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Food and Agriculture
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Продовольственная и
сельскохозяйственная организация
Объединенных Наций

Organización de las
Naciones Unidas para la
Alimentación y la Agricultura

منظمة
الأغذية والزراعة
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COMMITTEE ON AGRICULTURE

Twenty-seventh Session

28 September - 2 October 2020

Towards a Global Programme on Sustainable Dryland Agriculture in collaboration with the Global Framework on Water Scarcity in Agriculture (WASAG) in a Changing Climate

Executive Summary

Drylands cover over 43 percent of total global land area and are characterised by limited water availability with high temperature fluctuations. Dryland agriculture is dominated by smallholder producers including pastoralists who face the concomitant challenges of low productivity, low income and a growing competition for water, food and land resources exacerbated by climate change. Around two billion people live in dryland zones of which 90 percent are located in developing countries, primarily in rural areas and dependant on agriculture for their livelihoods. Without sustainability of production systems combined with efficient management of natural resources, resilience building and economic recovery, progress cannot be achieved in advancing the 2030 Agenda and the Sustainable Development Goals (SDGs).

A Global Programme on Sustainable Dryland Agriculture (Global Programme) has the potential to advance several SDGs, including those related to poverty reduction, food security and nutrition and the sustainable management of natural resources including water, land, forest and fisheries. The programme will support countries in dryland zones to address these problems through a comprehensive, integrated approach. The main goal will be to empower smallholders in dryland regions by strengthening agricultural systems, productive resources, capacities and opportunities while protecting the natural resources under climate change. The programme is envisaged within the framework of FAO's *Hand-in-Hand* Initiative (HIHI) which promotes data management and analytics; integrated policy services; partnerships and finance and investment for accelerating agricultural transformation and sustainable rural development in support of the SDGs. It will be structured around four pillars: data platform and toolbox for comprehensive assessments and integrated decision-making; promotion of enabling environment for policies, innovations, investments and partnerships; capacity development and strengthening of infrastructure and institutions; and knowledge-sharing hubs for information exchange, awareness and advocacy.

The Global Programme will offer a combination of innovative approaches and use local knowledge, modern science and technologies for increasing productivity and unlocking the full potential of agriculture in dryland regions. It will provide high-resolution digital baseline information on available resources for sustainable agriculture, strategies for diversification, soil moisture management, protected cultivation, water productivity and for addressing climate change. It will promote investments and partnerships that increase smallholders' adoption of good practices, technologies and innovations, as well as increase access to finance and participation in decision-making processes, in particular at local level. The programme will build on and strengthen partnerships and networking developed by the Global Framework on Water Scarcity in Agriculture (WASAG). It will fully engage

with partners and stakeholders including the One-CGIAR and other relevant inter-regional, regional and international entities. The Global Programme will have a global reach but the main target will be the low-income and /or low-capacity countries located mainly in the dryland zones of Land Locked Developing Countries (LLDC), Least Developed Countries (LDC) and Small Island Developing States (SIDS) where it will engage with governments, resource partners and the private sector including through South-South and Triangular Cooperation (SSTC), to ensure that innovations and investments are leveraged and amplified for driving a transformative change. The Global Programme will contribute to several SDGs and will be monitored under FAO's SDGs monitoring tool.

Suggested action by the Committee

The Committee is invited to:

- Call upon Members to endorse the 'Global Programme on Sustainable Dryland Agriculture' and support the transformation of agriculture in dryland regions within the framework of the *Hand-in-Hand Initiative* as a key to advance the 2030 Agenda;
- Recommend Members to strengthen their cooperation for the implementation of the Global Programme and urge them to support it through targeted policies, innovations and investments;
- Call upon Members to join and continue to actively support WASAG and its linkage with the Global Programme; and
- Request the Organization to report on the progress of the Global Programme on a periodic but regular basis.

