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Продовольственная и
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Объединенных Наций

Organización de las
Naciones Unidas para la
Alimentación y la Agricultura

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الغذية والزراعة
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COMMITTEE ON FISHERIES

SUB-COMMITTEE ON AQUACULTURE

Ninth Session

Rome, 24–27 October 2017

AQUACULTURE, THE SUSTAINABLE DEVELOPMENT GOALS (SDGS)/AGENDA 2030 AND FAO'S COMMON VISION FOR SUSTAINABLE FOOD AND AGRICULTURE

Executive Summary

The paper introduces the 2030 Agenda and the SDGs, and presents the Common Vision for Sustainable Food and Agriculture¹ as basis for discussion and for encouraging more effective and coherent action within aquaculture and across other agricultural sectors in implementing the 2030 Agenda. It highlights the relevance of the SDGs for further possible actions in policy-making, planning and management for sustainable aquaculture development, and relates these to available international guidance and initiatives focusing on sustainable aquaculture development. FAO's support to countries for implementation of the 2030 Agenda in the aquaculture sector is outlined, including through its Blue Growth Initiative.

The Sub-Committee is invited to:

- comment on the information presented in this document, as appropriate, and suggest future activities to be undertaken by the Secretariat as well as by the Sub-Committee itself towards actions of implementing the 2030 Agenda in aquaculture development and management;
- discuss the need and possibilities to promote more integrated actions in aquaculture and across agriculture, forestry and fisheries that balance the different dimensions of sustainability;

¹ When not specified otherwise, 'agriculture' is understood here as the whole set of activities related to crop and livestock production, forestry, fisheries and aquaculture.

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- endorse the five principles developed by FAO as a basis for policy dialogue and governance arrangements needed to identify sustainable development pathways to which aquaculture contributes across the SDGs, across sectors and along related value chains.

THE 2030 AGENDA AND FOOD AND AGRICULTURE

1. The 2015 United Nations Sustainable Development Summit endorsed the 2030 Agenda for Sustainable Development² which includes 17 Sustainable Development Goals (SDGs) and 169 targets, covering a comprehensive set of issues on technical, institutional and policy changes needed to achieve sustainable development. The 2030 Agenda applies to all countries, integrates the three dimensions of sustainable development (economic, social and environmental) and guides Members, the UN and other intergovernmental organizations, civil society organizations and other institutions on forthcoming opportunities, challenges and needs for sustainable development in all sectors, with the ambitious aim of eradicating extreme poverty and hunger. Elements that form the very core of FAO's work – food security and nutrition, poverty alleviation in rural areas, and sustainable management and use of natural resources – are featured across the SDGs. FAO actively supported the inter-governmental post-2015 process which led to the adoption of the 2030 Agenda.

2. The 2030 Agenda offers a vision of a fairer, more prosperous, peaceful and sustainable world in which no one is left behind, as it strives for a world that is just, rights-based, equitable and inclusive³. The Agenda not only calls for an end to poverty, hunger and malnutrition and for universal access to health care – all with major emphasis on gender issues – but also demands the elimination of all forms of exclusion and inequality everywhere. Sustained, inclusive and sustainable economic growth, as well as full and productive employment and decent work for all, are to be promoted. The SDGs are truly transformative and interlinked, calling for new approaches and combinations in the ways policies, programmes, partnerships and investments pull together to achieve the common goals.

3. The SDGs introduce a new vision of development based on programmes and policies that are integrative and holistic, thus enabling more innovative development strategies. The SDGs integrate the three dimensions of sustainable development, with closely interwoven goals and targets, and demand comprehensive, evidence-based and participatory approaches to problem-solving and policy-making. By design, the 2030 Agenda calls upon member states and their partners to explore the many linkages across goals and targets. It challenges them to develop technically sound policies and programmes adapted to this ambitious and complex vision.

4. The 2030 Agenda explicitly refers to two additional global frameworks adopted in 2015, complementing as well as strengthening the ambitions and the priorities identified in the 2030 Agenda: the Addis Ababa Action Agenda on Financing for Development, and the Paris Agreement on climate

² UN. 2015. Transforming our world: the 2030 Agenda for Sustainable Development. Resolution adopted by the General Assembly on 25 September 2015. A/RES/70/1.
www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E
[https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Dev
elopment%20web.pdf](https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf)

³ UNDG, 2017. Mainstreaming the 2030 Agenda for Sustainable Development. Reference Guide to UN Country Teams (March 2017 Update). United Nations Development Group. 137p. <https://undg.org/wp-content/uploads/2017/03/UNDG-Mainstreaming-the-2030-Agenda-Reference-Guide-2017.pdf>
<https://undg.org/document/mainstreaming-the-2030-agenda-for-sustainable-development-reference-guide-for-un-country-teams/>

change. The Addis Ababa Action Agenda⁴ supports, complements and helps to contextualize the 2030 Agenda's means of implementation targets. It relates to domestic public resources, domestic and international private business and finance, international development cooperation, international trade as an engine for development, debt and debt sustainability, addressing systemic issues and science, technology, innovation and capacity-building, and data, monitoring and follow-up. The twenty-first session of the Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change concluded with the historic adoption of the Paris Agreement⁵. Agriculture, including the forestry and fisheries sectors, needs to adapt to the impacts of climate change and improve the resilience of food production systems in order to sustain a growing population. These issues also need to be addressed as an integral part of the 2030 Agenda, which calls for the widest possible international cooperation aimed at accelerating the reduction of global greenhouse gas emissions and addressing adaptation to the adverse impacts of climate change.

