



## THE HAGUE CONFERENCE ON AGRICULTURE, FOOD SECURITY AND CLIMATE CHANGE

### *Chair's Summary*

#### **Introduction**

1. Participants from governments, international and regional organizations and institutions, the private sector, non-governmental organizations, philanthropic foundations, civil society, farmers and the scientific community, met at the Global Conference on Agriculture, Food Security and Climate Change in The Hague, Netherlands from 31 October to 5 November 2010 to develop a roadmap for action.

The Chair's summary of the gathering is as follows.

2. This global conference is the first of its kind to bring together the agendas of agriculture, food security and climate change. At this unique gathering a Roadmap for Action on Agriculture, Food Security and Climate Change has started to achieve the 'triple win' of improving agricultural productivity and food security, help address climate change, and improve the lives and livelihoods of rural populations that live in poverty. This Roadmap sends a strong signal and commitment to take concrete actions linking agriculture-related investments, policies, and measures with the transition to climate smart growth.

3. The world today faces one of the biggest challenges of the 21st century: how to feed 9 billion people in 2050, in the face of climate change and the growing competition for the use of natural resources, and achieving the Millennium Development Goals. Along these lines, the Seventeenth session of the Commission on Sustainable Development (CSD-17) of May 2009 and the FAO Summit on Food Security of November 2009 voiced a clear message regarding the urgent need to address the multiple challenges the world is facing in terms of food insecurity, climate change, degradation of ecosystems. It was noted that there are a number of related processes and assessments in the realm of agriculture, food security and climate change, such as CBD, UNCCD, UNFCCC, UNFF and IAASTD.

4. At the outset, the objectives of *The Hague Conference on Agriculture, Food Security and Climate Change* were to identify concrete actions linking agriculture-related investments, policies, and measures with the transition to climate smart growth. Specifically the conference has:

- identified what needs to happen for agriculture and related land use, forest and water management to deliver on increased productivity, reduced emissions, increased sequestration, environmental sustainability, better livelihoods and food security;

- showcased issues and shared knowledge on replicable good practices in climate resilient, low-emissions agriculture, livestock, fisheries, forestry and watershed management and demonstrate the potential for scaling up in a sustainable manner;
- used innovative approaches to bring together private and public sector finance for investments in climate smart agricultural systems.

5. Africa above all could benefit from climate-smart agriculture. Recognizing the challenges posed by the multiple global crises to the sustainable development prospects of Africa, the African Union Commission and the Government of the Federal Democratic Republic of Ethiopia organized the African Conference on Agriculture, Food Security and Climate Change, which met in Addis Ababa from September 6-8, 2010. A number of recommendations were agreed to promote action in the area of climate smart agriculture in Africa. The conference and its outcome were welcomed by The Hague conference on Agriculture, Food Security and Climate Change.

6. The conference expressed its appreciation to the host government of the Netherlands, and the organizing partners of the governments of Ethiopia, Mexico, New Zealand, Norway and Vietnam, and the World Bank and the Food and Agricultural Organization of the United Nations (FAO) for organizing this conference.

### **Understanding the Challenges**

7. Climate change will have differentiated effects in the countries characterized by different levels of development and which are located in different climatic zones. No other sector offers greater synergies between food security and climate change. Agriculture, including ecological agriculture and forestry offer opportunities for synergies between enhancing food security and mitigating climate change. No other sectors present more potential for carbon sequestration. Investments in the agricultural sector are still inadequate to meet the societal objectives to feed the increasing populations. Over the last decades agriculture has too often been neglected in both national and international arenas contributing to conflict and instability. Focus on production of food for local demand is important in this context. Seventy five percent of the world's poor are living in rural areas and most, for a large part women, are involved in farming, and agriculture, in the broader sense of its definition - comprising of crops, forestry, livestock, sustainable fisheries and aquaculture, biomass, and agro-industries. There is a need for urgent actions in the most vulnerable actions to climate change.

8. Growth in the agriculture sector remains fundamental for poverty alleviation, economic growth and environmental sustainability. Looking to the future, the world's population is expected to reach nine billion in 2050, and food production has to increase by seventy percent to feed them. New ways must be found and instruments developed to help farmers, herders, fishers and foresters at both large and small scales, to manage their increased exposure to climate risk. Investments in adaptation, including drought, heat- and flood-resilience as well as salt-resilient crop varieties and broader farming systems and watershed management, need to increase. Efforts to enhance resilience of agriculture need to be scaled up, as developing country farmers will be seriously affected. Agriculture has also an important role to play in climate change mitigation through carbon sequestration, production of bio-mass and greenhouse gas emission production..

9. Agriculture, forestry and sustainable fisheries is under threat from climate change, increased incidence of floods and droughts, increased temperatures, different patterns in the occurrence of weeds, pests, and diseases, and increased vulnerability of organic carbon pools. As a consequence climate change will affect the natural and managed systems – hydrology, forests, wetlands, aquatic ecosystems and coral reefs, drylands, agriculture, and fisheries – that

societies depend on for food, feed and fiber, and for many other things. At the same time, agriculture, including livestock, land use change and forestry is a major agent of environmental and climate change at local, regional and global scales contributing in a significant way to global greenhouse gas emissions.

Agriculture is a significant driver of deforestation and contributes through agricultural activities around 14 percent of overall greenhouse gas emissions worldwide. The challenge of producing more in a changing climate, while reducing greenhouse gas emissions overall, is immense. The challenge is to use natural resources in agriculture, forestry and fisheries in a sustainable way without depleting them. It will require managing the competing pressures on land and water from agriculture, forests and other ecosystems, growing population and urban expansion, as well as energy needs.

## **Understanding of the Solutions**

10. Agriculture must undergo a paradigm shift at all levels if the world's growing population is to be fed and the natural resource base that underpins food production is to be sustained. Business as usual is no longer an option. With a transition to climate resilient, low emitting production systems agriculture can become part of the solution to sustainable development.

11. The multiple challenges the world is facing in terms of climate change, degradation of ecosystems, food insecurity require an integrated approach. Such an integrated and cross-sectoral approach at all levels, including on a landscape level, must be developed to face climate change and support agriculture, food security. There are many successful experiences and best practices on the ground to achieve the "triple win" of climate-smart agriculture. We need to scale up, replicate and adapt what we know works. Conducive institutional and policy frameworks, including science, technology, education and extension services are needed.

12. Food security requires agricultural production systems to change in the direction of higher productivity and production, lower output variability and eco-efficiency, including eco-agriculture, in the face of climate risk and risks of an agro-ecological and social-economic nature. Such green growth in the agricultural sector is fundamental for food security, economic growth and environmental sustainability. Small- and family based farming systems, particularly in developing countries, are also vital for green growth and climate-smart agriculture, including organic systems.

13. Agriculture and water are closely linked. There are many competing claims on water. Worldwide agriculture consumes seventy percent of all freshwater withdrawals. Agricultural water productivity has to be increased significantly. Integrated land and water resources management, efficient use of water resources and safe reuse of waste water are vital in our approach to climate change adaptation. Adaptation efforts must begin now, because institutions and the infrastructure will bind us to patterns of water use and behavior for years to come.

14. Farmers have adapted to climate variability for centuries. The agricultural sector has the capacity to offer sound solutions to cope with this challenge, provided that farmers are encouraged to do so. Farmers, particularly women, youth and smallholder farmers, indigenous peoples and other relevant natural resources dependent people have an important role in a transition to climate-smart agriculture. Farmers feed the world, yet far too many are living in hunger and hardship. This injustice must cease. Farmers and rural people through their farming practices are custodians of the land and water. They are also custodians of the forests, of biodiversity, indigenous and traditional knowledge, and other services. Farmers' organizations can play an important role in promoting dialogue between farmers and across sectors. They can support individual farmers, especially smallholders. They can improve access to financial mechanisms, funding and carbon markets.

15. It is important to create the conditions and provide the opportunities and resources so that farmers everywhere can increase their food production, send their children to school, and enjoy rising living standards and fulfilling lives. There needs to be a particular focus on those who are the most vulnerable to the impacts of climate change, particularly those who live in dryland and low-lying coastal areas.

