



CULTIVATING STABILITY

Agricultural systems, conflict & resilience

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Introduction

Conflict, often violent and recurrent, is a dominant characteristic of the complex environments in which Mercy Corps operates. Most of today's armed conflicts are concentrated in regions where populations are heavily dependent on agriculture.¹ These conflicts disturb the traditional agricultural systems, leading to collapse of production levels, distortion of agriculture markets, and ultimately food insecurity and hunger.



“The rehabilitation of agriculture is a central condition for development, reducing poverty, preventing environmental destruction, and for reducing violence.”

—To Cultivate Peace: Agriculture in a World of Conflict

The destruction of agriculture systems is mostly the result of conflicts, but climate change, environmental degradation and inequitable access to natural resources have in turn sparked or aggravated conflicts. Thus, we need to act on three fronts: We need to **prevent the complete destabilization** of agriculture systems during conflict, we need to help **rebuild** these agriculture systems early so that livelihoods can resume, and we need to **prevent** these agriculture systems **from fueling further conflict**.

What is an agricultural system? The agriculture system is represented by the roles and relationships between private sector, governance and civil society actors that interact and work to raise the productivity of agriculture sustainably and increase the resilience of systems that deliver food, feed, fuel, fiber and other services under current and future climate conditions and resource availability.

Conflicts and agricultural systems: a causal relationship

Violent conflicts destabilize agricultural systems.

The immediate effects of conflicts on agriculture systems are a **drop in overall agricultural production**² and a **destabilization of the market systems**, leading to general price increases and food shortages and subsequent food insecurity and hunger.³ The interconnectedness of markets leads to ripple effects on the actors along the chain, all the way to urban and peri-urban consumers.

Agriculture and food producers are particularly vulnerable to conflict because they are tied to their land. Labor displacement, inability to tend the fields, theft and destruction, and inability to access basic inputs are

1 FAO, IFAD and WFP, “Reducing Poverty and Hunger.”

2 “Messer, Cohen and D’Acosta (1998) estimate that during periods of conflict, agricultural production drops an average of 12.3 percent each year.” Kimenyi et al., “The Impact of Conflict.”

3 FAO, *Counting the Cost*. In Syria, the index of food consumer prices increased 800 percent between 2011 and 2016.

all major causes of production decreases.⁸ The increased theft of cash, products and equipment, as well as the destruction of productive infrastructure, depletes markets actors' productive and financial assets, making it difficult to recover. The use of land mines often excludes vast areas of arable land from cultivation.⁹ Inputs become inaccessible because the seed and livestock input supply has collapsed, because traders withdrew from areas in conflict, or because government regulations restricted the use of certain inputs, such as urea, that can be turned into explosives.

Beyond agricultural production, the market systems that support the buying and selling of agricultural products can be severely disrupted by conflict. All market functions supporting the supply and distribution of inputs and outputs change shape because of constraints in movement and overall breakdown of traditional communication and information flow, affecting the way business occurs and the players in markets.¹⁰ Major supporting services such as advisory, financial or information services may break down because of high risk levels, limited access or diminishing trust. For example, financial institutions often close, rendering access to credit impossible and leading to all transactions being carried out in cash.¹¹ Because markets are adaptable, they can persevere despite conflict, but they also run the risk of manipulation by conflict actors. Moreover, conflicts affect different groups unevenly, and disadvantaged groups, including the displaced,

4 Syrian Department of Statistics.

5 FAO and WFP, *Special Report*, 35.

6 Kimenyi et al., "The Impact of Conflict."

7 Mercy Corps and USAID, *Northeast Nigeria*.

8 FAO. Over 30 percent of the rural population of Syria migrated to the cities between 2011 and 2016.

9 FAO, "Conflicts, Agriculture."

10 In Nigeria, constraints of movement led some traders who knew alternative routes or where checkpoints were located to gain a comparative advantage and increase their share of the market.

