

More holistic approaches to agriculture needed An analysis of submissions to SBSTA 44 on agriculture and adaptation

Alaya de Leon, Stephen Leonard and Christopher Martius

Key points

- We analyzed the 25 available submissions on agriculture and adaptation as requested by SBSTA 40, and submitted to SBSTA 44. Major emerging findings are summarized.
- Previous in-session agriculture workshops did not place enough emphasis on critical stakeholders such as small-scale food producers, food-insecure households and women.
- Separating the social and environmental aspects of adaptation measures from those that pertain to productivity, food security and resilience creates risks. Effective adaptation approaches look at multiple elements at once and seek to achieve multiple objectives.
- Gender relations and inequalities play a crucial role in structuring and differentiating vulnerabilities among women and men in the face of climate change. Women's agency should be recognized and supported through gender-responsive strategies.
- Platforms for sharing knowledge, information and experiences can serve as channels for collaboration, capacity building and innovation, and as repositories for adaptation options.
- SBSTA should establish a work program for determining how agriculture will fit into the new climate regime.

Introduction

SBSTA,¹ at its 40th session in June 2014, invited Parties and observer organizations to submit by its 44th session their views on the following (UNFCCC, FCCC/SBSTA/2014/2, paragraphs 85(c), 85(d) and 87):

(c) 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;

(d) 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.

While the importance of climate change research is recognized, there are still significant gaps in the literature on agricultural adaptation. Existing research focuses

on farmer behavior, but gender, social networks and institutions remain underrepresented (Davidson 2016). This InfoBrief aims to contribute to the understanding of current perspectives and approaches to adaptation in agriculture, in particular those linking agriculture to forests and ecosystems-based adaptation, and/or gender and indigenous knowledge and practices. It considers 25 submissions posted on the United Nations Framework Convention on Climate Change (UNFCCC) website including 9 from Parties,² 3 from intergovernmental organizations, 12 from non-government organizations and 1 from a non-admitted organization.³

General observations

SBSTA organized discussions on agricultural adaptation separating social and environmental aspects of adaptation measures from those pertaining to productivity, food security and resilience. This division creates risks because traditional knowledge and small-scale farming have a key role in any agricultural approach, while social, environmental and gender aspects must not be limited to adaptation measures.⁴ Many of the submissions conflate views under the two categories, showing their close interlinkages.

At least seven submissions considered it significant that a majority of Parties incorporated agriculture in the adaptation component of their Intended Nationally Determined Contributions (INDCs).⁵ Out of the 113 INDCs that include adaptation,⁶ 102 included agriculture in their adaptation priorities,⁷ 19 of which refer to indigenous knowledge.⁸ Out of the total 160 INDCs, only 25 refer to vulnerable and marginalized communities,⁹ close to 40% reference women and gender as key considerations,¹⁰ while 60% link climate change to food security needs.¹¹

Three submissions consider previous in-session workshops on agriculture,¹² observing that while useful, they were “tightly scripted” and did not place enough emphasis on critical stakeholders such as small-scale food producers, food insecure households and women.¹³ Neither did they address the role of smallholders in the UNFCCC process. In fact, they were excluded, along with civil society organizations (CSOs), women’s groups, and social movements from the discussions.¹⁴

Five submissions refer to the Paris Agreement as a reference point,¹⁵ underscoring the preambular provision on “safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change” (Preamble, Paris Agreement), and the reference to “the most vulnerable populations, poor, indigenous peoples and women dependent on ecosystems and agriculture for their livelihoods.”¹⁶ CARE International considers it “vital that discussions of agriculture in the UNFCCC, including in the SBSTSA 44 workshops, reflect principles of justice, gender equality, and all aspects of sustainability.”¹⁷

