



AGRICULTURAL APPROACH

South Sudan — Mathieu Rouquette/Mercy Corps 1013

INTRODUCTION

We live in a world where 2.8 billion people — nearly half of the population — survive on less than \$2 a day and an estimated 850 million people are undernourished.¹ Yet, an estimated 64 percent of the world's total land surface that is suitable for crop production remains untapped. Simultaneously, agriculture productivity has the potential to increase, offering potential high returns in terms of food security, nutrition, and rural income gains.^{2,3}

Taking advantage of agricultural opportunities requires that we address multiple challenges: encouraging overall economic development and poverty alleviation; recognizing and helping to manage increased competition for alternative uses of land and water resources; adapting to extreme weather events due to climate change; and contributing to biodiversity preservation and fragile ecosystem restoration — all while meeting the nutritional needs of an increasingly affluent and growing world population.

Promoting agricultural systems that combine economic growth, nutritional diversity, and agricultural productivity and efficiency will increase the resilience of the communities with whom we work, and help alleviate poverty, hunger

The Agriculture Sector at a Glance

- 450 million small farms of roughly 2 hectares
- 2 billion smallholders represent 56 percent of the global workforce
- 200 million pastoralist households manage more than 25 percent of the earth's resources in over 100 countries, despite extreme temperatures and unpredictable rainfall.

1 "The State of Food Insecurity in the World" (FAO 2012) [<http://www.un.org/en/globalissues/briefingpapers/food/vitalstats.shtml>]

2 Yield gaps were estimated to range from 11% in East Asia to 76% in Sub-Saharan Africa in 2005 (FAO, 2011b)

3 World Bank, 2008

and malnutrition. Particular emphasis needs to be placed on closing the gender gap in productivity associated with unequal access to resources, inputs and markets. This could raise total agricultural output in developing countries by 2.5–4 percent and reduce the number of undernourished people by 12–17 percent globally.⁴ Similarly, involving youth in productive agricultural employment can also increase overall agricultural productivity, resilience, economic sustainability and nutrition for farm families and local communities.

AGRICULTURE IN TRANSITIONAL ENVIRONMENTS

While conflict, natural disasters, and economic and political crises cause hardship for millions of people, these events can also offer tremendous opportunities for positive change. With a strategic focus on countries in transition, Mercy Corps helps communities convert agricultural challenges into opportunities, helping them become more economically productive, food secure, resilient and stable. While socio-ecological environments and markets differ from one country to the next, common factors that affect long-term productive agricultural growth do exist and need to be addressed. These include:

Inefficient farming systems – Inefficient production practices, poor extension services and limited access to technologies and other inputs contribute directly to the low productivity of small holdings. These inefficiencies result in low quantity and quality of agricultural products, which cannot meet local and global market demand, and are often not sufficiently diverse to adequately nourish a family.⁵

Dysfunctional markets – High transaction costs and weak regulatory frameworks often characterize agricultural and input supply markets in developing countries. And an often under-developed private sector means few of the essential functions necessary for a well-integrated, high performing market system are present. Many rural communities lack access to financial services adapted to their needs, as well as sufficient information to make sound and profitable market decisions. This results in insufficient revenues for the producers and others in the value chains and high prices for the consumers.

Inequitable (or absence of) formal and informal government regulation – Governmental policies and traditional norms on land ownership, markets and trade – combined with a weak or non-existent legal structure – are all too often inadequate for developing countries to compete in a global market system. Local governments do not always take into consideration, or protect, smallholder farmers, pastoralists, or small business entrepreneurs, even less so when they are women or youth. Land tenure insecurity, inequitable land-use rights, and the misuse of power by traditional and customary leaders often lead to land disputes and increased risk for those with less power who wish to assert their legal claims. For example, rather than establish effective regulation of seasonal livestock migration, governments often push pastoralists to “sedentarize”, (i.e., remain in one place) and ignore their desire to continue a pastoral livelihood. Finally, market policies are often inappropriate, being either inexistent or burdensome, leaving trade inefficient and highly corruptible.