16. Sound legal, institutional and policy frameworks at all levels and good governance is required to achieve climate smart agriculture, to create an enabling environment for farming and for climate-smart agricultural investments from all sources within a broader landscape approach. Tenure and secure access to land and land use planning play a crucial role for achieving poverty eradication, food security and sustainable development.

17. Close links between research, education and extension are vital for a proper application of research results on the ground. Traditional and indigenous knowledge needs to be linked with modern technologies with the latest scientific knowledge about climate-smart agriculture. It is critical that countries share experiences and innovative technologies and cooperate in training and developing human and technical capacities. Much of the technologies and the knowledge needed is already available but their wider diffusion and uptake by farmers are a key challenge that needs to be addressed. There are still significant knowledge and technology gaps, especially in addressing methodological questions related to climate change. There is a need for co-innovation and building multidisciplinary networks among research and knowledge institutions so that good practices can be spread around the globe.

18. The scaling-up of financing from all sources is important for achieving transformational change for climate smart agriculture and food security at all levels. There is a need to learn from related processes, such as REDD+, and to mainstream adaptation and mitigation measures in national strategies and policies, test, pilot and demonstrate such measures under different framework conditions.

19. In the past few years, agriculture has risen to the top of national and international policy agendas. There is a need to build on this momentum. Success in meeting our challenges will require combined efforts, new partnerships and leadership and a comprehensive approach of technical, institutional and financial innovations to achieve the 'triple win' of improving food security, help address climate change, and improve the lives and livelihoods of the many millions of rural dwellers who today live in poverty.

### **Urgent Need for Action**

20. The challenges and many of the solutions are understood. Now is the time to get down to earth and take urgent action on food insecurity, climate change, and the degradation of ecosystems towards a sustainable, inclusive and resource efficient path. The notion that agriculture can help to solve some of the world's gravest threats has been the basis for developing and starting this Roadmap for Action on Agriculture, Food Security and Climate Change.

## **A Roadmap for Action**

21. This Roadmap for Action has started to identify and initiate concrete ongoing and new actions linking agriculture-related investments, policies and measures, to the transition to lower greenhouse gas climate resilient growth and human development. These actions on the ground have helped in a non-exhaustive way to develop a path forward to climate-smart agriculture. This Roadmap for Action is part of an ongoing process to identify, stimulate and broaden actions. At the same time it is a stepping stone to further initiate and broaden the partnerships and its activities with inclusive engagement by all stakeholders, such as the private sector, governments, scientists, non-governmental organizations, civil society, farmers, indigenous peoples, women and youth. The need to improve the effectiveness, efficiency, transparency and coordination of initiatives and financial instruments and the concept for a clearing house for information should be explored further. Thus, the Roadmap for Action becomes a living roadmap.

### ***(i) Policies and strategies for climate-smart agriculture***

22. *Coordination, synergy and integration between sectoral development plans.* It is important to take an integrated response to addressing food and nutrition security, agricultural productivity and climate change. Agricultural measures are key components of national climate change strategies. Agriculture and rural development should be integrated into green growth strategies as well as into other national political processes, supported by assessment (including climate change assessment) at the local level. This integrated approach is important to achieve the Millennium Development Goals, particularly MDG1 to reduce hunger and malnutrition.

23. *Coherence of global processes.* The interconnected nature of today's challenges call for a coordinated and coherent response. Greater consistency between agriculture, food security and climate change policy-making but also with other related sectors must be achieved at all levels. Coherence requires reasonable coordination and regular communication among organizations and processes at national, regional and international level, such as the Committee of World Food Security (CFS), UN Standing Committee on Nutrition (UNSUN), UNFCCC and the Rio+20 process. There is also a need to support local stakeholders and groups to participate in national, regional and global processes.

24. *Enabling policies.* Measures to provide an enabling environment for investment in sustainable agriculture and rural development and for tackling the structural causes of food insecurity are needed by both small holder and large scale farmers. Inclusive and secure access to finance, especially for the millions of smallholders, has to be promoted, taking into account gender equality and the important role of women in agriculture. It is critical that appropriate land tenure systems for private and communal land are in place to promote climate-smart agriculture and improve access to land, especially for smallholders. The active engagement of all actors, including local government, civil society and private sector partners should be mobilized in planning and implementation of policies and practices. Measures for efficient and sustainable use of land, water, energy and other inputs in climate-smart agriculture are needed. It is important to generate opportunities on higher incomes through adding value to the production and supply chain.

25. *Role of the private sector.* The private sector has a key role to play in climate-smart agriculture and food security, in food production, processing and marketing, and in development and application of new technologies, including eco-efficient and responsible investments. There is a role for partnerships between small and large scale farmers and

enterprises as regards technology transfer and access to markets throughout the whole value chain. Creating an enabling environment for farmers' organizations is important in this regard.

**(ii) Tools and Technologies for Climate smart agriculture**

26. Sustainable agricultural intensification - more with less – and increasing productivity is the way to go, with no expansion of the area under cultivation. It will be possible to meet the needs of people for nutritional food, feed, fiber, energy and other products while conserving natural ecosystem functions. Support of development of institutions, public and private, to ensure access by farmers to new technologies at competitive, affordable prices is vital. It is also important to realize that agriculture is related to other issues, such as livelihoods, market development, cultural aspects and biodiversity. The research agenda solutions should be tuned to “triple win” solutions, such as CGIAR Climate Change Challenge Program.

27. *Landscape based approaches and agroforestry.* There is an urgent need for the restoration of degraded agricultural landscapes, in particular in drylands. A productive and diverse landscape will be more resilient to climate change and provide critical ecosystem, social and cultural services. Examples of approaches which have been widely adopted in a variety of regions include soil fertility enhancement, minimum tillage and organic agriculture. Trees in the production landscape can help reduce erosion, increase nutrients in the soil and sequester carbon. An example of successful agroforestry is *Faidherbia Albida*, which sheds its leaves in the rainy season. Such measures increase resilience while storing carbon in the soil.

28. *Agriculture and forests.* Planting and restoring forests can provide major benefits to both the quality and long term reliability of water flows, increasing water availability for agriculture and broader ecosystems functions.

29. *Water conservation and harvesting.* A suite of measures exists in both rain-fed and irrigated agricultural systems. In rainfed systems African examples include raised seedbeds to trap water, and keyhole gardens using wastewater. Improved irrigation systems, respecting the need for drinking water, include mini-sprinkler and drip systems, precision timing in plant watering and crop systems such as the intensive rice system which use less water than traditional systems. Such integrated measures also lower GHG emissions compared with traditional paddy systems. Improved water harvesting and retention, and water use efficiency are fundamental for increasing production.

30. *Pest and disease control.* There is a need to identify and implement approaches to the risks associated with pathogen adaptation to climate change. Early warning systems will be therefore be increasingly needed for early action.

31. *Soil and nutrient management.* The availability of nitrogen and other nutrients is essential to increase yield. Methods and practices that increase organic nutrient inputs should be promoted. Examples of agro-ecological practices that contribute to soil and nutrient fertility enhancement, including residue and manure and crop fertilisation, agro-forestry, more precise matching of nutrients with plant needs, controlled release and deep placement technologies or using legumes for natural nitrogen fixation and carbon sequestration, in combination with efficient use of artificial fertilizers and carbon sequestration. Efficient use of fertilizers – manure storage and management of artificial fertilizers and aspersions techniques – must also contribute to reducing greenhouse gas emissions.

32. *Crops.* Irregular rainfall, drier spells in the wet season, droughts and floods have a negative impact on yields. There is a need for production systems which are adapted to the needs for altering cropping patterns, planting dates and farm management techniques. Conservation agriculture contributes to adaptation to climate change by reducing crop vulnerability.

33. *Livestock and fisheries.* There is a need to improve grazing, including pastoralist-grazing, breeding and fodder management, and improved management and re-use of animal waste to reduce the carbon footprint of livestock and control water pollution. An example includes use of manure for biogas and as an organic fertilizer. There is a need to address aquaculture and fisheries sustainability in the context of rising temperatures and water scarcity.