Holistic approaches to agriculture

Six submissions refer to the need for an ‘holistic’ approach when tackling adaptation in agriculture, reflecting “a better understanding of interconnections between smallholder farming and wider landscapes.”¹⁸ Humane Society International raises the importance of an “holistic understanding of the impacts of the climate on agriculture and vice versa, along with numerous concomitant implications for sustainable development,”¹⁹ while FAO calls attention to the “cascade of risks” brought by climate change, including physical, economic and social impacts, that need to be considered in adaptation measures.²⁰

The submissions demonstrate that effective approaches look at multiple elements and seek to achieve multiple objectives. Actions in the land sector must “protect and benefit smallholder farmers, women and indigenous peoples who are the most vulnerable to climate change, while ensuring ecosystem integrity and the protection of biodiversity.”²¹ Coordination SUD calls for a “truly rights-based approach that ensures social and environmental safeguards and promotes traditional knowledge and a gender approach” to achieve adaptation for smallholders.²²

CGIAR states that holistic adaptation measures include “multi-functional land use planning, and supply chain standards that address both adaptation and mitigation.”²³ They cite environmental co-benefits from agricultural adaptation as well as its mitigation co-benefits. These are significant considering that 10–12% of global emissions come from agriculture, which in turn drives about 12% of emissions from deforestation. The importance of cross-sectoral policy coordination among agriculture, forestry, water and energy sectors, and alignment with national development visions, is also raised.²⁴

In the submissions, various frameworks and principles are referred to as reflecting a holistic approach, including ecosystem-based adaptation²⁵ and ecosystem integrity,²⁶ landscape approach/management,²⁷ climate-smart agriculture (CSA)²⁸ and agroecology.²⁹

Some submissions suggest that a landscape approach is necessary in order to achieve CSA, which integrates the economic, social and environmental dimensions of sustainable development in order to address food security and climate change.³⁰ However, CSA is criticized for placing too much emphasis on productivity³¹ without clear parameters on what is considered ‘climate smart’ and therefore risks ignoring context-specific realities and the diversity of potential solutions, particularly at local level.³²

Some instead favor agroecology³³ as an approach that “emphasizes equitable approaches and the empowerment of small-scale food producers,” prioritizes local knowledge and resources,³⁴ and is “truly productive in [the] face of climate change.”³⁵

Forests and tree-based ecosystems are shown to lessen social vulnerability to climate change in a number of case studies, particularly in developing countries, which have greater need for adaptation using low-cost measures that are immediately responsive to people's needs (Pramova et al. 2012). Over a billion people, many of whom are poor and vulnerable, rely on forests and trees, which are highly vulnerable environments. Indigenous peoples, in particular, are often "characterized by high levels of poverty, geographic isolation, and lack of economic and employment opportunities," while also lacking security of land and resource tenure.³⁶

Forests and trees provide livelihoods, livelihood resilience and multiple ecosystem services supporting food production and security. These ecosystem services then contribute to resilience and adaptive capacity, such that forest and landscape restoration leads to increased resilience of both the land and people living around these landscapes.³⁷

The use of forests in risk reduction and adaptation, and the adjustment of plans and practices to increase forest resilience, should be considered in countries' adaptation strategies, factoring in the wealth of indigenous and local knowledge while securing indigenous peoples' rights and improving resilience.³⁸

The general trend in the submissions emphasizes holistic approaches; however, adding multiple layers of complexity might also considerably complicate things in practice. We believe that holistic approaches may not always lead to more effective adaptation as the pathway to solutions becomes longer, reducing efficiency as more resources, people and time are required. Actors thus need to find ways to navigate this complexity without becoming mired in a 'holism fallacy', in that the drive to be ever more holistic becomes a task in itself.

Emphasis on the traditional and the local

Several submissions make the case for highlighting (i.e. respecting, reviving, maintaining and propagating) traditional and local knowledge, practices and technologies. These are variously identified as indigenous, traditional, local, small-scale, smallholder, community- or

home-based approaches, integrating the unique circumstances of each context within which they are applied.³⁹ This uniqueness pertains to both geographic and ecological specificity, as well as to the particular relationship people have to their land, and the farming systems and measures that have worked over generations.

