

Sunday, 12 November 2017 Vol. 170 No. 4

AGRICULTURE ACTION DAY - AGRICULTURE-BASED CLIMATE SOLUTIONS: 10 NOVEMBER 2017

This event convened on 10 November 2017, in Bonn, Germany, on the sidelines of the 23rd session of the Conference of the Parties (COP 23) to the UN Framework Convention on Climate Change (UNFCCC). It was organized by the: Food and Agriculture Organization of the United Nations (FAO); Government of New Zealand; World Wildlife Fund (WWF); International Union for Conservation of Nature (IUCN); International Climate Forest Initiative (ICFI); Centre for International Forest Research (CIFOR); World Bank; CGIAR Research Program on Climate Change, Agriculture and Food Security; United Nations Development Programme (UNDP); UN Environment; and Climate and Clean Air Coalition (CCAC). Agriculture Action Day highlighted solutions for addressing climate change mitigation and adaptation in the agricultural sector.

BRIEF HISTORY

The Action Day builds on previous events highlighting the linkages between climate change and agriculture. The Agriculture and Food Security Action Event, which took place on 16 November 2016, in Marrakech at COP 22 for example aimed at fast-tracking small-scale farmers' adaptation to climate change and improving food security. It highlighted how the agricultural sector can play a key role in tackling challenges pertaining both to climate change and to the Sustainable Development Goals (SDGs).

REPORT OF THE EVENT

HIGH-LEVEL PLENARY OPENING

The opening plenary was moderated by René Castro, FAO. He highlighted that the agricultural sector is more exposed to climate change impacts than any other sector, and underlined that, according to the Intergovernmental Panel on Climate Change (IPCC), climate change may lead to 20% increased risk of hunger and malnutrition by 2050. Mohamed Ait Kadi, Morocco, recalled that the Marrakech Action Proclamation adopted at COP 22 specifically refers to food security and climate impacts on agriculture; and delineated the work of the initiative for the Adaptation of African Agriculture (AAA). Peter Bleser, State Secretary, Federal Ministry of Food and Agriculture, Germany, emphasized that farmers and foresters play a key role in the implementation of the Paris Agreement and the SDGs. Inia Seruiratu, Minister for Agriculture, Rural and Maritime Development, and National Disaster Management and high-level climate champion, Fiji, highlighted that sea level rise is already washing away arable land in small island states; and called for governments, civil society and the private sector to cooperate in devising innovative agriculture-based climate solutions. Ankit Kawatra, Founder, Feeding India, and 2017 UN Young Leader for the SDGs, highlighted efforts to prevent food waste in India, and called for recognizing farmers as agents of change. Thomas Pesquet, Astronaut, European Space Agency (ESA), explained how observations from space contribute to climate monitoring.



The dais during the High-level Plenary Opening. L-R: **René Castro**, FAO; **Mohamed Ait Kadi**, Morocco; **Peter Bleser**, State Secretary, Federal Ministry of Food and Agriculture, Germany; **Inia Seruiratu**, Minister for Agriculture, Rural and Maritime Development, and National Disaster Management and High-Level Climate Champion, Fiji; and **Ankit Kawatra**, Founder of Feeding India / 2017 UN Young Leader for SDGs.



The dais during the session on “Low Carbon Livestock.” L-R: **Mark Sadler**, World Bank; **Hayden Montgomery**, Global Research Alliance; **Thomas Pesquet**, Astronaut, ESA; **Anne Mottet**, FAO; and **Fabiana Villa Alves**, Brazilian Agricultural Research Corporation, Brazil.

LOW CARBON LIVESTOCK: MOVING FORWARD

This session was moderated by Hayden Montgomery, Global Research Alliance. Anne Mottet, FAO, discussed options for reducing the carbon intensiveness of the livestock sector, including: soil carbon sinks in pastures; and demand-side interventions such as reduced meat consumption. Fabiana Villa Alves, Brazilian Agricultural Research Corporation, Brazil, discussed options for low carbon beef production in her country, and highlighted “Carne Carbona Neutron,” a pilot project aimed at livestock decarbonization. Mark Sadler, World Bank, discussed investment opportunities for low carbon livestock in sub-Saharan Africa, while also emphasizing the need to address excessive meat consumption in the Global North. Ruth Häckh, European Shepherds Network, explained that pastoralists like her often had to rely on subsidies from the European Union to complement their livelihoods, and called for financial compensation for their role as providers of agro-ecological landscape services. María Sánchez Mainar, International Dairy Federation, discussed industry-wide initiatives in the dairy sector aimed at reducing emissions.