11 Only 25 percent of households in Syria still have access to finance from any source, compared with 60 percent before the crisis. FAO, *Counting the Cost*.

AGRICULTURAL PRODUCTION DROPS

In Syria, prices of wheat flour in May 2017 were eight and six times the pre-conflict levels, while poultry production decreased by 50 percent, beef production by 35 percent and sheep production by 25 percent.^{4,5}

In Mali, rice yields decreased by 43 percent after one year of conflict in 2013. The reasons are as follows:

- *Fertilizers were delivered to Mopti (500 km from the conflict zone), and farmers had to retrieve them in compliance with rebels' rules.*
- *Major equipment, such as water pumps, was stolen.*
- *The government restricted the supply of urea to prevent its use in the production of explosives.*
- *Seed production was interrupted as institutions for seed multiplication relocated.*
- *A shortage of labor and insecurity about going to the field decreased the amount of land being cultivated.⁶*

In Nigeria, producers' inability to access land because of insecurity and (forced) displacement, government restrictions on chemical fertilizers that have been used to make explosives, and government restrictions on the height of certain crops—maize, for example—to prevent insurgents from hiding, have led to substantial decreases in production. Deforestation, due to burning by insurgents and displaced populations' need for cooking fuel, will have lasting economic and environmental impacts.⁷

may lack key capacities, such as social connections and access to land, that would enable them to invest in agriculture systems during crisis.¹²

As a result, conflicts have **lasting ecological, social and nutritional impacts** on overall agricultural systems. Ecologically, the absence of enforcement of environmental rules and regulations, the war economy resource extraction, and the movement of livestock or people to safer areas lead to overgrazing and overuse of natural resources overall, creating resource competition and risking fueling further conflict.¹³ Socially, displacements and the need to “take sides” sever social capital and connections. Nutritionally, reduced agricultural production, coupled with limited movement of agricultural products, food spoilage and the abandonment of food safety measures (such as phytosanitary controls), leads to a surge in malnutrition and diseases.¹⁴

Interestingly, the **cost of conflict** at the household level **varies with the type of agricultural products** produced and traded. Often, fish, small ruminants and crops such as cassava, which requires processing before consumption, are more resilient overall to the impacts of conflict because they are less likely to be consumed or turned into cash by armed forces. Conversely, large livestock is more likely to be lost to theft or disease, and some tree crops—such as cashews, bananas or coffee—if abandoned too long, require investments and time to recover.¹⁵ The effects of conflict are also more pronounced on those producers that are more advanced—for example, those using mechanization and irrigation, relying on the market for their inputs and outputs, and/or using immigration labor—as they are more likely to be the first destroyed or disrupted. Similarly, in areas where government had high levels of involvement in pre-crisis markets, reduced or halted government involvement due to crisis can cause disruptions in production and supply. When government subsidies stop, when local government advisory services cannot function, or when public markets can no longer serve their purpose, value chains supported by those governments collapse.

The **cost of conflict** also **varies with each subgroup** as their social roles, access to resources and abilities dictate their levels of exposure and sensitivity. While men, especially young men, are more likely to directly suffer from conflicts (through loss of life), women are more exposed to insecurity and violence, especially when they must travel away from the homestead to tend their fields. They are also responsible for maintaining the food security of their families in times of crises and thus are the first ones to sell off their assets to bring food to the table.¹⁶ Compared with their male counterparts, women also have less access to savings and fewer productive assets overall, leading to more difficult recovery periods.¹⁷ In some conflicts, children are disproportionately the victims of clashes between armed groups. This is the case, for example, in Nigeria.¹⁸

12 Mercy Corps, *Beyond Cash—Making Markets Work in Crisis*.

13 For example, in Sudan, the displacement of populations resulted in deforestation and a fuelwood crisis in dryland camp areas, land degradation, unsustainable groundwater extraction and water pollution UNEP, *Sudan: Post-Conflict*.