34. *Genetic resources.* Tolerance to shocks of temperature extremes, drought, flooding, pests and diseases is determined by genetic make-up. Preservation of genetic resources is fundamental in developing resilience of plants and animals to shocks, in improving the efficient use of resources, in shortening production cycles and in generating higher yields and improving market access and germplasm exchange. There is an ongoing dialogue on all technologies related to genetic resources, including intellectual property rights and breeder rights. The role of (small) farmers in preserving local crops and seeds is important. Agricultural biodiversity is a key resource for adaptation to climate-change as well as for ensuring continued crop and livestock improvement. There is a need to support farmers adaptation to climate ending by conservation and maintenance of their crop diversity through contribution to benefit sharing mechanisms, such as the fund under the International Treaty on Plant Genetic Resources for Food and Agriculture.

35. *Harvesting, processing and supply chains.* Efficient harvesting and early transformation of agricultural products can reduce post-harvest losses (PHL), particularly in dryer areas. As supply chains become longer and more complex it becomes ever more important to increase the operational efficiency of processing, packaging, storage and transport to ensure to retain quality and carbon footprints. This ensures greater availability of nutritious food and income throughout the season. There is an urgent need for creating a transparent value-chain that enables better linkages of farmers to the markets. Consumers need to be informed how their consumption patterns can become more climate smart. Sound certification schemes need to support information campaigns leading to informed choice.

36. *Input and waste management.* There is a need to address energy conservation and waste minimization in farm systems more broadly. Reducing post-harvest losses and minimizing waste throughout the production and consumption chain is important.

37. *Risk management.* It is important that National Platforms on Disaster Risk Reduction are included in their country plans for climate smart agriculture which should be based on the analysis of risk, vulnerabilities and capacities, with stronger coherence between adaptation, disaster risk reduction, food security and poverty reduction. Measures to improve and disseminate weather and climate information, together with adapted weather based insurance mechanisms and social protection measures, including production safety nets, are important elements of risk management strategies. This includes measures to reduce exposure of the most vulnerable to food price volatility.

38. *Research, education and extension services.* A lot is known on mechanisms that could contribute to the development of climate-smart agriculture. A lot more however remains unknown and needs to be researched and further studied. Research and development of varieties, including livestock, which are more robust to drought and flood are critical. It is also important to address knowledge gaps in many areas including for example in cost-effective approaches for assessing soil carbon and more broadly in assessment of the greenhouse gas profile of agricultural systems. Scaled up financing for research has an important role to play. It is also noted, to the extent possible, research should be open so as to ensure its widest possible benefit.

39. *Engaging the public, media and facilitating multi-stakeholder dialogue* It is important to engage the public at large and all stakeholders and create a broad understanding about the importance of moving towards climate smart agriculture and explain the linkages between

agriculture, food security and climate change. In this endeavor it is important to engage the media at all levels to play an active role in informing and educating the public as well as enhancing policy dialogue on the issue.

40. *Knowledge sharing, improved access to information and technology transfer.* Networking and knowledge sharing between research and knowledge institutions, synergy in research activities, and development of joint approaches should be supported between producers' organizations, non-government organizations, private sector and research institutes. Farmers advisory systems should be recognized and are important to address climate change.

41. *Scaling up of replicable models.* It is critical to scale up replicable models. Lessons for the success of long term programs include: a long term commitment, learning by doing, and participatory approaches. Support mechanisms need to provide incentives to "bridge the gap" between short term costs and longer term productivity gains, and to "internalize externalities" for decision makers. It is important to share experiences between countries.

### ***(iii) Financing for transformational change***

42. A holistic, diversified and inclusive approach is needed, combining public, private, development and climate finance. Such a portfolio approach consists of utilizing a combination of financial products and services that can raise financial resources (including, monetary resources, knowledge resources, capacity development, public support, and awareness, etc.) for effective action in climate-smart agriculture. Instead of selecting a single (or small) set of funding instruments (e.g., state-based contributions), a portfolio of complimentary financial products and services should be created to raise the required financial resources from a variety of relevant actors.

43. Financial inclusion, being access to a broad range of financial services, all at reasonable costs, provided by a diversity of sound and sustainable institutions, can contribute to climate-smart agriculture. Access of small farmers and small and medium enterprises to a range of financial services that meet their needs should be improved. Furthermore, access to finance across the whole value chain is needed.

44. *Regarding public finance.* Scaling up the level of investment in agriculture and rural development is important. Comprehensive African Agricultural Development Program (CAADP) countries commit to increase the proportion of their public expenditure on agriculture to 10% of the public budget. The 'quality' of expenditure is also important. The focus should be on investing in the policies, tools and technologies outlined above. Delivery against the l'Aquila commitments in agriculture and food security will be an important step forward. Investments in agriculture are also a cost-effective way to build resilience and reduce the need for humanitarian aid year after year in regions facing chronic food insecurity and protected food crises.

45. *Regarding private investment,* enabling environments are important for responsible private sector investment, both small-scale and large-scale, including partnerships with *philanthropic organizations and foundations*. It is important to learn from the range of pilot climate funds currently under implementation and participate in program design. Funding from all sources are required to support agricultural activities, with sufficient focus on resilience (adaptation) as well lower carbon growth. All forms of financing acceptable to each country, such as public finance and carbon finance, should be explored. There is much to learn from afforestation/reforestation and the REDD+ agenda, and to integrate agriculture and forestry across all agendas. A landscape approach, integrating forestry and agriculture and adaptation/mitigation, should be promoted. Programs to access the voluntary and compliance market should be scaled up. Approaches which integrate and blend all sources of financing are most likely to succeed in implementing climate smart agricultural models to scale.



## **Forging Partnerships for Climate-Smart Agriculture**

46. This living Roadmap provides an excellent opportunity to develop and deepen partnerships for climate-smart agriculture. New partnerships, including with civil society organizations, should be developed to contribute to the global battle against climate change by serving as a platform to scale up climate-smart agriculture actions and finance, and to that end to take immediate action, including improving the effectiveness, efficiency, transparency and coordination of initiatives and financial instruments identified under the roadmap. In that spirit, a clearing-house for information to exchange lessons learned, best practices and transfer of knowledge through discussion and presentation of our initiatives should be explored further.

47. There were many innovative approaches demonstrated during the Investment Fair at the conference which presented projects and programs proposals for partnerships and investment opportunities. The living Roadmap for Action offers a unique opportunity for strengthening exchange, learning and dialogue. Bold steps are required if we want to address the enormous challenges ahead. Partners are invited to make further contributions in-kind and through financing support for the implementation and further development of the living Roadmap for Action over time to close the gaps, provide information, build capacities and demonstrate transformative approaches at scale. The list of actions developed in the course of this conference is an important step towards a broader information sharing process and interaction between partners.

## **The Way Forward**

48. Ministers, gathered in the Ministerial Roundtable-sessions, highlighted the tremendous success of the Conference and recognized that for the first time the linkages between agriculture, food security and climate change were explored and understood. As such, it has been a major step forward. It was highlighted that each within its own responsibilities and capabilities should strive to address the issues in this living Roadmap for Actions in the various international agendas, showcase actions and determine how they may be relevant in national contexts.

49. There is a need to create an enabling environment and to engage people around the world, to work inclusive and to show leadership in guiding our endeavors towards climate-smart agriculture for the well-being for all people and of common stewardship of this planet which we all share and which sustains us.

50. The Hague Conference has addressed for the first time the interlinkages between agriculture, food security and climate change and started a living Roadmap for Action. This living Roadmap delivers a message of hope and the need for action now and into the future and with the strong hope to mobilize more new actions and partnerships building on this momentum. Recognising the urgency of the task, the living Roadmap should be further developed and implemented, individually and collectively within a broad partnership between countries and stakeholders. The Roadmap does not prejudge but support and contribute to international processes, such as CFS, UNFCCC, UNCCD and CBD and the Rio+20 process. The living Roadmap provides a basis for a way forward that requires a combined effort of all stakeholders.

51. This living Roadmap initiated during this conference will continue. To this end, participants welcomed the offer of the Government of the Netherlands to support the process in the lead up to a follow-up conference that Vietnam offered to host in 2012.