Nutritional shortfalls – Inadequate nutrition – including lack of sufficient calories and micronutrients for pregnant women and children – physically and cognitively affect more than 3 billion people, often preventing them from reaching their full economic capacity in adulthood. Unfortunately, agriculture production in developing markets does not always translate into improved nutritional outcomes for local families, due to a combination of low disposable incomes, lack of available nutrient-dense foods, poor dietary practices, agricultural production shortfalls and market failures.

4 “The State of Food Insecurity in the World” (FAO 2012)

5 Sustainable Agricultural Productivity Growth and Bridging the Gap for Small-family farms, Interagency Report to the Mexican G20 Presidency, 12 June, 2012. During normal years, agricultural outputs are on average 76% lower in countries where we work than the average productivity in similar contexts.

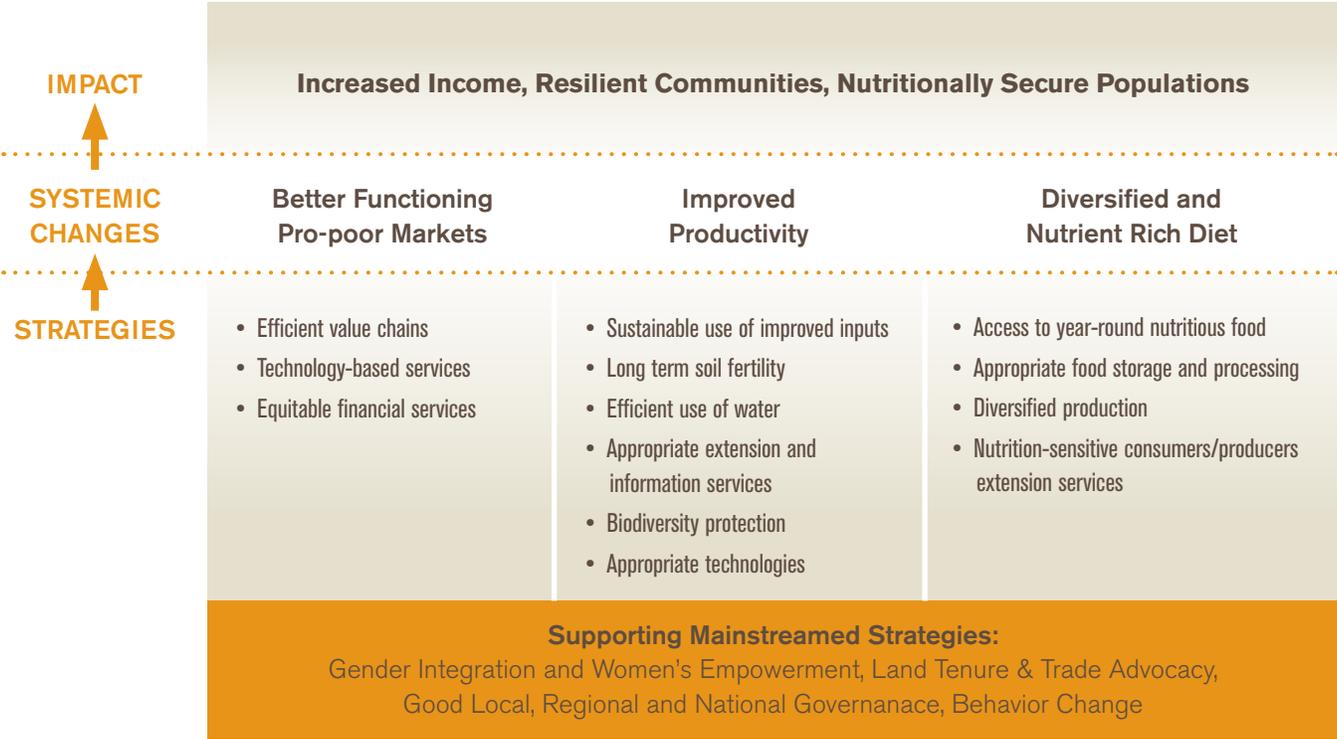
Challenging global trends – Demographic pressure, global price volatility, high energy costs and climate change have a direct effect on the fragile balance of local and global market systems and socio-ecosystems. Climate change will continue to impact both commercial and traditional agriculture through increased frequency and intensity of extreme weather events; erratic temperature and precipitation patterns; changes in available land and water resources; shifts in cropping zones; and changes in pest and disease patterns. Agricultural insurance services, either expensive or nonexistent in many developing markets, leave many farm families and smallholders with little opportunity to manage risk against crop shortfalls and damage related to climate change.

