Thematic Evaluation Series

Evaluation of FAO's contribution to Sustainable Development Goal 6 – "Ensure availability and sustainable management of water and sanitation for all"

Annex 1. Terms of reference

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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1. Introduction

1. In 2015, the United Nations (UN) General Assembly adopted the 2030 Agenda for Sustainable Development (UN, 2015), a plan of action for people, planet and prosperity to take the UN development agenda forward. The 2030 Agenda for Sustainable Development offers a framework for action made of 17 interrelated Sustainable Development Goals (SDGs) and 169 targets in areas of critical importance for humanity and the planet. Building from the eight Millennium Development Goals (MDGs), the SDGs offer a change in the world's vision and approach to development, being:

    1. **universal:** as relevant to developed as it is to developing nations;
    2. **indivisible:** with no one goal separate from the others;
    3. **sustainable:** in all three dimensions of the term: economic, social and environmental; and
    4. **ambitious:** aiming at generating transformational changes in all sectors of development (UN, n.d.a.).

2. At its 129th session (FAO, 2019a), the Food and Agriculture Organization of the United Nations (FAO) Programme Committee requested an evaluation of FAO's contribution to SDG 6: Ensure availability and sustainable management of water and sanitation for all (SDG 6 evaluation). The evaluation of SDG 6 will be the third SDG-oriented evaluation conducted by the FAO Office of Evaluation (OED), and will thereby build on the methodological basis and some of the analytical work already availed by the evaluations of FAO's contributions to SDG 2 and SDG 13. Accordingly, this will entail looking at FAO's work in the context of other relevant work led by UN agencies and development partners.

3. The terms of reference (TOR) for the evaluation serve as the evaluation roadmap. They are the result of a preparatory phase that consisted of reviewing documentation and mapping FAO's work around SDG 6 and consulting with key stakeholders. This document presents the subject under evaluation and the purpose, scope and approach proposed for the evaluation. Further inputs from key stakeholders and the evaluation team during the evaluation's inception phase will help refine and finalize the TOR, and in particular the assessment questions and related methodology.

2. Subject of evaluation

2.1 The challenge around water

4. Water is a condition for life on our planet. A food in itself, water is a principal component of food, energy, health, industrial development, liveable cities, and the biodiversity and ecosystems around us. Universal access to safe water and sanitation is a cornerstone of socioeconomic development: progress in food security, health promotion, education, poverty reduction, environmental protection, economic growth in agriculture, industry and energy generation are all related to the availability and sustainable management of water.

5. Yet, the world faces growing challenges linked to water scarcity, water pollution, degraded water-related ecosystems and cooperation over transboundary river basins. Billions of people worldwide still live without safely managed drinking water and sanitation, even though both services have long been defined as human rights (WHO, n.d.). Water stress remains alarmingly high in many regions, threatening progress towards sustainable development. About 36 percent of the world's population lives in water-scarce regions and predictions are that by 2050, more than half of the world's population — and about half of global grain production — will be at risk due to water stress. By 2050, desertification alone will threaten the livelihoods of nearly one billion people in about 100 countries (Sena, 2019). Within the Northern Africa and Western Asia regions, many countries withdraw all their renewable water resources (100 percent) every year, or even more (up to 1 000 percent) and rely on non-renewable resources to meet their water needs, some of which will eventually run dry, such as groundwater extracted from confined aquifers.

6. At the same time, demand for water (from agriculture – accounting for 72 percent of all water withdrawals, domestic use or industry [UN-Water, 2021]) is rapidly rising with growing populations and related increasing demand for food and energy, exacerbating scarcity problems. Even in water scarce areas, unsustainable or inefficient practices continue to withdraw water resources, often revealing inappropriate policies and governance that allow overuse and waste of the resource, with the agriculture sector being amongst the main sources of strain (UN-Water, n.d.a.). There is a need to support virtuous decisions on water allocation and use.

7. Water scarcity and pollution resulting from human activities also have negative consequences on public health, and on the sustainability of environmental, social and economic systems. The multifaceted issues affecting water resources globally can have mutually reinforcing effects. These effects are compounded by climate change and environment degradation, such as deforestation. Global warming and climate disasters imply that many people will have either no water, erratic access to water or far too much water.

8. The rising pressure on water causes disasters and conflicts and displaces millions of people, and while these situations affect many parts of the globe, within countries, the poorest and most vulnerable are hit the hardest. Inequitable access to safe drinking water has consequences on the lives and livelihoods of most marginalized people first. Over two billion people drink from contaminated water, resulting in a child dying every minute. These inequitable situations could lead to further disruptions.

9. Last, water does not respond to administrative or geographic boundaries: 40 percent of the world population lives within shared river basins, and almost 90 percent of the world population lives in countries sharing transboundary waters (UNEP, 2016).

10. More detailed analysis of the specific challenges related to each of the SDG 6 target or cutting across all of them is provided in Appendix 1.

2.2 Actions taken in the past decades

11. Ensuring availability and sustainable management of water and sanitation for all has been a priority topic over the last decades for the UN. Table 1 below recaps key milestone actions taken within the UN, to support action for water. Water is also at the heart of milestone agreements such as the Sendai Framework for Disaster Risk Reduction and the 2015 Paris Agreement.

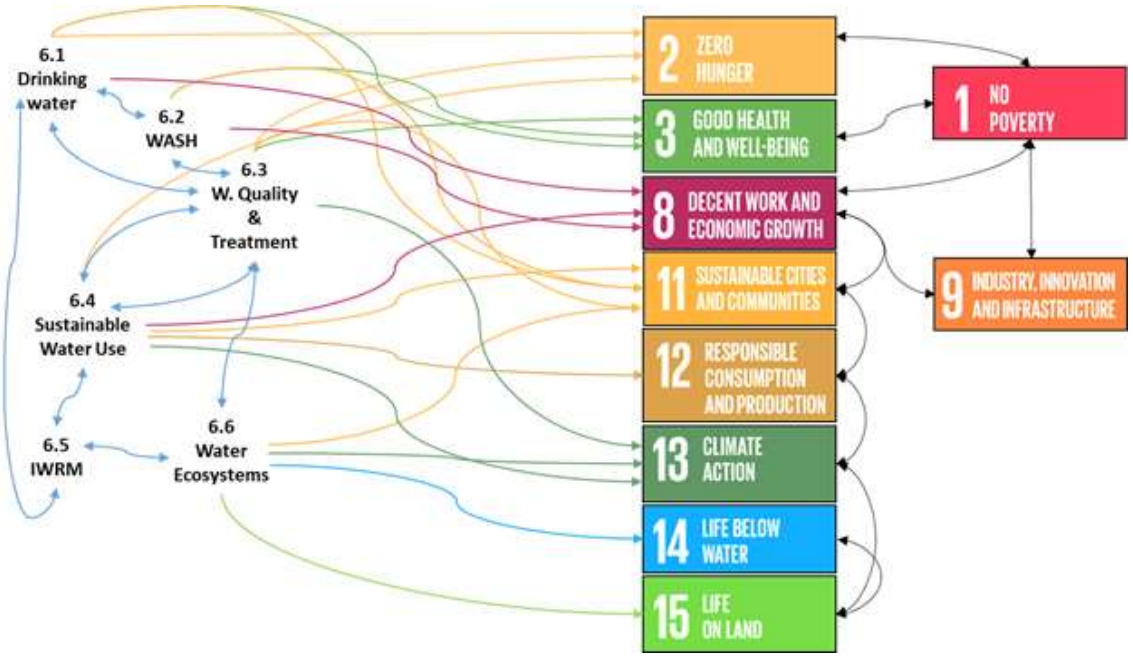
Table 1. Historical engagement of the UN system on water

Year	Action
1977	Action Plan on "Community Water Supply" at the Mar del Plata Conference in Argentina, declaring that all peoples have the right to access to drinking water in quantities and quality equal to their basic needs
1981–1990	International Drinking Water Supply and Sanitation Decade
1992	UN Conference on Environment and Development in Rio de Janeiro (Agenda 21, Chapter 18), and International Conference on Water and the Environment (ICWE) in Dublin
1993	UN General Assembly (GA) designates World Water Day on 22 March
2000	Millennium Development Declaration: By 2015, halve the proportion of people without access to safe drinking water and to basic sanitation (MDG7)
2003	International Year of Freshwater, and creation of UN-Water — a UN inter-agency coordination mechanism for all freshwater and sanitation related issues
2005–2015	"Water for Life" Decade
2008	International Year of Sanitation
2010	UN GA recognizes the human right to water and sanitation (Resolution 64/292)
2013	UN GA designates World Toilet Day on 19 November
2015	UN GA adopts the SDGs including SDG 6
2016	International Decade for Action – Water for Sustainable Development (2018–2028) adopted in support of the achievement of SDG 6 and other water-related targets
2020	Resolution on United Nations Conference on the Midterm Comprehensive Review of the Implementation of the Objectives of the International Decade for Action

Source: Prepared by the evaluation team.

12. Since 2015, the SDGs have offered a comprehensive agenda for action, complemented by several initiatives taken to champion this agenda and trigger the much-needed urgent action. SDG 6 identifies the range of 'water sector' issues that require attention, while almost all of the SDGs depend to some extent on how well water is managed. For example, sanitation improvements can lead to more jobs and economic growth (SDG 8). SDG 6 progress improved health (SDG 3) and social justice (SDG 16). Recycling wastewater may contribute to achieving sustainable production (SDG 12) and ending hunger (SDG 2). All the same, progress in other SDGs may facilitate or hinder achievements of SDG 6 targets (e.g. water pollution by food production activities). These interdependencies around water and the ensuing wide range of stakeholders involved in managing water make it a particularly complex agenda, and managing these interdependencies well is critical to attaining sustainable development.

