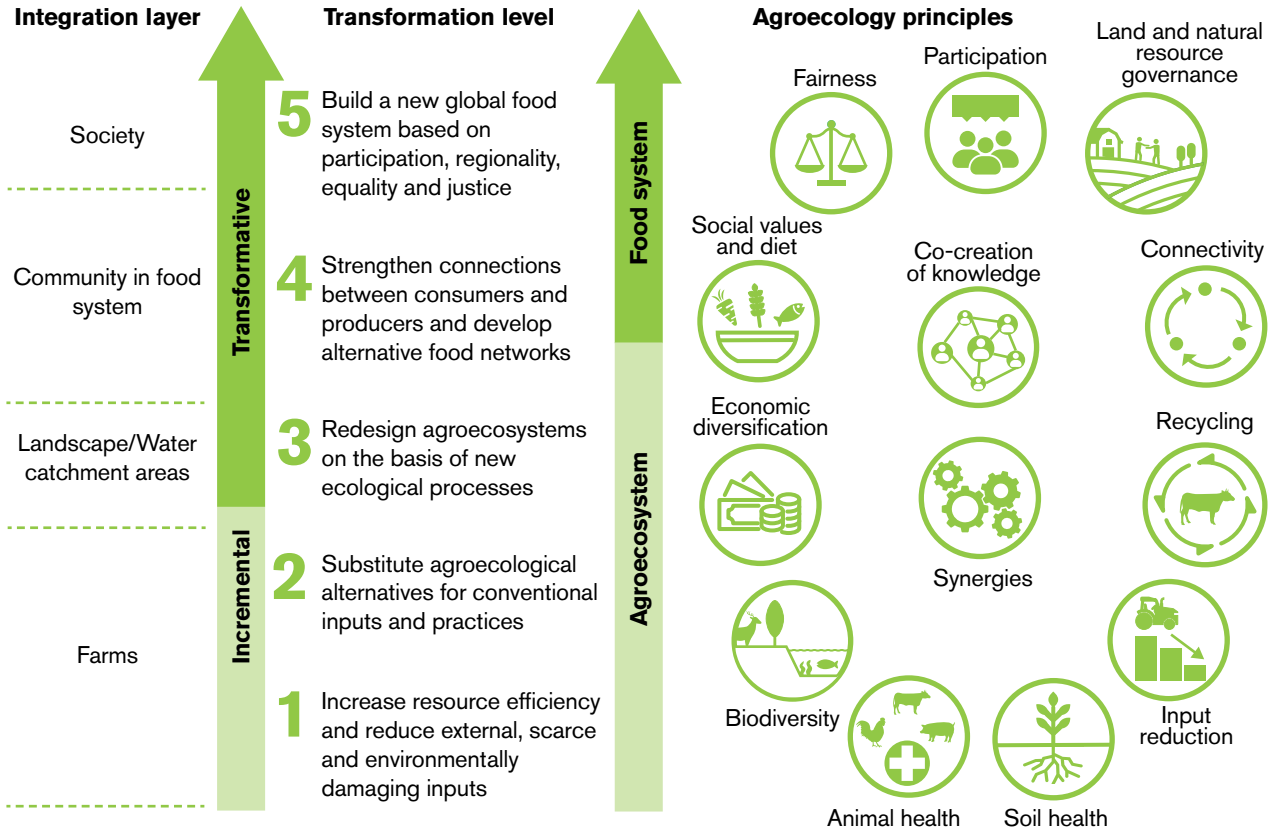
Food system transition or transformation refers to the process of moving from one food system to another that is more sustainable and has characteristics that are more in line with agroecology elements. Foresight4food identified four main transitions (Woodhill, 2023):

- A **consumption shift** to sustainable and healthy diets
- An **equitable economic shift** to ensure food economy producers and workers have a fair living income and can afford healthy diets
- A **shift towards nature-positive approaches** for food production, processing and distribution that have net zero climate impact and operate within a sustainable and safe natural resource use zone, and
- A **shift towards food system resilience mechanisms** that can ensure societies do not risk food insecurity and protect poor or vulnerable groups.

3 See also CCAFS (2021) on evidence needed with regards to climate change adaptation.

From an agroecological perspective, we need to add justice and empowerment to this list, placing stronger emphasis on the agency of (poor or vulnerable) food system actors rather than viewing them as passive victims of the system who need to be protected.

Figure 6. Levels and principles of agroecology



Source: adapted from Gliessman (2015), HLPE (2019) and GIZ (2024)

These four transition areas broadly align with **DCA's main intervention areas** (DCA, 2024):

- Supporting the transition to sustainable, climate-resilient food production through agroecology-based approaches
- Promoting the transition to agroecology-based market systems and value chains, which includes building sustainable and responsible food enterprises/business models and facilitating the inclusion of small-scale producers in value chains on fair conditions
- Focusing on sustainable consumption, and
- Reducing food loss and waste.

In 2024, an internal stocktake documented that 60% of DCA projects with an agricultural component applied agroecology approaches. Of these, 69% aimed to increase input use efficiency, reduce costly, scarce or environmentally damaging inputs and substitute conventional farming practices with agroecological practices at farm level. This implies that most interventions contributed to incremental changes at agroecosystem level. Thirty-one percent also worked to address wider food systems transformation — for example, through policy advocacy for agroecology. Such a transition invariably involves risks and uncertainties (see Section 2.4).

The transformation or transition will vary, depending on: the starting point (the current state of the food system or food system component); the vision of local and national stakeholders (the type of food system these actors deem desirable, see Section 3.4); and a wide range of contextual factors that support, enable or hinder a transformation (see Section 3.8). And, although there is a certain level of conceptual clarity about the different phases and pathways of an agroecological transition, in practice things are more complex. There are two main reasons for this.

First, development interventions — whether funded by donors or governments — rarely aim to transform a whole food system. Rather, they tend to focus on a specific subsector, location or component, such as supporting agroecological markets, developing and promoting agricultural innovations and technologies or shifting consumer behaviour. This is because projects are usually too short and rarely have the budget to operate at scale and across sectors (see Section 3.2).

Second, rather than transform an existing food system component, development interventions often introduce new components into a system, such as irrigation facilities in a dryland farming area or organising and training farmers in horticultural production using agroecological practices. While it is possible to consider such interventions as contributing to an agroecological transition by addressing elements of diversity and resilience, we could also argue that this approach is easier than transforming an intensive, profitable market gardening system that relies on external inputs into a sustainable, agroecological garden that provides environmental benefits as well. We reflect on the different starting points of the transition in Section 3.3.

2.3. Humanitarian context

Agreements and central documents created primarily by multilateral organisations formalised the definition of humanitarianism and humanitarian response, which have evolved into statements of established legal rights and obligations. In General Assembly resolution 46/182 of December 1991, the United Nations (UN) outlined a framework for intergovernmental and interagency coordination in humanitarian situations (OCHA, 2012) along with 12 guiding principles and stated that "the goal of humanitarian action is to protect life and health". In other words, interventions should avoid all actions that could put people at risk. Among the 12 guiding principles, four core principles — also known as 'the humanitarian imperatives' — define the necessary conditions for humanitarian response (see Box 3).

Box 3. The humanitarian imperatives

1. **Humanity:** human suffering must be addressed wherever it is found. The purpose of humanitarian action is to protect life and health and ensure respect for human beings.
2. **Neutrality:** humanitarian actors must not take sides in hostilities or engage in controversies of a political, racial, religious or ideological nature.
3. **Impartiality:** humanitarian action must be carried out on the basis of need alone, prioritising the most urgent cases of distress and making no distinctions on the basis of nationality, race, gender, religious belief, class or political opinions.
4. **Independence:** humanitarian action must be autonomous from the political, economic, military or other objectives that any actor may hold with regard to areas where humanitarian action is being implemented.

Source: OCHA (2022)

As the now formalised regime grew, the establishment of bodies such as the UN Office for the Coordination of Humanitarian Affairs (OCHA) and Interagency Standing Committee helped test the practical implementation of the resolution 46/182 framework, culminating in a more standardised understanding of the role of NGOs, the UN and national governments in humanitarian responses. This increased coordination has led to the current system, where signatories and participant organisations place substantial value on practical advice, and the creation of standard operational procedures for humanitarian response. Of these, the Humanitarian Charter, devised by Sphere, a global movement led by humanitarian organisations seeking to standardise humanitarian response and interventions, provides one of the most practical guidance (Sphere Association, 2018). The charter and derived documents have been developed to ensure consistent quality and approach in humanitarian responses, reflected in affected persons' enforceable right to receive humanitarian assistance.

Box 4. The seven phases of the disaster management cycle

1. Prevention: activities aimed at preventing future disasters occurring, such as building dykes or a dam to control flooding.
2. Mitigation: activities aimed at mitigating the impact of a disaster if prevention is not possible, such as building more earthquake-resistant schools.
3. Preparedness: activities aimed at preparing communities for a disaster, such as emergency drills or pre-stocking relief items in logistic hubs.
4. Disaster: an event that causes significant damage to people, property and infrastructure.
5. Response: activities aimed at understanding and responding to needs, including rapid assessments, provision of food and non-food items, water, sanitation and hygiene services, healthcare and shelter. In the immediate hours and days after a disaster, when search-and-rescue activities are critical, local actors are usually first to respond. Information is often patchy and confused; there can be significant damage to infrastructure and large movements of people.
6. Recovery: activities aimed at returning communities to normal life, such as livelihoods development or formal education. Recovery activities can start when the disaster has stabilised, and the affected population has access to food and water and some form of transitional shelter. This stage is sometimes divided in two: early recovery and medium-term recovery.
7. Reconstruction: activities aimed at rebuilding infrastructure and housing. This can often take years, and many activities — such as retrofitting schools to make them more resistant to earthquakes — may blend back into mitigation.

Cutting across all phases is accountability to affected people — that is, the commitment to use power responsibly by taking account of, giving account to, and being held to account by the people humanitarian organisations seek to assist. This includes enabling affected people to meet their different needs, address their vulnerabilities, build on pre-existing capacities and drive programme adaptation.

Sources: Elrha (no date); UNHCR (2004)

In crisis situations, humanitarian and food system interventions — such as actions to support more sustainable food production (and therefore agroecology) — may interplay. But as stated in the Sphere Humanitarian Charter, the humanitarian imperative to prevent and alleviate suffering arising out of disaster or conflict must come first (Sphere Association, 2018).

The definition of timelines in humanitarian situations (see Box 4), which guides the language used throughout this document in reference to humanitarian contexts, is crucial to any intervention. It is important to note that humanitarian responses are often complex and identified phases are primarily useful to help demarcate the type of intervention organisations should consider.

It is also worth noting that an increasing number of crises tend to result from longer-term situations of acute vulnerability that arise from a combination of multiple factors, often occurring simultaneously and reinforcing each other (FAO KORE, no date). While each situation is different, there is often an interplay of increasing climate shocks and stresses, conflict, lengthy food crises, loss of livelihoods and weak governance and institutional capacity.

In 2002, the Rome-based UN food agencies advocated for a twin-track approach for food security, particularly in the case of protracted crises, to ensure food production investments are accompanied by programmes delivering food and other basic goods and services to those who need them most. They later refined this approach to also cover food availability, access, use and stability, creating a framework through which to analyse food security indicators and responses that clearly distinguishes long-term and structural issues from the temporary needs of vulnerable population groups. They further refined the framework so it could be used in protracted crisis situations to link emergency interventions with opportunities to rebuild long-term resilience in food systems (Alinovi et al., 2008).

Often complex and underfunded, protracted crisis situations require an integrated approach that cuts across sectors and strengthens coherence and interlinkages across humanitarian, development and peace actors and actions — also referred to as the HDP or triple nexus. In the context of addressing food insecurity in fragile and protracted crisis-affected contexts, this means meeting acute food security needs while also enabling the transition to long-term food system transformation and addressing the root causes of food insecurity. It also means integrating food crisis prevention into peacebuilding and conflict prevention frameworks, recognising that conflict is a primary driver of food

crises and that food insecurity can fuel tension and violence. At the same time, resilient and equitable food systems play an important role in sustaining peace and development (GNAFC, 2025).

Integrating response, immediate recovery and long-term solutions into interventions links to the concepts of 'building back better' and 'bouncing forward' (see Box 5). Agroecology aligns well with the HDP nexus, by prioritising contextually adapted approaches, strengthening community preparedness and resilience in the face of shocks and promoting inclusive and sustainable resource management that may contribute to social cohesion (Minka International, 2025).

The HDP nexus framework and wider humanitarian policy and practice debates emphasise the importance of local leadership and financing modalities for local action to ensure contextualised, timely and effective interventions that span both the immediate humanitarian response and long-term recovery and peacebuilding efforts. This approach aligns well with the strong emphasis on communities' own aspirations in agroecology. Similarly, cash and voucher-based approaches, which have gained increasing importance in humanitarian responses, empower people to take care of their family's needs in a dignified way based on their own priorities and preferences, supporting local markets and cutting across sectoral silos. Where markets and the financial sector function, cash and voucher-based approaches have proven to be effective in achieving food security outcomes. This has been a preferred approach for DCA, contributing to community self-determination, strengthening local markets and incentivising food production among smallholder farmers.

Box 5. Building back better and bouncing forward

The 'build back better' principle focuses on enhancing resilience by improving systems beyond previous levels. First appearing in a World Bank report on the reconstruction of Aceh and Nias after the 2004 tsunami (World Bank, 2005), it has become a guiding principle for stronger, faster and more inclusive post-disaster recovery that integrates risk reduction into reconstruction to create more resilient communities. The concept has been reinforced by international forums — for example, when the COVID-19 pandemic disrupted food systems in the UK, an expert working group recommended it as an opportunity to build a more resilient food system (see Global Food Security Programme, 2020).

'Bouncing forward' similarly refers to recovery after a shock or traumatic event, with an emphasis on the new status being more resilient than the previous one. The term is widely used in personal development literature to describe the process of moving past adversity to achieve growth, transforming challenges into breakthroughs. The Committee on World Food Security's High-Level Panel of Experts on Food Security and Nutrition used the term in its report 'Building Resilient Food Systems', which highlights the need to shift from traditional resilience approaches, which focused on bouncing back to pre-disturbance conditions, to bouncing forward through transformative change that addresses structural and systemic vulnerabilities (HLPE, 2025). The report underscores the importance of diverse and equitable food systems in improving livelihoods and food security, particularly for those most affected by shocks and stresses.

The idea of transformative, radical change — as opposed to incremental change — is also used in the context of climate change adaptation, emphasising the need to go beyond recovery to the previous status and instead make drastic changes to better prepare for future disturbances (Vermeulen et al., 2015).

When designing recovery interventions within a building back better or bouncing forward framework, it is vital to ensure that affected populations, rather than external technical criteria, define what is 'better' and that crises or shocks do not automatically constitute consent for structural transformation.

Agroecology and the humanitarian response

As a first step in food security emergency responses, FAO recommends using the Multi-Cluster/Sector Initial Rapid Assessment (MIRA I) approach, which helps practitioners understand the emergency context by comparing indicators and risks to pre-emergency conditions of affected populations (FAO, 2016). Based on the four dimensions of food security — availability, access, utilisation and stability — MIRA I provides a minimum basis for baselines at the start of a response and is therefore an appropriate starting point for assessing the efficacy and role that agroecology might have before and during an emergency.

Comparing the ten elements of agroecology with the MIRA I indicators (see Table 2) shows there is significant overlap between agroecology as an approach to food systems transformation and the indicators used in MIRA I. And although it is clear that an agroecology approach would touch on the risks to populations affected by a food and nutrition security (and livelihoods) crisis, what is less evident is the appropriateness of agroecology approaches as part of an immediate

humanitarian response, rather than in the 'development' phases (prevention, mitigation, preparedness, recovery and reconstruction — phases 1, 2, 3, 6 and 7 in Box 4). A key consideration is to base the integration of agroecology in acute humanitarian response on restoring previous systems with proven safety and acceptance. But previous systems, including food systems, might not be safe or acceptable, and they might not have supported resilience and equity — two key objectives of food systems (HLPE, 2025). The challenge, then, is to 'build back better' (see Box 5), either with minimal risk to vulnerable food system actors or with appropriate risk mitigation measures.

Table 2. Overlap between agroecology and MIRA I food security indicators

Factor	MIRA I indicator	Applicable elements of agroecology
Food access	Change in food consumption patterns	Culture and food traditions Resilience
	Change in food source	Diversity Resilience
	Households with less than three daily meals for children under five	Culture and food traditions
Income access	Households with productive and non-productive assets	Circular and solidarity economy Human and social values
Market access	Communities without physical access to functioning markets	Circular and solidarity economy Responsible governance
	Change in key food and non-food commodity prices	Circular and solidarity economy
	Communities where food prices have significantly increased	Circular and solidarity economy Responsible governance
Availability	Households by duration of staple food stock	Efficiency Diversity Culture and food traditions Resilience
	Change in production compared with previous year's harvest by commodity	Diversity Resilience Co-creation and sharing knowledge Culture and food traditions
	Households/Communities unable to plant for next season	Resilience Human and social values
	Households/Communities that have lost animal reproduction assets	Diversity Efficiency
	Animal disease outbreaks	Diversity Responsible governance
	Households with suitable daily water and fodder consumption or livestock	Efficiency Resilience Circular and solidarity economy
Utilisation	Households with capacity to prepare food safely	Culture and food traditions

Note: the MIRA I indicators column presents an illustrative subset of the Standard Forest Stewardship Council Output Indicators.

2.4. Food system transition risks

As the main focus of this study is on de-risking agroecological food system transitions in humanitarian contexts, it is important to explain the types of risk that could be associated with the transition. A generic definition of risk is a situation involving exposure to danger. But risk also involves uncertainty about the effects or implications of an activity with respect to something that humans value — such as health, wellbeing, wealth, property or the environment — and often focuses on negative, undesirable consequences.

The International Organization of Standards' ISO 31073 defines risk as the **effect** (deviation from the expected) of **uncertainty** (state, even partial, of deficiency of information related to understanding or knowledge) on **objectives** (results to be achieved) (ISO, no date). Risk bearers are the individual or group of people affected by the risk. In the context of agroecological transitions in a humanitarian setting, these are food system actors — agricultural producers (of crops, livestock, fodder, honey and so on), food consumers and other actors along the value chain who are involved in transporting, processing, storing and selling agricultural produce — in poor or vulnerable situations.

In the context of this study, we have identified four broad categories of risk: 1) general risks to the food system, 2) barriers to and enablers for the agroecological food system transition or transformation, 3) risks resulting from the food system transition or transformation and 4) risks of not transitioning to an agroecological food system. These are discussed below. Specific risks identified in the three pilot sites, as well as methods and approaches used to reduce or manage them, are discussed in sections 3.7 and 3.8.