OUR APPROACH

Mercy Corps adopts a holistic approach to agriculture to ensure agro-systems are economically productive, nutritionally diverse and efficient, both today and in the future.⁶ With the goal of improving the lives and livelihoods of those in agricultural value chains, including smallholder farmers and pastoralists, Mercy Corps' agricultural interventions are designed to favorably impact populations on three fronts:

- Increase income for all participants across agriculture value chains including farmers, pastoralists, processors, traders, wholesalers, credit suppliers, retailers and consumers.
- Build resilient farm families and communities who are better prepared to face and respond to recurring shocks and stresses.
- Support populations to be nutritionally secure to ensure they reach their full economic potential.

Recognizing both the potential of improved agricultural systems on rural livelihoods and the complexity of the many challenges involved, Mercy Corps acts at the intersect of markets, farm productivity and household diet.



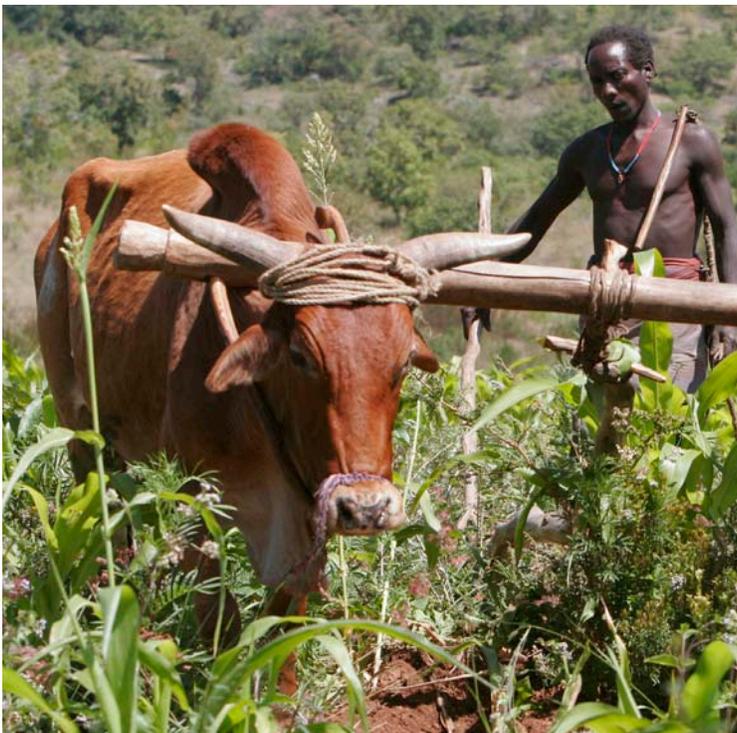
⁶ The term "agriculture" encompasses crop cultivation, livestock production, forestry and fisheries across a wide range of ecosystems and landscapes.

