

WFO submission on issues relating to agriculture for SBSTA 44 March 2016

(1) Identification of adaptation measures, taking into account the diversity of the agricultural systems, indigenous knowledge systems and the differences in scale as well as possible co-benefits and sharing experiences in research and development and on the ground activities, including socioeconomic, environmental and gender aspects



The World Farmers' Organisation (WFO)¹ is an international organisation of farmers for farmers. It aims to bring together all the national producer and farm cooperative organisations with the objective of developing policies which support farmers' in developed and developing countries around the world.

Farmers and foresters are on the front of line of changes to the climate with their lives and livelihoods directly affected. Along with food, global demand for water and energy will also increase, putting additional pressure on the world's natural resources which we rely upon to sustain ourselves. Whilst farmers have adapted to climate variability for centuries and have continued to feed the world's population, extreme weather in particular poses a serious threat to farmers and the whole agricultural sector. Therefore adaptation is key to increase resilience. The agricultural sector has the capacity to offer sound solutions to cope with this challenge, provided that farmers are encouraged to do so.

The WFO therefore welcomes the opportunity to submit its views to SBSTA 44 on the subject of "identification of adaptation measures, taking into account the diversity of the agricultural systems, indigenous knowledge systems and the differences in scale as well as possible co-benefits and sharing experiences in research and development and on the ground activities, including socio-economic, environmental and gender aspects."

Food security and food production are explicit in the Paris Agreement and agriculture is discussed in 80% of Intended Nationally Determined Contributions. It is our belief that the Paris Agreement opens the door to further work on agriculture between now and 2020, when the agreement takes hold. We see this as an opportunity as key stakeholders in the global agriculture community, to step up to the challenges put in place by the Paris Agreement and drive action.

The WFO's key messages on adaptation:

- Support climate smart agriculture in international negotiations
- Significantly raise investment in agriculture with an ambitious financing framework and supported by a positive incentive-based approach
- Switch from crisis management to risk management
- Make technologies affordable and accessible to farmers

¹ <http://www.wfo-oma.com/>

WFO recommendations

1. Support Climate-Smart Agriculture in international negotiations

The WFO supports the call to action on Climate-Smart Agriculture, offering the triple wins of increased food production, climate change mitigation and adaptation. As a member of the Global Alliance for Climate Smart Agriculture², the WFO wants to see sustainable increases in the productivity of food systems through sustainable management of natural resources – including soil, water and biodiversity, the adaptation of people's livelihoods, and agricultural practices that contribute to improved productivity. It is our hope that the Alliance will enable all stakeholders to support these transformations in ways that bridge traditional sectoral, organisational and public/private boundaries.

The Canadian Farmers Association (CFA)³ and the National Farmers' Union (NFU)⁴ in the United States have joined the North American Climate Smart Agriculture Alliance (NACSAA). This is a farmer-led initiative which will provide feedback to the Global Alliance from a North American perspective. The NACSAA is also aiming to provide 21st century extension functions to improve the sustainability and resiliency of production systems and will focus on taking actions to raise awareness of the issues and benefit farm operations

It is clear that there is no one-size fits all solution to delivering adaptation in agriculture and so success will require the development of site specific strategies. However there is critical link between adaptation and actions to improve productivity for example increasing soil carbon sequestration or improving the efficiency of agricultural systems in a sustainable manner. The common and scientific understanding of ways to address impacts, vulnerabilities and adaptation needs whilst improving productivity and safeguarding food security and livelihoods has to be improved. Linkages, synergies and trade-offs have to be identified on the basis of the best available science, the regional context and the local knowledge; with specific attention to the approaches and techniques most likely to create "win-win" solutions.

2. Significantly raise investment in agriculture with an ambitious financing framework and supported by a positive incentive-based approach

Changes in the weather and climate exacerbate the existing difficulties that farmers and foresters worldwide have to face as a result of the neglect of agriculture in national budgets for decades. Evidence of this neglect is seen in the lack of investments in research and development, extension services, affordable credit, water and land availability, insufficient infrastructure *etc.*

With mounting pressure on the agricultural sector to provide the growing world population with enough food and energy from renewable materials while protecting the environment, substantial investments in agriculture are necessary. This is particularly important in developing countries. High priority must be given to productivity gains and high quality production. Such investments in agriculture are an effective way to combat changes in the climate and poverty as well as boosting economic growth - all Sustainable Development Goals⁵.