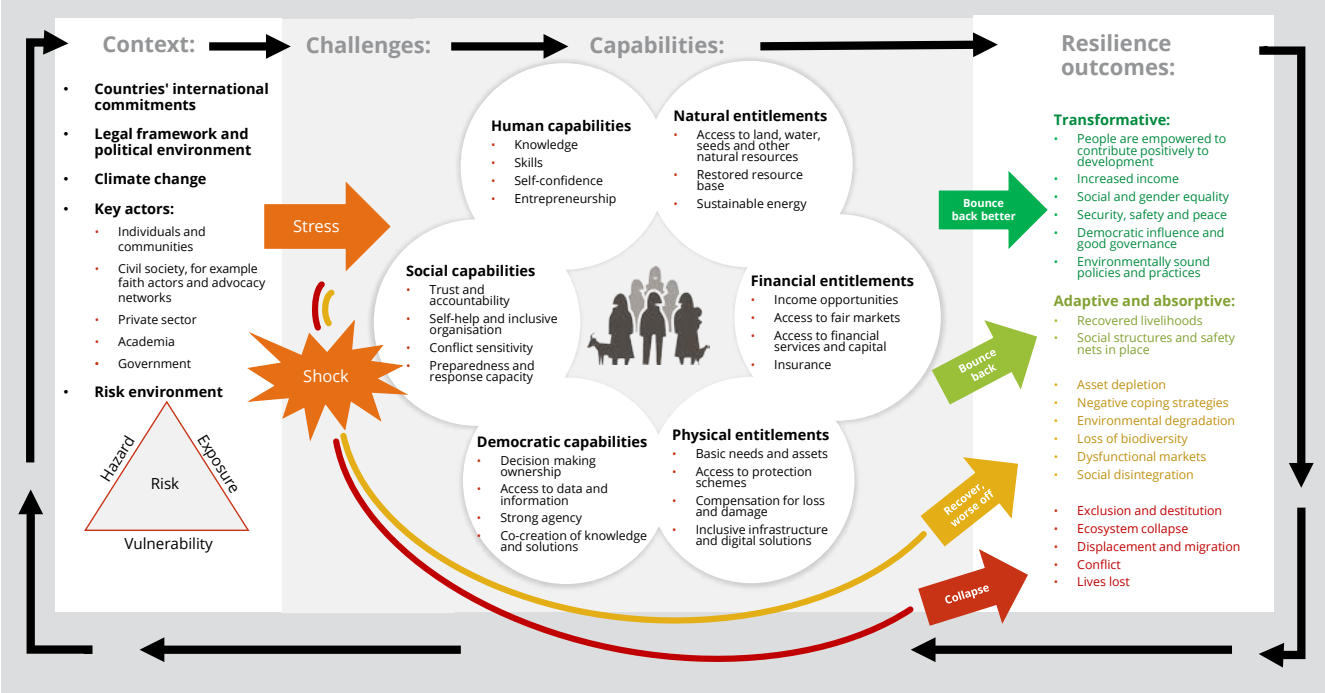
Category 1: general risks to the food system

Category 1 risks affect the food system before, or independently of, an agroecological transition. They are environmental, demographic, macroeconomic, political and other contextual factors and drivers such as climate change, macroeconomic trends, conflict and war; or structural factors such as poor infrastructure or small farm sizes, high levels of corruption or poor governance. In humanitarian and fragile situations, negative factors are often mutually reinforcing and deepen vulnerabilities. In southern Lebanon, for example, the agricultural system operates in a highly fragile and degraded natural environment, and small-scale farmer productivity is increasingly impacted by climate change. The protracted economic crisis and collapse of public services have increased the costs of agricultural inputs and decreased purchasing power, deepening the vulnerability of both host and refugee populations, who rely on farming for subsistence. In Turkana, Kenya, the recent drastic cuts in humanitarian assistance have severely diminished the food and nutrition security and purchasing power of refugee communities, also impacting the market for local agricultural produce in both refugee and host communities.

An agroecological transition can reduce some of these risks by making the food system more resilient, which is one of the main justifications for such a transition. The Nepal pilot explicitly aimed to address climate change risks by introducing an early warning system to enable anticipatory action via agromet advisory services, with advice focused on agroecological practices.

Included in category 1 are disaster risks, conceptualised by the Intergovernmental Panel on Climate Change (IPCC, 2019) in terms of hazards, vulnerabilities and exposures. DCA adopted this concept for their resilience framework (see Figure 7). But, as food system transformations are affected not only by disasters, but also by many other uncertainties, this review uses the wider definition of risk outlined at the start of this section.

Figure 7. DanChurchAid resilience framework



Source: DanChurchAid

Category 2: barriers to (and enablers for) the agroecological food system transition or transformation

Category 2 risks are challenges or obstacles that make a transition to an agroecological food system more difficult or even impossible, as well as enabling factors that may support a transition. Although there is some overlap with generic category 1 food system risks, the focus here is on risks or barriers that specifically affect the transition process, such as unsupportive policies and markets, and a shortage of capacities related to agroecology at different levels.

Market barriers were relevant in all three pilots, including fragile or non-functioning markets, difficulties in marketing non-uniform produce and consumers who were unwilling or unable to buy agroecological, local produce at higher prices than industrially produced, imported foods.

Some of the barriers can continue to affect the transitioned system, potentially triggering a transitioned food system to 'bounce back' to one that is less in line with the agroecological elements and principles. For example, the risk of climate shocks in Nepal could undo previous transitions through a loss of assets and subsequent adoption of unsustainable coping strategies. Increased climate change can trigger microclimate changes, bringing more hailstorms, cold snaps, heatwaves, droughts and floods. When hit by weather extremes, farming communities need special responses and external inputs to support the recovery of agriculture activities and get back on track in the transition to more resilient agroecology systems. At the same time, the Kenya and Nepal pilots show that repeated experiences of increasingly severe climate shocks can also make farmers and local government actors more receptive to considering agroecological solutions.

Category 3: risks resulting from the food system transition

Category 3 risks are (more or less) the direct result of the transformation process and associated interactions. They can affect farmers, consumers, other value chain actors and the environment. Although some of these risks are unintended negative impacts or trade-offs, the emphasis is on uncertainties — not knowing exactly what the impacts will be.

Some of these risks are related to piloting or starting a different system and can be temporary. They can also occur in other types of food system transition — for example, from a subsistence-oriented to a more market-oriented system, or from a system that relies on dryland crops to one that includes irrigated crops (see, for example, Snapp et al., 2021; Adolph, 2016).

Transition-related risks can affect farmers, food producers, consumers, other value chain actors and the environment. For example, if an agroecological transition reduces agricultural productivity in the short or longer term, it can cause farmland to expand into natural habitats, such as forests and wetlands, harming biodiversity and climate change mitigation.

This report focuses on transition-related risks, which have not received as much attention as category 1 and 2 risks. There is a danger of assuming that, once a transition has been achieved, the job is done. But there is arguably no ideal end point for a transition, as food systems are dynamic, and new challenges and opportunities emerge over time that require adjustment. So, similar to this project's learning cycle (see Figure 1), food system actors need to continuously experiment and adapt their behaviours and actions to maintain or increase the system's sustainability and resilience. There are also inherent trade-offs between different transition objectives, and stakeholders will need to continuously (re)negotiate their compromises. In challenging humanitarian contexts, it is important to manage this carefully to protect vulnerable groups and avoid food system actors losing trust in the transition (for example, because they are unable to cope with the risks).

Category 4: risks of not transitioning to an agroecological food system

Category 4 risks can stem from being trapped in an unsustainable, unresilient system that becomes increasingly vulnerable to shocks and unable to support livelihoods in the long term. This was exemplified in the Lebanon pilot, where small-scale farmers who depended on chemical inputs for farming struggled with rising costs and took on increasing debts. At the same time, unregulated chemical use was degrading the soil, reducing farm productivity. But such risks are difficult to define or quantify for a specific context, especially in the absence of a counterfactual.

Some organisations have tried to screen the impact of interventions in terms of potential risk for agroecological outcomes. For example, Mercy Corps and the University of Virginia developed an screening tool to assess the agroecological impact of agriculture interventions and identify opportunities to build resilience in food systems (Scarborough et al., 2014); but there is little information on how much it is used and any lessons drawn from its use.

3 Main findings

The findings and lessons presented in this section emerged from experiences from the three country teams and the reflections on and conceptualisation of these experiences during the online and face-to-face learning events (see Section 1.2), complemented by information from the literature interview and KIIs.

3.1. Operating in a humanitarian context

Our recommendations and insights on the application of agroecology in humanitarian settings are based on the Turkana workshop, which drew together learning from the pilots, as well as reflections from the KIIs. Arising as they did from lessons learned from different types of humanitarian intervention, they are general and we put them forward with the understanding that funding landscapes, previous farmer experiences and governing frameworks will differ across settings.

Overall, we found that the pilot interventions were not harmful to existing food production and market systems and did not endanger human life. Indeed, given enough time, agroecology can not only support the Sphere guidelines (Sphere Association, 2018) but also enhance the market system towards greater resilience, thus reducing the risks of a transition during humanitarian response.

As the pilots show, agroecology aligns well with the HDP nexus (UN, no date; see also Section 2.3) and may be applied as a strategic approach to build bridges between these traditionally siloed areas of intervention.

Box 6. Emerging impacts of agroecology in the three case study sites

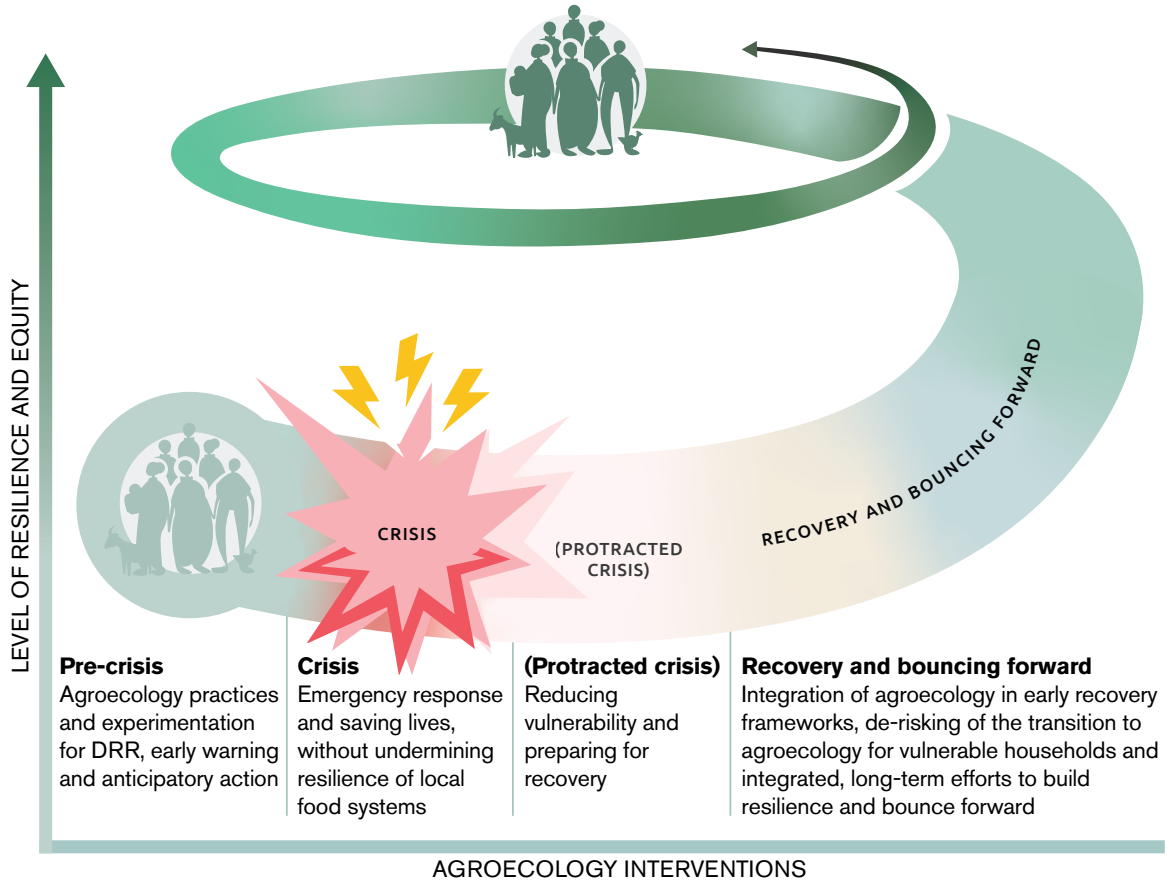
In a protracted refugee crisis, such as in Turkana, Kenya, agroecology has the potential to strengthen local food production and build social capital between refugee and host communities by developing diversified livelihood opportunities. From a resilience and peacebuilding perspective, agroecology promotes inclusive and sustainable natural resource management and can help alleviate tensions and prevent conflicts between refugee and host communities. As such, it presents a lever for preparedness, resilience building and crisis management, provided interventions take an inclusive approach that promotes social cohesion, are tailored to local contexts and are backed by long-term commitments.

Similarly, in southern Lebanon, marked by protracted crisis, climate stress and economic collapse, the pilot demonstrated potential to increase farmers' self-reliance and reduce exposure to production and market risks within a food system dominated by food imports and large conventional agribusiness and market actors. When a conflict-related acute humanitarian crisis erupted during the project, procuring food from local farmers served mainly as a food security measure, but also helped showcase the importance of more self-reliant and locally anchored food systems.

In Nepal, where increasing climate shocks and stresses threaten to erode agroecology-based food security gains facilitated by earlier interventions, piloting an early warning and anticipatory action system has helped local government, communities and private sector actors prepare and take early action. In this context, agroecological practices serve as a disaster risk reduction measure, increasing agricultural production resilience to extreme weather events, while the agromet advisory and anticipatory action system tailored to agroecology reduces the risk and impact of flooding and drought on food security.

The project team found that in many cases, traditional approaches to humanitarian response are already compatible with agroecology, but do not necessarily take place within a holistic agroecological approach. But by considering agroecology and how traditional approaches fit into the ten elements of agroecology, organisations will be better prepared to pursue further agroecological activities once the immediate response phase is over. As such, the main insight is that organisations working in humanitarian response should consider an agroecological approach to ensure recovery leads to a more resilient and equitable food system (bouncing forward) (see Figure 8).

Figure 8. Bouncing forward through agroecological transition in a humanitarian context



Source: DanChurchAid

Main lessons

Benefits and added values to framing humanitarian responses within agroecology: with its emphasis on building resilience, social inclusion and locally led leadership and governance systems, agroecology is a good fit for vulnerable or marginalised communities. Over time, it can build trust, agency and leadership capacity, supporting a better understanding of individual and collective needs during humanitarian response and how to best address them.

Agroecology lends itself well to farmer experimentation to adapt and fine-tune practices over time, through an iterative and localised process (see Section 3.5). Even relatively low-cost interventions — such as using mulch or compost to improve soil fertility and moisture retention — can show visible and quick (within one agricultural season) improvements. These can encourage fast scaling out (see Section 3.9), leading to quick gains during humanitarian response. The agroecological approach, by definition, respects localisation, dignity and traditional knowledge and is therefore well suited to protracted crises where sustained engagement is possible.

Agroecology can also build strong links between humanitarian response and a return to development programming. It is clearly compatible with climate adaptation and mitigation, building resilience and helping reduce losses from repeated disasters by increasing biodiversity in food and agriculture and diversifying livelihoods.

Although there is no single approach or solution for addressing food security-related risks during humanitarian response, the combination of climate-resilient and sustainable agriculture and trust-based interventions in agroecology can go a long way towards ensuring farmers adapt and adopt appropriate practices during humanitarian response.

Agroecology and risks in humanitarian response: a major risk to food security in humanitarian response is introducing practices and approaches that do not deliver expected outcomes and/or are not sustainable outside of the support provided by humanitarian organisations. Humanitarian responses can sometimes move too quickly, pushing solutions tried elsewhere that may not perform as expected in a different location. Humanitarian actors may lack local understanding, leading to mistargeted interventions, such as supplying inappropriate seeds and varieties or failing to identify all relevant actors in a food system. Introducing agroecology may therefore not always be appropriate in acute responses, unless it restores previous systems with proven safety or acceptance or demonstrates new practices that have been tested and proved suitable in the context.

The KIIs emphasised the need to introduce new practices slowly, accompanied by close monitoring and adaptation and starting at a small scale (see Section 3.8). The pilots confirmed this, as well as the need to address enabling factors such as access to natural resources and markets. Inequitable land tenure regimes and dependency on humanitarian responders and interventions make a new or continued transition to agroecology a careful balancing act of priorities and trust.

Despite coordination efforts at cluster or working group level (see Section 3.6), different humanitarian organisations may adopt different approaches to food system recovery. In such a case, different parts of the food system may receive uncoordinated support which could counteract any agroecological gains made before the crisis. This risk is carried through into the recovery and development stages, when disappointing yields, high labour demands or high demands on people's time for training, coordination, institution building and so on can dissuade food system actors from embracing the types of agroecological interventions introduced.

Lessons on how to manage and mitigate transition risks are discussed in more detail in Section 3.8.

Best practices, strategies and enabling factors: humanitarian interventions should focus on farmer organisations and other farmer and leadership structures. Putting farmers at the centre of their interventions, organisations need to build trust (especially if they have not worked in the affected regions before) and work through existing structures to ensure interventions continue beyond the initial humanitarian response. They should also consider making or rebuilding links with market actors via agreements and contracts. Crucial to this is the participation of government representatives or other local power structures. Early, visible successes will also help ensure a longer-lasting take-up of agroecological approaches while keeping the humanitarian imperative (see Box 3) central to the response.

Systematic preparedness is one of the best ways to ensure agroecological approaches continue. Where preparedness is lacking, projects can use methodologies such as cash modalities as entry points to maintain basic standards before introducing change and developing a catalogue of practices during the disaster phase. It is important to note that conditional cash modalities are not always the most successful approach. Cash modalities should be rooted in trust, and making them unconditional avoids coercive effects in high-vulnerability contexts.

DCA has documented solid resilience outcomes from supporting community-led responses through microgrants or group cash transfers. These grants transfer power and resources to self-help groups or organisations, allowing them to respond to humanitarian crisis and protracted needs, as members of affected populations identify their own priorities and grants are distributed to groups based on simple project proposals. This survivor- and community-led approach, which builds on local knowledge and capacities, as well as the energy of people ready to support their local community in time of crisis, could be suitable for supporting agroeocology-based recovery in contexts where there is already an understanding of, and interest in, agroecology.

Finally, it is important for organisations to show realistic examples of success and avoid overpromising the potential effects of agroecological approaches.

Funders, their priorities and roles: funding is a major issue across all programming in humanitarian response. The Sphere guidelines and other standards do not advocate a specific approach, so funding for agroecology is usually available if approaches address common food security and livelihoods indicators. This allows organisations to include agroecological approaches without being explicit about them. But funding is often limited compared to needs, and is frequently short term and projectised, leading to fragmented and sometimes siloed responses split across humanitarian, development and peacebuilding workstreams, with little coordination. Funding is rarely flexible enough to respond to changes in context.

To secure funding, organisations have to provide evidence of impact of agroecological approaches; but such evidence, when available, is not always enough to garner support from local government, authorities, national ministries and donors. If funders were to commit to supporting agroecological approaches across their interventions, it would help systematise uptake. Donor participation would also enable long-term monitoring and coordination, providing greater evidence of successful agroecological approaches, and could be part of a wider coalition of partners for an agroecological transition (see Section 3.2).

Agroecology has growing institutional support, but is yet to be mainstreamed in practice. To improve funders' take-up of agroecology, development organisations can focus on staff training and attitudinal change in extension and research systems, ensuring evidence of success is matched with an informed narrative on agroecology. Another area of focus is attracting donors to ancillary services, including appropriate financial mechanisms such as insurance and finance for labour-intensive approaches.

Sections 3.2–3.11 discuss some of these findings in more detail, and these are reflected in the recommendations in Chapter 4.

3.2. Tackling food system transition

While various studies document the concepts behind an agroecological food system transition (see Section 2.2), we did not find any examples of a full transition that meets all 13 Principles of Agroecology. This is unsurprising, as the agroecological principles and elements describe a desirable state in fairly general terms, but do not define an absolute end point for transition. Transforming an entire food system that is embedded in a country's or region's economic, social and physical fabric is a complex task that requires coordinated, harmonised actions across multiple sectors and at scale — that is, beyond small pilots and projects.

Main lesson

A key lesson from this project is that such a transition cannot take place through project modalities alone. Rather, it requires a broad coalition of partners — including government, donors, civil society and private sector actors — who can work together in a synergistic way, based on their respective roles and strengths. Ideally, the visions and strategies of such a coalition must have legitimacy and buy-in at national level. Although projects can pilot and test different approaches, support capacity development and build alliances by convening and facilitating, they cannot (and probably should not) lead the transition.

The opportunities and challenges of project modalities are well known. All three pilots in this study built on previous project interventions, by DCA or other actors. This is often the reality, as projects tend to be short and have a limited geographic scale. It can be cost-effective to continue working in the same locations as previous projects and build on their achievements, or to scale out successful interventions to new locations. Similarly, if previous projects supported the development of cooperatives or saving groups, subsequent projects can work with these groups when introducing new value chains or production methods. As capacities on the ground evolve (possibly along the transformation levels shown in Figure 6), interventions need to adapt, ideally in a coordinated and strategic way. But each donor and implementing agency has its own priorities and ways of operating, so strings of projects may lack coherence and/or local ownership. Gaps between projects can also put vulnerable food system actors at risk, if, for example, transition support is interrupted.