INTEGRATED LANDSCAPE MANAGEMENT – SUPPORTING CLIMATE CHANGE INTERVENTIONS DEFINED IN THE NDCS

The panel was moderated Paula Caballero, World Resources Institute (WRI). Gemedo Dalle, Minister of Environment, Forest and Climate Change, Ethiopia, pointed to restoration projects that successfully increase soil fertility and water availability in his country, therefore reducing crop failures. Ann Tutwiler, Director General, Bioversity International, recalled significant progress made in identifying linkages between forest management and nutrition. René Castro, FAO, highlighted recent evidence from 23 countries showing that it is possible to simultaneously increase forest cover and food production, breaking with the long-held belief that one comes at the expense of the other.

Karin Kemper, World Bank, emphasized the need to think beyond traditional public finance and support small and medium enterprises (SME) in accessing credit. Coraina de la Plaza, Global Forest Coalition (GFC), underlined that indigenous knowledge is invaluable, citing the example of a community in



The dais during the session on “Integrated Landscape Management – Supporting Climate Change Interventions Defined in the NDCs.” L-R: **Coraina de la Plaza**, Global Forest Coalition; **Gemedo Dalle**, Ethiopia; **Ousame Ndiaye**, Senegal; **Paula Caballero**, WRI; **Ann Tutwiler**, Director General, Bioversity International; **René Castro**, FAO; **Karin Kemper**, World Bank; and **Katia Avilés-Vázquez**, Organización Boricúa de Agricultura Ecológica.

Chile using native trees to successfully restore degraded land. Ousame Ndiaye, Senegal, emphasized the need to: downscale climate data to farm-level size; translate probabilistic information to better suit farmers' information needs; and identify appropriate communication channels to reach them. Katia Avilés-Vázquez, Organización Boricua de Agricultura Ecológica, highlighted the importance of fostering agro-ecological practices and promoting the free exchange of seeds.

MANAGING WATER SCARCITY FOR AGRICULTURE

This session was moderated by Oyun Sanjaasuren, Global Water Partnership. Opening the session, Oyun described pressures on water in her country, Mongolia, and called for holistic solutions to water scarcity. Olcay Ünver, FAO, reflected on reasons for optimism, including: the potential to reduce water usage through efficiency gains; and the growing prevalence of integrated agriculture practices. Luis Felipe Alcocer Espinosa, Comisión Nacional del Agua, Mexico, outlined national strategies, policies, and projects for efficient water management and soil conservation. Mariet Verhoeff-Cohen, Women for Water Partnership, outlined the Global Framework on Water Scarcity in Agriculture, saying that it is designed to bring together key actors across the globe and various sectors to ensure water and food security for all.



Mariet Verhoeff-Cohen, Women for Water Partnership

Tatiana Fedotova, World Business Council for Sustainable Development, outlined her organization's work on water-smart agriculture in India, highlighting a partnership between 11 companies to study water solutions to increase crop yields, and strengthen farmer's livelihoods and water efficiency. Avinash Tyagi, Secretary General, International Commission on Irrigation and Drainage (ICID), highlighted the ICID Vision 2030 which includes: facilitating higher crop productivity while reducing water and energy use; exchanging information, knowledge and technology; and enabling cross-disciplinary and inter-sectoral engagement. Nthopyizi Mphande, a subsistence farmer from Zambia, described the challenges of farming in an area subjected to both seasonal drought spells and swampy waterlogged soils.

UNLOCKING THE POTENTIAL OF SOIL ORGANIC CARBON FOR CLIMATE CHANGE ACTION

This session was moderated by Eduardo Mansur, FAO. Inia Seruiratu, Fiji, recalled recent extreme weather events in the Pacific, delineated associated impacts on the agricultural and livestock sectors, and emphasized the need to improve productivity while reducing greenhouse gas (GHG) emissions. Luca Montanarella, Chair, Intergovernmental Panel on Soils, drew attention to the Global Symposium on Soil Organic Carbon (SOC), which addressed the role of SOC for climate change, food security and the SDGs. Tekini Nakidakida, Fiji, highlighted

soil management efforts in the context of climate mitigation and adaptation in Pacific island states, aimed at changing damaging



Jo House, University of Bristol

soil management practices such as the burning of crop residue.