Figure 1. Representation of SDG 6 interconnections with other SDGs



Source: Developed by the evaluation management team based on: ICSU. 2017. *A Guide to SDG Interactions: from Science to Implementation* [D.J. Griggs, M. Nilsson, A. Stevance, D. McCollum (eds)]. Paris, International Council for Science. Fonseca, L.M., Domingues, J.P. and Dima, A.M. 2020. Mapping the Sustainable Development Goals Relationships. *Sustainability*, 12: 3359. https://doi.org/10.3390/su12083359.

13. SDG 6 built on the achievements of the MDG 7, supporting Environmental Sustainability. The MDG efforts led to meeting the targets set in relation to safe drinking water and some of the environmental targets but left the sanitation targets largely underachieved. SDG 6 also went beyond MDGs, including targets related to the sustainable management of water, wastewater and water ecosystems, and acknowledging the role of cooperation and partnerships, including at the local level. In total, SDG 6 includes eight specific targets, all accompanied by indicators to track progress over time, as outlined in Table 2.

14. SDG 6 includes six "outcome-oriented" targets (1-6) and two supporting means to achieve the former (a & b), most with a 2030 deadline, except for target 6, set to 2020. As for all SDGs, responsibilities for monitoring are under the responsibility of multiple stakeholders, starting with countries, who avail data collected by national statistical systems to the custodian agencies. Custodian agencies are UN bodies (and in some cases, other international organizations) responsible for compiling and verifying and submitting the data on progress against SDG targets, and strengthening national monitoring and reporting capacity. FAO and a few other UN organizations are custodians of the 11 global indicators related to SDG 6 targets (see next section). The UN Statistics Division makes the data received from countries and the custodians available on the SDG Indicators Global Database and incorporate them into progress reports as appropriate. Regional mechanisms can also facilitate data and knowledge exchange and capacity building. Finally, UN-Water and the Integrated Monitoring Initiative for SDG 6 coordinates custodian agencies' efforts, to facilitate integration and support the institutionalization of monitoring.

Table 2. SDG 6 targets and indicators, and respective custodian agencies

Target	Indicator (custodian agencies)
6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all	6.1.1 Proportion of population using safely managed drinking water services (World Health Organization [WHO]/United Nations Children's Fund [UNICEF])
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	6.2.1a Proportion of population using safely managed sanitation services (WHO/UNICEF) 6.2.1b Proportion of population using a handwashing facility with soap and water available (WHO/UNICEF)
6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	6.3.1 Proportion of wastewater safely treated (WHO/United Nations Human Settlements Programme [UN-Habitat]/United Nations Statistics Division [UNSD]) 6.3.2 Proportion of bodies of water with good ambient water quality (United Nations Environment Programme [UNEP]/UNSD)
6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	6.4.1 Change in water-use efficiency over time (Food and Agriculture Organization of the United Nations [FAO]) 6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources (FAO)
6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	6.5.1 Degree of integrated water resources management implementation (0–100) (UNEP) 6.5.2 Proportion of transboundary basin area with an operational arrangement for water cooperation (United Nations Educational, Scientific and Cultural Organization [UNESCO]/United Nations Economic Commission for Europe [UNECE])
6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	6.6.1 Change in the extent of water-related ecosystems over time (UNEP/Ramsar Convention)
6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies	6.a.1 Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan (WHO/UNEP/Organization for Economic Co-operation and Development [OECD])
6.b Support and strengthen the participation of local communities in improving water and sanitation management	6.b.1 Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management (WHO/UNEP/OECD)

Source: UN. 2018. *Sustainable Development Goal 6: Synthesis Report 2018 on Water and Sanitation*. Geneva, Switzerland. https://www.unwater.org/publications/sdg-6-synthesis-report-2018-on-water-and-sanitation/.

2.3 Monitoring progress towards the targets

15. SDG 6 monitoring is carried out through the UN-Water Integrated Monitoring Initiative for SDG 6 (IMI-SDG 6) (UN-Water, n.d.b.), which brings together the UN organizations that are formally mandated to compile country data on the SDG 6 global indicators. Table 2 above shows the custodian agencies for SDG 6 target indicators (UN-Water, n.d.c.), which include the United Nations Children's Fund (UNICEF), FAO, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Health Organization (WHO), the World Meteorological Organization (WMO), the United Nations Economic Commission for Europe (UNECE) and the United Nations Human Settlements Programme (UN-Habitat).

16. Countries collect data via their national relevant authorities and share them with the custodian agencies, which are responsible for compiling, verifying and submitting the data on progress against SDG targets, and strengthening national monitoring and reporting capacity.

17. The SDG global indicators only represent a fraction of the full suite of indicators monitored in a country and of the custodian agencies' respective monitoring focus and global data sets. For example, in addition to the country data needed to compute SDG indicator 6.4.1 and 6.4.2, FAO compile roughly 100 water resource-related country-level parameters that do not necessarily serve to inform these two targets, for which it has custodianship.

18. "Even before COVID-19 struck, the world was off track to meet Sustainable Development Goal 6," is the first statement of the March 2021 UN-Water's Summary Progress Update 2021 (UN-Water, 2021a). Indeed, since 2016, research has continuously underscored that SDG 6 had an important capacity gap, and advocated for significantly increasing the investments pace. In response, the UN GA adopted a resolution in support of achieving SDG 6 and launched the "International Decade for Action – Water for Sustainable Development (2018–2028)" (UN, n.d.b.) to increase attention to water related issues and to "energize implementation of existing programs and projects". In 2020, the UN launched a new "Global Acceleration Framework" to scale up and unify international support.

2.4 Key international institutions, initiatives and partnerships supporting SDG 6 aside from FAO

19. UN-Water provides a platform for coordinated action. Over 30 member organizations (Appendix 2) carry out water and sanitation programmes, reflecting the fact that water issues run through all of the UN's focus areas. UN-Water acts as an inter-agency mechanism to coordinate the efforts of UN entities and international organizations working on water and sanitation issues. Its main contributions to SDG 6 include: i) monitoring and reporting on SDG 6; ii) informing key policy processes; iii) serving as regional-level coordination mechanisms; and iv) coordinating the implementation of the SDG 6 Global Acceleration Framework. Amongst UN-Water members, the following agencies' respective actions are noted.

20. The World Bank (WB) has engaged towards the achievement of SDG 6 and other SDGs that rely on water with a portfolio of investments of USD 39 billion, and as such has been the largest multilateral source of financing for water in developing countries. It has worked with other multilateral development banks and client countries to help them use public finance more effectively, leverage additional resources and blend public or donors' funds with commercial finance.

21. The United Nations Development Programme (UNDP) contributes to a number of SDG 6 targets (UNDP, 2016). Key contributions include: i) supporting mainstreaming of SDG 6 into national plans and strategies; ii) mapping what a country is already doing, and where it may need to change direction to meet the SDG 6; and iii) strengthening institutional capacity to design, coordinate, implement plans and policy reforms in the water sector.

22. UNESCO has channelled some of its contributions to a number of SDG 6 targets through its International Hydrological Program (IHP), including to develop transboundary cooperation, supported by the IHP Water Information Networking System (target 6.5); to protect water-related ecosystems (target 6.6), among others. The UNESCO-led World Water Assessment Program (WWAP) (UNESCO, n.d.) coordinates a UN-Water Task Force to produce the SDG 6 Synthesis

Report, which summarizes the results of all related monitoring efforts and offers Member States policy recommendation to accelerate achieving SDG 6 in the wider context of the 2030 Agenda.

23. UNICEF helps provide safe water to people in humanitarian settings across countries (UNICEF, 2017). Their interventions in the field of drinking water supply, sanitation and hygiene also include capacity building, local community's participation and assistance to raise funds for projects in this field.

24. WHO engages in cross cutting work with health sector programs, especially in support of the water, sanitation and hygiene (WASH) indicator of SDG 6. Their interventions combine studies on WASH-related diseases and SDG progress monitoring about WASH in households, schools and health facilities and wastewater treatment (UN-Water, n.d.d.).

25. Amongst key initiatives supported by UN-Water, the Strategic Partnership Framework established a joint commitment to cooperate in helping countries implement the SDG 6 (along with other SDGs). Under this partnership framework, the technical teams of the UN and the WB work together to ensure effective implementation of commitments assumed under the framework.

26. The SDG 6 Global Acceleration Framework is a unifying initiative under UN-Water aiming to mobilize actions across governments, civil society, the private sector and the UN to better align efforts, optimize financing and enhance capacity and governance to achieve SDG 6.

27. The High-Level Panel on Water convened by the UN and the WB has set a global agenda for water action to help reach the SGG 6 targets. Such a global mechanism together with the High-Level Political Forum (HLPF) on Sustainable Development, a global platform on sustainable development meeting annually under the auspices of the UN Economic and Social Council, have supported a systematic follow-up and review of the 2030 Agenda, including SDG 6.

28. Last, and looking toward 2023, the UN Conference on the Midterm Comprehensive Review of the Implementation of the Objectives of the International Decade for Action, "Water for Sustainable Development" (2018–2028), to be held on 22–24 March 2023 is in focus for all agencies as the first global conference on water since 1977.