## Annex:

| ACTIVITIES  | YEARS                    | PARTNERS  |
|---|--------------------------|---|
| <b>Pillar 1: Policies, Strategies and Supporting Incentive Mechanisms for Climate-smart Agriculture</b>   |                          |   |
| <ul style="list-style-type: none"> <li>Conference in Nairobi to review the evidence and build a strategy to refine and adapt policies and technologies and to engage a wider range of smallholder farming systems in diverse agricultural environments.</li> </ul>  | April 2011               | Hosted by World Agroforestry Centre (ICRAF) and Government of Kenya       |
| <ul style="list-style-type: none"> <li>Agriculture and Rural Development Day (ARDD 2010) at UNFCCC COP 16 in December highlights key issues and potential solutions regarding the interaction between agriculture, food security and climate change.</li> </ul>   | 2010                     | CCAFS, GDPRD (Global Donor Platform for Rural Development) and Mexico     |
| <ul style="list-style-type: none"> <li>Implementation of new IFAD Climate Change Strategy (<a href="http://www.ifad.org/climate/strategy/e.pdf">http://www.ifad.org/climate/strategy/e.pdf</a>) - IFAD country strategies and programmes to systematically reflect climate and environment risks and opportunities with full implementation of the Climate Strategy.</li> </ul> | 2010 onwards             | Partners are UN, IFIs and partner governments for IFAD-supported projects |
| <ul style="list-style-type: none"> <li>2009 agricultural strategy continues development goal of food security, farm land reform, rural infrastructure development, productivity, and environmental sustainability and protection of delta farm lands and aquatic resources from saline intrusion</li> <li>Will host follow-up conference to The Hague Conference</li> </ul>     | 2009 onwards<br><br>2012 | Vietnam   |
| <ul style="list-style-type: none"> <li>Establish, implement and communicate findings from International Commission on Sustainable Agriculture and Climate Change</li> </ul>   | 2010 - 2011              | CCAFS(Climate change, agriculture and food security)                      |
| <ul style="list-style-type: none"> <li>A Dialogue on Life Stock, Food Security and Sustainability to promote and support sustainable development in global livestock value chains. The Netherlands will facilitate FAO the establishment of a Global Agenda of Action in Support of Responsible Livestock Development.</li> </ul>   | 2011-2012                | The Netherlands, Ethiopia, New Zealand, India, Brazil                     |
| <ul style="list-style-type: none"> <li>Facilitate the development of community based water storage and infrastructure schemes to build resilience and reduce the risks of water shortages caused by</li> </ul>  | 2010-2012                | New Zealand   |

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| climate change.   |           |  |
| <ul style="list-style-type: none"> <li>Development of a coordinated partnership for green growth: ecosystems, water and agriculture to support Africa's transition into a green economy and a common position for Rio +20.</li> </ul>   | 2010-2012 | AMCEN, AMCOW, CAADP, UNEP, GWP, Wageningen UR.               |
| <ul style="list-style-type: none"> <li>Development and implementation of agriculture and rural development policy to strengthen the food security focusing on national large scale programs with the participation of local rural population and the private sector: <ul style="list-style-type: none"> <li>Fight against desertification</li> <li>Expansion and rehabilitation of forest area</li> <li>Treatment and management of hydrographic basin</li> <li>Monitoring and conservation of water resources used in agriculture</li> </ul> </li> </ul> | 2010-2015 | Algeria  |
| <ul style="list-style-type: none"> <li>Initiative to enable integration of land use planning in country climate and food strategies. Support to a multi-country, 5-year initiative to enable integration of land use and planning considerations in the development of sustainable food production, low emission development (LED's) and adaptation strategies.</li> </ul>  | 2011-2016 | The Netherlands, Terrestrial Carbon Group and other partners |
| <ul style="list-style-type: none"> <li>Agriculture fully integrated into their climate change program [SAGARPA: Programa Especial de Cambio Climatico].</li> </ul>  | 2008-2020 | Mexico   |
| <ul style="list-style-type: none"> <li>Adoption of the National Framework Strategy on Climate Change (NFSCC) with Climate-responsive agriculture as a key result area of implemented national and local action plans on agriculture</li> <li>Implementation of climate-responsive agriculture strategy that aims to build the resilience of the country's food system, enhance ecosystems and ecosystem services, and secure food and water resources and livelihood opportunities throughout the value chain.</li> </ul>                                 | 2010-2022 | The Philippines  |
| <ul style="list-style-type: none"> <li>Implementation of policy to encourage a favorable institutional context for agricultural development in particular via market policies, land security, improvement of the environment of family farming and support to producer organizations</li> </ul>   | Ongoing   | France   |
| <ul style="list-style-type: none"> <li>Aligning state programs with nationalized MDGs, with a focus on improving the performance and competitiveness of agriculture and sustainability of environment against climate change.</li> </ul>  |           | Azerbaijan   |

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| <ul style="list-style-type: none"> <li>• Subsidies for elite seed production</li> </ul>  |                  |  |
| <ul style="list-style-type: none"> <li>• Accelerate the implementation of the Comprehensive African Agricultural Development Program (CAADP) by increasing financial support to country agricultural investment plan towards climate-smart agriculture and food security and climate-proofing.</li> </ul>  |                  | <p>AUC, RECs, AU member states, regional economic communities, NEPAD planning and coordinating agency (NPCA)</p> |
| <ul style="list-style-type: none"> <li>• Establishment of a National Integrated Watershed Management Strategy to conserve water resources quality and quantity and improve allocation amongst competing uses. Specific actions include: strengthening the capacity of public institutions for better monitoring of water and design and implementation of environmental management plan for Chilean Watersheds.</li> </ul>   |                  | <p>Chile</p>   |
| <ul style="list-style-type: none"> <li>• Development of Rwanda led Forest and Agriculture Landscape Initiative.</li> </ul>   | <p>2011-2015</p> | <p>Rwanda, World Bank, IUCN, UNFF and other CPF members.</p>   |
| <ul style="list-style-type: none"> <li>• Integrating climate change into USDA conservation and energy programs, e.g. <ul style="list-style-type: none"> <li>○ Conservation Reserve Program (ongoing): voluntary retirement erodible/environmentally sensitive cropland from production (more than 34 million acres enrolled)</li> <li>○ Environmental Quality Incentives Program (ongoing)</li> <li>○ Improving irrigation efficiency stewardship activities</li> </ul> </li> <li>• US Department of Agriculture (USDA) Strategic Plan (next five years) <ul style="list-style-type: none"> <li>○ Capitalize on Opportunities Presented by the Nation's Efforts to Develop Markets for Ecosystem Services and Mitigate Climate Change</li> <li>○ Ensure Our National Forests and Private Working Lands Are Conserved, Restored, and Made More Resilient to Climate Change, While Enhancing Our Water Resources</li> </ul> </li> <li>• Food Security: Feed the Future <ul style="list-style-type: none"> <li>○ Launched 2009</li> <li>○ Principles <ul style="list-style-type: none"> <li>▪ Invest in country-owned plans</li> <li>▪ Strategic coordination</li> <li>▪ Comprehensive approach</li> <li>▪ Leverage multilateral institutions</li> <li>▪ Deliver on sustained accountable commitments</li> </ul> </li> <li>○ Objectives: accelerate inclusive agriculture sector growth and improve nutritional status</li> </ul> </li> </ul> |                  | <p>USA</p>   |

