



CLIMATE RESILIENT AGRI-FOOD SYSTEMS

Climate change is accelerating globally. At the same time, hunger and malnutrition are on the rise. These dynamics exacerbate inequalities and fragility and pose challenges for ensuring food and nutrition security for all. As stated in the UN report *The State of Food Security and Nutrition 2021*: “It is projected that between 720 and 811 million people in the world faced hunger in 2020. This means that around 118 million more people were facing hunger in 2020 than in 2019”. The IPCC Report 2021 predicted that disadvantaged and vulnerable populations (including indigenous peoples and local communities dependent on agricultural or coastal livelihoods) face a higher risk of negative consequences of climate change. To mitigate, adapt and act in the face of climate change and food insecurity, Cordaid believes it is essential that local communities are empowered within climate resilient agri-food systems to enhance their livelihood security.

Urgency

Due to climate change, extreme weather events are taking an increasing toll in developing countries. Projections show that should the world average temperature increase with 2°C, Africa’s food production would be at risk. As of today, we have already reached about 1°C above pre-industrial levels. Global warming is likely to reach 1.5°C between 2030 and 2050 if current greenhouse gas emissions continue at the current rates.

The link between climate and food

Climate change affects agricultural production and food security through increasing temperatures, changing rainfall patterns and greater frequency and intensity of extreme weather events.

“Climate change is happening now and to all of us. No country or community is immune. [...] The poor and vulnerable are the first to suffer and the worst hit.”

António Guterres, UN Secretary-General

Especially smallholder farmers have a lower adaptive capacity to climate change. Droughts, floods, unpredictable rainy seasons, heatwaves and hurricanes destruct livelihoods and infrastructure, and affect human and animal health and cropping patterns. In coastal areas, climate change causes coastal erosion, coastal flooding, and saltwater intrusion. Climate change and shifting cultivation patterns also affect global food markets, translating into price increases of food, which highly affect smallholders and poorer households depending on cash income to buy food.

CLIMATE CHANGE & AGRICULTURE: FACTS

- Agriculture, forestry, and other land uses contribute to **24%** of greenhouse gas emissions
- The conversion of land for agricultural purposes accounts for **75-80%** of deforestation
- More than 570 million farmers are affected by climate change, of which **83%** are smallholders
- At high emission levels, **12-39%** of earth’s land surfaces will develop novel climates

Global Action

Policies driving action

The UNFCCC **Paris Agreement** is a legally binding international treaty to address climate change. It was adopted by 196 Parties at the COP 21 in Paris, on 12 December 2015. Its goal is to limit global warming (climate change mitigation) to well below 2 and preferably to 1.5 degrees Celsius, compared to pre-industrial levels. The agreement also aims to strengthen the ability of countries to deal with the impacts of climate change that already take place (adaptation).

The global community has committed to achieve the Sustainable Development Goals (SDGs) by 2030. **SDG 2: Zero Hunger** is about realizing food and nutrition security for all, focusing on eradicating hunger and malnutrition. This entails the need to double agricultural productivity sustainably, through resilient agricultural practices, maintaining ecosystems and maintaining seed genetic diversity. **SDG 13: Climate Action** is about taking urgent action to combat climate change and its impacts. Climate change is affecting every country on every continent. Climate action can focus on climate change mitigation, climate change adaptation or both.