3. FAO's work in support of SDG 6

29. A significant part of FAO's work relates to SDG 6 and involves in a wide range of collaborative ventures through field projects and through normative work. According to UN-Water, FAO's estimated annual water and sanitation budget is around USD 20-30 million (UN-Water, n.d.e.).

3.1 FAO's custodianship role

30. FAO is the custodian agency for the SDG indicators 6.4.1 on water use efficiency and 6.4.2 on level of water stress (Box 1). FAO collects and reports indicators' data produced and/or verified by each country, and provides technical support and capacity development as required.

Box 1. Indicators related to target 6.4, for which FAO has custodianship

6.4.1. Change in water-use efficiency: water use efficiency at national level is the sum of the efficiencies in the major economic sectors weighted according to the proportion of water withdrawn by each sector over the total withdrawals. The indicator measures changes in water use efficiency and has been designed to address the economic component of SDG target 6.4.

6.4.2. Level of water stress: freshwater withdrawal as a proportion of available freshwater resources is the ratio between total freshwater withdrawn by major economic sectors and total renewable freshwater resources, after taking into account environmental water requirements. This indicator is also known as water withdrawal intensity and will measure progress towards SDG target 6.4.

Sources: FAO. n.d. Sustainable Development Goals: Indicator 6.4.1 - Change in water use efficiency over time. In: *FAO*. Rome. https://www.fao.org/sustainable-development-goals/indicators/6.4.1/en/
FAO. n.d. Sustainable Development Goals: Indicator 6.4.2 - Level of water stress: freshwater withdrawal as a proportion of available freshwater resources. In: *FAO*. Rome. https://www.fao.org/sustainable-development-goals/indicators/642/en/

31. Although it is not a contributing agency for any other indicators under SDG 6, FAO conducts extensive work that is relevant to other SDG 6 targets. A substantive part of FAO's field programmes related to water supports integrated water management, water-related ecosystems or water safety, all related to other SDG 6 targets. Moreover, beyond SDG 6 targets, much of FAO's work that is implemented in other sectors, from plant production or protection, to livestock or land management, or even livelihoods support, may also have important outcomes on any of the SDG 6 targets, and thereby should be covered under the research universe of this evaluation.

3.2 FAO's normative work (Regular Programme)

32. FAO's normative work related to SDG 6 includes the following types of deliverables (more details in Appendix 3).

3.2.1 Flagship products and reports

33. As the lead organization in the UN system concerning water in the context of food and agriculture, FAO works to create or enhance global knowledge on sustainable water management. It produces various flagship products and contributes to key international reports regarding the topic of water. These include the State of the World's Land and Water Resources for food and agriculture (SOLAW), published every ten years and the United Nations World Water Development Report, published once a year.

34. Besides the flagship reports, FAO is also the (co)writer and publisher of policy briefs, factsheets, reports, white papers, land and water discussion papers and studies, which are published on a regular basis and include a wide range of thematic and technical topics. Some of these, clustered

by topic, are displayed in the table presented in Appendix 3. To be mentioned here are the three principal water series: i) FAO Irrigation and Drainage Report Series; ii) FAO Water Reports; and iii) FAO Discussion Papers.

3.2.2 Monitoring tools

35. FAO also supports decision-making, and policy and research coherence and helps to collect and analyse water-related data, for which FAO has created and implemented several assessment and monitoring tools. Some of the most prominent ones include the IMI-SDG 6 project, providing methodological support and capacity for countries to monitor and meet their targets; and FAO's Global Information System on Water and Agriculture (AQUASTAT) (FAO, n.d.a.), supporting the monitoring of SDG 6 indicators, including 6.4.1 and 6.4.2.; or the open access, remote sensed Water Productivity Open-access Portal (WaPOR) (FAO, n.d.b.), supporting countries in monitoring agricultural water productivity, identifying water productivity gaps and finding solutions and monitoring the progress towards SDG 6. Additionally, the Forest & Landscape Water Ecosystem Services tool, managed by the FAO Forestry Division, supports forest and water monitoring, taking into consideration environmental, economic and social indicators, many of which are directly related to SDG 6.

3.2.3 Advocacy and convening

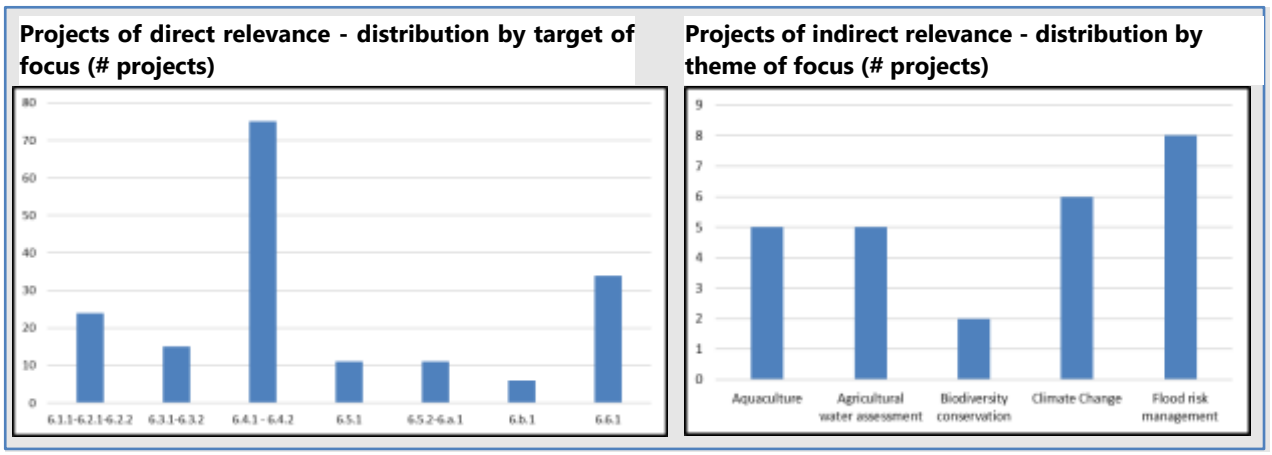
36. FAO co-hosts or supports a number of events and special days to promote the water agenda, such as the annual World Water Days or Weeks; Land and Water days (FAO, n.d.c.), a three-day event jointly organized by the International Fund for Agricultural Development (IFAD), FAO and the World Food Programme (WFP); the World Water Forum, the world's biggest water-related event, organized by the World Water Council (WWC) (FAO and WWC, 2018), and since 2021, the new Water tenure Mondays (2021) (FAO, n.d.d.). In 2021, FAO also sponsored the International Water Resources Association's Conference on Water, Food and Health. FAO is also a partner in the implementation of several relevant Conventions, such as the Convention on Biological Diversity, the UN Convention to Combat Desertification and the UN Framework Convention on Climate Change, all of which related to agricultural water (FAO, n.d.e.), and provides contribution to the Ramsar Convention and their Scientific and Technical Review Panel through an internal technical working group involving several divisions.

3.3 FAO field programme (extra-budgetary)

37. Out of all of FAO's field projects implemented over the evaluated period (2016–2020),[1] the evaluation preliminarily identified 151 projects as having direct or indirect relevance to SDG 6. Out of those, 85 percent (129 projects) were considered as having direct relevance their planned results were explicitly relevant to one or more of the SDG 6 targets, while the remaining 22 were not but still considered as having a potential influence on water related targets (indirect relevance). Figure 2 presents the distribution of these projects according to their targets or specific focus.

[1] The initial input database consisted of 4 927 projects, including all field projects implemented over the period.

Figure 2. Thematic distribution of FAO field projects with relevance to SDG 6

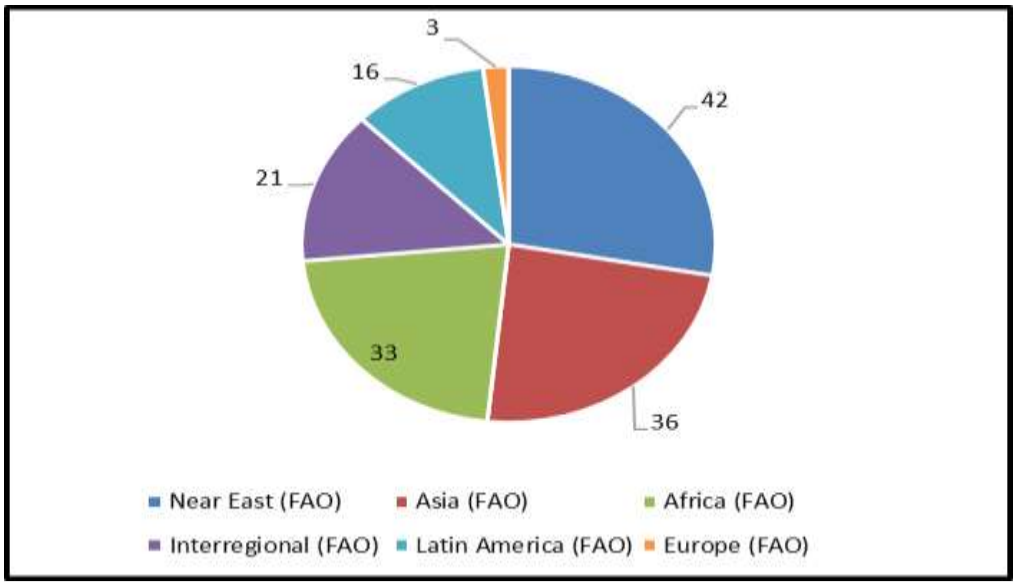


Source: Prepared by the evaluation team.