During the ensuing discussion, Jo House, University of Bristol, highlighted the IPCC's work on emissions from soils, and the impact of climate change on soils; noting that the 2006 IPCC Guidelines for National Greenhouse Gas Inventories guidelines are being updated to incorporate latest methods for soil carbon management. Deon Terblanche, WMO, highlighted the work of the World Climate

Research Programme, drawing attention to the GHG bulletin, and the Integrated GHG Global Information System (IG3IS). Terran Giacomini, National Canadian Farmers Union, La Via Campesina, cautioned against including soil carbon in carbon markets, and highlighted the pressure that soil carbon sequestration exerts on the land. Nazir Foerd, Indonesia, noted efforts to restore peatlands in Indonesia. Jean-Luc Chotte, United Nations Convention to Combat Desertification (UNCCD), highlighted capacity constraints surrounding depositing carbon in the ground.

DOWNLOADING CLIMATE DATA TO GROW AGRICULTURE

The panel, moderated by Victoria Hatton, New Zealand, addressed data instruments to support strengthening climate resilience. Marc Sadler, World Bank, pointed to examples of modern farm extension services, *inter alia*: water pumps controlled by soil moisture sensors, and parametric insurance payments via mobile banking. Sophia Huyer, Research Program on Climate Change, Agriculture and Food Security at CGIAR, emphasized gender differences in relation to climate data, both in terms of communication channels and the type of information needed. Francesca Eggleton, Fonterra Co-operative Group Limited, delineated how her company supports its farmers in reducing their GHG emissions, increasing water efficiency, and reducing fertilizer needs. Masamichi Saigo, Japan, highlighted data-based tools for migratory pest management, and explained how drones can be used for precision agriculture. René Castro pointed to the need for solutions to incentivize private investment in transforming the agriculture sector, including for small-scale farms.



Sophia Huyer, Research Program on Climate Change, Agriculture and Food Security at CGIAR

SCALING UP CLIMATE-SMART AGRICULTURE TO ACHIEVE THE NDCS IN THE AGRICULTURE SECTORS

Tony Simons, World Agroforestry Centre (ICRAF), moderated the session. Rima Al-Aaz, FAO, highlighted the updated Climate-Smart Source Book and noted that climate-smart agriculture has three objectives: to increase incomes generated from sustainable agriculture; adapt and build resilience to climate



Maria Eugenia Silva, Uruguay

change; and reduce GHG emissions. Daniel Zimmer, Climate-KIC, discussed a value chain approach to climate-smart agriculture, comprising a “climate-smart agriculture booster”, which is an open platform helping to build a community of practice. Maria Eugenia Silva, Uruguay, highlighted practical examples from her country that aim at increasing adaptive capacity, for example through soil

management, and reforms in the livestock area.

Nthopayizi Mphande, Zambian farmer, discussed constraints preventing her from adopting climate-smart practices, for example noting that converting to organic farming is costly. Moses Mwale, Zambia Agriculture Research Institute, advocated for a farming systems approach, which addresses the needs of farmers and enables them increase productivity, while reducing nutrient inputs. Tonya Rawe, CARE, called



Nthopayizi Mphande, Zambian farmer

for a participatory approach focusing on gender, emphasizing that measures cannot be considered climate-smart unless they addresses inequalities at all levels. Bruce Campell, CGIAR, emphasized the need for climate-smart indicators, which he said should be “built in from the start.”

GLOBALLY IMPORTANT AGRICULTURAL HERITAGE SYSTEMS AND CLIMATE CHANGE

This panel, moderated by Anne Mottet, FAO, discussed how traditional agricultural practices contribute to mitigation and climate change adaptation. René Castro delineated criteria for the identification of Globally Important Agricultural Heritage Systems (GIAHS), including agrobiodiversity and landscape features. Mauro Agnoletti, FAO and University of Florence, highlighted that traditional agricultural structures, such as dry stone terraces, allow for better adaptation to changing environmental conditions than modern systems.

Min Qingwen, Chinese Academy of Sciences and FAO, pointed to the resilience of Hani Rice Terraces to drought episodes, underlining that Hani rice yields had increased during the severe drought that affected China in 2009. Rachid Moussadek, Morocco, outlined GIAHS in Moroccan oasis landscapes, and detailed how the sites address the need to balance conservation, climate change adaptation and socio-economic development. Elisangela Aquino, Brazilian farmer, noted via video message that “farmers are also researchers,” and outlined community efforts to develop communal seed banks with support from the FAO.