14 Uncontrolled livestock movement increases the risk of livestock diseases and zoonoses spreading, thereby threatening animal and human health regionally. FAO, *Subregional Strategy*.

15 Estimates suggest that more than half the total livestock was lost through direct and indirect effects of conflict in Somaliland during the mid-1990s. The estimate for Mozambique is roughly 80 percent. FAO, “Conflicts, Agriculture.”

16 In Syria, where women are largely involved in livestock production, especially commercial poultry, the costs of destruction in this sector had an important impact on their livelihood and food security. FAO, *Counting the Cost*.

17 In Northeast Nigeria, Mercy Corps’ study revealed that savings mechanisms have been undermined by the insurgency through the dissolution of savings groups, impacting women specifically. Mercy Corps and USAID, *Northeast Nigeria*.

18 UNICEF and NSRP, *Perceptions and Experiences*.

The failure of agriculture systems becomes a catalyst of conflict.

Environmental degradation, extreme weather events and inequity in access to resources, particularly land, are important contributing factors to conflicts over productive resources.¹⁹ In sub-Saharan Africa, a decrease in rainfall (from the previous year) of 5 percent increases the likelihood of a civil war the following year by 50 percent.²⁰ Throughout history, from the French Revolution to the Syrian war to pastoralist-sedentary conflicts in Northeast Nigeria or East Africa, climatic events and loss of soil fertility and water have been “threat multipliers” and have led to the failure of agriculture systems to provide enough food for communities.²¹ As a result, populations migrate in search of food, pasture and water. In a vicious cycle, this migration in turn leads to increasing pressure on limited resources in areas of destination, becoming a source of potential conflict.

This situation is often aggravated by the choices or lack of choices of policies.²² Insecurity and inequity of land tenure or water access for certain populations increase the likelihood of conflicts; production-related policies can have detrimental impacts on production. In Syria, for example, the government agricultural intensification policy promoted irrigated crops for export and reliance on chemical fertilizers, which contributed to not only the degradation of Syria’s soils and water sources but also the failure of agricultural systems once the access to inputs was interrupted.

In the end, agriculture systems and conflicts are closely interlinked. An agriculture system’s failure, or the perception of its failure, contributes to the ignition of violent conflicts. Vice versa, conflict has detrimental effects on an agri-system’s ability to function, and agriculture systems can even be used as a weapon of war.^{24, 25} However, agriculture systems, and the markets and actors that support them, can find ways to function and support households, even in crisis. To break cycles of conflict and poverty, we must find ways to better sustain and strengthen these agriculture systems before, during and after crisis.



“A water crisis—whether caused by nature, human mismanagement, or both—can be an early warning signal of trouble ahead.”

—Somini Sengupta, *The New York Times*²³

19 In “Climate and Conflict,” a global study of human conflict, Burke, Hsiang and Miguel find that for each standard deviation change in average precipitation and temperatures, the frequency of interpersonal violence increases by 4 percent and that of intergroup conflict by 14 percent.

20 Miguel, Satyanath and Sergenti, “Economic Shocks.”

21 The French Revolution occurred when El Niño caused harvest failures, triggering mass rural-to-urban migration. Fraser and Charlebois, “We Can’t Talk Emissions.”

22 Competition for the benefits accrued from the use of surface water was an important contributing factor of the civil war in Sudan (Jonglei Canal project in South Sudan). While there is no indication that timber has been a major contributing cause of the instigation of conflict, there is clear evidence that revenue from hardwood timber sales helped sustain the north-south civil war. UNEP, *Sudan: Post-Conflict*.

23 Sengupta, “Warming, Water Crisis.” Like many countries from India to Syria, Iran, after the 1979 revolution, set out to be self-sufficient in food. It meant that the government encouraged farmers to plant thirsty crops, such as wheat, throughout the country. The government offered farmers cheap electricity and favorable prices for their wheat, and that served as an incentive to plant more and more wheat and extract more and more groundwater. The result: “25% of the total water that is withdrawn from aquifers, rivers and lakes exceeds the amount that can be replenished.”