38. The most significant volume of activity relevant to SDG 6 was related to target 6.4, on water use efficiency and water stress; followed by target 6.6, on water ecosystems, with the former representing about 62 percent of the identified projects, which is understandable in light of FAO´s custodianship role over indicators 6.4.1. and 6.4.2.

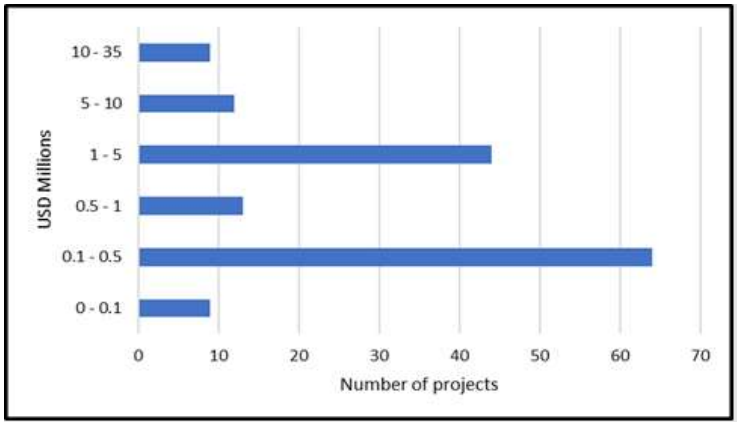
39. Out of the total identified projects, the Near East and Asia regions held the highest number of projects, as Figure 3 shows. And in regards to the budgetary volume, the 151 projects amounted to USD 394 821 688, and about 40 percent of those had an assigned budget ranging between USD 100 000 and USD 500 000, as shown in Figure 4. Amongst the main donors, Japan and the Global Environment Fund (GEF) had a combined contribution of more than 36 percent of the whole budget over the period, making them the biggest donors. More in-depth analysis of the field projects will be conducted during the inception phase and presented in the inception report.

Figure 3. Geographic distribution of SDG 6 relevant projects (2016–2020)



Source: Prepared by the evaluation team.

Figure 4. Distribution of projects by budget range



Source: Prepared by the evaluation team.

40. Also important to note that is that FAO has just adopted a new corporate Strategic Framework for the period 2022–2031. Any forward-looking perspectives offered by this evaluation will need to be considered within the context of this new vision and ensuing work organization. The new Strategic Framework introduces a modular model that has the 2030 Agenda as its backbone. It aims at supporting transformations towards more efficient, inclusive, resilient and sustainable agri-food systems and articulates around twenty Priority Programme Areas (PPAs), along four main dimensions, also called the four betters: better production, better nutrition, a better environment, and a better life (Figure 5).

41. The new FAO Strategic Framework puts a special emphasize on the SDGs. The four betters follow a guiding lens of three main SDGs, more specifically SDG 1 (no poverty), SDG 2 (zero hunger) and SDG 10 (reduced inequalities). Other SDG targets appear as supportive and to fill critical gaps and link different aspects of FAO's work. Within the PPAs, the Strategic Framework features SDG 6 exclusively in the better production dimension, under green innovation linking to SDG Target 6.4, among others. However, the PPAs will be further articulated towards the end of 2021 and may result in additional SDG 6 Targets being linked to the PPAs.

Figure 5. FAO strategic results framework

Source: FAO. 2021. *Strategic Framework 2022–31*. Rome. https://www.fao.org/3/cb7099en/cb7099en.pdf.

42. This development brings an opportunity to support FAO's efforts towards increasing its contributions to the achievement of SDGs. This being still at an early stage, it will require adopting a developmental approach. The UN Reform will be another important contextual element to consider in the same line.

43. In addition to specific projects, FAO has implemented several significant initiatives or projects dedicated to water, including:

i. FAO's Near East and North Africa (NENA) Water Scarcity Initiative (WSI), which aims at supporting countries in the NENA region in streamlining policies, governance and practices related to the management of this strategic resource, via a regional strategy closely aligned with the Arab Strategy for Water Security. It is currently supported by the USD 14.9 million regional project (GCP/RNE/009/SWE) "Implementing the 2030 Agenda on Water Efficiency, Productivity and Sustainability in the Near East and North Africa countries".

ii. The Building Forward Better initiative (2020) "Strengthening natural resources management capacities to revitalize agriculture in fragile contexts" (FAO, n.d.f.) aims at strengthening human capacities in fragile countries needing to improve natural resources management. FAO has produced nine e-learning modules focusing on the sustainable use of water resources.

iii. FAO's One Water One Health Initiative initiated in 2016, provides an integrated water resources management approach that embraces the value of water in all its forms and recognizes the intrinsic role of water in protecting human, animals and ecosystem health. There is very little information on this initiative.

3.4 Institutional set-up for FAO's work on water

44. FAO's work in relation to water largely cuts across much of the organization's work areas, which implies that although the Land and Water Division (NSL) has been the division mainly driving

FAO's efforts towards SDG 6, all the work that the evaluation will review does not rest with NSL alone. The division itself is divided into different teams, each working on different cross-cutting topics of water with overarching integrated issues on policy, economics, and health at the higher level:

i. The data and water resource assessment team collects and uses water data, applies innovative approaches, and information to provide assistance to member nations in developing policies, programmes, best practices and tools in the fields of sustainable water management. The team also monitors progress towards the whole of SDG 6, with particular focus on target 6.4.
ii. The irrigation and resource management team works towards improving the performance, productivity and sustainability or irrigated agriculture and irrigated systems, particularly through field projects and also addresses innovation in water saving approaches.
iii. The integrated nexus and water management team considers the different dimensions of water, energy and food systems and works towards enabling the optimal trade-offs associated with these interconnected sectors and sets the framework to evaluate the resource requirements expected for sustainable development. The team also addresses water quality, wetlands, source-to-sea, small island developing states (SIDS), nonconventional waters (saline and wastewaters), and the circular reuse aspects of nutrients and marginal water quality. This group links on-farm practices to wider environmental benefits.
iv. The Geospatial Unit has the mission to characterize and monitor natural resources use by developing and using geospatial data, methods and tools.
v. The integrated landscapes management team works towards creating sustainable food and agriculture, protecting vital ecosystem services and building resilient and productive social-ecological systems through landscape approaches. This team focuses less on the specific topic of water.
vi. The global partnerships team hosts three main partnerships in the sector of water and soil, namely the Global Soil Partnership, the Global Framework on Water Scarcity in Agriculture and the World Agriculture Watch.

45. Other units in FAO indirectly touch upon the topic of water and sustainable water resource management. The role of the Office of the Chief Statistician takes a particular importance in relation to the reporting on SDG indicators for which FAO has custodianship, as it shares with NSL the responsibility for reporting on indicators 6.4.1 and 6.4.2. The FAO divisions in charge of leading FAO's work on agriculture, fisheries, forestry or climate change may also have some indirect role on or articulation with FAO's work in relation to SDG 6. The FAO Investment Centre has also provided technical assistance and investment support to initiatives related to water. Last, technical experts posted in some of FAO's regional or sub-regional offices directly offer their support to field projects and support IMI-SDG 6. For example, in the Forestry Division, the Water and Mountains team oversees activities with direct relevance, including the Forest and Water programme and the Resilient Watershed Management programme.

3.5 Partnerships and collaborations

46. FAO also engages in the following partnerships and collaborative ventures relevant to water and SDG 6:

i. The FAO Water Platform (FAO, n.d.e.), created in 2015, aims at ensuring programmatic coherence and operational effectiveness across FAO headquarters departments and

decentralized offices through collaboration, support and effective communication. Its secretariat lies with NSL. This platform does not seem to be very elaborate and well designed.

ii. The Global Framework on Water Scarcity in Agriculture (WASAG) (FAO, n.d.g.; 2020) is an initiative for partners from all fields and backgrounds to collaborate in supporting countries and stakeholders in their commitments and plans related to the 2030 Agenda. It is a global partnership mechanism with six to seven working groups to spur solutions and resource mobilization for scaling up global water scarcity for agriculture, which have generated knowledge through webinars, papers or events.

iii. The World Agriculture Watch (WAW) initiative offers a comprehensive approach and tools to examine, analyze and monitor agricultural transformation around the world, including water, to identify patterns and drivers of change and assess their impact.

iv. Partnership for Agricultural Water for Africa (AgWA) (FAO, 2016) is an autonomous partnership of development partners, and international, regional and national organizations in Africa and elsewhere who have a common interest and important capacities to support investment in agricultural water management (AWM) in Africa. A core function of AgWA is its work as an "expert pool" to support the planning and implementation of AWM investments in the continent.

v. UN-Water – FAO is an active member of UN-Water and the SDG 6 Global Acceleration Framework.

4. Evaluation purpose, scope and focus

47. This evaluation takes place at an intermediary stage, approximately after five years of implementation out of 15 in total. Accordingly, it can serve to understand how well FAO is doing in supporting the achievement of SDG 6 and why, offering a basis to adjust as fitting and to maximize results by 2030. In other words, the evaluation will mainly have a formative purpose, focusing on assessing the adequacy of FAO's orientations and modalities of work and the contributions made to date to SDG 6.