The food system interventions implemented in the three case study sites before the current project did not necessarily have a primary focus on agroecology. DCA implemented the 'Reclaiming De-mined Agricultural Land for Social Economic Development' project in the Lebanon pilot area, which aimed to transform contaminated mine-infected fields to healthy farming land through agroecology (DCA, no date). The Himalayan Agroecology Initiative's (HAI) 'Promoting resilient agroecological system' project in Western Nepal and the Hindu Kush Himalayas had implemented several agroecological initiatives in the Nepal pilot area. HAI built the foundation for a transition to resilient and commercially viable agroecological farming systems by strengthening capability for agroecological policy, planning and practice in Nepal's western provinces. Finally, DCA had already initiated agricultural activities with the pastoral community in Kenya's main pilot site, Nakwangat Farm. In another garden site, Kalemchuch, where DCA trained farmers in agroecology and provided infrastructure support, FAO, World Vision and other NGOs had worked with refugee and pastoral farmers, providing some training and infrastructure such as pumps for open wells, but without an agroecology focus. According to local farmers,[4] there were no direct contradictions or incompatibilities between the different agricultural project interventions. NGOs working in the area

4 Personal communication during the Turkana learning workshop.

generally coordinate at field level with the county government and other agencies and have platforms that bring together all agriculture sector actors. The DCA team further leveraged established relationships with local input suppliers and traders to forge market connections for new farmers.

Increasing coordination and synergies between projects and actors is one step towards addressing these shortcomings, and several mechanisms facilitate this, including sector working groups (FMAFS, 2025), food security clusters (Lebanon FSAC, no date) and the African Union's Comprehensive African Agriculture Development Programme (African Union, no date). While some of these forums are primarily focused on coordination, others are more ambitious and aim to drive a transformation agenda, but not necessarily one that focuses on agroecology, as national and continental agricultural policies to date have often prioritised a more productivity-focused approach.

Some countries have started using projects in a more strategic way to support the national development agenda, but agroecology may not be their priority. For example, Rwanda established the Single Project Implementation Unit (Rwanda Biomedical Centre, no date) to improve donor coordination and ensure projects contribute to national priorities (see Uwaliraye et al., 2024 for an example from the healthcare system) but although the country's fifth strategic plan for agriculture transformation prioritises a modernisation of agriculture to achieve productivity increase, it does not mention agroecology (Republic of Rwanda, 2024). However, there can be significant trade-offs between supporting national agendas (which may not prioritise agroecology) to ensure high-level support and sustainability of interventions and supporting an agroecological food system transition that is unlikely to be continued after a project ends due to a lack of buy-in at the higher level. At the same time, in countries with effective decentralisation such as Kenya and Nepal, there are opportunities to work with state or local authorities to design and implement local-level agroecology policies. The Kenyan National Agroecology Strategy (MoALD, 2024) provides coordination mechanisms for agroecology actors and emphasises policy coherence with existing frameworks and subnational implementation support. Other African countries are following Kenya's lead (Biovision, 2025) and may provide the critical mass of experiences needed to move the transition to the next level at regional and continental scale.

Several groupings and alliances of civil society and development organisations, government agencies and other actors promote agroecology at national or regional levels. For example, HAI is a multistakeholder consortium that aims to enhance biodiversity, support sustainable agricultural practices, strengthen landscape approaches and foster agroecological value chains, market access opportunities and healthy diets to strengthen the resilience of food systems in India, Bhutan and Nepal in the face of the climate crisis. DCA and LI-BIRD worked with HAI and the Karnali provincial government to advance on agroecology. The Agroecology Learning Alliance in South-East Asia is a strong coalition of stakeholders that aims to strengthen the sharing of experiences and knowledge between agroecological initiatives, and increase the visibility and credibility of the agroecological movement among policymakers, family farmers and consumers (ALiSEA, no date). A key challenge for such networks is their dependency on donor funding, and in some cases, the lack of buy-in from national governments.

There are many opportunities to achieve more and better impact with food system transitions by working together with like-minded organisations, but it is important to address questions around the legitimacy and sustainability of such alliances. Short projects can make useful contributions to the transition, but their impacts will be limited unless they are part of a wider, strategic alliance.

3.3. Mapping and documenting food systems

The country teams carried out FSAs at the start of the project to gain an understanding of the different food system components and the connections between them and identify both the extent to which the existing food system already reflected agroecological principles and the main opportunities and challenges with regards to an agroecological transformation (see Section 2.4). The initial plan was for these assessments to be done rapidly, relying on existing information and discussions with stakeholders — such as the Rapid Actionable Food Systems Assessment methodology proposed by Obeng et al. (2025), which uses a mixed method approach combining expert elicitation, surveying and visualisation of opinions via heat maps — followed by focus group discussions (FGDs), to produce actionable results on a community level.

The Nepal team decided to undertake a more thorough assessment using a modified version of the Tool for Agroecology Performance Evaluation (TAPE), analysing the various components of the food system in more depth (FAO, 2019). This included calculating a characterisation of agroecological transition (CAET) score. The Kenya team

used a mixed method approach combining quantitative household surveys, alongside FGDs with farmers and KIIs with government and NGO representatives, DCA staff, and private sector actors. In Lebanon, the team used a similar approach, combining a literature review with KIIs, FGDs, a needs assessment, and several meetings with farmers and food system actors. The FSA in Lebanon was severely affected by the war, which made it difficult — and at times, impossible — to meet food system actors.

Other participatory assessment methods include the learning lab methodology the DCA used in Cambodia and the DCA-developed Field Dialogue Tool[5] for agroecology design and implementation at community level. Designed for participatory planning and designing agroecological practices with community and stakeholders, the Field Dialogue Tool allows users to make a situation assessment of a community and landscape, and build on existing practices and resources, while introducing a variety of new agroecological practices to increase productivity and reduce vulnerability. It can track community- and village-level progress, using structured participatory rural appraisal exercises such as transect walks, mapping, scoring, ranking and FGDs. Stakeholders then analyse the information jointly — for example, in a workshop where they can develop follow-up actions. Community- and field-level social mobilisers can also adapt and modify the tools when implementing the interventions. In Lebanon, the team established a local multistakeholder platform that brought together farmers, producer organisations and other food system stakeholders to review the FSA findings, develop a shared vision for agroecological transition and identify priority barriers and drivers to address in the pilot.

All three country teams used the FSA to adapt their transition approach. For example, in Nepal, the CAET scores showed that the circular and solidarity economy, responsible governance and recycling were the weakest elements of agroecology in the food system, prompting the team to:

- Support the governance of farmer groups and cooperatives to increase farmers' participation in agroecological food production and local government input subsidy decisions
- Use farmer field schools and two-way communication in agromet advisory services to disseminate agroecological knowledge among men, women and youth, facilitating knowledge sharing within and between communities
- Focus on recycling crops and animal residues and by-products for vermicomposting, and trial the use of rice straw and husk for mushroom production
- Identify suitable paddy varieties for flood conditions and wheat varieties for drought conditions through participatory varietal selection, and
- Develop localised agriculture advisory services for risk-prone communities.

Main lessons

Resources: completing an FSA takes a substantial amount of time, effort and skills. While TAPE is a well-tested and comprehensive methodology that will produce useful insights, it is also extremely detailed and time consuming. DCA developed a 'light' version of TAPE that the Nepal and Lebanon teams used for their FSAs, but even that required substantive data collection and analysis. In Lebanon, the team observed survey fatigue among some respondents, who had already been interviewed by other projects or organisations. In the end, the new insights from the FSA were not profound or relevant enough to justify the resources (particularly, time) used to generate them. Having invested in the FSAs, and with the aim of reducing future data collection in the same areas by future initiatives, we agreed to make the three FSA reports available online, as an open resource for all.[6]

Stakeholder involvement: involving stakeholders in the FSA is essential and could have been increased in the pilots. The Nepal and Kenya FSAs were carried out by consultants who interacted with some stakeholders but they did not involve them in the study design and implementation. Although they validated findings with stakeholders, the value of the assessment and how the findings would be used was not always obvious to farmers and other stakeholders. Being more co-creative in the FSA process would increase stakeholder buy-in for projects and ensure their perspectives and priorities are adequately reflected. Local stakeholders — including farmers and other food system actors — can also help ensure topics and questions reflect their diverse realities (which in the Lebanon pilot, included landowners and landless farm workers).

5 Accessible to the public after registration at the DCA Agroecology Hub (www.fabo.org/dca/AgroecologyHub), the tool is supported by technical resources covering the different field activities.
6 See www.danchurchaid.org/climate/climate-resilient-food-production-in-humanitarian-contexts

Timing: the ideal time to undertake an FSA is before developing pilot transition activities. This was not possible during this project, because activities had to be defined at the proposal stage, before resources were available for the FSA. Although the country teams adapted project activities based on the FSA findings, they could not accommodate major changes at this stage.

Sharing findings: a lengthy report is not the only appropriate format of making FSA findings accessible. Short briefings, other media, and interactive workshops or field visits can help translate findings into concrete project actions.

3.4. Defining the desired food system vision

FSAs provide an understanding of the current state of the food system, but not necessarily a consensus on the direction of travel from there. The three country teams engaged with stakeholders to discuss their visions and agree on the characteristics of a desirable future food system (or component thereof, as not all pilots focused on all components of the food system). The teams used FGDs, KIIs, community meetings, workshops and field visits together with agriculture research organisations and departments of agriculture extension services, as well as exposure visits for local government officials and lead farmers.

The concept of and terminology around agroecological transition — definitions, history, the 13 principles, the ten elements and so on — were new to most stakeholders, even though many had a clear understanding of the key issues associated with such a transition in their local context. The teams used different approaches to 'translate' the concepts in a way that drew on local knowledge and understanding (see Box 7).

Figure 9. Simplified diagram used to explain the agroecology principles in the Nepal pilot

Source: Nepal pilot

Box 7. Explaining agroecology to key stakeholders: an example from Nepal

Explaining agroecology to local stakeholders in a way that resonates with them can be challenging. This is mainly because agroecology, as conceptualised by FAO, describes the characteristics of the whole food system, not a specific farming practice or approach. In Nepal, many stakeholders, especially local government and private sector actors, asked for an explanation of agroecology as one clear, tangible activity, such as zero tillage, agroforestry or crop rotation. But agroecology is about how different parts of the food system — soil, crops, livestock, trees, water, people, markets and local knowledge — interact. It focuses on long-term benefits, not quick results. Compared to technology-based farming messages, this makes agroecology harder to explain.

Another difficulty is language. Agroecological principles use words like diversity, resilience, synergy, circularity and co-creation of knowledge, which are not commonly used in daily conversations. Local government actors, farmers and private sector actors usually prefer talking about tangible issues related to farming, incomes and so on.

During the project inception workshop in Barbardiya municipality, the Nepal project team presented agroecology, using the ten elements and 13 principles. The mayor, ward representatives and private sector participants found the presentation difficult to understand. The mayor asked a very practical question: "What will you do in this project and what changes will this project bring to our community and municipality?" He wanted to know whether farmers would earn a higher income, food security would improve, crop yields would increase, irrigation and farming services would improve and how this would change people's daily lives. These — rather than technical terms or theories — were the real concerns of the municipality. The mayor then asked the project team to revise the agroecology concept using local examples and simple language and present it again before starting project activities.

The team reworked the agroecology principles and elements into clear and practical messages, focusing on visible benefits. Instead of explaining scientific concepts, they explained agroecology as:

- Healthy soil that produces better crops every year
- Lower farming costs by using local seeds, manure and resources
- More food and income by growing different crops and raising livestock
- Lower risk of flood, drought and pests
- Better use of water, land and forests
- Strong farmers' knowledge, combined with new ideas, and
- Sustainable farming that protects resources for future generations

In Nepal's experience, agroecology becomes meaningful when it is presented not as a theory, but as a practical way to improve farming, livelihoods and natural resources. The team explained the 13 Principles of Agroecology in a simple way (see Figure 9 — with the principles in boxes), with farmers and communities at the centre, surrounded by the main agricultural priorities that have been identified locally (in bubbles). All these components are connected and support each other. When they work together, farming becomes productive, resilient and sustainable. And instead of referring to principles and elements, the team spoke about good farming practices that improve livelihoods and protect nature.

Image: capacity building workshop on agromet advisory and risk communication services to municipal staff, representatives and stakeholders in Barbardiya municipality, Bardiya district. Credit: © DanChurchAid Nepal

In the pilots, stakeholders understandably focused on the parts of the food system they were part of, or most affected by. As such, they had different preferences and priorities (see boxes 8 and 9).

Box 8. Different stakeholders' food system priorities in the Kenya pilot

Refugees prioritise short-term food and cash security, and small kitchen gardens. They prefer cash and immediate yields, but are less interested in livestock, as policies restrict their access to livestock ownership. The land they farm is controlled by the host community.

Host communities are interested in sustainable incomes from longer-term land productivity, boreholes, livestock-crop integration and market access.

The county government prioritises policy alignment, scale and institutional responsibilities.

DCA and other development organisations want to develop pilotable, measurable agroecology interventions (demonstrations, trainings) that meet donor timelines and requirements to demonstrate impact.

Market actors are keen on supply consistency, produce quality and have transport/storage concerns.

Source: Turkana pilot

Box 9. Different stakeholders' food system priorities in the Lebanon pilot

Farmers vs. market actors: farmers transitioning to agroecological practices face structural challenges related to market dynamics. They experience unfair pricing and limited interest from merchants in purchasing their chemical-free produce. Market and consumer preferences favour aesthetically appealing varieties that are chemically treated. The wholesale market in Saida operates as a monopoly controlled by a small group of influential stakeholders who dictate pricing and purchasing terms, leaving small farmers with limited bargaining power and access to fair markets. As such, farmers prioritise obtaining a premium price for their agroecologically produced produce, whereas other market actors are keen to retain control over prices and trade terms.

Farmers vs. government: the Lebanon FSA report highlights a history of government neglect and neoliberal agricultural policies that have favoured large agribusinesses and multinational corporations at the expense of small-scale farmers. The local municipality's limited resources and the central government's control over agricultural policy are reasons for not intervening in local crop production. But under the new government, there have been noticeable changes, including a growing acknowledgment of the importance of agriculture and more openness to collaboration with local actors and NGOs. These shifts signal potential opportunities for policy alignment and more inclusive agricultural planning in the future. As such, farmers' and government priorities are starting to align.

Farmers vs. humanitarian actors: during the crisis, major UN agencies and international NGOs largely continued with a business-as-usual approach, often overlooking local farmers as potential suppliers for food assistance programmes. As a result, aid parcels primarily comprised imported items, while fresh produce was procured from large merchants operating within Saida's wholesale market, further reinforcing the dominance of major traders and marginalising small producers. But during the period of escalation, some cash-for-work programmes initiated by humanitarian organisations enabled women to engage in greenhouse farming using agroecological methods. The produce from these activities was then used to support food assistance for IDPs, representing a positive shift towards integrating local, sustainable food production into humanitarian responses and highlighting opportunities to meet the needs of both humanitarian organisations (who want to purchase quality food for their programmes) and local agroecological producers.

Source: Lebanon pilot

To address these differences in priorities, country teams used several strategies. These included transparency and inclusiveness in consultations to ensure all food system actors were involved — for example, in Lebanon, traders from the wholesale market in Saida participated, even though they were not in favour of more localised and direct marketing approaches. The smallholder farmers' and small-scale traders' visions were prioritised, in line with the project's developmental objectives and DCA's commitment to community and local leadership, including locally led adaptation. This was particularly important in Lebanon, where large power differences exist between stakeholders. The teams also compromised in intervention design to ensure they met the priorities of all or most stakeholders at least partially, rather than focusing entirely on the priorities of some groups at the expense of others. For example, the model implemented in Turkana included poultry and household gardens (refugee priority) as well as agroforestry, apiculture and market linkages (host and county priorities).

Another challenge lies in needs and priorities changing over time. As stakeholders' understanding of agroecology evolves and their capacities increase, their vision will also shift. For example, in one of the gardening sites in Turkana, farmers dug open wells for irrigation — which were subsequently stabilised and secured by DCA (see Box 10) — giving them new opportunities to enhance diversity and resilience. They initially lifted water using treadle pumps that were introduced by a project, but as farmers' capacities increased, so did their ambitions. They decided to invest their profits in diesel pumps, which enabled them to lift more water and irrigate a larger area. But these pumps are expensive to operate, requiring expensive fuel. At the time of the project workshop, their ambition was to install solar pumps, with help from the Government of Kenya and/or development partners. Introducing renewable energy would also contribute to other dimensions of sustainability, such as climate change mitigation and reduced pollution from fuel spills. Farmers also received training in agroecological practices, building on the experience from the initial pilot project in Turkana.

Main lessons

Power imbalances: inevitably, the vision of the desired food system is influenced by those in power. And in the case of donor-funded initiatives, this includes funders and those implementing the projects/programmes, such as DCA and IIED. Combined with the necessity to present a well-thought-through proposal for a competitive tender before the project starts, there may be a risk that local food system visions are not fully reflected, particularly where they are at odds with or even contradict the visions of funders and implementing agencies (see Section 3.5).

Language and concepts: when introducing agroecology to stakeholders, it is important to translate the principles and elements into comprehensible language, using local terms and concepts they can relate to. Dogmatism — where the concept of agroecology dominates over its applications — is not helpful.

Flexibility and compromise: project teams may have to and can compromise. Identifying interventions that meet the needs of different groups to an extent, without competing, can reduce conflict and support sustainability. It is important to always be transparent about the reasons for decisions and avoid overpromising, which risks alienating stakeholders. There is no clear 'end point' for an agroecological transition. As the transition progresses, it is likely that stakeholders will develop new capacities, new needs and priorities will emerge, and new solutions will become feasible. What this looks like in practice can vary in different contexts, requiring both flexibility and creativity to design a transition process that is fit for purpose (see Section 3.5). It also requires good communication and monitoring, to recognise emerging needs and work with stakeholders to address them, using capacities they have developed throughout the process.

3.5. Contextualising agroecology

Different stakeholders' visions for their food system require different approaches to the transition. The three pilots provide interesting examples of ways to initiate and implement an agroecological transition, as they had very different starting points (see Section 1.3) and visions (see Section 3.4).

Even within the pilot sites, different groups had different needs that required different solutions. For example, in Turkana, the project supported a group of farmers in the vicinity of the Kakuma refugee camp and shared the lessons from this experience with another group. Despite only being a few kilometres from each other, the two groups had very different needs and priorities, and required different approaches to support their transition (see Box 10).

Box 10. Two farms, two worlds: supporting refugees and host communities in Turkana

During the in-person workshop in Turkana, the cross-country team visited two farmer groups. Although less than ten kilometres from each other, their starting points, priorities and capacities — and therefore their needs and the approaches required to support their transition — were worlds apart.

The Nakwangat farm was the main site connected to the pilot. The community managing this farm was largely pastoralist and had taken up crop farming with support from DCA to complement livestock farming. Most of the farmers were women and elderly men, who stayed behind in the homestead while the men and older boys moved with livestock herds in search of pastures. The farm had different sections: a shared demonstration site, a communal rainfed plot for sorghum, furrow-irrigated individual plots with zaï pits and a communally managed drip-irrigated net house. For the pastoral community, it was a big change to diversify into farming and marketing crops but they welcomed the new income opportunities and nutrition gains. Recognising the short duration of the pilot and the community's low experience in crop farming, the DCA team opted to demonstrate farming practices that would show results in the short term and were easy to replicate. There was an expressed need to continue the agronomic support — including for water management, commercial production and marketing — beyond the pilot.