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| <ul style="list-style-type: none"> <li>○ Pledged: minimum \$3.5 billion over three years</li> </ul>   |         |  |
| <ul style="list-style-type: none"> <li>• National Action Plan on Climate Change with a national mission for sustainable agriculture; focuses on dry lands, risk management, access to information and biotechnology.</li> <li>• National initiative on climate resilient agriculture which focuses on research, technology demonstration, capacity building.</li> </ul> |         | India  |
| <ul style="list-style-type: none"> <li>• Development of a road map for a zero carbon economy, using participatory approaches and an early warning system.</li> <li>• Policy support for mainstreaming climate change into development strategies</li> </ul>   |         | Samoa  |
| <ul style="list-style-type: none"> <li>• Implementation of a low carbon green growth strategy which includes the greening of agriculture.</li> </ul>  |         | South Korea  |
| <ul style="list-style-type: none"> <li>• Strengthening the Philippines' Institutional capacity to adapt to climate change</li> </ul>  |         | The Philippines (MDGF-1656 joint programme)                        |
| <ul style="list-style-type: none"> <li>• Supporting policies and strategies that emphasize the role of forests and water resources in supporting people's livelihoods and associated farming systems.</li> </ul>  | ongoing | IUCN in Zambia, Tanzania, and Mozambique                           |
| <ul style="list-style-type: none"> <li>• Committed to mainstreaming Climate Change mitigation and adaptation measures in the Agricultural Growth Strategy and supporting climate-smart agricultural best practices that improve productivity.</li> </ul>  |         | Ethiopia MoA, joint donors and international knowledge institutes. |
| <ul style="list-style-type: none"> <li>• Policy support for community-based integrated watershed management, including water harvesting, soil conservation and social protection measures.</li> </ul>   | ongoing | Ethiopia   |
| <ul style="list-style-type: none"> <li>• Support for community-based watershed management activities and interventions to address drought and floods. To be scaled up in the near future. Support for drought-resistant wheat, and increased use of integrated pest management.</li> </ul>  | ongoing | Iran   |
| <ul style="list-style-type: none"> <li>• Implementation of agriculture strategy focusing on food security, productivity and geographically adapted resilience programs.</li> </ul>  | ongoing | Kenya  |
| <ul style="list-style-type: none"> <li>• Supporting climate-smart agriculture and water conservation, including key-hole gardens from waste water, minimum tillage and natural resources management.</li> </ul>   | ongoing | Lesotho  |

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| <ul style="list-style-type: none"> <li>Implementing Rural Development Plan 2006-2013 that promotes environmental measures to support the adaptation and mitigation process.</li> </ul>   | ongoing                         | Poland       |
| <ul style="list-style-type: none"> <li>Implementing agriculture development plan which integrates economy, rural development and environment, including measures to support climate resilience and reduced emissions, and conserving biodiversity.</li> </ul>  | ongoing                         | Russia       |
| <ul style="list-style-type: none"> <li>Implementation of strategy on overcoming implications of drought, through proper water management; basin authorities are involved throughout the entire hydrological cycle, and they implement activities such as the development of hydrological indicators to monitor and assess water availability and shortage and the controlled allocation of water resources.</li> </ul>   | ongoing                         | Spain        |
| <ul style="list-style-type: none"> <li>Continued support measures for up-scaling conservation tillage and agro-forestry within a broader conservation agriculture framework</li> </ul>   | ongoing                         | Zambia       |
| <ul style="list-style-type: none"> <li>Supports for conservation agriculture for large and small scale farmers within the overall goals of competitiveness, productivity, black empowerment, and improved access to land.</li> </ul>   | ongoing                         | South Africa |
| <ul style="list-style-type: none"> <li>Subsidies to the most vulnerable farming families with a range of agricultural inputs to enhance productivity and reduce post harvest losses.</li> <li>Implementation of allocation of &gt;10% budget allocation in Agriculture in line with the Maputo Declaration 2003.</li> <li>Development of an Agriculture Investment Plan, with is an agriculture sector wide approach that is aligned to the country's stress. The Malawi growth and development strategy is also aligned to African's Agriculture Development Agenda (CAADP).</li> </ul> | ongoing                         | Malawi       |
| <ul style="list-style-type: none"> <li>Implementation of forests and pasture management program: secure land rights to communities, benefits from carbon finance; large-scale landscape restoration under way</li> <li>Preparation of disaster risk program</li> </ul> <p>Water resource and dam safety programs under way</p>   | ongoing<br>under<br>preparation | Albania      |
| <ul style="list-style-type: none"> <li>Well developed climate resilience strategy under implementation including development of drought, flood, and salt resistant rice farming system, afforestation on coastal protection bunds.</li> </ul>  | ongoing                         | Bangladesh   |
| <ul style="list-style-type: none"> <li>Family farm model integrated into climate-smart agricultural approaches including fisheries and forestry, watershed management, insurance systems</li> </ul>  | ongoing                         | Thailand     |

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| and support to competitiveness.  |         |   |
| <ul style="list-style-type: none"> <li>Plans to support development of resilient varieties, water conservation and a study on predicted climate change impacts on agriculture and sea level rise</li> </ul>  | ongoing | Tunisia   |
| <ul style="list-style-type: none"> <li>Strategy to increase production and exports to the east African community through commercialization, reduction of post harvest losses, marketing chains, access to finance, water for agriculture, infrastructure, reduction of vulnerability, integration of agriculture into climate change strategies</li> </ul>   | ongoing | Uganda  |
| <ul style="list-style-type: none"> <li>7 year program addressing adaptation and mitigation, together with productivity and food security. Supports integration and local ownership and activities such as zero grazing, intensification, improved irrigation, extension and research, value chain coordination, post harvest loss reduction and land rights (all within the CAADP framework)</li> </ul>  | ongoing | Rwanda  |
| <ul style="list-style-type: none"> <li>Action plan for sustainable natural resource use including irrigation and drainage, soil fertility management, livestock management (including construction of biogas complexes), that call on a combined approach to food security, production, and GHG reduction</li> </ul>   | ongoing | Belarus   |
| <ul style="list-style-type: none"> <li>Committed to carbon neutral economy with growth pillars of hydro electric energy, green tourism, and green agriculture.</li> </ul>  | ongoing | Bhutan  |
| <ul style="list-style-type: none"> <li>Adaptation measures ongoing on watersheds, water resources and fisheries legislation</li> </ul>   | ongoing | Fiji  |
| <ul style="list-style-type: none"> <li>National roadmap on adaptation and reduction of GHG emissions, which includes programs for sustainable oil palm production and irrigation modernization with focus on small holders.</li> <li>Implementing the national policy on climate change roadmap for agriculture sector</li> <li>Establishing national policy on biofuel development to reduction carbon emissions</li> <li>Formulate and implement Indonesia's sustainable palm oil systems</li> </ul> | ongoing | Indonesia   |
| <ul style="list-style-type: none"> <li>Support for a low till strategy for agriculture in Alberta; replication in other provinces under consideration.</li> </ul>  | ongoing | Canada with private sector organizations and farmers' groups. |
| <ul style="list-style-type: none"> <li>Formulation of the Philippine Medium-term development plan (2011-2016) that defines the agriculture and fisheries strategy with emphasis on</li> </ul>  | ongoing | The Philippines   |

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| productivity, food security, and climate resiliency.  |         |                 |
| <ul style="list-style-type: none"> <li>Development of a National Agriculture Policy and implementation program on climate change</li> </ul>   | ongoing | The Philippines |
| <ul style="list-style-type: none"> <li>Implement a strategy to enable land-based sectors to respond to increasing pressure by key export markets for information on the GHG-footprints for primary products</li> </ul>  | ongoing | New Zealand     |
| <ul style="list-style-type: none"> <li>Continue to implement a Sustainable Farming Fund that supports community-led, innovative collaboration that improves the financial, environmental and social performance of the land-based industry and enables them to respond and adapt to the challenges of climate change</li> </ul>   | ongoing | New Zealand     |
| <ul style="list-style-type: none"> <li>Development of national food plan along the whole supply chain, including domestic and international food security strategies.</li> </ul>  | ongoing | Australia       |
| <ul style="list-style-type: none"> <li>Ongoing strategy to increase food security while preserving natural resources and addressing vulnerability to climate variability. Highlights include improved rice cultivation, food diversification, water and fertilizer management, watershed protection, and support to rural entrepreneurship.</li> </ul>  | ongoing | Madagascar      |
| <ul style="list-style-type: none"> <li>Moroccan Agricultural Strategic Plan “Plan Maroc Vert” integrates adaptation and mitigation activities to address climate change.</li> </ul>   | ongoing | Morocco         |
| <ul style="list-style-type: none"> <li>Actions to improve efficiency of output and role of research and knowledge transfer to farmers, key in ensuring increased sustainable food production capability, need for better understanding of climate change on agricultural systems and adaptation needs. Committed to a collaborative program of research and sharing of research outcomes at EU and international levels.</li> </ul> | ongoing | Ireland         |
| <ul style="list-style-type: none"> <li>Participatory restoration of ecosystem services, natural capital in South Africa.</li> </ul>   | ongoing | Living lands    |