48. The evaluation will seek to provide relevant decision makers with a solid information base related to the dynamics underpinning FAO's contributions to SGD 6, to help identify best options for the way forward, support any required improvements and increase the contribution that FAO can make to the goal.

49. Considering that the Agenda 2030 came into effect as of January 2016, the evaluation will examine FAO's work related to SDG 6, as implemented since the beginning of 2016 until the end of 2020, therefore looking over about five years of operation. It will attempt to cover all FAO's efforts in supporting both developing and developed countries to set and achieve their SDG 6 targets.

50. It is important to note that the evaluation will not seek to examine overall progress towards SDG 6 targets, which depend on many stakeholders' actions. Its scope embraces the range of actions taken by FAO towards the attainment of goal 6 by its Member by 2030. As such, it will include looking into the relevance and effectiveness of its collaborations with other stakeholders, but not into the contributions of the latter.

51. Another significant element related to the evaluation timing is that it takes place as a new corporate Strategic Framework emerged. With new programmes on the horizon reflecting a stronger commitment to SDGs, the evaluation will also need to explore how the new strategic vision of the organization could buttress more impactful results.

52. Furthermore, evaluating FAO's contributions to SDG targets brings in several dimensions of complexity that are intrinsically part of the underlying principles that form the SDGs paradigm and to which the evaluation will have to give prominent attention. These include:

    i. The urge to aim for transformational change, including by leveraging innovations and technology as potential accelerators.
    ii. The commitment to act at scale by engaging a multiplicity of stakeholders at once; mobilizing knowledge, expertise and technology from public and private sectors and the financial partners.
    iii. The interconnections between SDGs, with consideration of synergies and trade-offs between targets and between the three pillars of sustainability: environmental, social and economic.
    iv. The pledge to "leave no one behind" and include all people in need, with a focus on the most vulnerable.

4.1 Focus and key question for the evaluation

53. Considering the above, the evaluation will aim to elicit an understanding of whether and how the adoption of SDG 6 has prompted FAO to adapt its positioning, focus and implementation approaches in relation to water-related challenges to the new paradigms and ambitions of the Agenda 2030, and the extent to which this has transformed its delivery mechanisms.

54. More specifically, the following evaluation questions will guide the inquiry. These will be reviewed and finalized throughout the evaluation inception phase, based on comments from key stakeholders and the evaluation team:

1. Has FAO positioned and organized itself to maximize its contribution to SDG 6? (internal and external coherence)
    i. Is FAO focusing on targets in which it can have the highest impact on achieving SDG 6?
    ii. Has FAO made the most of potential synergies with other players through partnerships and collaborations?
    iii. Has FAO promoted internal coherence in supporting Members to pursue SDG 6 targets?
    iv. Has FAO addressed key trade-offs and synergies between SDG 6 and other SDGs?
    v. Does FAO use knowledge products and awareness-raising to advance SDG 6-related activities, both in field programmes and amongst FAO Members?
2. To what extent have FAO's interventions related to SDG 6 addressed the needs and demands of its Members and their citizens? (relevance)
    i. To what extent has FAO tailored its range of interventions to SDG 6-related needs and demands of its Members?
    ii. To what extent has FAO adapted its operational or programmatic modalities to "leave no one behind" and promote equity between gender and vulnerable people and communities?
3. What have been the results achieved by or with the contribution of FAO in relation to SDG 6 at country, regional and global levels? (effectiveness)
    i. What are key examples of FAO actions in support of SDG 6 that can serve as good practices or lessons learned?
    ii. What are the main FAO's strengths and weaknesses that help or hinder FAO's contribution to its Members in achieving SDG 6?
    iii. To what extent does FAO's support to SDG 6 complement or put at risk other SDGs?
    iv. How effective has FAO been in monitoring and reporting against the SDG 6 indicators on which it has ownership?
    v. To what extent has FAO been effective in building capacities of national statistical agencies and other national agencies responsible to monitor and report SDG 6 to cover its indicators?
4. To what extent is FAO generating transformational and long-term changes in relation to SDG 6? (impact and sustainability)
    i. What are the most promising practices and interventions within FAO in terms of sustainable, transformational change related to SDG 6?
    ii. To what extent is there evidence of success in leaving no one behind in relation to SDG 6?
    iii. To what extent is FAO acting as a driver of transformation vis-à-vis the most vulnerable populations?

5. Evaluation approach

5.1 Contextual limitations and main phases of work

55. The evaluation starts at a time when restrictions due to the COVID-19 pandemic are still in place, and uncertainties as to the evolution of the worldwide situation remain. This global context is not conducive to making definite plans and will warrant an adaptive approach at least during the first phase of the evaluation. There is a high probability that restrictions may indeed limit options for collecting information in countries and for international travels. The evaluation team will therefore need to rely on innovative ways of and tools for collecting and analysing information, and working remotely as a team, and to tailor the entire approach to what is realistically possible. Also, the evaluation will invest significant efforts into leveraging all possible secondary sources of information to address the evaluation questions and focus any necessary primary data collection onto clearly identified evidence gaps.

56. The evaluation will take place in the period from March 2021 to May 2022 and will develop in three main phases, as summarized in Table 3 below.

Table 3. Summary timeline

Inception phase: March–June 2021
Desk Review, portfolio analysis
Initial consultations, identification of key stakeholders and of the evaluation team
Identification and hiring of independent team members
Terms of reference drafting
Inquiry and validation phase: July–November 2021
Evaluation inquiry design - if appropriate: stakeholder workshop to discuss evaluation focus
Secondary data review and analysis and preparation of interim thematic reports
Data collection planning and organization
Case studies, consultations and data collection (if possible field visits)
Data analysis
Report preparation, presentation and dissemination: December 2021–May 2022
Stakeholder workshop to discuss initial findings
Draft and final report
Presentation to stakeholders
Report dissemination and management response
Presentation of evaluation to Programme Committee at May 2022 session
Dissemination to stakeholders including workshops as appropriate

Source: Prepared by the evaluation team.

5.1.1 Inception phase

57. Considering the complexity of this evaluation and the large amount of work that may fall under its scope, the preparation phase has served to map the work and stakeholders concerned by this evaluation. This initial research coupled with initial consultations with selected key stakeholders also allowed drawing out key issues that the evaluation should address. It provided a basis for the general evaluation roadmap presented in the present TOR, to be discussed with key stakeholders to ensure the validity of the proposed focus and approach. During the preparatory phase, the evaluation management team has also identified the independent experts who will form the team.

58. With the team formed, the evaluation design phase will follow and overlap with the team's on-boarding into the evaluation. Most notably, this phase will serve for the team leader (and to some extent the team members) to contribute to shaping the evaluation approach, based on their technical knowledge of the topic under evaluation ('evaluand'). In addition, it will provide an

opportunity to refine the division of labour within the team, based on the experts' understanding of the issues at stake after their review of available documentation, as prepared by the evaluation management team.

5.1.2 Inquiry and validation phase

59. The evaluation inquiry phase will be divided into two stages. The first part will be entirely dedicated to the review of all available secondary evidence and data by evaluation team members as per their defined areas of focus in the evaluation. Based on this detailed analysis of secondary data sources, team members will write preliminary think pieces on assigned topics. This phase will form preliminary findings and hypothesis against evaluation questions to the extent possible and to identify major information gaps.

60. The second part of this inquiry phase will see the team plan and organise for the collection of primary data to fill evidence gaps. Stakeholder consultations will possibly imply virtual modalities, at least in part. If required and possible, the evaluation will hire consultants residing in countries of interest to support in-country data collection.

61. This phase will end with an iterative process of analysis and validation of the evidence collected, which will form the basis for the evaluation findings.

5.1.3 Drafting, consultation and presentation of results

62. The final phase will start with the preparation of the evaluation report and its annexes as appropriate. The preliminary results and the draft version of the report will be the subject of consultations with stakeholders as appropriate, through both meetings and opportunities to comment on the report.

63. The evaluation will end with a series of presentations and discussions on the results, including to the FAO Governing Bodies represented by the Programme Committee, at the spring 2022 session.

5.2 Overall approach

64. The evaluation will seek to respond to the evaluation questions related to the FAO contributions to SDG 6, and understand the dynamics underpinning achievements, to generate lessons and recommendations for future investments of relevance. In doing so, it will follow international standards, including from the United Nations Evaluation Group (UNEG). The evaluation will collect evidence of both qualitative and quantitative nature, as most appropriate, as a basis to form its findings. The credibility of evaluation findings will rely on an effort to validate the evidence gathered through the systematic triangulation of information sources.

65. To take gender aspects into account through the assessment, the evaluation will refer to OED's framework for the Harmonization of Gender-Based Analysis in Evaluations, which incorporates references from the UNEG guidance document "Integrating Human Rights and Gender Equality to Evaluations (2014)" and the FAO Policy on Gender Equality.

66. The evaluation will also strive to keep in mind the interdependencies between SDGs to be ready to capture the extent to which work that is not directly connected to water might have helped or hindered the achievement of SDG 6.

