

Info Note

The Role of Agriculture in the UN Climate Talks

How COP20 and COP21 can ensure a food-secure future

Bruce Campbell, George Wamukoya, James Kinyangi, Louis Verchot, Lini Wollenberg, Sonja Vermeulen, Peter Minang, Henry Neufeldt, Alain Vidal, Ana Maria Loboguerrero Rodriguez, Merylyn Hedger

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Key messages

- The various strands of work already underway on agriculture within the UNFCCC process can be strengthened and made more coherent
- A 2015 climate agreement should reference food production and provide the financial, technical and capacity building support for countries to devise ambitious actions for the agricultural sector
- A new climate agreement should be consistent with the Sustainable Development Goal (SDG) process

Agriculture, and consequently food security and livelihoods, is already being affected by climate change, according to latest science from the IPCC (Porter et al. 2014). The IPCC has found that the world needs to produce at least 50% more food than we do today in order to meet the goal of feeding a projected 9 billion people by 2050. This must be achieved in the face of climatic volatility and change, growing constraints on water and land for crops and livestock, and declining wild capture fishery stocks.

Although the protection of food security lies within the core objective of the UN Framework Convention on Climate Change (UNFCCC) (Article 2), no formal arrangements for addressing agriculture specifically within the negotiations have been agreed. CGIAR recognises that any new climate agreement is unlikely to be prescriptive about how adaptation in agriculture is supported and how agriculture might contribute to emission cuts, if required, as these issues are contested.

Core concerns

CGIAR considers that there is scope for greater coherence to strengthen the various strands of work already underway on agriculture within the UNFCCC process. We will continue to contribute to technical development for a clearer role for agriculture and greater integration of the land use sector. Countries will chart

their own pathways and there is a need to provide ideas and knowledge that can support their contributions as they are generated.

CGIAR will continue to support the concept of “climate-smart agriculture” (CSA), a comprehensive approach for transforming and reorienting agricultural systems to support food security under climate change (Lipper et al. 2014). Climate change threats can be reduced in some regions by increasing the adaptive capacity of farmers and increasing resilience and resource use efficiency in agricultural production systems, landscapes and food systems. In other regions there may be insurmountable challenges. We support the view that the UNFCCC is the primary international, intergovernmental forum focused on addressing climate change.



Agroforestry practices help farmers diversify income and prepare for climate shocks. Photo: C. Schubert (CCAFS)

We believe the 2015 agreement should reinforce the reference to food production in Article 2, as there is now evidence from the IPCC that production and food security are already being compromised. A 2015 agreement should create momentum for countries to devise ambitious actions for the agricultural sector, by providing the financial, technical, and capacity building support needed to help developing countries implement adaptation strategies and low emissions agricultural development. Investment in such support should help agriculture not only to meet mitigation goals, but also to

achieve food security and climate change adaptation. Support for these latter goals should be explicit in funding and technical packages from all funding sources. We recognise that mitigation would continue to be driven by national development priorities and be a co-benefit of sustainable development.

We envisage that the new climate agreement will need to be consistent with the SDG process and a shared vision on sustainable development that will give a signal on the low carbon economy.

While their final framing is still to be negotiated, climate change will be embedded in all SDGs at least implicitly and there may be a specific climate SDG, so there is a need to link the UNFCCC actions and ambitions with the SDG agenda. A chapeau type format in the Paris Agreement would be appropriate to make this link, in particular a link to the goals related to food security, nutrition, poverty reduction, economic growth and environmental sustainability. Such a chapeau could enhance the profile of agriculture and drive efforts to guarantee the stability of food systems under climate change. Agriculture provides key ecosystem services to society and economic opportunities to support development.

Progress in Lima towards Paris is dependent on a finance and technology package. The recent commitments to the GCF are encouraging but momentum needs to be sustained. For many developing countries that will be hard hit by climate change (and these mostly have low GHG emissions), finance and technological support will be crucial if they are to propose intended nationally determined contributions. A 2015 agreement should create mechanisms that enable **ambitious contributions from the agricultural sector**, while also providing the **financial, technical and capacity building support** needed to help developing countries implement low emissions agricultural development.