Current financial and technological transfer plans under the UNFCCC are not well suited to fulfil many developing countries' needs. The backbone of satisfactory response capacity is, without doubt, strongly connected to the level of economic development of each country. Therefore, finance mechanisms are required which reward farmers' positive contribution to mitigation and adaptation and for the range of the ecosystem services they provide to society.

Increasing agriculture's resilience by investing in, scaling up and replicating successful sustainable agricultural practices that improve production efficiency and yields, is crucial, but insufficient. Farmers' margins are already squeezed because of their weak position in the food chain, faced with huge concentration of farm input suppliers, processors and retailers. Profitability is key in giving farmers

² <http://www.fao.org/gacsa/en/>

³ <http://www.cfa-fca.ca/hot-topics/climate-change>

⁴ <http://www.nfu.org/>

⁵ <https://sustainabledevelopment.un.org/sdgs>

the confidence for an increasingly uncertain future. In addition rural infrastructure - roads, water, energy supply and telecommunications – is inadequate in developing countries and aspects need improving in developed countries. This is a major constraint to agriculture and rural development. This also includes better post-harvest infrastructure to reduce waste and enhance food quality along the food chain.

In Canada, the CFA have been asking for updated building codes that will help withstand more extreme weather. Supportive capital allowances systems would encourage farm investment (CFA and the National Farmers Union⁶ (NFU) of England and Wales). Action is required to close the growing digital divide between rural and urban areas (CFA, NASFAM in Malawi, National Farmers' Federation (NFF) in Australia, NFU of England and Wales). In Malawi, NASFAM⁷, plans to create local business centres providing farmer members with improved access to information and providing the community with business services to generate income for its Associations. In Australia, the NFF is leading three initiatives aim to digitally transform Australian agriculture⁸.

Poor post-harvest storage is a major challenge at the household and community level in Malawi, with up to 30% of crops being lost to poor storage. NASFAM works with Associations and their communities to improve household and community storage processes and facilities. This includes training on storage, as well as moisture and pest management processes. Some Associations are also supported to set up and manage village-based grain banks for local storage of surplus maize and legumes for the next hungry season.

Farmers' organizations should be recognized as key partners and benefit from enabling mechanisms to fulfil the role of service providers to individual farmers. The Dutch Farmers' Federation, LTO Noord, has been working on a project to transfer knowledge from Dutch farmers to farmers' federations in Uganda and Cambodia, supporting Ugandan and Cambodian farmers to tackle climate and weather problems. In Japan, JA-Zenchu's⁹ farm guidance is one of its most important activities. It provides member farmers with guidance to improve their farm management and production technologies. Farm advisors of JAs promote many activities and field technical guidance.

3. Switch from crisis management to risk management:

- i) *National risk management response strategies* should be based on three types of policies:
 - to reduce risks and their consequences i.e. early warning systems, awareness raising campaigns etc.
 - to cope with risks through crop insurance, guarantee fund schemes, etc.
 - for support after crises i.e. rehabilitation and recovery schemes to help farmers.

The NFF believes that the Australian agricultural industry requires a sophisticated risk management framework to ensure the sustainability of productive farm businesses. To date the framework for providing assistance has relied on reactive, ad hoc transaction subsidies and concessional loans for drought-affected businesses. Attempts by the private sector to introduce multi-peril crop insurance (MCPI) products have struggled, because premiums are inflated by a number of factors including the risk associated with Australia's rainfall variability. Over time, MCPI could be complemented by: index-based products to assist with commodity price fluctuations such as the development of weather-based derivatives and adoption of more resilient equity structures.

A number of farming organisations and farmers themselves have put in place services to link those who want to buy, sell or offer feed and grazing in the aftermath of extreme weather conditions. The Federated Farmers of New Zealand¹⁰ have a Feed List for livestock farmers in drought-stricken areas. AgriSA started Project Hope Grass to turn donations of clean grass trimmings into animal feed pellets, which were distributed to distressed farms and drought-stricken regions.

⁶ <http://www.nfuonline.com/business/tax/>

⁷ <http://www.nasfam.org/>

⁸ <http://www.nffdigital.org.au/>

⁹ <http://www.zenchu-ja.or.jp/eng/multipurpose>

¹⁰ http://www.fedfarm.org.nz/drought_list.asp

Improvements in weather forecasting are critical to make farmers more self-reliant by helping them become better informed about weather and climate issues that influence their agricultural production. This kind of information can improve the farmer's risk management, provide that early warning system and ensure sustainable use of natural resources for agricultural production.

