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KORONIVIA

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KORONIVIA JOINT WORK ON AGRICULTURE: Analysis of submissions

Submissions under UNFCCC decision 4/CP.23
provided by Parties and observers as at 20 May 2018



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FOREWORD

FAO applauds the adoption of the landmark decision known as the Koronivia Joint Work on Agriculture. The decision recognizes how vital agriculture is in building resilient and sustainable futures for every human being, while preserving natural ecosystems.

The decision could not have been more timely. Climate change is undermining all dimensions of food security – food availability, access, utilization and stability – which the Paris Agreement in its preamble recognizes as a “fundamental priority” to safeguard. It is sobering that, in the years since the Paris Agreement has been adopted, we have not been able to safeguard food security. The situation has actually worsened. 2017 represented the third year in a row during which world hunger has risen. The absolute number of undernourished people has increased to nearly 821 million in 2017, from around 804 million in 2016.

The 2018 State of Food Security and Nutrition in the World: Building Climate Resilience for Food Security and Nutrition report found that, alongside conflict, climate change is a key driver of food insecurity and under- or malnutrition. Hunger is significantly worse in countries with agricultural systems that are highly sensitive to rainfall and temperature variability and severe drought, and where a large proportion of livelihoods rely on agriculture.

Considerable work is urgently needed to ensure we “leave no one behind” on the road towards achieving the Sustainable Development Goals on poverty (SDG 1), food security and nutrition (SDG 2) and climate change (SDG 13), which underpin all other SDGs in turn. The Koronivia Joint Work has a crucial role to play in rallying international commitment to act, sharing proven solutions and creating an enabling environment to help raise ambition and scale up action.

FAO will continue to play an active role. The Koronivia decision resonates with FAO’s core mandate to eliminate hunger, food insecurity and malnutrition, reduce rural poverty, and make agriculture, forestry and fisheries more productive and sustainable. It also relates to Outcome 2 of FAO’s corporate Strategy on Climate Change, which strives to achieve improved integration of food security and nutrition, agriculture, forestry and fisheries considerations within the international agenda on climate. FAO has been supporting Parties in engaging in the negotiations on issues relating to agriculture since they began, by providing technical presentations during in-session workshops, making formal submissions, assisting countries requesting support in formulating their own submissions and facilitating informal exchanges between countries.

FAO is committed to enhancing its own capacities on climate change (Outcome 3 of its Strategy on Climate Change), to better serve its Member Nations. The Technical Network on Climate Change, FAO’s internal knowledge exchange mechanism on climate change, has therefore undertaken this summary of submissions expressing Parties’ and Observers’ views on elements to be included in the Koronivia Joint Work going forward, in collaboration with the Euro-Mediterranean Center on Climate Change (CMCC).

Let us work together on behalf of the one in nine people who still go hungry today. We are united by the shared conviction that transforming the agricultural sectors to address the climate challenge is a crucial step in eradicating hunger for good.



René Castro Salazar
FAO Assistant Director-General
Climate, Biodiversity, Land and Water Department

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In addition, the authors would like to thank the over 30 representatives from bilateral development agencies, NGOs, the private sector, research institutions, international and UN agencies, who gave feedback on the initial draft of this document, as part of the review organized in advance of the 48th session of the Subsidiary Bodies in Bonn in May 2018. Gratitude is also due to the graphic designers, Renato dalla Venezia (CMCC) and Juan Luis Salazar (FAO), for their continuous support.

This analysis was undertaken with support from FAO's Technical Network on Climate Change (TNCC). Launched as an internal network in 2014, the TNCC aims to create an enabling environment for the exchange and generation of knowledge and ideas on food security and climate change.

ABBREVIATIONS AND ACRONYMS

AC	Adaptation Committee
AFB	Adaptation Fund Board
AGN	African Group of Negotiators
AWD	Alternate Wetting and Drying
BUR	Biennial Update Report
CAN	Climate Action Network International
CARE	CARE international
CBDR	Common but differentiated responsibilities
CCAFS	Research Program on Climate Change, Agriculture and Food Security of the CGIAR
CDM	Clean Development Mechanism
CGE	Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention
CGIAR	Consultative Group on International Agricultural Research
CIAT	International Center for Tropical Agriculture
CIRAD	Centre de coopération internationale en recherche agronomique pour le développement
CNE	Confédération Nationale de l'Elevage
CNIEL	Centre National Interprofessionnel de l'Economie Laitière
COP	Conference of the Parties
CSA	Climate-Smart Agriculture
CTCN	Climate Technology Centre & Network
CUTS	Consumer Unity & Trust Society International
EAC	East African Community
EDF	Environmental Defense Fund
ENGO	Environmental Non-Governmental Organization

EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GASL	Global Agenda for Sustainable Livestock
GCF	Green Climate Fund
GHG	Greenhouse gases
IDELE	Institut de l'élevage
IFA	International Fertilizer Association
IFAD	International Fund for Agricultural Development
IGO	Intergovernmental Organization
ILUC	Indirect Land Use Change
INMS	International Nitrogen Management System
INRA	Institut National de la Recherche Agronomique
INTERBEV	Association Nationale Interprofessionnelle du Bétail et des Viandes
IPCC	Intergovernmental Panel on Climate Change
IRD	Institut de Recherche pour le Développement
KJWA	Koronivia Joint Work on Agriculture
LDCs	Least Developed Countries
LDN	Land Degradation Neutrality
LEAP	Livestock Environmental Assessment and Performance Partnership
LEG	Least Developed Countries Expert Group
M&E	Monitoring and Evaluation
MRV	Monitoring, Reporting and Verification
NACSAA	North America Climate Smart Agriculture Alliance
NAE	Non-Admitted Entity
NAP	National Adaptation Plan
NDC	Nationally Determined Contribution
NGO	Non-Governmental Organization
NPP	Net Primary Productivity
OXFAM	Oxford Committee for FAMine Relief International
PCCB	Paris Committee on Capacity Building
Point Blue	Point Blue Conservation Science

SB	Subsidiary Body
SB 48	48 th session of the Subsidiary Bodies
SB 53	53 th session of the Subsidiary Bodies
SBI	Subsidiary Body of Implementation
SBSTA	Subsidiary Body for Scientific and Technological Advice
SCF	Standing Committee on Finance
SDGs	Sustainable Development Goals
SLM	Sustainable Land Management
SOC	Soil Organic Carbon
TEC	Technology Executive Committee
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nation Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USA	United States of America
WB	World Bank
WBCSD	World Business Council for Sustainable Development
WEDO	Women's Environment and Development Organization
WFO	World Farmers Organisation
WFP	World Food Programme
WIM ExCom	Executive Committee of the Warsaw International Mechanism for Loss and Damage
YOUNGO	Youth non-governmental organizations

INTRODUCTION

The agriculture negotiations under the United Nations Framework Convention on Climate Change (UNFCCC) were incorporated as an agenda item under the Subsidiary Body for Scientific and Technological Advise (SBSTA) in 2011 with decision 2/CP.17 (paragraphs 75-77)¹.

The Conference of Parties (COP) requested SBSTA to consider issues related to agriculture, with the aim of exchanging views.

The discussions that followed for the next seven years led to a historic milestone in Bonn at COP23, where Parties adopted decision 4/CP.23 on the "Koronivia Joint Work on Agriculture" (KJWA)².

The decision recognizes the fundamental importance of agriculture in responding to climate change, and calls for joint work between SBSTA and the Subsidiary Body of Implementation (SBI) on specific elements, including through workshops and expert meetings. The KJWA broadens the conversation on agriculture from its former scientific and technical focus to also consider implementation.

As mandated by the decision, the work under the decision should take into consideration the vulnerabilities of agriculture to climate change and approaches to address food security. The Subsidiary Bodies are expected to report on progress and outcomes of the KJWA to the COP at its twenty-sixth session in November 2020. The paragraph 2 of the KJWA decision provides a list of initial elements on which Parties were invited to submit their views by 31 March 2018:

- ▶ Modalities for implementation of the outcomes of the five in-session workshops on issues related to agriculture and other future topics that may arise from this work;
- ▶ Methods and approaches for assessing adaptation, adaptation co-benefits and resilience;
- ▶ Improved soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management;
- ▶ Improved nutrient use and manure management towards sustainable and resilient agricultural systems;
- ▶ Improved livestock management systems;
- ▶ Socioeconomic and food security dimensions of climate change in the agricultural sector.

The five in-session workshops mentioned in element 2(a) of the KJWA took place between 2013 to 2015 during Subsidiary Bodies sessions and covered a wide range of themes related to agriculture, focusing, amongst others, on adaptation, early warning systems and sustainable agriculture production (see **Table 1** for a full list of workshops).

These workshops represented an important opportunity for Parties and invited external experts from international organizations to exchange experiences and views on these items. Following each workshop, a report was prepared by the UNFCCC secretariat, summarizing the discussions and the information provided.

¹ UNFCCC. 2012. Report of the Conference of the Parties on its seventeenth session [online]. [Cited 3 October 2018]. <https://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf.pdf#page=4>

² UNFCCC. 2018. Report of the Conference of the Parties on its twenty-third session [online]. [Cited 3 October 2018]. <https://unfccc.int/sites/default/files/resource/docs/2017/cop23/eng/11a01.pdf>

TABLE 1.

IN-SESSION WORKSHOPS ON ISSUES RELATED TO AGRICULTURE

WORKSHOP TITLE	SESSION	REPORT
In-session workshop on the current state of scientific knowledge on how to enhance the adaptation of agriculture to climate change impacts while promoting rural development, sustainable development and productivity of agricultural systems and food security in all countries, particularly in developing countries.	WARSAW, NOVEMBER 2013	FCCC/SBSTA/2014/INF.2
In-session workshop on the development of early warning systems and contingency plans in relation to extreme weather events and its effects such as desertification, drought, floods, landslides, storm surge, soil erosion, and saline water intrusion.	BONN, JUNE 2015	FCCC/SBSTA/2015/INF.6
In-session workshop on the assessment of risk and vulnerability of agricultural systems to different climate change scenarios at regional, national and local levels, including but not limited to pests and diseases.	BONN, JUNE 2015	FCCC/SBSTA/2015/INF.7
In-session workshop on the identification of adaptation measures, taking into account the diversity of the agricultural systems, indigenous knowledge systems and the differences in scale as well as possible co-benefits and sharing experiences in research and development and on the ground activities, including socioeconomic, environmental and gender aspects.	BONN, MAY 2016	FCCC/SBSTA/2016/INF.5
In-session workshop on the identification and assessment of agricultural practices and technologies to enhance productivity in a sustainable manner, food security and resilience, considering the differences in agro-ecological zones and farming systems, such as different grassland and cropland practices and systems.	BONN, MAY 2016	FCCC/SBSTA/2016/INF.6

The KJWA decision requests for future work to be carried out in close collaboration with constituted bodies under the Convention (see **Table 2**), providing an opportunity for interlinkages and harmonized action under the different bodies³. Those bodies aim to provide advice, technical input and expertise to advance the implementation of the Convention and cover different areas of work which might be relevant for the agriculture sectors, such as:

- ▶ capacity building (e.g. Paris Committee on Capacity Building, Climate Technology Center & Network, Technology Expert Committee);
- ▶ financing coordination and mobilization (e.g. Standing Committee on Finance);
- ▶ promotion of enhanced action on adaptation (Adaptation Committee);
- ▶ sharing of relevant information, knowledge, experience and good practices (e.g. Climate Technology Center & Network, Technology

Executive Committee, Adaptation Committee, Paris Committee on Capacity Building); and
 ▶ technology support and transfer to developing countries (e.g. Climate Technology Center & Network, Technology Expert Committee, Adaptation Committee).

On 8–9 March 2018, FAO organized an informal ‘Koronivia Dialogue’ in Rome, Italy, co-facilitated with Oxford Climate Policy and supported by the World Bank, with the objective of providing a neutral forum for open discussion among agriculture negotiators on the implementation of the KJWA and to offer support to countries in finalizing their submissions⁴. Recognizing that decision 4/CP.23 does not mandate the UNFCCC secretariat to produce a synthesis of submissions made, a number of Parties attending the Dialogue suggested that FAO might provide a factual summary of submissions made. Supported by its Technical Network on Climate Change, FAO is duly

³ For additional information on the UNFCCC bodies and their previous agriculture-related work, see FAO. 2018. The Koronivia Joint Work on Agriculture and the Convention Bodies: An Overview. www.fao.org/3/CA1544EN/ca1544en.pdf

⁴ FAO. 2018. Koronivia Dialogue, Post Dialogue Reflections [online]. [Cited 3 October 2018]. www.fao.org/climate-change/events/detail-events/en/c/1105126/

undertaking this exercise in light of Outcome 2 of its corporate Strategy on Climate Change, which strives to achieve *Improved integration of food security and nutrition, agriculture, forestry and fisheries considerations within the international agenda on climate change through reinforced FAO engagement*. The FAO Strategy on Climate Change was adopted by Member Nations on the occasion of the 40th FAO Conference in July 2017.

The submissions were considered at the 48th session of the Subsidiary Bodies (SB 48) of the Convention, in Bonn (30 April – 10 May 2018). By outlining possible ways forward, this initial round of submissions represented an

important milestone for the KJWA process. The SB 48 session in Bonn concluded with a concrete roadmap⁵ for the forthcoming three years that includes workshops on the elements listed in the decision (from 2(a) to 2(f)), a mandate to the Secretariat to prepare a report for each workshop and a call for submissions on the workshop topic before each session.

The analysis takes into consideration the 21 KJWA submissions made by Parties and 27 by observers and published by 20th of May 2018 on the UNFCCC submission portal, as well as the African Group of Negotiators (AGN) and Least Developed Countries (LDC) group submissions⁶.

TABLE 2.

