

## Enhancing NDCs: Opportunities in Agriculture

*How countries are reducing agricultural emissions of SLCPs to take action on climate and air pollution, with benefits for food security*

*27 April 2021, 14:00 – 15:30 CET via Zoom*

Reducing agricultural emissions of short-lived climate pollutants (SLCPs) like methane and black carbon is vital if the world is to keep warming to 1.5°C above pre-industrial levels by the end of the century. Agriculture, forestry, and other land use are estimated to be responsible for approximately 23% of all greenhouse gases (GHGs) emitted worldwide, including roughly 40% of global black carbon emissions and half of all human-made methane emissions.

Safeguarding food security, reducing the vulnerability of food production systems, and ending hunger are fundamental priorities in the response to climate change. The goals of the Paris Agreement cannot be met without transformative changes in the agriculture sector. The incorporation of more ambitious, explicit, and directed actions within the agriculture sector in countries' new or updated nationally determined contributions (NDCs) can play an important role in this transition.

The Climate and Clean Air Coalition (CCAC), the Food and Agriculture Organization of the United Nations (FAO), the World Resources Institute (WRI) and Oxfam held a virtual event on the margins of the Annual Meeting of the [Thematic Working Group on agriculture, food security and land use facilitated by FAO from 26-30 April 2021](#). The aim of this event was to demonstrate how countries are reducing agricultural emissions of SLCPs to take action on climate and air pollution, with benefits for food security.

The [CCAC](#) works at the nexus of climate and air quality, enhancing the capacity of countries to integrate air quality and climate change policies, with a central focus on SLCPs. Under its [2030 Strategy](#), the CCAC has three key directions: (1) Driving an Ambitious Agenda, for example, the international focus on methane in 2021 and the launch of the Global Methane Assessment; (2) Supporting National and Transformative Actions, through the Strategic SLCP Planning Hub and the Sectoral Hubs, including for agriculture, that will be driven by milestones and goals; and (3) Policy Relevant Research and Analysis, for example through the work of the Scientific Advisory Panel and Science-Policy Dialogues. These elements, along with strategic collaboration and alliances to amplify action (e.g. with FAO) and funding to develop capacity, underpin how the CCAC supports its-partners to reduce emissions of SLCPs in the agriculture sector.

### Country Actions and Plans

The CCAC has supported a number of countries in increasing their capacity to mitigate emissions of SLCPs from agriculture; in many cases this has taken the form of national and transformative action, allowing for agriculture to be included in countries' NDCs. This event provided an opportunity for participating countries to show what increased ambition can look like, as well as to share lessons learned.

*Dr. Agusto Susanto, Director Indonesian Centre for Animal Research and Development, Ministry of Agriculture, Indonesia*

Indonesia [presented](#) its approach to updating its NDC and the key lessons learned from this process. Indonesia is working with the CCAC, the Global Research Alliance on Agricultural Greenhouse Gases (GRA), FAO and the New Zealand Agricultural Greenhouse Gas Research Centre (NZAGRC) to enhance climate ambition and action in the sector. This has so far included

the development of a Tier 2 beef livestock inventory, as well as work to strengthen institutional capacity and coordination among agencies, enhance stakeholder participation and awareness, and improve understanding of the potential for methane mitigation through NDC and other policy planning processes. As a result, best practices for emissions reduction have been identified, demonstrating how the agriculture sector can help Indonesia meet the targets of its First NDC - the unconditional target of reducing GHG emissions by 29% and a conditional target of 41% relative to BAU by 2030.

Indonesia has set goals and is measuring progress as it improves its livestock management systems. However, Indonesia faces two main challenges in improving its livestock management systems. First, the capacity of farmers needs to be increased to adapt to and adopt technology; and second, farmers' low income and access to capital prevent uptake of technologies including anaerobic digestion.