CGIAR's perspective on current issues

Whilst not having a clear profile within the UNFCCC negotiations, agriculture is now embedded in key areas. CGIAR recognises constraints but considers that the stakes are too high to delay developmental work on agriculture in view of time taken for research, technical analysis, policy generation and institutional development to bring change on the ground. Ideally these will be enabled by the new international climate action framework that should come from Paris.

To respond urgently and to prepare for further climate change challenges ahead, CGIAR has identified four priority areas for action on climate change: (i) climate-smart agricultural practices, (ii) climate information services and climate-informed safety nets, (iii) low emissions agricultural development where coordination

across land use sectors and food system sectors will be critical for success, and (iv) policies and institutions for climate-resilient food systems.

We have identified that once the focus moves from international negotiation to implementation, past experience with the preparation of NAPAs and NAMAs suggests that agriculture and food security issues are likely to assume major importance in national policy-making discussions (see Box 1). Furthermore, agriculture and food security have been targets for financial support from the Least Developed Countries Fund and Pilot Program for Climate Resilience, which align funding allocations with national priorities.

Box 1 NAMAs and Agriculture

In 2012, at least 21 officially submitted NAMAs referred to agricultural activities and at least 30 developing countries had expressed interest in implementing agricultural NAMAs. Plans suggest significant mitigation potentials are possible. Agriculture is one of the largest sources of emissions for many developing countries, including in the major emitter countries of China, India and Brazil. Mitigation in the agricultural sector is thus an opportunity for many developing countries to meet their intended nationally determined contributions.

Agricultural practices considered for NAMAs have most commonly focused on improved agronomic practices and have included conservation tillage, composting, restoration of grasslands and degraded agricultural lands, fodder crop production, more efficient nitrogen fertilizer use, methane capture from manure, improved productivity of livestock, biological nitrogen fixation, improved coffee plantation efficiency and carbon storage, and reduced forest conversion forests on agricultural land. Improved economic performance, efficiency and often climate change adaptation are potential benefits from many of these practices.

Middle income and emerging countries have progressed most quickly in designing and implementing NAMAs, with domestic political processes and the availability of finance being important enabling factors. Brazil, for example, is currently implementing a self-funded NAMA with four agricultural activities intended to reduce emissions by 133-166 Mt CO₂e in 2020 in their Action Plan for Mitigation and Adaptation in Agriculture. Costa Rica developed NAMAs, with support from Germany, for livestock and coffee. Mongolia is seeking support for a NAMA on grassland management and livestock. Kenya is exploring a NAMA on dairy supply chains. Source: Wilkes et al 2013

Next steps

CGIAR sees a full agenda ahead including:

1. SBSTA

The SBSTA work plan puts off a substantial COP decision on agriculture until after 2016 and this decision will relate largely to adaptation. **Preparation is needed for the SBSTA 2015 workshop on: early warning systems and contingency plans; assessment of vulnerability and risk of different agricultural systems;** and for the 2016 workshop on the identification of adaptation measures; and identification and assessment of agricultural practices and technologies to enhance productivity in a sustainable manner.

2. Intended National Determined Contributions (INDCs)

The INDC emphasizes “contributions” from all parties rather than commitments or actions. The intent is that contributions can be assessed in advance of the Paris negotiations for their aggregate impact towards meeting the 2°C climate goal. A number of issues related to the development of INDCs are still to be negotiated at Lima.

- **Countries will prepare INDCs based on varied levels of technical capacity and information due to diverse national circumstances.**
- **Technical content may vary among countries in detail and clarity, so review guidance will be needed. These are to be discussed at the Lima COP.**
- **An international process will be needed for assessing the ambition and equity of INDCs and degree to which the 2°C climate goal can be reached in preparation for commitments COP21 in Paris.**

CGIAR envisages that once monitoring arrangements are finalised, there will be several technical issues around the land use sector which need to be addressed. For example, providing supplementary guidance to the 2006 IPCC guidelines is required to update emissions coefficients and make use of improved data in developing countries, especially to better reflect nitrous oxide management in agricultural systems.