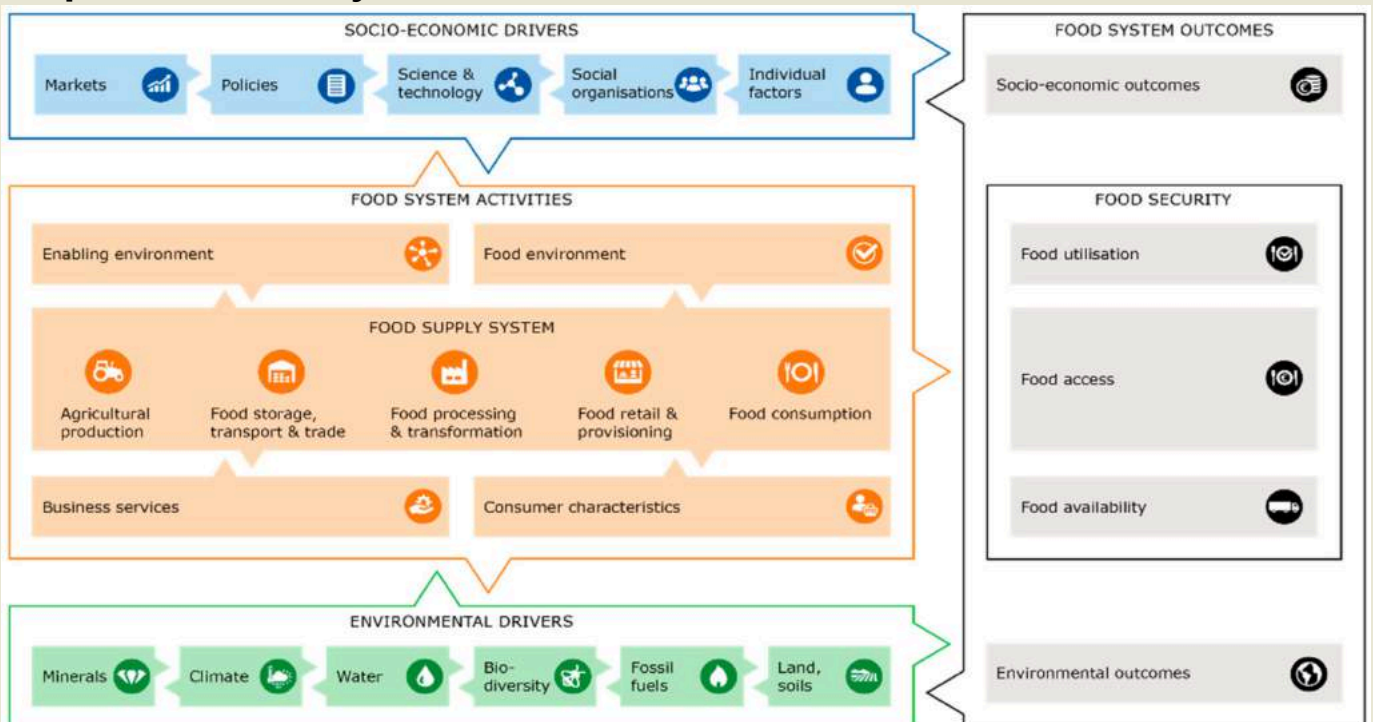
In September 2021, the **UN Food Systems Summit** will be held. Without a food systems transformation, it is said, we will not be able to achieve neither the Paris Agreement nor the SDGs. This entails rapid and radical change in the way we produce, handle, process, market, consume and recycle food products. Since climate, food, environment, and social needs are so interwoven, a food systems perspective is needed to approach these issues in an integrated and systemic way.



Going beyond action to transformation

Cordaid believes a profound change of the global food and agriculture system is needed if we are to nourish the more than 690 million people who are hungry today – and the additional 2 billion people the world will have by 2050 – in a sustainable manner. Transforming food systems requires tackling old assumptions and finding new leverage points. This requires the realisation that global trends of market connectivity, population growth, urbanisation and dietary shifts have impacts beyond national borders. Pollution and greenhouse gas emissions, but also trade policies and tax regulations in most developed nations have consequences for least developed nations. Consumer habits, particularly the consumption of meat and dairy, have a significant impact on climate change. Unequal ownership of and access to production capital, information and financial investments have put in place power imbalances in the local, national, and global food systems. Systemic food systems transformation therefore requires holistic thinking and multi-stakeholder collaboration based on principles of human rights, equality, and inclusion.

Components of a Food System



Source: Van Berkum, Dengerink & Ruben, 2018

CORDAID'S APPROACH

Climate Resilient Agri-Food Systems

Cordaid approaches the problems above through a lens of 'Climate Resilient Agri-Food Systems' (CRAFS). Only by understanding the complex interdependencies of food systems, a pathway towards sustainable food systems can be developed. Cordaid has a long track record in facilitating, guiding, and implementing interventions contributing to improved food security and climate resilient livelihoods. By building on this experience, Cordaid strives to contribute to food system transformation.

Objective

Cordaid supports communities to ensure improved access to sufficient, adequate, and acceptable food, with improved utilisation of food and stability of food markets. We see access to food as a right. We contribute to food transformation, including climate resilience, in order to realise SDG 2 and SDG 13.

Key areas of CRAFS in search for leverage

Cordaid develops integrated programmes that focus on generating synergies with people's sustainable livelihoods. The CRAFS approach includes four key areas:

1. **Sustainable land and water management** is focused on supporting farmers and local communities to grow food, maintain the needed natural resources and engage in disaster preparedness. This includes building capacities for good agricultural practices and sustainable soil and water management.
2. **Agri-food based value addition**, whereby inclusive business models and collaborations between farmers and entrepreneurs form the interface for sustainable income generation along food value chains and form a basis for creating a living income for rural communities.
3. **Social and technical innovation**, taking a multi-stakeholder perspective so that innovation between partners with new ideas and technologies can catalyse change. Innovations can involve new technologies, forms of knowledge, business models, financial products, and collaborations.
4. **Enabling environment** is about realising that governance and rights are in place to ensure dignity, justice and protection where local communities can thrive. We engage in advocacy and collaboration with local governments, and we encourage private sector to practice responsible business practices. We hold governments, including the government of the Netherlands, accountable to their commitments.

Throughout our approach, climate resilience and gender & youth inclusion are interwoven. **Climate resilience** is about enhancing the capacities of vulnerable people and communities to become more resilient to climate related hazards, while also paying attention to improved environmental management and conflict

risk reduction. Communities are supported to analyse and anticipate to climate change risks, respond when a disaster strikes, adapt their livelihood options, and work to transform systems to address underlying causes of risk.