*Bernard Kimoro, State Department of Livestock, Ministry of Agriculture, Livestock, Fisheries and Cooperatives, Kenya*

Kenya [presented](#) its enhanced NDC for the agriculture sector, including opportunities and challenges. Agriculture is a major driver of Kenya's economy, contributing to approximately 51% of its GDP. The agriculture sector is extremely sensitive to climate change; however, Kenya recognizes that agriculture also contributes to climate change. As a result, efforts are dedicated to ensuring coherence between opportunities in the sector and supporting the NDC targets. Like Indonesia, the agriculture sector in Kenya is expected to take a leading role in achieving the mitigation targets set out in the NDC. Mitigation actions in the agriculture sector will include Climate-Smart Agriculture (CSA) practices, in line with Kenya's CSA Strategy.

For example, through a Nationally Appropriate Mitigation Action (NAMA) in the dairy sub-sector, Kenya will support 267,000 households to increase their productivity and reduce emissions intensity. Kenya has received support from the CCAC in collaboration with FAO and GRA to identify feasible mitigation options to reduce enteric methane emissions intensity and to develop a Tier 2 inventory for the dairy sub-sector. This inventory was used for Kenya's national inventory report and in preparation for its updated NDC. Over the longer term, this process is intended to enhance Kenya's compliance with the enhanced transparency framework international reporting obligations, including through the development of well quantified, realistic, and ambitious methane reduction targets.

*Mauricio Chacon, Head of Livestock, Ministry of Agriculture and Livestock, Costa Rica*

Costa Rica [presented](#) the inclusion of measures to reduce agricultural short-lived climate pollutants in its NDC and the next steps for implementation. Although the economy of Costa Rica is strongly focused on the services sector in urban areas, livestock and agriculture are essential sectors to rural communities. Agriculture and livestock specific commitments have been made in the country's NDC to help further decouple growth and emissions from these sectors and provide financial and planning tools for adaptation. Costa Rica's 2020 NDC updates include an overall mitigation target of 9.11 million tonnes of CO<sub>2</sub>eq and the goal of achieving zero net emissions by 2050, along with sector-specific commitments – four of which focus on livestock and agriculture. The CCAC has worked with Costa Rica to help develop national planning capacity on SLCPs and identify sources and sectors, such as livestock, that can be addressed in national climate plans.

The NDC revision process in Costa Rica followed an assumption-based planning framework to integrate qualitative and quantitative approaches. Computer modelling was used to explore the quantitative impacts for thousands of different decarbonization scenarios within the country,

and the creation of potential future scenarios by stakeholders was used to determine qualitative impacts. These inputs resulted in recommendations to strengthen the climate plans and policies that underpin the country's NDC against future contextual changes. The Livestock NAMA in Costa Rica is using the strengthened plans and policies to help scale up action, with the overall targets of applying mitigation measures to 70% of the national herd and reducing sector emissions by 6 million tonnes of CO<sub>2</sub>e by 2030.

The CCAC, in collaboration with FAO and GRA, is supporting work to strengthen institutional capacity, enhance stakeholder participation and awareness, and improve understanding of the potential for methane mitigation in NDCs and other policy planning processes. Costa Rica is a target country and will be engaged to enhance its capacity to promote methane mitigation actions that align with the Sustainable Development Goals (SDGs).

*Dong Hongmin, Institute of Environment and Sustainable Development in Agriculture, Chinese Academy of Agricultural Sciences, China*

China [presented](#) its experience in developing low carbon agriculture by enhancing GHG mitigation through manure management. Currently, China's livestock sector provides food for one-fifth of the world and engages 92 million households. This sub-sector produces 3 billion tonnes of manure annually, with pigs contributing 40%. Policy and regulations, such as the 2014 Regulation on the Prevention and Control of Pollution from Intensive Animal Farms and the 2017 Opinions of the General Office of the State Council on Accelerating Animal Manure Utilization, have been introduced. As a result, China has been able to decouple livestock productivity from emissions intensity by promoting manure management and pollution control.