Queries on the substantive content of the document may be addressed to:

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I. Status of Dryland Agriculture

1. Drylands are characterised by very limited availability of water and high temperature fluctuations and constitute over 43 percent of the global land area. They are divided into hyper-arid, arid, semi-arid and dry sub-humid lands (including coastal savannah areas) of which 28 percent are barren, 25 percent covered by grasslands, 18 percent by forests, 14 percent by croplands, 10 percent by woods, one percent by inland water bodies, and the rest with no identified use¹. The dryland zones stretch across Sub-Saharan Africa, Near East and North Africa, Central America and Central Asia where agriculture plays a critical role dominated by small-scale food producers, in particular women, family farmers, herders, pastoralists, foresters and fisher folks (Fig 1). However, climate extremes, unsustainable agricultural practices, deforestation, frequent droughts and water scarcity are leading to concomitant challenges of low productivity, low income, conflicts and high incidence of poverty, malnutrition and food insecurity. Many countries are also facing an unprecedented threat of desert locusts at present, which has taken a new dimension in the wake of food security apprehensions during the COVID-19 pandemic².

2. Around two billion people live in drylands, of which 90 percent in developing countries, primarily in rural areas and dependent on a range of agricultural activities for their livelihoods. Without sustainable agriculture, production systems combined with efficient management of natural resources, enhanced resilience and economic support, progress cannot be expected in advancing the 2030 Agenda and the Sustainable Development Goals (SDGs) in the countries in the dryland zones.

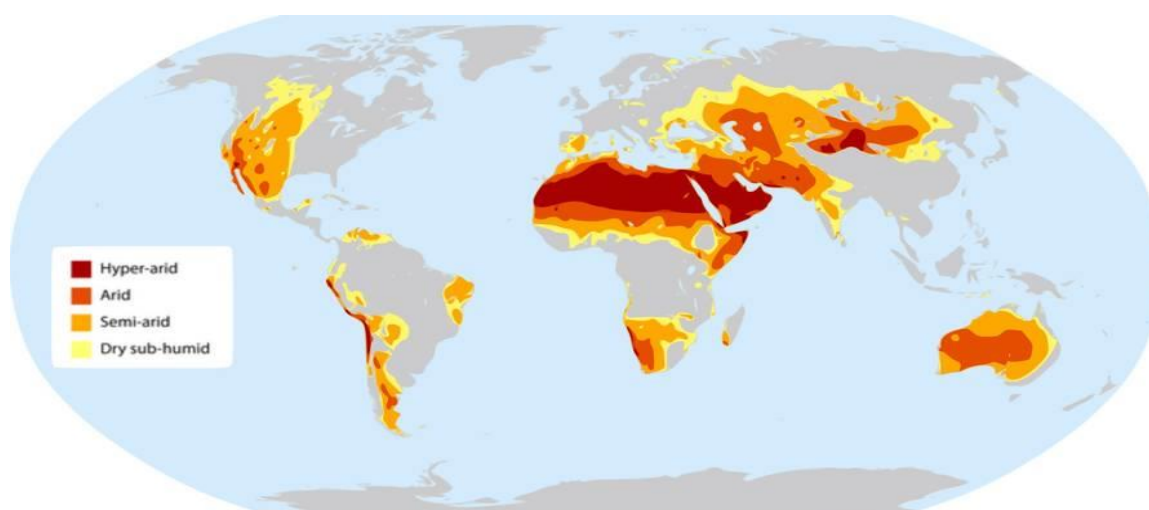


Fig. 1 Distribution of Drylands across the world³

3. Several initiatives have been undertaken by the Organization with partners to assist countries in addressing these challenges, in particular water scarcity, land degradation, deforestation and food insecurity. At regional level, in Africa, the *Green Wall for the Sahara and the Sahel Initiative*⁴ is addressing deforestation and desertification and the *Regional Initiative on Building Resilience of Africa's Drylands*⁵ is focused on strengthening resilience to disasters and crisis at regional, national and community level in food insecure countries. In the Near East and North Africa, the *Regional*

¹ Tree, forests and land use in drylands: The first global assessment. FAO 2019

<http://www.fao.org/3/ca7148en/ca7148en.pdf>

² FAO locust watch Desert Watch <http://www.fao.org/ag/locusts/en/info/info/index.html>