According to Boissière et al. (2013), "[e]xternal interventions for facilitating local adaptation to climate change are more likely to be successful if they build on existing knowledge, strategies and traditions." More often than not, the traditional ecological knowledge (TEK) systems of local communities already have in-depth knowledge of local climate variability and changes. This allows communities to cope with the effects of sudden changes in climate, and serves as a basis for more long-term and sustainable strategies (Boissière et al. 2013).

Practitioners of TEK are often the most vulnerable and marginalized.⁴⁰ The effects of climate change and variability further heighten the vulnerability of farmers, herders, fishers, forest-dependent communities, women and indigenous peoples. Adaptation measures must consider all of these.⁴¹

Six submissions consider the importance of integrating indigenous knowledge with contemporary scientific approaches.⁴² Agricultural innovation systems that "generate, manage, blend and share indigenous and scientific knowledge" are part of what makes an "ideal knowledge system" under climate change.⁴³ Indigenous peoples' years of experience and TEK is "intrinsically complementary to scientific research on climate change."⁴⁴ Yet, according to IIED:

[T]raditional knowledge and innovation systems are becoming weaker following decades of top-down agricultural research and extension, and due to other factors such as declining interest of youth, migration, reduced access to traditional territories and natural resources, and weakening of traditional institutions.⁴⁵

IIED makes the case for strengthening innovation systems based on indigenous knowledge by investing in "respectful collaborative research between smallholder farmers and scientists."⁴⁶

Gender equity

Fourteen submissions reference gender. CGIAR highlights that men and women have different vulnerabilities and capacities to adapt,⁴⁷ which, according to FAO, are often determined, respectively, "by socio-economic factors, livelihoods, access to knowledge, information, services, support, resources and infrastructure," and "opportunities governed by the complex interplay of social relations, institutions, organizations, and policies."⁴⁸

There are also differences in the distribution of productive and domestic roles between men and women, which influence the way they experience climate change impacts.⁴⁹ In Sri Lanka, for example, family size and perceptions of climate change have been found to affect the adoption of new technologies by either male- or female-headed households.⁵⁰

The role of rural women in smallholder farming is increasing⁵¹ (See Djoudi and Brockhaus 2011). Despite owning less than 1% of the land, women form 43% of the farming labor force in developing countries,⁵² while in least developed countries (LDCs), "79% of economically active women report agriculture as their primary economic activity."⁵³

Women are often affected disproportionately by the adverse effects of climate change on small-scale farming: higher income inequality, reduced household wealth and less stable food security.⁵⁴ Adaptation measures cannot be sustainable unless gender and other inequalities are reduced, especially when it comes to resource access and control.⁵⁵ CIDSE suggests examining the impacts of climate solutions through a gender lens to address this.⁵⁶

However, women must not be persistently portrayed as vulnerable and disadvantaged as this poses the danger of 'feminizing' vulnerability, seeing women as victims rather than as agents of change and transformation (Ihalainen et al. 2016; Basnett and Colfer 2013). Submissions vary in taking a binary (men vs. women), essentialist ("women as victims"), or instrumentalist (inclusion of women for better climate solutions) view.

A more nuanced look at the root causes of vulnerability is needed. Vulnerability is closely linked to power relations and inequities in access and distribution of resources and participation

in decision-making processes. Rather than assuming that women are more vulnerable, it is better to look at how gender roles and relations (in interplay with other power relations and inequities) structure and differentiate vulnerabilities among men and women in different contexts (Ihalainen et al. 2016; Basnett and Colfer 2013).