KEY CONSTITUTED BODIES UNDER THE CONVENTION RELEVANT FOR AGRICULTURE

CONSTITUTED BODY	SHORT DESCRIPTION	LINK
CLIMATE TECHNOLOGY CENTRE & NETWORK (CTCN)	<i>The CTCN promotes the accelerated transfer of environmentally sound technologies for low carbon and climate resilient development at the request of developing countries. CTCN provides technology solutions, capacity building and advice on policy, legal and regulatory frameworks tailored to the needs of individual countries.</i>	www.ctc-n.org/about-ctcn
TECHNOLOGY EXECUTIVE COMMITTEE (TEC)	<i>The TEC was created in 2010 and it focuses on identifying policies that can accelerate the development and transfer of low-emission and climate resilient technologies. TEC works closely with the CTCN to address technology development and transfer issues and together (TEC&CTCN) they form the Technology Mechanism.</i>	http://unfccc.int/ttclear/tec
ADAPTATION COMMITTEE (AC)	<i>The Adaptation Committee was established by the COP at its 16th session as part of the Cancun Agreements (decision 1/CP.16) to promote the implementation of enhanced action on adaptation in a coherent manner under the Convention, inter alia, through various functions. Its work was launched at COP 17.</i>	https://unfccc.int/process/bodies/constituted-bodies/adaptation-committee-ac
STANDING COMMITTEE ON FINANCE (SCF)	<i>The mandate of the SCF is to assist the COP in exercising its functions in relation to the Financial Mechanism of the Convention. This involves: improving coherence and coordination in the delivery of climate change financing; rationalization of the Financial Mechanism; mobilization of financial resources; measurement, reporting and verification of support provided to developing country Parties.</i>	https://unfccc.int/process/bodies/constituted-bodies/standing-committee-on-finance-scf
PARIS COMMITTEE ON CAPACITY-BUILDING (PCCB)	<i>The PCCB was established by the COP in 2015 as part of the adoption of the Paris Agreement to address gaps and needs, both current and emerging, in implementing capacity-building in developing country Parties and further enhancing capacity-building efforts, including with regard to coherence and coordination in capacity-building activities under the Convention.</i>	https://unfccc.int/process/bodies/constituted-bodies/paris-committee-on-capacity-building
LEAST DEVELOPED COUNTRIES EXPERT GROUP (LEG)	<i>The COP established the LEG, the membership of which is to be nominated by Parties, with the objective of supporting the preparation and implementation strategies of national adaptation programmes of action.</i>	https://unfccc.int/process/bodies/constituted-bodies/least-developed-countries-expert-group-leg
CONSULTATIVE GROUP OF EXPERTS ON NATIONAL COMMUNICATIONS FROM PARTIES NOT INCLUDED IN ANNEX I TO THE CONVENTION (CGE)	<i>The COP established the CGE with the objective of improving the process of the preparation of national communications from Parties not included in Annex I to the Convention.</i>	https://unfccc.int/process/bodies/constituted-bodies/consultative-group-of-experts-on-national-communications-from-parties-not-included-in-annex-i-to-the-convention-cge

⁵ UNFCCC. 2018. Koronivia joint work on agriculture: Draft conclusions proposed by the Chairs [online]. [Cited 3 October 2018]. https://unfccc.int/sites/default/files/resource/lo1_2.pdf

⁶ UNFCCC. 2018. Submission Portal. In: UNFCCC [online]. [Cited 20 May 2018]. www.unfccc.int/sites/SubmissionPortal/Pages/Home.aspx

Objective

This analysis aims to summarize the views submitted on the elements included in the Koronivia Joint Work on Agriculture and the process foreseen for the implementation of this joint work, including possible ways forward for

the agriculture community in the context of the international climate change negotiations.

The summary intends to make the wide range of views submitted more easily accessible to those interested – including to Parties and observers to the UNFCCC, but also FAO staff working on climate change more generally as well as interested members of the public.

Methodology

The analysis takes into consideration 21 submissions by Parties and observers and 27 by observers on the KJWA. All the submissions presented by Parties are in English and are publicly available on the UNFCCC submission portal⁷.

Each submission was studied in full text to ensure a comprehensive assessment of the views provided by Parties and observers. Original text was extracted into a database

that permits cross-referencing on different aspects of individual submissions. The database includes categories for each KJWA element 2(a) to 2(f); new or further topics mentioned; possible process proposed; outcomes desired, alongside others.

It is important to note that the submissions are highly heterogeneous in structure, contents and length. This has a strong influence on the level of coverage and detail of views on the proposed elements to be included in the joint work as well as on the process and expected outcome of the KJWA.

■ BOX 1. KEY TERMS

*Agriculture or the agricultural sectors, when used by FAO, comprises the sub-sectors of crops, livestock, fisheries and aquaculture and forestry. The terms **agriculture** or the **agricultural sector** in the UNFCCC domain are defined in accordance with IPCC terminology and cover emissions from enteric fermentation, manure management, rice cultivation, prescribed burning of savannas and grassland, and from soils (i.e. agricultural emissions). Emissions and removals from grassland and cropland are covered under LULUCF (Land Use Land Use Change and Forestry). In the IPCC 2006, the two sectors (i.e. agriculture and LULUCF) are treated together in the AFOLU (Agriculture, Forestry and Land Use) sector⁸.*

***Implementation** under the KJWA may either refer to the joint work to be undertaken by SBI and SBSTA (e.g. through workshops, technical papers, expert meetings, decisions and recommendations) or to the operational execution on the ground of agricultural actions and measures.*

***Food security**, although having a central role in the KJWA, is not defined in the decision. When used by FAO, the term draws on the World Food Summit definition (1996): “Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” From this definition, four main dimensions of food security are identified: food availability, food access, utilization and stability⁹.*

*>> In this analysis, the terms “**agriculture**”, “**implementation**” and “**food security**” are reported from the submissions without specifically referring to any specific meaning, thus not prejudging the interpretation applied by different Parties. <<*

⁷ Ibid.

⁸ IPCC. 2006. Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme, Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds). Published: IGES, Japan – Volume 4

⁹ FAO. 2006. Policy Brief Issue 2: Food Security [online]. [Cited 3 October 2018]. www.fao.org/fileadmin/templates/faoitally/documents/pdf/pdf_Food_Security_Cocept_Note.pdf

The analysis of submissions was developed following a stepwise approach:

► **STEP A:** A first draft with a partial and preliminary analysis including an in-depth overview based on Party submissions provided by the cut-off date of 16 April 2018 was available for comments during SB 48, for a total of 17 submissions. The cut-off was waived in the cases of the AGN and LDC group

submissions, as they represent a large number of Parties. The draft was opened for comments until the 20th of May 2018. A total of 111 comments were received from 11 reviewers.

► **STEP B:** A complete analysis of submissions from all Parties (21) and observers (27) is provided, taking into consideration comments and observations received on the first draft version (STEP A)

PARTY AND GROUP SUBMISSIONS¹⁰

- 1 **Argentina**
- 2 Australia
- 3 Bangladesh
- 4 Benin
- 5 Brazil
- 6 Burundi
- 7 China
- 8 Egypt on behalf of the African Group of Negotiators (AGN)
- 9 Ethiopia on behalf of the Least Developed Countries (LDC) group
- 10 European Union and its 28 member states¹¹
- 11 India
- 12 Indonesia
- 13 Japan
- 14 **Kenya**
- 15 **Malawi**
- 16 **New Zealand**
- 17 Norway
- 18 Philippines
- 19 Switzerland
- 20 United States of America (USA)
- 21 Viet Nam

OBSERVER SUBMISSIONS

United Nations System:

- 1 International Fund for Agricultural Development (IFAD)
- 2 Food and Agriculture Organization of the United Nations (FAO)
- 3 United Nations Convention to Combat Desertification (UNCCD)
- 4 United Nations Economic Commission for Europe (UNECE)
- 5 United Nations Environment Programme (UNEP)
- 6 World Food Programme (WFP)

¹⁰ in bold those added in the step

¹¹ This submission is also supported by Albania, Bosnia and Herzegovina and Serbia.

Admitted intergovernmental organizations (IGOs):

- 7 CGIAR System Organization on behalf of CGIAR System Organization, International Center for Tropical Agriculture (CIAT), and The World Bank (mentioned in the text hereafter as CGIAR-CIAT-WB)
- 8 East African Community (EAC)

Admitted non-governmental organizations (NGOs¹²) which represent six of the UNFCCC constituencies¹³:

9 Brighter Green	ENGO/CAN
10 CARE international (CARE)	ENGO/CAN
11 Climate Action Network International (CAN)	ENGO/CAN
12 Centre de coopération internationale en recherche agronomique pour le développement (CIRAD)	RINGO
13 CUTS International (CUTS)	ENGO
14 Environmental Defense Fund (EDF)	ENGO/CAN
15 Institut National de la Recherche Agronomique (INRA)	RINGO
16 Institut de Recherche pour le Développement (IRD)	RINGO
17 International Fertilizer Association (IFA)	BINGO
18 Oxfam International (OXFAM)	ENGO/CAN
19 Point Blue Conservation Science (Point Blue)	ENGO
20 Women's Environment and Development Organization (WEDO)	Women and Gender
21 World Business Council for Sustainable Development (WBCSD)	BINGO
22 World Farmers Organisation (WFO)	Farmers
23 Youth non-governmental organizations (YOUNGO)	YOUNGO

Non-admitted entities (NAEs):

- 24 The French ruminant livestock sector (CNE, IDELE, CNIEL, INTERBEV, mentioned in the text hereafter as CNE *et al.*)
- 25 Global Agenda for Sustainable Livestock (GASL)
- 26 Livestock Environmental Assessment and Performance Partnership (LEAP)
- 27 North America Climate Smart Agriculture Alliance (NACSAA)

To summarize: by 20th of May, 48 submissions on behalf of a total of 116 Parties and 32 observer organizations were published on the UNFCCC submission portal (see **Figure 1**). This includes a number of group submissions: the European Union submission (counted as a single Party yet

representing its 28 member states and supported by Albania, Bosnia and Herzegovina and Serbia); the submission by the Arab Republic of Egypt on behalf of the African Group of Negotiators, and the submission by Ethiopia on behalf of the Least Developed Countries Group (see **Figure 2**).

¹² i.e. that have been admitted by the Conference of the Parties as observers to the UNFCCC.

¹³ Admitted NGOs under the UNFCCC are loosely clustered according to interests or perspectives in nine constituencies, which are: Business and industry NGOs (BINGO), Environmental NGOs (ENGO), Farmers, Indigenous peoples organizations (IPO), Local government and municipal authorities (LGMA), Research and independent NGOs (RINGO), Trade union NGOs (TUNGO), Women and Gender, and Youth NGOs (YOUNGO). Since 2016 the UNFCCC secretariat also recognizes the following groups as informal NGO groups: Faith Based Organizations (FBOs); Education and Capacity Building and Outreach NGOs (ECONGO); and Parliamentarians.

FIGURE 1.

BREAKDOWN OF SUBMISSIONS AS AT 20 MAY 2018

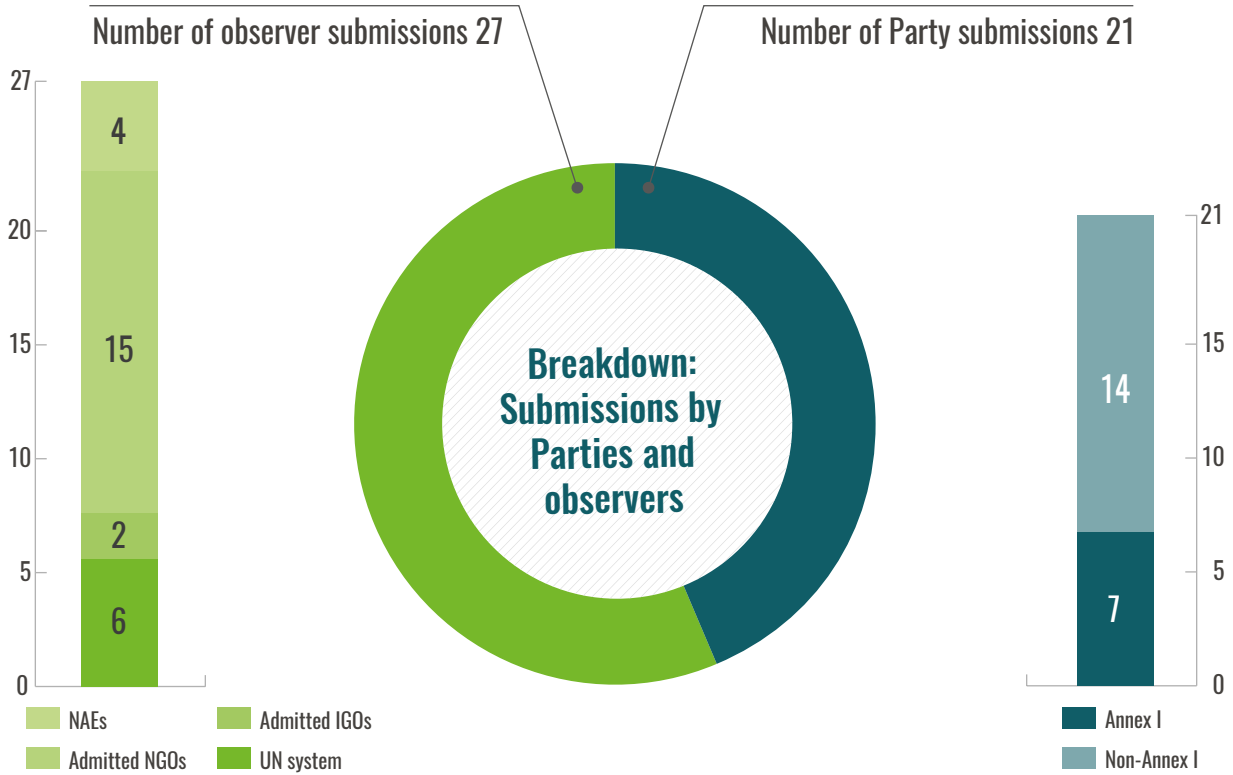
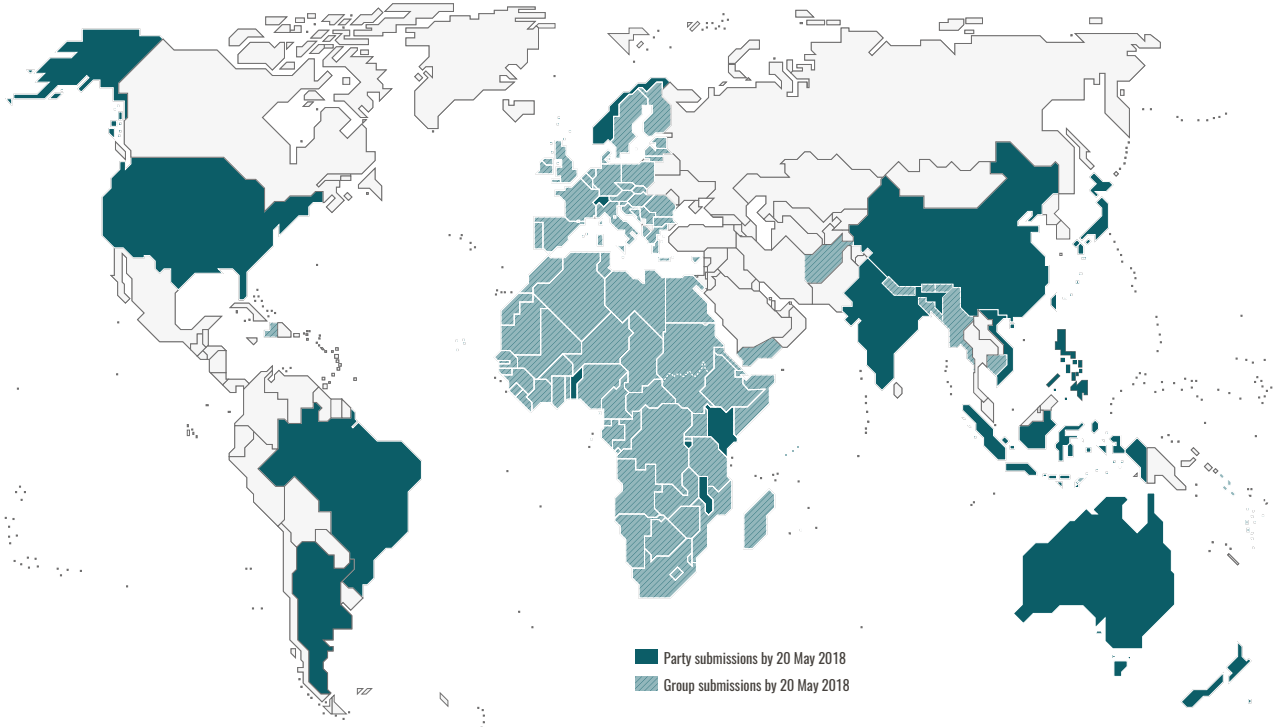


FIGURE 2.