Women and youth are key stakeholders, as either change makers and/or most affected actors. Cordaid applies a gender approach to ensure reach, benefit, and empowerment for women, and fosters women and youth participation within governance processes.

EXPERIENCES FROM THE FIELD

Cordaid has been working in various fragile settings in Africa, Asia, and Latin America on CRAFS.

South Sudan: Linking value chains & community resilience

The South Sudan Agribusiness Development Project improves food security and community resilience, while also creating employment opportunities for farmer households in a conflict-prone context. Training on Good Agricultural Practices is given on demonstration plots. Business plan competitions for women and youth entrepreneurs in the agribusiness sector were organized. In the project solar-powered irrigation is promoted, which will be scaled up.

Bangladesh: Introducing salt tolerant crops

Because of salinization, the increase of the salt concentration in the soil, worldwide less land is available for agriculture. This has different causes, like flooding by the sea. As a result, crops no longer grow. Within the program COASTS, farmers introduce salt-tolerant crops, so that fallow agricultural land becomes productive again. This improves their income and food security, and they adapt to the increasing salinization caused by climate change.

Burkina Faso: Win-wins between restoring biodiversity and value chains

The Sahel is suffering severely from desertification. This means the soil dries out, making it less fertile. Furthermore, farmers burn trees to create land for agriculture. Consequently, the landscape deteriorates. In the project Birds, Bees & Business new trees are planted and women get training in tree nursery. Local communities get to know more about sustainable land practices, biodiversity, the making of compost, beekeeping, the growing of firewood and the use of cleaner cookstoves. At the same time, women are linked to international value chains for non-timber forest products.

Senegal & Rwanda: Farmers deal with climate change

The program Strengthening African Rural Smallholders improved access to finance and markets for smallholder farmers in Senegal, Burkina Faso, Rwanda, and Ethiopia. Through a market-system approach, smallholders enhanced their competitiveness and

income, thereby increasing their food security. In Senegal, farmer's cooperatives created shared and jointly maintained solar-powered irrigation systems. In Rwanda, we promoted inter-cropping – growing trees in farmland areas – to counter flooding.

Burundi: Food production through agro-forestry

In Burundi, climate change related risks that threaten people's food security are floods, soil erosion and drought periods. Therefore, community members planted fruit tree seedlings as part of agro-forestry, using bio-degradable bags. Farmer Field Schools strengthened peoples' ability to analyse and improve their food production, by applying improved agricultural practices.

Indonesia & Cambodia: Geodata for agriculture

Cordaid's Geodata for Agriculture and Water (G4AW) programs improve food security by using satellite data and making this information available to farmers via SMS and mobile applications. The apps display the minimum and maximum temperature, wind direction and speed and the amount of rain by locations. This way, farmers can better prepare for unpredictable weather events.

Colombia & Bolivia: Promoting local food through gastronomy

Cordaid trains disadvantaged young people as chefs, using only local ingredients, through its program 'Manq'a'. This gastronomy approach creates employment perspectives for youth in the agri-food system and revalues the local food heritage, which is good for smallholder farmers as well. Nowadays Manq'a counts 15 schools in Bolivia and 2 in Colombia. Scaling-up is planned for Uganda.

RECOMMENDATIONS

Climate Resilient Agri-Food Systems (CRAFS) need to be transformed, sustained, and promoted to face the current challenges of climate change and food insecurity. Cordaid calls for key stakeholders involved in the food system to come to action, and include the following principles in their food, agricultural and climate policies and practices:

1. **Put small-scale producers at the centre** in the debate on climate change and agriculture and empower them to lead on shaping climate resilient agriculture and thus improve their livelihoods.
2. **Integrate a climate and environment risk analysis** in the food systems approach, and include related risk reduction activities in the approach, to further support climate resilient food production systems.
3. **Prioritise agri-food value chains and income generation that deliver healthy, accessible, and diverse food**, invest in rural markets that drive demand and food value addition opportunities.
4. **Create equitable collaboration between different stakeholders** (farmer organisations, CSO's, NGO's, governments, private sector, research centres, funding

agencies): combine strengths and work in partnerships to promote innovation in climate resilient agriculture.

5. **Support and enforce responsible business practices**, especially among multi-national companies active in food trade, so they take sustainability into account.
6. **Make climate and development finance more readily available** for climate resilient agriculture and agro-ecology. This finance should also be available at local level, for local governments and civil society organisations.

BUSINESS PARTNERS



ABOUT CORDAID

Cordaid works to end poverty and exclusion. We do this in fragile and conflict-affected areas in the world as well as in the Netherlands. We engage communities to rebuild trust and resilience and increase people's self-reliance.

Our professionals create opportunities to improve security, health care, food, and education. We also stimulate inclusive economic growth and offer humanitarian assistance when a disaster strikes. We are supported by more than 250,000 private donors in the Netherlands and by a worldwide partner and funding network. Cordaid is a founding member of Caritas Internationalis and of ACT Alliance (Action by Churches Together).

As of 1 January 2021, Cordaid and ICCO joined forces.

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