A few submissions do approach gender from a broader perspective, acknowledging that women's roles vary widely and are constantly shifting. The World Farmers' Organization (WFO) refers to a gender perspective that looks at women, vulnerable men, children and the elderly, but also identifies women as "repositories of indigenous knowledge, innovative strategies and traditional practices." It highlights a shifting paradigm where women play a "vital leadership role in revitalizing their communities and managing natural resources," placing them in a good position to adapt to climate change and a changing environment.⁵⁷

Challenges and barriers

There is a need to strengthen and scale up good practices and technologies⁵⁸ for adaptation and food security. There are a number of obstacles to this. Among LDCs, for example, there is limited skill in identifying and assessing appropriate adaptation measures in the context of different agroecological zones and farming systems. This is especially challenging due to the "diversity of the agricultural systems, indigenous knowledge systems and the differences in scale as well as possible co-benefits at regional, national, and local levels."⁵⁹

Within the African Group of Negotiators (AGN), despite vulnerable communities experimenting and adopting various technologies and systems (using either indigenous knowledge or external support), constraints of knowledge and finance have been a hindrance.^{60 61}

Inclusive research

As a knowledge-intensive field, agricultural adaptation should be mainstreamed and speeded up as a cross-cutting issue in research agendas.^{62 63} Research must be able to respond to changing climates, placing increased importance on "context-specific and continuously adapted knowledge to find solutions for complex and dynamic ecological and human systems."⁶⁴

Enhanced productivity is linked to increased research efforts, particularly for small-scale food production and women producers. An enabling environment supporting organic and agroecological research, which takes into account local knowledge, is needed for more balanced resource allocation and research-related reforms.⁶⁵

Integrated climate information services for smallholders, including interpretation and application of the information, are a key priority for marginalized farmers.⁶⁶ Similarly, a priority for LDCs is the integration and interpretation of scientific evidence with indigenous knowledge, and their accessibility to farmers and decision-makers.⁶⁷ Beyond this, research must be practical, packaged, made available to farmers,⁶⁸ and their active involvement in the research process promoted.⁶⁹

Engagement among all stakeholders would create opportunities to share experiences, knowledge and skills, which would facilitate the design and implementation of adaptation policies and measures.⁷⁰ Giving local communities “a voice in the day-to-day research” would likewise enable smallholders to “oversee and respond to ongoing challenges.”⁷¹ More broadly, community participation in planning, policy and budget processes should be ensured.⁷²

Knowledge-sharing and cooperation

Scaling up and broadening the reach of these practices and technologies is seen as a necessary step. Uruguay believes that to strengthen its capacity to sustainably manage its native forests, it needs access to knowledge and experience from countries with a stronger tradition in these practices.⁷³ The LDC submission highlights limited experience on climate research and gender issues and encourages the accelerated “propagation and international transfer of agriculture practices and technologies to increase food security and enhance adaptation measures, many of which already exist.”⁷⁴

Five submissions call for the creation of mechanisms, particularly regional and global platforms for sharing knowledge, information and experiences to serve as channels for

collaboration, capacity building and innovation, and as repositories for adaptation options.⁷⁵ Such platforms would provide opportunities for countries to exchange expertise, tools and practices, and transfer skills and technology. Synergies can be created with ongoing initiatives.⁷⁶

Financial support

A number of submissions cite finance as indispensable for agricultural adaptation. Lack of funding is a barrier for developing and implementing adaptation measures, which require “large financial investments at different levels of policy planning, technical and knowledge support, and local/community levels.”⁷⁷ As a result of the “neglect of agriculture in national budgets for decades,” farmers and foresters are experiencing increased difficulties in the face of climate change.⁷⁸

The EU reflects that change in the incentive structure for sustainable food production is necessary.⁷⁹ Other submissions specify where funding should be directed, including promoting local knowledge, improving climate forecasts, evaluating vulnerabilities,⁸⁰ promoting food security,⁸¹ and incentives for sustainable forest management and forest protection.⁸² For LDCs, the international community should provide adequate financial support for research and development and gender issues related to food security.⁸³

EDF suggests several funding sources – public, private, domestic, bilateral and multilateral,⁸⁴ while Coordination SUD flags the Green Climate Fund in particular to prioritize adaptation of smallholder farmers.⁸⁵

Recommendations for SBSTA

Although the agenda for agriculture and adaptation has long been acknowledged as crucial under the UNFCCC, discussion has been secondary to other land-use issues and mitigation. Many submissions welcomed the opportunity to submit their views, highlighting that Parties and observer organizations are invested in continuing the agriculture program under SBSTA and the UNFCCC.