5. In agriculture and food – the way food is grown, produced, consumed, traded, transported, stored and marketed – lies the fundamental connection between people and the planet, and the path to inclusive and sustainable growth. In fact, the 2030 Agenda emphasizes people, planet, prosperity, peace and partnership. FAO has been highlighting⁶ the fact that food and agriculture are key to achieving the 2030 Agenda.

6. In addition to meeting humanity's needs for food, feed, fibre and other products, agriculture, forestry, fisheries and aquaculture employ one in three of the world's workers, provide livelihood for rural households totalling 2.5 billion people, and are the sectors that most impact the way land, water, biodiversity and genetic resources are managed. Implementing sustainable crop and livestock production, forestry, fisheries and aquaculture is therefore central to achieving many of the SDGs. It will directly affect the success of SDG 1 (end poverty); SDG 2 (end hunger, achieve food security and improved nutrition and promote sustainable agriculture); SDG 3 (health); SDG 6 (water); SDG 13 (climate action); SDG 14 (marine ecosystems) and SDG 15 (terrestrial ecosystems, forests and land). It will significantly influence the outcome of several other goals and targets related to economic growth and employment (SDG 8), gender equality and empowerment of women (SDG5), access to resources, responsible consumption and production (SDG12); and the achievement of SDG 16 on peace and inclusive societies, and SDG 17 on means of implementation and partnering for sustainable development.

7. A comprehensive analysis of the SDGs was conducted by FAO's Strategic Programmes teams to assess the degree of alignment between the FAO Strategic Objectives (SOs) and the SDGs targets. The results show a strong alignment of the SOs with the SDGs, with FAO's Strategic Framework and its Vision on Sustainable Food and Agriculture potentially contributing to integrated implementation of all 17 SDGs.

⁴ Addis Ababa Action Agenda of the Third International Conference on Financing for Development. www.un.org/esa/ffd/wp-content/uploads/2015/08/AAAA_Outcome.pdf

⁵ United Nations Framework Convention on Climate Change. 2015. Adoption of the Paris Agreement [online]. FCCC/CP/2015/L.9/Rev.1. <http://unfccc.int/resource/docs/2015/cop21/eng/109r01.pdf>; <http://unfccc.int/resource/docs/2015/cop21/eng/10a01.pdf>

⁶ Food and Agriculture – Key to key to achieving the 2030 Agenda for Sustainable Development. www.fao.org/3/a-i5499e.pdf

TOWARDS A COMMON APPROACH IN SUPPORT OF SUSTAINABLE FOOD AND AGRICULTURE⁷

8. Given the ambition and the major interlinkages between the SDGs, implementing the 2030 Agenda will require new modalities for developing coherent and effective policies, programmes and investments. The SDGs can effectively be achieved through partnerships, thus transforming the way different stakeholders cooperate.

9. Shared goals and principles are a powerful entry point for discussion amongst different stakeholders on more coherent actions for implementing the 2030 Agenda. FAO, as part of its own transformative change process, had developed already in 2014 a framework and an approach to address sustainable development in agriculture, forestry and fisheries in a more effective and integrated way⁸. This work builds on FAO's experience in sustainable production of crops, livestock, forestry, fisheries and aquaculture, and management of land, water, oceans and coasts and soils, biodiversity, as well as climate change adaptation and mitigation.

10. The Common Vision for sustainable food and agriculture considers the following five principles as a basis for the policy dialogue and governance arrangements needed to identify sustainable development pathways across the SDGs, across sectors and along related value chains:

- 1) Improving efficiency in the use of resources. This includes improved genetic material, improved agricultural technologies and practices, integrated management of pests and soil fertility, precision irrigation, improved animal feeding and health control, reduced loss and waste.
- 2) Conserving, protecting and enhancing natural ecosystems. This includes practices for the conservation of plant and animal genetic resources, restoration and conservation of soils, protection against water pollution, reduced carbon emission intensity, and incentives for environmental services, such as the protection of pollinators and carbon sequestration.
- 3) Protecting and improving rural livelihoods, equity and social well-being. Of critical importance is the extent to which rural people, in particular small-scale family farmers, youth and women, have secure and equitable access to knowledge, services, markets and resources, including land and water, control over their livelihood through decent work opportunities, and access to diverse and nutritious food.
- 4) Enhancing the resilience of people, communities and ecosystems. This includes contingency planning for droughts, floods or pest outbreaks and the adoption of more diversified and resilient production systems, associated with effective safety nets.
- 5) Promoting responsible and effective governance mechanisms across natural and human systems. This includes effective policies and strategies that are consistent across sectors, alignment of legal frameworks and investments, and strengthening of capacities of public institutions and other relevant stakeholders at all levels. It is based on broad stakeholder consultation, strengthening partnerships, and the application of mediation and conflict resolution mechanisms that are needed to build consensus around sustainable development objectives.