OUR APPROACH: Better Functioning Pro-Poor Markets

Based on Mercy Corps' resilience principles, which recognize that addressing the root causes of rural and developing market poverty requires a systems approach, Mercy Corps acts as a market facilitator to engage a wide range of stakeholders to analyze and overcome the constraints that prevent the poor from participating efficiently in agricultural market systems. Based on in-depth analyses of the political, economic, social and environmental contexts in which we work, interventions are designed to improve the functions of core and supporting markets that can improve the lives of the poor.

More specifically, Mercy Corps works to strengthen the provision of key agriculture-related products and services—including inputs, value-added activities, financial services and extension services among others. Interventions are based on win-win scenario by which key stakeholders, specifically those within the private sector, find and exploit incentives that foster a long-term commitment. Leveraging both supply and demand opportunities, Mercy Corps and its partners target market strategies, including the following:

- Operational, financial and risk reduction assistance to input suppliers for improved services to target populations.
- Development or strengthening of missing market linkages.
- Product and service improvements to respond to the specific needs of the target populations.
- Product value addition and transformation.
- Strategies to boost demand for specific products and services.
- Business models to help integrate embedded services.
- Development and promotion of modern and appropriate technologies.



Ethiopia — Geoff Oliver Bugbee for Mercy Corps

Livestock Improvement in Ethiopia

In the Somali region of Ethiopia, livestock value chains are hindered by a weak input supply sector. This has ramifications for livestock productivity, which affect not only market access but, more importantly, household nutrition. Based on the theory of change that assisting private-sector actors to develop markets for critical inputs stimulates systemic beneficial and sustainable change, Mercy Corps' USAID-funded Pastoralist Areas Resilience Improvements and Market Expansion (PRIME) program focuses on enhancing:

- Pharmaceutical distribution network
- Private veterinarian pharmacy capacity
- Community animal health worker (CAHW) service capacity

Results are encouraging. The quality and quantity of pharmaceutical products available have improved, and fee-for-service animal health services outreach has increased, leading ultimately to improved livestock productivity.

OUR APPROACH: Improved Sustainable Productivity

Demographic pressure and antiquated land tenure systems can limit production, yet improving long-term agricultural productivity (from production to harvest to storage) is at the core of increasing quality yields and returns on investments. Improved productivity in a resilient ecosystem requires significant improvements in agricultural practices, introduction of innovative low-cost technologies, and better management of natural resources and biodiversity. Mercy Corps works with producers (farmers and herders) and other stakeholders (for example extension services, input suppliers, or financial service providers) to help them adapt to climate change so that they become more productive in the short-term, while responding to longer-term energy and natural resource conservation needs. To this end, Mercy Corps promotes proven agricultural practices adapted to each context that are climate-smart, energy-efficient and agro-ecologically sound.^{7,8}

While the choice of appropriate practices depends largely on context, and must combine scientific expertise with local knowledge, promoted practices seek to develop responses that foster productivity, adaptation and mitigation. However, Mercy Corps goes beyond the simple diffusion of these practices and seeks to ensure a fundamental change of agricultural behaviors. Based on lessons from the health field, Mercy Corps is increasingly incorporating behavior change approaches, such as barrier analyses, within its agriculture program design, as appropriate.

Promoted practices and technologies include:

| CROPS | SOIL | LIVESTOCK |
|--|--|--|
| <ul style="list-style-type: none"> • Diversification of crop systems • Agro-forestry • Adjustment of crop rotation, planting calendar, fertilizer use • Use of drought-resistant, pest-resistant, and short-season varieties | <ul style="list-style-type: none"> • Reduction of soil erosion⁹ • Increase in soil moisture¹⁰ • Improvement of soil health¹¹ • Rehabilitation of degraded land | <ul style="list-style-type: none"> • Integration of crop/livestock systems for diversification and synergies¹² • Silvo-pastoral systems¹³ for shade, feed and carbon sequestration • Productive, disease resistant breeds • Improved herding practices • Improved animal health and nutrition |
| PEST & DISEASES | WATER | INSTITUTIONS |
| <ul style="list-style-type: none"> • Use of integrated pest management • Development of multiple cropping/rotation systems | <ul style="list-style-type: none"> • Development of rainwater harvesting systems • Drip-irrigation • Improved water-use efficiency¹⁴ • Improved soil water holding and infiltration • Conservation of natural riverine ecosystems, especially wetlands | <ul style="list-style-type: none"> • Strengthening of Early Warning Systems • Strengthening of public and private extension services and information dissemination • Collaboration with research institutions • Reinforcement of capacity for water management¹⁵ |

