

LINKING CLIMATE CHANGE FINANCING AND SUSTAINABILITY

IMPLICATIONS FOR AGRICULTURE



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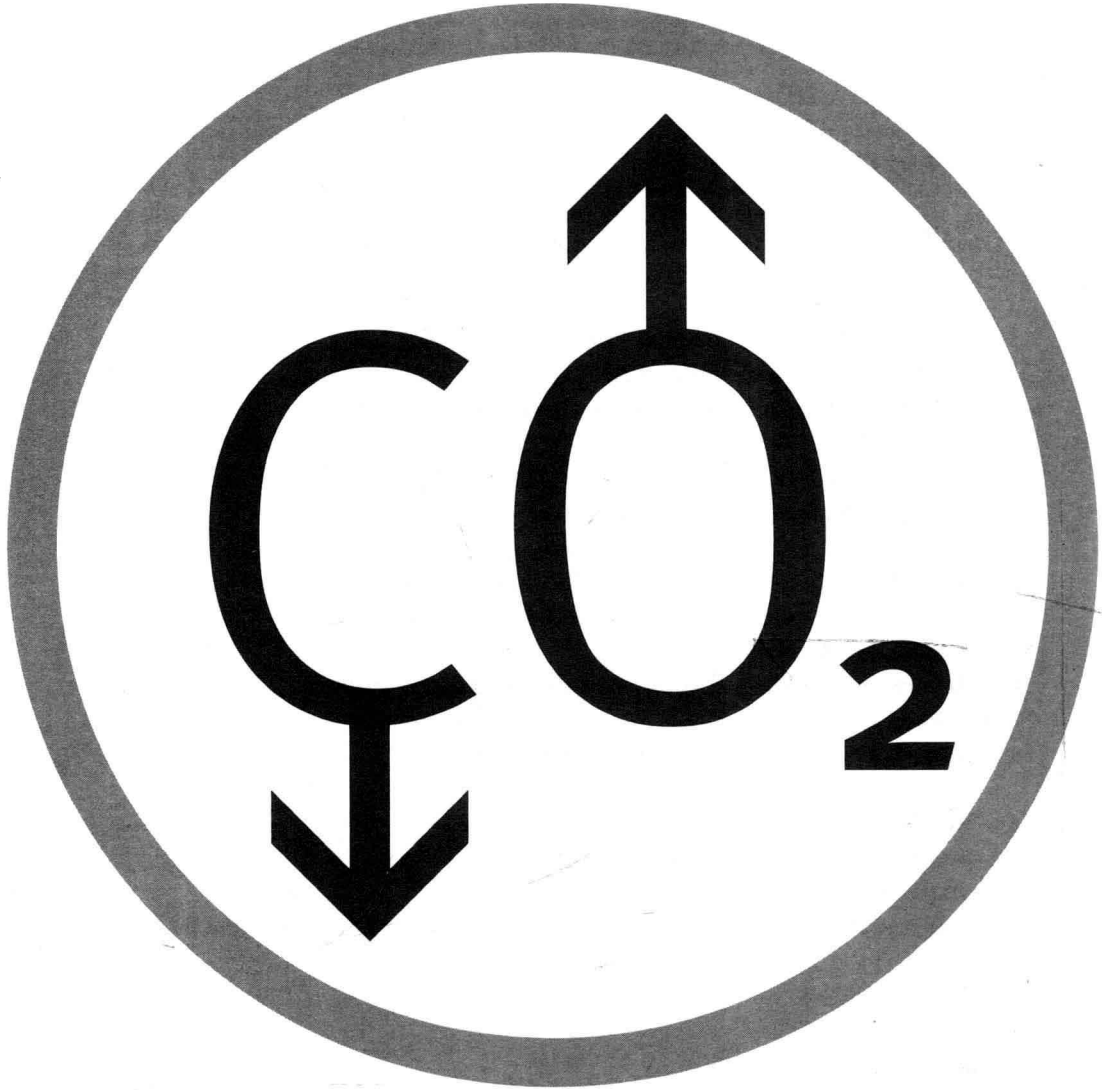
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PREFACE

Sustainable development and climate policy objectives strongly converge in aiming for environmental integrity, economic resilience and social well-being. In developing countries, and particularly in LDCs, the agricultural sector (including crops, livestock, forestry and fisheries) is the largest provider of employment and opportunities for land/ocean stewardship. Thus, synergies between sustainability and positive climate action must be better reflected in strategies for crops, livestock, forestry and fisheries that jointly lead to improved food security, increased income, inclusive rural development and sustainable natural resources use.