The second site, Kalemchuch, comprised individual land plots farmed by a group made up mainly of refugees, with a few host community farmers on a piece of communal land provided by the local pastoralist host community. The refugees were largely from Burundi and brought with them strong experiences in crop farming. The group exchanged experiences among themselves and with the host community farmers and took collective initiative to develop the land and build supportive infrastructure, such as open-dug wells. While the refugee farming community had clear advantages in terms of strong agricultural knowledge, experience of marketing produce and strong relationships with traders in the refugee camp, it also faced significant constraints. Refugees were generally not allowed to own land and large livestock, which could have been beneficial in terms of crop-livestock integration on farm. They also had to adhere to movement restrictions following protests in the camps against aid cuts and drastically deteriorating living conditions. Recognising the strong drive and existing capacities in the group, DCA supported the well construction with materials for reinforcement, elevated water tanks and provided capacity building on agroecology, including integrated pest management to support a transition away from inorganic pesticides. At the same time, through other funding channels, DCA supported the diversification of livelihoods by providing materials and technical support for a mushroom production facility, initiated by members of the refugee farmer group based on their own experience in mushroom farming.

The work with host and refugee communities in the two sites took place in a context of power asymmetries between refugee and host communities, a new paradigm of socioeconomic integration of refugees, and drastic aid cuts, which significantly impacted refugee communities' purchasing power and local markets. The team therefore paid special attention to the risks of exacerbating competition over resources as well as opportunities to enhance social co-existence through land-use sharing agreements, market linkages and capacity sharing on agricultural and natural resource management practices across groups.

Images: host community farmers at Nakwangat farm (left) and refugee and host community farmers at Kalemchuch farm (right), Kakuma, Kenya.
Credit: © Rikke Fabienke/DanChurchAid

Source: Kenya pilot

Local stakeholders may prioritise short-term economic benefits over long-term sustainability — particularly in a humanitarian crisis situation — and it is important to respect this. As such, interventions have to meet both immediate needs and long-term objectives, which requires flexibility, continuous experimentation and adaptation, and shared decision making. Although these characteristics are embedded in the agroecology principles of participation and co-creation of knowledge, where either capacity or the will to follow such a flexible and participatory learning process is low, there is a risk of agroecology being rolled out with limited local ownership. Working with farmer organisations can help ensure this does not happen (see Section 3.6).

Main lessons

There are trade-offs between a by-the-book agroecology transition that addresses all the principles and elements and using a bottom-up, community-led approach that prioritises certain elements over others. Achieving sustainable outcomes with buy-in from local stakeholders will most likely require some degree of compromise, a genuinely participatory approach that empowers farmers and their organisations, and the ability to embrace failure and mistakes. Even within a small geographic area, the starting points and visions for an agroecological transition can vary significantly, calling for interventions that offer a high level of flexibility and implementing partners with a high level of adaptive capacity.

3.6. Working with stakeholders and building partnerships

Stakeholder engagement was an important component of all three pilots. As the DCA teams and partners had previously worked in the project locations, they quickly identified key actors and involved them from the start. There was an initial stakeholder mapping at the project design phase, when the team consulted the main stakeholders on project components and activities. During the FSA, it carried out a more detailed stakeholder mapping to identify potential champions and blockers, enabling them to monitor, inform, engage with and satisfy them through meetings, field visits and workshops. Due to the project's relatively short duration and limited budget, the scale of these activities was relatively limited, and they were further hindered by staff turnover in key partner organisations, such as agricultural departments and other factors (particularly the war in Lebanon).

The main stakeholders were:

- Local community members: farmers, pastoralists, refugees, local traders
- Government agencies: at municipality or county, and national level, including agriculture, environment, trade and food security
- Private sector organisations (input suppliers and traders)
- Civil society organisations, and
- Other projects or initiatives.

We have already discussed the benefits of a bottom-up approach that empowers local communities (see Section 3.5) and the rationale for a broader coalition of partners that operate in a synergistic way (see Section 3.2). The pilots demonstrated the key role of farmer organisations in the agroecological transition, not merely as a mechanism to roll out project interventions, but as a strong force for sustainable change (see Box 11).

Box 11. Diyalo farmer group: overcoming barriers to agroecological transition in Nepal

Based in Barbardiya municipality, the Diyalo farmer group is a women-led organisation with 40 members, mostly from the Tharu community. Located along the Babai River and near a community forest, the group faces frequent climate shocks (floods and heatwaves) and crop damage from wild animals. Agriculture is their members' main livelihood, but productivity has been declining due to degraded soils, a heavy reliance on hybrid seeds, chemical fertilisers and pesticides, and weak access to extension services and climate information. As a result, local crop varieties are being lost over time.

The project supported the group to address these barriers collectively. Members conducted participatory trials on mulching and adopted organic and plastic mulch, drip irrigation, improved water-use timing and mixed cropping with cover crops. They shifted towards agroecological soil and pest management practices, including vermicompost, improved farmyard manure, Trichoderma and shared preparation of botanical pesticides, using cattle urine. These practices reduced their dependence on chemical inputs, lowered production costs and improved soil health.

The group also revitalised seed sovereignty by conserving, producing and exchanging Indigenous and improved crop varieties among members, significantly reducing their reliance on external seed markets. Improved linkages with municipal extension services and the establishment of an agroecological learning centre at a member's farm strengthened local knowledge and peer learning. Access to agromet advisory services through digital platforms also enabled timely farm decisions, reducing losses from climate-related events. According to group member Sundari Kumari Tharu, timely weather updates helped her harvest her paddy early and avoid losses from unexpected rainfall.

Overall, the Diyalo farmer group demonstrates how collective action, local experimentation and strengthened information and extension linkages can help smallholder farmers overcome ecological, climatic and institutional barriers to agroecological transition.

Source: Nepal pilot

Main lessons

Effective collaboration with government institutions was challenging at times. In Kenya, DCA's policy of not paying government staff working with the project per diem on activities that are core to their role acted as a disincentive for some government officials to participate in project activities. The policy is aligned with broader donor harmonisation principles for government allowances. The Lebanon team noted that their pilot's limited engagement with the Ministry of Agriculture was a crucial lesson learned, as stronger institutional alignment and active involvement of public agricultural authorities could have facilitated access to the extension services, market infrastructure and policy support required to scale and sustain the agroecological transition.

3.7. Recognising food system transition risks

Using the risk categorisation presented in Section 2.4, the country teams mapped out the different risks and developed strategies to mitigate or manage them. Although this was not a systematic or structured process, the regular online learning events were useful in working towards a certain level of cohesion in approach across teams.

Table 3–Table 5 outline the main risks identified and potential mitigation options. Most of the risks, barriers and uncertainties are interrelated.

Table 3. Category 1 risks and threats to the food system in the three pilot sites

Risks/Threats	Potential mitigating actions	Relevant pilot		
		N	K	L
Climate change (droughts, floods, severe heat etc) leading to crop damage or loss, low yields, infrastructure damage, pest outbreaks etc	Agroecology supports adaption and mitigation, reducing external input use, restoring soil carbon etc	■	■	■
Land degradation (due to invasive species, unsustainable farming practices, agrochemical use, urban sprawl etc) and pollution, leading to low yields	Use agroecology to restore land and policy advocacy for control of chemicals			■
Small farm size (due to limited land access for women and refugees, land grabbing, land fragmentation etc) leading to low production potential	Support policy advocacy, adapt agroecology to suit small farms (value addition etc)	■	■	■
Widespread poverty and lack of access to assets and credit, leading to low risk management and adaptive capacity	Select agroecological strategies with low start-up costs	■	■	
Lack of local income opportunities and poor returns to agricultural labour, leading to out-migration and less interest of youths in farming	Support policy advocacy for providing incentives for agroecological producers, value addition, value chain development etc	■		■
Cheap food imports from neighbouring countries, undercutting local producers	Support policy advocacy and campaigns to increase consumer awareness of agroecological produce, develop local markets, strengthen producer organisations	■	■	■
Fragile or non-functioning markets for inputs and outputs, high market access costs, price fluctuations, excessive power of wholesale market (L)	Support policy advocacy, connect agroecological producers to consumers, strengthen producer organisations	■	■	■
Governments and public institutions weakened by protracted economic and humanitarian crisis (war, climate change impacts, refugee influx etc), leading to low capacity to support transition	Facilitate training and capacity development	■		■
Unsupportive policies and politics (lack of political will, weak coordination between actors including NGOs, corruption etc)	Support policy advocacy, advocacy with NGOs and donors, strengthen producer organisations		■	■
Global reduction in aid, reducing financial support for agricultural development	Build on existing capacities and strength, emphasise sustainability throughout, early warning and action capacities			■
War and wider conflicts, leading to widespread destruction and displacement	Build general resilience			■
Local conflicts over land, livestock theft, water etc as a result of pressures on resources, undermining local institutions and trust	Strengthen local institutions to enable them to better manage conflicts		■	
Lack of social protection for agricultural workers, exploitative contracts (especially for women and refugees)	Support policy advocacy, strengthen producer and worker organisations			■

Notes: category 1 risks affect the food system before or without an agroecological transition. These are contextual factors or drivers that include environmental, demographic, macroeconomic and political factors; N = Nepal, K = Kenya, L = Lebanon.

Table 4. Category 2 risks and enablers for food system transformation in the three pilot sites

Risks (barriers)/Enablers (opportunities)	Potential mitigating actions	Relevant pilot N	K	L
BARRIERS				
A short project cannot bring about all the changes needed for a transition	Form coalitions or alliances with other actors; advocate for longer-term funding	■	■	■
Weak technical and financial capacity of government institutions to invest in the transition (infrastructure, ongoing support from agricultural extension and research etc)	Use project support for capacity development and institutionalisation of transition into national research and extension agendas	■	■	■
Knowledge gaps, technical and organisational constraints at farmer (individual and group) level, including access to resources for testing, adaptation and adoption of agroecological practices	Use agroecological funds and government subsidies for agroecological inputs, link farmers to insurance, facilitate training and farmer-to farmer learning support	■	■	■
Market barriers: irregular produce supply and inconsistent demand, risk of spoilage or low prices, consumers that are unable or unwilling to buy agroecological produce (too expensive, not uniform etc) (L)	Raise awareness among consumers, develop local markets including urban niche markets, encourage aggregation, invest in storage and processing facilities	■	■	■
Dependency on project funding for transition, for continuation of agri-extension services, delivery mechanisms etc	Integrate agroecology into municipal plans and budgets, national-level policy advocacy	■	■	
Different stakeholder visions, priorities and perspectives with regards to the transition	Adopt a flexible approach, facilitate the negotiation of compromise solutions			■
Political, corporate or donor visions that contradict an agroecological transition	Build coalitions, support bottom-up advocacy via civil society organisations			■
ENABLERS				
Strong local (individual and community-level) knowledge and resources on agroecology (agroecology as tradition, local crop varieties etc)	Make use of this capacity for experimentation and adaptation, promote practices	■	■	■
Strong local institutions	Work with them, let them lead	■	■	
Repeated disaster episodes make farmers and local government more receptive to agroecological solutions (need for diversification, reduced external inputs etc)	Ensure agroecological solutions really fit with the context (focus on low-cost solutions etc)	■		■
Quick-win interventions are possible that do not require a lot of investment (household level gardens, poultry, water-infrastructure, training)	Ensure agroecological solutions really fit with the context (focus on low-cost solutions etc)		■	
Additional funding available from central government as disasters hits area	Support farmer organisations in advocacy to use these funds for agroecological transition	■		
Opportunity to **build back better** after war	Contribute to policy process, feed in evidence			■
Refugee-host markets provide demand if local supply is strengthened	Work with farmers to develop regular supply		■	

Notes: category 2 risks make a transition to an agroecological food system more challenging; category 2 enablers work in favour of a transition; N = Nepal, K = Kenya, L = Lebanon.

Table 5. Category 3 risks from the food system transformation in the three pilot sites

Risks	Potential mitigating actions	Relevant pilot N	K	L
FOR PRODUCERS				
Uncertainty about the performance of agroecological practices under local conditions and climate change, and without the use of chemical inputs (due to a lack of local experience and/or data)	Undertake participatory action research, exchange knowledge between farmers, and establish agroecological learning hubs (researchers and farmers) and demonstration plots to test and adapt practices on farm as needed	■	■	■
Increased workload, particularly for women and children due to labour-intensive production methods (hand weeding instead of herbicide, making compost etc)	Identify, develop, test and promote labour-saving technologies, establish labour-sharing methods		■	
High costs of transition (requiring upfront investments with low initial returns)	Focus on promoting practices with low start-up costs, establish revolving funds or green credit facilities for smallholders during transition, provide in-kind support	■	■	■
Yield decreases in early phase of transition due to systems adjustments (pests and diseases, soil ecology, farmers making mistakes etc)	Make compensation payments to farmers, stagger the introduction of practices	■	■	■
Agroecological produce may not be able to compete with cheaper, conventionally produced food, including imports	Raise awareness among consumers of the benefits of agroecological produce, reduce production costs through participatory action research	■		■
Marginalisation of farmers without required resources (smartphone), as agricultural extension system relies on those (for early warning messages)	Use other methods to reach those farmers (interactive voice response messages, sirens, lead farmers)	■		
FOR OTHER VALUE CHAIN ACTORS				
Input dealers cannot sell their conventional inputs anymore and therefore face income losses	Invest in strengthening their knowledge to support the transition by shifting to market agroecological produce etc	■		
POTENTIAL FUTURE RISKS				
For consumers: food price increase as a result of reduced production during transition, potentially higher production costs due to more labour-intensive methods	The level of production in the three pilots sites was not high enough to impact prices			
For the environment: if transition resulted in lower productivity, areas under agricultural production may expand at the expense of natural habitats	Use participatory land-use planning to restrict the expansion of land for crop farming The level of production in the three pilots sites was not high enough to impact natural habitats			
RISKS THAT MAY BE REDUCED THROUGH AGROECOLOGICAL TRANSITIONS (IN THE LONGER TERM)				
Less reliance on external inputs, for example, because local seed system, composting etc reduce the risks of input price fluctuations		■	■	■
Increased resilience to climate change impacts (to be demonstrated)		■	■	
Fewer pests and diseases due to farming systems diversification			■	
Uncertainties reduce over time, as farmers gain experience with agroecological practices		■		

Notes: category 3 risks are (more or less) a direct result of the transformation process and associated interactions and can affect farmers, consumers, other value chain actors or the environment. Some are unintended negative impacts or trade-offs; N = Nepal, K = Kenya, L = Lebanon.

Category 1 risks are not specific to an agroecological transition. They are factors that affect all development processes in a given location, and ample documentation is available on different approaches to address them. The pilot teams identified those included in the tables under mitigating options.

Category 2 risks (and opportunities) are more relevant, because they include factors that are specific to the agroecological transition. These are largely institutional and policy factors — related to the knowledge and capacities of key actors — but also include market and political economy issues. The pilot teams tried to address some of these barriers, but the project was too short to make much progress. As outlined in Section 3.1, many of these risks and barriers are too complex and entrenched to overcome via a project approach. They require an alliance or coalition of actors who have the clout and resources to operate at multiple levels for a longer period. But this does not mean these barriers cannot be addressed. The three pilot teams implemented a range of activities to reduce risks and barriers, including:

- Working with government and private sector stakeholders to understand their perspectives, increase their understanding of agroecology, and design and implement activities together that also meet their objectives — for example, working with agricultural departments at county or municipal level to diversify agricultural production or introduce agroecological practices
- Institutionalising agroecology into work plans at country or municipal level to enhance the likelihood of future support via government actors
- Using climate hazard assessments and early warning systems to inform preparedness, disaster risk reduction and anticipatory action
- Facilitating market linkages and developing alternative marketing channels, including direct marketing from agroecological producers to consumers
- Raising consumer awareness of agroecological produce through social media campaigns and field days, and
- Working with existing farmer organisations and champions.

These tried and tested approaches have been well documented by others, including members of the Agroecology Coalition.

Category 3 risks are inherent in a transitioning or transitioned system. In the context of humanitarian crises, all development interventions need to protect life and prioritise safeguarding (preventing harm), avoiding or carefully managing any potential risks that arise. Despite some studies on specific aspects of such risks — such as labour requirements and marketing issues — development organisations that promote agroecology have perhaps not paid them enough attention. Section 3.8 focuses on reducing these risks.

3.8. Reducing transition risks and safeguarding progress made

Globally, a range of interventions have been developed, piloted and tested, adapted and scaled out to support agroecological transitions. These include agroecological production practices, social and institutional models for managing natural resources and accessing capital, labour and other means of production, and agroecological value chains. So, any initiative aiming to facilitate an agroecological transition has ample experiences to build on. Even at national and subnational levels, there are documented pilots and case studies to draw on.[7]

And yet, the three pilots illustrate how **little is known about the impacts** of specific interventions in specific contexts. For example, while the agronomic practices introduced have generally been tested in similar environments, their performance under different socioeconomic and agroecological contexts is unknown. Performance includes not only production per unit area, but also labour and other resource requirements under different management regimes. Similarly, little is known about the impact of agroecological transitions on local markets in specific contexts. Large numbers of often poor traders rely on transporting and selling both imported food and agri-inputs and produce grown with agroindustrial production methods. While it is reasonable to assume that, in the long term, markets will adjust to changes in supply and demand, the short-term impacts of interventions that focus on connecting producers to consumers more directly are not known in all contexts.

7 For some examples, see https://agroecology-coalition.org/agroecology-case-studies/

As the crucial link between producers and consumers, markets are the main entry point for wider system change, which can scale up impacts from farm to landscape and beyond (see Figure 6). Natural resource management, particularly with regards to conservation of and access to water, is another key component that requires looking beyond farm and community levels in the transition, as landscape-level interventions might be required to restore hydrology.

Development organisations — whether governmental, civil society, private sector or a combination of these — have a moral obligation to do no harm, particularly in humanitarian crisis contexts, where people are already suffering from the impacts of disasters. Promoting interventions that have not been adequately tested in the local context can expose people in vulnerable situations to unacceptable risk.

A recurrent theme in the literature and the three pilots is the challenge of **ensuring access to resources** for an agroecological transition, including secure access to land, inputs, labour and transport, and storage and marketing facilities. This access is required not just during the transition period, where additional support in the form of project grants might be available, but also in the long term.

The importance of secure land rights to incentivise investments in land is extensively documented (see, for example, IFAD, 2021). In two of the three pilots, farmers were struggling to access land: in Lebanon, because the war had destroyed a lot of farmland and in Turkana, because refugees relied on host communities to make land available to them, usually with no formal agreement. Access to water for producing higher-value crops (such as vegetables, mushrooms, insects and spirulina)[8] is also often severely limited, either due to non-availability or because of high costs involved in bringing water to farms. Access to specialised inputs for agroecological production or transformation can also be a challenge. While in principle, agroecology relies heavily on locally sourced materials, efficient resource use and recycling, a humanitarian crisis may severely reduce the availability of such resources.

Developing transport, processing and marketing facilities also requires resources, from initial investments to ongoing maintenance and upgrading. In a humanitarian crisis where basic health, education and housing facilities have been destroyed, such investments may not be a priority. But the recovery and reconstruction phases provide an opportunity to build back better and develop infrastructure and services that support an agroecological food system.

Last, but not least, the transition from a conventional, external input-dependent system to an agroecological one may result in a temporary (or permanent) drop in productivity at a time when producers may require additional equipment, materials, labour or other resources for the transition, to practice integrated pest management, implement soil and water conservation measures, establish trees or other perennial vegetation, produce organic soil amendments and so on. Transition costs and yield drop will vary significantly in different contexts, and both governments and development organisations have developed support mechanisms to help farmers bridge this gap. DCA has experimented with cash transfers for agroecology, using cash grants to stimulate a green transition by reducing risks for small-scale farming communities in Uganda and Zimbabwe. The initial results confirm that providing cash can be an important enabler of the transition, allowing farmers to experiment with and adopt different practices.

An important risk for farmers adopting agroecological practices are the **uncertainties around labour requirements**. This includes both the number and type (women, men, children) of person hours it takes to manage farm and other food system operations, as well as the skills, knowledge and time required for each task. When working with vulnerable people affected by humanitarian crises, development agencies have a duty to ensure that their food system-transforming interventions do not pose an undue burden on people, even in the short term. This may require adapting approaches in ways that reduce labour impacts, where these are a challenge.

