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KORONIVIA

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# KORONIVIA JOINT WORK ON AGRICULTURE

## Analysis of submissions on topics 2(e) and 2(f)

Submissions under UNFCCC decision 4/CP.23  
provided by Parties and observers as at 16 October 2020



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# CONTENTS

Acknowledgements	iv
Abbreviations and acronyms	v
<b>Introduction</b>	<b>1</b>
Objective	4
Methodology	4
<b>1.0 Overview of the submissions by Parties</b>	<b>7</b>
1.1 Views on topic 2(e)	8
1.2 Views on topic 2(f)	10
1.3 View on the workshops on topics 2(e) and 2(f)	11
<b>2.0 Overview of the submissions by observers</b>	<b>15</b>
2.1 Views on topic 2(e)	16
2.2 Views on topic 2(f)	18
2.3 View on the workshops on topics 2(e) and 2(f)	21
<b>References</b>	<b>23</b>
<b>Annex I</b>	
<b>Main initiatives and programmes undertaken by Parties or in which they are actively involved recalled in the Party submissions</b>	<b>24</b>
<b>Annex II</b>	
<b>Main initiatives and programmes undertaken by observers or in which they are actively involved recalled in the observer submissions</b>	<b>29</b>
<b>Figures</b>	
1. Constituted bodies under the convention	2
2. Koronivia Joint Work on Agriculture road map	3
3. Breakdown of submissions	6
4. Party and group submissions	6
<b>Boxes</b>	
1. Key terms	4

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# ABBREVIATIONS AND ACRONYMS

<b>AFOLU</b>	Agriculture, Forestry and Other Land Use
<b>AGN</b>	African Group of Negotiators
<b>ASEAN</b>	Association of South-East Asian Nations
<b>CBS</b>	Constituted bodies
<b>CEC</b>	Centro de Exportadores de Cereales
<b>CGIAR</b>	Consultative Group of International Agriculture Research
<b>CI</b>	Conservation International
<b>CIARA</b>	Camara de la Industria Aceteira da la Republica Argentina
<b>CIAT</b>	International Centre for Tropical Agriculture
<b>CMCC</b>	Euro-Mediterranean Center on Climate Change
<b>CONINAGRO</b>	Confederacion Intercooperativa Agropecuaria
<b>COP23</b>	23rd session of the Conference of the Parties
<b>CRA</b>	Confederaciones Rurales Argentinas
<b>EU</b>	European Union
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FIBL</b>	Forschungsinstitut für biologischen Landbau
<b>GCF</b>	Green Climate Fund
<b>GEF</b>	Global Environment Facility
<b>GDP</b>	Global Dairy Platform
<b>GHG</b>	Greenhouse gas
<b>GIZ</b>	Deutsche Gesellschaft für Internationale Zusammenarbeit
<b>IFOAM</b>	International Federation of Organic Agriculture Movements
<b>IGO</b>	Intergovernmental organization
<b>IICA</b>	Inter-American Institute for Cooperation on Agriculture
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>KJWA</b>	Koronivia Joint Work on Agriculture
<b>LDC</b>	Least Developed Countries group
<b>LEAP</b>	Livestock Environmental Assessment and Performance Partnership
<b>LEG</b>	Least Developed Countries Expert Group
<b>LULUCF</b>	Land Use, Land Use Change and Forestry
<b>NACSAA</b>	North America Climate Smart Agriculture Alliance Business for Social Responsibility
<b>NDCs</b>	Nationally Determined Contributions

<b>NGO</b>	Non-governmental organization
<b>SB 52</b>	52nd session of the Subsidiary Bodies
<b>SBI</b>	Subsidiary Body for Implementation
<b>SBs</b>	Subsidiary Bodies
<b>SBSTA</b>	Subsidiary Body for Scientific and Technological Advice
<b>SCF</b>	Standing Committee on Finance
<b>SDGs</b>	Sustainable Development Goals
<b>SfL</b>	Solutions from the Land
<b>SRA</b>	Sociedad Rural Argentina
<b>UN</b>	United Nations
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>WB</b>	World Bank
<b>WFO</b>	World Farmers' Organisation
<b>WGC</b>	Women and Gender Constituency

# INTRODUCTION

The Koronivia Joint Work on Agriculture (KJWA) is a specific workstream under the United Nations Framework Convention on Climate Change (UNFCCC) on issues related to agriculture launched by Parties at the 23rd Conference of the Parties (COP 23) in 2017 (Decision 4/CP.23, hereafter referred as the KJWA decision (UNFCCC, 2018a).

Through the KJWA decision, the UNFCCC recognizes the fundamental importance of agriculture in responding to climate change challenges while ensuring food security. The KJWA decision establishes a three-year joint work programme led by the UNFCCC Subsidiary Bodies (SBs), that aims to advance the exchange among Parties on issues related to agriculture under its multifaceted aspects, including but not limited to, an initial list of topics:

- ▶ 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 (including agropastoral production systems and others); and
- ▶ Socio-economic and food security dimensions of climate change in the agricultural sector.

The exchange on KJWA topics is undertaken through a series of workshops, submissions and reports following a well-defined roadmap (UNFCCC, 2018b). In addition to the topics above, in June 2019 the Subsidiary Body for Implementation (SBI) and the Subsidiary Body

for Scientific and Technological Advice (SBSTA) requested the Secretariat to organize an additional intersessional workshop that should take into account the following elements:

- ▶ sustainable land and water management, including integrated watershed management strategies, to ensure food security; and
- ▶ strategies and modalities to scale up implementation of best practices, innovations and technologies that increase resilience and sustainable production in agricultural systems according to national circumstances.

**The work under the KJWA takes into consideration the vulnerabilities of agriculture to climate change and approaches to address food security, while also acknowledging the importance of issues related but not limited to farmers, gender, youth, local communities and indigenous peoples.**

Agriculture issues are not new in the UNFCCC process, the Convention text considered agriculture as an integral part of mitigation and adaptation actions since the onset. The Convention text [Article 4 (1)(c)] mentions agriculture as one of several sectors where Parties are requested to “promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases”, while Article 4 (1)(e) makes a specific reference to the agriculture sector, mentioning the need to develop appropriate and integrated adaptation plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas affected by drought and desertification, as well as floods (UN, 1992).

A dedicated agenda item on issues related to agriculture under the SBSTA was first formalized in 2011 (decision 2/CP.17), followed by five in-session workshops on the status of scientific knowledge concerning agriculture and climate change. Rich exchanges among countries paved

the way towards the KJWA (2017), which calls for collaboration between SBSTA and the SBI widening the scope of the conversation from a scientific and technical focus to implementation. The KJWA requests also close collaboration with the Constituted bodies (CBs) and the Financial Mechanism of the Convention (the Global Environment Facility [GEF] and the Green

Climate Fund [GCF]), the Adaptation Fund, the Least Developed Countries Fund and the Special Climate Change Fund, providing an opportunity for interlinkages and harmonized action under the different bodies, and combining scientific and technical negotiations with exchanges on how to facilitate and finance implementation (UNFCCC, 2018c).

FIGURE 1.

CONSTITUTED BODIES UNDER THE CONVENTION



Most Parties see the KJWA as an opportunity to increase exchange and collaboration among countries to promote the development and transfer of knowledge, best practices and technologies. Many Parties envision that discussions under the KJWA

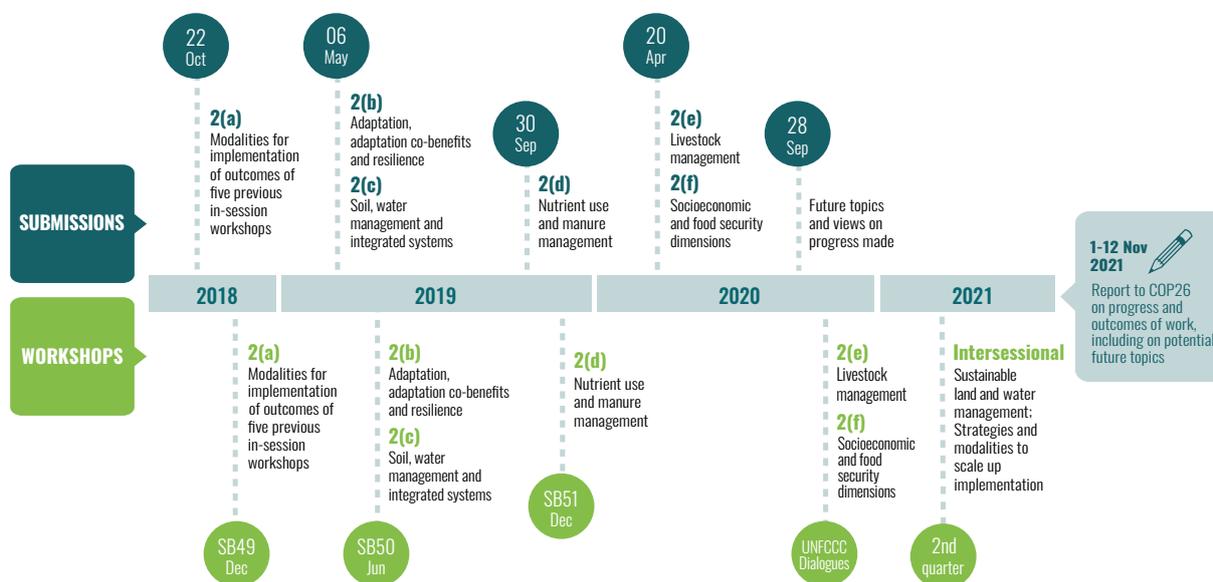
could lead to concrete recommendations to the CBs and provide tools to address the major challenges related to climate change, agriculture and food security that could be embedded in their national planning efforts (FAO, 2018).

The Koronivia road map (2018–2021) provides a timeline of the in-session workshops (organized by

the UNFCCC secretariat) and determines how the joint work will be organized (**Figure 2**).

**FIGURE 2.**

**KORONIVIA JOINT WORK ON AGRICULTURE ROAD MAP**



At the end of the three-year KJWA process at COP26, SBs will report to the COP on the progress achieved and possible outcomes of the discussions.

However, many Parties have already declared in their submissions that the three-year period currently foreseen may not signify the end date of the KJWA and that the SBs may define further work after 2021, pending a further COP decision (FAO, 2018).

Due to the COVID-19 crisis, the timeline of KJWA workshops was affected, with the fifty-second session of the Subsidiary Bodies (SB 52) postponed to 2021 (dates to be confirmed) and final reporting to the COP to take place at the 26th session of the Conference of Parties (COP 26) to the UNFCCC, delayed to November 2021. Under the guidance of the Chairs of SBI and SBSTA, the relevant events that were envisaged in the calendar mandated to SB 52 were included in the UNFCCC Climate Change Dialogues (23 November –4 December 2020). This also applied to the fifth and sixth in-session workshops of KJWA. The workshops addressed the two following topics:

- improved livestock management systems, including agropastoral production systems and others (topic 2(e) of the decision 4/CP23) and

- socio-economic and food security dimensions of climate change in the agricultural sector (topic 2(f) of the decision 4/CP23)

In preparation of the two workshops, Parties and observers were required to express their views on the above-mentioned topics by 20 April 2020.

In response to requests by a number of Parties, the Food and Agriculture Organization of the United Nations (FAO) continues to provide factual summaries of submissions made. FAO has already provided the analyses of three past rounds of submissions by Parties and observers in preparation for the 48th, 49th and 50th sessions of the SBs, namely:

- Koronivia Joint Work on Agriculture: Analysis of Submissions (FAO, 2018);
- Koronivia Joint Work on Agriculture: Analysis of Submissions on topic 2(a) (Chiriaco, M.V *et al.*, 2019a);
- Koronivia Joint Work on Agriculture: Analysis of Submissions on topics 2(b) and 2(c) (Chiriaco, M.V *et al.*, 2019b); and
- Koronivia Joint Work on Agriculture: analysis of submissions on topic 2(d) (Chiriaco, M.V *et al.*, 2020).

## Objective

This analysis aims to summarize the views on KJWA topics 2(e) and 2(f) submitted by Parties and observers in the UNFCCC Submission and Statement Portal as at 16 October 2020.

The analysis 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 experts working on climate change more generally, as well as interested members of the public.

Portal (UNFCCC, 2020), by the cut-off date of 16 October 2020. Each submission was studied in full to ensure a comprehensive assessment of the views provided by Parties and observers. The original text was extracted into a database that permits cross-referencing on different aspects of individual submissions. The database includes categories for KJWA topics 2(e) and 2(f), including the general views on the two topics expressed by Parties and observers, the priorities and needs for consideration during the workshops, the desired participation and expected outputs, among others.

The final analysis of submissions is developed following a stepwise approach:

- ▶ **STEP A:** a first draft with a partial and preliminary analysis including an in-depth overview reflecting ten Party submissions and seven observer submissions, available in the UNFCCC Submission Portal by 15 July 2020;
- ▶ **STEP B:** a complete analysis reflecting all the submissions from all Parties and observers, including also those submitted after the date defined for step A and by the cut-off date of 16 October 2020.

## Methodology

The analysis takes into consideration the submissions on topics 2(e) and 2(f) by thirteen Parties or groups of Parties and ten observer organizations or groups of observers, published in the UNFCCC Submission and Statement

### ■ 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 Intergovernmental Panel on Climate Change (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 Land Use, Land Use Change and Forestry (LULUCF). In the IPCC 2006, the two sectors (i.e. agriculture and LULUCF) are treated together in the Agriculture, Forestry and Land Use (AFOLU) sector.

**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 stability.

In this analysis, the terms above are reported from the submissions without specifically referring to any specific meaning, thus not prejudging the interpretation applied by different Parties.