Recognizing that sustainable development comprises the economic, environmental and social aspects of human activities, FAO has launched the Greening the Economy (GEA) initiative in order to simultaneously address the three pillars of sustainability and effectively contribute to the objectives of the United Nations Conference on Sustainable Development that will be held in Rio in 2012. GEA refers to ensuring the right to adequate food, as well as food and nutrition security – in terms of food availability, access, stability and utilization – and contributing to the quality of rural livelihoods, while efficiently managing natural resources and improving resilience and equity throughout the food supply chain, taking into account countries individual circumstances.

Based on lessons learned from the current climate policy process – where agriculture has played to date a too minor role – this paper examines how stronger sustainability criteria and a wider focus on payment for ecosystem services can provide the pathway to significantly increase the amount of climate financing directed towards the agricultural sector for sustainable development.

For this transition to happen, and in order to scale up climate finance for agriculture to the levels necessary to implement effective action in developing countries, this paper argues that agriculture should be explicitly included in future climate mechanisms, by expanding the range of currently available methodologies and by simplifying monitoring, reporting and verification approaches.

Importantly, this paper points out that, in order to effectively couple climate financing with strong and measurable sustainable development criteria, there is a need to move beyond carbon as a standalone tradeable commodity, by increasingly valuing the significant range of additional ecosystem and socio-economic services provided by sustainable agriculture practices and programmes that simultaneously address climate concerns and sustainable rural development priorities.



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EXECUTIVE SUMMARY

The Rio Declaration (RD) and the United Framework Convention on Climate Change (UNFCCC), both subscribed internationally at the 1992 UNCED Rio Summit, share at the core the same fundamental principles of sustainable development. These relationships are relevant to translating into action the emerging concept of green economy – particularly in the context of the “Greening the Economy with Agriculture” (GEA) initiative, which FAO is developing towards Rio+20. One important concept emerging from a joint RD UNFCCC analysis is that there can be no sustainable development under unabated climate change. Therefore climate adaptation and mitigation solutions are fundamental components of sustainability; furthermore, in order to be relevant to least-developed countries (LDCs), such response actions should exhibit strong food security, ecosystem resilience and rural development components. It follows that future climate policy agreements consistent with sustainable development criteria and relevant to LDCs should include prominently agriculture, forestry and fisheries issues.

By contrast, agriculture is severely under-represented in the range of adaptation and mitigation activities that are possible under existing climate policy agreements. For instance, very few agricultural methodologies have been developed to date for the clean development mechanism (CDM) of the Kyoto Protocol (KP); in addition, most registered projects fail to sufficiently address key sustainability issues of importance to FAO: food security and sound rural development. Indeed, the terms “agriculture”, “food security”, “hunger”, “rural development” and even “ecosystem” appear very sporadically in official UNFCCC decisions and agreements; by contrast the term “forest” appears several dozen times, reflecting growing attention towards REDD+ as a means to achieve sustainability of forest ecosystems and communities.

In the run-up to 2012 and beyond, greater attention to the food and agriculture sectors can be achieved in several ways. Technically, by extending the range of what is possible under the UNFCCC framework, such as helping to develop new

methodologies for mitigation and adaptation projects in agriculture, seeking to use the Copenhagen Green Climate Fund (GCF) to promote such activities in LDCs. Politically, at a minimum more explicit language pointing to agriculture, food security and rural development must find its way within the ongoing Ad-hoc Working Groups on Long-term Agreements (AWG-LGA) and the Kyoto Protocol (AWG-KP).

In the context of developing new mechanisms for agriculture, it should be likewise recognized that carbon markets alone cannot provide a major source of funding for agriculture and forestry – at least not on the scale of the USD100 billion annual financial flows necessary to respond to climate change in LDCs. This is because the carbon credits that could be generated in the food and agriculture sectors, including those from REDD+, albeit potentially large, will continue to be poorly accepted in regulatory markets in developed countries – due to permanence problems and measurement uncertainty – and therefore will not be sold in large volumes. Indeed, the EU-ETS – the largest such market today – will not allow carbon credits from *any* land-based project until at least 2020. At the same time, emerging small regulatory cap and trade systems and voluntary markets will continue to lack enough liquidity to accommodate land-based credits in sufficiently large volumes.