7 The Food and Agricultural Organization (FAO) defines climate-smart agriculture as “agriculture that sustainably increases productivity, resilience (adaptation), and reduces or removes greenhouse gases (mitigation)”. Higher yields translate into higher disposable incomes and food security. Producers’ adaptation to weather variability renders them more resilient over time. And agricultural practices that sequester greater amounts of carbon in woody biomass and soils help mitigate climate change.

8 Agro-ecology uses ecological concepts and principles for the design and management of sustainable agro-ecosystems where external inputs are replaced by natural processes such as natural soil fertility and biological control. Agro-ecology takes greater advantage of natural processes and beneficial on-farm interactions to reduce off-farm input use and enhances the functional biodiversity of agro-ecosystems.

9 Includes live fence and minimum tillage

10 Includes cover crops, mulch and organic fertilizers, contour cropping, terracing or leveling

11 Incorporation of crop residue, green manure legumes and nitrogen-fixing trees, regulation of grazing

12 Manure is used to fertilize crops and crop residues are used as animal feed

13 Combines grazing and forestry

14 Through adjustments of timing and amount of irrigation

15 Includes irrigation systems, water pricing and allocation, etc.

Bio-reclamation Techniques in Niger

Farmer-managed natural regeneration (FMNR) or **natural tree regeneration consists of sustaining the growth of new natural plant seedlings** (i.e. the re-growth from still-living stumps). Mercy Corps adopts this technique in Niger for soil protection against wind erosion and evaporation, bio-diversity, alternative sources of revenue through the sale of firewood and fodder, and complementary food production through fruit trees.



Niger – John romano for Mercy Corps

OUR APPROACH: Diversified & Nutrient-Rich Diet

A productive agriculture sector is central to human nutrition as it has the potential to supply year-round access to nutritionally diverse, safe and affordable foods. There is a growing understanding that agricultural development is an entry point for improving human nutrition, while at the same time, agricultural investments targeted toward smallholder farmers are more likely to succeed if they address human capital constraints due to malnutrition.¹⁶

Mercy Corps encourages the application of a “nutrition lens” when designing its agricultural interventions. This aims to maximize the impact of agriculture on nutrition outcomes, while minimizing any unintended negative nutritional consequences of agricultural interventions and policies on the poor, especially women and young children. Tools are being developed to ensure Mercy Corps’ agriculture programs increasingly include nutrition considerations throughout the assessment, planning, implementation and evaluation processes, including explicit nutrition objectives and indicators. Mercy Corps’ adopted strategies for nutrition-sensitive agriculture programs include:

Empowering women helps ensure that incomes derived from agriculture are wisely spent on women and children’s dietary needs.

Diversifying production supports multiple pathways to improving nutrition through dietary diversification; diversification of income; and increased seasonal access to nutritious products. Production diversification can be applied to agricultural value chain work and includes intercropping of staples with micro-nutrient rich secondary crops, introducing productive home gardens, and promoting integrated crop/livestock production systems.

Nutrient-dense foods are emphasized through the promotion of horticulture, livestock production and legumes. In its value chain selection, aside from economic opportunities, Mercy Corps examines the caloric, vitamin A, iron, protein and overall nutrient content of selected crops.