Labour impacts will vary significantly, depending on the type of intervention, stage of transition and opportunity costs of labour in that location and for the individuals or groups involved. Impacts can be positive or negative. Labour requirements might reduce over time and be fewer than those of conventional farming practices — for example, using mulch and organic matter to cover soil could reduce the amount of weeding required in the long term. Or they may increase, but be compensated by a reduction in fertiliser, pesticide, water or other input costs. For example, in the Lebanon pilot, introducing integrated pest management increased labour requirements for pest and disease monitoring and preparing biopesticides but reduced the need to buy (and the cost of buying) pesticides in the market. Input costs for farmers in Nepal also fell due to integrated pest management and seed saving. In the Kenya pilot, mulching required

8 DCA and other development organisations have introduced novel foods such as insects and spirulina as income-generating opportunities where agricultural land is in short supply or affected by climate change impacts (see, for example, ICIPE, no date).

more labour but reduced evaporation and therefore the amount of fuel needed to pump irrigation water. In all the pilots, participating food system actors had to increase labour inputs to some extent.

Practitioners do not always consider opportunity labour costs (loss of income or other benefits from not doing something else during that time) when introducing agroecological interventions, sometimes assuming farmers have no other occupations and are therefore free to invest more time in their farming operations. But farmers and other food system actors may have a range of other activities and livelihood options that could suffer if they have to reduce the time and attention they can spend on them. On the other hand, some off-farm livelihood activities might be considered undesirable. Such is the case with artisanal mining, which is popular with youths in many parts of the world for quick returns, but associated with high risk of accident or becoming a victim of crime. Provided the returns are attractive, drawing youth away from such activities into farming could be a positive step.

As with other characteristics of agroecological interventions, the pilots identified the uncertainty of labour needs for different transition-related interventions as a key issue. Besides changes in cultivation, processing and marketing methods, the transition might also require substantial time inputs for training, attending meetings, participating in collective action and so on. It is difficult to anticipate how much time each of these activities would take up, and how different individuals or groups could be affected by it. The only way to find out is to carefully monitor the effects with all concerned and adapt interventions accordingly.

Capacities required for an agroecological transition, at individual and organisational levels, include both physical attributes (such as equipment and transportation) and human attributes (attitudes, knowledge, experience and skills). The pilots identified **capacity gaps** at all levels, as well as **available capacities** to harness for the transition.

Where capacities are lacking, there is a risk that any steps towards a transition will not be sustainable, once project support ceases. Similarly, where only some individuals or groups have the capacity to participate in the transition, there is a risk of leaving others behind, increasing rather than reducing inequalities. This applies, for example, to differences in capacity between men and women, older and younger people, host communities and refugees, pastoralists and farmers, literate and illiterate individuals, and formal and informal institutions. Supporting capacity development for all can help create a more even playing field for the transition.

Agroecology is very knowledge intensive, as it seeks to balance environmental, social and economic outcomes, and requires different practices and activities in different contexts. It requires both individual- and institutional-level capacities to design, implement, support and sustain the transition. Although development interventions normally include some elements of capacity development, the needs for a food system transition are different from those of conventional agricultural projects, which primarily focus on production or productivity. Co-creating and sharing knowledge are key elements of agroecology, and the interactive learning dimension of capacity development (learning by doing or experimentation) is crucial. This must include the different food system actors whose actions will impact on the success of the transition overall. Bringing together actors across government sectors (agriculture, environment, health) and along the value chain (farmers, traders, consumers, processors and so on) can be challenging and time consuming, but collective action is required for many aspects of the transition. The participation principle and decentralised governance element build on collective action by farmers and other value chain actors.

The pilots aimed to develop such action by supporting farmer organisations and connecting them to regional and national platforms. The pilot teams used several interventions to develop food system actor capacity. Broadly similar to the approaches used for other sustainable agricultural development initiatives, they included:

- Workshops, meetings and field visits to raise awareness of agroecological concepts for food system actors, including local government officials, agricultural extension service providers and consumers
- Field-based technical training and mentorship on agroecological practices for individual and groups of farmers, often combined with on-farm experimentation (trying out new or adapted practices and monitoring their performance), building on existing knowledge
- Training for farmer groups on agroecology, collective action, governance and so on, combined with exchanges and learning platforms for farmers and farmer groups from different locations, and
- Awareness raising among consumers and value chain actors about agroecological produce.

As already noted elsewhere, a short project is not the most appropriate way of bringing about such changes at scale, which requires a wide coalition of partners to sustain it.

A key component of food system transformation is the process of **strengthening connections between consumers and producers and developing alternative food networks** (transformation level 4 in Figure 6). Even in a humanitarian crisis context, food is produced not just for home consumption but also for trading, providing much-needed income for other essential household expenses. All three pilots identified markets as both a key barrier and an inherent risk in the transformed food system that could affect producers, consumers and traders.

Competition from cheap food imports from neighbouring countries was identified as a major barrier in all the pilots. Both formal and informal trade of agricultural produce and inputs provides many livelihood opportunities along the value chain, but where production costs and access to resources varies across borders, food imports can become a real threat to local producers, particularly during the initial phase of the agroecological transition. The Lebanon pilot worked around this challenge by establishing dedicated marketing channels that directly linked sustainable agroecological farmers with consumers and local businesses interested in buying chemical-free and local produce. This gave farmers fairer prices and a more stable market for their produce, allowing them to bypass the exploitative and import-focused wholesale market.

Other challenges in the early stages of transition include:

- Low levels of awareness about agroecological produce among food consumers, who may be used to attractive-looking, uniform produce but are not aware of the invisible characteristics of such produce, such as high levels of pesticide residue, or the negative environmental impacts of the production system overall
- Lower quality of agroecological produce in the eyes of consumers (such as leafy vegetables with signs of insect damage) while integrated pest management systems develop and stabilise
- Low levels of market power among local food producers, leading to their inability to demand a price that reflects the increased production cost, and
- Irregular supply issues from agroecological producers during the transition phase due to experimentation (which sometimes fails), leading to local traders preferring to buy from regular, conventional suppliers.

In the longer term, agroecological transition that builds on value addition, diversification and efficiency gains is likely to provide a range of income-generating opportunities for farming households and traders. Where markets function well and farmers can obtain premium prices for their produce, agroecological production can thrive. But the extent to which this translates into improvements in food and nutrition security at household level (see Bezner Kerr, 2021) also depends on gendered control over the means of production, income from sale and other resources, and household-level decision making. Where households desperately need cash, producers may sell rather than consume high-value produce such as vegetables.

In a crisis situation, humanitarian actors may also intentionally contribute to developing value chains and markets to support longer-term recovery and food system transformation. While the primary focus of a humanitarian response should be on saving lives, ensuring food security and protection for affected populations, there may be opportunities to connect the emergency response to supporting local food production and the functionality of local markets. This is exemplified by interventions such as the Home-Grown School Feeding programme in East Africa, led by the World Food Programme, which aims to deliver safe, nutritious and locally sourced school meals in areas characterised by food and nutrition insecurity, while also strengthening the climate resilience of smallholder farmers.

When conflict broke out in Lebanon in 2024, DCA focused on delivering emergency response to address displacement and food insecurity. Where possible and cost-effective, it sourced food for internally displaced persons (IDP) soup kitchens from local small-scale producers. This demonstrated the continued relevance and potential of local food producers under crisis conditions in contrast to main food markets, which depended heavily on imports, were dominated by large traders and experienced high price fluctuations due to the conflict. Government entities, donors and NGOs have since renewed their focus on the agricultural sector. DCA and Agrimovement have proactively worked to bring this learning case forward, arguing for policy options for rebuilding more self-reliant and resilient food systems with local, small-scale food producers included in markets.

Main lessons

Recognising and addressing uncertainties about agroecological interventions: even interventions that have been implemented successfully in similar locations need to be carefully tested, with robust and ideally participatory monitoring and evaluation (M&E) of all relevant parameters. These might include labour requirements over time and potential negative impacts on certain groups. This is particularly important where practices are new, rather than where interventions make minor adaptations to existing practices.

Reducing uncertainty requires extensive testing of interventions over time, accompanied by adaptive management, to modify approaches in response to monitoring results. Short-term projects are not well suited for this; longer-term commitments are required.

Ideology should never take precedence over lived experience. Something might look promising on paper and fit nicely with the agroecology narrative and elements but face challenges on the ground in a given context. Organisational culture needs to embrace critical thinking and avoid peer pressure or groupthink, whereby evidence that contradicts the dominant ideology is discarded or frowned upon.

Ensuring access to resources for the transition and beyond: secure access to land is an important prerequisite, and experiences from implementing the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (FAO, 2022) can help inform intervention strategies to improve tenure security. Informal arrangements that are in line with traditional tenure systems (such as the agreements between host farmers and refugees in Kakuma) can provide such security.

Where the transition involves high costs and/or yield drops, mechanisms to support farmers during the transition are required, provided a case can be made for the long-term economic viability of the transition pathway. For example, the Kenya pilot provided building materials for well construction and solar-powered irrigation, and the Nepal pilot provided equipment — such as electric maize-threshing machines and plastic sheets to support mulching — and agri-input support for farmyard manure improvement and vermicomposting to reduce women's workload.

Designing and implementing infrastructure investments in areas affected by humanitarian crisis in a way that supports the agroecological transition requires participatory and inclusive planning that involves all food system stakeholders to ensure buy-in and sustainability (see also Section 3.9).

Addressing the impacts on family labour: there are strong indicators that an agroecological transition requires, at least during the initial stages, some additional time and labour investments from participating food system actors, but it is difficult to systematically assess how crucial this investment is, and how it will affect individuals. As such, interventions will require continuous communication and monitoring of labour impacts with affected food system actors to identify and seek to address negative impacts. As with other uncertainties related to the transition, they will need to adopt a participatory and adaptive management approach to recognise and address issues as they arise. This applies in particular to interventions that detect negative impacts on women, children and other vulnerable groups.

DCA and other actors have tried a range of approaches to reduce the labour burden (not all tested in this project), which include:

- Ensuring interventions consider existing seasonal or gender-based labour patterns, to avoid adding to existing labour peaks or over-burdening specific groups
- Where there is a labour shortage, identifying practices that require lower levels of labour input, even if they are not optimal in terms of other desirable aspects
- Encouraging or supporting the use of labour-sharing arrangements, where possible building on traditional or local mechanisms, such as labour groups
- Introducing labour-saving technologies, including mechanisation, where appropriate and feasible, while also considering sustainability issues (with regards to repairs, energy needs and so on) and testing carefully on a small scale before rolling out

- Seeking government agency assistance or paying farmers' wages through food-for-work programmes to cover initial labour peaks resulting from an intervention, such as clearing land for the community garden in the Kenya pilot; there is a lot of experience with food for work in all three pilot areas, all of which have identified good practices to avoid dependency and ensure fairness
- Adjusting training and community events to fit with food system actors' timetables and preferences and keeping them well organised and brief (providing incentives, such as food or cash, to attend events can help in the short term but is not sustainable), and
- Carefully monitoring labour-related issues throughout, rather than focusing on productivity and income parameters; this includes noting the perceptions of different food system actors during field visits and analysing information about labour-related bottlenecks with the actors affected — for example, in community meetings.

Developing individual and organisational capacities: developing food system actor capacity is crucial in the transition process, adapting approaches to the local context and building on local knowledge. Experiential learning is particularly effective to co-create locally relevant knowledge.

Capacity development for government actors can support buy-in for the transition process. This works particularly well where there is already some commitment to, and supportive policies for, agroecology at national level.

Effective capacity development can counteract the risk of some groups being left out or falling behind and therefore not benefiting from the transition. It may be necessary to target activities for certain groups of people, including those who struggle with access to resources (such as land or capital) and those who have less power and influence due, for example, to their gender or ethnicity. Sharing resources and capacities between food system actors can also contribute to social cohesion. Fairness is a key principle of agroecology.

Collective action is required for many dimensions of the transition. At policy level, food system actors who speak with one voice are more likely to be heard and have their concerns addressed. In the early stages of transition, mobilising food system actors collectively can significantly reduce risks for individuals — for example, by spreading efforts for soil and water conservation and other practices that require coordination between farms, or by undertaking activities together that are too difficult for individual households. Labour sharing is an important aspect of collective action to encourage and facilitate.

Developing value chains and markets: strengthening connections between consumers and producers and developing alternative food networks takes time and resources. This includes raising consumer and value chain actor awareness and improving the quality and quantity of produce for sale. If consumers are unwilling or unable to pay premium prices for agroecological produce, competition from more cheaply produced food using a high external input model may pose a risk to the transition going to scale. In this scenario, identifying low-cost production methods would help reduce the price gap.

It is difficult for small pilots to influence markets, and development organisations may have to help link farmers to niche markets (such as restaurants or hotels) or buyers such as schools or hospitals. But where scale is achievable, it is possible to build markets for agroecological produce (Loconto et al., 2018 provides some examples).

3.9. Achieving change at scale and making impacts last

Taking agroecology to scale requires the transformation of the entire food system at local, national and global levels, while integrating food demand, distribution, transformation and production in a food network that is sustainable, resilient and fair. Scale and sustainability are interconnected, as transformation at scale can only happen if systems are in place that support the transition independently of short-term, small-scale projects. Sustainability is also linked to location: if interventions work and fit with local context, they are more likely to last.

Scaling has three dimensions (WWF, no date). **Scaling out** refers to replicating an approach, strategy or intervention in more locations or impacting larger numbers (of people, organisations, countries and so on), but with the required local adaptation. The emphasis here is on spreading innovation horizontally. **Scaling up** refers to embedding the concept in policies, laws and organisations, to facilitate sustainable change from the top. That way, scaling up supports scaling out. Finally, **scaling deep** is about impacting on relationships, cultural values and beliefs by building networks and connecting people in various ways.

For a long time, **scaling out** — increasing adoption rates for technologies, practices and approaches — was the main paradigm related to food and agricultural development, and many projects still assess their success by measuring adoption rates. But others criticise this concept for not reflecting real-life decisions taken by farmers and other food system actors, "which are not simple, dichotomous yes/no, once-and-for-all and linear progressions by which inferior existing materials or methods become obsolete and are abandoned in favour of new, superior ones" (Glover et al., 2016).

During the Green Revolution,[9] promoting and adopting agricultural practices relied on agricultural packages of improved crop varieties and agricultural inputs (see, for example, Pingali, 2012), which significantly increased yields of some staple food crops under favourable, homogenous conditions, albeit with some negative environmental and socioeconomic impacts. Agroecological systems, on the other hand, are complex, diverse and ever evolving, making it much more difficult to transfer practices from one context to another. Although it is possible to scale out the iterative, locally led learning approach, this is not so for the specific solutions and practices that this approach produces.

There is a trade-off between a bottom-up transition that is grounded in local experiences and contexts on the one hand, and a transition at scale across (sub)sectors and geographies on the other. In a humanitarian context, characterised by additional uncertainties and vulnerabilities, achieving scale can be even more challenging. But some aspects of scaling out may be easier in situations where the pre-existing food system has been disturbed (see Box 5).

The pilot teams used a range of methods for scaling out, including farmer-to-farmer learning exchanges, training of farmers and agricultural extension staff in agroecological practices, participatory agroecological practice performance trails, developing booklets in local languages, and learning and sharing workshops with other municipalities.

Scaling up enables scaling out by providing the institutional and policy framework required to bring about change at scale. In the context of agroecological transitions, this means initiating and supporting the bringing together of stakeholders along the value chain to agree on and work towards a food system transition, and facilitating experimentation and adaptation. To support scaling up, the pilot teams integrated agroecological principles into agricultural and food policies and government work plans (Nepal); advocated for policy change at national level to support key aspects of the transition, such as farmers' right to propagate local crop varieties and sell the seed (Lebanon); convinced local government of the need to invest in market infrastructure (Nepal); and carried out advocacy to support a just agroecological transition and encourage investment in market infrastructure that strengthens local food systems and supports smallholder farmers (Lebanon). This included opposing a proposed law regulating seeds, seedlings and propagation material, and defending farmers' rights to save, propagate and sell local crop varieties.

Scaling deep complements scaling up by connecting actors and bringing about changes in attitudes, behaviours and values. This includes effective communication of the benefits of an agroecological transition (see Section 3.10) and developing a community of practice and critical mass of practitioners. The Lebanon pilot supported local farmers, strengthened peer-learning networks and built capacities for collective problem solving and knowledge sharing to ensure farmers could adopt and sustain agroecological practices, while also helping them expand their knowledge and reach by engaging with policymakers and stakeholders and encouraging participation in events related to

9 A period when technology transfer initiatives resulted in a significant increase in crop yields. Starting in developed countries in the early 20th century, the Green Revolution subsequently spread globally until the late 1980s.

agroecological transitions, policies and laws. To ensure scaling happens in a way that is sustainable, it is best to avoid project-based interventions (such as shade nets in Kakuma), unless there are mechanisms to ensure farmers can procure, maintain and replace materials in the long term — for example, via a farm business plan that factors in operational expenditures, a revolving fund for equipment or through government grants.

Main lessons

Agroecological transitions require all three types of scaling to replicate the approach, develop supportive policies and institutions, and change relationships and attitudes. Key elements of a scalable approach include:

- Identifying, mobilising and involving all food system actors
- Adopting a bottom-up and inclusive process to arrive at a shared vision for the transitioned food system and identify obstacles and enablers
- Adapting capacity development to the needs and interests of actors and supporting transition requirements
- Operating a participatory and experiential learning process (learning by doing) across all food system components, alongside (ideally participatory) monitoring of (positive and negative) impacts, and
- Building and supporting alliances and platforms to address systemic issues.

3.10. Communicating and advocating for change

Communication and advocacy are essential to bringing about an agroecological food system transition. The Agroecology Coalition, a network of 450 member organisations that commit to supporting food system transformation through agroecology, has a separate working group on communications, which develops key messages and advocacy tools to help members communicate agroecology to different stakeholders.

The pilot teams engaged with food system actors and stakeholders throughout the project to:

- Listen to and understand their perspectives and priorities — although this should be an obvious starting point, more often than not, interventions are supply driven, with projects pushing their own agenda without regard for other actors' priorities
- Communicate agroecology and food systems thinking and concepts in a way that resonates with them (see Box 7)
- Develop a shared vision of a future food system (see Section 3.4)
- Identify challenges and shortcomings — such as unhelpful laws, policies or behaviours — that need to be addressed to facilitate the transition, and
- Develop and test ways of addressing these challenges.

The main communication and advocacy strategies used included presentations and discussions in face-to-face meetings, workshops, field visits, trainings and so on; using research reports, stories and testimonies, photos and video; some social media outreach, via DCA's central communications team and website as well as national-level channels; and contributions to local- and national-level debates either directly, or via champions that were supportive of an agroecological transition.

Main lessons

Working with or via champions is an effective way to feed lessons into local and national policy and investment discussions, particularly for development NGOs that may lack the time and resources to engage in advocacy. Working with a broad coalition of actors enables some to focus primarily on communication and advocacy, while others focus on facilitating the transition from the bottom up. This approach has greater impact than individual small projects attempting to do their own advocacy. At the same time, engaging with multiple stakeholders across government authorities, private sector actors, research institutions, farmers' organisations and other groups fosters joint understanding and action.

3.11. Tracking impacts

Throughout this report, we have highlighted the need for continuous monitoring and adaptation of the transition process. Unexpected events or processes can disrupt food systems and increase risks for food system actors, particularly in a humanitarian crisis context, where 'normal rules' no longer apply. For example, informal transborder trade could swamp local markets with produce, undermining local production, even when policies, such as tariffs, are in place to prevent this from happening. Experiential learning cycles require constant observation of intended and unintended changes and contexts, to adapt actions accordingly.

Conventional M&E that tracks progress against predefined outcome targets, often used in projects, is not particularly appropriate for food systems transitions, for several reasons. First, agroecological food system transitions are complex, long-term processes that cannot normally be achieved via individual projects. M&E frameworks that measure project outputs and outcomes can miss out important, highly relevant changes that were not part of the original design. Second, the transition can only be sustainable where it is driven by local food system actors' visions, priorities and preferences. The experiential learning process encourages them to seek out alternative pathways from those originally intended, which means outcomes may not align with those planned. And third, it is difficult to attribute changes to specific interventions in a dynamic and complex environment, such as food systems in crisis situations. Changes are more likely to be a result of interactions between a range of factors that are difficult to identify and track.