Upcoming in-session workshops

Several submissions consider the upcoming in-session workshops on agriculture⁸⁶ as opportunities for exchange, learning and participation. Suggestions include:

- Address elements of convergence and divergence.⁸⁷
- Explore agricultural practices and techniques through social justice, gender equality and sustainability lenses.⁸⁸
- Identify what constitutes CSA, including the development of principles and guidelines to ensure the protection of the rights and interests of local communities, indigenous peoples, and food insecure households.⁸⁹
- Share information, best practices, and advice: showcase technical and policy examples to assist countries in achieving their INDCs;⁹⁰ learn from farmers' and CSOs involved in agriculture;⁹¹ and begin discussion around a knowledge and learning platform.
- Identify research gaps and information needs.⁹²
- Welcome the participation of international (scientific) organizations⁹³ and encourage greater participation of observer organizations, civil society,⁹⁴ farmers' organizations, marginalized stakeholders, including women, smallholder farmers, pastoralists and indigenous peoples.⁹⁵

The results of the workshops should be synthesized and made widely available, with opportunities for collaboration highlighted.⁹⁶

Knowledge and learning platform

Existing research from relevant initiatives should be considered.⁹⁷ Integrated data collection on agriculture should be encouraged and a space for sharing and learning provided.⁹⁸

Multiple submissions refer to the need to create, develop, or establish platforms or hubs for exchanging information on "gained experience, good practices, support tools and models, databases, successful institutional developments, success stories and lessons learned on responding to climate change in agricultural systems."⁹⁹ This merits serious consideration considering the rich resource of knowledge, information, technology and skill that already exists in various local and national contexts. This could also lead to "a common understanding of the issues to be addressed in the agriculture sectors by UNFCCC."¹⁰⁰

Agriculture work program

From multiple challenges and barriers to the innovative adaptation measures identified in the submissions, it is clear that there is much left to be explored. Inclusion of agriculture in the post-Paris agenda is essential. This acknowledges the sector's increasing vulnerability to climate change, and the intention of many countries to include adaptation in their NDCs.

Discussions around agriculture are inherently complex, not only in relation to adaptation but also mitigation, other land uses (i.e. REDD+, LULUCF), ecosystem integrity and other areas covered by the Paris Agreement. SBSTA should thus establish a process that goes beyond sharing of views and seeks to determine how agriculture fits into the new climate regime. Questions about comprehensive land-use accounting, for instance, have not been tackled.

The topics suggested for the workshops also provide ideas for further work by SBSTA. SBSTA 44 will be an ideal opportunity to get the momentum started on an agriculture work program, which could be adopted at COP 22 in Morocco.

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UNFCCC. 2015. Paris Agreement, Adoption of the Paris Agreement (Annex). Decision 1/CP.21, FCCC/CP/2015/10/Add.1.