5.3 Methodology

67. The evaluation will use a mixed-methods approach to gather the evidence on which to draw its findings. Methods for collecting the data will include:

5.3.1 Secondary documentation and data review

68. The evaluation team will review the existing information and data as provided in FAO documents and websites. This will constitute the basis from which the evaluation will build its inquiry, to verify actual achievements and perceptions against planned and reported ones. The secondary information analysis will include inter alia an analysis of:

i. programme documents and monitoring and evaluation (M&E) data as gathered from available documents (e.g. the Field Programme Management Information System [FPMIS]) and from interviewees;
ii. relevant publications;
iii. regular and extra-budgetary budget flows; and
iv. databases generated or managed by FAO (e.g. AQUASTAT, SDG target 6.4 indicators, corporate outcome assessments).

5.3.2 Interviews and consultations

69. Gathering of perceptions, experience and data from individuals whose work contributed directly or indirectly to advancing the water agenda will serve to understand the dynamics of contributions. Most of the consultations could be virtual, considering the pandemic-related situation, although if visits to selected institutions and countries are possible, these could usefully complement the collection of primary data. The evaluation will ensure that the sample of stakeholders consulted equitably represent the various possible perspectives, including an adequate variety of geographical contexts.

70. A list of stakeholders to be consulted will be prepared during the inception and design phase, using a snowball approach, starting with inputs from FAO personnel and their partners. Consulted stakeholders will include representatives of the stakeholders identified in Table 4 below. The sample composition will also depend on the availability of interlocutors and the evolution of the public health situation. A larger sample than necessary will be identified, with alternative contacts to provide information on the same point, to compensate for expected lack of availability, frequent in the current context.

5.3.3 Country or thematic case studies or both

71. Based on the results of the analyses conducted during the inception phase, the evaluation will decide on the conduct of specific case studies, which could focus on country experiences or study identified areas of work more in depth. These case studies should provide an opportunity to illustrate the way in which FAO's actions contributed to addressing the water challenges underpinning SDG 6. The criteria for selecting case studies will be discussed during the inception phase and will allow ensuring that case studies may support in-depth analyses on areas of work that have particular significance or learning potential for FAO.

5.3.4 Survey(s)

72. To compensate for the limited opportunities for interacting with stakeholders, the evaluation may use an online survey to gather a wide range of perceptions from institutions that collaborate with FAO, or from country stakeholders from public or private institutions managing water-related

challenges in countries. The survey contents would complement the qualitative information collected through interviews and desk review.

5.4 Internal quality assurance mechanism

73. Several mechanisms will be used to assure the quality of the evaluation: i) one evaluation advisor in OED will be in charge of peer reviewing evaluation deliverables; and ii) an advisory group composed of external experts could also provide expert comments on key deliverables. Other key individual stakeholders will be consulted at several stages of the evaluation. Engaging most relevant FAO personnel and managers throughout the evaluation phases to discuss the evaluation focus and approach and gather evidence at key milestones will serve to ensure the evaluation's relevance and to foster ownership over its results. This could be formalized with the forming of an internal reference group including FAO stakeholders based in headquarters, in regional offices and in country offices.

5.5 Deliverables

74. The evaluation contributions are twofold. First, the process itself provides an opportunity for all stakeholders to engage in substantive reflection on the issues raised by the evaluation. Thus, even before a report is issued, the learning acquired during discussions related to the evaluation constitutes a significant contribution. Adopting an approach that relies on regular engagement of stakeholders should further strengthen this aspect.

75. At the end of the process, the evaluation will produce a detailed report presenting the findings, conclusions and recommendations in response to the evaluation questions. These results will be discussed with all stakeholders and key institutions interested and the report will eventually be published on the OED website. The team leader and the evaluation manager will agree on the outline of the report at the start of the evaluation process, based on the guidance provided by OED.

6. Roles and responsibilities

6.1 The Office of Evaluation

76. The OED management team, composed of an evaluation manager and two research analysts, will guide the evaluation process and support the independent team's work. The OED evaluation manager will monitor the quality of the process and deliverables and provide an on-going organizational support and guidance of the team. OED will also follow-up with the programme team on the timely preparation of the management response.

6.2 The independent evaluation team

77. The evaluation will be conducted by an independent team of experts in water resources management under the supervision of the OED evaluation manager.

78. The independent team will collectively combine experience in relation to the various technical areas of focus that FAO is working on relative to SDG 6 including Integrated Water Resources Management; water accounting and water stress management; water-use efficiency in agriculture and irrigation management; watershed management; waterway's nutrient, chemicals, sediment, and plastic pollution; WASH; freshwater ecosystem management; and water governance. The team composition will include:

i. the team leader who will be responsible for further developing the evaluation methodology based on the TOR, coordinating the team effort to conduct the evaluation and producing the evaluation report;
ii. a core team consisting of three water experts who will participate in briefing and debriefing meetings, consultations, field visits, and will contribute to the evaluation with written inputs for the final draft and final report; and
iii. the more specific expertise of other independent team members, which may be added to the team at the end of the inception phase, depending on specific needs for technical, or geographically focused inquiry.

6.3 Evaluation stakeholders: roles and interactions in the evaluation

79. Table 4 presents the main stakeholders identified for the evaluation.

Table 4. Evaluation stakeholders

Stakeholders	Interest and role in the evaluation
FAO teams in technical departments primary of which NSL, and regional, sub-regional and country offices	Presumably interested in learning from the evaluation results to inform future strategic directions. They will be a primary source of information on processes and results and hence the evaluation team will seek to engage with their representatives throughout the process. It will be particularly important to engage with FAO stakeholders working in all the different levels of operation, to get a balanced representation of the diversity of views they hold.
Immediate partner institutions (public, private, academia, non-profit sectors)	Direct partners of FAO may have an interest in evidence that the evaluation can provide on the appropriateness and effectiveness of partnerships and collaborations that FAO engages in. They will be consulted as appropriate for information, including to understand their involvement and the contribution generated by the partnership/ collaboration in which they engage with FAO.
Other UN and non-UN custodian agencies	Considering their interest in promoting consistent approaches with FAO on progress measurement and complementary interventions in advancing the SDG 6

Stakeholders	Interest and role in the evaluation
	agenda, they will be a primary source of information on process and results and hence will be consulted as appropriate for information.
FAO governmental partner institutions in countries	They have an interest in learning about the effectiveness and the dynamics of FAO's interventions on the various aspects of water management, to learn from good practices and possible replications. As recipients of some of FAO's support, the evaluation will consult with them to inform the effectiveness of interventions.
FAO governing bodies and donors	They have an interest in learning about the effectiveness and the dynamics of FAO's interventions on the various aspects of water management, for accountability purposes. The evaluation will seek the view of some of their representatives and will inform them of the evaluation results, including through a formal presentation at the Programme Committee in 2022.
Other development partners (non-custodian)	International and national FAO interlocutors from private, non-profit and public sectors will have an interest in learning about the effectiveness and the dynamics of FAO's interventions on the various aspects of water management. They will be consulted to gage the extent to which they perceive as useful the information provided by these tools and will have access to the evaluation report once published.

Source: Prepared by the evaluation team.

80. The evaluation will seek opinions and feedback from stakeholders at different points in time of the process. It will ensure that stakeholders with diverse views are consulted to ascertain that the assessment is based on a comprehensive understanding of diverse perspectives on issues, performance and outcomes. All of the above will be regularly consulted from the initial to the last phase of the evaluation, to comment on key evaluation documents, share and clarify facts, share their views and provide the team with the necessary reference documentation. They will be requested to provide comments to the draft evaluation report, with concrete and evidence-based remarks.

81. The evaluation will seek the support of an advisory group made up of senior experts in the area of water resources management and SDGs. These will be identified and contacted during the evaluation's inception phase. The advisory group will provide advice to the evaluation at key stages of the evaluation process. In particular, it will be consulted on the evaluation TOR and at the end of the inception phase and will provide comments on the preliminary report of the evaluation. This approach will provide a solid peer review to the evaluation and thereby increase the credibility of its results.

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Appendix 1. Key challenges related to SDG 6

Challenges ahead related to SDG 6 targets

Target 6.1 and target 6.2: Access to safe drinking water and to adequate sanitation

82. Targets related to drinking water and sanitation are lagging behind, according to latest progress reports. Current rates of progress need to double achieving universal access to basic drinking and to quadruple to achieve universal access to safely managed drinking water by 2030. For now, 785 million people still lack even basic drinking water services, and numbers are increasing in Sub-Saharan Africa. Two billion people still lack even basic sanitation services and no SDG region is currently heading to meet the goal (UN-Water, 2021a).

83. Again, disparities are high, with rural and poor populations most impacted by the lack of access to safe drinking water and adequate sanitation. Only 62 percent of people in the least developed countries (LDCs) having access to basic drinking water supply services, compared to 89 percent of the world's population, and only 32 percent of people in LDCs having access to basic sanitation facilities while the world average is 68 percent. Open defecation is still being practiced at a rate of more than 5 percent of the population in at least 55 countries.

84. Development partners have identified three major hurdles: i) the insufficient level of current investment (estimated at one sixth of needs by the World Bank); ii) the insufficient use of repayable finance (microcredits, blended finance); and iii) resources imperfectly targeting poor and vulnerable groups who cannot access financial services.

Target 6.3 Improve water quality, wastewater treatment and safe reuse

85. Agriculture and untreated wastewater still pose two of the greatest threats to environmental water quality globally, and release excess nutrients and agrochemicals into rivers, lakes and aquifers that damage ecosystem function. To protect water bodies and improve water quality, it is essential to urgently enhance farming management practices and increase wastewater treatment, especially in regions with high population growth such as Africa. First lines of actions towards accelerated policy action are through capacity building and investments in all regions to expand country-level monitoring networks and establish national water quality standards.