PARTY AND GROUP SUBMISSIONS AS AT 20 MAY 2018



Source: Department of Field Support Geospatial Information Section (formerly Cartographic Section) Map No. 4136 Rev. 12.1 UNITED NATIONS July 2018. The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or any area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

OVERVIEW OF THE SUBMISSIONS BY PARTIES

Although Party submissions vary considerably in structure, length and degree of detail, many submissions show similarities in highlighting certain components or recommendations.

More than half the Party submissions (AGN, Argentina, Australia, Benin, Brazil, Burundi, China, India, Japan, Kenya, LDCs, New Zealand, Philippines, USA, Viet Nam) provides an overview of the agriculture sector in their country, describing the economic importance of the sector at national level, the major threats posed by climate change to agriculture and food security and presenting main initiatives such as programmes, strategies and action plans undertaken by their countries to address climate change adaptation and mitigation, and enhance food security.

Most Party submissions (AGN, Argentina, Benin, Brazil, Burundi, China, EU, India, Japan, Kenya, Malawi, New Zealand, Norway, Switzerland, Viet Nam) underlines that it is paramount to address under the KJWA the vulnerability of the agricultural sectors to

the adverse impacts of climate change, and to promote adaptation and mitigation as well as to contribute to food security in alignment with national priorities, already recalled into their national plans and programmes. In this regard, the KJWA is seen as an opportunity to assist countries in the implementation of their national plans and programmes, such as:

- ▶ Nationally Determined Contributions (NDCs) under the Paris Agreement (Benin, Brazil, Burundi, China, EU, Japan, Malawi, New Zealand, Norway, Switzerland);
- ▶ National Adaptation Plans (NAPs) (Brazil, Burundi);
- ▶ reporting efforts such as Biennial Update Reports (BUR) (Burundi);
- ▶ Adaptation communications under the Paris Agreement (Malawi).

Regarding the list of six elements (2(a) to 2(f)) outlined in Paragraph 2 of Dec. 4/CP.23, some Parties (3: Indonesia, Philippines, Viet

Nam) refer generally to all or some elements without specific considerations, while other submissions list the needs and priorities identified for all or some of the elements (10: AGN, Bangladesh, Benin, Burundi, China, India, Kenya, LDCs, Malawi, New Zealand), or present specific actions already undertaken as showcases to be referred to as best practices and lesson learned for other countries (6: Australia, Bangladesh, Benin, Japan, New Zealand, USA). Some submissions (8: AGN, Argentina, Brazil, EU, Indonesia, Kenya, Philippines, Switzerland) propose new elements or further aspects that should be addressed beyond the elements listed in the decision. Many submissions (15: AGN, Argentina, Australia, Benin, China, EU, India, Kenya, Malawi, New Zealand, Norway, Philippines, Switzerland, Viet Nam, USA)

focus on further aspects of the KJWA, such as indications on the roadmap and modalities of the process or considerations on the expected outcomes from the joint work.

Some submissions (7: AGN, Australia, EU, Kenya, Malawi, New Zealand, Norway) also provide explicit indications on the possible results expected from SB 48. These are mainly related to a common agreement by Parties on the definition of a calendar for the three-year joint work, on the methodology and format for workshops and expert meetings, the list of experts to be invited and desired outcomes.

According to the main considerations raised in the submissions, an in-depth review of the views expressed by Parties is provided in the paragraphs below.

1.1 Element 2(a): Modalities for implementation of the outcomes of the five in-session workshops on issues related to agriculture and other future topics that may arise from this work

14 submissions out of 21 (AGN, Australia, Bangladesh, Benin, Burundi, China, India, Japan, Kenya, LDCs, Norway, Philippines, Viet Nam, USA) specifically refer to the modalities for implementation of the outcomes of the five in-session workshops on issues related to agriculture and/ or to other future topics that may arise from the KJWA (element 2(a) of the paragraph 2 of the decision 4/CP.23).

Five Parties (Australia, Japan, Norway, Philippines, USA) make a general reference to this element in their submissions, without embarking on specific actions or indications, but simply underlining the usefulness of the outcomes and the topics identified in the in-depth reports of the five in-session workshops, that could be considered in the future KJWA as well as the importance of having clear objectives and outcomes translated in concrete actions, avoiding the replication of work.

Priority areas

Nine submissions (AGN, Bangladesh, Benin, Burundi, China, India, Kenya, LDCs, Viet Nam) recall in their views the most relevant topics within element 2(a) according to their national circumstances, including, but not limited to:

- ▶ risk and vulnerability assessments and management;
- ▶ early warning systems;
- ▶ research and technology development to adapt to climate change, including through international cooperation;
- ▶ soil and water management;
- ▶ pests and diseases control;

- ▶ fertilizer and manure management;
- ▶ crop and livestock breeding technologies;
- ▶ development and management of agro-silvo-pastoral area and fisheries; and
- ▶ capacity building of extension services providers, scientists and farmers.

Modalities for implementation

The modality highlighted by these Parties for the implementation of the relevant outcomes of the five in-session workshops is related to the availability of adequate financial resources, with three submissions (AGN, Benin, Kenya) specifically referring to the Green Climate Fund (GCF) as a source of finance. To evaluate the cost of activities under the items of the five in-session workshops for developing countries, one Party (Benin) proposes to refer to projects and programs identified for the agriculture sector in National Communications, NDCs, NAPs and BURs.

One Party (China) considers the assistance to developing countries to implement their NDCs committed under the Paris Agreement as a possible way to facilitate the implementation of the outcomes of the five in-session workshops.

Other modalities identified by four Parties (Bangladesh, Benin, China, India) for the successful implementations of the topics under 2(a) refer to the establishment of operational partnerships among countries and the main scientific and technological institutions and organizations in the field of agriculture and climate change, at national and international level. This could also take the form of a web platform (China, India) and of a synthesis report based on the outcomes of the workshops (India), with the aim to share knowledge, technologies and know-how, as well as capacity-building.

One Party (Benin) refers to the organization of two in-session workshops with the involvement of relevant constituted bodies under the Convention, while another Party (Burundi) refers to expert meetings with the aim of producing specific technical guidance. Two submissions (AGN, Kenya) also refer to the organization of an in-session joint workshop between the SBSTA, the SBI and the other constituted bodies under the Convention to discuss actions, roles and modalities of enhancing implementation of the outcomes under the KJWA, with the SBSTA and SBI also in charge of developing guidelines on those modalities for consideration by the COP.

1.2 Element 2(b): Methods and approaches for assessing adaptation, adaptation co-benefits and resilience

Most submissions (15 out of 21: AGN, Australia, Bangladesh, Benin, Brazil, Burundi, China, India, Indonesia, Japan, LDCs, Malawi, Philippines, USA, Viet Nam) specifically refer to methods and approaches for assessing adaptation, adaptation co-benefits and resilience (element 2(b) of the paragraph 2 of the decision 4/CP.23). Two (Indonesia, Philippines) of these include a general

reference to this element without providing specific inputs or indications.

Two Parties (Brazil, Japan) see this element as very close to the socioeconomic and food security dimensions of climate change in agriculture, thus linked to element 2(f) of the paragraph 2 of the decision 4/CP.23, and propose to consider these elements together. Another Party (Viet Nam) refers to element 2(b) emphasizing the opportunity provided by the KJWA to learn from other countries on assessment methods, approaches and tools, and share the progress of assessing the adaptation, resilience and co-benefits. One submission (Malawi) sees the measurement of adaptation and resilience as critical for determining progress made, to enhance transparency and accountability, with particular attention to effective engagement of vulnerable populations and a focus on gender equality.

Showcases

In this perspective, three Parties (Australia, Japan, USA) present specific actions already undertaken in their country as showcases to be referred to as best practices and lesson learned for other countries. Relevant experiences addressed are related but not limited to:

- ▶ research programmes and initiatives aimed at developing innovative tools, including biotechnology, for a sustainable agriculture capable to adapt to and mitigate climate change;
- ▶ contribution to research networks to increase knowledge on and understanding of the relationship between agricultural practices and GHG emissions to advance methods for the quantification of GHG emissions from cropped and grazed soils;
- ▶ hubs making climate related tools and information available to agricultural and natural resources managers and decision-makers;
- ▶ projects assessing the environmental impacts of climate change and the economic evaluation of the adaptation and mitigation technologies; and
- ▶ approaches to enhance the resilience of agricultural systems and adaptation methods on a country-level.

Needs and priorities

Ten submissions (AGN, Bangladesh, Benin, Brazil, Burundi, China, India, Kenya, LDCs, Malawi) identify a list of needs and priorities to be addressed in order to advance in methods and approaches for assessing adaptation, adaptation co-benefits and resilience. Common issues identified by Parties include, among others:

- ▶ the need for downscaled climate scenarios;
- ▶ assessing and mapping risk and vulnerability;
- ▶ predicting, through the application of models, the impacts of climate change on crop yield and animal production;
- ▶ monitoring, report and verify the effectiveness of adaptation actions, plans and strategies through performance indicators of the progress achieved and results obtained, involving also practitioners and communities; and

- ▶ improving the understanding and identification of different methods, tools and approaches for assessing adaptation, adaptation co-benefits and resilience.

Actions for addressing identified needs

Three submissions (AGN, Bangladesh, Malawi) highlight the need for guidelines on methods and approaches for assessing adaptation, adaptation co-benefits and resilience building on the expertise of various Parties or the SBSTA/SBI.

Four Parties (Benin, Brazil, China, India) further propose possible actions for addressing the identified needs under the KJWA, including, but not limited to, the enhancement of research (Brazil, India), the organization of regional trainings workshops, courses, expert meetings (Benin) with the involvement of the United Nations specialized agencies and the constituted bodies under the Convention and the establishment of a web platform to facilitate the exchange of knowledge and information (China). In particular, one Party (Benin) mentions the importance of the availability of adequate funding for the development and implementation of the National Adaptation Plan (NAP) and requests technical, scientific and financial support from international community and UN specialized agencies (FAO, UNDP, UNEP, etc.).

Four submissions (AGN, Kenya, LDCs, Malawi) propose the organization of an in-session workshop and expert meetings to discuss this topic, with three submissions (AGN, Kenya, Malawi) specifying that SBSTA/SBI should develop guidelines on methods and approaches for assessing adaptation, adaptation co-benefits and resilience for consideration by the COP.

1.3 Element 2(c): Improved soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management

Most submissions (17 out of 21: AGN, Australia, Bangladesh, Benin, Burundi, China, India, Indonesia, Japan, Kenya, LDC, Malawi, New Zealand, Norway, Philippines, USA, Viet Nam) specifically refer to issues related to improved soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management, as comprised in the element 2(c) of the paragraph 2 of the decision 4/CP.23.

Two Parties (Indonesia, Philippines) include in their submissions general references to topics under element 2(c), without going into details, with one Party (Indonesia) proposing to consider the topics under element 2(c) and 2(e) together. Another Party (Japan) underlines that actions to improve soil carbon, soil health and soil fertility would also simultaneously improve nutrient use (e.g. fertilizer management), mentioning that it would be more efficient to consider topics under element 2(c) and 2(d) together. One more Party (China) elaborates considerations on the improvement of agricultural practices on grassland, cropland, livestock and manure management to enhance the resilience of agriculture, linking elements 2(c), 2(d) and 2(e).

Two Parties (Norway, Viet Nam) refer to element 2(c) emphasizing the opportunity provided by the KJWA to exchange knowledge on best practices with particular regard to soil conservation.

Showcases

Five Parties (Australia, Japan, Malawi, New Zealand, USA) present specific actions already undertaken in their respective countries as showcases to be referred to as best practices and lesson learned for other countries, including, among others:

- ▶ soil and water conservation programmes encouraging the use of farming practices and technologies that improve soil carbon, including cover crops, no-till, crop rotation, efficiency in fertilization, rotational grazing, converting cropland to permanent pasture, remediating soils, and that enhance sustainable water management including through irrigation technologies for water saving and recycling of drainage water for sub-irrigation;
- ▶ recent developments in technology and science including a Global Soil Map, and weekly maps of drought conditions;
- ▶ initiatives offering technical and financial assistance to help farmers to apply measures that are adaptation-mitigation co-beneficial.

Needs and priorities

Eight submissions (AGN, Bangladesh, Benin, Burundi, China, India, Kenya, LDCs) identify a list of needs and priorities to be addressed in order to improve soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management. Issues and priorities identified by Parties include, for example:

- ▶ setting up programmes for restoration of degraded lands, building on the experiences of the United Nations Convention to Combat Desertification (UNCCD);
- ▶ establishing a platform to share information and experiences;
- ▶ strengthening technical, technological and financial capacities to foster sustainable and efficient use of water resources and promote conservation agriculture to control erosion and increase soil carbon;
- ▶ soil fertility and carbon to be included in soil mapping;
- ▶ integrated soil fertility management;
- ▶ sustainable land management; and
- ▶ the rational use of fertilizers.

One submission (LDCs) proposes to conduct national studies on the status of soil conditions in relation to its quality to support the various agricultural land-uses.

