Engaging stakeholders on policies to reduce greenhouse gas emissions in the livestock sector: Lessons from East Africa

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Introduction

This brief summarizes lessons learned through CGIAR Research Programs (CRP) on Climate Change Agriculture and Food Security (CCAFS), and Livestock on supporting the development of greenhouse gas (GHG) emission reduction strategies and investment plans with national partners. This brief presents an opportunity to reflect on the experience of CGIAR researchers so far in East Africa, where we focus on the process of developing a research agenda that can support policy and finding an engagement process that meets national stakeholder needs. In this brief, we refer to the more extensive experience of colleagues in Latin America, for which a separate brief will be written in 2020.

Why focus on emissions from livestock?

Livestock production is a critical economic opportunity for many smallholder farmers in the tropics. It is also a major contributor of GHGs (the largest in agriculture). As the livestock sector grows in response to demand across Africa, concerns have also grown parallelly undermining development objectives in the sector. For example, the Organization for Economic Co-operation and Development (OECD) funders have become reluctant to invest in livestock production. Fortunately, options to

reduce the intensity of emissions from livestock—GHGs emitted per unit of product—will improve the productivity of livestock systems, leading to a win-win.

The year 2013 saw the emergence of Nationally Appropriate Mitigation Actions (NAMA) that included agriculture and specifically mentioned livestock as a sector to be included in the Africa group. NAMA present an opportunity to attract finance to implement interventions to reduce GHG emissions in livestock production.

In 2015, countries pledged to reduce nationally determined contributions (NDC) and made commitments on the Paris Agreement. Countries are required to report on these commitments regularly and update them every five years. Tracking progress and targeting interventions require better data and systems to monitor the reduction of emissions. If countries want to track the impact of interventions on mitigation targets, they need to adopt a Tier 2 approach to calculating their emissions, which is needed in order to capture changes in productivity and efficiency over time. Currently, only 21 countries use this and only five update it regularly (Wilkes 2017). CCAFS, the Food and Agriculture Organization of the United Nations (FAO) and the Global Research Alliance on Agricultural Greenhouse Gases (GRA) have encouraged researchers to support national partners to meet their mitigation target commitments.

In addition, countries are still trying to identify good practices that have proven mitigation impact. There is very little experimental evidence from low- and middle-income countries on best interventions, especially for livestock. CRP scientists at the International Livestock Research Institute (ILRI) and CIAT have invested in research to present empirical evidence on what might be technically possible and how to measure the changes in emissions. To this end, CIAT has worked closely with the governments of Colombia and Costa Rica; and ILRI started in Kenya, later expanding to Tanzania, Ethiopia and Uganda.

Policy contexts that contribute to opportunities for research collaboration on GHG emissions

Livestock development plans offer opportunities for researchers to support governments as they develop long term investment plans for the sector. ILRI has some success supporting the development of Livestock Master Plans (LMPs)[1] which articulate pathways to achieve economic and production goals in a given country. Ideally, the climate mitigation goals of a country should align with its economic goals, but to achieve coordinated planning among relevant ministries has been a challenge so far. ILRI plans to harmonize these objectives in future LMPs.

Mitigation plans and interest to attract investment in climate present another opportunity. Both the NAMAs and the NDCs include quantitative targets that countries commit to meet through specific investments (financial, technical and other) to reduce their GHG emissions. Forty-eight developing countries have specifically included livestock in their NDCs and 17 have livestock-related NAMA proposals. Developing plans that meet the standards of international finance and the reporting requirements of the United Nations Framework Convention on Climate Change (UNFCCC) is a tall order, and often technical experts are sought to support these processes. The recent review of measuring, reporting and verification (MRV) processes in the livestock sector by Wilkes (2017) outlines some of the opportunities to improve reporting on emissions from the livestock sector, and many of them require inputs from research. These include reducing the uncertainties associated with emission calculations and improving their accuracy, as well as collecting much of the basic data on current emissions and the potential of interventions to reduce these.

Countries where Livestock CRP and CCAFS have supported governments: how did opportunities arise?

As part of the overall push to get CGIAR research to have more impact and promote access and use of research outputs, CCAFS Low Emissions flagship encouraged scientists to partner with projects or government staff interested in developing MRVs or GHG inventories for the agriculture sector.