Endnotes

- 1 Subsidiary Body for Scientific and Technological Advice
- 2 Submissions by Parties: <http://www4.unfccc.int/submissions/SitePages/sessions.aspx?showOnlyCurrentCalls=1&populateData=1&expectedsubmissionfrom=Parties&focalBodies=SBSTA>
- 3 Submissions by observer organizations: http://unfccc.int/documentation/submissions_from_observers/items/7482.php
- 4 See submission by CCFD-Terre Solidaire supported by Action contre la Faim – France, Agronomes et Vétérinaires Sans Frontières, Asia Pacific Forum on Women Law and Development, Corporate Europe Observatory (CEO), CIDSE, Drynet, Environmental Monitoring Group (EMG), Global Forest Coalition, Institute for Agriculture and Trade Policy (IATP), and TEMA (cited as CCFD)
- 5 Submission by the World Farmers' Organization (WFO) and CCFD
- 6 Compiled December 2015
- 7 Submissions by the European Union (EU), Coordination Solidarité Urgence Développement (CSUD), and Environmental Defense Fund (EDF), citing the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)
- 8 Submission by the World Food Programme (WFP)
- 9 CSUD
- 10 Submission by the Food and Agriculture Organization of the United Nations (FAO)
- 11 CCFD
- 12 Held during SBSTA 42 in June 2015
- 13 Submission by CARE International (CARE)
- 14 Submissions by CARE, CSUD, Humane Society International with Brighter Green (cited as HSI)
- 15 Submissions by Argentina, EU, FAO, WFP, WFO
- 16 FAO, 1
- 17 CARE, 5
- 18 CSUD, 6
- 19 HSI, 2
- 20 FAO, 2
- 21 EDF, 2
- 22 CSUD
- 23 Submission by Consortium of International Agricultural Research Centers (CGIAR), 7
- 24 CGIAR
- 25 Submission by Conservation International (CI)
- 26 EDF
- 27 Submissions by EDF, FAO, and the Foundation for the Economics of Sustainability with Stop Climate Chaos (cited as Feasta)
- 28 Submissions by the United States of America (US), CI, WFO
- 29 Submissions by Uruguay, Sri Lanka, CARE, CSUD, Feasta, CCFD, International Institute for Environment and Development (IIED)
- 30 FAO
- 31 IIED
- 32 CARE, CCFD, CSUD
- 33 Feasta, CARE, CIDSE, CSUD
- 34 CARE, 8
- 35 CIDSE, 2
- 36 FAO, 7
- 37 FAO
- 38 FAO
- 39 See, e.g., Submissions by the EU, African Group of Negotiators (AGN), Association of Southeast Asian Nations (ASEAN), CGIAR
- 40 See CSUD
- 41 FAO
- 42 Submissions by AGN, Least Developed Countries (LDCs), Sri Lanka, CGIAR, CSUD, IIED
- 43 CGIAR, 3
- 44 CSUD, 4
- 45 IIED, 6
- 46 IIED, 6
- 47 CGIAR
- 48 FAO, 4
- 49 Uruguay, CARE
- 50 Sri Lanka
- 51 CGIAR
- 52 CSUD
- 53 CGIAR, 7
- 54 CIDSE
- 55 CSUD
- 56 CIDSE
- 57 WFO, 5
- 58 Uruguay
- 59 LDCs, 1
- 60 AGN
- 61 WFP
- 62 Uruguay
- 63 WFO
- 64 FAO, 13
- 65 Feasta
- 66 ASEAN
- 67 LDCs
- 68 WFO
- 69 FAO
- 70 See Uruguay, CGIAR, FAO, CSUD, IIED
- 71 Feasta, 7
- 72 CARE, FAO
- 73 Uruguay
- 74 LDCs, 2
- 75 See Argentina, Uruguay, LDC, EU, CSUD
- 76 See Uruguay
- 77 AGN, 1

78	WFO, 2	89	CARE
79	EU	90	EU
80	CSUD	91	CSUD
81	EDF	92	CSUD
82	Uruguay	93	LDCs
83	LDC	94	HSI
84	EDF	95	CSUD
85	CSUD	96	CSUD
86	Workshop information: http://unfccc.int/land_use_and_climate_change/agriculture/workshop/9457.php ; http://unfccc.int/land_use_and_climate_change/agriculture/workshop/9458.php	97	EU
87	CSUD	98	EDF
88	CARE	99	Uruguay, 8
		100	FAO, 3



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