Methods and tools for monitoring the food system transition

Despite these challenges, there are several indicator sets and tools for monitoring agroecological food systems. These include the FAO's TAPE — used for the Nepal pilot FSA (see Section 3.3) — which assesses the status of the food system in terms of the 10 Elements of Agroecology by formulating scales and CAET scores for each element (see Table 6). TAPE users assess each element and domain along the scale, using household surveys, field observations, KII or FGD to gather the required information.

Biovision has developed a similar system, the Agroecology Criteria Tool. Based on Gliessman's five levels of food system change (Gliessman, 2015) and the FAO's 10 Elements of Agroecology, it uses a list of criteria to assess the degree to which a project or initiative has integrated agroecological principles (Biovision, no date).

The advantage of these tools lies in their inclusion of all ten agroecology elements, allowing a systematic before-and-after comparison. Disadvantages include the relatively large time and resource requirements for assessing each element in a representative manner, the absence of a method to assess the attribution of interventions to observed changes and the lack of contextualisation of the scores. For example, the number of crops grown in a system also depends on the agroecological environment — rainfall, soils and so on — while three crops may be a lot in some systems but not in others.

In a humanitarian crisis, where food system actors may be vulnerable and under stress, a more qualitative, interactive way of assessing changes may be more appropriate, serving as M&E while also providing entry points for learning and stakeholder engagement. Outcome harvesting is a method that "collects ('harvests') evidence of what has changed ('outcomes') and, working backwards, determines whether and how an intervention has contributed to these changes" (Wilson-Grau et al., 2024). DCA and IIED both use outcome harvesting to track changes in complex systems.

Table 6. CAET scales and scores for the 'diversity' element

Domain	0	1	2	3	4
Crops	Monoculture (or 0 crops cultivated)	1 crop covering more than 80% of cultivated area	2 or 3 crops	More than 3 crops adapted to local and changing climatic conditions	More than 3 crops and varieties adapted to local conditions. Spatially diversified farm by multi, poly or intercropping
Animals (including fish and insects)	0 animals	1 species only	Several species, with a few animals	Several species, with a significant number of animals raised	High number of species, with different breeds that are well adapted to local and changing climatic conditions
Trees and other perennials	0 trees or other perennials	Few trees (and/or other perennials) of 1 species only	Some trees (and/or other perennials) of more than 1 species	Significant number of trees (and/or other perennials) of different species	High number of trees (and/or other perennials) of different species integrated within the farmland
Activities, products and services	1 productive activity only (for example, selling only 1 crop)	2 or 3 productive activities (for example, selling 2 crops or 1 crop and 1 type of animal)	More than 3 productive activities	More than 3 productive activities and 1 service (for example, processing products on the farm, ecotourism, transporting agricultural goods, training)	More than 3 productive activities, and several services

Source: FAO (2019)

Emerging findings from the three pilots

For this project, partners agreed to use outcome harvesting to capture the perceptions of different food system actors, as part of an ongoing engagement process in the three sites.

In **Nepal**, the team undertook KIIs, FGDs and farm visits to assess outcomes along eight outcome areas or themes:

1. Strength of community institutions
2. Agriculture biodiversity and local seed system
3. Soil fertility and water resource management
4. Disease and pest management
5. Indigenous knowledge, social values and food culture
6. Value addition, branding and marketing
7. Attitudes and perceptions related to: changes in the use of chemical inputs and pesticides, collaboration among farmers, empowerment of women and youth, productivity and productions costs, contribution of agroecological practices to agroecosystem sustainability, compatibility of agroecological practices with local community culture and traditions, and
8. The enabling environment (including policy-level changes) for agroecology: risk/perception visualisation of the existing food system and climate hazards, functional agromet advisory and risk communication services, integration of agroecology in the municipality policy and plan.

The exercise produced two main outcome stories. The first was around the adoption of agroecological farming practices: "By December 2025, smallholder farmers living in the Babai River Basin areas of Barbardiya municipality, particularly those engaged in the NOVO De-risking Agroecology Project, demonstrated increased willingness, confidence, and early adoption of agroecological farming practices". The other was about the institutionalisation of a localised agromet advisory service system: "By December 2025, Barbardiya municipality has established and

operationalised functional systems and mechanisms that enable and de-risk the transition to agroecological farming in a humanitarian context characterised by recurrent floods, droughts, and climate extremes."

In **Lebanon**, the team conducted an outcome harvesting exercise to document and verify changes experienced by participating farmers. The pilot aimed to help farmers shift from chemical-dependent farming to more sustainable, agroecological production systems through training, technical support, demonstrations plots and ongoing mentoring. In the outcome harvesting exercise, the monitoring, evaluation, accountability and learning team focused on identifying and understanding how the project contributed to real changes in farmers' behaviour, practices and outcomes. After carrying out structured interviews with participating farmers, asking them to describe what changes they had observed since joining the project, which practices they had adopted or abandoned, and what had enabled or constrained those changes, the team identified six outcomes:

1. **A shift away from chemical agriculture:** between the start of the project and 2025, participating farmers in Saida and Jezzine reduced or stopped using chemical fertilisers, pesticides and commercial seed inputs, replacing them with compost, natural pest control and locally preserved seeds. Farmers reported a clear reduction of their dependency on expensive inputs and improved soil and crop health. The DCA team also introduced farmers to the Lebanon National Gene Bank (part of the Lebanese Agriculture Research Institute under the Ministry of Agriculture) and helped them enrol for seed germination monitoring.
2. **Adoption of agroecology practices:** farmers adopted a range of new practices, including composting and fermentation of organic matter, natural plant-based pest control, improved pruning, intercropping, systematic organic feeding, better irrigation management, and improved seed handling and preservation.
3. **Better farm performance:** farmers reported cost reductions and yield increases of 15–20%. Crop quality, taste and appearance improved, strengthening their market potential despite ongoing pricing and access challenges.
4. **Increased farmer confidence and independence:** farmers gained strong confidence in agroecological methods after seeing tangible results in soil health, plant vigour and production. Many expressed that they no longer fear reducing chemicals and now trust natural methods to maintain or improve yields.
5. **Strengthened knowledge sharing:** farmers increasingly exchanged seeds, advice and techniques. Some became informal demonstration points for neighbouring farmers, contributing to wider diffusion of agroecological practices beyond direct project participants.
6. **More inclusive farm participation:** while the main farmers retained primary decision making, women, men and youth participated more actively in farm activities such as pruning, weeding, harvesting and sorting, increasing shared responsibility and engagement.

The Lebanon team also noted some gradual shifts with regards to the attitude of market actors and local government. While market actors may not yet fully consider whether the produce is organic, their awareness of organic practices is slowly increasing. Similarly, changes in local government or research engagement are longer-term processes influenced by multiple actors and initiatives, not just this short pilot. The team started linking farmers with conferences and talks at broader levels, which help build knowledge, networks and engagement over time.

In **Kenya**, the team plans to use an outcome harvesting process after the end of the project, to complement their quantitative findings collected using the KoboToolbox.[10] This includes information on crops planted and harvested, and sales made; quantities consumed at household level; and any challenges faced by farmers, with collected data used to calculate income changes, food consumption scores and Reduced Coping Strategies Index. The team has yet to analyse their findings.

These experiences show that it is possible to track subtle shifts in food systems through qualitative and quantitative tools, but attribution to specific interventions is a challenge. More in-depth discussions with key stakeholders might help unpack different influencing factors and evaluate the usefulness of different interventions and approaches. For accountability and learning purposes, a combination of outcome harvesting or similar qualitative approaches, such as Most Significant Change methodology (Davies and Dart, 2008), and indicator-based approaches, such as TAPE or the Agroecology Criteria Tool, appears appropriate. The effort and resources used for M&E need to be appropriate for the specific learning purpose.

10 For information, see www.kobotoolbox.org/

4

Conclusions and recommendations

This project has documented experiences of working towards an agroecological food system transition in challenging contexts — particularly those affected by climate change, conflict and protracted displacement. While the pilot activities were small in scale, scope and duration, we have drawn several lessons from them and the literature, presented here by target group.

In humanitarian contexts, agroecology is neither a luxury nor a long-term aspiration. It is often one of the few viable pathways that works with disrupted markets, reduces dependence on external inputs, strengthens social cohesion and has potential to lower future humanitarian caseloads.

Each actor group contributes differently, but success depends on alignment, humility, patience and recognising agroecology as both a survival strategy and a transformation pathway.

4.1. National governments, line ministries and departments

National governments play an important enabling role in agroecological food system transitions (see Section 3.9). They do not implement agroecology directly; rather, they create the conditions under which agroecological practices, knowledge and markets can flourish. And because agroecology cuts across sectors, action is needed at whole-of-government level and within line ministries. The actions outlined here can help governments achieve policy coherence, reallocation of public resources, empowerment of farmers and communities and long-term institutional change.

Set an enabling policy and legal framework

Level: whole-of-government, central ministries

To provide a foundation for an agroecological transition and enable government institutions at all levels to adapt their agendas and instruments, governments and ministries can:

- Adopt a national agroecology or sustainable food systems strategy with clear targets and budgets — and monitor implementation
- Align agricultural, environmental, climate, nutrition and rural development policies to avoid contradictions — for example, fertiliser subsidies undermining soil health
- Integrate agroecology into nationally determined contributions, national adaptation plans, national biodiversity strategies, biodiversity strategies and action plans, and Sustainable Development Goal implementation plans
- Reform land tenure and natural resource governance to ensure secure land and resource rights, especially for women, refugees/IDPs and other vulnerable groups

- Explicitly recognise agroecology as a crisis response and recovery approach in national disaster risk reduction strategies, climate adaptation plans, refugee and displacement policies, and
- Ensure humanitarian, agricultural, environmental and social protection policies do not contradict each other — for example, emergency input subsidies undermining soil health or local seed systems — and design short-term humanitarian responses (to the extent possible) to build the foundation for longer-term recovery and resilience strategies (see Box 5).

Level: local government

- Include agroecology in municipal development plans and local contingency plans (drought, floods and so on)
- Pass local bylaws that encourage sustainable land management
- Facilitate collective tenure arrangements that secure land for smallholders and refugees, and
- Integrate agroecological objectives into local climate action plans and disaster risk strategies.

Reorient public finance and incentives

Level: ministries of finance, planning, agriculture

- Gradually redirect subsidies from synthetic inputs[11] towards soil fertility regeneration (composting, legumes, cover crops), biodiversity-based pest management, and agroforestry and mixed farming systems
- Introduce payments or incentives for ecosystem services (soil carbon, water regulation, agrobiodiversity) and provide low-risk credit, insurance and grants tailored to diversified and small-scale farming systems
- Ensure public investment criteria reward resilience, diversity and nutritional outcomes, not only yield per hectare
- Redirect emergency agricultural spending towards low-input, regenerative practices rather than repeated external input distribution, and
- Fund transition costs (labour and capital investments for start-up, learning periods) that are especially risky in crisis contexts; enable shock-responsive social protection linked to agroecology — such as cash-for-work for land restoration — ensuring such mechanisms fit local priorities and do not encourage recipients to adopt unsustainable practices.

Level: local government

- Introduce microgrant programmes for farm diversification, composting equipment, water harvesting or agroforestry
- Establish local ecosystem payment schemes, and
- Pool resources with local partners to provide community investment funds for agroecology and crisis recovery.

Reform agricultural research and extension

Level: ministries of agriculture, science and technology; agricultural research institutes

- Rebalance research funding towards farmer- and local food actor-led, participatory and transdisciplinary research that supports the food system transition
- Strengthen public research on: local seed systems for climate-resilient varieties; agroecological soil, water and pest management; and climate resilience in low-input systems, including displacement and post-conflict settings
- Retrain extension services from input delivery to problem solving, facilitation, co-learning, field-based experimentation, and support for whole-farm and landscape-level approaches, and
- Recognise and remunerate farmer-to-farmer extension and community knowledge.

Level: local government

- Support farmer field schools, innovation hubs and demonstration plots for experiential learning (possibly on public land), and
- Partner with universities, NGOs and farmer groups to run participatory research projects tailored to local ecosystems and cultures and host seasonal forums and knowledge exchanges that bring farmers together to share innovations.

11 Many countries still subsidise synthetic inputs, despite having policies that emphasise agroecology, particularly inorganic fertilisers.

Support seed sovereignty and agrobiodiversity

Level: ministries of agriculture, environment, justice

- Reform seed laws to legally recognise farmer-managed seed systems, local varieties and their informal exchange
- In crisis situations, temporarily relax or adapt seed regulations to allow local seed multiplication, farmer-managed seed exchange, and invest in decentralised seed reserves rather than centralised emergency seed imports
- In the long term, protect farmers' rights to save, use, exchange and sell seed, especially in conflict-affected areas, and
- Integrate agrobiodiversity conservation into all agricultural development, not just protected areas.

Level: local government

- Support the establishment of community seed banks
- Recognise and enable seed fairs and exchange events under municipal regulation
- Protect and promote local crops and varieties through municipal branding and markets, and
- Partner with local communities to map and monitor agrobiodiversity hotspots in the territory.

Strengthen markets and food system infrastructure

Level: ministries of trade, agriculture, local government

- Invest in local and territorial markets, decentralised storage, processing and transport infrastructure to prevent emergency food imports from crowding out local markets
- Use public procurement (schools, hospitals, food aid) to prioritise agroecological and local food
- Support short value chains, cooperatives and producer organisations, and
- Reform quality and food safety standards so they are appropriate for small-scale and diverse production, not just export-oriented systems.

Level: local government

- Develop and operate municipal farmers' markets (and protect them during crises), local food hubs, cold storage and processing facilities
- Prioritise smallholder and agroecological producers in public procurement for schools, clinics and local programmes, and
- Facilitate short supply chains linking local producers with displaced and urban populations.

Enable inclusive governance and participation

Level: all relevant ministries

- Institutionalise multistakeholder platforms including farmers' organisations, women's groups, civil society and researchers
- Link humanitarian, agricultural and environmental actors where required
- Ensure policy design and monitoring include smallholders, pastoralists, fishers and urban food actors, and that policies are conflict sensitive and do not exacerbate land or resource tensions
- Address power imbalances in food systems by supporting collective action and producer organisations, and
- Promote decentralised decision making at landscape and territorial levels to allow locally led adaptation.

Level: local government

- Create multistakeholder food councils or committees that include farmers, women, youth, refugees and urban consumers
- Organise participatory budgeting that allocates funds to community-identified agroecological priorities
- Support territorial food system planning that connects producers, retailers and consumers across districts and regions, and
- Facilitate conflict resolution and collective planning platforms for shared natural resources (water, grazing lands).

Integrate gender and social equity

Level: ministries of gender, agriculture, social development; crosscutting

- Secure women's access to land, credit, extension and decision making
- Secure land and resource rights for IDPs where appropriate
- Prioritise women, youth and marginalised groups in crisis recovery programmes
- Recognise and reduce women's unpaid labour burden through appropriate technologies and services that support the transition
- Design agroecology programmes that support youth employment and dignified rural livelihood, and
- Provide tailored support for marginalised regions and groups, such as refugees.

Level: local government

- Audit and reform local services to ensure women, youth, landless and marginalised groups have access to extension, finance, inputs and markets
- Run targeted training and leadership programmes for women and youth in agroecology and food enterprise
- Establish childcare, transport or cooperative support schemes that reduce barriers to participation, and
- Protect rights to communal lands and common property resources, ensuring equitable access and use.

Align education, health and nutrition policies

Level: ministries of education and health

- Integrate agroecology into agricultural colleges, universities and vocational training
- Promote food and nutrition education linked to local, diverse diets
- Align agroecology with public health goals — for example, through reduced pesticide exposure or improved diet diversity, and
- Support urban and peri-urban agroecology for food security.

Level: local government

- Integrate agroecology into municipal schools and vocational centres
- Support school gardens that provide healthy food and teach ecological principles
- Coordinate with local health departments to run nutrition education campaigns linked to local foods, and
- Promote urban and peri-urban agroecological food production (for example, during displacement or urban influx).

Regulate harmful practices and externalities

Level: ministries of environment, agriculture, health

- Gradually tighten regulation of highly hazardous pesticides
- Enforce environmental and social safeguards for large-scale agricultural investments
- Internalise environmental costs (pollution, soil degradation) into agricultural decision making, and
- Strengthen monitoring and accountability mechanisms.

Level: local government

- Enforce local regulations on pesticides, hazardous air/water pollution and waste disposal
- Establish buffer zones around water sources and critical habitats, and
- Support community monitoring initiatives and local compliance mechanisms.

Measure what matters

Level: ministries of planning, statistics, agriculture, environment

- Move beyond yield-based indicators to track soil health and biodiversity, nutritional outcomes, resilience to climate shocks, and livelihood security and equity, using crisis data to inform long-term food system reform, and
- Support national data systems that capture agroecological performance at farm and landscape level (for example, using the TAPE tool).

Level: local government

- Track metrics beyond yield in municipal reporting
- Set up community surveys and participatory data systems to measure progress towards agroecological goals
- Link local data with regional or national systems to ensure accountability and learning
- Publish local food system dashboards to inform and engage citizens, and
- Share lessons with municipalities or counties facing similar shocks.

4.2. International development organisations and NGOs

International development organisations and NGOs who want to facilitate an agroecological food system transition in a humanitarian crisis situation have a number of options to support and enable government action in crisis contexts. These recommendations draw on the experiences of the three pilots, KIIs with humanitarian organisations and the wider literature.

Bridge humanitarian response and agroecology by linking emergency response with long-term government priorities

In crisis situations, governments struggle in multiple ways. Ministries are under pressure to deliver rapid assistance (food, inputs, cash). Emergency mechanisms are often separate from agricultural, climate or food system policy. Risk aversion leads to 'safe' but unsustainable responses, such as blanket input distributions. NGOs can lower political and technical risk for governments, supporting them to integrate agroecology into crisis policy frameworks by:

- Piloting crisis-compatible agroecological responses — such as drought-resilient crops or kitchen gardens for displaced households — that governments can later scale or institutionalise
- Demonstrating how government ministries can frame agroecology as disaster risk reduction (ministry of interior/disaster risk reduction), climate adaptation (ministry of environment/climate) or food security and nutrition (ministry of agriculture/health), and
- Providing governments with evidence and operational models that justify shifting from short-term relief to recovery pathways.

Work with, not against, fragility by making government strategies workable under real crisis conditions

During a humanitarian crisis, governments may struggle with market collapse, insecurity, displacement and damaged infrastructure, while extension services and input supply chains are likely to be disrupted. Standard policies assume stable markets and institutions that no longer exist. NGOs can help ensure government policies are implementable in fragile realities by:

- Designing interventions that function when markets fail, aligning with governments' need for continuity of food production
- Supporting mobile, low-input and collective systems that work for pastoralists, displaced and host communities, and conflict-affected smallholders, and
- Providing context-tested approaches that governments can integrate into national recovery plans, refugee response frameworks and local contingency plans.

Protect and rebuild local capacities by filling service gaps while strengthening public systems

In crisis situations, key capacities may not be available at government level, as extension agents are displaced or under-resourced, institutional memory and field presence are lost, and government reach into marginalised or insecure areas is weakened. To support governments, NGOs can act as temporary structures, prevent the erosion of public capacity and enable post-crisis rebuilding by:

- Operating farmer-to-farmer extension and community facilitation that maintains knowledge flows during crisis and prevents a total collapse of advisory services
- Documenting and systematising local and Indigenous knowledge, feeding it back into public extension curricula, research agendas and recovery planning, and
- Training local facilitators who can later be absorbed into government extension systems.