1. Developing a livestock master plan for Ethiopia:
https://cgspace.cgiar.org/handle/10568/51565
Developing a livestock master plan for Tanzania:
https://cgspace.cgiar.org/handle/10568/72716

Colombia and Costa Rica

CIAT, International Food Policy Research Institute (IFPRI) and World Agroforestry (ICRAF) worked with CCAFS to support the efforts of the Colombian government to make progress towards its NDC commitments. In Colombia, the opportunity specifically arose with the engagement of the University of Cape Town on a multi-country project to develop a low carbon strategy for the country (de Pinto et al. 2017). This provided an opportunity for CGIAR centres partnering with CCAFS to build on CIAT's long term engagement with the government of Colombia and support the development of low emissions plans for the livestock and other agricultural sectors. This included demonstrating the technical potential of interventions (e.g. managed pastures), supporting MRV systems for livestock and agreeing on commitments to reduce emissions.

In Costa Rica, a similarly strong partnership between CGIAR centres and the government to develop implementable plans has provided an opportunity for partnership (Chacón et al. 2015; Serna et al. 2017).

In both cases, the leadership of government to develop a low emission development plan for future investment was critical, as was the willingness of CCAFS to provide initial financial support for coordination and technical input by CGIAR centers.

Kenya

ILRI and FAO were already collaborating on an MRV tool for the dairy sector in 2012 and 2013 based on mutual interests in the dairy sector and FAO's desire to find a case for which an MRV could reliably be developed. This required a detailed data set (which ILRI had collected) as well as expertise on GHG emissions and MRV. Simultaneously, interest in developing a NAMA for the dairy sector was encouraged by government partners, FAO, CCAFS and Unique Forestry (a consulting firm with expertise in MRV and the livestock sector). These group of partners were mainly interested to work on NAMA because it creates an opportunity to contribute to a large national effort rather than smaller project level initiatives. CCAFS provided resources and the Green Climate Fund was identified as target entity for a NAMA proposal as it was just emerging on the scene. A draft NAMA proposal was prepared with the support of Unique Forestry. ILRI reviewed the technical content of the proposal and continued to engage in supporting the overall approach regarding gender inclusion, forage and land use, and social equity. A broader network of partners, including the Global Resource Alliance (GRA) and World Bank, is now poised to support further development of the NAMA.

ILRI's research on improving actual emissions factors from livestock systems started under the CCAFS SAMPLES project in 2013. SAMPLES was an initiative to collect local field data from smallholder production systems to demonstrate the potential of mitigating GHG emissions in these systems (Rosenstock et al. 2013). ILRI's engagement with this project and simultaneous decision to build the Mazingira Centre positioned it to provide unique data for

East African systems. Collecting and analyzing data takes considerable time and resources, and only in 2018 were major papers reporting on emissions intensities from livestock systems published.

For the past two years, ILRI has been engaging with efforts to support Tier 2 emissions factors for the livestock sector in Kenya. This was initiated by the World Bank, GRA and the Australian Centre for International Agricultural Research (ACIAR); ILRI's expertise has been crucial in this process. One ongoing activity is a series of meetings by the State Department of Livestock (SDL) where ILRI is a participant. As a result of discussions on this platform, ILRI's estimates of emissions from manure have been included in Kenya's GHG inventory. ILRI has also been asked to collate data to develop Tier 2 estimates for non-dairy cattle in support of an ongoing project—System for Land-based Emissions Estimation in Kenya (SLEEK)—which intends to support the Government of Kenya to improve its mitigation reporting.

Ethiopia

Ethiopia is considered a leader in combatting GHG emissions because of its early commitment to a plan for a Climate Resilient Green Economy (CRGE). ILRI's engagement in Ethiopia is just beginning. In July 2018, CCAFS collaborated with World Bank, FAO, GRA, the UN Economic Commission for Africa and the African Climate Policy Centre, to host a regional meeting in Addis Ababa to determine policy and implementation support needed by East African governments to reduce emission from the livestock sector. This meeting brought livestock and environment ministry staff from Kenya, Ethiopia, Uganda and other countries to assess their interest and commitment to reduce GHG emissions from the livestock sector. The technical and donor support the organizing partners can offer was also discussed. Since that meeting, CCAFS, ACIAR and the World Bank have provided financial and technical assistance to develop an MRV for parts of the livestock sector in Ethiopia. ILRI has supported CCAFS to coordinate these efforts and will continue to engage in this process.