## PARTY AND GROUP SUBMISSIONS

1. African Group of Negotiators (AGN)
2. Benin
3. Brazil
4. Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam as Members of the Association of South-East Asian Nations (ASEAN)
5. European Union (EU)
6. Indonesia
7. Japan
8. Bhutan on behalf of the Least Developed Countries (LDC) group
9. Mexico
10. New Zealand
11. Senegal
12. Switzerland
13. Vietnam

## OBSERVER SUBMISSIONS

### United Nations System

1. Food and Agriculture Organization of the United Nations (FAO)

### Admitted intergovernmental organizations

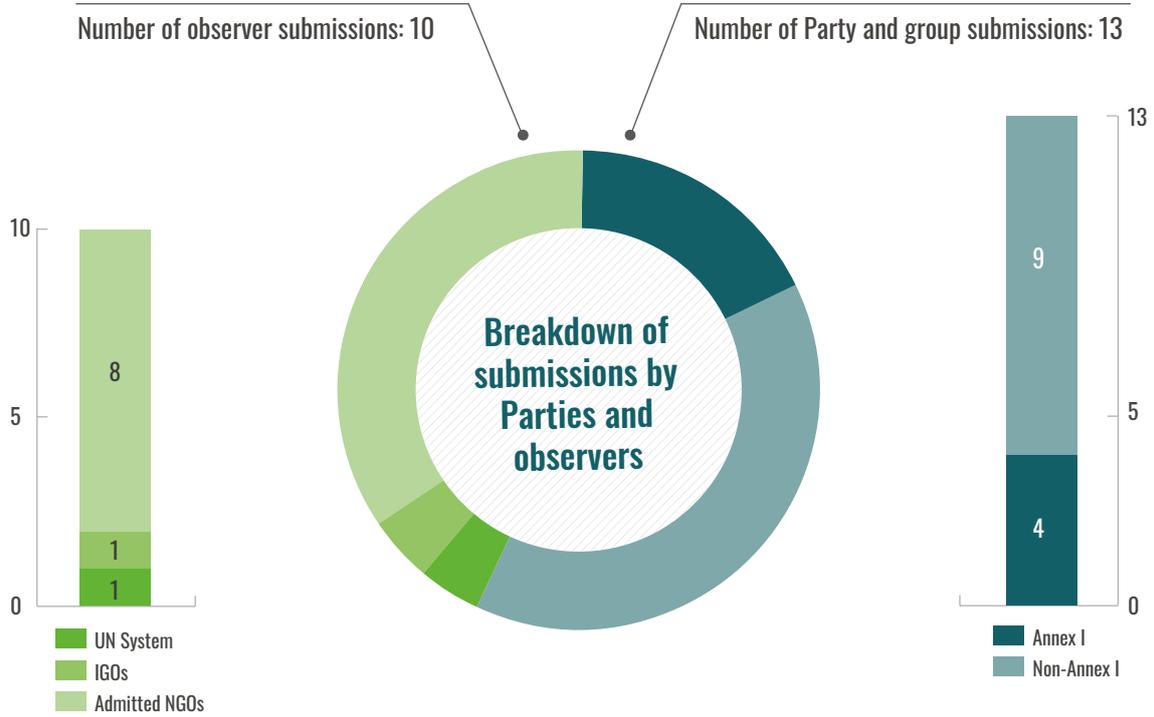
2. The Consultative Group of International Agriculture Research (CGIAR) System Organization, the International Centre for Tropical Agriculture (CIAT) and the World Bank (WB) (mentioned in the text hereafter as CGIAR-CIAT-WB)

### Non-governmental organizations

3. Conservation International (CI) and the Inter-American Institute for Cooperation on Agriculture (IICA) (mentioned in the text hereafter as CI-IICA)
4. Global Dairy Platform (GDP)
5. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
6. International Federation of Organic Agriculture Movements (IFOAM) Organics International, IFOAM-EU, Biovision and Forschungs institute für biologischenLandbau (FiBL) (mentioned in the text hereafter as IFOAM and others)
7. Solutions from the Land (SfL) and the North America Climate Smart Agriculture Alliance (NACSAA) (mentioned in the text hereafter as SfL-NACSAA)
8. Sociedad Rural Argentina (SRA) on behalf of Sociedad Rural Argentina; Grupo Productores del Sur, Confederaciones Rurales Argentinas (CRA), Confederacion Intercooperativa Agropecuaria (CONINAGRO), CREA; Aapresid, Bolsa Cereales, Camara de la Industria Aceteira da la Republica Argentina (CIARA), Centro de Exportadores de Cereales (CEC) (mentioned in the text hereafter as SRA and others)
9. World Farmers' Organisation (WFO)
10. Women and Gender Constituency (WGC)

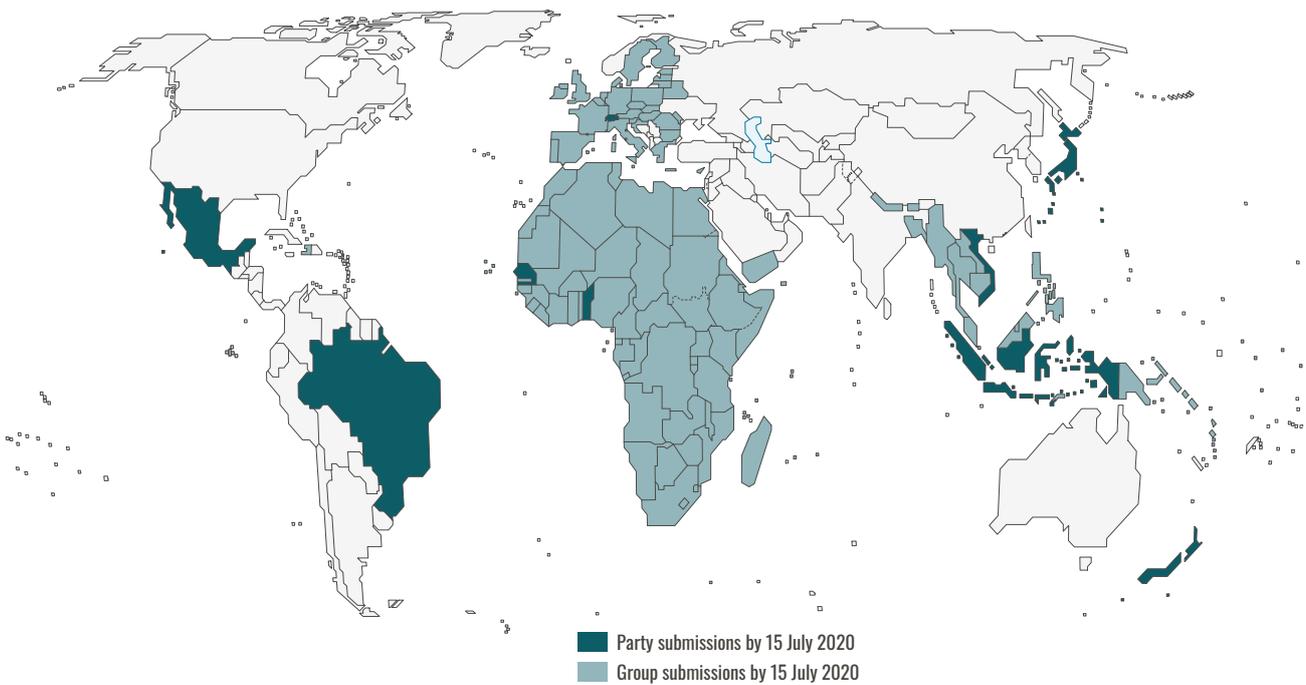
**FIGURE 3.**

**BREAKDOWN OF SUBMISSIONS**



**FIGURE 4.**

**PARTY AND GROUP SUBMISSIONS**



Source: Adapted from United Nations World map, February 2021

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# OVERVIEW OF THE SUBMISSIONS BY PARTIES

Topics 2(e) and 2(f) cover a wide range of elements related to livestock and agropastoral systems, agriculture and climate change, including the socio-economic and food security dimensions. Topic 2(e) relates to the importance of improving livestock management systems, including agropastoral production system, while topic 2(f) focuses on the highly multifaceted socio-economic and food security aspects of climate change in the agricultural sector.

This part of the analysis summarizes the views expressed by 13 Party submissions (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Japan, LDCs, Mexico, New Zealand, Senegal, Switzerland and Vietnam). Although these submissions vary considerably in structure, length and degree of detail, many of them show similarities in highlighting certain components or recommendations. Twelve out of 13 submissions (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Japan, LDCs, Mexico, New Zealand, Senegal and Vietnam) express their view on

both topics 2(e) and 2(f), while one submission (Switzerland) focuses exclusively on topic 2(f).

By providing their views on both topics 2(e) and 2(f), overall Parties agree on the fact that the unsustainable exploitation of agriculture, including livestock farming, has contributed to a range of detrimental effects, including the increase of net greenhouse gas (GHG) emissions from the sector, the loss of biodiversity and natural ecosystems, the growth of socio-economic uncertainties and food security reduction with large regional variation. Such effects are exacerbated by the vulnerabilities of the agriculture sector to climate change.

**For these reasons the main objective that should be pursued under the KJWA, as highlighted by all submissions, is to promote urgent action on climate change in order to avoid the risk of hunger, poverty and conflicts especially in developing countries.**

Building more resilience and sustainable practices on grassland, cropland and livestock systems, including a focus on ecological and socio-economic aspects of the pre- and post-production activities, are imperative to enhance adaptation and mitigation in the agricultural sector. In this context, policies and technical support should guide actions for the effective implementation of sustainable agriculture and livestock systems as well as global food security.

Five submissions (AGN, LDCs, New Zealand, Switzerland and Vietnam) also emphasize the important link of topic 2(f) with socio-economic development and food security objectives included in the UN Sustainable Development Goals (SDGs), with particular regard to: agricultural productivity and incomes of small-scale food producers (including women, indigenous peoples, family farmers and pastoralists); sustainable diets, sustainable value chains, resilient food production systems, and reduction of food losses and waste. Seven submissions (AGN, ASEAN, Benin, Mexico, New Zealand, Senegal and Vietnam) underline actions aimed at increasing food security and tracking progress in adaptation, adaptation co-benefits and resilience in livestock systems that should be a priority in the Nationally Determined Contributions (NDCs). More specifically, these submissions see the KJWA as an opportunity to provide countries with the necessary technical assistance for NDC enhancement, and to integrate objectives aimed at ensuring food and nutrition security, promoting sustainable production systems, protecting and rehabilitating degraded land, promoting sustainable livestock management and enhancing restoration of grasslands and rangelands.

The effects of the recent COVID-19 pandemic are recalled by three Party submissions (EU, New Zealand and Indonesia). These submissions emphasize the need to strengthen international coordination and to improve resilience through adaptation actions of the agricultural sector not only to climate change but also to pandemics like COVID-19 in order to safeguard the global food system. One submission (EU) highlights the need to investigate and monitor the link between infectious diseases and the pressure of human beings on climate and natural habitats, through deforestation, urbanization and industrialization.

## 1.1 Views on topic 2(e): improved livestock management systems, including agropastoral production systems and others

Twelve Party submissions out of 13 (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Japan, LDCs, Mexico, New Zealand, Senegal and Vietnam) specifically refer to issues related to improved livestock management systems (including agropastoral production systems and others) in topic 2(e). These submissions highlight the following common general considerations:

- ▶ Livestock systems contribute to people's livelihoods and food security, especially in rural areas.
- ▶ Livestock is important as a protein source and additional source of income.
- ▶ The livestock sector is an increasing source of GHG emissions at global level; and
- ▶ Livestock is seriously affected by the change in climate patterns. In particular, climate change is expected to decrease animal productivity unless adaptation actions are consistently undertaken.

All submissions (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Japan, LDCs, Mexico, New Zealand, Senegal and Vietnam) deepen the discussion on the potential needs, priorities and necessary actions to improve the existing methods and approaches of livestock management systems. In particular, they refer to the following aspects:

- ▶ facilitate and promote adaptation and mitigation initiatives to increase the resilience of livestock production systems (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Japan, LDCs, Mexico, New Zealand, Senegal and Vietnam);
- ▶ promote training, capacity building and technical assistance among farmers, especially in remote areas, to guide them

towards the adoption of sustainable practices and technologies, and increase their capacity to adapt to climate change (AGN, ASEAN, Brazil, EU, Indonesia, Japan, LDCs, Mexico, Senegal and Vietnam);

- ▶ promote the development of integrated systems involving animals, such as agroforestry and agropastoral systems, and capitalize on the co-benefits in agroecological food systems (AGN, Brazil, Benin, EU, Indonesia, LDCs, Mexico, Senegal and Vietnam);
- ▶ assess impacts of climate change on livestock and refine the methods to correctly estimate GHG emission from livestock (Brazil, EU, Japan and New Zealand);
- ▶ increase consumers' awareness of their role in adopting healthier and more sustainable diets that have low environmental impacts and low carbon footprint, and contribute to food and nutrition security (Brazil and EU);
- ▶ develop a collaborative policy-making approach, including the effective involvement and participation of those groups that are most vulnerable to the negative impacts that climate change exerts on food systems, such as women, youth, local communities and indigenous peoples (AGN, ASEAN, Benin, EU, Mexico and Senegal); and
- ▶ enhance research to develop sustainable innovations for livestock, including the possibility of exploring genetic improvement and promoting conservation and sustainable use of animal genetic resources (EU, Indonesia, LDCs, Mexico, New Zealand and Vietnam).