86. Only 19 out of the 49 countries that are reporting are heading to improve water quality. Urgent action is necessary to improve monitoring systems for both surface and groundwater regarding pollutions and quality and to define water quality standards. Ambient water quality needs improving, regardless of national socio-economic status, including through transboundary cooperation. Across countries reporting against this target, safely treated domestic wastewater flow amount to 60 percent, with large variations between most and least developed countries. The remaining 40 percent of waters discharged without treatment has damaging consequences onto the environment. A lack of systematic availability of monitoring data impedes proper assessments of global progress on water quality and wastewater flows.

Target 6.4: Increase water-use efficiency and ensure freshwater supplies

87. Globally, 18.4 percent of renewable freshwater resources are withdrawn (UN-Water, 2021a). Water stress occurs when there is too much freshwater withdrawn compared to the total freshwater available, also taking into account the water needed for sustaining basic ecosystem function. Stress affects countries on every continent, but there are large regional variations. Three SDG regions have water stress values above 25 percent, with Western Asia and Northern Africa and

Central and Southern Asia withdrawing more than 70 percent of available water resources. In these regions, many countries withdraw all their renewable water resources every year and rely on non-renewable resources to meet their water needs. These could eventually run dry, such as groundwater extracted from confined aquifers. Between 2015 and 2018, there has been a global improvement in water use efficiency of around 9 percent; however, the highest efficiencies have been observed in highly developed countries, while the strongest increase has been in Central and Eastern Asia.

88. The lack of sufficient data has been a major impediment to assessing water-use efficiency, to enable analyses that may guide policies and operational decisions tackling the root causes of water use inefficiency among various water users. Over the past ten years, 67 countries (42 percent of reporting countries) have not been consistently reporting water stress data, most of them in Sub-Saharan Africa (UN-Water, 2021a).

89. Investing in technical and non-technical innovation is another key to reducing the pressure of growing economies on available water resources. This is particularly important in agriculture, accounting for 72 percent of all water withdrawals: new crop varieties, efficient irrigation systems and improved 'rain-fed' cultivation could decrease water stress. Reducing losses in municipal distribution networks and industrial processes are other key areas to work on, to reduce water stress, with 16 percent of water withdrawals linked to municipality and households services, and 12 percent to industries (UN-Water, 2021a).

90. High water stress has many undesirable consequences, such as hindering the sustainability of natural resources and hampering economic and social development, all of which tend to affect the most vulnerable people more. Between 2015 and 2017, water-use efficiency increased by about 4 percent globally but decreased in 20 countries over the same period. Using nonconventional water resources, such as the reuse of wastewater, desalinated water and direct use of agricultural drainage water can provide useful strategies, in addition to efforts to reduce freshwater withdrawal by increasing productivity and use efficiency.

Target 6.5: Implement integrated water resources management (IWRM)

91. The concept of IWRM has been defined by the Global Water Partnership (GWP) as a process to plan actions for water resources management in a holistic and participatory way, to balance social, economic and environmental needs.

92. Transboundary water cooperation can have a catalytic role across SDGs, and adopting cooperative arrangements favours progress towards water for all. It is associated with efforts to promote peace and justice (SDG 16), to sustain economic growth (SDG 8), to reduce poverty (SDG 1) or to end hunger (SDG 2). Out of the 153 countries sharing transboundary basins, 58 percent have reported an operational agreement on water cooperation.

93. Arrangements to establish transboundary basins management can be hindered by the following factors:

i. lack of political will and asymmetry of power between riparian countries;
ii. fragmentary nature of the national legal, institutional and administrative frameworks;
iii. lack of financial means, human and technical; and
iv. insufficient data, especially with regard to transboundary aquifers.

94. UN-Water identified a need to double the rate of progress to achieve sustainably water resources management by 2030, with 129 countries not on track to hit the target. Eighty-seven countries

have limited IWRM, mostly in Latin America and the Caribbean, Oceania, Central and Southern, Asia and Africa. This translates, for instance, in rivers, lakes and aquifers lacking operational arrangements for water cooperation. Failure to accelerate steps towards IWRM seriously threatens their ability to sustain their development. Countries most advanced in transboundary cooperation are located in Europe, North America and Sub-Saharan Africa, where 11 countries have developed and begun implementing action plans for IWRM.

Target 6.6: Protect and restore water-related ecosystems

95. Water-related ecosystems include river basins, aquifers lakes, ponds, rivers, streams springs, and wetlands. Target 6.6 also includes mountains and forests.

96. Over one fifth of the world's basins have recently experienced either rapid increases in their surface water area (indicative of flooding, growth in reservoirs and newly inundated land), or rapid declines in surface water area indicating drying up of lakes, reservoirs, wetlands, floodplains and seasonal water bodies. The adverse effects of climate change is likely to have compounded these rapid changes within river basins and general decrease of freshwater bodies, thereby worsening ecosystems. Overall, there has been massive losses across all water-related ecosystems over the last centuries, and the rapid changes seen over the last decade calls for urgent action. High increases and/or declines in surface water area are most notable in Eastern Asia and Southeastern Asia, Central Asia and Southern Asia, Latin America and the Caribbean and Sub-Saharan Africa.

Target 6.a: International cooperation and capacity building support to developing countries in the water/sanitation sector

97. Recognizing that financial commitments in support of water-related targets are essential, the 2030 Agenda sets a target related to investments in SDG 6 and supporting countries' capacities to absorb funding and manage procedural complexities for SDG 6 related ODA disbursements.

Target 6.b: Support local communities engagement in water and sanitation management

98. Community and user participation is increasingly recognized in national policies and laws. Yet, six out of ten countries report that human and financial resources are less than 50 percent of those needed to support community participation. The situation is especially critical in rural areas, where over three quarters of countries report insufficient financial resources to support participation.

99. Across all sub-sectors, only 14 out of 109 countries report high levels of community and user participation for collaborative management and decision-making. For rural drinking water and sanitation and water resources management, most countries report medium levels of user and community participation.

Crosscutting issues and challenges

100. In line with UN-Water reports cited above, other institutions, such as WB also alerted on the slow progress made towards meeting the SDG 6 (World Bank, n.d.). The challenge today is to stimulate and accelerate progress towards the achievement of SDG 6 through measures, which, in addition to technical solutions, also involve enabling elements, which have been identified as key factors that have affected this progress:

i. appropriate governance arrangements, to define "who does what, at which level and how", and to promote policy and institutional dialogue and synergies;
ii. increased capacities in countries to manage operational services, collect and monitor data – also calling for open data platforms and tools;

iii. financing: OECD has estimated that an additional annual investment of USD 500 billion (Sadoff *et al.*, 2015) would be required to address water issues within the 2030 horizon (as a reference, official development assistance (ODA) disbursements to the water sector was around USD 9.2 billion in 2019); (UN-Water, 2021a) and
iv. more effective partnerships between stakeholders.

Lack of good governance

101. Policy and institutional fragmentation between levels, actors and sectors means that decisions taken in one sector often do not consider the impacts on water availability and water quality in other sectors, and that issues do not receive the necessary political attention. Political leadership and increased financing will be the backbone of an enabling environment for accelerating progress towards SDG 6, as well as supporting better planning and governance.

102. OECD defined water governance as a range of political, institutional and administrative rules, practices and processes through which decisions are taken and implemented, stakeholders can articulate their interests and have their concerns considered, and decision makers are held accountable for water management. In many developing countries, SDG 6 targets are poorly integrated into national planning processes, sectoral policies and strategies.

Weak institutional capacity and data gaps

103. There are insufficient country data to estimate global status or trends of SDG 6 progress. Data coverage is very poor outside of Europe and North America (UN-Water, 2021a). Improving data coverage is an essential first step to accelerating efforts in wastewater collection and treatment. Although much data related to SDG 6 exist at the country level, it may be scattered across stakeholders, and substantial resources and capacity building are required to close data gaps and harmonize reporting.

104. The assessment reports released by UN-Water and WB underscore weak institutional and human capacity, especially at the level of local governments, which impede progress towards achieving the SDG 6 in many developing countries. While global indicators are effective for evaluating overall progress, policy- and decision-makers need more detailed data to plan actions at national and sub-national levels. Country focal points say data gaps result from too little technical capacity and too few human and financial resources. Examples include lack of monitoring infrastructure, lack of data management systems, low staff numbers and low expertise.

Funding gaps

105. Funding gaps impede progress towards the SDG 6 targets. A review of SDG 6 progress by UN-Water found that increasing donor commitments to the water sector will remain crucial to make progress towards the goal. This is why the UN has put in place a unifying initiative that improves support to countries known as SDG 6 "Global Acceleration Framework". Increasing the rate of progress towards SDG 6 requires improving the productivity of existing financial resources, while increasing innovative sources of finance, such as commercial and blended finance, particularly from the private sector.

Insufficient cooperation and partnerships

106. To achieve the SDG 6 in 2030, enhanced cooperation between all actors, including international cooperation, and at all levels, is necessary. Partnerships involving multiple nations and stakeholders including the private sector can offer new opportunities for achieving the SDG 6 targets. Sharing, using and adapting new solutions requires efficient cooperation. SDG 6 is an

ideal platform for plural partnerships and allows for more effective and useful progress towards poverty reduction and sustainable development.