Building on a range of lessons learned in the climate policy arena, this paper suggests that the nascent FAO GEA process could help overcome these gaps and fill an important niche, by proposing and implementing novel climate funding streams for agriculture projects based on payments for ecosystem services (PES), i.e., by identifying a range of ecosystem and social benefits that, while still highly relevant to building climate change responses in LDCs, decisively move beyond carbon as the sole climate currency, allowing for a significant role for public as well as private funding. These services would target achievements such as improved water availability and quality, reduced pollution from inorganic fertilizer, enhanced community level bio-energy systems and re-cycling, etc.

Simplified rules for measurement, reporting and verification procedures (MRV) should likewise be developed, to insure that such multi-functional projects are easily developed by LDCs participants, while maintaining internationally accepted validation standards. Because of the large funds needed to meaningfully achieve these goals, specific lobbying for priority Green Climate Funding should be sought. A set of relevant activities and timelines are identified in this report, focusing on pilot activities and dedicated funding for new project ideas.

In conclusion, FAO can strongly support and facilitate enhanced activities in the food and agriculture sectors and play a fundamental role in fostering sustainable development in LDCs while combating climate change. Concerted action must focus on those activities that link adaptation and mitigation actions for effective climate response, but that also include a range of ecosystems and social services that promote decisively food security, ecosystem resilience and rural development.

ACRONYMS

AF	Adaptation Fund
AWG-KP	Ad-hoc Working Group on Kyoto Protocol
AWG-LCA	Ad-hoc Working Group on Long-term Cooperative Action
CAR	Climate Action Reserve
CDM	Clean Development Mechanism
COP/MOP	Conference of the Parties serving as Meeting of the Parties
DNA	Designated National Authority
EC	European Commission
EU-ETS	European Union Emission Trading System
FAO	Food and Agriculture Organization
GCF	Green Climate Fund
GEA	Greening the Economy with Agriculture
JI	Joint Implementation
KP	Kyoto Protocol
LDC	Least Developed Countries
MRV	Measurement Reporting and Verification
NAMA	Nationally Appropriate Mitigation Action
NAPA	National Adaptation Plan of Action
PDD	Project Design Document
PES	Payment for Ecosystem Services
PoA	Programme of Activities
RD	Rio Declaration
REDD+	Reduced Emissions from Deforestation and Forest Degradation+
SD	Sustainable Development
UNCED	United Nations Conference on Environment and Development
UNCSD	United Nations Conference on Sustainable Development
UNEP	United Nations Environmental Programme
UNFCCC	Framework Convention on Climate Change

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INTRODUCTION

The reality and the growing threat of climate change in the 21st century provide evidence that global economic growth is out of step with the planet. Some have identified climate change with the biggest market failure of our times¹. The climate system – defined as the totality of our planet’s physical and biological realms, including atmosphere, hydrosphere, biosphere, geo-sphere and their interactions² – provides objective metrics for quantifying such growing discordance of growth versus planet; one that climate policy defines as *dangerous anthropogenic interference with the climate system*³.

Since the beginning of the industrial revolution, atmospheric concentrations of trace gases have grown exponentially; global mean surface temperature is about 0.6°C above long-term means; precipitation patterns are shifting towards more intense events in many regions; nine out of the ten warmest years on record have happened in the past decade. More is likely to come in the near future – unless emissions are reduced significantly: continued warming; increased frequency of extreme events; stronger storm surges in low-lying areas; increased aridity of continental interiors; glacier melt and sea ice reductions; sea-level rise. As a result, ecosystems and human activities are at risk, endangering food security and economic growth⁴.

Many of the climate events we already observe today demonstrate the vulnerability of our world, be it developed or developing. Such risks are projected to continue to increase, through the spread of pest and disease eroding ecosystems health; shifts in seasonality affecting previously stable ecological rhythms; increased frequency of heat stress, droughts and flooding disrupting people and agricultural production alike.

There is no doubt that our current modes of production and lifestyles are the basis for such increased risks. The implication is that fighting climate change by stabilizing concentrations of greenhouse gases in the atmosphere⁵ is one of the *condicio sine qua non* for achieving sustainable development.

1 Stern, N., 2007. Climate change, ethics and the economics of a global deal. Lecture delivered at the Royal Economic Society, 29.11.2007, London.

2 UNFCCC, article 1.3

3 UNFCCC article 2

4 IPCC AR4, WG I

5 IPCC AR4, WG II

It is not surprising therefore that both the Rio Declaration on Environment and Development and the UNFCCC saw their birth at the same conference, the 1992 UNCED Earth Summit – alongside the other three key agreements, i.e., Agenda 21, the Convention of Biological Diversity and Forest Principles – detailing goals and means for achieving sustainability in all of its dimensions.