**Increasingly sustainable livestock production is seen as a key solution by all Party submissions (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Japan, LDCs, Mexico, New Zealand, Senegal and Vietnam) in order to foster climate change adaptation and mitigation, while co-benefiting from the ecosystem services sustainable livestock production can provide, and protecting biodiversity.**

The implementation of appropriate management practices can contribute to achieving sustainability in livestock production, these include:

- ▶ agroecology, agroforestry, organic farming, agropastoral and integrated systems to improve productivity and restore degraded pasture lands, with the aim of increasing their resilience, reducing overall GHG emissions and the emissions intensity of livestock production (AGN, Brazil, Benin, EU, Indonesia, LDCs, Mexico, Senegal and Vietnam);
- ▶ improved management of grasslands, rangelands and croplands, by prioritizing organic fertilizers and promoting the interactions between plants and microorganisms with the objective of improving the absorption of nitrogen while reducing the need for chemical fertilizers (ASEAN, Benin, Brazil, EU, Indonesia, Japan, Mexico);
- ▶ livestock management technologies and practices that allow increasing animal welfare and health while improving mitigation and adaptation to climate change (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Japan, LDCs, New Zealand, Senegal and Vietnam);
- ▶ upscaling and dissemination of proven livestock management technologies and knowledge to a greater population of livestock farmers and small-scale food producers to enhance their adaptive capacity (AGN, ASEAN, EU, Indonesia, Japan, LDCs, Mexico, New Zealand and Vietnam);
- ▶ improved feed quality and efficiency to reduce methane and nitrogen emissions, including practices of reducing feed additives, diversification of forage types, breeding insects for livestock feeding (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Japan, LDCs, Mexico, New Zealand and Vietnam);
- ▶ improved agricultural and livestock waste management, including manure fermentation facilities, to reduce methane emissions (ASEAN, Benin, EU, Indonesia, Japan, Mexico, New Zealand and Vietnam);
- ▶ promotion of environmental sustainability along the entire livestock value chain by adopting sustainable and traceable high-quality production while increasing productivity (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Japan, LDCs, Mexico, Senegal and Vietnam);
- ▶ development of a strong national legal framework and an enabling institutional

environment to incentivize sustainable and low-emissions production systems (ASEAN, Benin, Brazil, EU, Indonesia, Japan, Mexico, New Zealand, Senegal and Vietnam); and

- ▶ increased research, technology transfer and capacity-building on sustainable practices for livestock management, including a better understanding of methane emission factors to improve GHG inventories, and on processes to obtain high-quality products (EU, Brazil, Japan and New Zealand).

The importance of financial support, including through multilateral financial institutions, in support of effective climate action in the agriculture and livestock sector, is highlighted by ten Party submissions (AGN, ASEAN, Benin, Brazil, EU, Indonesia, LDCs, Mexico, Senegal and Vietnam).

According to ten submissions (Benin, Brazil, EU, Indonesia, Japan, LDCs, Mexico, New Zealand, Senegal and Vietnam), topic 2(e) should help to identify and share best practices, policies and technologies that can enable an improvement of livestock management. The development of a common understanding with country-specific solutions is necessary in order to identify knowledge gaps to achieve sustainable livestock management. Many of these submissions mention and describe national programmes and/or initiatives (see **Annex I**), with the aim to:

- ▶ share experience, increase knowledge and access to research information;
- ▶ develop and share platforms, mechanisms and analytical tools;
- ▶ support development or enhancement of relevant national policies and guidelines, as well as strengthen coordination; and
- ▶ improve farmers' access to financing schemes and mechanisms.

The programmes and initiatives described in the submissions include the following commonalities:

- ▶ national programmes and initiatives to improve livestock management systems that increase efficiency and profitability, enhance social, economic, and environmental sustainability, reduce the GHG intensity and increase resilience and adaptive capacity;

- ▶ national policies that support the development and implementation of adequate technologies and innovative solutions for livestock management, including animal feed techniques and livestock manure management practices;
- ▶ the role of policymakers and stakeholders in designing, implementing, monitoring and assessing sustainable food systems policies, programmes and initiatives;
- ▶ national programmes and initiatives that provide financial incentives for improving livestock management systems;
- ▶ development of good practices and innovative agro-zootechnical solutions for eco-sustainable livestock value chains, resilient food production systems, and reduction of food losses and waste;
- ▶ examples of agro-pastoral systems in which the livelihood strategies of small extensive livestock farmers play a key role; and
- ▶ national programmes and research that address livestock selection.

The initiatives described in the submissions consider the important links with soil health, water quality, agricultural productivity and economic prosperity, and highlight adaptation, adaptation co-benefits and resilience in different livestock systems, considering also the local circumstances and conditions.

## 1.2 Views on topic 2(f): socio-economic and food security dimensions of climate change in the agricultural sector

All Party submissions (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Japan, LDCs, Mexico, New Zealand, Senegal, Switzerland and Vietnam) provide views on issues related to socio-economic and food security dimensions of climate change in the agricultural sector.

The submissions underline that agriculture is one of the sectors most susceptible to climate change.

The negative effects of extreme events due to climate change have severe impacts on food production with a direct impact on food insecurity (including decrease of productivity, loss of products, and soil degradation) especially in developing countries which are exacerbated in the absence of appropriate adaptation and mitigation measures.

These submissions agree on some common general considerations on topic 2(f). Specifically, they highlight the following:

- ▶ On one side, the expansion of agriculture can ensure food availability for a growing population, but on the other side, increased cropland coupled with unsustainable practices can contribute to land degradation and desertification in many regions, impacting food security and terrestrial ecosystems.
- ▶ Climate change threatens the income and livelihoods of those most vulnerable.
- ▶ Climate-related extreme events, such as droughts and floods, can increase inequities and conflicts at the local level, contributing to the migration of millions of people.
- ▶ Global food security should be addressed by applying sustainable land-use practices and strengthening resilience and adaptive capacity of agricultural production systems.

Needs and priorities to be addressed with regard to the socio-economic and food security dimensions of climate change in the agricultural sector are identified by all Party submissions (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Japan, LDCs, Mexico, New Zealand, Senegal, Switzerland and Vietnam).

In particular, the submissions focus on the need to improve sustainable land management, with an ecological and socio-economic focus, and related co-benefits for climate change adaptation.

The most common priority options identified by the Party submissions include the following:

- ▶ application of sustainable land management options, such as reduction of soil erosion and nutrient loss by growing leguminous and green manure crops, using cover crops, crop residue retention, reduced/zero tillage farming, and maintenance of ground cover by improved grazing management;
- ▶ coordination of activities and knowledge exchange among all stakeholders including businesses, producers, consumers, land managers, policymakers, indigenous peoples and local communities with the aim to increase capacity for adopting appropriate climate change response options; and
- ▶ development of approaches and innovation for sustainable agriculture and food systems, including agroecology, agroforestry, climate-smart agriculture and integrated production systems.

Furthermore, all Party submissions identify potential actions, practices and measures for farmers and food producers to fulfil their potential contribution to climate change mitigation and adaptation, while ensuring the four pillars of food security (food availability, access, utilization and stability) and allowing effective balance among environmental, social and economic sustainability. In this regard the identified priorities are:

- ▶ identify requirements to improve the infrastructure of agriculture value chains and increase agricultural productivity, sustainability and efficiency (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Japan, LDCs, Mexico, New Zealand, Senegal, Switzerland and Vietnam);
- ▶ reduce food loss and waste in order to make the food system more efficient and reduce the carbon footprint of food production (AGN, ASEAN, EU, Indonesia, Mexico, Switzerland and Vietnam);
- ▶ promote sustainable supply chains of agricultural commodities as part of a sustainable food system (Brazil, EU, New Zealand and Mexico), including through incentives for deforestation-free commodities (EU);

- ▶ recognize and secure land tenure to foster sustainable land–use systems (ASEAN, Benin, EU, Indonesia, Mexico and Senegal);
  - ▶ ensure good nutrition by enhancing diversification and quality of food products (Brazil, Benin, EU, Indonesia, Mexico, Senegal, Switzerland and Vietnam);
  - ▶ promote healthy and sustainable diets to increase overall health of the population while reducing GHG emissions from food systems (AGN, Brazil, EU, Indonesia, Mexico, Switzerland);
  - ▶ foster livelihoods of rural communities and empower women, youth, indigenous peoples and other vulnerable groups to reduce inequalities and strengthen global food security (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Mexico, New Zealand, Senegal and Switzerland);
  - ▶ ensure access to innovation, technologies, and services for small–scale food producers and family farmers (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Japan, Mexico, New Zealand, Senegal, Switzerland and Vietnam);
  - ▶ increase institutional dialogues between stakeholders at all levels in order to design and apply relevant policies and programmes promoting agricultural and food system adaptation to climate change (ASEAN, Benin, Brazil, EU, Indonesia, Japan, Mexico, New Zealand, Senegal, Switzerland and Vietnam);
  - ▶ promote responsible marketing concepts, creating food value chains that indicate denomination of origin, sustainable production labels, food safety certifications (AGN, Brazil, EU, Indonesia, Mexico and Vietnam); and
  - ▶ implement an information system that can deliver information and knowledge for better decision making on farming practices to rural producers (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Japan, LDCs, Mexico Senegal and Vietnam).
- ▶ increase the socio–economic resilience of farmers through enhanced access to finance (AGN, ASEAN, Benin, Brazil, EU, Indonesia, LDCs, Mexico, Senegal and Vietnam);
  - ▶ mobilize investments in research, innovation, technology development and transfer, low carbon infrastructures, capacity building, public policy development, and innovative approaches to access agriculture value chains (AGN, ASEAN, Brazil, Indonesia, LDCs, Mexico, Switzerland and Vietnam);
  - ▶ improve the systems of payments for environmental services to increase the commitment of farmers, in particular at the local level (Brazil, Mexico); and
  - ▶ foster agricultural insurances to support farmers and to enable integrated risk management (AGN, Brazil, EU, Indonesia, Japan, LDCs, Senegal and Vietnam).

Nine out of 13 Party submissions (Benin, Brazil, EU, Japan, Mexico, New Zealand, Senegal, Switzerland and Vietnam) refer to best practices and lessons learned from actions at the national level to address the socio–economic and food security dimensions of climate change in the agricultural sector (see **Annex I**). These include the following actions:

- ▶ design, implementation, monitoring and assessment of sustainable initiatives that foster the potential contribution of small–scale food producers and small food businesses to sustainable food and nutrition security;
- ▶ implementation of national programmes and plans that develop new approaches for sustainable management of agricultural systems with the aim of protecting priority habitats at risk of loss or significant degradation, ensuring food security, reducing GHG emissions, increasing people’s wellbeing and resilience, and increasing the adaptive capacity of small–scale farmers;
- ▶ elaboration of public policies to support the development and implementation of adequate technologies in food production;
- ▶ development of inclusive policies and programmes to reduce existing inequality gaps and target the most vulnerable populations as priority beneficiaries of agricultural initiatives;

### The importance of financial resources and credit access in pursuing socio–economic and food security goals under a changing climate is highlighted by all submissions.

Nevertheless, different actions are proposed in this regard:

- ▶ implementation of sustainable approaches in local food systems through training, information exchange, and capacity building to promote socio-economic improvement in rural environments, as well as to improve remuneration and an increase in the quality of products;
- ▶ implementation of national initiatives that allow a quantitative assessment of expected GHG emissions and climate change impacts on agricultural productivity, finance and other interrelated effects; and
- ▶ technical and normative support to identify new insights in order to address the risks and impacts of climate change and to facilitate access of agricultural producers to incentives and collateral loans.

## 1.3 View on the workshops on topics 2(e) and 2(f)

Eleven Party submissions (AGN, ASEAN, Benin, Brazil, EU, Indonesia, Japan, LDCs, New Zealand, Switzerland and Vietnam) make specific reference to the in-session workshops at SB 52 related to topics 2(e) and 2(f). These submissions present potential themes to be presented at the workshop, expected participation and the desired outcomes to achieve global commitments in the agricultural and livestock systems. Ten Party submissions express their views on the two workshops on topics 2(e) and 2(f), while one Party submission (Switzerland) refers exclusively to the workshop on topic 2(f). The in-session workshop on the topic 2(e) is seen as an opportunity to:

- ▶ promote the identification of appropriate policies, best practices, lessons learned, and barriers for implementation, in order to allow a fruitful exchange of information and views from all stakeholders on climate action in agriculture and the whole food value chain. This includes, sustainable experiences on practices and technologies for improved and sustainable livestock management to increase food security and animal welfare;

- ▶ encourage sustainable livestock management in agro-pastoral and agroforestry systems to implement measures that address the issue of biodiversity and climate change in an integrated manner;
- ▶ identify enabling environments and tools to facilitate the application and the transfer of scientific and technological knowledge to local populations;
- ▶ balance productivity and profitability with GHG emissions efficiency from livestock activities;
- ▶ improve extra income for farmers through sustainable livestock management practices;
- ▶ facilitate financial investment in innovation to improve livestock management systems;
- ▶ favour individual access to sustainable livestock products to promote healthy diets, provide decent livelihoods, and reduce GHG emissions from food systems;
- ▶ enhance the conservation of indigenous animal genetic resources; and
- ▶ identify livestock management systems adapted to overcome the challenges of COVID-19.

The in-session workshop on the topic 2(f) is seen as an opportunity to:

- ▶ identify main challenges, strategies, measures and approaches for improving socio-economic conditions of farmers when taking climate actions;
- ▶ identify climate policy measures that improve food security of the most vulnerable rural population. These policy measures, among others, may include land reforms and secure land tenure;
- ▶ integrate practices and measures for improving socio-economic conditions in national planning processes;
- ▶ promote citizen inclusion in local, regional and national governance and decision making;
- ▶ facilitate farmers' access to local markets to increase income opportunities;
- ▶ facilitate access to financial loans;
- ▶ identify policies and best practices that reduce food loss and waste and enhance productivity and climate resilience of farming communities;
- ▶ promote actions to support efficient regional coordination to facilitate North-South, South-South and triangular cooperation models to scale up implementation for a global food security under climate change; and
- ▶ discuss COVID-19 recovery mechanisms with a focus on maintaining food security.