Actions for addressing identified needs

Possible actions to address the identified needs are proposed by three Parties (Australia, Benin, China) and include the preparation of technical papers and the organization of workshops during

the KJWA with the aim of sharing expertise and lessons from scientists and researchers from universities and research centers, experts from UN specialized agencies, including FAO and IPCC. One Party (Benin) proposes to hold a single in-session workshop, jointly addressing elements 2(c), 2(d) and 2(e). Three submissions (AGN, Kenya, LDCs) also propose to hold an in-session workshop focusing on element 2(c). One Party (China) proposes the establishment of a web platform to facilitate the sharing of information and experiences.

1.4 Element 2(d): Improved nutrient use and manure management towards sustainable and resilient agricultural systems

14 submissions (AGN, Bangladesh, Benin, Burundi, China, India, Indonesia, Japan, Kenya, LDCs, Norway, Philippines, USA, Viet Nam) specifically refer to issues related to improved nutrient use and manure management towards sustainable and resilient agricultural systems.

Two Parties (Indonesia, Philippines) include in their submissions general references to topics under element 2(d) without specific actions or indications. Another Party (Japan) highlights how improved nutrient use (e.g. fertilizer management) can be achieved also through actions aimed at improving soil carbon, soil health and soil fertility, pointing out that it would be more efficient to consider topics under element 2(c) and 2(d) together. One more Party (China) considers elements 2(c), 2(d) and 2(e) together, referring to actions aimed at the improvement of agricultural practices on grassland, cropland, livestock and manure management to enhance the resilience of agriculture.

Two Parties (Norway, Viet Nam) refer to element 2(d) emphasizing the opportunity provided by the KJWA to exchange knowledge on best practices with particular regard to the improvement of nutrient use and manure management and the use of climate resilient crops.

Showcases

As for the previous elements, three Parties (Benin, Japan, USA) present specific showcases to be referred to as best practices and lesson learned for other countries, emphasizing for example:

- ▶ research, and its dissemination through partnerships;
- ▶ assistance to and education for the implementation of best practices;
- ▶ development and use of nutrient management plans;
- ▶ real-time weather forecasting (near-term and seasonal) to reduce runoff;
- ▶ agricultural practices;
- ▶ technologies and equipment to reduce nutrient loss and increase efficiency of products;
- ▶ sustainable management of manure including the recovery of energy or nitrogen and phosphorus or byproducts such as fiberboard;
- ▶ feed management for GHG emissions reduction;
- ▶ optimization of frequency in grassland renovation to adapt to climate change and assessment of GHG emission potentials associated to nutrient use and manure management.

Needs and priorities

Eight submissions (AGN, Bangladesh, Benin, Burundi, China, India, Kenya, LDCs) identify a list of needs and priorities to be addressed in order to improve nutrient use and manure management towards sustainable and resilient agricultural systems. In particular, main issues addressed refer to:

- ▶ the need to define agricultural techniques and timings to maximize nutrient uptake according to crop needs through field and lab experiments;
- ▶ the provision of organic nutrients such as humus and the implementation of crop rotations;
- ▶ the use of cover crops and the promotion of organic farming;
- ▶ the intensification in the use of technologies;
- ▶ the optimization and rational use of inorganic fertilizers use in agricultural systems;
- ▶ the development of approaches for optimizing use and management of manure, crop residue and other organic fertilizer, in a manner which maximizes the resilience of agriculture systems.

Actions for addressing identified needs

One of the submissions (LDCs) proposes to conduct national studies on current and traditional knowledge of manure management and utilization.

Two others (Benin, China) outline possible ways to address the identified needs within the KJWA, including through the preparation of technical papers, the establishment of a web platform to share information and experiences, and the organization of an intersessional workshop on the topic. In one submission (China) it is suggested to gather expertise and lessons from scientists, researchers and experts from United Nations specialized agencies on this element, to be treated together with 2(c) and 2(e). Three submissions (AGN, Kenya, LDCs) propose to organize an in-session workshop.

1.5 Element 2(e): Improved livestock management systems

Most submissions (17 out of 21: AGN, Australia, Bangladesh, Benin, Burundi, China, India, Indonesia, Japan, Kenya, LDCs, Malawi, New Zealand, Norway, Philippines, USA, Viet Nam) specifically refer to issues related to improved livestock management systems as referred in the element 2(e) of the paragraph 2 of the decision 4/CP.23. Two Parties (Indonesia, Philippines) include in their submissions general references to topics under element 2(e), without providing further details, with one Party (Indonesia) proposing to consider topics under element 2(c) and 2(e) together. Another Party (China) considers elements 2(c), 2(d) and 2(e) together, referring to actions to improve agricultural

practices on grassland, cropland, livestock and manure management to enhance the resilience of agriculture.

Three Parties (New Zealand, Norway, Viet Nam) refer to element 2(e) by emphasizing the opportunity to exchange knowledge on best practices under the KJWA.

Showcases

Six Parties (Australia, Benin, Japan, New Zealand, USA) present specific country actions as showcases to be referred to as best practices and lesson learned for other countries, including, among others:

- ▶ national programmes providing financial incentives to foster emissions reduction methods such as improved diet and early finishing of livestock;
- ▶ improved monitoring, reporting and verification of emissions from the livestock sector;

- ▶ establishment of gene banks;
- ▶ examples of breed selection, improved grazing lands, tracing of passage corridors for transhumant, construction and rehabilitation of water reservoirs;
- ▶ technologies and centers for artificial insemination;
- ▶ composting, anaerobic digester and biogas recovery systems for manure.

Needs and Priorities

Seven submissions (AGN, Bangladesh, Burundi, China, India, Kenya, LDCs) identify needs and priorities to be addressed in order to improve livestock management systems in their country. In particular, Parties refer to:

- ▶ the need to enhance research activities on zootechnical genetics, health and nutrition with the aim to improve productivity;
- ▶ the adoption of sustainable practices for integrated agro-silvo-zootechnical systems;
- ▶ the application of methods to assess and reduce GHG emissions from the livestock sector and to adapt the sector to climate change;
- ▶ the improvement of processing and storage of livestock products and facilitation of access to markets;
- ▶ the introduction of innovative techniques for breed improvement and valorization of by-products from animal waste (e.g. biogas);
- ▶ the development of monitoring, reporting and verification systems for agro-pastoral production systems;

- ▶ the promotion of sustainable and efficient livestock management systems and value chains, including agro-pastoral management systems, climate-resilient livestock production and ecosystem-based grassland management; and
- ▶ the management of risks in livestock production systems.

Actions for addressing identified needs

One submission (LDCs) proposes to conduct national studies on the current and traditional knowledge of livestock management systems looking at their role in climate change mitigation and in reducing community vulnerability.

Two Parties (Benin, China) also mention possible ways to tackle topics under element 2(e) in the KJWA in order to address the identified needs, including the preparation of technical papers, the establishment of a web platform to share information and experiences, and the organization of an intersessional workshop, treating together elements 2(c), 2(d) and 2(e). This workshop would aim to gather expertise of and lessons from scientists and researchers from universities and research centers, as well as experts from United Nations specialized agencies. Three submissions (AGN, Kenya, LDCs) propose the organization of in-session workshops and expert group meetings to discuss this topic.

1.6 Element 2(f): Socioeconomic and food security dimensions of climate change in the agricultural sector

Most submissions (17 out of 21: AGN, Australia, Bangladesh, Benin, Brazil, Burundi, China, EU, India, Indonesia, Japan, Kenya, LDCs, New Zealand, Philippines, USA, Viet Nam) specifically refer to the socioeconomic and food security dimensions of climate change in their agricultural sectors. Three Parties (Australia, Indonesia, Philippines) include in their submissions general references to topics under element 2(f) without providing specific actions or indications. Two submissions (EU, Malawi) specifically refer to the four pillars of food security as defined in the 1996 World Food

Summit, underlining the negative effects of extreme climate-related events (i.e. drought) on the agricultural system in absence of adaptation measures, especially in developing countries, and threatening particularly women, children and poor people. One Party (Japan) sees this element closely related to element 2(b) methods and approaches for assessing adaptation, adaptation co-benefits and resilience and proposes to jointly consider these two elements. Another Party (Viet Nam) refers to element 2(f) by highlighting the opportunity provided by the KJWA to learn from other countries on the socioeconomic and food security dimensions of climate change in the agricultural sector.

Showcases

Five Parties (Bangladesh, Benin, Japan, New Zealand, USA) present specific country actions as showcases to be referred to as best practices and lesson learned for other countries. Relevant reported experiences are related, but are not limited, to:

- ▶ the use of multi-model ensemble seasonal climate data for seasonal forecasting of crop yield variability;
- ▶ research initiatives to improve crop cultivations potential, water management, livestock and fishing;
- ▶ the development of national programmes and strategies for food security in partnership with other governments, civil society, multilateral development institutions, universities and other research institutions and the private sector to enhance sustainable economic growth of the agricultural sector, strengthen resilience and reduce global hunger, malnutrition and poverty.

Needs and priorities

Ten submissions (AGN, Bangladesh, Benin, Brazil, Burundi, China, India, Kenya, LDCs, Malawi) identify needs and priorities to be addressed with regard to the socioeconomic and food security dimensions of climate change in the agricultural sector. In particular, they mainly refer to the need to:

- ▶ enhance research and increase the state of scientific knowledge on climate change impacts on crops, livestock, and fisheries, especially for developing countries;
- ▶ boost the adaptation of agriculture to climate change impacts;
- ▶ build capacities of women's and youth organizations in the agricultural sector;
- ▶ develop contingency plans and consider to establish strategic food stocks in high-risk areas;
- ▶ address issues related to land property and land rights, to allow access to agricultural finance and insurance, especially for women and youth, in order to promote investment in measures to restore soil fertility, fight erosion, reforestation, improve yield and increase agricultural production;
- ▶ consider the impacts of climate change on agriculture, in particular on the livelihoods of vulnerable smallholder farmers, on migration, conflicts, security, and nutritional value of food;
- ▶ consider the role of food systems beyond livelihoods but also well-being as health and nutrition; and
- ▶ increase the efficiency of agriculture value chains and food systems.

Actions for addressing identified needs

One submission (LDCs) proposes to conduct national assessments of the impact of climate change on social, economic and environmental aspects in line with future impacts on food and nutrition security. Another submission (Malawi) refers to the recently agreed Gender Action Plan as a key tool to support the examination of gender dimension in climate change in the agriculture sector.

Three Parties (Australia, Benin, China) propose as possible ways to address the identified needs under the KJWA, such as the preparation of a technical paper on the topics under 2(f) and the organization of an in-session workshop, involving for example (Benin) the constituted bodies under the Convention (e.g. the Adaptation Committee, LEG, CTCN). Three submissions (AGN, Kenya, LDCs) also propose the organization of an in-session workshop.

1.7 Further elements to consider in the KJWA

Six submissions introduce topics of interest to be discussed during the KJWA that were not explicitly linked to any of the elements listed in paragraph 2 of the decision (AGN, Argentina, Brazil, EU, Philippines, Switzerland). Some of the topics proposed are of cross-cutting nature, while others present aspects to be further identified when considering the elements listed in the decision or are mentioned as new elements to be included in the KJWA. The list of the mentioned topics, taken from 6 submissions (but not common to all), are here reported as further items proposed to be included for discussion under the KJWA:

- ▶ adoption of a food system approach and according policy instruments taking into consideration climate change adaptation and mitigation;
 - ▶ actions to reduce climate-related loss and damage, including climate information services, particularly for small farmers, small fishers, coastal communities and rural women, coupled with actions to provide agricultural insurance protection;
 - ▶ synergies between adaptation and mitigation measures in agricultural production, including in the context of other environmental aspects such as biodiversity, water, soils and the achievement of the Sustainable Development Goals (SDGs), identifying barriers and ways to overcome them;
 - ▶ methods and approaches for monitoring, reporting and verification of climate actions, with particular regard to data availability in the various subject matters mentioned in the elements 2(a) to 2(f) and possible standardized approaches and indicators to allow for better comparability and advance in metadata analyses to support decision making;
 - ▶ explore current and projected (potential) risks and vulnerabilities of agriculture and food value chains, including the quantification of the economic impacts and implementation of adaptation measures in agriculture;
 - ▶ integrated management of climate risks including policies, instruments and practices of risk reduction and expansion of monitoring networks, strengthening of early warning systems and disaster risk reduction;
 - ▶ agriculture data infrastructure and innovative digital solutions;
 - ▶ development of resilient crop varieties against extreme conditions and development and application of cropping calendar;
 - ▶ financing for agriculture including assessment of impacts and implications of innovative financing, if used, for investment in agriculture;
 - ▶ potential impacts of actions taken to combat climate change on agriculture exports from Africa and measures that could be taken to contain such impacts;
 - ▶ enhancement of the knowledge base through multi-actor and multi-level approaches, exploring new and more efficient ways of communication, coordination and collaboration among:
 - UNFCCC and international agencies and groups (i.e. such as FAO, CGIAR-CCAFS, UNEP, Global Research Alliance on Agricultural Greenhouse Gas Emissions, Global Alliance for Climate Smart Agriculture, etc.);
 - global programmes and initiatives; and
 - stakeholders in the field of agriculture and food systems (farmers, governments, companies and civil society) and the research system,
- with a focus on different local, regional, national and international levels. This includes also the UNFCCC review process of national GHG-inventories, national communications, BURs and other activities by UNFCCC bodies (e.g. the CDM Executive Board) to be used to gather, compile and disseminate information on successful mitigation and adaptation actions already implemented by Parties;
- ▶ integration of good agriculture practices in sectorial plans;

- ▶ emphasizing actions that improve: livestock efficiency, soil health, soil carbon sequestration, recovery of degraded environments, and that promote the integration of production along with the conservation of natural environments such as forests and grasslands;
- ▶ enhancement of research and development projects and of technologies focused on sustainable production taking into account the national, local and regional needs and conditions;
- ▶ enhancement of resilience of productive systems with emphasis on production at the local level.

1.8 Views on process

According to paragraph 1 of the decision 4/CP.23, SBSTA and SBI are asked to jointly work to address issues related to agriculture including through workshops and expert meetings.

Specific indications on the process foreseen by Parties to advance the joint work are provided in 15 submissions (AGN, Argentina, Australia, Benin, China, EU, India, LDCs, Malawi, New Zealand, Norway, Philippines, Switzerland, USA, Viet Nam). One submission (LDCs) specifies that the KJWA should foresee the collaboration with constituted bodies in a continuous and interactive way, where the constituted bodies provide information on their activities in the agriculture sector while the SBs should report back on their outcomes and products.