The agriculture, forestry and fisheries sectors can offer significant opportunities to address the fight against climate change within robust sustainable development paths, especially in LDCs, by offering solutions that reduce negative impacts on land and water resources, enhance ecosystem management and services, improve food security and generate income opportunities, leading to production systems and rural livelihoods that are more resilient to shocks and allow for better resource use efficiency.

BACKGROUND

UNCED and UNFCCC Common Principles

The Rio Declaration (RD) provided twenty-seven principles to guide sustainable development around the world. Many of these found their expression within the legally binding UNFCCC, produced at the same summit and signed shortly thereafter, on May 9th 1992 in New York. The inherent link between the principles to fight climate change and achieve sustainable development can indeed be referred back to these two pioneering documents. The first four principles of the RD identify a set of core guidelines that were further elaborated by UNFCCC. In particular, principle 4 states that *to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it*. The UNFCCC clearly addresses these principles from the perspective of global environmental protection; in fact, article 2 expands them, by defining planetary conditions needed for sustainable development: stabilization of greenhouse gases in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system⁶. This fundamental definition implies that sustainability can only be achieved within environmental stability. In this novel context, economic growth cannot be considered sustainable as long as it forces the global climate system out of balance, beyond a recognized threshold⁷.

Article 2 of UNFCCC further defines the scale and the timing of the efforts required towards this goal: *within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner*. Thus, for UNFCCC, environmental stability is dynamic: the ultimate goal is to stabilize the climate system, not at pre-industrial level – which is impossible – but at least at levels and within a timeline sufficient to avoid pushing ecosystems, food security and development prospects out of balance. Using the fight against climate change as a new, overriding principle, the UNFCCC in essence provides an operational guide to the RD.

6 Dangerous level is any warming above 2°C in mean global temperature. Concentrations of CO₂ need to stabilize below 450ppm for this, implying global emissions peak by 2020, with reductions of 20-45 percent by 2030 and 70-80 percent by 2050 with respect to 1990.

7 Equilibrium between economic growth and natural resources implies that ultimately GDP must also stabilize.

In the pre-amble to Article 1, UNFCCC affirms the fundamental principles of sustainable development, in particular that *responses to climate change should be coordinated with social and economic development in an integrated manner, with a view to avoiding adverse impacts on the latter, taking into full account the legitimate priority needs of developing countries for the achievement of sustained economic growth and the eradication of poverty*. At their core, therefore, the basic tenets of UNFCCC prefigure those at the basis of the Green Economy: i) Low carbon; ii) resource efficient; and iii) socially inclusive⁸. To this end, the UNFCCC preamble states that *all countries, especially developing countries, need access to resources required to achieve sustainable social and economic development and that, in order for developing countries to progress towards that goal, their energy consumption will need to grow, taking into account the possibilities for achieving greater energy efficiency and for controlling greenhouse gas emissions, including through the application of new technologies on terms which make such an application economically and socially beneficial*.

Food and Agriculture within UNFCCC

It is useful to analyze how RD and UNFCCC guiding principles relate directly to the food and agriculture sectors, which include agriculture (crops, pastures and livestock), forestry and fisheries - in agreement with FAO definitions. Furthermore, the FAO definition of sustainable development is herein considered alongside the RD: *Sustainable Development is the management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such sustainable development conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable*.⁹

The UNFCCC recognizes among its primary concerns the need to ensure that ecosystems are not disrupted and food production is maintained (article 2). Additionally, five specific references are made in relation to agriculture, forests and ecosystems. These relate to promotion of GHG abatement technology development and transfer in all sectors, including agriculture, forestry (4.1c); promotion of sustainable management, conservation and enhancement of GHG sinks and reservoirs, including *biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems* (4.1d); cooperation in preparing for adaptation to

8 Green Economy, UNEP Feb 21st 2011

9 FAO, 1989

the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, *water resources and agriculture*, and for the protection and rehabilitation of areas, *particularly in Africa*, affected by drought and desertification, as well as floods (4.1e); and a commitment to support developing countries address climate change impacts and responses, with a focus on arid and semi-arid areas, *forested areas and areas liable to forest decay (8.c); and areas with fragile ecosystems (8.g)*.