The discussion of INDCs has to some extent moved faster than the National Adaptation Plan (NAP) process within the UNFCCC. The NAP process was established in 2010 as a mechanism for countries to address climate vulnerability, building their capacity to adapt to current and future climatic changes. A key focus is to integrate climate change adaptation into development planning processes and strategies across all sectors and at local to national scales, which was where NAPAs were weak. Under the NAP process, many countries have conducted

some or other form of impact assessment, usually on a sectoral basis. There is a generic framework to use developed by the Least Developed Countries Expert Group (LEG) (a draft exemplar sectoral framework for Water in NAPs is currently stalled). Further consideration is being given to NAPs within the Adaptation Committee and the LEG.



Rice farmers in Kashmir, India face new challenges due to increasing droughts. Photo: Sandeep Chetan

3. Finance

It is axiomatic that a post 2020 deal depends on the delivery by developed countries on the mobilisation of finance to help developing countries respond to climate change: the current goal is \$100 billion per year by 2020. The ideal balance of public to private sources is contested (Vandeweerd et al. 2012).

However, there has been encouraging progress since the UN Secretary General’s Climate summit in September 2014 to secure the operationalisation of the GCF as the central funding mechanism of the UNFCCC, and \$9.7 billion has now been pledged at the time of writing. Lessons have been learned from the work of the Climate Investment Funds and the Adaptation Fund about the need to ensure national ownership of projects to enable direct access to funds through a national designated entity or agency, and to align spending with national development priorities. The GCF is designed to pursue a country-driven approach and to strengthen engagement through the effective involvement of the relevant institutions and stakeholders at country level (Green Climate Fund 2012).

Between 2008 and 2013 \$1 billion per year was spent by multi-lateral climate funds, but much more was spent from public funds overall on climate change (CPI 2013). Very little analysis has been undertaken on spending on agriculture and land use, though more is known about REDD+ funds which cover agriculture as a driver for deforestation (see section 7 below). The profile of spending is not clear across all funding sources and timeframes. Spending on adaptation overall has been 30% of the \$4.69 billion of international public climate

finance from multilateral funds between 2003-13. On the mitigation side there has been more investment (63%), but generally funds have been focused on the capital intensive side of the energy sector (Nakhoda and Norman 2014). Spending on adaptation of agriculture through the Fast Start Fund mechanism (which included bilateral aid) increased from \$155 million to \$613 million between 2010-2012 (Hoogzaad et al. 2014). A case study of six countries, receiving significant volumes of adaptation finance (Bangladesh, Cambodia, Nepal, Samoa, Zambia and Ethiopia) showed that excluding bilateral aid only 10% of adaptation finance (from multilateral funds) in those countries between 2008-13 had been spent on adaptation and food security, despite this often being a high priority sector for some of these countries (Nakhoda and Norman 2014).

CGIAR considers that more analysis needs to be undertaken to see what outcomes have emerged from spending from all sources (multilateral climate funds, bilateral aid and private finance) to see if lessons can be learned for scaling up and to ensure the sector receives its appropriate share in the future from the GCF. It is noted that the Global Environmental Facility (GEF) is taking a number of steps towards increasing levels of financing aimed at low emissions agriculture, improving land use and indirect emissions methodologies and including land use, (GEF 2014), particularly climate-smart agriculture within the GEF-6 financing period (GEF 2013).

As the GCF will soon be fully operational, one area for immediate attention will be to ensure the GCF can help to deliver adaptation strategies and low emissions strategies for agriculture. The GCF has committed to equitably split spending between adaptation and mitigation. It has launched a readiness programme which has several activities, including support to institutional development and stakeholder engagement in countries and the development of programming pipelines that will enable a paradigm shift to low carbon and climate resilient development. Already 20 countries have requested assistance (Green Climate Fund 2014a). CGIAR can see that there is now considerable opportunity for countries to develop a pipeline of projects, including cross-cutting transformational interventions for the GCF in which agriculture and food security are embedded. These projects will need to meet the stringent results frameworks that are being developed (Green Climate Fund 2014b).