| Pillar 2: Tools and Technologies for implementing climate-smart agriculture   |           |   |
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| <ul style="list-style-type: none"> <li>International Ecoagriculture Landscape Conference and Knowledge Exchange aiming to achieve syntheses and lessons learned on landscape-scale initiatives.</li> </ul>  | 2012      | EcoAgriculture Partners, UNEP, Bioversity International, Conservation International, World Agroforestry Centre  |
| <ul style="list-style-type: none"> <li>Work conference focused on farmers organizations, about smart adaptation strategies for farmers in cooperation with farmers organizations (leading), research institutes and local governments.</li> </ul>   | 2011      | LTO-Noord, Wageningen University and Research Centre, Agri-Profocus and Agriterro   |
| <ul style="list-style-type: none"> <li>Inventory and evaluation of Integrated Agricultural Landscape Initiatives. Lessons learned about effective organization, governance, planning and monitoring should be synthesized, and used to inform policy and institutional changes. Cross-country assessments can be shared at the Eco-agriculture Conference, and presented to Rio+20, World Water Forum and other international and regional forum. Support forums/platforms for integrated landscape management in important agricultural regions Capacity building for inter-sectoral planning and action</li> <li>Establishment of agricultural landscape monitoring to track impacts over time</li> </ul> | 2011      | EcoAgriculture Partners   |
| <ul style="list-style-type: none"> <li>Support the strengthening of the seed sector in Africa, within the AU's Seed and Biotechnology Programme, by means of an integrated approach towards seed systems development (ISSD), by making use of farmer led best practices, involving both formal and informal seed systems and facilitating multi-stakeholder processes.</li> </ul>   | 2011/2012 | African Union, FAO, Netherlands Government, Agri-ProFocus members (Wageningen University, Rijk Zwaan, East African Farmers Union, SNV, ICCO cs)<br><br>To be started with: Ethiopia, Mali, Malawi, Uganda and Zimbabwe. |
| <ul style="list-style-type: none"> <li>Sustainable consumption to support climate smart agriculture. Sustainable consumption and production as a systemic approach to food production, food security and climate change. Development of an Initiative on Sustainable Consumption and Production in agri-food</li> </ul>   | Ongoing   | UNEP, FAO, Switzerland  |

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| systems as a component of the 10 years Framework Programme on Sustainable Consumption and Production to be presented for adoption at the CSD 19 in 2011   |           |   |
| <ul style="list-style-type: none"> <li>• Support the mobilization of local actors to develop practices adapted to the local context and to strengthen their capacity.</li> <li>• Support the integration of climate change in development policies and programs (for example, NAMAs and NAPAs)</li> <li>• Support agriculture research for development</li> <li>• Encourage cooperation and synergy in agricultural research for development in particular in the framework of CGIAR, EU, Global Research Alliance.</li> </ul>                                    | Ongoing   | France and other partners   |
| <ul style="list-style-type: none"> <li>• Knowledge development and sharing of good practices related to farmer access to markets, and financial services, focussing on optimising productivity and food security in relation to land and water use systems through a systemic value chain approach.</li> </ul>  | 2011/2012 | Agri-ProFocus network at country level (Farmers Organisations, NGO's, private sector, knowledge institutions and government). |
| <ul style="list-style-type: none"> <li>• Development and implementation of sustainability criteria for biofuels and other bio-based products</li> </ul>   | 2010-2011 | Netherlands   |
| <ul style="list-style-type: none"> <li>• The establishment of knowledge and training centers in China, Australia and Mexico to educate local growers in more advanced growing strategies and technologies based on their level of development in order to achieve climate-smart horticulture. In the centers the "trainer concept" is developed next to education. Priva is a Dutch private company in the field of automated climate and process control in the horticultural sector promote climate-smart horticulture via the stepping-stone model.</li> </ul> | 2011-2012 | Priva   |
| <ul style="list-style-type: none"> <li>• Develop and share knowledge about good practices in value chain development in agriculture, with a specific focus on the functioning of multi stakeholder processes, systemic approaches and scaling up in the seed and dairy sectors.</li> </ul>  | 2011-2012 | SNV in cooperation with IFAD in East and Southern Africa, AgriProFocus  |
| <ul style="list-style-type: none"> <li>• Development and implementation of website and information sharing on Fast Start Finance about climate related project investments, including agriculture, for contributing and recipient countries to increase transparency (<a href="http://www.faststartfinance.org/">http://www.faststartfinance.org/</a>)</li> </ul>   | 2010-2012 | Netherlands, UK, Mexico, Germany, Marshall Islands, Colombia, Costa Rica, Indonesia, Norway, Vietnam and others               |
| <ul style="list-style-type: none"> <li>• Implementation of a program to mitigate greenhouse emissions in agriculture by 20-30 percent in 2020 by amongst others development and use of emission-low fodder for livestock; bio-gas production from manure</li> </ul>   | 2010-2013 | Netherlands and relevant partners in the  |

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| fermentation and manure refinery; re-use agricultural residues and waste for bio-based production; energy saving projects and use of renewable energy (including geothermic energy) and CO2-reuse in greenhouses resulting in climate neutral greenhouse production; research and technology development and exchange of low carbon crops and livestock and development of CO2-footprint-tools to inform consumers.  |           | industry   |
| <ul style="list-style-type: none"> <li>Development and enhancement of farmer decision support tools that take a systems based approach that enables farmer to balance nutrient management, nitrate leaching, greenhouse production, productivity and profitability.</li> </ul>   | 2010-2013 | New Zealand  |
| <ul style="list-style-type: none"> <li>Development of finance mechanisms for biogas (digesters) development in Africa, as well as a program on the use of bio-slurry from the biogas plants as organic fertilizer for the increase of productivity of food crops and for sequestration.</li> </ul>   | 2010-2013 | International and local Partners in the African Biogas Partnership Programme (ABPP), Wageningen University & ISD             |
| <ul style="list-style-type: none"> <li>Development of a new international Commission on Climate Change and Sustainable Agriculture to identify what policy change and actions are needed to respond to food security, poverty reduction and climate change</li> </ul>  | 2011-2015 | CGIAR, Global Donor Platform for Rural Development   |
| <ul style="list-style-type: none"> <li>Implementation of Proposal for Mega Program 7: Climate Change, Agriculture and Food Security</li> </ul>   | 2011-2015 | CGIAR  |
| <ul style="list-style-type: none"> <li>Establishment of Taskforce on sustainable palm oil production and marketing in order to use sustainably certified palm oil in 2015 with a reduced carbon footprint</li> </ul>   | 2011-2015 | Product Board for Margarine, Fats and Oils, Netherlands and other industry participants                                      |
| <ul style="list-style-type: none"> <li>Organize regional multi-stakeholder policy dialogues and media outreach on climate smart agriculture in Africa, Caribbean and Pacific</li> </ul>  | 2011-2015 | Technical Centre for Agricultural & Rural Cooperation (CTA)  |
| <ul style="list-style-type: none"> <li>Plantwise Alliance: Working with partners, CABI ( Centre for Agricultural Bioscience International) is building a comprehensive resource of plant health through the web containing regularly updated information on geo-specific distribution and occurrence of crop pests and diseases and management advice on plant health. This is coupled with a system of providing advice on plant health systems to the world's poorest farmers through the development of in-country plant health support systems, and a regional network of</li> </ul> | 2010-2015 | CABI, UK Food and Environment Research Agency (FERA), CIMMYT, IRRI, (with seed funding of the UK, Switzerland and Australia) |