Despite such important explicit references to food and agriculture activities, it should be noted that UNFCCC makes no reference to rural development and only one to LDCs (Article 4.9). Yet rural development is fundamental to allow smallholders and communities in LDCs achieve efficient use of land and water resources while implementing climate change responses¹⁰. Furthermore, the RD makes no reference to the terms *agriculture, forest, fisheries, food, hunger, rural development* – while the term *ecosystem* is mentioned only once (principle 7).

The Kyoto Protocol (KP), entered into force on Dec. 11th 1997, formalizes rules for operationalizing key principles of UNFCCC, in relation to emission reduction commitments of Annex I parties, as well as establishing flexible financial mechanisms and international emission trading. The KP mentions the term *agriculture* three times; *forest* ten times; while no explicit reference is made to *ecosystems, rural development* and *LDCs*. More specifically, the KP promotes *sustainable forest management practices, afforestation and reforestation (2.1a ii)*; sustainable forms of *agriculture* in light of climate change considerations (2.1 a iii); R&D and increased use of *renewable forms of energy (2.1. a iv)*. The latter includes implicitly agriculture and ecosystems at large, through promotion of efficient use of biomass resources for energy to achieve low carbon growth in a resource efficient and socially inclusive manner.

The pivotal components of the KP that address the food and agriculture sectors are Article 3.3 and 3.4 – and Annex 16 to CP1. In particular, articles 3.3 and 3.4 regulate the national reporting of GHG emissions related to Land Use, Land Use Change and Forestry (LULUCF), limiting mandatory reporting of land carbon sources and sinks to afforestation, reforestation and deforestation activities; article 3.4 allows parties to opt for reporting of additional LULUCF categories¹¹. In particular, LULUCF CDM projects are currently limited to afforestation/reforestation (A/R) activities in relation to carbon sequestration. In addition, and importantly, agricultural project activities under the CDM can target mitigation in non-CO₂ gases.

10 UNEP GE; GEA.

11 16.CPM1 1. (e): The implementation of land use, land-use change and forestry activities contributes to the conservation of biodiversity and sustainable use of natural resources.

The other reference to *agriculture* and *forestry* in the KP is Article 10, seeking to support regional programmes containing measures to *mitigate* climate change and measures to facilitate adequate *adaptation* to climate change, including in the *agriculture, forestry and waste management* sectors. Adaptation technologies and methods for improving spatial planning are also supported (10.b i).

UNFCCC Adaptation Fund, REDD+, Green Climate Fund

Adaptation is fundamental in limiting the adverse effects of climate change in coming decades, increasing the resilience of vulnerable systems to climate shocks. Decisions on implementing adaptation actions are based on article 4.8 and 4.9 of the UNFCCC and Article 10 of the KP, and include Decision 5/CP.7, 2001 and Decision 1/CP.10, 2004 (the Buenos Aires programme of work on adaptation and response measures). National Adaptation Programmes of Action (NAPAs) prioritize urgent and immediate adaptation needs for LDCs (Article 4.9). The NAPAs draw on existing information and community-level input, benefiting from knowledge of local coping strategies. Successful adaptation not only depends on governments but also on the active and sustained engagement of stakeholders (Nairobi work programme) – including national, regional, multilateral and international organizations, the public and private sectors, civil society. The objective of the Nairobi work programme is to help countries to improve their understanding and assessment of the impacts of climate change and to make informed decisions on practical adaptation responses. The UNFCCC maintains a coping strategies database to facilitate the transfer of knowledge from communities already coping with specific hazards under current or evolving climate change.

Developing countries require international assistance to support adaptation (Articles 4.4, 4.8 and 4.9). This includes funding, technology transfer and capacity building. Funding for adaptation is provided through the financial mechanism of the UNFCCC, currently operated by the Global Environment Facility (GEF) and the Adaptation Fund Board (AFB). Funding opportunities include: the GEF Trust Fund, including support for vulnerability and adaptation assessments as part of national communications; Least Developed Countries Fund (LDCF) and Special Climate Change Fund (SCCF) under UNFCCC; Adaptation Fund (AF) under the KP, managed by the AFB. The latter is funded primarily through a 2 percent levy on every Certified Emission Reduction (CER) issued by the UNFCCC. It currently totals roughly 50 million CERs, or about USD650 million at current secondary CERs spot prices. In operational terms, the UNFCCC Adaptation Fund Board began calls for project funding in 2010; only one such project, focused on reducing vulnerability from coastal erosion in Senegal, has been funded to date.

The current state of the art on post-2012 UNFCCC agreements were elaborated in the Copenhagen Accord (CA) and formalized via the Cancun Agreements at COP16