CONCERN AND CLIMATE SMART AGRICULTURE: **AN OVERVIEW**

Introduction

There is now general acceptance that long-term changes to the Earth's climate caused by human activities are a reality!

There is also a growing realisation that it is the Extreme Poor, Concern Worldwide's target group, who will be most directly affected by these changes. In both urban and rural contexts this group are forced to live in areas prone to flooding, drought, soil erosion / degradation and landslides, risks that are expected to increase due to climate change.

These areas are already considered marginal for agriculture, so any small change in climate could result in a significant change in crop yield. These changes can come in the form of:

- Increased heat stress in livestock and plants, and increases in the evaporation of water from soil and plants (evapotranspiration) leading to water stress in crops.

Conservation Agriculture – Zambia.
Photo by Carl Wahl, 2014.

- Uncertainty over when the rain comes, when it ends, how much comes in each rainfall event and how predictable it is.
- Changes in the length of the growing season – a result of the combined effects of changes in rainfall, temperature and evapotranspiration.

CONCERN worldwide

- Changes in the nutritional value of crops – while higher levels of CO_2 may improve carbohydrate production in crop plants improving calorie production, it may also reduce the ratio of proteins and micronutrients to carbohydrates in grain.
- Sea level rises (by between 11 and 77 cm by 2100), which will drown productive agricultural land and increase the salinity of groundwater in coastal areas, as well as increase the risk of flooding during storms.

The rate, pace and impact of climate change is increasing those risks and vulnerabilities leading many to become more deeply entrenched in poverty and more susceptible to malnutrition and hunger. One of the ways that we have taken on to deal with this is through the promotion of Climate Smart Agriculture (CSA), this enables farming communities to:

- sustainably and reliably increase agricultural productivity and incomes;
- adapt and build resilience to extreme weather events and a changing climate; and
- where appropriate, contribute to reducing greenhouse gas emissions and concentrations.

CSA entails equipping farmers to better use and manage natural resources and adopt more efficient methods of producing, processing and marketing agricultural goods. As an organisation, Concern is committed to promoting CSA in ways which go far beyond crop production – unlocking the potential to build CSA models which are directed towards improved nutrition outcomes, are aligned with wider efforts around the first 1,000 days and which address the challenge that sees 805 million people continue to go hungry in a world of plenty.Concern's CSA work is part of our wider mission to help people living in extreme poverty achieve major improvements in their lives which last and spread without ongoing support from Concern.

Our approach to CSA is informed by our understanding of extreme poverty – recognising that extremely poor people often have few assets, gain poor returns on those assets, experience wide-ranging structural inequalities and are exposed to risks and vulnerabilities in many shapes and forms.

Our experiences to date

Concern Worldwide's focus is on adaptation, helping poor farmers to adjust to actual or expected climate changes and variation and their effects, to moderate or avoid harm and to exploit beneficial opportunities.

Working closely with farmers throughout sub-Saharan Africa our work is focused on not only helping farmers increase their agricultural productivity through more resilient, effective farming practices but also ensuring that the natural resources farmers depend on are not depleted.

Some key examples of this work include:

- Across Malawi, Mozambique, Tanzania, and Zambia our promotion of Conservation Agriculture has led to the doubling of yields in comparison to conventional approaches. Our work with Malawian women farmers on Conservation Agriculture approaches enabled them to reduce their workload by 34 days per year. In western Zambia, CA allowed early field preparation and made farming resilient enough to allow women to accept the risk of purchasing hybrid maize.

- In Chad and Sudan we are testing the use of Climate Analogue Software which locates sites currently experiencing the climate farmers may experience in 2050 and then provide them with a basket of options from which they can choose technologies best suited to their own environment. Going forward our work will focus on capturing learning and promoting scale up of promising practice(s).
- By engaging Somali agronomists in the diaspora and through a lot of detective work with our partners ICRISAT, we have been able to track down pre 1990s research and help Somali farmers to test promising varieties, resulting in the widespread adoption of the 'filsan' mung bean.
- We have transferred rainwater harvesting techniques that have worked well in Rwanda and Burundi and built on existing knowledge in our programmes across the Sahel to expand the coverage of water spreading techniques and sand dams which trap river water in the dry season, and the adoption of Zai holes, demi-lunes and contour bunds.

In addition to the technical side of improving agricultural production, our years of experience working with Africa's poorest farmers have taught us that farming at any scale is a business, and smallholders and producers must be treated as entrepreneurs. This necessitates the development of clear linkages along the value chain, from production to processing, marketing and, ultimately, to consumption.

Equally important is the need to make women smallholders the focus of training to deliver better results – experience has shown that they learn and adopt new ideas and techniques

Impact of wetter seasons on soil and plant growth
Photo by Carl Wahl, 2014.

faster, yet women in Africa still receive less information than men on agricultural practices and climate issues, despite making up the majority of smallholder farmers. We also know that women's choices around the use of resources are typically more focused on the welfare of the family and training women more on agriculture can lead to better nutritional outcomes for the family.

Climate Smart Agriculture and Improving Nutritional Outcomes

For Concern, it is not just about promoting improvements in crop yields (or even reducing the seasonal variability of these) – we also want to see a stronger link between CSA and nutritional outcomes, particularly as 805 million people worldwide are estimated to be chronically malnourished.

While there is a need to increase substantially agricultural production to feed the estimated 9 billion people that will inhabit the planet by 2050, we also need to look at the quality of this food to ensure it is rich in nutrients and address

how this food is being accessed to ensure a varied diet for the household. In that respect, we feel that it is important that discussions around CSA need to go further than crop production and focus on clear links to improving nutrition, especially if we are to reduce malnutrition and stunting during the first critical 1,000 days of a child's life.

Zambia – Senanga District, Kaeya – healthy stand of CA groundnuts and maize in basins lined with mukwe leave. Photo by Carl Wahl.

What we are doing in terms of taking CSA to scale

At present, Concern is working with an estimated 100,000 poor farm households to promote CSA in some of the poorest and most vulnerable parts of the African continent; under our new livelihoods strategy our plan is to treble this to 300,000 in the next three years and then double that again to 600,000 by 2021.

This is part of Concern's commitment to the **Africa CSA Alliance**, under the chair of the NEPAD (New Partnership for Africa's Development) Agency, which has committed to reaching 6 million smallholder families by 2021, and the broader African Union (AU) commitment of reaching 25 million by 2025 (*25 x 25*). Concern sees that our engagement in this alliance opens the door to working with national governments around their CAADP (Comprehensive Africa Agriculture Development Programme) commitments and facilitating the engagement of local civil society and community based organisations in the process.

Within our CSA work it is our intention to provide poor farmers with a basket of options from which they can choose technologies most suited to their socio-economic circumstances.

We encourage farmers to experiment with their own variations on technology and then to adopt these practices over the longer term. We will also learn from farmers who are already experiencing the climate that the project area can expect to experience in the coming years.

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Concern Worldwide
Working with the world's poorest people to transform their lives

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