11. Building more effective and coherent policies and programmes requires an evidence-based assessment of issues and policy options related to these principles, inclusive dialogue platforms that lead to shared understanding and negotiated solutions across sectors and across the dimensions of sustainability, and the development of tools to transform these solutions into changes in practices.

⁷ The following text is based on paper 2016/4 of the 25th Session of the Committee on Agriculture in 2016: Agriculture and the 2030 Agenda for Sustainable Development (www.fao.org/3/a-mr022e.pdf).

⁸ The document FAO. 2014. Building a common vision for sustainable food and agriculture – principles and approaches – has been produced as a basis for discussion and dialogue on the way forward (www.fao.org/3/a-i3940e.pdf); a summary is found in: www.fao.org/3/a-i3941e.pdf.

12. Effective transition towards sustainable development requires a common understanding and better dialogue within and across sectors. It also entails involving all stakeholders, including the private sector, civil society, academia and research institutions, and developing partnerships at different levels. Achieving progress on the SDGs makes it necessary to align and enhance investments in agriculture⁹ and to prioritize those actions that can achieve measurable results on the ground.

13. Future improvements in agriculture will continue to rely on enhanced productivity, but greater emphasis will need to be placed on the social and environmental dimensions of sustainability. Greater understanding of the social dimensions of sustainable agriculture – including the need to pay particular attention to the situations and roles of women, youth, smallholders and family farmers, fisher folks, pastoralists, forest users and indigenous peoples – is key in determining a successful transition to sustainable agriculture practices. Against this background, innovations that can contribute to a more sustainable economy have considerable potential for employment creation in rural areas, in particular for young women and men. This directly contributes to Goal 8 of the SDGs on productive employment and decent work for all.

14. It is also vital to engage these important social actors in the design and implementation of policies, programmes and investments to promote the adoption of innovative and new practices and ensure access to appropriate technologies. They need to be empowered as critical agents of change through smart incentives and sustained policy dialogue.

15. Decision-making requires a clear understanding of the synergies and trade-offs that exist across and within the social, economic and environmental dimensions of sustainability. Choices often need to be made between conservation and production options; short- and long-term needs; economic benefits and environmental externalities; and among agricultural development models that have different impacts on productivity, food security, equity and rural poverty in various ways. Sustainability requires enhancing synergies and identifying ways to build upon them as well as to manage trade-offs.

16. Taken independently, sectoral approaches can lead to conflicts in resource use and allocation and management. In many places, crops, livestock and inland aquaculture compete for land and water, and their expansion is usually at the expense of forests and inland fisheries, thus resulting in erosion of biodiversity and increased emissions of carbon dioxide. The expanding demand for animal products has led to increasing demand for animal feed that requires more land. Similarly, the culture of high-value aquatic carnivorous species has increased the demand for fish feed, which adds to the already high pressure on wild fish stocks.

17. On the other side, important synergies and complementarities can be explored between crops, livestock, trees, fisheries and aquaculture, supported by natural or semi-natural ecosystems that contribute to soil formation, water purification, biodiversity conservation and climate regulation. Integrated approaches require knowing where there is potential and promoting political processes that nurture an equitable distribution of costs and benefits across different stakeholders, and over time. It also requires innovative technologies, interventions and institutions that are geared to capturing these synergies.

18. Overall, achieving the SDGs will require looking at sustainable development within and across agriculture, forestry, fisheries and aquaculture in an integrated manner, taking into account synergies and trade-offs across sectors and across sustainability dimensions. Development assistance will need to evolve with more attention on policy advice, human and institutional capacity development and monitoring of progress.

⁹ Committee on World Food Security. 2014. CFS Principles for Responsible Investment in Agriculture and Food Systems. www.fao.org/3/a-au866e.pdf; <http://www.fao.org/cfs/cfs-home/activities/rai/en/>

19. In discussing “Agriculture and the 2030 Agenda for Sustainable Development”, the FAO Committee on Agriculture¹⁰ in 2016 endorsed the five principles¹¹ developed by FAO as a basis for the policy dialogue and governance arrangements needed to identify sustainable development pathways across the SDGs, across sectors and along related value chains.

AQUACULTURE AND THE SDGS: RELEVANCE AND AVAILABLE GUIDANCE

20. Agenda 2030 and the SDGs are highly relevant for policy-making, planning and management for sustainable development of aquaculture. In particular, SDGs 1 (end poverty), 2 (end hunger), 5 (gender), 8 (growth, employment), 12 (production and consumption), 13 (climate change), 14 (marine resources & ecosystems) and 15 (biodiversity) will have significant bearing for aquaculture, but also other SDGs will influence the work of FAO Members and partners in their efforts of promoting sustainable aquaculture development. Aquaculture, when developed appropriately, will also contribute to the achievement of many other SDGs.