24 In Syria, the control of the wheat value chain became a central strategy for all factions, mainly because the ability to supply food can win support among the population. ISIS targeted Syria’s breadbasket, capturing swaths of wheat-producing land, taking over flour mills and setting up an agricultural bureau responsible for trade. Perry, “Climate Change.”

25 Mercy Corps, *Beyond Cash—Making Markets Work in Crisis*.

Overall Framework

“If productive farming areas are neglected, more people will be forced to leave already depopulated rural areas making eventual recovery harder, longer and more costly to achieve.”²⁶

Our **theory of change** aims to ensure that agricultural systems continue to function throughout violent conflict, recover more quickly and minimize the risks of fueling further conflicts so that the people within these systems (producers, market actors and consumers) maintain food security and economic gains.

The basis for any agriculture intervention in a situation of conflict or at risk of conflict is to have a **good understanding of the conflict issues** that could impact or have their source in the agriculture system. This understanding will allow us to tailor appropriate solutions for each affected group—internally displaced persons (IDPs), refugees, returnees or people who stay behind—in ways that respond to their unique needs and vulnerabilities and that address directly and deliberately the drivers of conflicts.

To reach this goal, we need to be agile in the way we design and implement our programming. The selection of our interventions will vary with the intensity of conflicts within each agriculture subsystem (usually within a market catchment). We use **“freedom of movement” as a proxy indicator** to determine which intervention can apply. Freedom of movement can be dictated by people’s own fears (they do not want to travel to markets because of insecurity), or movement restrictions may be imposed by the government or militias.

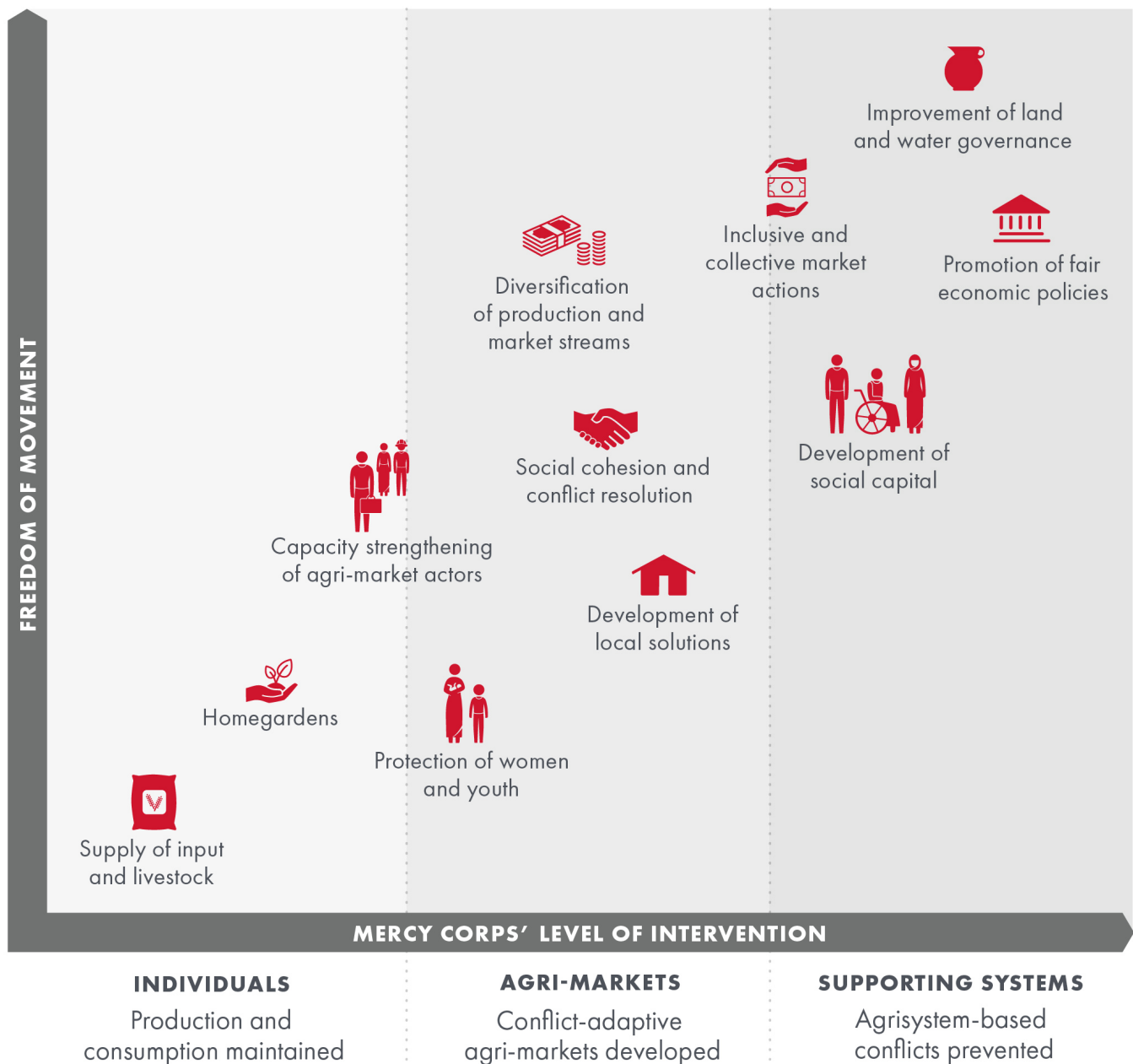
› *In Syria, Mercy Corps distributed small livestock and provided vouchers for veterinarian services and fodder. Using World Food Programme’s standard Food Consumption Score methodology, results have shown that of the program participants whose food consumption was considered poor or borderline, between 70 and 90 percent of them reached an “acceptable” range of food consumption at the end of the project.*