In general, indications on process contained in the submissions refer to the number and contents of workshops or expert meetings, the participants that should be involved, the possible scheduling and the outcomes expected by Parties from each workshop or expert meeting.

Contents and settings of the workshops/expert meetings

Some Parties (Benin, Japan) suggest to aggregate specific topics for the workshops/expert meetings together given the similarity in the contents. Specifically, topics under elements 2(c) and 2(d) are proposed to be treated together (Japan) as well as topics under 2(b) with 2(f). Another proposal (Benin) is to aggregate topics under elements 2(c), 2(d) and 2(e).

Three Parties (Australia, Japan, USA) specify that the workshops should consider only the topics under elements 2(b) to 2(f), as the five

in-sessions workshops mentioned in element 2(a) already produced a series of in-depth reports and work undertaken to which Parties can refer. One Party (USA) recommended to follow the order already applied in the decision, while three submissions (Australia, EU, USA) called for a careful scheduling trying to align the treatment of specific topics with the outcomes of other relevant actions, initiatives, processes and programmes, such as the delivery of upcoming IPCC Special Reports, in order to increase cooperation and minimize overlaps. Some Parties (Australia, Japan, USA) suggest to treat two or three topics at each workshop.

Content-wise, eleven submissions (AGN, Australia, Benin, China, EU, India, Japan, LDCs, Malawi, New Zealand, USA) propose the issues to be addressed in the workshops, mainly referring to:

- ▶ showcases of best practices;
- ▶ identification of gaps and/or barriers (with a view to policy, regulatory, technological, know-how, or financial aspects);
- ▶ identification of innovative, efficient and state-of-the-art technologies and know-how;
- ▶ advice on the ways and means of promoting development and/or transferring such technologies;
- ▶ consider key criteria to ensure environmental and social integrity;
- ▶ share views on how to consider vulnerabilities of agriculture to climate changes, including the socio-economic dimensions, and approaches to addressing food security as well as mitigation activities;
- ▶ recommend actions, including by other bodies under the Convention to address those gaps.

One Party (Switzerland) specifies that workshops and expert meetings should only be considered if the knowledge in question is not available elsewhere, with the possibility, as an alternative to the workshop, to request the compilation of technical papers or summary reports.

Four submissions (AGN, Australia, EU, India) specify that the workshops should be in-session, one (Benin) proposes two in-session workshops for topics under elements 2(a) and 2(f) and one inter-sessional workshop for elements 2(c), 2(d) and 2(e) together. A submission (New Zealand) suggests undertaking a number of parallel work streams on the identified elements before COP26 in the form of workshops, round tables, expert meetings, at regional, national and global level with the engagement of non-state actors.

One Party (EU) states that workshop and expert meetings should be open to observers and webcast, another submission (USA) suggested to make presentations held during the workshops available online through the UNFCCC web platform to ensure the most benefit as possible from the information shared during the workshops.

Four submissions (EU, LDCs, Malawi, Norway) propose to invite submissions by Parties and observers or scientific and technical reports from qualified institutions and organizations on specific topics before each workshop or expert meeting as basis for the exchanges.

Potential participants in the workshops/expert meetings

Indications on the potential workshop participants are provided by seven submissions (Australia, Benin, EU, Japan, Malawi, New Zealand, Norway), suggesting that experts from international organizations and initiatives, including, inter alia, the United Nations specialized agencies, IPCC, Global Research Alliance, World Bank, etc. and from relevant research institutions should also be invited to inform workshops, present experiences and share information related to the workshop's topic. Two submissions (EU, Malawi) refer to the participation of civil society organizations including small-scale food producers, NGOs and women's groups, ensuring their engagement and participation. Four Parties (Benin, EU, Japan,

New Zealand) specify that the participation of representatives from constituted bodies under the Convention should be guaranteed.

Expected outcomes of the workshops/expert meetings

Possible outcomes of the workshops and expert meetings are identified in ten submissions (Argentina, Australia, Benin, China, EU, Japan, Malawi, Norway, Switzerland, USA) in form of technical papers, guidelines, or summary reports on various aspects. In particular, three submissions (Australia, EU, USA) propose that, following each workshop, a technical report should be prepared as summary by the co-chairs and/or by the Secretariat to inform the constituted bodies and international organizations, while four submissions (Argentina, Burundi, EU, Malawi) expect concrete recommendations or guidelines from the workshops and expert meetings, with the aim of improving the implementation of climate actions in agriculture to protect food security and to contribute to the Paris Agreement's goal to keep the global temperature rise well below two degrees Celsius.

Expected outcomes of SB 48

Six submissions (ANG, Australia, EU, Malawi, New Zealand, Norway) also provide explicit indications on potential results and expected outcomes from SB 48, such as¹⁴:

- ▶ agreeing on definition of the calendar of work, including possible calls for submissions before workshops and expert meetings;
- ▶ agreeing on the methodology and format of workshops and expert meetings;
- ▶ identifying the type and list of experts to be invited; and
- ▶ defining the expected outcomes from the workshops (summary reports, technical paper with concrete recommendations, etc.).

One submission (Malawi) expects that SB48 mandates the Secretariat to conduct a landscape analysis of the work of the other bodies under the UNFCCC regarding agriculture and to provide a review of means of implementation available as

well as of existing finance criteria/policies and environmental and social safeguards.

According to paragraph 4 of the decision 4/CP.23, SB 53 should report to COP 26 in 2020 on the progress and outcomes of the KJWA. However,

two submissions (EU and Norway) state that the three-year period currently foreseen may not signify the end date of the KJWA, but that the SBs may define further work after 2020.

1.9 Perspectives and expected outcomes of the three-year joint work

Most Parties (15: Argentina, Australia, Benin, Brazil, China, EU, India, Japan, Malawi, New Zealand, Norway, Philippines, Switzerland, USA, Viet Nam) stress the opportunity of the KJWA to boost exchange and collaboration among countries to promote the development and transfer of knowledge, best practices and technologies. This exchange would aim to provide instruments and tools to countries and stakeholders in the agricultural sectors to address the major challenges posed by climate change to agriculture and food security. Recognizing the unique characteristics of the agricultural sectors, some submissions (Switzerland) suggests to adopt a holistic food systems perspective, combining climate-smart and site-adapted solutions for adaptation and mitigation progress. Some submissions underline that the KJWA should build on existing knowledge and experience, with a focus on activities that are implementation-ready, both at country and international level (Brazil, EU, Switzerland), drawing on SBI and SBSTA expertise and other international relevant institutions (New Zealand, Philippines, USA).

In particular, Party expectations for the KJWA include, inter alia:

- ▶ a discussion space for the exchange of views and expertise on climate action in

- ▶ agriculture and initiatives on Climate-Smart Agriculture (CSA) implementation, encouraging cooperation between Parties and support for the implementation of climate and agriculture-related measures on the ground;
- ▶ the translation of the outcomes of the KJWA into concrete actions to address issues related to agriculture and climate change, that could be different from country to country, in accordance with the principles and provisions of the Convention, including the common but differentiated responsibilities (CBDR) of Parties, in relation to their own national circumstances, needs and priorities, obligations, commitments and responsibilities;
- ▶ the identification of enabling environments and tools (including fostering of research) to increase and to facilitate the application of scientific and technological knowledge on sustainable agriculture and food systems;
- ▶ the identification of suitable possible technical and political solutions;
- ▶ capacity building in methodologies and approaches to design adaptation and impact indicators;
- ▶ useful platform for an inclusive global discussion on how agriculture can contribute to the effective implementation of the Paris Agreement;
- ▶ the inclusion of the most recent and innovative knowledge on best practices and technologies in climate-related decision making at national, sub-national and farm level;
- ▶ a roadmap to facilitate the implementation of the NDCs and other relevant national strategies and plans, including actions to promote CSA;

¹⁴ Examples not common to all six submissions.

- ▶ an exchange of knowledge to improve the reporting and accounting of emissions and removals from agriculture and of the impacts of policies and measures;
- ▶ the promotion of a more inclusive and integrated agricultural and food systems and increase investment in climate change adaptation and mitigation in the different sub-sectors of agriculture;
- ▶ an improved understanding of the social and economic impacts of climate change on the agriculture and food sector;
- ▶ strategies to manage human migration related to the adverse effects of climate change on the agricultural sectors.

To reach these milestones and to be compliant with paragraph 4 of the decision 4/CP.23, which asks SB 53 to report to COP 26 in 2020 on the progress and outcomes of the KJWA, concrete expected outcomes from the KJWA are mentioned by most Parties.

Nine submissions (Argentina, Australia, China, EU, India, Malawi, Philippines, Switzerland, USA) see the **delivery of technical reports or guidelines** as an outcome of the three-year work. Such documents can for example take the form of simple summary documents prepared by Co-Chairs and the Secretariat, with the aim of informing the discussion of agriculture in other fora, including the constituted bodies under the Convention and international organizations working on agriculture. The reports should contain concrete and practical recommendations of scientific and technological nature of climate actions to be undertaken in agriculture to help Parties to face climate change in the agricultural sectors and safeguard food security. One submission (Malawi) sees the development of guidelines and criteria (or safeguards) for climate action in the agriculture

sector as a means to ensure sustainability and gender-equity as well as increased resilience and food security.

Three Parties (China, India, USA) mention the creation of a **web platform or knowledge hub** to collect the outcomes of the upcoming three years of work. The platform should facilitate the collection of best practices and lesson learned identified by Parties and other stakeholders, the exchange and sharing of knowledge, updates and dissemination of information to countries. Two Parties (Brazil, USA) refer to existing examples of knowledge management hubs, recommending the use of UNFCCC web resources to host the platform.

Six Parties (Bangladesh, Benin, China, Philippines, USA, Viet Nam) provide considerations on **financial aspects**. Four Parties (Bangladesh, China, Philippines, Viet Nam) make general reference to the need to enhance financial investment (especially for research and development activities) and strengthen the financial capacities especially in developing countries to formulate and implement concrete actions to enhance agricultural systems in each country. One Party submission (USA) considers the KJWA as an opportunity to improve the effectiveness of existing financing mechanisms and programs. Without establishing any new mechanism, the KJWA could allow the existing financing mechanisms to better target agriculture in their programmes and to facilitate access for countries accordingly. Three submissions (AGN, Benin, Kenya) propose the opening of a specific window under the Green Climate Fund (GCF) for adaptation and mitigation in the agricultural sectors, in alignment with national priorities and the objective of safeguarding food security.

OVERVIEW OF THE SUBMISSIONS BY OBSERVERS

As for the Party submissions, most observer submissions vary considerably in structure, length and degree of detail, with some groups of submissions that are instead aligned or very similar (4 NGOs: CIRAD, IRD, INRA and WBCSD with 1 IGO: CGIAR-CIAT-WB). The majority of the observer submissions (17 submissions - 4 UN system: FAO, IFAD, UNECE, WFP; 1 IGO: CGIAR-CIAT-WB; 12 NGOs: BRIGHTER GREEN, CAN, CARE, CIRAD, CUTS, INRA, IRD, OXFAM, POINT BLUE, WEDO, WFO, YOUNGO) provide their general view on the KJWA, describing the way forward they see under the three-year joint work. These submissions underline that the KJWA could be an opportunity to help countries, particularly developing countries and LDCs, to enhance their capacities, and to access finance and climate-responsive technologies, in order to:

- ▶ enhance the sustainable development of the agricultural sectors, acknowledging not only their environmental impacts, but also the

social and economic dimension of agricultural production;

- ▶ advance climate action in the agricultural sectors, addressing both adaptation and mitigation, with the aim to reduce emissions in absolute and equitable terms, and increase resilience, especially of rural populations most vulnerable to climate change.

Many observer submissions see the KJWA as an opportunity to support countries in the implementation of their national plans and programmes, such as the Nationally Determined Contributions (NDCs) under the Paris Agreement (11 submissions - 2 UN system: FAO, IFAD; 1 IGO: CGIAR-CIAT-WB; 8 NGOs: BRIGHTER GREEN, CARE, CUTS, OXFAM, WBCSD, WEDO, WFO, YOUNGO). Some submissions (2 NGOs: BRIGHTER GREEN, EDF) mention the possibility to include the outcomes of the KJWA in the next NDC submissions, as well as under the National Adaptation Programme of Action (NAPAs)

(2 NGOs: OXFAM, WEDO) and the Nationally Appropriate Mitigation Action (NAMAs) (1 NGO: OXFAM). Other submissions see the KJWA as a vehicle contributing to the achievement of the long-term SDGs as part of the 2030 Agenda (2 submissions – 1 UN system: FAO; 1 NGO: WEDO), and towards sharing experiences and initiatives on CSA (4 submissions – 3 NGOs: CIRAD, CUTS, YOUNGO; 1 NAE: NACSAA).

Most observer submissions (17 submissions–4 UN system: FAO, IFAD, UNECE, WFP; 1 IGO: CGIAR–CIAT–WB; 12 NGOs: BRIGHTER GREEN, CAN, CARE, CIRAD, CUTS, INRA, IRD, OXFAM, POINT BLUE, WEDO, WFO, YOUNGO) identify modalities for the successful implementation of the joint work that should, among others:

- ▶ ensure a participatory process with a holistic, gender-responsive and regionally balanced approach respecting the rights, roles, knowledge, needs and aspirations of rural women, indigenous peoples and small-scale agricultural producers;
- ▶ ensure the integrity, legitimacy and effectiveness of the KJWA through balanced representation of expertise and knowledge during the workshops, including the active participation of observers in particular ENGOs, and avoiding potential conflicts of interests when inviting presenters and views for the workshops;
- ▶ encourage knowledge transfer to farmers and between farmers' associations and knowledge-sharing of cost-effective, proven solutions for farm management and production technologies to address the vulnerability of the agricultural sectors to the adverse impacts of climate change and promote adaptation and mitigation in order to firmly underpin food security, gender equality, and human rights;
- ▶ consider the progress of scientific and technological research and innovations to ensure food security and face climate change in the agricultural sectors, incentivizing community-based approaches with the engagement of local stakeholders in a science-informed framework;
- ▶ recognize the 'landscape approach' in pursuing food security with integrated land planning and management (including,

but not limited to, integrated watershed and river basin management, integrated crop–livestock management, agroforestry, sustainable fisheries management, sustainable forest management, improved rangeland management), taking into consideration the multiple and often competing interests of stakeholders. The aim is to preserve landscape complexity through the promotion of within-farm ecological diversification as well as the maintenance of mosaics of managed and natural lands to retain biotic interactions that result in ecosystem services essential to agricultural production and climate resilience;

- ▶ address food security while also recognizing the social, economic, and environmental value of climate change mitigation actions in agriculture, including the co-benefits for health and sustainable development. This includes the reduction of food losses and waste, a critical step towards reducing GHG emissions from food production and consumption, and the promotion of so-called “food miles” for localized food production and consumption, and demand-side solutions improving consumption patterns, including for example the promotion of sustainable and healthy dietary patterns.