It is also important to communicate seasonal climate information to farmers for better agricultural management. Three-day weather forecasts are now common everywhere but the next frontier is to provide seasonal climate predictions in the range of 15 days, one month up to six months. In the UK, the NFU has been working with the UK Met Office to help improve dissemination methods for its seasonal monthly weather forecast using language and graphics fit for a farming audience.

Weather forecasting can provide an important input to animal health and disease risk monitoring systems. There is a need to improve disease monitoring at a global level in order to anticipate epidemics and pandemics more successfully.

ii) Adapt to meet lack of water

More extreme weather events are likely to have severe adverse effects on water availability, especially in dry regions so the management of water in food, energy and other policies is critical. Farmers need the support of the research community to

- unlock the potential of rain-fed agriculture by developing and using more intensive water-harvesting and storage techniques
- build capacity on water and soil conservation technologies and practices
- provide tools to manage water resources for multiple uses
- develop more efficient irrigation systems fit-for-use for all farmers

AgriSA¹¹ in South Africa represents its members on the agricultural value chain working group of South Africa's Strategic Water Partner Network. The Network aims to reduce the water gap by 2030 and functions according to the Public Private Partnership principle. The agricultural value chain group is involved in the facilitation of a business plan between the respective interest groups with a view to reinstatement of the Vaalharts Irrigation Scheme. If the plan is successful, it could be extended to other schemes. In France, the FNSEA¹² sees access to water as the very first form of crop insurance. It is pursuing action to have procedures for building water storage facilities simplified and to have thresholds for approval raised.

The NFU of England and Wales and its members are active supporters and participants in Water Abstractor Groups¹³. Such groups enable farmers to come together to provide a strong united voice, to build a direct channel of communication between themselves and the regulator and to foster a commitment among members to use water efficiently.

Some beef production systems in the semi-arid Paraguayan Chaco (including some of the associated slaughtering and beef-processing industries) are fully dependent on efficiently collected rainwater. These systems are being continuously improved up to a very high sustainability standard through private initiatives and Public-Private Partnerships.

Agricultural land in many countries is also vulnerable to flooding. For example, of the total agricultural land in England, approximately 1.3 million hectares (14%) are within flood risk areas¹⁴.

¹¹ <http://www.agrisa.co.za/>

¹² <http://www.fnsea.fr/>

¹³ <http://www.bawag.co.uk/>

¹⁴ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/297425/LIT_8443_200ddd.pdf

4. Make Technologies affordable, more efficient and accessible to farmers

Today's technology does not provide sufficient, concrete tools to deliver benefits from range of adaptation (and mitigation) opportunities in agriculture. However, appropriate incentives to support the implementation of existing climate-friendly technology would be a great leap forward for agriculture. One of the main challenges is to make existing technologies more affordable and efficient. This could be achieved by:

- Prioritising international technology transfer programs as well as capacity building programmes by fostering and supporting extension services
- Establishing partnerships between farmers and scientists on research and development
- More pro-poor farming research

5. Gender

While the gender perspective in the climate change context means looking not only at women, but also at vulnerable men, children and the elderly, it also means looking at women not only as victims who suffer disproportionately, but also as repositories of indigenous knowledge, innovative strategies and traditional practices, which are a valuable resource in terms of the ideas and actions that have allowed them survive and adapt to climate change.

Since women are primarily responsible for producing food for the family, as well as obtaining the household water and energy supply, this vital leadership role in revitalizing their communities and managing natural resources has positioned them well for adapting livelihood strategies to a changing environment. This is a shifting paradigm that has turned women from victims who suffer disproportionately from the effects of weather and climate to agents of change. However, traditional approaches to dealing with every type of risk will not always be adequate or even appropriate as longer-term pressures evolve.

In this regard, there are a number of women empowerment strategies that may be employed to boost women's problem-solving and innovative capacities, such as learning and raising awareness, better access to resources and appropriate technologies, training and other support services. Women-led adaptation should not be seen in isolation from adaptation in related fields, as it is as much a developmental issue as an environmental one.