# OVERVIEW OF THE SUBMISSIONS BY OBSERVERS

This part of the analysis summarizes the views expressed on topics 2(e) and 2(f) by ten observer organizations, representing one United Nations (UN) system member (FAO), one intergovernmental organization (IGO) (CGIAR-CIAT-WB) and eight non-governmental organizations (NGOs) (CI-IICA, GDP, GIZ, IFOAM and others, SfL-NACSAA, SRA and others, WFO and WGC). Ten observers or groups of observers prepared their submissions with different levels of detail and length. More specifically, six submissions (one UN system: FAO and five NGOs: GDP, IFOAM and others, SfL-NACSAA, WFO and WGC) expressed their views on both topics 2(e) and 2(f), two submissions (two NGOs: GIZ and SRA and others) focused exclusively on topic 2(e) and two submissions (one IGO: CGIAR-CIAT-WB and one NGO: CI-IICA) focused exclusively on the topic 2(f). All submissions recognize the risks and vulnerabilities that agriculture and livestock management are experiencing in a changing climate.

**As highlighted in almost all submissions, the main objectives that should be pursued are elimination of hunger, safeguarding food security and nutrition, reducing rural poverty, and making the agricultural sector more productive and sustainable.**

For this reason, submissions discuss the importance of actions aimed at improving agricultural practices on grassland, cropland, livestock and manure management to enhance adaptation, resilience and mitigation in agricultural systems to achieve positive socio-economic and food security outcomes. Furthermore, these actions should be accompanied by the right technical support, enabling policies, and appropriate levels of engagement, in order to contribute to the sustainability of agriculture and livestock systems as well as to global food security and the other thematic areas of the KJWA.

The alignment of the SDGs with many national sustainability targets in agriculture, livestock and the food sector is underlined by five out of ten observer submissions (one UN system: FAO and four NGOs: GDP, GIZ, SfL-NACSAA and WFO). Six submissions (one IGO: CGIAR-CIAT-WB and five NGOs: CI-IICA, GDP, GIZ, IFOAM and others and WFO) highlight that ensuring food security through the implementation of innovative and sustainable agricultural and livestock systems can enable countries to meet the mitigation and adaptation goals set out in their NDCs. In this regard, one observer submission (NGO: CI-IICA) remarks the usefulness of the technical and financial assistance from UNFCCC to farmers and researchers in developing countries, in particular, to support the implementation process of their NDCs.

The impacts of the COVID-19 pandemic is recalled by five submissions (one UN system: FAO and four NGOs: GIZ, SfL-NACSAA, WFO and WGC) that remarked how the pandemic is affecting food systems with the risk of disrupting global food supply chains and impacting food security, especially for the most vulnerable countries and communities. According to these submissions, the COVID-19 pandemic must be seen as an opportunity to change the food system and lead to a more equitable world without hunger. Furthermore, it is important to maintain momentum and step up climate action to achieve the goals of the Paris Agreement despite the postponement of major climate meetings and events due to the COVID-19 pandemic.

## 2.1 Views on topic 2(e): improved livestock management systems, including agropastoral production systems and others

Eight observer submissions (one UN system: FAO, and seven NGOs: GDP, GIZ, IFOAM and others, SfL-NACSAA, SRA and others, WFO and WGC) specifically refer to issues related to improved management of livestock systems. These submissions highlight the following common general considerations:

- ▶ The livestock sector is an important source of GHG emissions and can have other significant environmental and social impacts, especially if unsustainably managed.
- ▶ Livestock systems are vulnerable to the climate crisis and to associated extreme weather events. Meanwhile, livelihoods that depend on livestock systems are becoming less secure as a result of climate change.
- ▶ Livestock systems play an essential role for small-scale food producers and family farmers in agropastoral systems, contributing to food security and livelihoods of local communities. Livestock systems support these communities to escape poverty, especially, when considering gender aspects.
- ▶ Sustainable management of livestock systems can help to achieve climate change adaptation and mitigation goals; and
- ▶ Livestock systems vary in terms of contexts, size, and functions. The diversity of the livestock sector requires location and system-specific solutions to reduce vulnerability and emissions.

Needs and priorities that should be addressed to reduce GHG emissions and vulnerability of livestock systems are identified by eight submissions (one UN system: FAO, and seven

NGOs: GDP, GIZ, IFOAM and others, SfL-NACSAA, SRA and others, WFO and WGC). These include:

- ▶ promotion of sustainable, low carbon, local and resilient agriculture and livestock production to maintain and even increase the ecosystem services they provide (one UN system: FAO and seven NGOs: GDP, GIZ, IFOAM and others, SfL-NACSAA, SRA and others, WFO and WGC);
  - ▶ improvement of land-use through sustainable grazing management and limiting expansion of feed crop production to reduce loss of forests and other natural ecosystems. Moreover, policies should regulate land tenure, land price and illegal land-use change (one UN system: FAO and seven NGOs: GDP, GIZ, IFOAM and others, SfL-NACSAA, SRA and others, WFO and WGC);
  - ▶ development of integrity and transparency along the entire food value chain, in order to ensure optimal nutrition, high quality and safety of products (one UN system: FAO and six NGOs: GDP, GIZ, IFOAM and others, SfL-NACSAA, WFO and WGC);
  - ▶ sustainable increase of livestock productivity (one UN system: FAO and four NGOs: GDP, GIZ, SfL-NACSAA and WFO) paying attention to:
    - improved quality of animal forages and digestibility by harvesting varieties rich in nutrients, using forages that have a higher energy-to-protein ratio and balancing high protein forages with high-energy supplements;
    - animal health and wellbeing, animal housing, manure and anaerobic digestion management, and information technology;
    - targeting animal genetic resources in order to increase efficiency and reduce emission intensities.
  - ▶ improve management and monitoring of water and soil quality, nutrient application, and animal health by ensuring access to reliable weather and climate forecast information and data and early warning systems (one UN system: FAO and three NGOs: GDP, GIZ and SfL-NACSAA);
  - ▶ shift to more efficient and renewable energy use in farms and in transport (one UN system: FAO and six NGOs: GDP, GIZ, IFOAM and others, SfL-NACSAA, WFO and WGC);
  - ▶ conversion of manure into biogas, while providing decentralized green energy for smallholder farmers and rural communities, reducing methane and nitrous oxide emissions, as well as emission intensity of livestock production (five NGOs: GDP, GIZ, IFOAM and others, SfL-NACSAA and WFO);
  - ▶ promotion of fertilizers with low carbon footprint (four NGOs: GDP, IFOAM and others, SfL-NACSAA and SRA and others);
  - ▶ improvement of the quantification of GHG emissions across the full livestock value chain through the application of enhanced methods (one UN system: FAO and two NGOs: GDP and GIZ);
  - ▶ involvement of representation of women, youth, local communities and indigenous people in decision-making processes (one UN system: FAO and five NGOs: GDP, GIZ, SfL-NACSAA, WFO and WGC); and
  - ▶ development of enabling and context-specific policy measures for supporting small-scale farmers in the following areas (one UN system: FAO and five NGOs: GDP, GIZ, IFOAM and others, SfL-NACSAA and WFO):
    - agriculture subsidies to improve performance and strengthening market competitiveness;
    - adoption of innovative technologies;
    - access to extension services and knowledge;
    - limit forest conversion and logging in order to expand of cropland.
- Some submissions (one UN system: FAO and five NGOs: GDP, GIZ, SfL-NACSAA, WFO and WGC) highlight the importance of supporting farmers in developing countries to make livestock systems more sustainable and resilient through:
- ▶ reinforcement of knowledge sharing;
  - ▶ development of tools, technologies, training and pilot projects that enable farmers and decision-makers to address complex farm-level challenges;
  - ▶ implementation of institutional processes for governments and other bodies to adjust policies and regulations based on local farmer inputs;
  - ▶ facilitation of dialogue through intergovernmental and multi-stakeholder meetings to advance the implementation of the KJWA.

The importance of private and public-sector financial support and investment to develop tools and methods for resilient and sustainable agriculture is highlighted by five observer submissions (one UN system: FAO and four NGOs: GDP, GIZ, SfL-NACSAA and WFO). According to these submissions, financial support should aim to strengthen investments in:

- ▶ supporting farmers to access innovative technologies in order to advance the modernization of the livestock sector and develop more resilient and productive systems;
- ▶ enhancing research and effective knowledge transfer focused on bringing the least efficient farmers closer to the most efficient, including research on alternative feed sources for animals such as biofuel by-products;
- ▶ providing incentives to accelerate the translation and implementation of low-carbon efficient technologies and practices; and
- ▶ developing transparent and effective markets to build economically viable business opportunities for farmers and rural communities, achieving a fair and transparent flow of goods.

Three submissions (three NGOs: GIZ, IFOAM and others and WGC) highlight the need to reduce the growth of the intensified livestock production model which is a major cause of climate change, deforestation and biodiversity loss. As an alternative, conscious and responsible consumption of meat and livestock products is proposed. Furthermore, raising awareness of the importance of human and animal health and environmental impacts of food choices should be pursued with the aim of reducing GHG emissions from the livestock and food sectors.

Specific initiatives developed and undertaken at local, national and international level are reported by six submissions (one UN system: FAO and five NGOs: GDP, GIZ, IFOAM and others, SfL-NACSAA and SRA and others). These can be used as examples of best practices, technologies and know-how, research experiences and results, programmes, initiatives, policy instruments and tools to help farmers to improve sustainability and adaptive capacity in livestock management systems (see [Annex II](#)). They include:

- ▶ tools, methodologies, protocols and policies to assess, monitor and evaluate livestock GHG emissions and try to reduce them through innovative solutions;
- ▶ approaches that improve prevention, preparedness, early detection and early response to animal health threats and emergencies in order to improve livestock health and reduce associated emissions;
- ▶ initiatives that quantify the social impact of the sustainable actions to eradicate poverty, childhood malnutrition and hunger, generating employment opportunities and women's empowerment; and
- ▶ political solutions that can allow to rapidly implement and spread useful and sustainable initiatives.

## 2.2 Views on topic 2(f): socio-economic and food security dimensions of climate change in the agricultural sector

Eight observer submissions (one UN system: FAO, one IGO: CGIAR-CIAT-WB and six NGOs: CI-IICA, GDP, IFOAM and others, SfL-NACSAA, WFO and WGC) specifically refer to issues related to socio-economic and food security dimensions of climate change in the agricultural sector. In this regard, these submissions highlight the following common general considerations:

- ▶ Agriculture has a two-way link to climate change. On the one hand, it is vulnerable to the impacts of climate change that can affect the livelihoods of rural populations and family farms. On the other hand, it can provide significant adaptation and mitigation benefits and important ecosystem services;
- ▶ The agricultural sector fulfils important socio-economic functions, providing jobs and

economic growth as well as wellbeing and food for the global population; and

- ▶ Sustainable transformation of the traditional agricultural sector and food system can tackle negative climate change impacts on the socio-economic and food security aspects while reducing GHG emissions.

Eight submissions (one UN system: FAO, one IGO: CGIAR-CIAT-WB and six NGOs: CI-IICA, GDP, IFOAM and others, SfL-NACSAA, WFO and WGC) identify needs and priorities that should be addressed by specific actions to tackle the socio-economic and food security dimensions of climate change in the agricultural sector. In particular, they refer to issues of social inclusion and protection, food security, poverty reduction, environmental and economic sustainability, through:

- ▶ supporting countries institutions to develop and enhance a coherent and consistent set of economically, environmentally, and socially sustainable policies that address climate change impacts in agricultural sectors and deliver improved socio-economic and food security outcomes (one UN system: FAO, one IGO: CGIAR-CIAT-WB and six NGOs: CI-IICA, GDP, IFOAM and others, SfL-NACSAA, WFO and WGC);
- ▶ protecting livelihoods and promoting the inclusion of the most vulnerable people, especially smallholder farmers and their families, women, youth, local communities and indigenous people in order to improve their access to land, employment, financial resources, technologies, and education (one UN system: FAO, and six NGOs: CI-IICA, GDP, IFOAM and others, SfL-NACSAA, WFO and WGC);
- ▶ addressing issues related to access to equitable tenure rights for social and environmental stability (one UN system: FAO, one IGO: CGIAR-CIAT-WB and three NGOs: CI-IICA, WFO and WGC);
- ▶ increasing efficiency of food systems by establishing mechanisms to connect producers and consumers, promoting coordination and knowledge-exchange among value chain actors, reducing food loss and waste and working towards advocacy and awareness of

sustainable food systems (one UN system: FAO, one IGO: CGIAR-CIAT-WB and six NGOs: CI-IICA, GDP, IFOAM and others, SfL-NACSAA, WFO and WGC);

- ▶ facilitating farmers' access to markets, encouraging and supporting associations among small producers for production and trade (e.g. cooperatives and other forms) (one IGO: CGIAR-CIAT-WB and six NGOs: CI-IICA, GDP, IFOAM and others, SfL-NACSAA, WFO and WGC);
- ▶ promoting transparency and traceability in food supply chains through the application of national measures and trade policies that ensure open, fair and transparent national and international trading systems, assuring that these policies help agriculture and trade to adapt and mitigate climate change (one UN system: FAO, one IGO: CGIAR-CIAT-WB and four NGOs: GDP, SfL-NACSAA, WFO and WGC);
- ▶ strengthening the resilience to climate change of agricultural producers and rural communities, through the development of vulnerability and climate risk maps to climate risk monitoring and implementing early warning and early action plans (one UN system: FAO, one IGO: CGIAR-CIAT-WB and four NGOs: CI-IICA, GDP, SfL-NACSAA and WGC);
- ▶ collecting, analyzing and monitoring data on climate change impacts on people and agroecosystems to support national governments and farmers in planning appropriate adaptation strategies and protect their livelihoods, income and their food security; (one UN system: FAO, one IGO: CGIAR-CIAT-WB and four NGOs: CI-IICA, GDP, SfL-NACSAA and WFO); and
- ▶ highlighting the central role of farmers in knowledge exchange, agricultural research and innovation systems, at national and regional level (one UN system: FAO; one IGO: CGIAR-CIAT-WB and six NGOs: CI-IICA, GDP, IFOAM and others, SfL-NACSAA, WFO and WGC).