Appendix 2. UN-Water Members and partners with special status

Members

i. Convention on Biological Diversity
ii. Department of Economic and Social Affairs of the United Nations Secretariat
iii. Food and Agriculture Organization of the United Nations
iv. International Atomic Energy Agency
v. International Fund for Agricultural Development
vi. International Labour Organization
vii. International Organization for Migration
viii. International Telecommunication Union
ix. Office of the United Nations High Commissioner for Human Rights
x. UN Conference on Trade and Development
xi. UN Convention to Combat Desertification
xii. UN Development Programme
xiii. UN Economic and Social Commission for Asia and the Pacific
xiv. UN Economic and Social Commission for Western Asia
xv. UN Economic Commission for Africa
xvi. UN Economic Commission for Europe
xvii. UN Economic Commission for Latin America
xviii. UN Educational, Scientific and Cultural Organization
xix. UN Framework Convention on Climate Change
xx. UN High Commissioner for Refugees
xxi. UN Industrial Development Organization
xxii. UN Institute for Training and Research
xxiii. UN International Children's Emergency Fund
xxiv. UN Office for Disaster Risk Reduction
xxv. UN Women
xxvi. UN World Tourism Organization
xxvii. UN-HABITAT
xxviii. United Nations University
xxix. World Bank Group
xxx. World Food Programme
xxxi. World Health Organization
xxxii. World Meteorological Organization

Partners with special status

i. Green Climate Fund
ii. OHCHR - Special Rapporteur on the human rights to safe drinking water and sanitation
iii. Sanitation And Hygiene Fund
iv. Sanitation and Water for All
v. UN Global Compact

Appendix 3. FAO's normative work related to SDG 6 (Regular Programme)

Flagship products and reports

107. As the lead organization in the UN system concerning water in the context of food and agriculture, FAO works to create or enhance global knowledge on sustainable water management. It produces various flagship products and contributes to key international reports regarding the topic of water. These include:

i. The State of the World's Land and Water Resources for food and agriculture (SOLAW), a report presenting current state, trends and challenges facing two of the most important agricultural production factors: land and water. It provides policy recommendations and way forward proposal. The first edition dates back from 2011, and the second edition will be published in 2021.
ii. The State of Food and Agriculture report (SOFA), with the 2020 edition focused on water in agriculture, and challenges implied by water scarcity for irrigated and rain-fed agriculture. The special emphasis on sustainable use of water might suggest a higher awareness of the importance of this topic.
iii. United Nations World Water Development Report, published once a year, it is a UN-Water's flagship report on water and sanitation issues, focusing on a different theme each year. The 2021 edition of the report was on 'Valuing Water ' – in times of growing scarcity and against the backdrop of population growth and climate change.
iv. Towards a Water and Food Secure Future - Critical Perspectives for Policy-makers (2015), a co-creation with the World Water Council. The report provides an outlook for water and food security to 2050, with a focus on technical and economic aspects of water use for crop and livestock production.

108. Besides the flagship reports, FAO is also the (co)writer and publisher of policy briefs, factsheets, reports, white papers, land and water discussion papers and studies, which are published on a regular basis and include a wide range of thematic and technical topics. Some of these, clustered by topic, are displayed in Table 5 below.

Table 5. Non-exhaustive list of papers produced by FAO on water related issues

Topic	FAO report
Circular and reuse of wastewater	FAO contribution to the 2006 WHO Guidelines for the safe use of wastewater, excreta and greywater (WHO, 2006) FAO – Spain International Symposium the Use of Nonconventional Waters for Achieving Food Security, held in Madrid in 2019 (FAO, n.d.h.) FAO contribution to the 2017 World Water Development Report on Wastewater under UN-Water umbrella (UNESCO, 2017) Other FAO reports on the economics of wastewater use in agriculture, and on-farm training handbooks (FAO, 2010; 2019b)
Water and financing to accelerate SDG 6	FAO has joined up with the OECD on an expert Roundtable on Agriculture Water Financing to raise awareness and spur financing (FAO, n.d.i.) Numerous background reports are contained including our report into the G20 process in 2020 where Water Ministers sat together with Agriculture Ministers to bring about acceleration in water
Water-Food-Energy Nexus concepts (related to the NSL integrated nexus and water management team)	With a view to drawing attention to the interrelated nature of global resource systems, FAO is exploring how the water-energy-food nexus can support food security and sustainable agriculture worldwide (FAO, n.d.j.) It developed a framework on the nexus for Lebanon (FAO, 2021a)

Topic	FAO report
Water Productivity and Nutrition	Water productivity, the yield gap, and nutrition, the case of Ethiopia (FAO, 2021b)
Water accounting and auditing	This 2016 sourcebook serves to provide practical advice on the application and use of water accounting and auditing and help users, plan and implement water accounting and auditing procedures and processes that best fit their needs (FAO, 2016b)
Concept of Water Tenure	FAO provided the definition and water was left out of the FAO VGGTs due to its complexity in governance jurisdictions (FAO, 2020b)
Water Management in Agriculture-Nature Based Solutions (Ag NBS) –interface) and financing requirements (scaling up)	FAO's report on Nature-Based Solutions for agricultural water management and food security (FAO, 2018a) FAO created three reports on scientific evidence (literature reviews) and case studies concerning nature-based solutions (Miralles-Willhelm, 2021; Miralles-Willhelm and Iseman, 2021; Hallstein and Iseman, 2021)
Guidelines on Irrigation Investment	FAO's guidelines on irrigation investment (FAO, 2018b)
Water and gender	FAO aqua stat report on the role of women in the management of water resources in general and agricultural water in particular. This report is based on a pilot report in Algeria, Morocco and Tunisia (FAO, n.d.k.) FAO Passport to mainstreaming gender in water programs (FAO, 2012) The FAO Socio-Economic and Gender Analysis (SEAGA) irrigation sector guide supports the participatory planning of irrigation schemes and the integration of socio-economic and gender issues in the planning process (FAO, 2001)
Drought related tools	FAO's direct access to the Adaptation Fund by NSL and GCF and the GEF (FAO, 2011) Drought in Central Asia (FAO, 2013)
Irrigation (related to the irrigation team)	Modernization of irrigation systems to prevent water loss, multiple uses of water (FAO, n.d.l; n.d.m.) Emergency work and solar irrigation projects (FAO, n.d.n.) Multiple Use Systems combing smart irrigation with WASH Water Sanitation and Hygiene (FAO, 2020c)

Source: Prepared by the evaluation team.

Monitoring tools

109. FAO also supports decision-making, and policy and research coherence and helps to collect and analyse water-related data, for which FAO has created and implemented several assessment and monitoring tools:

i. The IMI-SDG 6 project, implemented by FAO in the context of a multi-agency UN effort, is providing methodological support and capacity development assistance to the member countries. Beyond the support to monitoring, the Organization is supporting the implementation of measures to ensure that countries meet the target, including the water scarcity initiative and the water productivity project.

ii. FAO hosts and developed AQUASTAT (FAO, n.d.a.), the global information system on water resources including water quality and agricultural water management. AQUASTAT plays a key role in the monitoring of the Sustainable Development Goal 6 and in particular, indicators of target 6.4 on water stress and water use efficiency. AQUASTAT has monitoring capacity which FAO maintained for the past 25 years and which includes a global water database, country reports and associated tools for global analysis of water issues. However, response rates to AQUASTAT questionnaires are rather low, as many countries lack of capacity to collect the relevant data. This is an area of work in which FAO has to continue to provide its support to the countries.

iii. Additionally, FAO hosts AQUAMAPS (FAO, n.d.o.), which is AQUASTAT's online geospatial database on water and agriculture and is complementary to AQUASTAT's

statistical data. AQUAMAPS concentrates on geographical information that for the biggest part has been generated by spatial modelling.

iv. FAO facilitates monitoring water productivity through the open access, remote sensed WaPOR platform (FAO, n.d.b.) and supports countries in monitoring agricultural water productivity, identifying water productivity gaps and finding solutions and monitoring the progress towards SDG 6. The second version of the WaPOR methodology was released in 2020.

v. Other water-related data collection tools, used and/or created by FAO are: Climate Information Tool, global map of irrigated areas, WaterLex, KnoWat (knowing water better) amongst others.

Advocacy and convening

110. FAO co-hosts and organizes a number of events/special days related to water:

i. Land and Water days (FAO, n.d.c.), a three-day event jointly organized by IFAD, FAO and WFP. The event gathers a variety of experts and stakeholder to discuss land and water policies, governance, investments, and adoption of management practices linked to food security and resilience to climate change.

ii. The World Water Forum is the world's biggest water-related event and is organized by WWC, an international organization that brings together all those interested in the theme of water, and has FAO playing an active role in it. The event was launched in 1997 and counts with eight editions (FAO and WWC, 2018).

iii. World Water Day - every year, 22 March has been set aside to mark the World Water Day. Amongst many other international organizations and UN agencies, FAO has been a partner for this event.

iv. Advocacy for agricultural water - FAO is a key partner in the implementation of the Convention on Biological Diversity, the UN Convention to Combat Desertification and the UN Framework Convention on Climate Change, all of which are directly related to agricultural water (FAO, n.d.e.).

v. Water tenure Mondays (2021) (FAO, n.d.d.) - a forum for building a stronger water tenure concept and pursue FAO's efforts in broadening the knowledge base of its application to achieve a more equitable and secure access to water, even in conditions of scarcity.

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