Act as convenors and translators, making coordination possible when governments are overloaded

During crises, fragmented humanitarian actors often operate in silos due to limited convening capacity across sectors. Donor reporting and humanitarian jargon may also be misaligned with agroecological concepts. To help governments regain coordination and steering capacity at times of limited operational control, development agencies can:

- Convene multi-actor platforms that governments can later formalise
- Translate agroecology into humanitarian logframes, risk and resilience metrics, and donor-compliant language, and
- Align humanitarian programmes with, rather than bypass, national and local government plans.

Advocate within humanitarian systems, creating political space for reform

Governments may experience donor pressure to prioritise short-term outputs. And, while humanitarian norms tend to treat food systems as neutral or apolitical, there is a risk of backlash if emergency aid disrupts markets or land relations. To help governments gain room to manoeuvre politically, even in donor-driven humanitarian settings, NGOs can:

- Advocate with donors and UN agencies for policy coherence, reducing contradictory demands on governments
- Challenge humanitarian practices that undermine local markets, displace smallholders or lock governments into dependency cycles, and
- Provide governments with external legitimacy to defend agroecological and territorial approaches.

4.3. Donors/Funders of development programmes

Donors have multiple entry points to support governments in transitioning food systems. The following recommendations should ease both the government tasks (see Section 4.1) and the development programmes that support them (see Section 4.2).

Reform funding modalities

- Shift from short, rigid project cycles to flexible, multiyear funding that allows adaptation to shocks, and
- Enable blended humanitarian-development-climate finance that supports transition pathways.

Fund systems, not projects

- Support territorial and food system-level initiatives rather than isolated farm interventions, and
- Fund local institutions, networks and processes, even when outcomes are uncertain or non-linear.

Redefine 'value for money'

- Accept lower short-term output efficiency in exchange for long-term resilience and reduced aid dependence, while cushioning vulnerable people during initial periods of lower productivity and ensuring saving lives and food security are top priorities, and
- Reward programmes that reduce exposure to future humanitarian crises.

De-risk agroecological transitions

- Fund transition costs, such as labour peaks, learning curves and temporary yield dips, and
- Support contingency funding windows for communities after climate or conflict shocks.

Shift power and accountability

- Channel funds directly to local NGOs, farmer organisations and municipalities where possible, or to international NGOs with a strong programme of supporting these organisations, and
- Require meaningful participation and safeguard space for local decision making even in emergencies.

4.4. Local market actors

The following recommendations illustrate the important role local market and private sector actors — such as input dealers, traders and food processors — can play in supporting the transition.

Adapt business models to crisis contexts

- Shift from selling high-risk, imported inputs to locally available, low-input solutions, such as organic fertilisers, tools and seed, and
- Develop service-based models, such as knowledge, aggregation and storage, rather than volume-based input sales.

Stabilise rather than extract

- Avoid price speculation during crises, adopting fair and transparent pricing instead, which may also improve company reputations and post-crisis customer base, and
- Maintain purchasing relationships with smallholders during shocks to prevent distress sales.

Invest in local value chains

- Support local processing, storage and transport to reduce post-harvest losses during disruptions, and
- Work with producer groups to ensure consistent supply and shared risk.

Support agroecological innovation

- Co-invest with communities in adaptive technologies, such as solar drying, water harvesting, local feed production and alternative foods such as spirulina, and
- Engage in participatory product development rather than top-down technology push.

Accept a broader notion of 'viability'

- Recognise that resilience, trust and continuity may matter more than short-term profit in crisis-prone areas, and
- Align with social enterprises and solidarity-economy principles where markets are fragile.

4.5. Local communities and their organisations (farmer organisations, cooperatives, customary institutions)

The following recommendations for local communities and their organisations underline the vital support they can give to the transition.

Strengthen collective resilience

- Pool labour, land, seed and livestock through collective mechanisms to reduce individual risk, and
- Maintain and revitalise communal resource governance for water, grazing, forests and so on.

Safeguard agrobiodiversity

- Prioritise local seed saving, exchange and multiplication, especially after shocks, and
- Protect diverse crops and breeds that provide fallback options during crises.

Anchor agroecology in survival strategies

- Integrate agroecological practices into coping strategies (diversified diets, multifunctional landscapes), and
- Combine production with social protection functions (mutual aid, food sharing, labour sharing).

Engage strategically with external actors

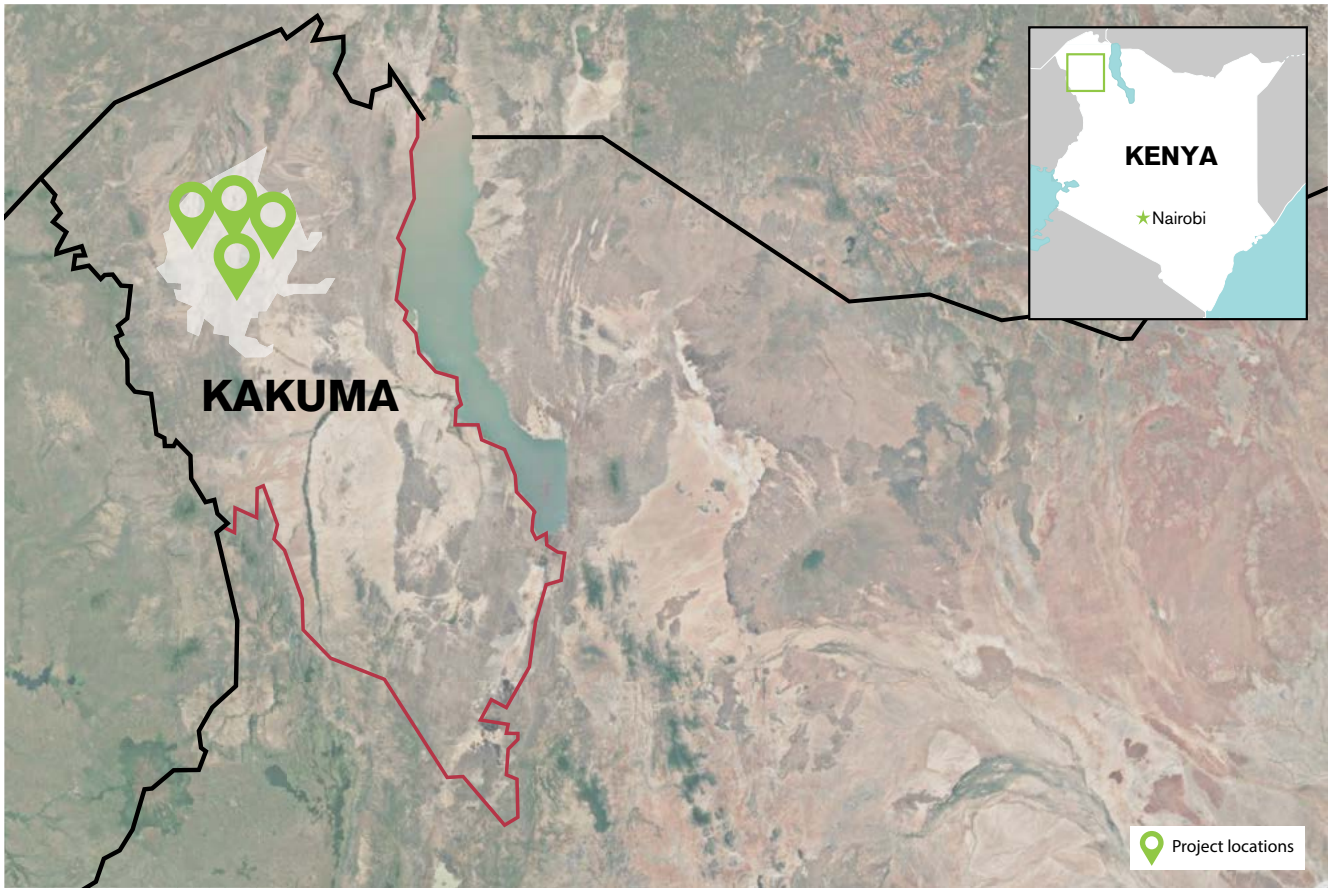
- Negotiate with NGOs and donors to align emergency support with local priorities, and
- Resist interventions that undermine long-term autonomy (such as dependency on external inputs).

Maintain social cohesion

- Use agroecological activities (collective gardens, watershed restoration) as platforms for peacebuilding and social repair in conflict-affected areas, and
- Ensure inclusion of women, youth, displaced people and marginalised groups.

Case studies

Case study 1. Kenya: supporting host and refugee communities in food system transformation in Turkana



Main partners and stakeholders

- Refugee communities in the Kakuma refugee camp
- Pastoral host communities around Kakuma
- County government agencies
- Local traders buying produce from local producers for sale in Kakuma town
- Drylands Natural Resources Centre

Context

The Kakuma refugee camp and settlement is in Turkana county in the drylands of northern Kenya, where livelihoods are limited and agricultural food production is challenged by increasingly extreme weather conditions, making it one of the country's most food-insecure regions. Pastoralism and rainfed agriculture are the main livelihoods in Turkana, where irrigated horticultural production and limited food processing are also emerging. Low rainfall and high temperatures, combined with high evapotranspiration rates, result in salt and hard pans on the soil surface, and only 30% of the county's soil is suitable for farming (MoALFC, 2021). Climate change is intensifying the unreliability of the already erratic rainfall, and heavy storms and catastrophic flash floods can occur. Environmental degradation undermines the ability of agroecosystems to cope with weather extremes.

Since 1991, Kenya has been a generous host to large numbers of refugees and asylum seekers in the Kalobeyei and Kakuma refugee camps in Turkana West. In alignment with the Global Compact on Refugees and the Comprehensive Refugee Response Framework,[12] Kenya has worked with international development partners to improve conditions

12 For information, see www.unhcr.org/uk/global-compact-refugees and www.unhcr.org/uk/comprehensive-refugee-response-framework

for refugee and host communities, including through the Kalobeyei Integrated Socio Economic Development Plan in Turkana West (UNHCR, no date). The Kenya Shirika Plan pioneers an ambitious approach for socioeconomic inclusion of refugees by transforming camps into integrated settlements for refugees and asylum seekers in a phased approach from 2025–2036 (Republic of Kenya, 2024). The intention is to reduce pressure on host communities and enhance self-reliance for refugees and host communities over time, ending long-term dependence on economic aid. But since January 2025, drastic cuts in United States and other donor government aid has led to declining food rations and cash assistance to refugees, placing severe pressure on host and refugee economies alike.

Focus and relevance

The pilot focused on the transition to agroecology at farm level, working with pastoral host and refugee communities on diversifying and building resilience of agricultural food production systems for food and nutrition security. It also explored linking producers to local markets for income generation and strengthening connections between refugee and host communities. Developed and tested amid drastic cash assistance and food ration cuts, the Kenya pilot presents an interesting learning case for a transition to more self-reliant local food economies in situations of protracted refugee crises and dwindling aid.

The main objective was to explore and demonstrate practical agroecology approaches at farm level for increased self-reliance in the context of Turkana's harsh climate. Working with pastoral host and refugee communities, the pilot trained farmer groups in agroecology practices, facilitated linkages from producers to local markets for income generation and anchored interventions with local community champions and institutions.

The pilot aligned with and complemented the wider portfolio of food system interventions in Kakuma implemented by DCA and partners, which emphasise self-reliance and durable solutions in the protracted displacement crisis. As well as diversifying agricultural and pastoral livelihoods and food production strategies (including crickets, spirulina and mealworm as novel foods), the pilot supported financial inclusion and enterprise development. The work has been supported by a broad group of donors, including Danida, the Novo Nordisk Foundation and the IKEA Foundation.

Activities and participants

Recognising that agricultural transitions take time, the main learning and demonstration site at Nakwangat Farm had been developed with the local community during a previous project. The community around this intervention was pastoral, and was taking steps to diversify food production, to avoid depending solely on pastoral livestock raising. The main participants were women and elderly men, because younger men care for, and migrate with, the livestock herds.

An FSA, conducted by the Drylands Natural Resources Centre, assessed internal and external evidence on the suitability of agroecology practices, good practices and lessons learned in terms of agroecology transition processes and the risks of — and to — transition. The assessment identified limited crop diversity, limited dietary diversity, gaps in input access, water constraints, weak producer-market connections and the need for increased institutional coordination. These results shaped the pilot's priorities and interventions, leading to a stronger emphasis on crop diversification and drought-tolerant crops, integrating sorghum, cowpeas, pumpkins, spinach, okra, moringa and Amaranthus under improved soil and water management practices, with soil fertility management and pest control in organic systems as learning priorities. The pilot designed a community-managed irrigation scheduling system for Nakwangat Farm, combining solar-powered pumping, regulated furrow distribution and drip irrigation in shade houses. Recognising the need for strengthened market connections, the pilot design included structured marketing groups and training on collective aggregation of vegetables and sorghum. Informed by the FSA, the pilot's main activities included:

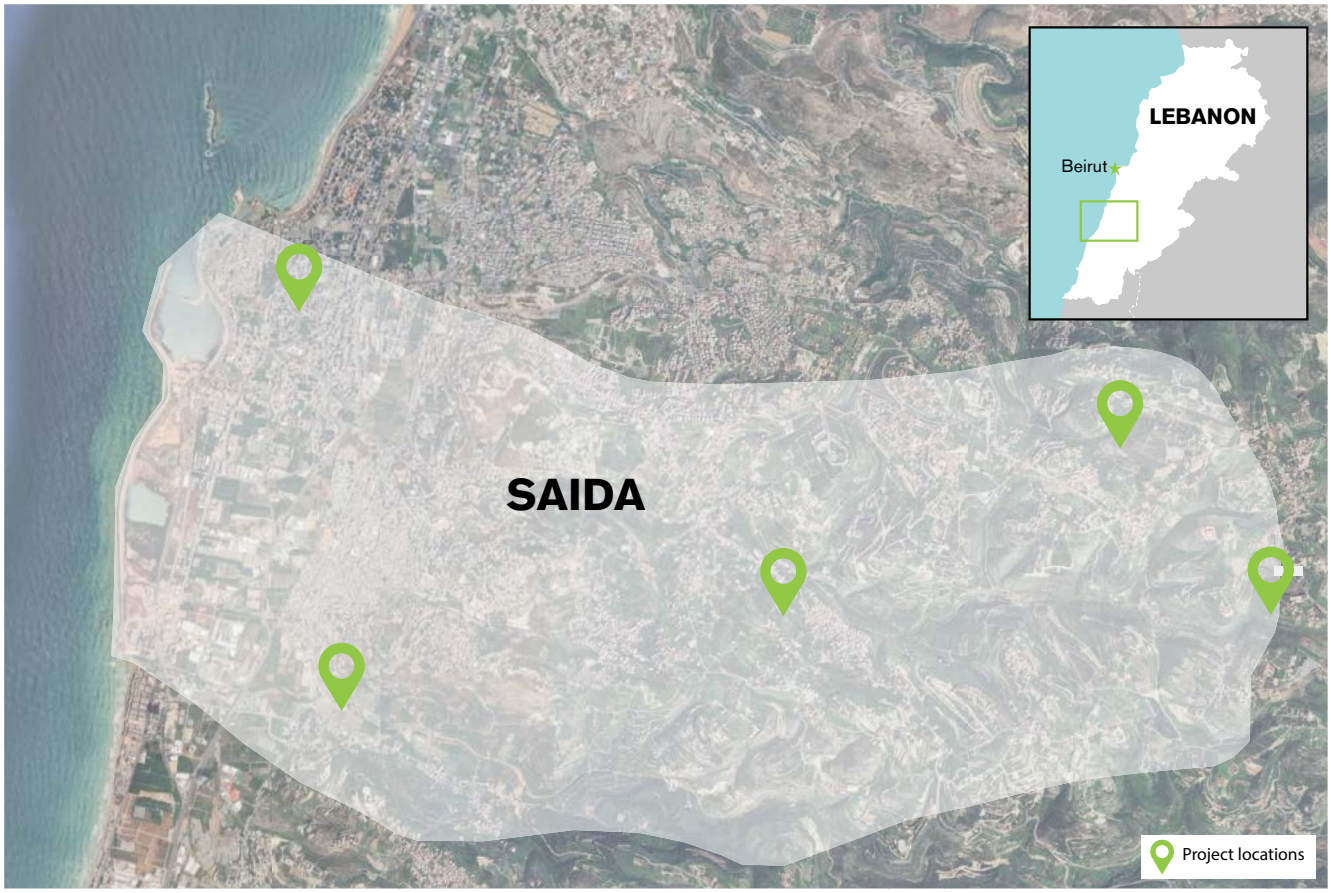
- **Training farmers on agroecological practices** to promote the adoption of climate-resilient practices to improve soil health and productivity, building on traditional dryland practices (crop-livestock interactions, intercropping, crop rotation, crop diversification, agroforestry, mulching): this was partially successful, increasing uptake of low-labour practices (intercropping, agroforestry, mulching) that improved yields and soil fertility, but farmers were slow to adopt composting techniques due to labour and time constraints.
- **Establishing demonstration plots and farmer-led experimentation sites** to facilitate hands-on learning and peer exchange through a farmer field school approach: this strengthened peer learning and replication by other farmers, and enhanced understanding of soil and water conservation.

- **Promoting farmer group formation and peer learning clusters** to strengthen collaboration, learning and marketing linkages among farmers: new farmer groups built on existing self-help group structures, improving collective action and linkages to traders and county programmes.
- **Promoting gender-responsive decision making and inclusion in farming activities** to strengthen women's participation in household decision making: building on existing gender dialogue platforms, this activity improved household cooperation, increasing women's involvement in land-use and farm planning decisions.
- **Training farmers on composting, soil health improvement and circular economy principles** to enhance their capacity on organic fertiliser production and sustainable resource use: building on Indigenous composting practices, this activity was a partial success as it improved skills and awareness, but adoption was limited by a lack of tools and inputs. There was, however, a notable improvement in soil structure and water retention on the demonstration plots.
- **Facilitating market linkages and engagement with value chain actors** to strengthen farmer income through improved market access and value addition: building on existing informal trade networks with local traders in the Kakuma refugee camp and Kakuma town, this activity was partially successful, as it helped increase incomes and raise farmers' awareness of marketing dynamics, and established new trading connections between farmers and offtakers. But sales of community produce were limited by formal buyers' certification and documentation requirements — such as eTIMS-generated invoices[13] for tax compliance — logistical gaps and an inability to provide the steady and varied supply of produce some buyers required.
- **Engaging county officers in joint agroecology and policy alignment workshops** to build county government ownership, ensure county government extension officers support for the new initiative and foster a supportive policy environment for agroecological transition: this activity did not work as intended, due to low engagement among government officials, who were dependent on per diems, which DCA does not supply for government officials carrying out work in their job description. This, in turn, led to weak institutional uptake.

Images: a well liner at Kalemchuch farm (left) and diverse crops on Nakwangat farm (right), Kakuma, Kenya. Credit: © Rikke Fabienke/DanChurchAid (left); © Barbara Adolph (right)

13 This is a mandatory electronic tax invoice from the Kenya Revenue Authority's eTIMS system, issued by businesses using approved software.

Case study 2. Lebanon: food system transformation in areas affected by war



Main partners and stakeholders

- Fifteen smallholder farmers living in Saida district
- Agrimovement: grassroots organisation working on right to food and food sovereignty
- Association of Farmers and Beekeepers of Renewed Lebanon: grassroots capacity-building organisation
- National and local government entities
- Local farmer cooperatives and producer groups

Context

Lebanon's agricultural system operates within a highly fragile natural and socioeconomic environment, shaped by overlapping crises. Climate change has intensified existing environmental pressures, with rising temperatures, prolonged droughts, erratic rainfall and increasing water scarcity accelerating soil degradation and reducing agricultural productivity. Smallholder farmers — who often cultivate fragmented plots and rely on rainfed or informal irrigation[14] — face heightened production risks and growing dependence on costly external inputs.