- In a situation of **intense conflict**, where security concerns limit the freedom of movement, maintaining local production and consumption is paramount to fighting acute hunger and preventing the total breakdown of the system. Interventions could include providing emergency seed and small livestock (if appropriate, and only as a short-run strategy in acute crisis), partnering with local businesses and institutions that have an interest in providing inputs and services (e.g., through vouchers, linkages and capacity building), developing home gardens for consumption, and working with traders who have the capacity to maintain the flow of inputs and outputs from marketplaces where access has been restricted.
- In a situation **at immediate (or near-term) risk of conflict or when conflict diminishes**, facilitating the development of adaptive market and production systems will be the key to maintaining production levels and feeding the population without endangering the natural resource base. Based on an assessment of the capacities and relationship of market actors, interventions could include developing diversified production and market streams, reinforcing capacities of private and government actors, and linking to newly present market actors when the political situation has changed.

²⁶ FAO, *Counting the Cost*.

- To **prevent conflicts** from reoccurring, we need to address the systemic barriers that perpetuate cycles of conflict, poverty and vulnerabilities. Interventions could include addressing land and water security across gender, ethnic and conflicting party lines; influencing economic policies to ensure they do not disadvantage groups; supporting inclusive market engagement; and building the capacities for inclusive governance and peaceful dialogue that promotes social cohesion.

MAKING AGRISYSTEMS AGILE AND ADAPTABLE TO CONFLICT



Principles and actions

Foster social cohesion

Different functions in an agricultural market system may be filled by opposing parties to a conflict. This represents a threat, and we should not, through our action, deepen the inequities that generated or were created by a conflict. This is also an opportunity to bring opposing parties together to find common economic incentives. Recommended actions include:

- Analyze differentiated vulnerabilities to inform design so that we minimize negative trade-offs on population subgroups.
- Rely on and strengthen the capacity of local agriculture structures, such as farmer groups, village and saving groups, and formal or informal extension agents, to increase communication between the different parties to a conflict. This will help strengthen social cohesion and promote peace, transparency, accountability and ultimately trust between all agriculture actors.²⁷
- Provide balanced emergency response, work opportunities, and new skills to both displaced persons and refugees and host communities.