21. Table 1 presents an indication of relative relevance of the SDGs to aquaculture development. Clearly, emphasis will change according to context, circumstances, conditions and priorities given. In addition, in many cases there will be specific SDG targets that will prevail in their possible importance.

Table 1. Indicative general relevance of Sustainable Development Goals to aquaculture development¹²

	Sustainable Development Goals	Relevance to aquaculture
1	End poverty in all its forms everywhere	**
2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	***
3	Ensure healthy lives and promote wellbeing for all at all ages	*
4	Ensure inclusive and quality education for all and promote lifelong learning	*
5	Achieve gender equality and empower women and girls	**
6	Ensure availability and sustainable management of water and sanitation for all	**
7	Ensure access to affordable, reliable, sustainable and modern energy for all	*
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	***

¹⁰ Report of the 25th Session of the Committee on Agriculture (Rome, 26-30 September 2016), C2017/21. (www.fao.org/3/a-mr949e.pdf).

¹¹ Reference is made to the Five Principles of the Common Vision for sustainable food and agriculture (www.fao.org/3/a-i3940e.pdf).

¹² Sources for Tables 1–3: *The 2030 Agenda and the SDGs: The challenge for aquaculture development and management*, by John Hambrey. FAO Fisheries and Aquaculture Circular No. 1141. COFI:AQ/IX/2017/SBD.2

9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	**
10	Reduce inequality within and among countries	*
11	Make cities and human settlements inclusive, safe, resilient and sustainable	*
12	Ensure sustainable consumption and production patterns	***
13	Take urgent action to combat climate change and its impacts	**
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	***
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	**
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	*
17	Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	**

22. There are many SDG targets related to, or dependent upon, policy, planning, regulation and implementing institutions – and the particular issues faced by aquaculture development (Table 2). Appropriate SDGs and subsidiary targets can be taken up and incorporated in new or revised policy and planning documents and associated instruments that relate directly to aquaculture (whether exclusively, or as part of broader rural or food production policies and plans, e.g. following the Common Vision for Sustainable Food and Agriculture). Where these policies, plans and associated instruments are well designed, the chances of realising the SDG targets will be greatly enhanced.

Table 2: Key issues in aquaculture policy and planning and corresponding SDG targets

Issues and challenges for aquaculture policy & planning	Relevant SDG targets
Contributions to food security and nutrition	2.1, 2.2, 2.3, 2.4
Contributions to ending poverty	1.1, 1.2, 1.4, 1.b
Gender equality and women empowerment	5.a, 5.c
Contributions to economic growth, employment and decent work	8.3, 8.5, 8.6, 8.7, 8.8, 4.4, 14.7
The loss of habitat and in particular wetland, mangrove	14.2, 14.5, 15.9
Introduction of alien species	15.8
Loss of genetic diversity/genetic impacts	2.5, 15.6
Lost access to fishery resources	1.4, 2.3
Resource use/access conflicts between rice farmers, fishermen and fish farmers	1.4, 2.3
Weak biosecurity governance, prevalence of disease/aquatic animal health problems	1.5

Poor practice in the use of antimicrobials and other chemicals	3.9, 12.4
Poor water supply and disposal infrastructure	2.a, 6.5
Cumulative impacts on water quality	3.9, 14.1
Poor working conditions and exploitation of migrant labour	4.4, 8.3, 8.5, 8.7, 8.8
Food quality and safety	2.1
Barriers to trade	2.b
Resilience to unpredictable market price and climate change	1.5, 2.c, 13.2, 13b
Low value added	9.b
Lack of skills	4.4
Lack of finance or financial incentive	17.1-17.5

23. In practice, aquaculture activities face opportunities and challenges for meeting or contributing to SDG targets. Table 3 suggests a range of key aquaculture activities, frequent challenges as well as opportunities in addressing the SDGs.

Table 3: Aquaculture practice opportunities and challenges in meeting SDGs

Aquaculture activity	Challenges	Opportunities and corresponding targets
<i>Biosecurity governance</i>	<ul style="list-style-type: none"> Poor farmers with limited awareness and capacity to deal with diseases and other aquaculture risks 	<ul style="list-style-type: none"> Increase capacity in analysing and managing aquaculture risks (2.b 3.9, 6.3, 12.4, 12.5) Effective biosecurity at policy and farm levels (1.5, 2.b, 3.9, 12.4) Reduce the number of disease outbreaks and reduce production losses (2.b, 3.9, 6.3, 12.4, 12.5) More prudent and responsible use of antimicrobials and prevent antimicrobial resistance (AMR) (2.b, 3.9, 6.3, 12.4, 12.5)
<i>Decision to engage in aquaculture; Site selection</i>	<ul style="list-style-type: none"> Most poor farmers have very limited choice regarding siting of aquaculture activities 	<ul style="list-style-type: none"> Integrated and climate resilient water resources management and ecosystem restoration (6.5, 13b, 14.2, 15.9) Habitat, biodiversity and ecosystem service conservation (15.1, 15.3, 15.4, 15.5) Access (land, water, resources, information, finance, transport), gender equality (1.4, 5.a, 8.10, 9.1, 9.3, 9.a, 9.c, 11.2, 14.b) Minimize resource use conflict
<i>Design and investment in production system</i>	<ul style="list-style-type: none"> Limited finance and technical knowledge Limited entrepreneurial motivation or capacity 	<ul style="list-style-type: none"> Increase business/livelihood resilience (1.5, 2.4, 8.3, 13.1) Increase resource use efficiency (6.4; 6.a,7.3, 8.4, 9.4) Improve health, reduce chemical usage (3.9, 6.3, 12.4) Promoting entrepreneurship, innovation, enterprise; and facilitating access to financial services (8.3)