Regarding the list of six elements (2(a) to 2(f)) outlined in Paragraph 2 of Dec. 4/CP.23, some observer submissions refer generally to all or some elements without specific considerations (4 submissions – 3 NGOs: CIRAD, INRA, OXFAM, 1 NAEs: CNE IDELE CNIEL INTERBEV). Other submissions list the needs and priorities identified for all or some of the elements (12 submissions – 3 UN system: FAO, UNCCD, UNEP; 2 IGOs: CGIAR–CIAT–WB, EAC; 7 NGOs: CAN, CARE, CUTS, EDF, IFA, WBCSD, YOUNGO). Some present specific actions already undertaken as showcases, best practices and lesson learned, particularly for developing countries and LDCs (9 submissions – 5 UN system: FAO, IFAD, UNCCD, UNEP, WFP; 1 IGO: CGIAR–CIAT–WB; 3 NGOs: CARE, EDF, WBCSD). Some submissions (7 submissions – 2 UN system: UNCCD, UNECE; 1 IGO: CGIAR–CIAT–WB; 3 NGOs: EDF, IRD, WBCSD; 1 NAE: LEAP) propose new elements or further aspects that should be addressed beyond the elements listed in the decision.

2.1 Proposed contribution to the joint work

Eleven observers (3 UN system: FAO, UNEP, WFP; 6 NGOs: CAN, CIRADR, GASL, IRD, POINT BLUE, YOUNGO; 2 NAEs: CNE *et al.*, LEAP), highlight their role as agencies of the UN system, IGOs, NGOs or NAEs acting in the context of agriculture, food security and climate change. They mention in their submissions the willingness to actively take part in the discussions under the joint work. In particular, they express their availability to contribute to the KJWA by helping building bridges between countries and experts, through technical assistance and guidance to countries on technological options, mitigation measures, funding opportunities, application of measurement tools and policy development, in

order to capitalize experiences and capacities and facilitate and catalyze mitigation and adaptation actions in agriculture sector, in line with national policies and processes.

Twenty observer submissions (5 UN system: FAO, IFAD, UNECE, UNEP, WFP; 1 IGO: CGIAR-CIAT-WB; 12 NGOs: BRIGHTER GREEN, CAN, CARE, CIRAD, CUTS, INRA, IRD, OXFAM, POINT BLUE, WEDO, WFO, YOUNGO; 2 NAEs: CNE *et al.*, NACSAA) recall the main existing local, regional and global initiatives and programmes they are leading or in which they are actively involved. These initiatives and programmes collect information or investigate and test solutions, best practices and innovative technologies to enhance climate change adaptation and mitigation in the agricultural sectors and enhance food security. The submissions suggest that they are considered as a basis for discussion or referred to as best practices under the KJWA. A full list of the suggested programmes and initiatives is shown in Annex.

2.2 Element 2(a): Modalities for implementation of the outcomes of the five in-session workshops on issues related to agriculture and other future topics that may arise from this work

Ten observer submissions (2 UN system: FAO, UNCCD; 1 IGO: EAC; 7 NGOs: CAN, CARE, CIRAD, CUTS, INRA, WBCSD, YOUNGO) out of 27 specifically refer to the modalities for implementation of the outcomes of the five in-session workshops on issues related to agriculture and/or to other future topics that

may arise from the KJWA (element 2(a) of the paragraph 2 of the decision 4/CP.23). 5 observer submissions (CAN, CARE, CIRAD, CUTS, INRA) make a general reference to this element in their submissions, without embarking on specific actions or indications, but simply mentioning the topics of the five in-session workshops that should be considered in the KJWA workshops

One submission (EAC) recalls in its view the priority action areas for implementation based on the outcomes of the five in-session workshops, including: early warning systems and contingency plans, vulnerability assessment and risk management including insurance, and technology needs assessments in the agricultural sectors and technology development and transfer. The modalities identified by two observer submissions (FAO, UNCCD) for the successful implementations of the topics under 2(a) refer to knowledge sharing and exchange of information on good practices and lessons learned, possibly through a web platform (FAO), and to the establishment of a collaboration across the Rio Conventions and coordination of efforts by ministries and agencies (UNCCD).

Three observer submissions (FAO, WBCSD,

YOUNGO) report that the implementation of the relevant outcomes of the five in-session workshops is related to the mobilization of climate finance for the agriculture sector, with one submission (FAO) specifically referring to the Green Climate Fund (GCF) and the Global Environment Facility (GEF), one (YOUNGO) mentioning bilateral funding for climate action in agriculture and another one (WBCSD) making reference to private investments.

One observer submission (EAC) refers to the organization of an in-session workshop between SBSTA/SBI and the constituted bodies under the Convention to discuss actions, roles and modalities of enhancing implementation of the outcomes and two (EAC, YOUNGO) ask SBSTA/SBI to develop guidelines on climate actions on agriculture and modalities of implementation of outcomes for consideration by the COP.

2.3 Element 2(b): Methods and approaches for assessing adaptation, adaptation co-benefits and resilience

Most submissions (14 out of 27 – 5 UN System: FAO, IFAD, UNCCD, UNEP, WFP; 2 IGOs: CGIAR-CIAT-WB, EAC; 7 NGOs: CAN, CARE, CIRAD, EDF, INRA, WBCSD, YOUNGO) specifically refer to methods and approaches for assessing adaptation, adaptation co-benefits and resilience (element 2(b) of the paragraph 2 of the decision 4/CP.23). Two (CIRAD, INRA) of these include in their submissions a general reference to this element without providing specific inputs or indications. Four observer submissions (CARE, FAO, IFAD, UNCCD) present specific actions already undertaken as showcases to be referred to as best practices and lesson learned (See Annex). Three submissions (EAC, FAO, WFP) identify a list of needs and priorities to be addressed in order to advance in exploring methods and approaches for assessing adaptation, adaptation co-benefits and resilience and eight submissions (CAN, CARE, CGIAR-CIAT-WB, EDF, FAO, UNEP, WBCSD, YOUNGO) propose possible actions for addressing the identified needs. Common issues identified include, among others:

- ▶ the need to enhance appropriate statistics, research, analyses and tools based on coordination of the regional, national and international governments and organizations

- for the collection of disaggregated, independent, open, reliable, and timely data for the development of common indicators and methodologies for assessing adaptation, adaptation co-benefits and resilience in agriculture, to design credible Monitoring and Evaluation (M&E) and Monitoring, Reporting and Verification (MRV) systems in order to monitor progress of adaptation and the Sustainable Development Goals (SDGs);
- ▶ the importance of considering also possible negative effects of practices that potentially could enhance adaptation, adaptation co-benefits and resilience, i.e. the adoption of short-term coping strategies (e.g. skipping meals, switching to cheaper foods, borrowing food, begging, etc.) that could threaten food security in the long term;
- ▶ the necessity to strengthen coherent policy frameworks and to identify the technical, financial, and capacity-building support needed for assessing adaptation, adaptation co-benefits and resilience. This includes also the necessity to ensure appropriate climate finance, including the enhancement and risk reduction of private sector investment in innovation and technologies for adaptation, particularly in the LDCs;
- ▶ the usefulness of participatory and gender-balanced approaches that should actively involve farmers, especially smallholders, youth, women and indigenous peoples, vulnerable populations and marginalized communities; and
- ▶ the importance to engage experts and coordinate actions with other forums and international organizations relevant to agricultural development.

One observer submission (EAC) refers to the organization of an in-session workshop and expert meeting and asks SBSTA/SBI to develop

guidelines on methods and approaches for assessing adaptation, adaptation co-benefits and resilience for consideration by the COP.

2.4 Element 2(c): Improved soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management

Most submissions (14 out of 27 – 4 UN system: FAO, IFAD, UNCCD, UNEP; 2 IGOs: CGIAR-CIAT-WB, EAC; 7 NGOs: CAN, CARE, CIRAD, EDF, INRA, WBCSD, YOUNGO; 1 NAE: CNE *et al.*) specifically refer to issues related to improved soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management, as comprised in the element 2(c) of the paragraph 2 of the decision 4/CP.23. Three submissions (CIRAD, CNE *et al.*, INRA) include in their submissions general references to topics under element 2(c), without going into details. Four observer submissions (CARE, CGIAR-CIAT-WB, FAO, IFAD) present specific actions already undertaken in their country as showcases to be referred to as best practices and lesson learned (See Annex). Two submissions (EAC, FAO) identify a list of needs and priorities to be addressed in order to improve soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management. Seven submissions (CAN, EDF, FAO, UNCCD, UNEP, WBCSD, YOUNGO) propose possible actions for addressing the identified needs. Common issues identified include, among others:

- ▶ the necessity to raise awareness on sustainable soil management, including approaches to increase soil organic carbon (SOC) sequestration and stocks and reducing SOC losses, and to protect soil ecosystems with alternatives to open burning and applying agronomic management practices that improve above and below ground biomass production and residue retention;
- ▶ the necessity to reduce emissions from intensive cultivation and land management changes (e.g., avoiding or reducing deforestation, rapid urbanization and unplanned urban sprawl, biofuel plantations) and to protect high carbon content soils (e.g. avoiding excessive drainage leading to oxidation and mineralization of organic soils, avoiding agronomic practices and production systems that accelerate soil erosion and the decomposition of soil organic matter, preferring no- or low-tillage systems, permanent soil cover, rotational grazing, etc.);
- ▶ the usefulness to develop guidelines and safeguards on carbon sequestration as mitigation practice, and on measuring, mapping, reporting and monitoring SOC stocks;
- ▶ the importance to improve the knowledge and evidence base on the benefits of soil biodiversity and health, including a global assessment of soil biodiversity, and to implement integrated systems in the agricultural sectors to improve soil health and soil fertility, as well as water availability (e.g. more efficient use of the water resources pursuing the aim to expand irrigation access to the largest number of poor while keeping its costs affordable, choice of drought-resistant or inundation-resistant or even salt-resistant crops, maintain optimal groundwater levels and protect and restore wetlands);
- ▶ consider land-based or landscape approaches with effective administrative and governance frameworks at the local level that can be integrated within national and global

strategies, in order to develop policy and financial instruments that create incentives (remove disincentives) to increase soil organic carbon;

- ▶ the importance to consider possible negative effects on soil health, biodiversity and water of practices applied to enhance food security including for example deforestation, intensive farming, “No-till” monocultures of genetically modified crops that use high

inputs of glyphosate herbicide and pesticides which negatively affect soils;

- ▶ the usefulness to share knowledge regarding soil management especially with farmers, capitalizing also on the expertise under the GSP and other instruments.

One observer submission (EAC) refers to the organization of an in-session workshop.

2.5 Element 2(d): Improved nutrient use and manure management towards sustainable and resilient agricultural systems

13 submissions (4 UN system: FAO, IFAD, UNCCD, UNEP; 2 IGOs: CGIAR-CIAT-WB, EAC; 6 NGOs: CAN, CIRAD, EDF, IFA, INRA, YOUNGO; 1 NAE CNE *et al.*) specifically refer to issues related to improved nutrient use and manure management towards sustainable and resilient agricultural systems. Three observers (CIRAD, CNE *et al.*, INRA) include in their submissions general references to topics under element 2(d) without specific actions or indications. One submission (UNEP) considers elements 2(d) and 2(e) together, referring to actions aimed at reducing methane emission from livestock and manure management. Three observer submissions (FAO, IFAD, UNEP) present specific actions already undertaken as showcases to be referred to as best practices and lesson learned (See Annex). One submission (EAC) identifies a list of needs and priorities and seven submissions (CAN, CGIAR-CIAT-WB, EDF, FAO, IFA, UNCCD, UNEP, YOUNGO) propose possible actions to improve nutrient use and manure management towards sustainable and resilient agricultural systems. Common issues identified include, among others:

- ▶ the necessity to develop a regulatory framework, in particular related to public health and environment, that consider sanitary and technical requirements to address nutrient leaching and pollution (e.g. recovery of nutrients). This includes the need for a clear distinction between industrial fertilizers and compost or manure and the awareness of related effects on water resources, on soil health and structure and on health of farmers and consumers;
- ▶ the usefulness of improved and more efficient nutrient use management with planning of fertilizers application in space and time, applying the concepts of life cycle and circular economy to the management of nutrient resources. This includes also the possibility of developing locally processed organic fertilizers as a new economic opportunity, including the recycling animal waste also for bioenergy (e.g. manure application to crops and biogas production);
- ▶ the importance of promoting agro-ecological strategies such as agroforestry systems, organic agriculture, permaculture as well as the use of sophisticated site-specific monitoring and modeling technology for precision agriculture to optimize the use of nutrients, naturally increase fertility of the soil and increase resilience;
- ▶ the opportunity to create an efficient link between experts and farmers to access knowledge and technical assistance to accelerate action and access financing.

One submission (particularly by agribusiness representatives: e.g. IFA) expresses its view on

the fertilizers application according to Best Management Practices (4Rs–Right source, rate, place, time) that could be seen as a possible climate solution for achieving global food security, focusing on the productivity intensification and the subsequent reduction of GHG emissions per unit of agricultural products, preventing also deforestation. However, many observers mention the importance to treat advocacy (showed

particularly by agribusiness representatives e.g. IFA) in favour of synthetic fertilizer applications with skepticism, considering the risks to increase absolute (total) GHG emissions of the agriculture sector and of developing a financial and social dependence to international firms producing industrial fertilizers.

One observer submission (EAC) refers to the organization of an in-session workshop.