Do No Harm

A few principles to ensure agriculture programs Do No Harm to nutrition objectives:

- Ensure women are not overburdened by agricultural production to the detriment of child care
 - Evaluate the potential negative impact of production choices when focus is solely on cash, or toward male-only benefits
 - Consider the risks of diseases from incorrect usage of agro-chemicals, livestock raising, poor storage, etc.
 - Ensure agriculture practices do not pollute or exhaust water systems
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¹⁶ A GAIN study shows that 1% decrease in height due to stunting leads to a 1.4% reduction in productivity

Bio-fortification is introduced to allow families to continue to consume their traditional foods but with higher nutrient content (e.g., orange-fleshed sweet potatoes).

Improving storage and processing maintains or enhances nutrient content (such as germination or fermentation) and reduces the occurrence of mycotoxins including aflatoxins.

Streamlining nutrition education involving multiple stakeholders – such as agricultural extension agents, health agents and community leaders – will ensure all are aware and continue to promote nutrition considerations. Designed to raise awareness on how to prevent malnutrition among the most vulnerable (children under 2 years and pregnant and lactating women), nutrition education encompasses food handling and food safety; healthy food choices and balanced diets; nutritional requirements of age, gender and age-diverse family members; and dietary care practices addressing food taboos.

SUPPORTING MAINSTREAMED STRATEGIES

Gender and women's empowerment – In many parts of the world, women represent the majority of the agricultural labor force, and yet their contribution remains largely unrecognized. Women face greater obstacles than their male counterparts in accessing markets. Yet, at home, women are usually responsible for their families' dietary diversity and nutrition. They are also more likely to spend their incomes on food and their children's needs. Following a systematic gender analysis in all countries where we work, Mercy Corps' interventions are designed to empower women and girls in their daily decisions, and help the private sector recognize the latent market opportunities that serving this important (and underserved) market segment offers. Mercy Corps therefore helps women and girls increase their income opportunities; improve access to gender and age-appropriate extension services and information; adopt labor, time-saving and productivity-enhancing technologies; and support them in their rights to land, employment and education.

Working with Youth

Rural youth are the future of the agricultural sector. They are more apt to adopt new practices, embrace technological challenges and turn farms into profitable businesses. Yet they face many specific challenges that are often bundled up with those of their parents—their access to land and financial services is often poor; they may not always have a voice in their community regarding policy-making; and they generally need off-season employment. As such, agriculture often becomes a second choice and they seek employment in cities. Mercy Corps recognizes that working with, and through, youth in agriculture is paramount and is continuing its search to find ways to interest and involve them in profitable business opportunities along agricultural value chains.



Afghanistan – Miguel Samper for Mercy Corps

Mercy Corps' Four Core Principles of Resilience

Resilience reflects the diversity of communities, and the social, political, economic and environmental landscapes they inhabit, to help ensure that our approach is agile and flexible. Our core principles are the following:

- Complex Systems Require a systems approach
- Our role is one of facilitation
- Strong partnerships and dynamic relationships are transformative
- Moderate, test, and iterate to build an evidence-base towards resilience

Land Tenure and Advocacy in Latin America

In 2009, Mercy Corps founded Red Tierras, a land network in Latin America to resolve land disputes and secure land tenure for indigenous, Afro-descendent, and/or small-scale farmers. Red Tierras achieves this objective through two primary interventions, (1) the facilitation of knowledge exchange on land issues among marginalized populations, state land agencies, non-governmental organizations and other stakeholders in Latin America; and (2) the use of innovative technological strategies to improve the transparency, inclusiveness and efficiency of land tenure resolution processes.



Bolivia – Jennifer Dillon/Mercy Corps

Advocacy and good governance principles – Mercy Corps actively engages local government, and customary community leaders when appropriate, at local and national levels to foster ownership, and improve agricultural governance on two critical fronts: land tenure and trade. Through a facilitative process involving dialogue between stakeholders, Mercy Corps strives to increase transparency and inclusiveness of the most marginalized, while reducing systemic inefficiencies. Resolving land disputes, securing land tenure, eliminating illegal trade transaction costs, and assisting governments in developing more equitable agricultural policies are all key to improving the provision of public goods and services as well as correcting market inefficiencies and failures.