<i>Sourcing inputs (water, seed, feed, therapeutants, energy)</i>	<ul style="list-style-type: none"> Limited availability; finance and technical knowledge 	<ul style="list-style-type: none"> Improve resource use efficiency (6.4, 7.4, 7.a, 8.4, 9.4) Responsible management of introductions (15.7, 15.8) Conservation, sustainable use, development and sharing of genetic resources (2.5, 15.6) Reduce chemical and organic pollution and associated health risk (3.9, 6.3, 12.4, 12.5) Increase productivity and income (2.3, 2.4, 8.2)
<i>Utilizing/employing labour</i>	<ul style="list-style-type: none"> Much family labour not amenable to employment law; competition driving down wages/driving up hours 	<ul style="list-style-type: none"> Decent job creation (4.4, 8.3, 8.5, 8.6) Implement decent work guidance and protocols (8.7, 8.8) Promote gender equity and youth employment opportunity (4.4, 8.6)
<i>Farm operation</i>	<ul style="list-style-type: none"> Limited finance and technical knowledge; limitations imposed by farm design and environment 	<ul style="list-style-type: none"> Increase resilience (13.1) including climate change adaptation Implement codes of practice (in relation to all relevant targets) Training and skills development (4.4, 4.7) Genetic resource conservation and utilization strategies (2.5, 15.6)
<i>First hand sales and marketing</i>	<ul style="list-style-type: none"> Existing power relations in the value chain; Infrastructure and market access 	<ul style="list-style-type: none"> Quality and value added through improved handling (8.2) Better price through enhanced market intelligence (2.c) Reduced waste (12.3)
<i>Processing and distribution</i>	<ul style="list-style-type: none"> Existing power relations in the value chain; Infrastructure and market access Traceability Finance 	<ul style="list-style-type: none"> Quality and value added through improved handling (8.2) Value added through new product identification (8.2) Better price through enhanced market intelligence (2.c) Increased trade and reduced tariffs (2.b, 8a, 10a, 14.6, 17.10, 17.11, 17.12) Access to safe and nutritious food for all (2.1) Reduce waste (12.3) Economic benefits to SIDS and LDCs (14.7)
<i>Retailing</i>	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Better price through sustainability certification/branding and promotion (note – there are no SDG targets relating to certification and standards) Reduced waste (6.3, 11.6, 12.3)

24. A recent analysis¹³ shows that most available international guidance focusing on aquaculture development broadly matches the expectations of the SDGs. Existing international commitments and calls on sustainable aquaculture development, such as in the Code of Conduct for Responsible Fisheries,¹⁴ its associated Technical Guidelines¹⁵ for implementation of the CCRF, the 2000 Bangkok Declaration¹⁶ and the 2010 Phuket Consensus,¹⁷ and the FAO Blue Growth¹⁸ Initiative^{19,20} – which includes the Ecosystem Approach to Fisheries and Aquaculture (EAF/EAA²¹) – are generally well aligned with Agenda 2030 and will generally support the delivery of the SDGs.

25. Taken together these various sources of guidance (Annex 1) would contribute to the achievement of almost all the SDGs and corresponding targets, and especially those relating to poverty, hunger, nutrition, education, wellbeing, economic growth, employment, and sustainable use of resources. They all furthermore emphasise the three dimensions of sustainability – social, economic and environmental. Most of these resources however – and particularly the earlier ones, put rather less emphasis on rights, empowerment of women and youth; and decent work – all of which are highlighted across the SDGs.

26. It is arguable that these guidance instruments and initiatives should be further strengthened in some key cross-cutting areas, including:

- Poverty alleviation, hunger eradication and creation of decent work
- Leaving no-one behind: equity, human rights, access and opportunity for all (e.g. sites, skills, finance, inputs, market intelligence)
- Resource use efficiency and waste
- Resilient aquaculture farming systems
- Genetic resource sharing and conservation

¹³ *The 2030 Agenda and the SDGs: The challenge for aquaculture development and management*, by John Hambrey. FAO Fisheries and Aquaculture Circular No. 1141. COFI:AQ/IX/2017/SBD.2

¹⁴ FAO. 1995. Code of Conduct for Responsible Fisheries. www.fao.org/3/a-v9878e.pdf

¹⁵ FAO Technical Guidelines for Responsible Fisheries: www.fao.org/fishery/topic/166351/en