The NFU in the United States holds an annual Women's Conference providing women with important skills and guidance to confidently manage risks on their farming and ranching operations. The NFU believes that family farm operations and agribusiness board rooms alike benefit from the views and ideas provided by women in the agriculture industry. Nationally in the US, women make up 30 percent of farmers, farming over three hundred million acres, and those farms are more likely to be enrolled in conservation programs. The Specific Union for Farmer Women in Jordan¹⁵ offers training programs as well as loan products to foster financial independence and education. These services are particularly important in the rural areas of Jordan because women are often limited to the domestic sphere, and thereby are unable to gain financial independence.

NASFAM in Malawi prioritises equal participation of women throughout the NASFAM system. Women are encouraged to become members and to actively participate in their local Committee activities, as well as putting themselves forward for leadership positions. It also works with a proportion of female members, particularly female headed households, to help set them up in sustainable income generating activities so that they can farm as a business and support their families. Some of these women may have benefited from the functional literacy training

¹⁵ http://www.agro-info.net/?menu=organisations&view=organisation&organisation_id=16080

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(2) Identification and assessment of agricultural practices and technologies to enhance productivity in a sustainable manner, food security and resilience, considering the differences in agro-ecological zones and farming systems, such as different grassland and cropland practices and systems



The World Farmers Organisation (WFO)¹ is an international organisation of farmers for farmers. It aims to bring together all the national producer and farm cooperative organisations with the objective of developing policies which support farmers' in developed and developing countries around the world.

The WFO welcomes the opportunity to address the identification and the assessment of agricultural practices and technologies to enhance productivity in a sustainable manner under the Subsidiary Body for Scientific and Technological Advice (SBSTA) at its 44th session. WFO considers that agriculture, as the basis for food production, food security, livelihoods and rural development, needs to be adequately considered in relation to weather and climate effects under the UNFCCC. Practices and technologies to enhance productivity in a sustainable manner, food security and resilience are already being implemented. There is a need to increase the efficiency of agricultural production in the context of decreasing availability of natural resources, often exacerbated by extremes of weather.

We see this as an opportunity as key stakeholders in the global agriculture community to step up to the challenges put in place by the Paris Agreement and drive action.

1. General remarks

i) Building upon the Paris agreement

Agriculture is an important sector in global climate change effort. Food security and food production are explicit in the Paris Agreement and agriculture is discussed in 80% of Intended Nationally Determined Contributions. The Paris Agreement opens the door to further work on agriculture between now and 2020, when the agreement takes hold, in order to ensure that food production is not threatened (Article 2).

It should also reinforce the commitment made in the Paris Agreement, which “recognises the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change”. Article 2.1b, the purpose of the future climate agreement to be implemented from 2020 onwards, states an aim to strengthen the global response to the threat of climate change by “increasing the ability to adapt to the adverse impacts of extreme weather and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production”.

¹ <http://www.wfo-oma.com/>

ii) *Recognise the specific role of farming*

Throughout the world, agriculture and forestry are facing enormous challenges:

- As one of the most vulnerable sectors, agriculture and forestry need smart strategies to ensure water availability, to guarantee plant health, and to benefit from adapted crop varieties etc;
- Agriculture has a unique role in supplying sufficient and nutritious food for a growing world population, especially as food production will have to be increased by 70 % by 2050;
- The unique status of the farming sector is even more significant as agriculture and forestry capture CO₂ and produce renewable energy. A low-carbon economy will not be possible without bioenergy.

It is therefore critical that the efficiency of cropping and livestock farming is further increased. This means farming in both an environmentally-friendly and highly productive way.

iii) *Mitigation potential real, but limited*

Limitations to GHG reductions in the agriculture sector exist because of the biological nature of its emissions. The UNFCCC's technical paper on "challenges and opportunities for mitigation in the agricultural sector"² provides a good basis for further work on agriculture under the UNFCCC process. According to this report, the global technical mitigation potential of agriculture, excluding fossil fuel offsets from biomass, by 2030 is estimated to be 5.5–6 Gt CO₂ e per year. About 30% of this potential can be achieved in developed countries, while 70% lies within developing countries. In addition, the technical mitigation potential differs from the economically feasible potential. This is a complex process, especially as there are many uncertainties surrounding estimations of agricultural emissions. It is therefore important not to overestimate the mitigation potential of the agriculture and forestry sector

iv) *Build consensus about principles on possible actions to improve productivity*