Building scale and innovation for increased resilience – Achieving sustainable agricultural development builds resilience within the communities with whom we work; and this requires innovation, learning and the adoption of new practices. Within our resilience framework, Mercy Corps tests new innovations, builds momentum, learns from specific experiences, identifies best practices, and then applies interventions at scale. Mercy Corps supports sustainable change by enabling communities to prepare for and rebound from shocks through both suggested behavior change and by its facilitative approach to programming. This approach encourages adaptability and flexibility, while program ownership is built by and within target communities, with a particular emphasis on private sector development and involvement.

To further this endeavor, Mercy Corps encourages the use of technology-enabled services to deliver time-sensitive market information, and extension and financial services to targeted agricultural value chain participants. For example, building on the increasingly pervasive use of mobile phones, Mercy Corps' agriculture programming and interventions exploit local community networks as a transformative agent of rural development.



Indonesia – David Snyder/Mercy Corps

AgriFin Mobile Program in Zimbabwe, Uganda and Indonesia

Working with a broad range of private sector organizations (such as mobile networks operators), microfinance institutions and input and extension service providers, our AgriFin Mobile program, piloted in Indonesia, Uganda and Zimbabwe, is a unique program approach providing farm management tools and financial services packaged in affordable, unified platforms on mobile phone channels. Its success is based on economies of scale, high revenue potential for participating providers, increased client outreach for reduced risks, and quick and affordable access by small holders.

WHO WE WORK WITH

Mercy Corps' vision for change is to engage a broad range of partners, including the public and private sectors, civil societies, and, increasingly, research institutions.

- **Public sector** – Central governments influence local law, particularly those relating to land tenure and trade policy; impact agricultural sales and productivity through regulations and controls on product purchases; and provide essential services to the poor. At the same time, local and decentralized government extension services, when functioning properly, are key to disseminating knowledge and skills.
- **Private sector** – Agribusinesses, including input and service providers, equipment suppliers, local and industrial processors, transporters, traders, wholesalers, retailers, chambers of commerce, and producer and other value chain associations, are the main drivers of Mercy Corps' agricultural programs. Based on the principles of identifying and capitalizing on incentives to help build ownership and to promote sustainability, private sector partners are engaged in driving the process.
- **Civil society** – Community-based organizations such as associations, cooperatives, savings groups, and water-user committees are the foundation to grassroots participation, community empowerment and social inclusion of the most vulnerable.
- **Research institutions** – Mercy Corps' continued partnership with international and national research institutions provides access to the latest agricultural product varieties and technologies, the opportunity to field test such innovations, and to disseminate them to partner communities.

MERCY CORPS AGRICULTURE PROGRAMMING AT A GLANCE

Mercy Corps' agricultural programs are valued today at more than USD \$200 million and implemented in 27 countries. Coupled with a broad range of complementary interventions such as financial services, health and nutrition, and conflict management, they contribute to improving economic development and food & nutrition security. Programs with a special emphasis on livestock value chains represent over one third of our agricultural programs and operate in varied environments – from the drylands of Africa, to the steppes of Mongolia and mountains of Afghanistan. Other agricultural sectors, in addition to those focusing on cereals and horticultural products, include spices in Asia and tree crops in Latin America and Asia. Mercy Corps is also the agriculture lead within the USAID-funded Technical and Operational Performance Support (TOPS) program, which is a Food for Peace knowledge management coordination platform for all partners engaged in Food for Peace development programs.



Niger – Cassandra Nelson/Mercy Corps

ABOUT MERCY CORPS

Mercy Corps is a leading global humanitarian agency saving and improving lives in the world's toughest places.

With a network of experienced professionals in more than 40 countries, we partner with local communities to put bold ideas into action to help people recover, overcome hardship and build better lives. Now, and for the future.



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