Five submissions (one UN system: FAO and four NGOs: CI-IICA, GDP, IFOAM and others and SfL-NACSAA) highlight that the interconnections between agriculture and forest cover should be carefully considered to limit widespread deforestation, support biodiversity conservation restoration and preserve the

essential ecosystem services provided by forests and other natural ecosystems.

**All submissions underline the importance to incentivize financial support, both from the private and the public sector, to boost investments for climate action in the agricultural sector aimed at enhancing socio-economic and food security outcomes.**

This can be achieved specifically by:

- ▶ strengthening finance mechanisms for delivering technical and financial assistance to developing countries in the agricultural sector; (one UN system: FAO, one IGO: CGIAR-CIAT-WB and three NGOs: CI-IICA, SfL-NACSA and WFO);
  - ▶ providing incentives and access to climate-smart investments in agricultural sectors to farmers, with the aim of upscaling sustainable practices and strengthening farmers' contribution towards positive and healthy ecosystems (one UN system: FAO, one IGO: CGIAR-CIAT-WB and six NGOs: CI-IICA, GDP, IFOAM and others, SfL-NACSA, WFO and WGC);
  - ▶ incentivizing public and private sector investments in technology and innovation to achieve more resilient food systems and address in a balanced and integrated way the economic, social and environmental dimensions of sustainable development (one UN system: FAO, one IGO: CGIAR-CIAT-WB and four NGOs: CI-IICA, GDP, SfL-NACSA and WFO);
  - ▶ providing access to knowledge exchange and technology transfer to the most vulnerable groups to support sustainable food production, distribution and speed up the transition to resilient food systems (one UN system: FAO, one IGO: CGIAR-CIAT-WB and six NGOs: CI-IICA, GDP, IFOAM and others, SfL-NACSA, WFO and WGC); and
  - ▶ providing a platform on finance for a wide range of stakeholders from governments, climate funds, financial institutions, civil society, think tanks and the private sector to discuss and promote the mobilization of climate finance for agriculture (one IGO: CGIAR-CIAT-WB and one NGO: WFO).
- Specific initiatives developed and undertaken at local, national and international level are reported by four submissions (one UN system: FAO and three NGOs: GDP, IFOAM and others and SfL-NACSA). These can be used as examples for best practices to address the socio-economic and food security dimensions of climate change in the agricultural sector (see **Annex II**). They include:
- ▶ technical and normative support to countries in order to address climate risks and impacts of climate change on the food production and distribution;
  - ▶ identification of low carbon and resilient solutions in agriculture;
  - ▶ promotion of coordination and knowledge-exchange among value chain actors;
  - ▶ provision of sustainable financing mechanisms to producers in order to accelerate climate-smart investments tailored to context-specific needs;
  - ▶ development of regional collaboration and coordination to face climate change impacts in agriculture; and
  - ▶ creation of opportunities to deliver improvements in the health and wellbeing of populations, especially children, thus reducing adverse health outcomes.

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## 2.3 View on the workshops on topics 2(e) and 2(f)

Nine observer submissions (one UN system: FAO, one IGO: CGIAR-CIAT-WB and seven NGOs: CI-IICA, GDP, IFOAM and others, SfL-NACSAA, SRA and others, WFO and WGC) make specific reference to the workshops on topics 2(e) and 2(f). The in-session workshops on topics 2(e) and 2(f) are seen as an opportunity to advance the discussion in particular on the following aspects:

- ▶ Agriculture, climate and environment:
  - adopt sustainable best practices to maintain and restore ecosystem services for low carbon, local and resilient agriculture and food systems, and to reduce GHG emissions (one UN system: FAO, one IGO: CGIAR-CIAT-WB and seven NGOs: CI-IICA, GDP, IFOAM and others, SfL-NACSAA, SRA and others, WFO and WGC); and
  - increase sustainable productivity and efficiency in food value chains (one UN system: FAO, one IGO: CGIAR-CIAT-WB and two NGOs: CI-IICA and SfL-NACSAA);
- ▶ Social issues:
  - increase resilience and income, generating employment for rural populations, and delivering both economic and mitigation co-benefits through the adoption of sustainable agricultural practices (one UN system: FAO, one IGO: CGIAR-CIAT-WB and six NGOs: CI-IICA, GDP, IFOAM and others, SfL-NACSAA, WFO and WGC); and
  - involve representatives of most vulnerable groups in decision-making processes, including women, youth, local communities and indigenous people to address socio-economic dimensions (one UN system: FAO, and four NGOs: CI-IICA, IFOAM and others, WFO and WGC);
- ▶ Governance and policy frameworks:
  - promote coherent national and international policies to ensure stability, transparency and accountability in the food sector, engaging governments and institutions, private sector, and civil society (one UN system: FAO, one IGO: CGIAR-CIAT-WB and five NGOs: CI-IICA, GDP, SfL-NACSAA, WFO and WGC);
  - secure land tenure rights, particularly for vulnerable groups (one UN system: FAO, and two NGOs: CI-IICA, and WGC); and
  - prioritise the transfer of knowledge, research and technology to strengthen the assistance to developing countries in the agricultural and livestock systems (one UN system: FAO, one IGO: CGIAR-CIAT-WB and six NGOs: CI-IICA, GDP, IFOAM and others, SfL-NACSAA, WFO and WGC);
- ▶ Climate finance:
  - prioritize adequate climate finance and investment mechanisms that support all scales of sustainable production systems in the agriculture and livestock systems (one UN system: FAO, one IGO: CGIAR-CIAT-WB and four NGOs: CI-IICA, GDP, SfL-NACSAA, and WFO); and
  - enhance private and public-sector support and investment to strengthen resilient and sustainable agriculture systems and improve livelihoods outcomes (one UN system: FAO, one IGO: CGIAR-CIAT-WB and three NGOs: CI-IICA, SfL-NACSAA and WFO).



# REFERENCES

- Chiriaco, M.V., Perugini, L. and Bombelli, A. Bernoux, M., Gordes A. and Kaugure, L. 2019a.** *Koronivia joint work on agriculture: analysis of submissions on topic 2(A) – Modalities for implementation of the outcomes of the Five in-session workshops. Environment and natural resources management working paper no. 74.* Rome. FAO. 32 pp. (also available at [www.fao.org/documents/card/en/c/ca5063en](http://www.fao.org/documents/card/en/c/ca5063en))
- Chiriaco, M.V., Perugini, L. Bellotta, M., Bernoux, M. & Kaugure, L. 2019b.** *Koronivia Joint Work on Agriculture: analysis of submissions on topics 2(b) and 2(c). Environment and Natural Resources Management Working Paper no. 79.* Rome. FAO. 32 pp. (also available at [www.fao.org/3/ca7026en/CA7026EN.pdf](http://www.fao.org/3/ca7026en/CA7026EN.pdf))
- Chiriaco, M.V., Perugini, L., Bellotta, M., Kaugure, L., Bernoux, M. 2020.** *Koronivia Joint Work on Agriculture: analysis of submissions on topic 2(d). Environment and Natural Resources Management Working Paper No. 83.* Rome. FAO. 36 pp. (also available at [www.fao.org/documents/card/en/c/ca9169en](http://www.fao.org/documents/card/en/c/ca9169en))
- FAO. 2018.** *Koronivia Joint Work on Agriculture: Analysis of Submissions. Environment and Natural Resources Management Series, Working Paper 71.* Rome. FAO. 52 pp. (also available at [www.fao.org/3/CA2586EN/ca2586en.pdf](http://www.fao.org/3/CA2586EN/ca2586en.pdf))
- UN.1992.** *United Nations Framework Convention on Climate Change. Chapter XXVII. Environment.* In: UN [online]. New York. [Cited 16 June 2020]. [https://treaties.un.org/doc/Treaties/1994/03/19940321%2004-56%20AM/Ch\\_XXVII\\_07p.pdf](https://treaties.un.org/doc/Treaties/1994/03/19940321%2004-56%20AM/Ch_XXVII_07p.pdf)
- UNFCCC. 2018a.** *Decision 4/CP.23 – Koronivia Joint Work on Agriculture. Report of the Conference of the Parties on its twenty-third session, held in Bonn from 6 to 18 November 2017. Addendum Part two: Action taken by the Conference of the Parties at its twenty-third session. FCCC/ CP/2017/11/Add.1.* In: UNFCCC [online]. Bonn. [Cited 16 June 2020]. <https://unfccc.int/sites/default/files/resource/docs/2017/cop23/eng/11a01.pdf>
- UNFCCC. 2018b.** *Koronivia Joint Work on Agriculture. Report of the Subsidiary Body for Scientific and Technological Advice on the first part of its fortyeighth session, held in Bonn from 30 April to 10 May 2018 FCCC/ SBSTA/2018/4.* In: UNFCCC [online]. Bonn. [Cited 16 June 2020]. <https://unfccc.int/sites/default/files/resource/9e.pdf>
- UNFCCC. 2018c.** *Koronivia Joint Work on Agriculture, Report of the Subsidiary Body for Scientific and Technological Advice on its forty-ninth session held in Katowice from 2 to 8 December 2018 FCCC/ SBSTA/2018/8.* In: UNFCCC [online]. Bonn. [Cited 18 June 2020]. <https://unfccc.int/sites/default/files/resource/08.pdf#page=7>
- UNFCCC. 2020.** *Submission Portal. In: Views from Parties and observers on topic 2(e) –Improved livestock management systems, including agropastoral production systems and others – and Topic (2f) – Socio-economic and food security dimensions of climate change in the agricultural sector .* [online]. [www4.unfccc.int/sites/submissionsstaging/Pages/Home.aspx](http://www4.unfccc.int/sites/submissionsstaging/Pages/Home.aspx)
- World Food Summit. 1996.** *Rome Declaration on World Food Security.* In: FAO [online]. Rome. [Cited 20 December 2019]. [www.fao.org/3/w3613e/w3613e00.htm](http://www.fao.org/3/w3613e/w3613e00.htm)

# ANNEX I

## Main initiatives and programmes undertaken by Parties or in which they are actively involved recalled in the Party submissions

TABLE 1 – ACTIVITIES AND PROGRAMMES MENTIONED BY PARTIES RELATED TO ELEMENT 2(E)		
PARTY who mentioned the Programme/ Project/ Report	PROGRAMME/PROJECT/REPORT	WEB LINK
BRAZIL	Embrapa's contribution to the development of new plant varieties and their impact on Brazilian agriculture	<a href="http://www.embrapa.br/documents/10180/9523522/Embrapa%E2%80%99s+contribution+to+the+development+of+new+plant+varieties+and+their+impact+on+Brazilian+agriculture/176c7f-de-ba66-4716-8190-2f5bc3e506fd">www.embrapa.br/documents/10180/9523522/Embrapa%E2%80%99s+contribution+to+the+development+of+new+plant+varieties+and+their+impact+on+Brazilian+agriculture/176c7f-de-ba66-4716-8190-2f5bc3e506fd</a>
BRAZIL	Inoculation of brachiaria with Azospirillum	<a href="http://www.embrapa.br/busca-de-publicacoes/-/publicacao/1085771/inoculacao-de-braquiarias-com-azospirillum">www.embrapa.br/busca-de-publicacoes/-/publicacao/1085771/inoculacao-de-braquiarias-com-azospirillum</a>
BRAZIL	Integrated Crop-Livestock-Forest Systems - ICLFS	<a href="http://www.embrapa.br/en/tema-integracao-lavoura-pecuaria-floresta-ilpf/nota-tecnica">www.embrapa.br/en/tema-integracao-lavoura-pecuaria-floresta-ilpf/nota-tecnica</a>
BRAZIL	Certified Low Carbon Livestock Platform, a third-party certification standard for livestock products	<a href="http://www.embrapa.br/en/gado-de-corte">www.embrapa.br/en/gado-de-corte</a> <a href="http://www.embrapa.br/en/pecuaria-sudeste">www.embrapa.br/en/pecuaria-sudeste</a>
BRAZIL	ICLF Network (Rede ILPF)	<a href="http://www.redeilpf.org.br/">www.redeilpf.org.br/</a>
BRAZIL	Future Agricultural Scenario Simulator (SCAF)	<a href="https://slideplayer.com/slide/6904564/">https://slideplayer.com/slide/6904564/</a>
BRAZIL	Climate Risk Agricultural Zoning (ZARC)	<a href="http://www.maff.go.jp/e/policies/env/attach/pdf/climate_smart_ws_2019-9.pdf">www.maff.go.jp/e/policies/env/attach/pdf/climate_smart_ws_2019-9.pdf</a>
EU	PACTORES - Pastoral ACTORS, Ecosystem services and Society as key elements of agro-pastoral systems in the Mediterranean	<a href="http://www.pactores.eu/">www.pactores.eu/</a>
EU	Sheep to ship LIFE: Looking for an eco-sustainable sheep supply chain: environmental benefits and implications	<a href="http://www.sheeptoship.eu/index.php/en/download-area/publications">www.sheeptoship.eu/index.php/en/download-area/publications</a>
EU	Beef Data Genomics Programme & the Carbon Navigator	<a href="http://www.agriculture.gov.ie/beef schemes/">www.agriculture.gov.ie/beef schemes/</a>
EU	Animal Health Ireland (AHI)	<a href="https://animalhealthireland.ie/">https://animalhealthireland.ie/</a>
JAPAN	Improvement of cattle feeding	Subepang S, Suzuki T, Phonbumrung T, Sommart K (2019) Enteric methane emissions, energy partitioning, and energetic efficiency of zebu beef cattle fed total mixedration silage. Asian-Australasian Journal of Animal Sciences 32(4) 548-555
JAPAN	Feeding CNSL additive	Watanabe, Y., Suzuki, R., Koike, S., Nagashima, K., Mochizuki, M., Forster, R. & Kobayashi, Y. (2010) In vitro evaluation of cashew nut shell liquid as a methane-inhibiting and propionate-enhancing agent for ruminants. J. Dairy Sci., 93: 5258-5267. doi:10.3168/jds.2009-2754
JAPAN	N <sub>2</sub> O mitigation measures of nitrite-oxidizing bacteria [NOB] addition to livestock composting	Fukumoto, Y., Suzuki, K., Osada, T., Kuroda, K., Hanajima, D., Yasuda, T. & Haga, K. (2006) Environmental Science & Technology, 40, 6787-6791 Fukumoto, Y., & Inubushi, K. (2009) Soil Science and Plant Nutrition, 55, 428-434 Fukumoto, Y., Suzuki, K., Waki, M. & Yasuda, T. (2015) Japan Agricultural Research Quarterly: JARQ, 49(4), 307-312.
JAPAN	Composting system with automated airflow control system	<a href="http://www.compost-systems.com/en/produkte/emsr">www.compost-systems.com/en/produkte/emsr</a>