Opportunities and challenges for research to support national efforts to reduce GHG emissions from the livestock sector

In this section we aim to reflect upon factors that have enabled or constrained ILRI's engagement so far. Below, we highlight seven main issues.

1. Finding an appropriate entry point to stimulate action: in Kenya, activities coalesced around SDL focal point Robin Mbae, with combined support from FAO and CCAFS, and later the World Bank. Robin's counterpart in the Ministry of Environment and Climate Change Directorate, Michael Okumu, has also been very supportive of efforts to include agriculture and livestock. Together, Robin and Michael have been open to working with research partners and understand the need for better emissions factors, and why it is necessary to include livestock in the NDC, as well as pursue a dairy NAMA. We note that since last year

(2018) there is a broader multi-stakeholder platform for climate-smart agriculture supported by CCAFS with the chair, Veronic Ndetu, open to collaborate on research opportunities. CIAT and ICRAF are also members of the platform. In Ethiopia, this is starting to happen in part through the efforts of the CCAFS regional coordinator Dawit Solomon, but also because other donors such as the World Bank, GRA and ACIAR have begun to show interest.

2. Mitigation targets: intentions have been set for the dairy NAMA in Kenya, the CRGE for Ethiopia and the NDCs for all three countries (Kenya, Ethiopia and Costa Rica) with general commitments to achieve GHG emissions reduction through the livestock sector. However, the pathways and annual targets against which progress can be measured are not well defined.

3. Lack of data to set targets and monitor progress: this is also the primary reason for lack of clear targets. Although each of the countries has established a GHG emissions inventory, data for the livestock sector is a struggle. The investment by GRA, World Bank, CCAFS and ILRI has been crucial to improve these datasets which require cross-agency and ministry collaboration along with good livestock census data.

4. Finance: a fourth challenge is the need for internal and external financial source for researchers and governments to implement improved GHG emissions inventories, establish Tier 2 emissions factors and a monitoring process. This creates a bit of a "chicken and egg" dilemma: countries cannot improve their monitoring and reporting without finance and they cannot access finance without better reporting.

5. Incentives in government agencies and ministries: incentives are important to follow through on the reporting now required through the NDC process or in support of any funded NAMA in the future. In addition to having to learn a new and complex process, staff have to cooperate with new agencies and ministries with little additional support. It is essential to have appropriate financial and technical assistance to reach intended goals, but long-term institutional collaboration also requires patience and the development of mutually compatible goals and processes.

6. Coordination among donors and other actors: while financial and technical support is now available, coordinating amongst donors and actors still remains a challenge. It requires goodwill and intention from all sides, including government counterparts, to collaborate and coordinate. In Kenya, the State Department of Livestock (SDL) is facilitating this; in Ethiopia, CCAFS has recently revitalized a multi-stakeholder taskforce to support this.

7. Perception of researchers: supporting slow government-led processes can be frustrating, as can collaborating with donors or technical consultants who are impatient for quick solutions to attract the needed investment. These groups of people may be less interested in research to create detailed GHG emissions baselines across the multiple livestock systems found in East Africa. It has taken several years for ILRI to come to a mutual understanding of the strengths of each other and to find synergies in our roles.

Recommendations

Based on this experience and the state of play in the countries at the moment, our recommendations for action are as follows:

- The national processes require long term engagement from research partners. Thus, we suggest that both CGIAR research institutions and their investors create long term resource strategies that enable such commitment.
- The processes also require a willingness to meet stakeholders where they are, even if their priorities differ from ours and their capabilities need more support. Thus, we recommend that researchers learn to reorient their approach of engaging national partners such as line ministry staff by treating such engagement as mutual learning process and ongoing conversation.
- Countries require significant support to set up the data structures and necessary reporting processes to refine their GHG targets and MRV. Donors are supporting this in a piecemeal and uncoordinated manner that needs to be improved.

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