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| trained plant doctors.  |           |           |
| <ul style="list-style-type: none"> <li>• Support for agricultural intensification including sustainable water resource management, irrigation, agro management techniques and plant breeding programs.</li> <li>• Development of a new agriculture strategy based on an intensive but sustainable approach to food production.</li> </ul>   | 2010-2030 | Egypt     |
| <ul style="list-style-type: none"> <li>• Significant research program on: soil carbon, mitigation (livestock and cropping emissions), biochar, adaptation, and demonstration, and extension. Implementation of the Carbon Farming Initiative which will develop a voluntary carbon market to trade domestically and internationally, reductions in agriculture emissions and sequestration opportunities in the land based sector.</li> </ul>   | Ongoing   | Australia |
| <ul style="list-style-type: none"> <li>•</li> </ul>   |           |           |
| <ul style="list-style-type: none"> <li>• Revision of current weather-based risk insurance mechanisms</li> <li>• Establishment of Eurasian Center for Food Security (in cooperation with other countries and partners).</li> <li>• Increased focus on winter wheat and integration of forest and trees in production landscapes</li> <li>• Increased focus on forest fire risk management</li> </ul>   | ongoing   | Russia    |
| <ul style="list-style-type: none"> <li>• Promoting agricultural tools such as water harvesting, farm inputs, conservation agriculture, and soil and water conservation.</li> <li>• Piloting soil carbon sequestration in agricultural systems</li> <li>• 10% of farm land set aside for trees</li> </ul>  |           | Kenya     |
| <ul style="list-style-type: none"> <li>• 17 adaptation and 19 mitigation support measures in place already</li> <li>• Improved pasture management on 5 million hectares with satellite monitoring and verification program.</li> <li>• Creation of National Center of Genetic Resources.</li> <li>• National research to be shared with the world (special focus on Maize)</li> <li>• New programs for sustainability in arid areas: use of new models, increasing extension programs.</li> <li>• Innovative weather insurance program for small farmers</li> <li>• At an international level, committed a to a green fund to pool resources</li> <li>• Use and adapt existing instruments</li> </ul> |           | Mexico    |

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| <ul style="list-style-type: none"> <li>Committed to conservation of genetic resources (largest gene bank of Africa). Development of a comprehensive strategy for agro biodiversity to improve conservation and use of plant genetic resources in adapting to climate change.</li> </ul>   |         | Ethiopia MoA, IBC, CCF-E, Biodiversity International, UNDP, Netherlands, GEF, Norway. |
| <ul style="list-style-type: none"> <li>Support for drought insurance and transition from gravity-fed irrigation systems to more efficient systems.</li> </ul>   |         | Morocco   |
| <ul style="list-style-type: none"> <li>Implementation of system of rice intensification technique that minimizes anaerobic fermentation (by avoiding continual flooded rice culture), thereby restricting methane emissions.</li> </ul>   |         | Madagascar  |
| <ul style="list-style-type: none"> <li>Development and dissemination of green technology</li> <li>Carbon footprint labeling</li> <li>Development of carbon market</li> <li>Incentive measures for green agriculture</li> <li>Waste minimization support measures in agriculture (reduce, recycle, reuse)</li> </ul>   |         | South Korea   |
| <ul style="list-style-type: none"> <li>Promotion of new crop varieties tolerant to changes in temperature, drought, salinity, etc.</li> <li>Drought contingency planning, preparedness, impact assistance</li> <li>Crop contingency planning (resources inventories, improved irrigation, crop diversification, alternate land use system)</li> </ul>   |         | India   |
| <ul style="list-style-type: none"> <li>Application of water distribution, regulation and measurement system, based on small-holder farmer user associations, whereby farmers pay for the volume of water they request and individual usage is documented. Innovative method of prioritizing what work needs to be done with respect to canals, flood gates, pipes, sewer systems, etc.</li> </ul>   |         | Peru  |
| <ul style="list-style-type: none"> <li>Adaptation programs (ongoing): <ul style="list-style-type: none"> <li>Research/surveillance: pests and diseases</li> <li>Improving observations: monitoring climate change</li> <li>Improving plant/ecosystem models that assess impacts</li> </ul> </li> <li>Mitigation practices (ongoing): <ul style="list-style-type: none"> <li>Conservation tillage/nutrient management</li> <li>Improving energy/fertilizer efficiency</li> <li>Perennial grasses</li> <li>Methane digesters/manure management systems</li> </ul> </li> <li>New crop varieties (ongoing) <ul style="list-style-type: none"> <li>Producing higher yields</li> <li>Increases drought and heat resistance</li> </ul> </li> </ul> | ongoing | USA   |

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| <ul style="list-style-type: none"> <li>• Will integrate climate change across Feed the Future research strategy. especially: <ul style="list-style-type: none"> <li>○ Water management</li> <li>○ Legume Productivity</li> <li>○ Extension/education/improved management practices</li> </ul> </li> <li>• Will build capacity of governments and farmers organizations to <ul style="list-style-type: none"> <li>○ Develop risk management tools, strategies</li> <li>○ Address risks of pests, invasive species, disease that come with climate change</li> <li>○ Manage applied research and extension programs.</li> </ul> </li> </ul> |                              |  |
| <ul style="list-style-type: none"> <li>• Implementation of comprehensive strategy against climate change in the Agriculture, Forestry and Fisheries sector, which includes mitigation measures such as enhancement of carbon sequestration in forest and farmland soil, reducing greenhouse gas emissions from livestock and greenhouse horticulture, and the utilization of biomass, and adaptation measures such as developing plant varieties and reviewing cultivation systems.</li> <li>• Water management for irrigation by land improvement district</li> </ul>  | Ongoing                      | Japan  |
| <ul style="list-style-type: none"> <li>• Convening of a Nordic ministerial meeting on effective use of genetic resources with focus on agriculture and climate change</li> </ul>  |                              | Norway, Nordic countries                       |
| <ul style="list-style-type: none"> <li>• Weather based livestock risk insurance facility under implementation and to be scaled up.</li> </ul>   | ongoing                      | Mongolia                                       |
| <ul style="list-style-type: none"> <li>• Development of a toolbox of climate change adaptation tools for farmers</li> </ul>   |                              | Samoa with partners                            |
| <ul style="list-style-type: none"> <li>• Development of vulnerability assessment tools to determine local impacts of climate change on key sectors in the country, particularly on agriculture, water, forestry, coastal and health.</li> </ul>   | Ongoing                      | The Philippines<br>(MDGF 1656 joint programme) |
| <ul style="list-style-type: none"> <li>• LEARN (Livestock Emissions and Abatement Research Network) - a collaborative international approach to facilitate the development of cost effective and practical greenhouse gas mitigation solutions for the livestock sector.</li> <li>• LEARN Fellowship Programme – a number of opportunities for researchers from developing countries to work in New Zealand research institutions in the area of livestock greenhouse gas emissions.</li> <li>• <a href="http://www.livestockemissions.net">www.livestockemissions.net</a></li> </ul>   | 2007-ongoing<br>2008-ongoing | New Zealand                                    |

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| <ul style="list-style-type: none"> <li>Global Research Alliance on Agricultural Greenhouse Gases - establishment of an Alliance that brings countries together to find ways to grow more food without growing greenhouse gas emissions through increasing international cooperation and collaboration, and investment in public and private research activities.</li> <li><a href="http://www.globalresearchalliance.org">www.globalresearchalliance.org</a></li> </ul>                            | 2009 - ongoing | New Zealand   |
| <ul style="list-style-type: none"> <li>NZAGRC (New Zealand Agricultural Greenhouse Gas Research Centre) - the NZAGRC is a significant new investment in a partnership comprising nine of New Zealand's leading research organisations undertaking an ambitious and long-term research and innovation programme to develop technologies to reduce emissions from the agricultural sector while enhancing productivity.</li> <li><a href="http://www.nzagrc.org.nz">www.nzagrc.org.nz</a></li> </ul> | 2010 - ongoing | New Zealand   |
| <ul style="list-style-type: none"> <li>Commission study on best design of interlinked policies and instruments on Adaptation and Mitigation by the High Level Panel of Experts on Food Security (HLPE/FS)</li> </ul>   | proposed       | Committee of Food Security  |
| <ul style="list-style-type: none"> <li>An ad hoc working group on climate change and nutrition that facilitates information exchange and supports nutrition sensitive climate related policies and strategies towards COP16 of UNFCCC.</li> </ul>  | Ongoing        | United Nations System Standing Committee on Nutrition (UNSCN)                   |
| <ul style="list-style-type: none"> <li>Support for multi-risk agricultural insurance</li> <li>Support the transition from gravity – fed agriculture to efficient irrigation systems</li> <li>Support agricultural research programs for delivering climate resilient technologies</li> </ul>   | ongoing        | Morocco   |
| <ul style="list-style-type: none"> <li>Establish Sentinel sites and monitor above and below-ground carbon and soil health through the Africa Soil Information Service (AfSIS).</li> </ul>  | ongoing        | World Agroforestry Centre, CIAT, TSBF, Gates Foundation, AGRA, Kenya            |
| <ul style="list-style-type: none"> <li>Significant research and development program to upscale Evergreen Agriculture in multiple countries in Africa.</li> </ul>   | ongoing        | World Agroforestry Centre (ICRAF), IFAD, Malawi, Zambia, Niger and Burkina Faso |
| <ul style="list-style-type: none"> <li>Joint programming initiative on Agriculture, Food Security, and Climate Change to bring together key research organizations and funders in Europe, for a more multifunctional and sustainable food production</li> </ul>  | Ongoing        | Research organizations and EU member states                                     |