JAPAN	Mitigation of GHG emissions from wastewater treatment system employed carbon fibers (CF) reactor	Yamashita, T., Shiraishi, M., Yokoyama, H., Ogino, A., Yamamoto-Ikemoto, R. and Osada, T. (2019) <i>Energies</i> , 12(6), 1013, 1-13 Yamashita, T., Shiraishi, M., Yamamoto-Ikemoto, R., Yokoyama, H., Ogino, A. and Osada, T. (2016) <i>Animal Production Science</i> , 56(3), 330-336 Yamashita, T., Yamamoto-Ikemoto, R., Yokoyama, H., Kawahara, H., Ogino, A. and Osada, T. (2015) <i>Animal Science Journal</i> , 86(3), 358-368
JAPAN	Mitigation of GHG emission introduce of balanced amino acid feed	Ogino, A., Osada, T., Takada, R., Takagi, T., Tsujimoto, S., Tonoue, T., Matsui, D., Katsumata, M., Yamashita, T., and Tanaka, Y. (2013). <i>Soil Science and Plant Nutrition</i> , 59(1), 107-118 Osada, Takashi, Ryoza Takada, and Izuru Shinzato. <i>Animal feed science and technology</i> 166 (2011): 562-574
MEXICO	Programas de SADER y otras Entidades operados por FIRA	<a href="http://www.gob.mx/fira/acciones-y-programas/programas-de-sagarpa-y-otras-entidades-operados-por-fira">www.gob.mx/fira/acciones-y-programas/programas-de-sagarpa-y-otras-entidades-operados-por-fira</a>
MEXICO	FONAGA Verde (eficiencia energética)	<a href="http://www.gob.mx/fira/acciones-y-programas/fonaga-verde-eficiencia-energetica">www.gob.mx/fira/acciones-y-programas/fonaga-verde-eficiencia-energetica</a>
MEXICO	Análisis desde la Perspectiva del Sector Productivo	<a href="https://d034b8ba-9335-44bc-8353-9b93f6cc7c89.filesusr.com/ugd/fd1a7f_8ec644146a4249bab84d8ec37ffc0d4d.pdf">https://d034b8ba-9335-44bc-8353-9b93f6cc7c89.filesusr.com/ugd/fd1a7f_8ec644146a4249bab84d8ec37ffc0d4d.pdf</a>
NEW ZEALAND	Domestic research programme: New Zealand Agricultural Greenhouse Gas Research Centre	<a href="http://www.nzagrc.org.nz/">www.nzagrc.org.nz/</a>
NEW ZEALAND	Pastoral Greenhouse Gas Research Consortium	<a href="http://www.pggrc.co.nz/files/1500851481547.pdf">www.pggrc.co.nz/files/1500851481547.pdf</a>
NEW ZEALAND	Report of the Biological Emissions Reference Group (BERG)	<a href="http://www.mpi.govt.nz/dmsdocument/32125/direct">www.mpi.govt.nz/dmsdocument/32125/direct</a>
NEW ZEALAND	Reducing New Zealand's agricultural greenhouse gases: What we are doing	<a href="http://www.pggrc.co.nz/files/1499904137329.pdf">www.pggrc.co.nz/files/1499904137329.pdf</a>
NEW ZEALAND	New Zealand Agriculture Greenhouse Gas Research Centre, Highlights 2019	<a href="https://www.nzagrc.org.nz/user/file/2062/P55054%20NZAGRC%20Highlights%202019-FA-LR.pdf">https://www.nzagrc.org.nz/user/file/2062/P55054%20NZAGRC%20Highlights%202019-FA-LR.pdf</a>
SENEGAL	Regional Support Project for Pastoralism in the Sahel (PRAPS)	<a href="https://rr-africa.oie.int/en/projects/praps/">https://rr-africa.oie.int/en/projects/praps/</a>
SENEGAL	Déclaration de Nouakchott sur le Pastoralisme, 2013. Mobilisons ensemble un effort ambitieux pour un pastoralisme sans frontière	<a href="http://www.oie.int/doc/ged/D12969.PDF">www.oie.int/doc/ged/D12969.PDF</a>
SENEGAL	Déclaration de N'Djamena, 2013. Elevage pastoral: une contribution durable au développement et à la sécurité des espaces saharo-sahéliens	<a href="http://www.oecd.org/fr/csao/evenements/Livre_elevage-pastoral_light.pdf">www.oecd.org/fr/csao/evenements/Livre_elevage-pastoral_light.pdf</a>
SENEGAL	Lettre de Politique de Développement de l'Elevage-Sénégal- 2017-2021	<a href="http://www.bameinfopol.info/IMG/pdf/lpde_2017_2021_versjanv2017.pdf">www.bameinfopol.info/IMG/pdf/lpde_2017_2021_versjanv2017.pdf</a>
SENEGAL	Plan National de Développement de l'Elevage-Sénégal	<a href="http://www.bameinfopol.info/IMG/pdf/pnde-versiondef_dec2017.pdf">www.bameinfopol.info/IMG/pdf/pnde-versiondef_dec2017.pdf</a>
SENEGAL	Plan Sénégal Emergent	<a href="http://www.sec.gouv.sn/sites/default/files/Plan%20Senegal%20Emergent_0.pdf">www.sec.gouv.sn/sites/default/files/Plan%20Senegal%20Emergent_0.pdf</a>
VIETNAM	Plan on Restructuring of the livestock sector for enhancing value-added and sustainable development	<a href="https://thuvienphapluat.vn/van-ban/Linh-vuc-khac/Decision-985-QD-BNN-CN-2014-plan-Scheme-for-animal-husbandry-restructuring-with-the-aim-of-value-412834.aspx">https://thuvienphapluat.vn/van-ban/Linh-vuc-khac/Decision-985-QD-BNN-CN-2014-plan-Scheme-for-animal-husbandry-restructuring-with-the-aim-of-value-412834.aspx</a>
VIETNAM	Law on Animal Husbandry	<a href="http://www.economica.vn/Content/files/LAW%20%26%20REG/Law%20on%20Animal%20Husbandry%202018.pdf">www.economica.vn/Content/files/LAW%20%26%20REG/Law%20on%20Animal%20Husbandry%202018.pdf</a>

**TABLE 2 – ACTIVITIES AND PROGRAMMES MENTIONED BY PARTIES RELATED TO ELEMENT 2(F)**

PARTY who mentioned the Programme/ Project/ Report	PROGRAMME/PROJECT/REPORT	WEB LINK
BENIN	Programme d'Actions du Gouvernement (PAG 2016–2021)	<a href="http://revealingbenin.com/wp-content/uploads/2017/03/Le-Programme-dActions.pdf">http://revealingbenin.com/wp-content/uploads/2017/03/Le-Programme-dActions.pdf</a>
BENIN	Plan Stratégique de Développement du Secteur Agricole (PSDSA 2017–2025)	<a href="http://www.fao.org/faolex/results/details/fr/c/LEX-FAOC184002/">www.fao.org/faolex/results/details/fr/c/LEX-FAOC184002/</a>

BENIN	Plan Stratégique de Relance du Secteur Agricole (PSRSA) 2011–2015	<a href="http://extwprlegs1.fao.org/docs/pdf/ben149176.pdf">http://extwprlegs1.fao.org/docs/pdf/ben149176.pdf</a>
BENIN	Programme National de Recherche Agricole (PNRA)	<a href="https://inrab.org/programme-national-de-recherche-agricole-pn-ra-accompagner-programme-daction-gouvernement-pag-benin-revele-2018-2022/">https://inrab.org/programme-national-de-recherche-agricole-pn-ra-accompagner-programme-daction-gouvernement-pag-benin-revele-2018-2022/</a>
BENIN	Plan National d'Investissement Agricole et de la Sécurité Alimentaire et Nutritionnelle (PNIA–SAN)	<a href="http://www.fao.org/faolex/results/details/es/c/LEX-FAOC184003/">www.fao.org/faolex/results/details/es/c/LEX-FAOC184003/</a>
BENIN	Rapport d'évaluation du Projet d'Appui à la Production Vivrière et de Renforcement de la Résilience dans les départements de l'Alibori, du Borgou et des Collines (PAPVIRE–ABC)	<a href="http://www.afdb.org/fileadmin/uploads/afdb/Documents/Boards-Documents/B%C3%A9nin-Rev_1-Projrt_d_appui_%C3%AO_Ja_produ_-PAP-VI-ABC.PDF">www.afdb.org/fileadmin/uploads/afdb/Documents/Boards-Documents/B%C3%A9nin-Rev_1-Projrt_d_appui_%C3%AO_Ja_produ_-PAP-VI-ABC.PDF</a>
BRAZIL	National Plan for Low Carbon Emission in Agriculture (ABC Plan)	<a href="http://redd.mma.gov.br/en/legal-and-public-policy-framework/national-plan-for-low-carbon-emission-in-agriculture-abc-plan">http://redd.mma.gov.br/en/legal-and-public-policy-framework/national-plan-for-low-carbon-emission-in-agriculture-abc-plan</a>
BRAZIL	Family Agriculture Insurance	<a href="http://www.gov.br/agricultura/pt-br/">www.gov.br/agricultura/pt-br/</a>
BRAZIL	Rural Insurance Premium Grant Program	<a href="http://www.gov.br/agricultura/pt-br/">www.gov.br/agricultura/pt-br/</a>
BRAZIL	Agricultural Climate Intelligence Centre	<a href="http://www.gov.br/mma/pt-br">www.gov.br/mma/pt-br</a>
BRAZIL	National cash transfer program to fight extreme poverty (Bolsa Família)	<a href="http://www.gov.br/cidadania/pt-br">www.gov.br/cidadania/pt-br</a> <a href="http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---sro-new-delhi/documents/presentation/wcms_175274.pdf">www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---sro-new-delhi/documents/presentation/wcms_175274.pdf</a>
BRAZIL	School Lunch Program (Programa merenda escolar)	<a href="http://www.gov.br/cidadania/pt-br">www.gov.br/cidadania/pt-br</a> <a href="http://www.scielo.br/scielo.php?script=sci_arttext&amp;pid=S1415-52732016000200253">www.scielo.br/scielo.php?script=sci_arttext&amp;pid=S1415-52732016000200253</a>
BRAZIL	National program aimed at offering low-cost meals to public restaurants (Programa Restaurante Popular)	<a href="http://www.gov.br/cidadania/pt-br">www.gov.br/cidadania/pt-br</a> <a href="http://www.scielo.br/scielo.php?pid=S1415-52732020000100322&amp;script=sci_arttext">www.scielo.br/scielo.php?pid=S1415-52732020000100322&amp;script=sci_arttext</a>
BRAZIL	National network of food banks	<a href="http://www.gov.br/cidadania/pt-br">www.gov.br/cidadania/pt-br</a> <a href="http://www.foodbanking.org/stateofglobalfoodbanking/brazil.html">www.foodbanking.org/stateofglobalfoodbanking/brazil.html</a>
EU	Climate action in agriculture. Implementation at local level in the EU and support for action in countries outside the EU	<a href="https://ec.europa.eu/clima/sites/clima/files/climate_action_agriculture_en.pdf">https://ec.europa.eu/clima/sites/clima/files/climate_action_agriculture_en.pdf</a>
EU	Strengthening the EU-Africa partnership	<a href="https://ec.europa.eu/info/food-farming-fisheries/farming/international-cooperation/africa/eu-africa-partnership_en">https://ec.europa.eu/info/food-farming-fisheries/farming/international-cooperation/africa/eu-africa-partnership_en</a>
EU	Effort Sharing Decision (ESD) and Effort Sharing Regulation (ESR)	<a href="https://ec.europa.eu/clima/policies/effort_en">https://ec.europa.eu/clima/policies/effort_en</a>
EU	EU Common Agriculture Policy	<a href="https://ec.europa.eu/info/food-farming-fisheries">https://ec.europa.eu/info/food-farming-fisheries</a>
EU	Nitrates Directive	<a href="https://ec.europa.eu/environment/water/water-nitrates/index_en.html">https://ec.europa.eu/environment/water/water-nitrates/index_en.html</a>
EU	National Emission Ceilings Directive	<a href="http://www.eea.europa.eu/themes/air/air-pollution-sources-1/national-emission-ceilings">www.eea.europa.eu/themes/air/air-pollution-sources-1/national-emission-ceilings</a>
EU	Industrial emissions directive	<a href="https://ec.europa.eu/environment/industry/stationary/ied/legislation.htm">https://ec.europa.eu/environment/industry/stationary/ied/legislation.htm</a>
EU	SALSA – Small farms, small food businesses and sustainable food and nutrition security EU and Africa	<a href="http://www.salsa.uevora.pt/">www.salsa.uevora.pt/</a>
EU	The Burren LIFE Programme	<a href="http://burrenprogramme.com/">http://burrenprogramme.com/</a>
JAPAN	Assessment of crop production losses associated with recent climate change	Toshichika Iizumi, Hideo Shiogama, Yukiko Imada, Naota Hanasaki, Hiroki Takikawa, Motoki Nishimori (2018) Crop production losses associated with anthropogenic climate change for 1981-2010 compared with preindustrial levels. International Journal of Climatology. Online: <a href="https://rsmets.onlinelibrary.wiley.com/doi/full/10.1002/joc.5818">https://rsmets.onlinelibrary.wiley.com/doi/full/10.1002/joc.5818</a> Sultan, B., Defrance, D. & Iizumi, T. Evidence of crop production losses in West Africa due to historical global warming in two crop models. Sci Rep 9, 12834 (2019). Online: <a href="https://www.nature.com/articles/s41598-019-49167-0">https://www.nature.com/articles/s41598-019-49167-0</a>