¹⁶ FAO/NACA. 2001. Aquaculture Development beyond 2000: The Bangkok Declaration and Strategy. www.fao.org/3/a-ad351e.pdf

¹⁷ FAO/NACA. 2010. Phuket Consensus. Re-affirmation of commitment to the Bangkok Declaration. ftp://ftp.fao.org/Fi/document/aquaculture/aq2010/Phuket_Consensus_13-12-2010.pdf

¹⁸ FAO promotes Blue Growth as it constitutes a holistic approach, which seeks to strengthen interactions with existing policies linked in particular to the implementation of:

- (1) Sustainable development frameworks and ecosystem approaches to fisheries and aquaculture as well as integrated management of ocean, coastal and inland water systems;
- (2) Policies to support the improvement of governance through capacity building and greater participation of stakeholders and populations in public policies, and of course;
- (3) Policies in favour of the fight against poverty and hunger and malnutrition, recognition of a blue economy with efficient use of its aquatic resources, a lower carbon footprint, high employment and decent work promoting social and territorial cohesion.

¹⁹ FAO. 2015. COFI Sub-Committee on Aquaculture. Eighth Session. FAOs Blue Growth Initiative and Aquaculture. COFI:AQ/VIII/2015/7 www.fao.org/cofi/30795-045b188b4c734e56986ed853cfb667a88.pdf

²⁰ FAO. 2015. Achieving Blue Growth through implementation of the Code of Conduct for Responsible Fisheries, available at www.fao.org/fileadmin/user_upload/newsroom/docs/BlueGrowth_LR.pdf; see also: The Blue Growth Initiative (available at www.fao.org/3/a-mk541e/mk541e02.pdf; www.fao.org/asiapacific/perspectives/blue-growth/en/; www.fao.org/zhc/detail-events/en/c/233765/).

²¹ FAO. 2010. Aquaculture development. 4. Ecosystem approach to aquaculture. FAO Technical Guidelines for Responsible Fisheries. No. 5, Suppl. 4. www.fao.org/docrep/013/i1750e/i1750e.pdf

Soto, D., Aguilar-Manjarrez, J. & Hishamunda, N. eds. 2008. Building an ecosystem approach to aquaculture. FAO/Universitat de les Illes Balears Expert Workshop. 7–11 May 2007, Palma de Mallorca, Spain. FAO Fisheries and Aquaculture Proceedings. No. 14. Rome, FAO. 2008. 221 pp. www.fao.org/3/a-i0339e.pdf

- Fair and productive value chains

27. However, implementing the SDGs in aquaculture will also require additional efforts to address several outstanding conceptual and practical challenges including:

- how to deal with trade-offs between different sustainable development objectives, e.g. economic progress versus benefit sharing and conflicts with local communities;
- the nature of environmental capacity or limits to growth, e.g. aquaculture seen as one of many resource users and polluters versus the renewed emphasis on economic growth as primary driver for poverty eradication and human development, with the expectation that aquaculture will continue to contribute to these goals;
- integration and complexity, i.e. how to integrate aquaculture development efforts in increasingly complex contexts and processes requiring facilitation and reconciliation of diverse interests, such as e.g. integrated coastal or watershed management, integrated rural development, multi-stakeholder platforms and partnerships, poverty alleviation and youth and women employment, public private partnerships, etc.;
- environmental assessment and precaution which includes discussion and consensus over effective implementation of environmental impact assessment and monitoring of aquaculture operations and farm clusters as well as of recognition of uncertainty and risks associated with aquaculture practices e.g. use of alien or genetically modified species, transboundary aquatic animal diseases, use of antimicrobials and other chemicals etc.;
- adaptive planning and management systems, i.e. the need for longer-term feasibility and operations planning, and for flexible and efficient management for environmental, social and economic performance of individual aquaculture enterprises, aquaculture farm areas and the aquaculture sector in general, designed to account for and address and overcome issues;
- human and labour rights that need to be recognized, protected and ensured in many cases, e.g. personal security, health, food security and standard of living of aquaculture farm workers as well as of members of local communities hosting aquaculture operations, women empowerment and gender equality, abolition of child and forced labour, freedom of association, etc.;
- capacity development of institutions, including public authorities and agencies in charge of aquaculture as well as commodities (e.g. rice) and processes (e.g. integrated coastal management) associated with aquaculture, organizations and associations of aquaculture producers and input (seed and feed) suppliers, aquaculture R&D institutes and networks, aquaculture farm worker and consumer groups, etc.; and
- stakeholder participation and empowerment that need to be promoted with a view to strengthening aquaculture governance mechanisms and ensuring fair and transparent involvement and consultation in decision-making of different interest groups concerned with aquaculture development.

28. The Common Vision for Sustainable Food and Agriculture provides a useful framework for discussion of such challenges.