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| for different agro-ecological zones and regions.  |                     |   |
| <ul style="list-style-type: none"> <li>The European Research Framework Programme's work on climate change mitigation options linked to deforestation and agriculture in the context of a post-2012 international agreement on climate change, with particular focus on livestock production.</li> </ul>   | 2010 work programme | the EU, open to international participation   |
| <ul style="list-style-type: none"> <li>National research institution in collaboration with International research institutes developed and released early maturing and drought-resistant maize varieties.</li> <li>Also integrated soil fertility management, water harvesting technologies, risk management tools through macro and micro insurance, enhanced extensions.</li> </ul> | Ongoing             | Malawi  |
| <ul style="list-style-type: none"> <li>Development of carbon efficient farming, especially for small holder farmers</li> </ul>  | Ongoing             | Indonesia   |
| <ul style="list-style-type: none"> <li>AFOLU Readiness: Linking improved land management practices that enhanced productivity and food security, improved use of climate information and risk management.</li> </ul>  | 2011-2015           | COMESA/EAC/SADC/Member States, Norway, European Union, Rockefeller Foundation.                |
| <ul style="list-style-type: none"> <li>Development and implementation of the global framework for the sustainability of products: data and progress collection in the supply chain of food products.</li> </ul>   | 2010                | People for Earth  |
| <b>Pillar 3: Financing for transformational change</b>  |                     |   |
| <ul style="list-style-type: none"> <li>Support Agro-Food SME specialized in the agro-food sector for developing viable business opportunities through offering an innovative combination of access to finance and business development assistance</li> </ul>  | 2011-2012           | Netherlands and Food for All  |
| <ul style="list-style-type: none"> <li>Innovative carbon smart agriculture projects for small holders in Africa</li> </ul>  | 2010-2012           | Africa Agricultural Climate Facility, Rainforest Alliance, NCRC Ghana, Rockefeller Foundation |
| <ul style="list-style-type: none"> <li>Development and implementation of investment strategy under the Forest Investment Program (FIP), linking improved land management practices with afforestation and reduced forest degradation; cropland and grassland management; adoption of soil and moisture conservation measures.</li> </ul>  | 2011-2015           | Burkina Faso  |



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| <ul style="list-style-type: none"> <li>Development and implementation of investment strategy under the Forest Investment Program (FIP), including investments to enhance agricultural productivity aiming at reducing pressures on forests.</li> </ul>   | 2011-2015 | Ghana                            |
| <ul style="list-style-type: none"> <li>Development and implementation of investment strategy under the Forest Investment Program (FIP), including investments to enhance agricultural productivity aiming at reducing pressures on forests.</li> </ul>   | 2011-2015 | Indonesia                        |
| <ul style="list-style-type: none"> <li>Development and implementation of investment strategy under the Forest Investment Program (FIP), including investments to enhance agricultural productivity aiming at reducing pressures on forests.</li> </ul>   | 2011-2015 | Peru                             |
| <ul style="list-style-type: none"> <li>Development and implementation of investment strategy under the Forest Investment Program (FIP), including investments to enhance agricultural productivity aiming at reducing pressures on forests.</li> </ul>   | 2011-2015 | Mexico                           |
| <ul style="list-style-type: none"> <li>Developing and implementing a strategic plan for climate resilience focused on watershed management and improved climate information under the Pilot Program for Climate Resilience</li> </ul>  | 2011-2015 | Nepal                            |
| <ul style="list-style-type: none"> <li>Agricultural Soil Carbon Project: carbon sequestration in maize farming systems and the application of innovative carbon accounting and payment methods that allow large scale application and the inclusion of small holder farmers.</li> </ul>  | 2010-2015 | Kenya and BioCarbon Fund         |
| <ul style="list-style-type: none"> <li>US Department of Agriculture (USDA) Strategic Plan (next five years) <ul style="list-style-type: none"> <li>Capitalize on Opportunities Presented by the Nation's Efforts to Develop Markets for Ecosystem Services and Mitigate Climate Change</li> </ul> </li> </ul>  | 2010-2015 | USA                              |
| <ul style="list-style-type: none"> <li>Establishment of an indo specific expert panel on a pacific regional financing mechanism for food security, energy security, natural resources management</li> <li>Development of private sector philanthropic climate change programs</li> <li>Developing innovative renewable energy programs benefiting farmers</li> </ul> | 2010-2015 | Samoa                            |
| <ul style="list-style-type: none"> <li>Convene a pan-African expert panel to explore the possibility of setting up a financial mechanism for African climate-smart agriculture and food security</li> </ul>  | 2012      | African Union Commission and CTA |
| <ul style="list-style-type: none"> <li>Convening an international agroforestry investment</li> </ul>   |           | Kenya, World Bank,               |

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| forum: "Landscape management and restoration"   |         | ICRAF, PROFOR  |
| <ul style="list-style-type: none"> <li>• Creating value for shareholders and society simultaneously by supporting reduction of the environmental footprint and GHG emissions for livestock, and land and water conservation for livestock and coffee.</li> </ul>  |         | Nestle   |
| <ul style="list-style-type: none"> <li>• Developing and implementing a strategic plan for climate resilience, integrating improved weather information, climate governance, water management, locally-developed land management, agricultural productivity, social protection, and risk reduction measures under the Pilot Program for Climate Resilience</li> </ul>  |         | Niger  |
| <ul style="list-style-type: none"> <li>• Support farmers adaptation to climate change by conservation and management of their crop diversity through contribution to the benefit sharing fund of the International Treaty on Plant Genetic Resources for Food and Agriculture</li> </ul>  |         | Norway   |
| <ul style="list-style-type: none"> <li>• Developing and implementing a strategic plan for climate resilience, including agriculture, land and water management and improved weather and risk management systems under the Pilot Program for Climate Resilience (PPCR)</li> </ul>  |         | Zambia   |
| <ul style="list-style-type: none"> <li>• Bangladesh Climate Change Resilient Fund (BCCRF) established</li> <li>• Also a Pilot Program for Climate Resilience (PPCR) country: program will focus on climate resilient agriculture, water supply, afforestation, coastal bund protection, and related studies.</li> </ul>   | ongoing | Bangladesh   |
| <ul style="list-style-type: none"> <li>• Implementation of the Program of Action for the African Regional Strategy on Disaster Risk Reduction including the funding mechanism.</li> </ul>   | ongoing | AU member states, African Union commission, RECs, UNISD, UNDP, WB GFDRR, UNEP, UNECA.  |
| <ul style="list-style-type: none"> <li>• Information regarding climate finance can be found at: <ul style="list-style-type: none"> <li>○ <a href="http://www.wri.org/publication/summary-of-developed-country-fast-start-climate-finance-pledges">www.wri.org/publication/summary-of-developed-country-fast-start-climate-finance-pledges</a></li> <li>○ <a href="http://www.faststartfinance.org">www.faststartfinance.org</a></li> <li>○ <a href="http://www.climatefinanceoptions.org/">http://www.climatefinanceoptions.org/</a></li> </ul> </li> </ul> |         | <ul style="list-style-type: none"> <li>• WRI</li> <li>• The Netherlands</li> <li>• UNDP/World Bank Climate Finance Knowledge Platform</li> </ul> |
| <ul style="list-style-type: none"> <li>• A program to help access finance and business development assistance and to Agro-Food</li> </ul>   |         | The Netherlands  |

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| entrepreneurs in East and West Africa. It will support Agro-Food SME's.  |         |  |
| <ul style="list-style-type: none"> <li>Development and implementation of financing concepts for the 'missing middle'; business oriented farmers and agri-SMEs like processing companies with a focus on (i) equity funding, (ii) guarantee schemes (iii) embedded services, (iv) insurance schemes.</li> </ul> | ongoing | Kilimo Trust / SNV partner, East African Community (EAC) |