JAPAN	Weather-rice-nutrition integrated decision support system for rain-fed rice production (WeRise)	Hayashi K., Llorca L., Izaya R., Prihasto S., Zaini Z. (2019). Reducing vulnerability of rain-fed agriculture through seasonal weather forecast: A case study on the rain-fed rice production in Southeast Asia. <i>Agricultural Systems</i> 162: 66–76 Hayashi, K., Llorca, L., Bugayong, I. (2018). Development, validation and dissemination of a decision support system for rainfed rice farming in Southeast Asia. A case study in Indonesia. In: Iizumi, T., Hirata, R., Matsuda, R. (eds) <i>Adaptation to Climate Change in Agriculture</i> . Springer Nature Singapore Pte Ltd. 2019: 211–228
JAPAN	Weather Index Insurance	<a href="http://www.jircas.go.jp/sites/default/files/publication/proceedings/2012-session-32_0.pdf">www.jircas.go.jp/sites/default/files/publication/proceedings/2012-session-32_0.pdf</a>
JAPAN	[Economic model analysis] Response of crop yield growth to global temperature and socio-economic change	Furuya J, Kobayashi S, Yamamoto Y, Nishimori M (2015) Climate Change Effects on Long-term World-crop Production: Incorporating a Crop Model into Long-term Yield Estimates, <i>JARQ</i> 49(2), 187–202.
JAPAN	[Economic model analysis] Impact of climate change on regional economy	Kunimitsu Y (2015) Regional Impacts of Long-term Climate Change on Rice Production and Agricultural Income: Evidence from Computable General Equilibrium Analysis, <i>JARQ</i> 49(2), 173–185.
JAPAN	[Economic model analysis] Economic evaluation of adaptation technologies to global warming on domestic agricultural and related industries	Akune Y, Okiyama M, Tokunaga S (2015) Economic Evaluation of Dissemination of High Temperature-Tolerant Rice in Japan Using a Dynamic Computable General Equilibrium Model, <i>JARQ</i> 49(2), 127–133.
JAPAN	[Economic analysis] Evaluation of mitigation technologies	Kobayashi S (2015) Report on technological evaluation of mitigation technologies, Final report of the economic evaluation team of the MAFF Climate Change project, A1-A12 (written in Japanese).
JAPAN	[Economic model analysis] Evaluation of adaptation technologies	Kobayashi S, Furuya J (2015) Development of a Tool for Socio-Economic Evaluation of Agricultural Technologies Directed toward Adaptation to Climate Change, <i>JARQ</i> 49(2), 135–141
JAPAN	Global crop forecasting (yield variability)	Toshichika Iizumi, Yonghee Shin, Won sik Kim, Moosup Kim and Jaewon Choi (2018) Global crop yield forecasting using seasonal climate information from a multi-model ensemble, <i>Climate Services</i> , Online: <a href="http://www.sciencedirect.com/science/article/pii/S2405880717301346?via%3Dihub">www.sciencedirect.com/science/article/pii/S2405880717301346?via%3Dihub</a>
MEXICO	Comprehensive water management in agriculture	<a href="http://www.gob.mx/conagua/acciones-y-programas/usos-del-agua">www.gob.mx/conagua/acciones-y-programas/usos-del-agua</a>
MEXICO	Platform for Climate Action in Agriculture (PLACA)	<a href="https://sdg.iisd.org/news/lac-countries-join-platform-for-climate-action-in-agricultural-sector/">https://sdg.iisd.org/news/lac-countries-join-platform-for-climate-action-in-agricultural-sector/</a>
MEXICO	National Atlas of Vulnerability to Climate Change	<a href="https://atlasvulnerabilidad.inecc.gob.mx/">https://atlasvulnerabilidad.inecc.gob.mx/</a>
MEXICO	Lineamientos de Operación del Programa de Agromercados Sociales y Sustentables	<a href="http://www.dof.gob.mx/nota_detalle.php?codigo=5554794&amp;fecha=21/03/2019">www.dof.gob.mx/nota_detalle.php?codigo=5554794&amp;fecha=21/03/2019</a>
MEXICO	REDD+ National Strategy (ENAREDD+)	<a href="http://www.enaredd.gob.mx/">www.enaredd.gob.mx/</a>
MEXICO	Sembrando Vida programme	<a href="http://www.gob.mx/bienestar/acciones-y-programas/programa-sembrando-vida">www.gob.mx/bienestar/acciones-y-programas/programa-sembrando-vida</a>
NEW ZEALAND	New Zealand's National Institute of Water and Atmospheric Research	<a href="https://niwa.co.nz/">https://niwa.co.nz/</a>
NEW ZEALAND	New Zealand's National Climate Change Risk Assessment	<a href="http://www.mfe.govt.nz/climate-change/assessing-climate-change-risk">www.mfe.govt.nz/climate-change/assessing-climate-change-risk</a>
NEW ZEALAND	Adapting to Climate Change in New Zealand	<a href="http://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/adapting-to-climate-change-stocktake-tag-report.pdf">www.mfe.govt.nz/sites/default/files/media/Climate%20Change/adapting-to-climate-change-stocktake-tag-report.pdf</a>
NEW ZEALAND	Impacts of Global Climate Change on New Zealand Agriculture	<a href="http://www.nzagrc.org.nz/user/file/96/2_Impacts%20of%20Global%20Climate%20Change%20on%20New%20Zealand%20Agriculture%20-%20Fact%20Sheet.pdf">www.nzagrc.org.nz/user/file/96/2_Impacts%20of%20Global%20Climate%20Change%20on%20New%20Zealand%20Agriculture%20-%20Fact%20Sheet.pdf</a>
NEW ZEALAND	The Climate Change Challenge for Māori	<a href="http://www.mpi.govt.nz/dmsdocument/26869/direct">www.mpi.govt.nz/dmsdocument/26869/direct</a>
NEW ZEALAND	Living Standards Framework	<a href="http://www.treasury.govt.nz/information-and-services/nz-economy/higher-living-standards/our-living-standards-framework">www.treasury.govt.nz/information-and-services/nz-economy/higher-living-standards/our-living-standards-framework</a>

NEW ZEALAND	Reducing enteric methane for improving food security and livelihoods" is a collaboration between the New Zealand Agricultural Greenhouse Gas Research Centre and FAO	<a href="http://www.fao.org/in-action/enteric-methane/en/">www.fao.org/in-action/enteric-methane/en/</a>
SENEGAL	Nutrition Development Policy (LPDN)	<a href="http://documents1.worldbank.org/curated/en/244341537165468896/pdf/Evolution-of-Nutrition-Policy-in-Senegal.pdf">http://documents1.worldbank.org/curated/en/244341537165468896/pdf/Evolution-of-Nutrition-Policy-in-Senegal.pdf</a>
SENEGAL	Multi-sectoral Strategic Plan for Nutrition (PSMN 2017–2021)	<a href="https://extranet.who.int/nutrition/gina/sites/default/files/SEN-2017-2021-Plan%20Strategique%20multisectorel%20de%20la%20Nutrition.pdf">https://extranet.who.int/nutrition/gina/sites/default/files/SEN-2017-2021-Plan%20Strategique%20multisectorel%20de%20la%20Nutrition.pdf</a>
SENEGAL	National Food Security and Resilience Strategy (SNSAR)	<a href="http://extwprlegs1.fao.org/docs/pdf/Sen173610.pdf">http://extwprlegs1.fao.org/docs/pdf/Sen173610.pdf</a>
SENEGAL	National Food Security and Resilience Support Program (PNASAR)	<a href="http://www.secnsa.sn/secnsa-programme-national-dappui-a-la-securite-alimentaire-et-a-la-resilience-pnasar/">www.secnsa.sn/secnsa-programme-national-dappui-a-la-securite-alimentaire-et-a-la-resilience-pnasar/</a>
SENEGAL	Plans Nationaux d'Adaptation du secteur de l'Agriculture (PNA Agri)	<a href="http://www.fao.org/3/cb0396fr/CB0396FR.pdf">www.fao.org/3/cb0396fr/CB0396FR.pdf</a>
SENEGAL	Enquête Nationale de Sécurité Alimentaire, Nutrition et de Nutrition	<a href="http://anads.ansd.sn/index.php/catalog/187">http://anads.ansd.sn/index.php/catalog/187</a>
SWITZERLAND	Constitutional Article 104a on "Food Security	<a href="http://www.fedlex.admin.ch/eli/cc/1999/404/en#a104">www.fedlex.admin.ch/eli/cc/1999/404/en#a104</a>
SWITZERLAND	Commissioned study "Eco-friendly, Resource-conserving Food and Feed Production: A Detailed Analysis for Switzerland"	A. Zimmermann et al., "Umwelt- und ressourcenschonende Ernährung: Detaillierte Analyse für die Schweiz," <i>Agroscope Science</i> 55 (2017). Online: <a href="https://ira.agroscope.ch/de-CH/publication/37058">https://ira.agroscope.ch/de-CH/publication/37058</a>
SWITZERLAND	One Planet (10YFP) Sustainable Food Systems (SFS) Programme	<a href="http://www.oneplanetnetwork.org/sustainable-food-system">www.oneplanetnetwork.org/sustainable-food-system</a>
SWITZERLAND	National Research Programme "Healthy Nutrition and Sustainable Food Production" (NRP 69)	<a href="http://www.nfp69.ch/en/Pages/Home.aspx">www.nfp69.ch/en/Pages/Home.aspx</a>
SWITZERLAND	High Level Dialogue on "Investing in Food Systems Transformation – on the road to the 2021 UN Summit" during the annual meeting of the World Economic Forum (WEF) on 22 January 2020	<a href="https://worldfoodsystem.ethz.ch/news/wfsc-news/2020/01/wef20.html">https://worldfoodsystem.ethz.ch/news/wfsc-news/2020/01/wef20.html</a> <a href="http://www.oneplanetnetwork.org/more-80-leaders-discuss-food-system-investment-davos">www.oneplanetnetwork.org/more-80-leaders-discuss-food-system-investment-davos</a>
SWITZERLAND	Stakeholder Dialogue on "Sustainable Food Systems Switzerland" in the margins of the Swiss Green Economy Symposium (SGES) on 1 September 2020	<a href="https://sges.ch/if02-2020/">https://sges.ch/if02-2020/</a> <a href="https://foodsystemsdialogues.org/">https://foodsystemsdialogues.org/</a>
SWITZERLAND	Revised the model chapter on Trade and Sustainable Development in FTAs, by Switzerland and its fellow EFTA members, which includes an article recognizing the role of trade for sustainable agricultural and food systems	<a href="http://www.seco.admin.ch/seco/en/home/Aussenwirtschaftspolitik_Wirtschaftliche_Zusammenarbeit/Wirtschaftsbeziehungen/Freihandelsabkommen/nachhaltigkeit.html">www.seco.admin.ch/seco/en/home/Aussenwirtschaftspolitik_Wirtschaftliche_Zusammenarbeit/Wirtschaftsbeziehungen/Freihandelsabkommen/nachhaltigkeit.html</a>
VIETNAM	National Target Program on the New Rural Development	<a href="https://projects.worldbank.org/en/projects-operations/project-detail/P159737?lang=en">https://projects.worldbank.org/en/projects-operations/project-detail/P159737?lang=en</a>
VIETNAM	Decree on management and use of land for rice cultivation	<a href="https://english.luatvietnam.vn/ecree-no-62-2019-nd-cp-dated-july-11-2019-of-the-government-on-amending-and-supplementing-a-number-of-articles-of-decree-no35-2015-nd-cp-dated-apr-175270-Doc1.html">https://english.luatvietnam.vn/ecree-no-62-2019-nd-cp-dated-july-11-2019-of-the-government-on-amending-and-supplementing-a-number-of-articles-of-decree-no35-2015-nd-cp-dated-apr-175270-Doc1.html</a>
VIETNAM	Decree on credit policies for agricultural and rural development	<a href="https://luatminhkhue.vn/en/decree-no-55-2015-nd-cp-dated-june-09--2015-of-the-government-on-credit-policies-for-agricultural-and-rural-development.aspx">https://luatminhkhue.vn/en/decree-no-55-2015-nd-cp-dated-june-09--2015-of-the-government-on-credit-policies-for-agricultural-and-rural-development.aspx</a>
VIETNAM	Rice restructuring plan	Decision No.1898/QĐ-TTg
VIETNAM	Agriculture restructuring Plan	Decision No.1819/QĐ-TTg
VIETNAM	Small field, Large farm programme	<a href="https://sites.google.com/a/irri.org/social-sciences-division/latest-news-and-developments/irriscientistsjoinfp2teamtoupradericevaluechainsinasiaandafrika-1">https://sites.google.com/a/irri.org/social-sciences-division/latest-news-and-developments/irriscientistsjoinfp2teamtoupradericevaluechainsinasiaandafrika-1</a>
VIETNAM	Decree on agricultural insurance	<a href="https://english.luatvietnam.vn/ecree-no-58-2018-nd-cp-dated-april-18-2018-of-the-government-on-agricultural-insurance-162115-Doc1.html">https://english.luatvietnam.vn/ecree-no-58-2018-nd-cp-dated-april-18-2018-of-the-government-on-agricultural-insurance-162115-Doc1.html</a> <a href="http://extwprlegs1.fao.org/docs/pdf/vie103153.pdf">http://extwprlegs1.fao.org/docs/pdf/vie103153.pdf</a>