China has also been supported by the CCAC to promote the incorporation of methane emissions reduction measures from manure management into its 14<sup>th</sup> five-year work plan and updated NDC. This includes the identification of new practices for reducing methane emissions through a collaborative process; quantifying the potential of mitigation; and the provision of policy recommendations for the formulation of the 14<sup>th</sup> five-year work plan.

### Shared Experiences

Many of these countries have experienced similar challenges and barriers to enhancing agricultural ambition in their NDCs. Barriers to reducing emissions from the agriculture sector include: weak institutional capacity, cooperation and coordination within and across the sub-sectors at national and sub-national levels; limited technical capacity to fully implement the policies, legislation and programmes and deliver competitive projects to attract climate finance; and lack of well-coordinated and elaborate databases with well-defined data and knowledge and information sharing mechanisms.

In order to overcome these barriers, and maximize emissions reduction from the agriculture sector, there is a need for specific support. For example, building the capacity of farmers to adapt to and adopt new technologies, as well as improving access to financial mechanisms for new technologies. The development of emissions inventories is a common starting point for many countries where further assistance is required, along with the creation of effective monitoring, reporting and verification (MRV) systems that allow countries to keep track of their progress. Perhaps most importantly, action plans need to be put in place to move the needle on implementation where programs such as NAMAs do not exist. Other support includes: improving institutional capacity to manage the GHG inventory compilation process and to establish a sustainable system for producing regular national GHG inventories; improving

capacity to identify and assess the impact of specific mitigation actions, and increasing capacity to develop bankable proposals to access funds.

### Opportunities for increased ambition in the agriculture sector

The NDC revision process allows countries to focus on the agriculture sector and seize opportunities to: foster increased adaptation actions; support small-scale and vulnerable farmers and herders; align the agriculture sector with low-emissions transformation; bring together climate action with the SDGs, and attract investment and support.

As countries update their first NDCs there has been an increased degree of specificity in the way countries are approaching adaptation. For the agriculture sector, actions relating to food and nutrition security have increased. An analysis conducted by Climate Watch shows that many NDCs include agriculture measures for both adaptation and mitigation in their new or updated NDCs.

Win-win solutions for the agriculture sector are detailed in the publication [Enhancing NDCs: Opportunities in Agriculture](#) but fall into general ‘buckets’:

- More sustainable production and consumption measures, such as reduced food loss and waste and shifts to healthier and more sustainable diets
- Better land management, such as improved pastures for grazing; improved soil and water management, including through agroecological approaches; reduced use of burning as a management strategy; and improved soil fertility
- Advanced crop management, to increase the potential yield of crops and help farmers achieve better yields by enhancing the capacity to cope with environmental constraints, including a changing climate
- Better livestock management (i.e., better feed, animal health care and breeding), to increase productivity and improve the livelihoods and resilience of livestock producers

NDCs can be enhanced with agricultural contributions in a number of ways. For example: by making the revision process more inclusive and increasing alignment with national development plans and strategies; by adding specific policies and actions; by incorporating additional agriculture sector action into an emissions target, either economy-wide or sector-specific; or by facilitating clarity, transparency and understanding through descriptions of assumptions and processes.

*Rebecca Carter, World Resources Institute (WRI) & Laurel Pegorsch (Oxfam)*

Speakers from WRI and Oxfam concluded the event by [presenting](#) opportunities for increased ambition in the agriculture sector and identified foundational actions that set the stage for inclusive, equitable and scalable contributions to an enhanced NDC:

1. Scoping the national context
2. Establishing policy coherence
3. Involving stakeholders
4. Intra-governmental coordination
5. Strengthening MRV
6. Modelling and analysis
7. Identifying opportunities for support-both international and domestic
8. Enabling equitable and inclusive governance-considering gender equality, land tenure, and social safeguards

Each action is further detailed in the above-mentioned publication by WRI, Oxfam and the CCAC.