PROMOTING COLLABORATIVE CLIMATE ACTION TO REDUCE FOOD LOSS AND WASTE

Rima Al-Azar moderated the session. Craig Hanson, World Resources Institute, explained that one third of food produced is lost or wasted every year, highlighting a three-point strategy aimed at targeting, measuring and taking action to address the problem. Isabel Chanteaux, Messe Düsseldorf GmbH, highlighted food saving initiatives undertaken by the packaging industry. Martina Otto, UN Environment, highlighted the UN Environment Assembly’s (UNEA’s) resolution on food



The dais during the session on “Globally Important Agricultural Heritage Systems and Climate Change.” L-R: **Anne Mottet**, FAO; **Mauro Agnoletti**, University of Florence, Italy; **Min Qing Wen**, Chinese Academy of Science; **Rachid Moussadek**, Morocco; and **René Castro**, FAO.



The dais during the session on “Promoting Collaborative Climate Action to Reduce Food Loss and Waste.” L-R: **Dorothee Merkl**, FAO; **Rima Al Azar**, FAO; **Craig Hanson**, WRI; **Isabel Chanteaux**, Messe Düsseldorf GmbH; **Martina Otto**, UN Environment; **Pascal Martinez**, GEF; and **Toine Timmermans**, CGIAR.

loss and waste, noting that member states would report back progress at UNEA later this year. Toine Timmermans, CGIAR, highlighted one of his organization’s new programmes which focuses on climate change, agriculture and food security and aims at developing evidence, creating awareness and building partnerships. Pascal Martinez, Global Environment Facility (GEF), noted GEF’s efforts aimed at enabling countries to tackle environmental degradation through integrated management approaches.

REDUCING THE VULNERABILITY OF MOUNTAIN AND DRYLAND ECOSYSTEMS TO CLIMATE CHANGE

This panel was moderated by Maya Hunt. Eduardo Mansur, FAO, highlighted the great potential of nature-based solutions and said, “the best place to store water is in the soil.” Andrew Taber, Executive Director, The Mountain Partnership, emphasized the need to strengthen livelihood options of mountain communities. Djimé Adoum, Executive Secretary, Permanent Interstate Committee for Drought Control in the Sahel, highlighted interlinkages between desertification, food security, ethnic conflict and migration. Somaya Omer Abdoun, Sudan, built on the example of a project on the gum Arabic sector to showcase how environmental restoration can go hand-in-hand with reducing the vulnerability of small producers.

Tony Simons, World Agroforestry Centre (ICRAF), elaborated on the role of agro-forestry in reducing vulnerability to climate change in drylands, highlighting restoration projects in Tigrey, Ethiopia, and Yunnan, China. Sasha Alexander, UNCCD, discussed the concept of land degradation neutrality, which refers to the state where the amount of healthy and productive land resources remains stable or increases.

CLOSING OF THE EVENT

Amaru Torre, Nicaraguan farmer, highlighted the importance of young farmers like him attending the event, pointing out that they are at the forefront of dealing with climate change impacts. Jesús Vázquez, Puerto Rican farmer, delineated the contribution of small-scale farmers to strengthen community resilience by means of providing access to food, as recently evidenced in Puerto Rico after the island was hit by hurricane Maria.

Summarizing key themes of the event, James Dalton, IUCN, noted the need for more efficient use of water in agriculture. He added that a range of solutions exist, but that climate-smart agricultural practices need to be scaled-up.

Recalling key themes of the day, Inia Seruiartu, Fiji, underscored dialogue, coordination and collaboration as essential elements to devise agriculture-based climate solutions; and closed the meeting at 7:57pm.



The dais during the session on “Reducing the Vulnerability of Mountain and Dryland Ecosystems to Climate Change.” L-R: **Maya Hunt**, moderator; **Eduardo Mansur**, FAO; **Andrew Taber**, Executive Director, The Mountain Partnership; **Somaya Omer Abdoun**, Sudan; **Tony Simons**, Director General, ICRAF; **Sasha Alexander**, UNCCD; and **Djimé Adoum**, Executive Secretary, Permanent Interstate Committee for Drought Control in the Sahel.