# ANNEX II

## Main initiatives and programmes undertaken by observers or in which they are actively involved recalled in the observer submissions

TABLE 1 – ACTIVITIES AND PROGRAMMES MENTIONED BY THE OBSERVERS RELATED TO ELEMENT 2(E)			
TYPE OF OBSERVER	OBSERVER who mentioned the Programme/ Project/ Report	PROGRAMME/PROJECT/REPORT	WEB LINK
UN System	FAO	Tackling climate change through livestock	<a href="http://www.fao.org/3/i3437e/i3437e.pdf">www.fao.org/3/i3437e/i3437e.pdf</a>
UN System	FAO	Five practical actions towards low-carbon livestock	<a href="http://www.fao.org/3/ca7089en/ca7089en.pdf">www.fao.org/3/ca7089en/ca7089en.pdf</a>
UN System	FAO	The Global Livestock Environmental Assessment Model (GLEAM)	<a href="http://www.fao.org/gleam/en/">www.fao.org/gleam/en/</a>
UN System	FAO	The Livestock Environmental Assessment and Performance partnership	<a href="http://www.fao.org/partnerships/leap/en/">www.fao.org/partnerships/leap/en/</a>
UN System	FAO	Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists (SHARP)	<a href="http://www.fao.org/in-action/sharp/resources/publications/en/">www.fao.org/in-action/sharp/resources/publications/en/</a>
UN System	FAO	Tool for Agroecology Performance Evaluation (TAPE)	<a href="http://www.fao.org/3/ca7407en/ca7407en.pdf">www.fao.org/3/ca7407en/ca7407en.pdf</a>
UN System	FAO	Global Agenda for Sustainable Livestock	<a href="http://www.livestockdialogue.org/en/">www.livestockdialogue.org/en/</a>
UN System	FAO	Global Livestock Systems	<a href="http://www.fao.org/livestock-systems/en/">www.fao.org/livestock-systems/en/</a>
UN System	FAO	Pastoralist Knowledge Hub	<a href="http://www.fao.org/pastoralist-knowledge-hub/en/">www.fao.org/pastoralist-knowledge-hub/en/</a>
UN System	FAO	Reducing enteric methane for improving food security and livelihoods	<a href="http://www.fao.org/in-action/enteric-methane/en/">www.fao.org/in-action/enteric-methane/en/</a>
UN System	FAO	African Sustainable Livestock 2050 (ASL2050)	<a href="http://www.fao.org/in-action/asl2050/en/">www.fao.org/in-action/asl2050/en/</a>
UN System	FAO	Climate-Smart Livestock Management, Integrating Reversion of Land Degradation and Reduction of Desertification Risks in Vulnerable Provinces in Ecuador	<a href="http://www.fao.org/in-action/agronoticias/detail/en/c/1025398/">www.fao.org/in-action/agronoticias/detail/en/c/1025398/</a>
UN System	FAO	Agriinvest Uganda	<a href="http://www.uncdf.org/article/5714/rfa-innovative-digital-lending-solutions-for-farmers-in-uganda">www.uncdf.org/article/5714/rfa-innovative-digital-lending-solutions-for-farmers-in-uganda</a>
UN System	FAO	Increasing carbon sequestration in Kyrgyzstan by supporting climate investments in forests and rangelands	<a href="http://www.greenclimate.fund/project/fp116">www.greenclimate.fund/project/fp116</a>
UN System	FAO	Projet de Développement de l'Élevage (PRODEL) in Cameroon	<a href="http://www.prodel.cm/">www.prodel.cm/</a>
NGO	GDP	Dairy Sustainability Framework (DSF)	<a href="https://dairysustainabilityframework.org/wp-content/uploads/2020/10/DSF-Strategic-Plan-2020-2025.pdf">https://dairysustainabilityframework.org/wp-content/uploads/2020/10/DSF-Strategic-Plan-2020-2025.pdf</a>
NGO	GDP	Mapping the Dairy Sector contributions to the Sustainable Development Goal	<a href="http://www.globaldairyplatform.com/news-posts/mapping-the-dairy-sector-contributions-to-the-sustainable-development-goal/">www.globaldairyplatform.com/news-posts/mapping-the-dairy-sector-contributions-to-the-sustainable-development-goal/</a>
NGO	GDP	Climate change and the global dairy cattle sector – The role of the dairy sector in a low-carbon future	<a href="https://dairysustainabilityframework.org/wp-content/uploads/2019/01/Climate-Change-and-the-Global-Dairy-Cattle-Sector.pdf">https://dairysustainabilityframework.org/wp-content/uploads/2019/01/Climate-Change-and-the-Global-Dairy-Cattle-Sector.pdf</a>
NGO	GDP	Dairy Impact Methodology (DIM)	<a href="https://globaldairyplatform.com/wp-content/uploads/2019/10/gdp1910-acheivements-single-pages-with-bar-final.pdf">https://globaldairyplatform.com/wp-content/uploads/2019/10/gdp1910-acheivements-single-pages-with-bar-final.pdf</a>
NGO	GDP	A common carbon footprint approach for the dairy sector	<a href="https://dairysustainabilityframework.org/wp-content/uploads/2016/10/IDFBulletin479-2015_Carbon-footprint.pdf">https://dairysustainabilityframework.org/wp-content/uploads/2016/10/IDFBulletin479-2015_Carbon-footprint.pdf</a>
NGO	GDP	How Dairy Cattle Health Impacts Greenhouse Gas Emissions: Chile, Kenya & UK	<a href="https://dairysustainabilityframework.org/wp-content/uploads/2019/12/GHG-Dairy-Health-Leaflet-v2.pdf">https://dairysustainabilityframework.org/wp-content/uploads/2019/12/GHG-Dairy-Health-Leaflet-v2.pdf</a>

NGO	IFOAM and others	IFOAM, FIBL - EU. (2016). Organic Farming, Climate change, mitigation and beyond. Reducing the environmental impacts of EU agriculture. Brussels	<a href="http://www.ifoam-eu.org/sites/default/files/ifoameu_advocacy_climate_change_report_2016.pdf">www.ifoam-eu.org/sites/default/files/ifoameu_advocacy_climate_change_report_2016.pdf</a>
NGO	SfL-NACSAA	A Platform for Knowledge Sharing and Application of Climate Science to Agriculture	<a href="http://www.sfldialogue.net/files/sfl_formation_plan_2015.pdf">www.sfldialogue.net/files/sfl_formation_plan_2015.pdf</a>
NGO	SRA and others	AACREA. 2019. Agricultural Innovation Portal. Buenos Aires, Argentina	<a href="http://www.crea.org.ar/innovacion-2/">www.crea.org.ar/innovacion-2/</a>
NGO	SRA and others	AAPRESID. 2019. Evolution of direct planting in Argentina's 18/19 harvest. Rosario, Argentina	<a href="http://www.aapresid.org.ar/blog/evolucion-de-siembra-directa-en-argentina-campana-2018-19/">www.aapresid.org.ar/blog/evolucion-de-siembra-directa-en-argentina-campana-2018-19/</a>
NGO	SRA and others	Regúnaga, M. and Elverdin, P. 2017. Southern Cone Contributions to Food Security and Global Environmental Sustainability. Group of Producing Countries of the Southern Cone.	<a href="https://grupogpps.org/web/seguridad-alimentaria-deficit-hidrico-la-agenda-del-g-20-y-el-rol-estrategico-de-los-paises-del-cono-sur-argentina-brasil-paraguay-y-uruguay/">https://grupogpps.org/web/seguridad-alimentaria-deficit-hidrico-la-agenda-del-g-20-y-el-rol-estrategico-de-los-paises-del-cono-sur-argentina-brasil-paraguay-y-uruguay/</a>
NGO	SRA and others	Ricard, M. and Viglizzo, E. 2017. Virtual water in the rural sector of Argentina, Brazil, Paraguay and Uruguay and its potential impact on global water security. Group of Producing Countries of the Southern Cone	<a href="https://grupogpps.org/web/seguridad-alimentaria-deficit-hidrico-la-agenda-del-g-20-y-el-rol-estrategico-de-los-paises-del-cono-sur-argentina-brasil-paraguay-y-uruguay/">https://grupogpps.org/web/seguridad-alimentaria-deficit-hidrico-la-agenda-del-g-20-y-el-rol-estrategico-de-los-paises-del-cono-sur-argentina-brasil-paraguay-y-uruguay/</a>

**TABLE 2 – ACTIVITIES AND PROGRAMMES MENTIONED BY THE OBSERVERS RELATED TO ELEMENT 2(F)**

TYPE OF OBSERVER	OBSERVER who mentioned the Programme/ Project/ Report	PROGRAMME/PROJECT/REPORT	WEB LINK
UN System	FAO	Global Information and Early Warning System (GIEWS)	<a href="http://www.fao.org/giews/background/en/">www.fao.org/giews/background/en/</a>
UN System	FAO	FAO strategy on climate change	<a href="http://www.fao.org/3/i7175e/i7175e.pdf">www.fao.org/3/i7175e/i7175e.pdf</a>
UN System	FAO	Resilience Strategic Programme	<a href="http://www.fao.org/3/i6463e/i6463e.pdf">www.fao.org/3/i6463e/i6463e.pdf</a>
IGO	CGIAR-CIAT-WB	Climate Smart Agriculture Investment Plans (CSAIPs)	<a href="http://www.worldbank.org/en/topic/agriculture/publication/climate-smart-agriculture-investment-plans-bringing-climate-smart-agriculture-to-life">www.worldbank.org/en/topic/agriculture/publication/climate-smart-agriculture-investment-plans-bringing-climate-smart-agriculture-to-life</a>
IGO	CGIAR-CIAT-WB	World Bank's Punjab Agriculture and Rural Transformation Program in Pakistan	<a href="https://projects.worldbank.org/en/projects-operations/project-detail/P162446">https://projects.worldbank.org/en/projects-operations/project-detail/P162446</a>
IGO	CGIAR-CIAT-WB	Senegal's Agricultural Services and Producer Organizations Project	<a href="https://documents.worldbank.org/en/publication/documents-reports/documentdetail/9136146877555429/senegal-agricultural-services-and-producer-organizations-project">https://documents.worldbank.org/en/publication/documents-reports/documentdetail/9136146877555429/senegal-agricultural-services-and-producer-organizations-project</a>
IGO	CGIAR-CIAT-WB	West African Agriculture Productivity Programme (WAAPP)	<a href="https://www.worldbank.org/en/topic/agriculture/brief/the-west-africa-agricultural-productivity-program">https://www.worldbank.org/en/topic/agriculture/brief/the-west-africa-agricultural-productivity-program</a>
IGO	CGIAR-CIAT-WB	Maximizing Finance for Development (MFD) approach	<a href="http://www.worldbank.org/en/about/partners/maximizing-finance-for-development">www.worldbank.org/en/about/partners/maximizing-finance-for-development</a>
IGO	CGIAR-CIAT-WB	Harvesting Prosperity	<a href="https://openknowledge.worldbank.org/bitstream/handle/10986/32350/211393ov.pdf?sequence=2">https://openknowledge.worldbank.org/bitstream/handle/10986/32350/211393ov.pdf?sequence=2</a>
NGO	CI-IICA	Programa de desarrollo territorial y agricultura familiar	<a href="https://repositorio.iica.int/handle/11324/7973">https://repositorio.iica.int/handle/11324/7973</a>
NGO	CI-IICA	El sector agropecuario en las contribuciones previstas y determinadas a nivel nacional de América Latina	<a href="http://repiica.iica.int/docs/B3990e/B3990e.pdf">http://repiica.iica.int/docs/B3990e/B3990e.pdf</a>
NGO	GDP	The Dairy Nourishes Africa (DNA) initiative	<a href="https://globaldairyplatform.com/dna/">https://globaldairyplatform.com/dna/</a>
NGO	GDP	Dairy's Impact on Reducing Global Hunger	<a href="http://www.fao.org/3/ca7500en/CA7500EN.pdf">www.fao.org/3/ca7500en/CA7500EN.pdf</a>
NGO	GDP	Dairy Development's Impact on Poverty Reduction	<a href="http://www.fao.org/3/CA0289EN/ca0289en.pdf">www.fao.org/3/CA0289EN/ca0289en.pdf</a>
NGO	GDP	Dairy and the Sustainable Development Goals	<a href="https://dairysustainabilityframework.org/wp-content/uploads/2016/10/Rabobank_IN574_Dairy_and_the_Sustainable_Development_Goals_Bellamy_Bogdan_Oct2016.pdf">https://dairysustainabilityframework.org/wp-content/uploads/2016/10/Rabobank_IN574_Dairy_and_the_Sustainable_Development_Goals_Bellamy_Bogdan_Oct2016.pdf</a>
NGO	IFOAM and others	IFOAM. (2009). Organic Agriculture - A guide to climate change & food security. IFOAM	
NGO	SfL-NACSAA	Ohio Smart Agriculture: Solutions from the Land	<a href="http://www.sfldialogue.net/ohiosmartag/reports/OSA-SfL_Phase_I_Report.pdf">www.sfldialogue.net/ohiosmartag/reports/OSA-SfL_Phase_I_Report.pdf</a>



The historic Koronivia Joint Work on Agriculture decision was adopted at the 2017 UN 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 topics 2(e) – ‘Improved livestock management systems, including agropastoral production systems and others’ and 2(f) – ‘Socio-economic and food security dimensions of climate change in the agricultural sector’ by 20 April 2020. This working paper summarizes thirteen submissions made by Parties and Party groups and ten submissions from observers that were published on the UNFCCC submission portal as at 16 October 2020.

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