4. Technology Transfer

The transfer of technology is a core part of the UNFCCC and been incrementally developed within the negotiations since 1992 (Hedger 2012). This is still an ongoing agenda and we note that groups such as the LMDC in Bonn at the October ADP spoke of the need for the deployment of

technologies for many sectors and included agriculture, in the context of the need to deliver the technology transfer dimensions of the 1992 Convention (Article 4.5).

A recent synthesis of Technical Needs Assessments (UNFCCC 2013) showed that the agriculture, forestry and other land uses sector targeted both adaptation and mitigation, and mainly included actions to combat land degradation, rules and regulations for seeds, better management of renewable natural resources, agricultural modernization and natural resource management, combating desertification and improving food security.



Better forages for livestock can help reduce greenhouse gas emissions. Photo: G. Smith (CIAT)

Most recently, the Climate Technology Centre and Network (CTCN), as part of the Technology Mechanism, has become fully operational and there is growing demand from Parties, via their National Designated Entities, requesting support for tailored responses to implement their technology-related climate plans. The CTCN's mandate is to respond quickly to these requests, which are limited in volume (up to \$250k) and fairly quick in their implementation (generally 1 year), to avoid competing with other facilities and funding sources that enable and implement technology transfer. Many of the requests that have come in so far are addressing issues related to agriculture and natural resource management, mainly in terms of improving responses to climate impacts, and are based on national climate change priorities as described in NAPs, NAPAs or national climate change strategies.

The advantage of the CTCN (and potentially other technology transfer instruments) is its high flexibility, quick response time and low cost. As the operation of the facility (the CT-Center) is led by UNEP in collaboration with a number of highly qualified and regionally distributed research and development organizations (including the World Agroforestry Centre from the CGIAR), the responses are taken out of the political realm and are addressed with the necessary technical understanding. The CT-Network, which links research organizations and businesses for example, ensures an outcome-oriented

approach. It is expected that the number of national requests will rise significantly in the coming years. The number of requests that can be addressed by the CTCN will then primarily be limited by the volume of funds that can be made available through the facility. Hence, there may be an opportunity to increase funding of these demand-driven activities if they turn out to produce good outcomes.



Empowering rural women to take action on climate change is a key strategy for ensuring food security. Photo: IFPRI

Agriculture has been identified as an important area for capacity development. As a result, it is very likely that this country-driven and voluntary instrument will become an important tool in supporting context-specific and targeted solutions for agriculture in developing countries.

5. Equitable outcomes for women

Gender has now been mapped across all aspects of the UNFCCC's functions and its mainstreaming will be overseen by SBI. **This provides an opportunity to develop agriculture initiatives that have gender-sensitive strategies.** Climate change will add to the challenges that vulnerable and poor women face in securing incomes, personal freedoms, water, food and fuel. It has been estimated that if women had the same access to productive resources as men, farm yields could increase by 20-30% and that global hunger could be significantly reduced as a result (FAO 2011).

6. Agriculture in the REDD+ mechanism

REDD+ is a voluntary mechanism within the United Nations Framework Convention on Climate Change (UNFCCC) to provide incentives to reduce carbon emissions from deforestation and forest degradation in developing countries. A review in 2012 found that agriculture is the major driver of deforestation while other activities account for forest degradation: commercial agriculture was the major driver of deforestation, accounting for 50% with subsistence agriculture as the second most important driver, accounting for 30% of the deforestation (Hosonuma et al. 2012). National strategy

documents developed in 43 countries have been assessed to understand how countries were integrating the knowledge of drivers into national REDD+ programs (Salvini et al. 2014). Proposed interventions by most countries in the forest sector have not been aimed at the drivers of deforestation but rather have been aimed at improving forest management, improved cook stoves and agroforestry. It would seem that addressing the expanding agriculture frontier is challenging. **CGIAR supports greater efforts on dialogue and policy to manage the role of agriculture in driving deforestation.** CGIAR notes that the GCF is likely to be the major conduit of resources to national REDD+ activities in the near to medium term. Among the Fund's first activities has been to operationalize results based payments for REDD+, so that real results can be expected following from financial support.