MONITORING PROGRESS IN IMPLEMENTING THE SDGS

29. A follow-up and review mechanism for the implementation of the SDGs is central to the 2030 Agenda which has set in place a global reporting structure that includes inputs at local, national and global levels, and culminates in the UN High Level Political Forum on Sustainable Development (HLPF). The HLPF convened under the auspices of the UN Economic and Social Council (ECOSOC) has responsibility for overseeing implementation, monitoring and review of Agenda 2030. The HLPF is an annual intergovernmental meeting that provides guidance and recommendations, identifies progress and challenges, and mobilises action to accelerate implementation of the 17 SDGs.

30. The HLPF encourages member states to conduct regular and inclusive reviews of progress at the national and sub-national levels. Countries are expected to participate in voluntary reviews at least twice in the 15-year cycle. These voluntary national reviews (VNRs) feed into higher level assessments and reviews by HLPF. The VNRs “aim to facilitate the sharing of experiences, including successes, challenges and lessons learned, with a view to accelerating the implementation of the 2030 Agenda”. Countries can use SDG indicators at national and sub-national level, linked to setting measurable targets in national policy and planning, and related monitoring.

31. In addition, the UN Secretary General (SG) provides the HLPF with the Report on Progress, based on international processes of global monitoring and reviewing progress. The SG report is annually reporting on progress against global SDG indicators, compiled with the support of the Custodian Agencies. The UN Statistical Commission (UNSC) is mandated to adopt the SDG indicators and periodically review those under development, as proposed by the Inter-Agency Expert Group on SDG indicators (IAEG-SDG) which have developed some 231 indicators to measure progress in achieving the 169 targets at realistic cost and effort.

32. As custodian agency, FAO²² has specific responsibility for 21 global SDG indicators, relating to 17 targets and 6 goals – with the main emphasis on Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture. FAO is a key partner in relation to a further 6 indicators. A full list is presented in Annex 2.

33. Aquaculture is mentioned explicitly only once in the 2030 Agenda, i.e. in SDG target 14.7, in relation to Small Islands Developing States (SIDS)²³ and Least Developed Countries (LDCs). However, most SDGs and some 35 SDG targets are directly relevant to aquaculture development. Presently, there are no dedicated specific global SDG indicators that would aim to monitor aquaculture explicitly. Nonetheless, aquaculture might well be covered by monitoring efforts of indicators on SDG targets that do concern aquaculture. In the list of global SDG indicators covered by FAO custodianship (Annex 2), indicators for targets 2.3, 2.4, 2.5, 5.a, 6.4 and 14.7 may cover aquaculture, although at present a global level monitoring might be constrained by data problems and lack of specific methodology.

FAO’S SUPPORT TO COUNTRIES AND AQUACULTURE STAKEHOLDERS

34. Given the multidimensional nature of the SDGs, as well as their interlinkages, effective coordination and strategic integration of policy and implementation efforts addressing multiple SDG targets will be required to achieve lasting and constructive changes in policies, institutions, participation and commitments to actions, at local, country and international levels. As FAO’s vision and approach to sustainable food and agriculture²⁴ address the needs of both the people and the planet, and given the strong priority assigned to food and agriculture in the 2030 Agenda, the support will cover targets across all SDGs.

35. FAO has already aligned its Strategic Objective results framework with the SDGs²⁵ in order to effectively assist member countries in the achievement of their targets. As a specialized knowledge organization, FAO is expected to lead efforts on technical support that will include, among others, guidance for national targets establishment, strategy and policy development, good governance for better public investment/budgeting design and implementation. With funding mechanisms and means

²² FAO, 2017. FAO and the SDGs. Indicators – Measuring up to the 2030 Agenda for Sustainable Development. (www.fao.org/3/a-i6919e.pdf).

²³ Delegates are invited to attend the Special event on aquaculture in the Small Island Developing States (SIDS): Blue Growth opportunities for SIDS in a changing climate (COFI:AQ/IX/2017/8).

²⁴ Building a Common Vision for Sustainable Food and Agriculture. <http://www.fao.org/3/a-i3940e.pdf>

²⁵ FAO. 2016. Reviewed Strategic Framework and Outline of the Medium Term Plan 2018-21. FAO Council 105th Session. December 2016. Document CL155/3, www.fao.org/3/a-mr830e.pdf

of implementation targeting partnerships and multiple sources of financing, South-South Cooperation, etc., FAO will focus on advocacy, technical support and capacity development,^{26,27,28} and, will, in particular, also:

- continue to raise awareness with international institutions and national partners in government authorities, private sector and CSOs about FAO's key messages and opportunities for collaboration on the implementation of the SDGs in aquaculture;
- highlight links between FAO's work and the SDGs as relevant to aquaculture;
- promote aquaculture stakeholder participation in national multi-stakeholder SDG-related processes of relevance to aquaculture;
- engage actively with national and international media outlets on FAO's work towards SDG implementation in aquaculture;
- identify potential partners in resource mobilization related to SDGs and aquaculture development;
- identify capacity development and training activities for key actors on aquaculture SDG issues, e.g. selection and use of indicators for SDG related statistical monitoring and reporting on aquaculture;
- help map food and agriculture (–including aquaculture–) linkages in the SDGs to country priorities;
- assist efforts of mainstreaming SDG messages in national aquaculture development policy-making and planning, including in particular aligning SDGs into national aquaculture planning for issues related to food security, efficient use of resources and sustainable rural development;
- update FAO country programming frameworks²⁹ (CPFs) according to national SDG priorities for aquaculture, take a prominent role in preparing upcoming UNDAFs,³⁰ including aquaculture priorities with a view to achieving relevant SDGs, and actively contribute to UNCT³¹ working groups or processes emphasizing aquaculture priorities and needs.