The socioeconomic environment compounds these vulnerabilities. Lebanon's protracted economic crisis, high inflation, currency devaluation and collapse of public services have led to a sharp increase in the cost of agricultural inputs, reduced purchasing power and constrained market access for small-scale producers. Lebanese and IDP farming households increasingly rely on agriculture for subsistence and income but lack access to affordable credit,

14 Informal irrigation in Lebanon, which stems from a lack of formal infrastructure, poor management and increasing demand, involves farmers illegally tapping polluted rivers, streams or even sewage pipes for water, especially during shortages, to compensate for overexploited freshwater sources. Although this poses health risks, it alleviates water stress, and new national standards aim to formalise safe wastewater re-use and reduce uncontrolled water extraction.

insurance or extension services. The policy environment offers limited protection or support for smallholders, with weak enforcement of agricultural regulations and minimal climate-responsive planning.

Since October 2023, the escalation of hostilities in the south has further exacerbated vulnerabilities in already fragile rural and peri-urban areas. Sustained shelling, airstrikes and crossborder exchanges of fire have damaged farmland, irrigation systems and rural infrastructure, restricted access to agricultural land and triggered repeated waves of displacement, particularly in districts such as Saida, Tyre, Nabatieh and Bint Jbeil. Within this context, humanitarian needs are driven by the convergence of economic collapse, climate shocks, displacement and conflict-related disruption, pushing households towards negative coping strategies and undermining food security. The pilot responds to this HDP nexus by easing and de-risking the transition towards climate-resilient food production systems that can strengthen self-reliance and stabilise local food systems under protracted crisis conditions.

Focus and relevance

The Lebanon pilot supported 15 smallholder farmers and vulnerable households in Saida to transition toward climate-resilient and sustainable food production systems in the face of war, economic instability, climate shocks and humanitarian pressures. The entry point was community-level engagement, working directly with farmers to understand local constraints and opportunities and co-develop practical pathways for adopting agroecological practices that enhance soil health, water-use efficiency and overall resilience, while reducing their dependence on costly external inputs.

The main objective was to explore and demonstrate practical pathways for supporting marginalised small-scale farmers to transition towards agroecological practices in a context marked by protracted crisis, climate stress, economic collapse and conflict-related disruption. Implemented by DCA in partnership with Agrimovement, the pilot focused on increasing farmers' self-reliance and reducing their exposure to production and market risks within a food system dominated by imports and large conventional agribusiness and market actors. The pilot sought to identify viable entry points for agroecological transition that could function under humanitarian conditions, while strengthening local food production, access and resilience.

The pilot was anchored in southern Lebanon, where farming systems have been particularly affected by rising input costs, water scarcity and since 2023–2024, escalating conflict and displacement. During the 2024 conflict, agricultural activities were disrupted and access to land and markets constrained, while humanitarian needs increased sharply due to displacement. Within this context, the project tried to source food from local small-scale producers to supply IDP soup kitchens, demonstrating the continued relevance and potential of localised food systems under crisis conditions. Highlighting the vulnerability of import-dependent food systems, this experience serves as a concrete learning case and advocacy entry point for rebuilding more self-reliant, equitable and resilient food systems.

Activities

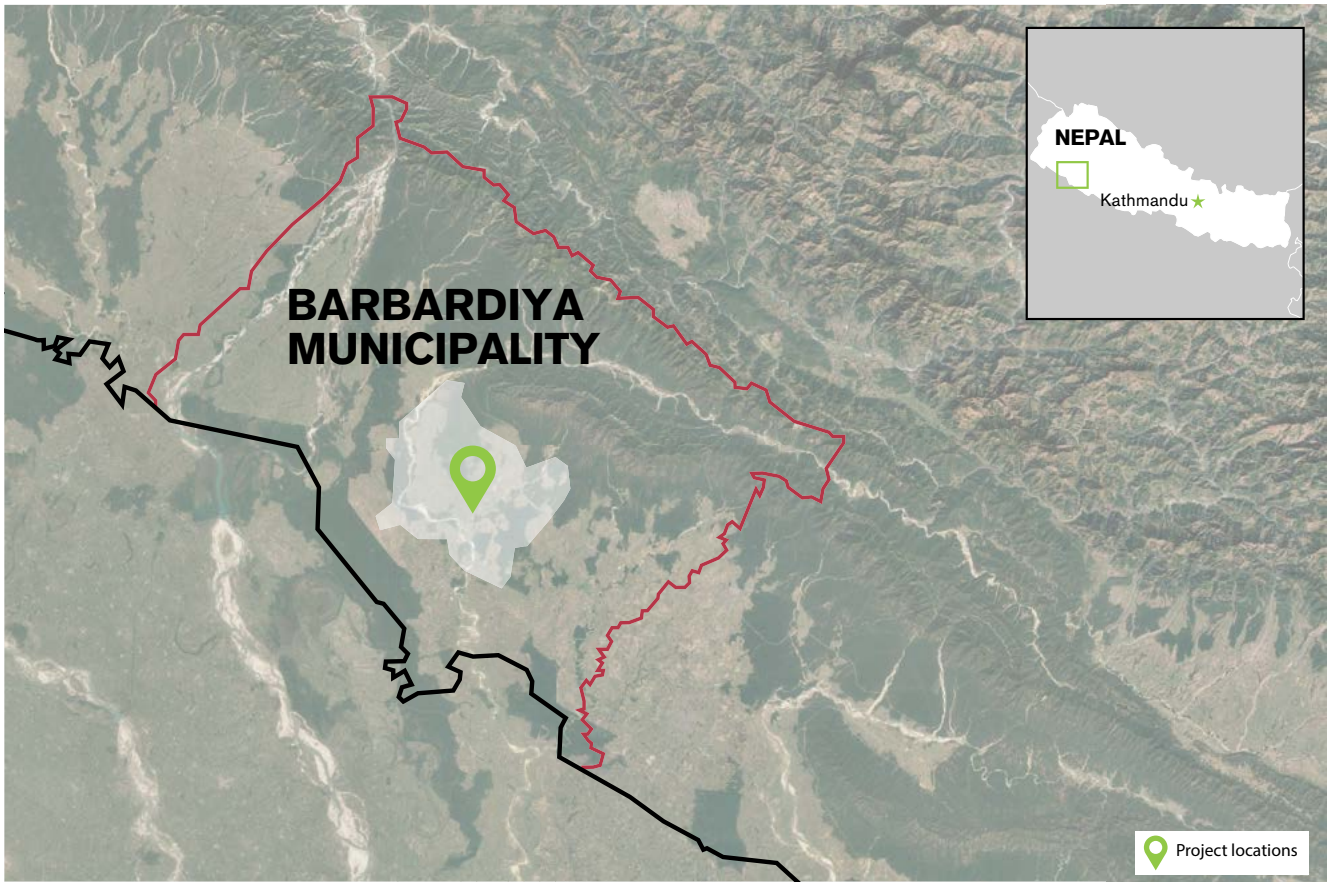
Recognising that food system transitions require a strong evidence base and stakeholder alignment, the pilot began with an FSA engaging farmers, consumers, cooperatives, municipalities and other stakeholders. The assessment reviewed existing studies and secondary data, mapped local food production systems and identified key barriers and opportunities for agroecological transition. Key challenges included high dependency on external inputs, limited access to affordable inputs and water, weak producer-market linkages, limited institutional coordination and policy gaps in supporting climate-resilient and agroecological farming. These findings shaped the pilot's priorities and selection of agroecological practices and risk-reduction strategies to be tested. Informed by the FSA, the main activities included:

- **Establishing a local multistakeholder platform — the Agroecology Living Lab — to bring together farmers, producer organisations and food system stakeholders:** the platform reviewed the FSA findings, developed a shared vision for agroecological transition and identified priority barriers and drivers to address. Together, stakeholders agreed on which agroecological approaches to pilot, as well as complementary measures to de-risk adoption, including input support, peer learning and market linkage models.
- **Conducting outreach with farmers and stakeholders:** focused on identifying the farmers and stakeholders to involve in the pilot and engaging them to raise awareness about the pilot and its potential benefits, this activity built trust, gathered feedback on local challenges and risks, and collected key data to inform targeted interventions. By strengthening relationships and understanding the local context, the pilot ensured support was relevant and effective, reducing operational and financial risks.

- **Undertaking a needs assessment:** a needs assessment using the Light TAPE tool, with additional questions tailored to the context of Lebanon. helped the team gain a clearer understanding of farmers' practices, needs and potential entry points for the pilot.
- **Undertaking a market case study on the status of agroecology in Saida district:** recognising the district as the hub of southern Lebanon's wholesale produce market, the team took a qualitative approach, with questionnaires, interviews and FGDs used to gather insights from farmers, stakeholders and local market actors, providing a comprehensive understanding of current practices, challenges and opportunities for adopting agroecological methods in the region.
- **Training farmers in agroecological approaches designed to enhance soil health, improve water-use efficiency and strengthen resilience to climate variability:** this training emphasised practical, sustainable techniques that reduce dependence on costly external inputs to optimise productivity while maintaining an environmental balance. It covered crop diversification, soil fertility management, water conservation practices, and methods for integrating organic amendments and locally available resources. As well as improving their technical knowledge, this hands-on training encouraged farmers to adopt long-term, sustainable practices that support both their livelihoods and the broader agricultural ecosystem.
- **Providing inputs, including tools and equipment, based on individual farmers' needs:** these enabled farmers to effectively apply sustainable soil management, water conservation and crop diversification techniques, implementing the training in a practical and tailored way.
- **Establishing demonstration plots and farmer-led experimentation sites:** by facilitating hands-on learning and collective reflection, these sites strengthened knowledge exchange between participants and enabled farmers to observe and test new practices and build confidence in adopting sustainable agroecological techniques.
- **Reinforcing peer learning and farmer group structures:** this promoted collaboration, collective problem solving and lesson sharing, strengthening social cohesion among participants and enabling farmers to support each another to adopt and sustain new agroecological practices.
- **Exploring models to strengthen market linkages for agroecologically produced food:** this includes developing local sourcing arrangements to integrate produce into humanitarian food provision, which helped identify opportunities to support farmers' incomes, promote sustainable practices and connect local production with broader market and relief systems.
- **Undertaking advocacy:** these efforts focused on protecting smallholder farmers from potential harm resulting from the existing food system, while also highlighting that Lebanon's Ministry of Agriculture and social safety net programmes rely heavily on donor and international funding. Such funding arrangements often come with policies and regulations that prioritise neoliberal market interests, which can undermine support for small-scale farmers and locally driven agroecological initiatives. The pilot's advocacy activities sought to represent farmers' needs and perspectives and safeguard against policies that could compromise their livelihoods, such as the proposed draft seed law, which is currently under review.

Images: an ecological farm in El Mir, East Sidon (left) and a beekeeping training for farmers from the south (right), Lebanon. Credit: © Agrimovement

Case study 3. Nepal learning pilot: food system transformation under climate stress



Main partners and stakeholders

- NAXA: a private geospatial information and communication technology organisation responsible for developing and customising an agromet advisory and risk communication system
- LI-BIRD: a national NGO that promotes agroecology-based food system research and development
- Barbardiya municipality: Leads the project at local level, mobilising resources, providing policy support and implementing interventions after the pilot phase; coordinates with government agencies, such as the Department of Hydrology and Meteorology and Nepal Agricultural Research Council

Context

The Nepal pilot was in Barbardiya municipality, Bardiya district of Lumbini province in the lower Babai River Basin in western Nepal. In 2021, the municipality had 16,897 households and a total population of 72,533, around 80% of which belonged to the Tharu ethnic group. A significant number of households are Muktakamaiya (freed bonded labourer) families, resettled by the government after 2000 and given small (0.16 hectare) land plots per household. Agriculture is the main source of livelihood, but most farmers have insufficient land to produce food for the whole year. With around 15–20% only able to meet their food needs for three to six months of the year, seasonal food insecurity is common. To survive, many depend on daily wage labour and seasonal migration.

Farmers with relatively larger landholdings increasingly use chemical fertilisers and pesticides to meet market demand, which has led to unsustainable farming practices. Despite having high agricultural potential, Barbardiya municipality is highly vulnerable to climate risks. During the monsoon season, frequent and severe floods from the Babai River damage

rice crops, erode fertile soil and destroy key infrastructure, including irrigation systems, storage facilities and roads. In contrast, prolonged dry periods in winter cause water shortages, affecting crops such as maize, wheat and mustard. Both floods and droughts cause major economic losses for farmers, leaving many households reliant on government and humanitarian agency food assistance.

As climate shocks and stresses are expected to increase, the municipality needs a system that can provide early flood and drought forecasts, as well as loss and damage scenarios, to help local government, communities and the private sector prepare and take early action.

Focus and relevance

The pilot focused on developing and testing agroecology-based farming models in areas affected by severe floods and droughts. The aim was to support communities and local governments to transition from unsustainable farming practices to a more resilient, agroecology-based food system. It also tested an innovative system linking climate hazard mapping with agromet advisory services and risk communication to help reduce disruptions to food production and local markets, and introduced an anticipatory action approach to support timely food security responses during humanitarian situations.

The pilot's main objective was to develop and test models that support and reduce risks during the transition to agroecology-based food systems, while also strengthening forecasting and anticipatory action to protect local food and market systems from climate shocks. Specifically, it aimed to develop and test agroecology practices that are suitable for flood- and drought-affected areas, as well as an agromet advisory, risk communication and anticipatory action system for the municipality's river basin areas. Building on earlier work by DCA, NAXA and LI-BIRD on anticipatory action, flood forecasting, agromet advisory services and agroecology-based food systems in other parts of Nepal, the pilot design drew on the following key experiences.

B-Ready: Demonstration of Scalable Model of Local-Led Anticipatory Humanitarian Action in Mahakali River Basin, Western Nepal: DCA and partners' locally led anticipatory action project in Dodhara Chandani municipality focused on flood risk modelling, flood mapping, household vulnerability assessment and capacity building for municipal officials and community groups, and helped the municipality update disaster preparedness plans and develop standard operating procedures for forecast-based actions.

Agroecology and Gender-Responsive Agriculture in the Karnali River Basin: DCA and LI-BIRD's joint project piloted agroecological practices and helped provincial governments develop agroecology-related plans and policies. Lessons from this work informed the design of the Nepal pilot's agroecological practices.

Multihazard Early Warning and Agromet Advisory Services: experiences from LI-BIRD's project to strengthen early warning systems for floods and landslides, which had a strong focus on agromet advisory services, helped integrate early warning systems with agroecological packages and agromet advisory services planning in the current pilot.

Activities

Learning from these initiatives, the pilot combined food system risk mapping, early warning systems, agromet advisory services and anticipatory action protocols to support agroecological and climate-resilient food system transitions in Barbardiya municipality. Its main activities included:

- **Conducting a food system risk assessment and visualisation, focusing on flood and drought risks:** using TAPE and CAET to assess the municipality's current level of agroecological transition, the assessment analysed the impacts of climate hazards on agriculture and infrastructure, and highlighted the need and rationale for transitioning to an agroecology-based food system.
- **Developing and testing agroecological practices for agricultural biodiversity, local seed systems, soil fertility, water management, pest management, value addition, marketing, local food culture and women's empowerment:** farmer field schools conducted participatory variety trials of drought- and flood-tolerant crops such as wheat, potato and rice and demonstrated vermicomposting, disease and pest control methods, water management practices, local seed conservation and how to prepare organic pesticides.

- **Providing training and tools for farmers:** these supported their adoption of agroecological practices.
- **Conducting a validation workshop:** conducted with the Nepal Agriculture Research Council and Department of Agriculture Extension, the workshop examined the results of the pilot and validated/adjusted the results.
- **Establishing a functional agromet advisory and risk communication system at municipal level:** the pilot formed a technical working group to prepare and review local agromet bulletins, disseminating advice through social media, municipal notice boards and the municipal early warning system.
- **Developing locally led anticipatory action protocols:** this included drafting a standard operating procedure for anticipatory action on floods and droughts, which the municipal council is in the process of endorsing for integration into planning and budgeting.

Image: women farmers from a farmer field school during an agroecology exposure visit at Maya Eco-Village Integrated Agriculture Farm, Jhijhirka, Kaski district, Nepal. Credit: © DanChurchAid Nepal

Appendices

Appendix 1.Guiding questions for expert interviews

What are the most significant potential benefits and added value of integrating agroecological approaches into humanitarian programmes compared to conventional approaches? Can you provide specific examples?

Are there alternatives (such as conventional farming) to agroecological approaches that provide food security and livelihoods, an inclusive food system and resilience through natural and manmade humanitarian crises?

Do you see any potential for building food systems 'back better' after a disaster that has destroyed or shaken up the existing food system?

What are the main challenges and risks of promoting agroecology in humanitarian settings, particularly manmade crises? What are the main barriers and how can these be overcome? What are the different considerations in sudden onset versus predictable crises?

What specific recommendations do you have for best practices, strategies and enabling factors for successfully integrating agroecology into different phases of humanitarian response (such as emergency relief, recovery, resilience building)? What is the role of development partners, local and national government? How can we best ensure progress in agroecological transition is not lost?

How can the humanitarian community better support the development and scaling of agroecological initiatives in crisis-affected regions (both in terms of production/marketing and social acceptance), and what role can different actors (such as NGOs, governments, research institutions) play?

Appendix 2. Consolidated set of 13 Principles of Agroecology

	Principle	FAO's 10 Elements of Agroecology	Scale application
Improve resource efficiency			
1	**Recycling:** preferentially use local renewable resources and close nutrient and biomass resource cycles as far as possible	Recycling	Field Farm Agroecosystem
2	**Input reduction:** reduce or eliminate dependency on purchased inputs and increase self-sufficiency	Efficiency	Farm Agroecosystem Food system
Strengthen resilience			
3	**Soil health:** secure and enhance soil health and functioning for improved plant growth, particularly by managing organic matter and enhancing soil biological activity		Field
4	**Animal health:** ensure animal health and welfare		Field Farm Agroecosystem

Principle		FAO's 10 Elements of Agroecology	Scale application
5	**Biodiversity:** maintain and enhance diversity of species, functional diversity and genetic resources, thereby maintaining overall agroecosystem biodiversity in time and space at field, farm and landscape scales	Part of diversity	Field Farm Agroecosystem
6	**Synergy:** enhance positive ecological interaction, synergy, integration and complementarity among the agroecosystem elements (animals, crops, trees, soil and water)	Synergy	Field Farm Agroecosystem
7	**Economic diversification:** diversify on-farm incomes by ensuring small-scale farmers have greater financial independence and value addition opportunities while enabling them to respond to consumer demand	Part of diversity	Farm Agroecosystem Food system
Secure social equity/responsibility			
8	**Co-creation of knowledge:** enhance knowledge co-creation and horizontal sharing including local and scientific innovation, especially through farmer-to-farmer exchange	Co-creation and sharing of knowledge	Farm Agroecosystem Food system
9	**Social values and diets:** build food systems, based on local community culture, identity and traditions, and social and gender equity, to provide healthy, diversified, seasonally and culturally appropriate diets	Parts of human and social values and culture and food traditions	Farm Agroecosystem Food system
10	**Fairness:** support dignified and robust livelihoods for all actors engaged in food systems, especially small-scale food producers, based on fair trade, employment and fair treatment of intellectual property rights		Farm Agroecosystem Food system
11	**Connectivity:** ensure proximity and confidence between producers and consumers by promoting fair and short distribution networks and re-embedding food systems into local economies	Circular and solidarity economy	Farm Agroecosystem
12	**Land and natural resource governance:** strengthen institutional arrangements to improve governance, including by recognising and supporting family farmers, smallholders and peasant food producers as sustainable natural and genetic resource managers	Responsible governance	Farm Agroecosystem Food system
13	**Participation:** encourage social organisation and greater food producer and consumer participation in decision making to support decentralised governance and local adaptive management of agricultural and food systems		Food system

Source: HLPE (2019)

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Knowledge Products

Research Report
April 2026

Food and agriculture

Keywords:
Agroecology, food systems, humanitarian response, Kenya, Lebanon, Nepal

Food security and nutrition outcomes are profoundly disrupted in crisis contexts. This report analyses how agroecological approaches can contribute to strengthening food security, resilience and longer-term food system transformation in humanitarian settings, and how to recognise and manage the risks of transition. It shares the findings from learning pilots in Kenya, Lebanon and Nepal, which demonstrate that, even under conditions of conflict, displacement and climate stress, it is possible to take meaningful steps towards more resilient and equitable food systems.

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