7. Agriculture and the Kyoto Protocol

Within the Protocol, agriculture features (directly) in land use land-use change and forestry (LULUCF) and in the Clean Development Mechanism (CDM). Agriculture features directly in the Kyoto Protocol as part of "sink activities" notably in "agricultural soils and the Land-Use Change and Forestry", through which Annex 1 parties could achieve their emission reduction targets (Article 3, para 3-4 of the Kyoto Protocol). In the 2006 IPCC Good Practice Guidance for Land Use, Land Use Change and Forestry – LULUCF, croplands and grazing lands are explicitly mentioned as categories to be accounted for.

Indirectly, agriculture (in the form of agroforestry) could be part of afforestation and reforestation activities eligible within Article 3, para 3 and part of the CDM of the Kyoto Protocol, depending on the definition of forest in any given country (Van Noordwijk and Minang 2009; Minang et al, 2014). At COP in Warsaw, discussions within the subsidiary bodies of the UNFCCC (SBSTA and SBI) ushered in discussions of the possibility of considering LULUCF activities within the CDM as part of efforts to ensure permanence. This offers an entry point into the UNFCCC framework for specific LULUCF activities as part of INDCs.

Recommendations

What the agricultural technical community and agencies need to do

There is now a framework for bringing external expertise directly into the negotiations: a Technical Expert Meeting (TEM). The TEM held in the June 2014 ADP meeting shared country experience on issues related to land use (including agriculture). TEMs are meant to explore new options and actions and share experiences that could feed into the negotiations, and are not an integral part of the negotiation process. Nonetheless, **TEM discussions could be used in the future to bring new knowledge into the negotiations to inform specific areas for future work.**

CGIAR with its partners will continue to:

- Provide technical support to countries on UNFCCC related issues, including:
 - Development of INDCs,
 - GCF project development,
 - Technology transfer projects, and
 - Preparatory work for SBSTA workshops;
- Assist countries in reducing GHG emissions from agriculture and forestry sectors;
- Work through research partnerships with countries to achieve sustainable development, poverty reduction and improved food and nutritional security while coping with climate variability and change;
- Undertake analysis of agencies and institutions that will develop support roles for national progress on agriculture and natural resource management;
- Support improved measurement and reporting systems for assessing emissions and GHG emissions reductions;
- Work on integration of adaptation and mitigation interventions in land-use sectors;
- Research to support integration of LULUCF, REDD+, and agriculture development objectives and explore how transformative integration through land based projects could be a focus of the GCF.

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This info note was prepared by the following authors from CGIAR and partner organisations:

Bruce Campbell (b.campbell@cgiar.org), Director of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)

George Wamukoya, Climate Advisor, Common Market for Eastern and Southern Africa (COMESA) Secretariat

James Kinyangi, East Africa program leader, CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)

Louis Verchot, Director, Forests & Environment Research, Center for International Forestry Research (CIFOR)

Lini Wollenberg, Flagship Leader, Low-emissions agricultural development, CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)

Sonja J. Vermeulen, Head of Research, CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)

Peter A. Minang, Global Coordinator, ASB Partnership for the Tropical Forest Margins and World Agroforestry Centre (ICRAF)

Henry Neufeldt, Head of the Climate Change Unit, World Agroforestry Centre (ICRAF)

Alain Vidal, Senior Advisor on Capacity Development and Partnerships, CGIAR Consortium

Ana Maria Loboguerrero Rodriguez, Latin America program leader, CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)

Merylyn Hedger, Research Associate, Overseas Development Institute (ODI)

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