Mercy Corps is implementing a shared natural resource management and peace-building program in three districts in the Mendera Triangle in Africa. This program helps community members and local authorities identify, restore and manage critical natural resources that are often scarce, degraded and, as a result, sources of intercommunity tensions. The program acts on both sides—consultations and trainings on negotiation and other conflict management skills culminate in long-term natural resource management plans, and improvement in intercommunal natural resource management reduces the impetus for conflict between groups that compete over natural resources.

Tailor solutions to different affected groups²⁸

Ensuring that the different groups affected by crises are part of the agricultural system requires that solutions be tailored to their abilities and skills, access to resources, and needs. The assets and skills of IDPs or refugees will differ from those of host communities or returnees, and those of men will differ from those of women and of young people. Recommendations for action include:

- Strengthen the technical and business skills and confidence of host communities and returnees to drive agriculture systems. They are more likely to own economic assets and access land and other agro-services, and they can be the driving force to maintain the production system during a crisis and lay the foundations for efficient and long-term agriculture systems.²⁹

²⁷ National Academy of Engineering, “Adapting Agriculture Extension.”

²⁸ FAO, *Subregional Strategy*.

²⁹ FAO, *Counting the Cost*. Non-IDP households still living in rural areas depend on agriculture as their main livelihood, with around 80 percent involved in annual crop production, 60 percent in perennial crop production and 60 percent also in livestock rearing.

- Strengthen the capacities of IDPs and refugees, who have less access to land, around “intangible” or soft skills such as extension services. Support them in increasing their nutritional self-reliance through permagardens.
- Facilitate women’s chores by supporting access to inputs, tools and equipment.
- Help empower women (and displaced groups) to play a greater role in their households and communities.
- Support young people’s access to social capital and protection while supporting the development of economic skills.

Ensure protection of women and youth

Preventing unnecessary movement to the field or to markets that may prove dangerous in conflict situations will help increase protection of those who are most at risk – women and youth. Recommendations for action include:

- Develop communication technology for selling agriculture products, purchasing inputs or making financial transactions—for example explore the potential for digital payments and services.
- Support access to land closer to the homes.
- Avoid promoting tall and bushy crops, such as maize, as they easily serve as hiding places and render fields insecure.

Support inclusive re/construction of productive infrastructure

The destruction of market facilities, irrigation schemes and storage units has substantial impact on producers’ and traders’ ability to continue to produce and deliver foodstuffs. Based on careful assessments regarding the economic potential, location, ownership and use of this infrastructure to ensure we “build back better,” supporting the re/construction of infrastructure while addressing potential root causes of conflicts will help speed recovery without fueling further conflicts. Reconstruction can engage conflicting parties to join efforts in collective action.

› CONFLICT-RESILIENT CROPS

In the Democratic Republic of the Congo, quinquina, cocoa and vanilla are not usable in their raw form and cannot be readily converted to cash owing to the length of supply chains. Quinquina trees can be neglected for weeks or years; their bark can be harvested when it is safe and convenient to do so; the trees can withstand violence and vandalism because of their tall, sturdy structure; and they offer no apparent benefit for the actors of violent conflict.

In Rwanda during the genocide, small ruminants were more resilient than cattle as they are “movable” and easily hidden and require minimum care.

Develop conflict-resilient production systems

Intertwining conflict and climate resilience requires understanding the main risks and vulnerabilities that populations are confronted with. Vulnerabilities linked to a conflict are difficult to predict and require more agile responses as the situation evolves.