³ <http://www.fao.org/gef/dryland-sustainable-landscapes/en/>

⁴ Green Wall for the Sahara and the Sahel Initiative of FAO's Action Against Desertification initiative <http://www.fao.org/in-action/action-against-desertification/overview/great-green-wall/en/>

⁵Regional Initiative on Building Resilience on Africa's Drylands : <http://www.fao.org/africa/perspectives/resilience-in-drylands/en/> ;

*Water Scarcity Initiative*⁶ is promoting evidence-led policymaking and a regional collaborative strategy for sustainable water management for food security. More recently, the *Sustainable Forest Management Impact Program on Dryland Sustainable Landscapes* (SFM-IP-DSL) with the Global Environment Facility (GEF) and other partners are addressing land use and land degradation in eleven countries⁷, and the *Central Asian Countries Initiative for Land Management* (CACILM –II) is scaling up integrated natural resources management in drought prone, salt affected agricultural landscapes⁸. FAO is also engaged with the One-CGIAR, International Center for Biosaline Agriculture (ICBA) and other international and regional entities, and has developed tools, methodologies, online portals and publications on agro-silvopastoral systems, land use, soil and water management in drylands.⁹

4. At the global level, the WASAG was launched in 2016, as a coordination mechanism for advocacy, knowledge dissemination and actions for addressing water scarcity in agriculture in a changing climate in support of the SDGs. The Committee at its previous Session expressed its support for the partnership and requested FAO to report regularly on its progress and to develop an umbrella programme with a funding strategy¹⁰. FAO is leading a recently established UN Coalition on Combatting Sand and Dust Storms (SDS) to foster regional and inter-regional collaboration in SDS-inflicted countries. Besides, FAO is leading the implementation of the UN Decade of Family Farming with International Fund for Agricultural Development (2019-2028) and the UN Decade Ecosystem Restoration with United Nations Environment Programme (2021-2030)¹¹ to support and advance the SDGs and leave no one behind.

5. This document provides the rationale and an outline for developing a *Global Programme on Sustainable Dryland Agriculture* to empower smallholders' by strengthening agricultural systems in dryland regions. Two information documents COAG/2020/INF/15¹² and COAG/2020/INF/16¹³ provide additional details on specificities, partnerships and collaborations.

II. Towards a Global Programme on Sustainable Dryland Agriculture

6. Despite the efforts outlined above, agriculture in drylands faces several interconnected structural, environmental and socio-economic challenges that are complex and unique. With increasing population, competition for food, land and water is on the rise, leading to progressively intense resource use such as mono cropping, overuse of pesticides, deforestation, over grazing and other mismanagement of natural resources that are increasing land degradation, soil salinity, water scarcity and loss of livelihoods. Furthermore, smallholders and other actors in dryland regions are marginalized by uncoordinated policies, lack of investments, non-inclusive growth, poor infrastructure and inadequate access to credit, tools and technologies. These lead to destabilisation of agro-ecological balance, fragility, conflicts, land abandonment and outmigration from rural settings in large numbers. Urgent action is needed to improve productivity, natural resource management and socio-economic stability through policy and technical responses, innovations, services, investments and partnerships both at local and global level. Better coordination between agricultural, water and environmental sectors is required so that dryland agriculture can support countries in achieving

⁶ Regional Water Scarcity Initiative in NENA <http://www.fao.org/3/mj380e/mj380e.pdf>

⁷ SFM-IP-DSL partners are GEF, IUCN, WWF, World Bank. Operating in Angola, Botswana, Burkina Faso, Kazakhstan, Kenya, Malawi, Mongolia, Mozambique, Namibia, Tanzania, Zimbabwe <http://www.fao.org/gef/dryland-sustainable-landscapes/en/>

⁸ CACILM II: Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan and Turkey <http://www.fao.org/in-action/cacilm-2/en/>

⁹ Collect Earth, <http://www.fao.org/dryland-forestry/en/>; Drought Portal, Dryland Restoration Initiative Platform, <http://www.fao.org/land-water/resources/en/>

¹⁰ Report of the 26th Session of the Committee on Agriculture (Rome, 1-5 October 2018) <http://www.fao.org/3/my349en/my349en.pdf>

¹¹ <http://www.fao.org/family-farming-decade/home/en/>; <http://www.fao.org/news/story/en/item/1182090/icode/>

¹² COAG/2020/INF/15: Towards a Global Sustainable Dryland Agriculture Programme

¹³ COAG/2020/INF/16: Report on Water Scarcity in Agriculture (WASAG)

multiple SDGs, in particular SDGs 2 (Zero Hunger), 6 (Water and Sanitation), 15 (Life on Land) and 17 (Partnerships).