2.6 Element 2(e): Improved livestock management systems

Fourteen submissions (4 UN system: IFAD, UNEP, FAO, UNCCD; 2 IGOs: EAC, CGIAR–CIAT–WB; 8 NGOs: CAN, CARE, CIRAD, CNE *et al.*, EDF, INRA, WBCSD, YOUNGO) specifically refer to issues related to improved livestock management systems as referred in the element 2(e) of the paragraph 2 of the decision 4/CP.23. Three observers (CIRAD, CNE *et al.*, INRA) include in their submissions general references to topics under element 2(e), without providing further details. One submission (UNEP) considers elements 2(d) and 2(e) together, referring to actions aimed at reducing methane emission from livestock and manure management. Five observer submissions (CARE, EDF, FAO, IFAD, UNEP) present specific actions already undertaken as showcases to be referred to as best practices and lesson learned (See Annex). Two submissions (EAC, WBCSD) identify a list of needs and priorities and seven submissions (CAN, CGIAR–CIAT–WB, EDF, FAO, UNCCD, UNEP, YOUNGO) propose possible actions to improve livestock management systems. Common issues identified include, among others:

- ▶ the need for further study and development toward identifying the necessary technical and financial support for the effective implementation of sustainable and low-emissions agro-pastoral systems practices, including considerations on productivity improvements that reduce emission intensities on one side but increase the absolute (total) emissions on the other side, carbon sequestration through improved pasture management in an integrated landscape management approach, better livestock integration in circular bioeconomy and in programmes for rural and peri-urban communities;
- ▶ the need to develop appropriate MRV systems for agro-pastoral systems;
- ▶ the opportunity to consider the potential of extensive and integrated livestock management systems and of sustainable industrial meat production systems with a switch to less processed foods and less meat;
- ▶ the opportunity to create an efficient link between experts and farmers to access knowledge and technical assistance to accelerate action and access financing.

One observer submission (EAC) refers to the organization of an in-session workshop.

2.7 Element 2(f): Socioeconomic and food security dimensions of climate change in the agricultural sector

Most submissions (16 out of 27 – 4 UN system: FAO, IFAD, UNCCD, WFP; 2 IGOs: CGIAR–CIAT–WB, EAC; 9 NGOs: CAN, CARE, CIRAD, CUTS, EDF, INRA, OXFAM, WBCSD, YOUNGO; 1 NAE: CNE *et al.*) specifically refer to the socioeconomic and food security dimensions of climate change in the agricultural sectors. Four submissions (CIRAD, CNE *et al.*, INRA, OXFAM) include general references to topics under element 2(f) without providing specific actions or indications. Five observer submissions (CARE, FAO, IFAD, WBCSD, WFP) present specific actions already undertaken in their country as showcases to be referred to as best practices and lesson learned (See Annex). Other five submissions (CGIAR–CIAT–WB, CUTS, EAC, WBCSD, YOUNGO) identify a list of needs and priorities and six submissions (CAN, CUTS, EDF, FAO, UNCCD, WBCSD) propose possible actions in order to improve the socioeconomic and food security dimensions of climate change in the agricultural sector. Common issues identified include, among others:

- ▶ the importance to address gender equality and apply rights-based approaches to sustain the rural poor, family farmers, women, youth, indigenous communities and vulnerable groups with the aim to increase smallholder and family farmers' resilience, empower rural livelihoods, increase the adaptive capacity, reduce poverty and increase food security, especially in developing countries and LDCs;
- ▶ the need to increase the understanding of the linkages between climate change, land degradation, droughts, food security and conflict, including addressing the root causes of migrations and design and adopt a new approach to migration;
- ▶ the necessity to explore all the aspect of food security, including methods to enhance sustainable agricultural production systems (e.g. precision farming), but also to deepen the knowledge on the magnitude of food loss and reduce food waste, promoting demand-side solutions through improvement of consumption patterns, nutrition issues, diets and lifestyle;
- ▶ the need to build capacity and share knowledge, especially in developing countries and LDCs, through the promotion and dissemination by key institutions of guidelines, tools and models for development of climate change adaptation and mitigation in the food sector;
- ▶ the importance of research, development and transfer of technology aimed at enhancing food security, including incentives and assistance in the implementation of pilot projects and scaling up successful strategies to the national level, and capacity-building;
- ▶ the necessity to improve, particularly in developing countries and in LDCs, access to finance through identifying possible funding and financial investments (including the Green Climate Fund and other financial means) as well as encouraging the roles of private and public-sector to support the strengthening of sustainable agriculture and new advances in technology development, sharing of knowledge and capacities, and climate-resilient production infrastructures;
- ▶ the usefulness of improving weather forecasting to help farmers in planning agricultural practices and protect crops from adverse impacts of climate change and of the development of an insurance system that would help protecting farmers, their income and their food security from climatic variations.

2.8 Further elements to consider in the KJWA

Seven submissions (2 UN system: UNCCD, UNECE; 1 IGO: CGIAR–CIAT–WB; 3 NGOs: EDF, IRD, WBCSD; 1 NAE: LEAP) introduce topics of interest to be discussed during the KJWA that were not

directly linked to the elements listed in paragraph 2 of the decision. Further elements proposed (taken from the seven submissions, and not common to all) include the following items for discussion under the KJWA:

- ▶ exploring new developments on the recent establishment of the International Nitrogen Management System (INMS) with the aim to better investigate the nexus of the nitrogen cycle in the context of agriculture with the impacts on climate change and possible opportunities for mitigation, air and water quality, ecosystems and biodiversity (considering the UN Convention on Biological Diversity and its Aichi Targets), stratospheric ozone (considering the Montreal Protocol);
- ▶ pursuing land degradation neutrality (LDN) in order to maintain or enhance land-based natural capital and its associated ecosystem services through sustainable land management (SLM) practices coupled with efforts to reverse degradation through restoration or rehabilitation of degraded land, developing also LDN indicators for monitoring such as land cover (physical land cover class), land productivity (net primary productivity, NPP) and carbon stocks (soil organic carbon (SOC) stocks);
- ▶ investigating the rural-urban linkages and the related effects on agriculture in terms of increased need of food for citizens of expanding urban areas and the corresponding decrease of available croplands due to the expansion of cities;
- ▶ fostering technological investments for climate action in agriculture (the so called "Fourth Industrial Revolution Technologies in Agriculture");
- ▶ addressing the link between the development of bioenergy and possible negative social and environmental outcomes, including indirect land use change (ILUC) and associated food security impacts. This can be safeguarded using wastes and residues of second generation, coupled with credible sustainability certification, such as the Roundtable on Sustainable Biomaterials.

2.9 Perspectives and expected outcomes of the KJWA

Many submissions from observers (11 – 2 IGOs: CGIAR-CIAT-WB, EAC; 8 NGOs: BRIGHTER GREEN, CAN, CARE, EDF, OXFAM, WBCSD, WFO, YOUNGO; 1 NAE: NACSAA) highlight the KJWA as an opportunity to promote the development and transfer of knowledge, best practices and technologies with the aim to address and face the major challenges posed by climate change to agriculture and food security. Observer expectations of the KJWA include, inter alia:

- ▶ mobilization of knowledge, technology, finance and capacity needed, and building of capacities, especially among women and youth to adapt to climate variability (CGIAR-CIAT-WB, WBCSD, WFO, YOUNGO);
- ▶ enhancement of the research and development agendas, with the direct involvement of farmers in a farmer-centric gender-balanced approach in order to provide technological solutions more adapted to realities, practices, crops and needs of the farmers (WFO, YOUNGO);
- ▶ appointment of a senior food security focal point, (CAN, OXFAM) by the Executive Secretary to ensure that presentations and outcomes of the KJWA are aligned with the fundamental priority of safeguarding food security;

To reach these milestones, concrete expected outcomes from the KJWA are mentioned by some submissions. Nine submissions (2 IGOs: CGIAR-CIAT-WB, EAC; 7 NGOs: BRIGHTER GREEN, CAN, CARE, EDF, NACSAA, OXFAM, YOUNGO) ask SBSTA/SBI to develop specific policy guidelines or safeguards – a set of social and environmental standards – with criteria and objectives for climate action in the land sector, to ensure food security, livelihoods and ecosystems integrity.

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ANNEX

EXISTING INITIATIVES AND PROGRAMMES LED OR SUPPORTED BY OBSERVERS, AS HIGHLIGHTED IN THEIR SUBMISSIONS

LINK TO KJWA DECISION ELEMENT	TYPE OF OBSERVER	OBSERVER	PROGRAMME / PROJECT / REPORT	WEB LINK
2(b)	NGOS	CARE	Burkina Faso: special programme for soil and water conservation and agroforestry (phases 1 & 2).	www.ifad.org/web/ioe/evaluation/asset/39835621
	NGOS	CARE	Participatory Monitoring, Evaluation, Reflection, and Learning (PMERL) approach in community-based adaptation (CBA) projects.	https://careclimatechange.org/wp-content/uploads/2014/12/2014_PMERL.pdf
	NGOS	CARE	CARE's Participatory Performance Tracker (PPT).	www.carepathwaystoempowerment.org/wp-content/uploads/2015/04/PPTStepbyStepGuideFinal.pdf
	NGOS	CARE	CARE's Community Scorecard (CSC).	https://insights.careinternational.org.uk/media/k2/attachments/CARE_Community_Score_Card_Toolkit.pdf
	UN SYSTEM	FAO	System for earth observation, data access, processing and analysis for land monitoring (SEPAL).	https://sepal.io/
	UN SYSTEM	FAO	Open Foris.	www.openforis.org/
	UN SYSTEM	FAO	Collect Earth.	www.openforis.org/tools/collect-earth.html
	UN SYSTEM	FAO	EX-Ante Carbon Balance Tool (EX-ACT).	www.fao.org/tc/exact/ex-act-home/en/
	UN SYSTEM	FAO	Tracking adaptation in agricultural sectors: climate change adaptation indicators. FAO, 2017.	www.fao.org/3/a-i8145e.pdf
	UN SYSTEM	FAO	Resilience Index Measurement and Analysis (RIMA).	www.fao.org/resilience/background/tools/rima/en/
	UN SYSTEM	FAO	Knowledge Tank for agriculture sectors' adaptation to climate change. FAO, 2016.	www.fao.org/in-action/naps/knowledge-tank/en/
	UN SYSTEM	FAO	Addressing agriculture, forestry and fisheries in National Adaptation Plans – Supplementary guidelines.	FAO, 2017. Available at: http://www.fao.org/3/a-i6714e.pdf
	UN SYSTEM	FAO	Bioenergy and Food Security Approach.	www.fao.org/energy/bioenergy/bioenergy-and-food-security/en/
	UN SYSTEM	FAO	Agriculture Stress Index System (ASIS).	www.fao.org/resilience/news-events/detail/en/c/296089/
	UN SYSTEM	FAO	Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists. Details at:	www.fao.org/in-action/sharp/en/
	UN SYSTEM	FAO	FAOSTAT. FAO 2017.	www.fao.org/faostat/en/#home :
	UN SYSTEM	FAO	FAO and UNDP collaborative Programme Integrating Agriculture in National Adaptation Plans (NAP-AG).	www.fao.org/in-action/naps/en/
	UN SYSTEM	FAO	The Mitigation of Climate Change in Agriculture (MICCA) programme.	www.fao.org/in-action/micca/en/
	UN SYSTEM	FAO	The Forest and Landscape Restoration Mechanism (FLRM).	www.fao.org/in-action/forest-landscape-restoration-mechanism/en/
	UN SYSTEM	FAO	Blue Growth.	www.fao.org/policy-support/policy-themes/blue-growth/en/
	UN SYSTEM	FAO	UN Climate Resilience Initiative A2R.	www.a2rinitiative.org/
	UN SYSTEM	IFAD	Multidimensional Poverty Assessment Tool (MPAT).	www.ifad.org/topic/overview/tags/mpat ; https://www.ifad.org/documents/10180/8f51cc65-88f8-49cb-926b-236aacc32734
	UN SYSTEM	IFAD	Measuring climate resilience.	www.ifad.org/documents/10180/338cf851-0ff2-4589-8a0f-da616cf43751
UN SYSTEM	IFAD	Climate risk assessments.	www.ifad.org/documents/10180/30b467a1-d00d-49af-b36b-be2b075c85d2	

	UN SYSTEM	IFAD, WFP	Participatory Integrated Climate Services for Agriculture (PICSA).	https://ccafs.cgiar.org/participatory-integrated-climate-services-agriculture-picsa#WzNUgVUzaUk ; www.walker.ac.uk/projects/participatory-integrated-climate-services-for-agriculture-picsa/
	UN SYSTEM	UNCCD	Resilience, Adaptation Pathways and Transformation Assessment (RAPTA) framework.	Framework and guidelines on application of RAPTA: www.stagef.org/rapta-guidelines www.stagef.org/node/1606 Report on the application of RAPTA in Ethiopia: https://publications.csiro.au/rpr/pub?pid=csiro:EP173933 https://rethink.earth/making-resilience-adaptation-and-transformation-real/
2(c)	IGOS	CGIAR-CIAT-WB	Assess soil organic carbon stocks and hot spots for preventing loss and improving stocks.	http://soilsbestbets.ciat.cgiar.org
	IGOS	CGIAR-CIAT-WB	Monitor water balances over large scales and identify the practices and landscape approaches to manage extremes, and reduce water consumption (International Rice Research Institute and the Climate and Clean Air Coalition have compiled information on these practices for rice).	www.knowledgebank.irri.org/training/fact-sheets/water-management
	NGOS	CARE	CARE Mozambique25 study of conservation agriculture for cassava intercropped with green manure/cover crops.	www.care.org/mz/contentimages/mozambique_MERL_Conservation%20Agriculture%20FFS%20vs.%20Farmer%20Practice.FINAL.pdf
	UN SYSTEM	FAO	Global Soil Partnership. FAO, 2018.	www.fao.org/global-soil-partnership/about/why-the-partnership/terms-of-reference/en/
	UN SYSTEM	FAO	Voluntary Guidelines for Sustainable Soil Management. FAO, 2017.	www.fao.org/3/a-bl813e.pdf
	UN SYSTEM	FAO	Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security. FAO, 2012.	www.fao.org/docrep/016/i2801e/i2801e.pdf
	UN SYSTEM	FAO	Guidelines for the safe use of wastewater, excreta and greywater. WHO/FAO/UNEP, 2006.	http://apps.who.int/iris/bitstream/10665/41681/1/9241542489.pdf
	UN SYSTEM	FAO	Global Framework on Water Scarcity in Agriculture.	www.fao.org/land-water/overview/wasag/en/
	UN SYSTEM	FAO	The Global Soil Organic Carbon Map leaflet and GSOCmap web application. FAO, 2017.	http://54.229.242.119/apps/GSOCmap.html
	UN SYSTEM	FAO	AQUASTAT. FAO, 2010.	www.fao.org/nr/water/aquastat/main/index.stm
	UN SYSTEM	FAO	Global Symposium on Soil Organic Carbon.	www.fao.org/about/meetings/soil-organic-carbon-symposium/en/
	UN SYSTEM	IFAD	Conservation Agriculture (CA).	www.ifad.org/documents/10180/8f4cceb3-d99f-4583-bbaa-d376d7937d60 ; https://asia.ifad.org/enrap/resources/tans/tan-705-bioversity/TAN_coconut%20intercrop.pdf ; www.ifad.org/newsroom/press_release/tags/p53/y2017/47401925 ; www.ifad.org/documents/10180/65e06cd3-5b59-4192-8416-a7089d91630c
	UN SYSTEM	IFAD	Success with Grazing Enclosure Zones.	www.tandfonline.com/doi/full/10.1080/14735903.2017.1352059
UN SYSTEM	IFAD	The IFAD funded "Food Security and Development Support Project (PASADEM)" in Niger that uses an Assisted Natural Regeneration (ANR) technique to improve land restoration and climate change resilience.	www.ifad.org/web/operations/project/id/1625/country/niger	
2(d)	UN SYSTEM	FAO	Livestock Environmental Assessment and Performance (LEAP) Partnership.	www.fao.org/partnerships/leap/en/
	UN SYSTEM	FAO	Guidelines for environmental quantification of nutrient flows and impact assessment in livestock supply chains. FAO, 2017.	www.fao.org/3/a-bu312e.pdf
	UN SYSTEM	FAO	Developing the Code of Conduct for the Management of Fertilizers. FAO, 2018.	www.fao.org/fsnforum/activities/discussions/CoCoFe
	UN SYSTEM	FAO	<i>Integrated Plant Nutrient Management (IPNM). Nitrogen inputs to agricultural soils from livestock manure: New Statistics. Integrated crop management series. Vol. 24. FAO, 2017.</i>	www.fao.org/agriculture/crops/thematic-sitemap/theme/spi/scpi-home/managing-ecosystems/integrated-plant-nutrient-management/ipnm-what/en/