Applying a conflict-sensitivity lens to how we engage with production systems in pre- or post-conflict settings means considering the type of crops and livestock products promoted. Careful consideration must be paid when promoting new crops that could ignite conflicts, such as those between pastoralists and sedentary farmers, or that could drain soils of water or nutrients. Depending on context, production systems could:

- Include a selection of crops and livestock that can be “movable” in case of displacement and, similarly, that do not require lots of movement to tend if conflict is likely to restrict movement (for example tree crops).
- Combine nutrient-rich and diversified products that can be consumed locally, such as bananas, with products that require processing and are less likely to be looted, such as coffee.
- Mix perennial and seasonal crops—for example, tree crops and vegetables—to ensure a short-term source of food while simultaneously maintaining long-term production and environmental protection.
- Develop biofertilizers (including local compost) to palliate restrictions of chemical fertilizers.³⁰

Promote context-driven local solutions

Increasing self-reliance of local agriculture systems will allow them to continue to function, even during the peak of the conflict period. Interventions should be based on the context and will vary depending on the type of conflicts. However, general recommendations for action include:

- Develop informal, local and community-based input supply and business service systems in case essential market functions break down or are not accessible—for example, support community-based input stores, promote a diversity of short-maturity cycle crops that can be sold locally, develop savings and loan associations, and strengthen community extension agents’ capacity. Strengthening the informal seed system will help producers cope during crises, when they do not have access to the formal system.

Local may also mean peri-urban! As populations seeking more secure environments regroup around towns, they bring new expertise and may be well-placed to produce sufficiently to feed themselves and the host cities. Harnessing these new skills for mutual economic benefit will encourage peaceful coexistence.

Recommendations for action include the following:

- Support the access of displaced populations to peri-urban land.

³⁰ Mercy Corps and USAID, *Northeast Nigeria*.

- Support trade between peri-urban displaced populations and city dwellers.³¹
- Support livestock and by-product production that requires less land and a smaller initial investment.

Mainstream water and land governance

Land and water access is often the source of localized conflicts that can escalate into protracted crises.³² Mainstreaming water and land governance activities throughout our interventions will help foster communication and trust between potentially antagonistic parties, minimize the escalation of violence in the future, and support an easier reintegration of returnees. While interventions will vary with the context, recommendations for action include:

- Support good land governance and the fair management of natural resources while supporting producers adapt to climate change.
- Work with local populations and local governments on clarifying land tenure laws and regulations and supporting access to formal land titles and/or long-term equitable land leasing agreements.
- Support fair and equitable rangeland management mechanisms.

Strengthen agriculture markets from the onset

When a conflict occurs, we are ready to intervene and save lives through emergency input supply and nutrition support. This support needs to transition rapidly to strengthen agricultural market actors so that they can rebuild their businesses and take over. Recommendations for action include:

- Conduct systematic market analyses and build partnerships between aid groups, private sector and financial entities, government departments, regulatory bodies, and researchers to understand the constraints and capacities of local markets serving crisis-affected populations.
- Combine support to local businesses and market institutions with direct provision to households to spark market activities that benefit crisis-affected groups. This will help producers and processors continue to produce, allow for a faster recovery of the agricultural market system, and help individuals regain their dignity through work and income.
- Strengthen social and market connections so that traders and other market actors can negotiate easier passage through checkpoints, clarify movement procedures and connect with producers.³³
- Support the use of technology to facilitate trade. Sharing information via mobile phone on market prices, production levels and availability, and road access will diminish the need for movement.

31 In Northeast Nigeria, most local governments provide recommendations on where farmers can safely plant (generally within a 3-10 km radius from the town). Mercy Corps and USAID, *Northeast Nigeria*.

32 Global Land Tool Network, "Crosscutting Issues."

33 Transporters that can navigate the changes in routes and ensure that the produce can reach its destination in a timely fashion with minimal cost implications have become the most valuable players in the market. Mercy Corps and USAID, *Northeast Nigeria*.

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Mercy Corps is a leading global organization powered by the belief that a better world is possible. In disaster, in hardship, in more than 40 countries around the world, we partner to put bold solutions into action—helping people triumph over adversity and build stronger communities from within.

Now, and for the future.



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