- Options should be considered in the context of the entire farming system in order to understand the links between all the system components
- Improvements in efficiency should be favoured. Such efforts could offer opportunities for enhancing sustainable development and food security and contribute especially to poverty alleviation in developing countries.
- A one size fits all approach does not apply to agriculture. The diversity of agricultural systems and specific national and regional development priorities, objectives and circumstances have to be considered. Each country should decide on key issues for its climate action strategy, recognising its national environmental, social and economic circumstances.
- Options that could lead to an increase in profits and/or productivity should be favoured. Practices and technologies contributing to a reduction of GHG emissions will have a better uptake among farmers if farm profitability is a clear co-benefit.
- Enhance the link between actions to improve productivity and deliver adaptation. Increasing soil carbon sequestration or improving the efficiency of agricultural systems in a sustainable manner, can at the same time build resilience to climate impacts. The common and scientific understanding of the best ways on how to address impacts, vulnerabilities, productivity and adaptation needs whilst contributing to safeguarding food security and livelihoods has to be deepened. Linkages, synergies and trade-offs have to be identified on the basis of the best available

² <http://unfccc.int/resource/docs/2008/tp/08.pdf>

science, the regional context and the local knowledge; with specific attention to the strategies and techniques most likely to create “win-win” solutions.

2. Examples of agricultural practices and technologies currently undertaken to enhance productivity in a sustainable manner, food security and resilience

The following examples of agricultural practices and technologies currently undertaken to enhance productivity in a sustainable manner, food security and resilience is by no mean exhaustive. Our response focuses on the conditions required to facilitate the uptake of such practices.

i) Improving productivity and efficiency

- Foster investment in the agriculture sector worldwide as a way of supporting farmers who strive to make their farming methods as efficient and environmentally-friendly as possible;
- Incentivise the installation of farm-scale anaerobic digestion (AD) plants for multiple farm business and environmental benefits – more efficient nutrient management, methane mitigation, renewable energy generation.
- Use funds and extension services available through different initiatives like the GACSA and its regional relatives³ to promote agriculture and forestry’s role in improving productivity and special climate-friendly farming methods in agriculture;
- Ensure that the work of the Global Agricultural Research Alliance is translated into guidance for farmers. This could lead to the development of innovative farming methods for all farming systems.
- Where available, use agri-environmental schemes or equivalent to encourage further efficiency improvements in fertiliser and feed application;
- Promotion of programmes for energy efficiency and to provide access to renewable energy technologies.

ii) Managing soil carbon and the carbon cycle in agricultural products

The agriculture and forestry sector is the only economic sector in which production, through photosynthesis, stores CO₂. With regard to increasing the organic matter content of agricultural soil, however further research is needed. A significant sink could result from increasing soil organic matter content; nevertheless there is considerable uncertainty over the durability as well as the carbon capture potential of soil.

Enabling conditions for the adoption of such practices:

- More intensive research on the possibilities of increasing the soil organic matter content;
- Increasing the carbon cycle of crops by improving productivity whilst paying due attention to the need for efficiency;
- Use of incentives to promote carbon capture;
- Promote breeding and production of leguminous crops.

³ Global Alliance for Climate Smart Agriculture

iii) Renewable energy generation

Using renewable resources from agriculture and forestry to produce electricity, heating and fuel to substitute fossil fuels elsewhere in national economies has the potential to make a significant contribution to mitigation and energy security

Enabling conditions for the adoption of such practices:

- Greater use of renewable resources as materials;
- Exploit the untapped potential of AD
- Use land for the additional cultivation of energy crops, made available through yield increases from arable cropland and grassland;

iv) Speed up international agricultural research

Further research in the following areas is urgently needed:

- increasing potential for carbon sequestration and resilience enhancements such as resilience of soil ecosystems, breeding, potential of perennial crops;
- where climate impacts are not well understood, such as impacts on pest and diseases of crops and livestock production (quantity and quality)
- tools and techniques to improve resource utilisation and efficiency as well as decision-making capacity, such as water storage and irrigation technologies, food storage methods, and spatial data collection and dissemination.

The outputs of such research need to be practical and packaged and made available to farmers.

v) Promoting climate-smart agriculture (as defined by the FAO)

Throughout the world, many practices and approaches are being implemented on the ground in order to improve the efficiency of the farming methods. The focus should be put on climate-smart practices by which agriculture sustainably increases resilience (adaptation), productivity (mitigation), and enhances delivery of national food security and development goals. Examples include: better manure management, cultivation of catch crops and cover crops, development of advisory services and understanding genetics to improve livestock productivity.