	UN SYSTEM	FAO	The Bioenergy and Food Security (BEFS) Approach.	www.fao.org/energy/bioenergy/bioenergy-and-food-security/en/
	UN SYSTEM	FAO	Global Partnership on Nutrient Management (GPNM).	web.unep.org/gpa/what-we-do/global-partnership-nutrient-management
	UN SYSTEM	FAO	Nitrogen Inputs to Agricultural Soils from Livestock Manure. FAO, 2018.	www.fao.org/economic/ess/ess-events/faostat-manure/en/
	UN SYSTEM	IFAD	Flexi-biogas.	www.ifad.org/documents/10180/2b0e6bfe-da33-4c56-99ee-e2125c188766 ; www.ifad.org/documents/10180/4df6d932-0e7c-47ec-9ee1-18f648d16165 ; www.biogas.co.ke/ ; www.ifad.org/documents/10180/d768c82a-7bbf-43d5-a0a1-afbfe06237d0
	UN SYSTEM	IFAD	Multi-functional Climate Smart Agricultural Systems.	https://link.springer.com/chapter/10.1007%2F978-3-319-32930-7_3
	UN SYSTEM	UNEP	Climate & Clean Air Coalition (CCAC).	http://ccacoalition.org/en/ ; www.fao.org/in-action/enteric-methane/en/
	UN SYSTEM	UNEP	The Global Livestock Environmental Assessment Model (GLEAM).	www.fao.org/gleam/en/
2(e)	IGOS	CGIAR-CIAT-WB	Possible actions in livestock systems to adapt to, and mitigate climate change, in both intensive, smallholder and pastoral systems.	www.fao.org/3/a-i3437e.pdf
	NGOS	EDF	Global Research Alliance on Agricultural Greenhouse Gases.	globalresearchalliance.org/
	UN SYSTEM	FAO	Breed Distribution Model.	www.fao.org/breed-distribution-model/en/
	UN SYSTEM	FAO	Tackling Climate Change in Zambia and Malawi. FAO, 2017.	www.fao.org/3/a-i8210e.pdf
	UN SYSTEM	FAO	Global Early Warning System for Transboundary Animal Diseases.	www.glews.net/
	UN SYSTEM	FAO	Global Livestock Environmental Assessment Model (GLEAM).	www.fao.org/gleam/en/
	UN SYSTEM	FAO	Global database of GHG emissions related to feed crops.	www.fao.org/partnerships/leap/database/ghg-crops/en/
	UN SYSTEM	FAO	Smallholder dairy methodology for Quantification of GHG Emission Reductions from Improved Management in Smallholder Dairy Production Systems using a Standardized Baseline. FAO, 2016.	www.fao.org/3/a-i6260e.pdf
	UN SYSTEM	FAO	Tackling Climate Change through Livestock. FAO, 2017.	www.fao.org/3/a-i3437e.pdf
	UN SYSTEM	FAO	Reducing Enteric Methane for improving food security and livelihoods.	www.fao.org/in-action/enteric-methane/en/
	UN SYSTEM	FAO	The Global Agenda for Sustainable Livestock.	www.livestockdialogue.org/
	UN SYSTEM	IFAD	Multifunctional boreholes for food production, livestock and human consumption powered through solar panels.	www.rural21.com/english/from-our-partners/detail/article/channelling-climate-finance-for-adaptation-in-agriculture-00002612/ ; http://ifad-un.blogspot.ch/2017/03/where-there-is-water-there-is-life.html
	UN SYSTEM	IFAD	Animal Health Agents (AHAs).	www.prosul.gov.mz/index.php/publicacoes/historias-de-sucesso/42-the-simple-cattle-crush-and-para-vets-pdf/file
	UN SYSTEM	IFAD	Fodder banks and supplementary feeding techniques.	www.prosul.gov.mz/index.php/publicacoes/historias-de-sucesso/41-stories-from-the-field-haymaking-and-salt-licks/file
	UN SYSTEM	IFAD	Community Based Natural Resource Management (CBNRM) plans.	www.ifad.org/documents/10180/b77e8cc4-b49f-4fbc-9605-0c2280c0e17e ; www.ifad.org/documents/10180/91e476ea-679a-46f0-9e0f-5240e0bf1acb
	UN SYSTEM	UNEP	Climate & Clean Air Coalition (CCAC).	http://ccacoalition.org/en/ ; www.fao.org/in-action/enteric-methane/en/
	UN SYSTEM	UNEP	The Global Livestock Environmental Assessment Model (GLEAM).	www.fao.org/gleam/en/
2(f)	NGOS	CARE	The Gender Action Plan.	www.unicef.org/gender/gender_57856.html
	NGOS	CARE	How effectively integrating gender in climate-resilient agriculture programs: IFAD "How to Do: Design of gender transformative smallholder agriculture adaptation programs".	www.ifad.org/web/knowledge/publication/asset/40215442

NGOS	CARE	CARE's Village Savings and Loan Associations (VSLAs).	https://insights.careinternational.org.uk/development-blog/vslas-the-three-keys-to-financial-security
NGOS	CARE	CARE's Farmer Field and Business School (FFBS).	www.care.org/work/worldhunger/farmersfieldandbusinessschooltoolkit
NGOS	CARE	CARE's Participatory Scenario Planning (PSP).	https://careclimatechange.org/wp-content/uploads/2015/05/ALP_PSP_EN.pdf
UN SYSTEM	FAO	Greening the Economy with Agriculture.	www.fao.org/nr/sustainability/greening-the-economy-with-agriculture-gea/en/
UN SYSTEM	FAO	Sustainable Food Value Chains Knowledge Platform.	www.fao.org/sustainable-food-value-chains/home/en/
UN SYSTEM	FAO	Climate Smart Agriculture Sourcebook.	www.fao.org/climate-smart-agriculture-sourcebook/en/
UN SYSTEM	FAO	Modelling System for Agricultural Impacts of Climate Change (MOSAICC).	www.fao.org/in-action/mosaicc/en/
UN SYSTEM	FAO	Economics and policy innovations for climate change (EPIC).	www.fao.org/climatechange/epic/home/en/
UN SYSTEM	FAO	Analysis and Mapping of Impacts under Climate Change for Adaptation and Food Security (AMICAF).	www.fao.org/in-action/amicaf/en/
UN SYSTEM	FAO	Nansen Programme.	www.fao.org/in-action/eaf-nansen/topic/18001/en
UN SYSTEM	FAO	Great Green Wall Initiative.	www.greatgreenwallinitiative.org/
UN SYSTEM	FAO	Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security. FAO, 2005.	www.fao.org/3/a-y7937e.pdf
UN SYSTEM	FAO	Training guide for Gender and Climate Change Research in Agriculture and Food Security for Rural Development. FAO and CCAFS.	www.fao.org/docrep/018/i3385e/i3385e.pdf
UN SYSTEM	FAO	State of Food and Agriculture. FAO, 2016.	www.fao.org/publications/sofa/2016/en/
UN SYSTEM	FAO	Save and Grow Initiative.	www.fao.org/ag/save-and-grow/
UN SYSTEM	IFAD	'Support to Agricultural Development and Rural Entrepreneurship Programme', in collaboration with WFP and the National Agricultural Insurance Company of Senegal (CNAAS), IFAD supported the professionalization of producer organizations (PO) by managing and mitigating risks, with a proposed insurance contract based on rainfall indexes derived by a satellite precipitation estimate (RFE).	www.ifad.org/web/knowledge/publication/asset/39186273 www.ifad.org/web/guest/parmhttp://p4arm.org/
UN SYSTEM	IFAD	Ecosystem-based adaptation and climate smart businesses opportunities for youth.	www.ifad.org/documents/38714170/39972302/Cameroon_e/853484e6-e804-41b5-bb45-75973db67222 www.ifad.org/web/operations/country/id/cameroon www.ifad.org/web/operations/project/id/1694/country/cameroon
UN SYSTEM	IFAD	Weather Index Insurance.	www.ifad.org/web/guest/wrmf www.ifad.org/documents/10180/2a2cf0b9-3ff9-4875-90ab-3f37c2218a90
UN SYSTEM	IFAD, WFP	Participatory Integrated Climate Services for Agriculture (PICSA).	https://ccafs.cgiar.org/participatory-integrated-climate-services-agriculture-picsa#WzNUgVUzaUk www.walker.ac.uk/projects/participatory-integrated-climate-services-for-agriculture-picsa/
UN SYSTEM	WFP	Hunger and Climate Vulnerability Index (HCVI) developed under the High-End Climate Impact and Extreme initiative (HELIX).	www.wfp.org/content/2015-food-insecurity-and-climate-change-map www.wfp.org/content/2017-high-end-climate-impact-and-extremes-helix
UN SYSTEM	WFP	The Consolidated Livelihood Exercise for Analyzing Resilience (CLEAR).	https://documents.wfp.org/stellent/groups/public/documents/communications/wfp291243.pdf?_
UN SYSTEM	WFP	The 72-hour emergency assessment approach.	https://documents.wfp.org/stellent/groups/public/documents/communications/wfp291242.pdf?_
UN SYSTEM	WFP	Fill the Nutrient Gap.	www.wfp.org/content/2017-fill-nutrient-gap

	UN SYSTEM	WFP	Forecast-Based Financing.	https://docs.wfp.org/api/documents/WFP-0000069094/download/
	UN SYSTEM	WFP	The R4 Rural Resilience Initiative (R4).	https://docs.wfp.org/api/documents/b9a3d33bd9974e5aaf01b11a3e3da410/download/?_ga=2.85003738.254731469.1520238270-269468544.1504855920
	UN SYSTEM	WFP	Global Framework for Climate Service (GFCS) Adaptation Programme for Africa.	www.wfp.org/climate-change/initiatives/climate-services-action-africa?_
	UN SYSTEM	WFP	Productive Safety Net Programme (PSNP).	www.wfp.org/sites/default/files/PSNP%20Factsheet.pdf
	UN SYSTEM	WFP	How Climate Drives Hunger: Food Security Climate Analyses, Methodologies & Lessons 2010-2016.	www.wfp.org/content/2017-how-climate-drives-hunger?_
GENERAL	NAES	CNE ET AL.	Low carbon dairy and beef farms French and EU programs.	www.beefcarbon.eu/ www.carbon-dairy.fr/
	NAES	LEAP	International Dairy Federation that includes LEAP guidelines	www.fil-idf.org/working-areas-strategic/standards/
	NAES	LEAP	International Feed Industry Federation that includes LEAP guidelines	http://globalfeedlca.org/
	NAES	LEAP	EU Product Environmental Footprint Guidance that includes LEAP guidelines	http://ec.europa.eu/environment/eussd/smgp/policy_footprint.htm
	NAES	LEAP	Global Agenda for Sustainable Livestock	www.livestockdialogue.org/about-agenda/about-the-agenda/en/
	NGOS	CIRAD, INRA, IRD	4 PER 1000: Soils for Food security and Climate initiative.	www.4p1000.org/sites/default/files/content/consortium_3-4_-_4p1000_research_priorities_from_stc_0.pdf
	NGOS	WFO	Climate & Nature from Lantmännen in Sweden, food supply chain initiative.	https://lantmannen.com/en/sustainable-development/responsibility-in-the-value-chain/sustainable-cultivation/
	UN SYSTEM	UNECE	UNECE Air Convention's 2016 Scientific Assessment Report (SAR).	www.unece.org/fileadmin/DAM/env/lrtap/ExecutiveBody/35th_session/CLRTAP_Scientific_Assessment_Report_-_Final_20-5-2016.pdf
	UN SYSTEM	UNEP	Near-term Climate Protection and Clean Air Benefits: Actions for Controlling Short-Lived Climate Forcers. UNEP, 2011.	http://ccacoalition.org/en/resources/near-term-climate-protection-and-clean-air-benefits-actions-controlling-short-lived
	UN SYSTEM	UNEP	Food Systems and Natural Resources. A Report of the Working Group on Food Systems of the International Resource Panel. UNEP, 2016.	www.resourcepanel.org/reports/food-systems-and-natural-resources
NEW	NGOS	EDF	Roundtable on Sustainable Biomaterials.	https://rsb.org/



The historic Koronivia Joint Work on Agriculture decision was adopted at the 2017 international climate conference, COP23.

The decision recognizes the fundamental importance of agriculture in responding to climate change, and calls for joint work between the two Subsidiary Bodies of the United Nations Framework Convention on Climate Change.

The Koronivia decision represents the first conclusions adopted on the agenda item on “issues relating to agriculture” since its inception in 2011. Importantly, it broadens the conversation on agriculture from its former scientific and technical focus to also consider implementation.

The six elements specifically mentioned in the decision cover many of the most promising areas for action, including soil, livestock, nutrient and water management as well as the assessment of adaptation, socio-economic and food security dimensions.

Parties and observers were invited to submit their views on the joint work going forward by 31 March 2018. This working paper summarizes the 21 submissions made by Parties and the 27 submissions from observers that were published on the UNFCCC submission portal by 20 May 2018, as well as the two groups submissions by the African Group of Negotiators and Least Developed Countries.

Climate and Environment Division (CBC)

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