7. An integrated, participatory Global Programme can address these multiple, interlinked challenges to agricultural productivity, natural resource management and livelihoods. It will bring together policies, strategies, knowledge, technologies and partnerships for sustainable management of crop, livestock, soil and water resources under changing climatic scenarios in the agroecosystem. It will be an umbrella programme within the framework of FAO's *Hand-in-Hand* Initiative (HIHI)¹⁴ to eradicate poverty, hunger and malnutrition by accelerating agricultural transformation and sustainable rural development in support of the SDGs.

8. The main goal of the Global Programme is to empower smallholders in the dryland zones by strengthening productive resources, capacities and opportunities while protecting the natural resources under climate change. It will concentrate on integrated, systems-based approach to: a) promote diversification strategies, including adoption of locally adapted seeds, varieties and breeds; b) improve plant-soil-livestock management of grasslands; c) address soil-fertility and soil salinity; d) strengthen land use planning and e) increase water use efficiency including through nature-based solutions. It will up-scale best practices, integrated strategies, technical options, digital solutions to address trade-offs and maximising synergies and resilience. Inclusive modalities will be promoted for expanding extension and rural advisory, financial services, input supply services, and strengthening infrastructure for access to markets especially for women. Targeted activities with tailored interventions and institutional actions will create decent jobs for the local communities. Overall, the Global Programme will nurture agricultural systems that are sustainable, economically viable, protect the environment, ensure social equity, and remain productive in face of climate change.

III. Implementation of the Global Programme

9. The Global Programme will implement practical and proven approaches for developing agricultural systems that are sustainable and maximize economic benefits for the local communities. In line with the HIHI, the Global Programme will apply new ways of working through data management and build crosscutting approaches to identify the biggest opportunities for innovations, investments and impact at scale. The delivery will be structured around four pillars:

- Assessments for integrated decision-making through the Data platform and Toolbox for Dryland Agriculture;
- Enabling environment for policies, innovations, investments and partnerships;
- Capacity development for strengthening institutions, infrastructure and services;
- Knowledge-sharing and information exchange for awareness and advocacy

10. The pillar on assessments will be supported by a multidimensional Data platform that will provide geographic information system (GIS) and remotely sensed data to help visualize biophysical, economic and statistical information pertinent to dryland agriculture systems. It will be linked to the HIHI Geospatial Platform¹⁵ and support gap analysis, assessments, analytics for modelling and monitoring status and outcomes. It will complement a 'Toolbox for Sustainable Dryland Agriculture' which will offer validated methodologies, proven good practices, technologies and innovations that can add value to smallholders' productive assets, income and livelihoods. Many tools and digital solutions are already available, such as for conservation and precision agriculture, protected cultivation, monitoring soil health, livestock, water harvesting, water management including from FAO's Collect Earth and the Dryland Restoration Initiative Platform (DRIP) that supports good practices restoration, and Land Degradation Neutrality¹⁶. The data platform and the

¹⁴ Progress Report on the *Hand-in-Hand* Initiative <http://www.fao.org/3/nc857en/nc857en.pdf>

¹⁵ Relevant FAO databases from <http://www.fao.org/faostat/en/#data/>

¹⁶ DRIP <http://www.fao.org/in-action/dryland-restoration-initiative-platform/en/>

toolbox will provide a comprehensive package that will support the other three pillars. It will also be made available to all partners and stakeholders for tailoring policies, strategies, technologies, collaborations and investment priorities.

11. The pillars aimed at enabling environments, capacity development and knowledge sharing will accelerate ongoing efforts at national and regional level by combining policies with innovations, local knowledge with advances in science and technologies to unlock the full potential of the programme on the ground. It will strive to promote policies and public investments that increase smallholders' investment capacity, participation in decision-making processes, right to land tenure and access to technology and innovations. Many effective policy tools are already available, but their adoption or adaptation require action. The programme will encourage stronger linkages between local and national administrative bodies for coordinated responses in targeted areas to promote a sustainable transition.

12. A range of skill enhancement initiatives will be offered to men and women, youth farmers and producers through targeted trainings, participative learning, Farmer Field Schools, study tours and exchange visits, including through South-South and Triangular Cooperation (SSTC). Smallholder focused diversification strategies to adapt to climate change, institutionalizing and strengthening producers' organizations will be encouraged and supported by making available technical and financial options related to agronomic and market related information. There are enormous possibilities to enhance SSTC to cover all issues related to sustainable dryland agriculture and increase participation of developing countries. The Global Programme will also take advantage of and use existing regional knowledge platforms and thematic networks on drylands. Locally adapted measures can be combined with innovative measures by involving relevant stakeholders.

13. The four pillars of the Global Programme will particularly benefit from WASAG in supporting the development of resilient and sustainable agriculture in the context of water scarcity and climate change. The expertise of WASAG partners will be relevant for water use, drought preparedness, agriculture in marginal lands, saline agriculture, promotion of underutilised crops, forages among others. The Global Programme will also build on the current support from members to this partnership and reach out to WASAG beneficiaries across countries, regional entities, river basin organizations, civil society organizations and local communities.

14. The Global Programme will strengthen partnerships, cooperation and knowledge sharing in multiple ways. Alliances with relevant international, regional and national entities, academia, research institutes, farmers and producers' organizations and the private sector will be strengthened. Collaborations are already being established with the ICARDA-led DryArc Initiative¹⁷ that is under development by the One-CGIAR to ensure technology suitability through research and development and the potential for uptake of integrated approaches during implementation. Functional partnerships will be established with all relevant programmes that synergize efforts and amplify collaborations, including with the *Sustainable Forest Management Impact Program on Dryland Sustainable Landscapes* (SFM-IP-DSL) and other programmes guided by the Committee on Forestry and its Working Group¹⁸. Partnerships with the private sector, local actors, and start-ups will be facilitated for the uptake of innovations and emerging technologies and expanding opportunities for joint investments.

15. Since most of the dryland regions fall in low-income, low-capacity countries, prioritization of geographical focus within dryland zones will be the first step of the programme. Adequate investments through targeted resource mobilization strategy will be necessary for engaging at scale. Guidelines for formulating successful investment packages will be developed to assist in prioritization of investments and provide practical information that demonstrate gains and costs of implementation of dryland management projects. Resource mobilization efforts will engage Member Nations, traditional resource

¹⁷ MoU renewed with ICARDA in 2020. DryArc Initiative 2019-2021

<https://storage.googleapis.com/cgiarorg/2018/12/SMB12-03-Discussion-on-the-Dry-Arc-concept.pdf>

¹⁸COFO/WG-DF/2019/5.d <http://www.fao.org/forestry/48571-0ccd6900e17ece56f51db67502dafc87a.pdf>

partners and emerging partners, including through domestic resource mobilization at country level. It will build on ongoing projects (TCPs and GCPs) and particular attention will be given to promoting crosscutting, integrated approaches that can harness the results for wider impacts. In partnership with governments, the Global Programme will engage financial institutions and the private sectors to ensure that innovations and sustained investments are available for transformation of dryland agriculture systems. A Multi-Partner Trust Fund will be established for the purpose.

16. The Global Programme on dryland agriculture is proposed as one of the programmatic areas under consideration in FAO's New Strategic Framework. This will allow the outputs and results of the Global Programme to be linked to the relevant indicators of the SDGs through FAO's SDG monitoring tool and reported on a periodic basis. The implementation through a harmonized and integrated approach will help raise productivity while protecting the environment and ensuring socio-economic stability support the achievement of national priorities and the SDGs in countries in the dryland regions.