36. Sustainable management of fisheries and aquaculture resources and the livelihoods of communities depending on fishing, fish farming and fish processing are at the heart of FAO's Blue Growth Initiative.^{32,33} FAO's Blue Growth activities emphasize the ecosystem approach to capture fisheries (EAF) and aquaculture (EAA); the promotion of sustainable livelihoods for coastal fishing communities; recognition and support to small-scale fisheries and aquaculture development; and fair access to trade, markets, social protection and decent work conditions along the fish value chain.

37. It will be of paramount importance for governmental and non-governmental fisheries and aquaculture stakeholders to familiarize themselves with the 2030 Agenda and its multiple SDGs, and to further promote awareness and action towards their achievement. The 2030 Agenda guides and focuses efforts towards more integrated, better coordinated and targeted action to facilitate effective change and improvements in increasingly complex and challenging contexts of social and economic development

²⁶ Food and Agriculture – Key to key to achieving the 2030 Agenda for Sustainable Development. www.fao.org/3/a-i5499e.pdf

²⁷ FAO. 2015. FAO and the 17 Sustainable Development Goals. www.fao.org/3/a-i4997e.pdf

²⁸ www.fao.org/sustainable-development-goals/en/

²⁹ FAO Country Programming Framework:

<ftp://ftp.fao.org/OSD/CPF/NMTPF%20guidelines/FactSheetAboutCPF.pdf>

³⁰ UNDG, 2017. United Nations Development Assistance Framework Guidance. United Nations Development Group. 44p. https://undg.org/wp-content/uploads/2017/05/2017-UNDAF_Guidance_01-May-2017.pdf

³¹ United Nations Country Teams: <https://undg.org/about/un-country-level/>

³² FAO. 2016. The State of World Fisheries and Aquaculture. Contributing to Food Security and Nutrition for All. www.fao.org/3/a-i5555e.pdf

³³ FAO. 2016. Agenda 2030, Sustainable Development Goals and Fisheries and Aquaculture. COFI/2016/Inf.20. www.fao.org/3/a-mq652e.pdf

and sustainable growth. In taking up and supporting the 2030 Agenda, local, national, regional and international measures and means to implement Blue Growth approaches to aquaculture development will help achieve SDG targets relevant for aquaculture in an integrated manner. FAO's work in countries and regions provides technical evidence to support decision-making and capacity development strategies and programmes to address the cross-cutting nature of sustainable development.

38. It will be useful for aquaculture managers and policy makers to consider how to introduce the SDGs and what steps to take in order to facilitate mainstreaming³⁴ of Agenda 2030 to the context of aquaculture development planning and management. Mainstreaming efforts may focus on aquaculture development planning and management at national, sectoral and stakeholder levels, and should involve aquaculture producers, suppliers, buyers, processors, local communities, farm workers, consumers, etc., and related public authorities and institutions as well as civil society organizations.

39. As the 2030 Agenda places an emphasis on capacity development efforts, especially those strengthening the policy environment, institutional arrangements and collaborative processes, FAO's Blue Growth Initiative will help empower fishing and aquaculture communities, civil society organizations, seafood value chain actors and public entities. In many cases, developing solutions to challenges in fisheries and aquaculture will require interactions, collaboration with, and support from stakeholders and institutions outside the sector. The 2030 Agenda encourages such interactions and processes that will lead to more integrated, efficient, inclusive and better coordinated initiatives as they address multiple SDG targets.

40. The Blue Growth Initiative recognizes the need and opportunities for engaging the private sector as well as for empowering communities, and aims at providing consultative and innovative platforms that will facilitate transformational processes at the levels of production, communities and value chains. Building partnerships and strengthening stakeholder participation are key to progress and success to promote and effectively implement Blue Growth activities in support of specific as well as interlinked SDG targets important to aquaculture.

41. In order to assist Members with the SDG implementation in aquaculture, FAO and its Blue Growth Initiative will continue to provide capacity development support through normative advice and technical guidance through policy, knowledge and information products as well as through direct technical assistance project interventions at country and local levels. A wide range of activities that address the complex challenges of more integrated, inclusive and better coordinated actions for sustainable aquaculture development are already ongoing and will continue in the future, covering work such as for example:

- Guidance on indicators potentially useful for national monitoring and reporting on sustainable aquaculture;³⁵
- Use of surveys of progress made in implementing the Code of Conduct for Responsible Fisheries in aquaculture for possible SDG monitoring, follow-up and review;

³⁴ UNDG, 2017. Mainstreaming the 2030 Agenda for Sustainable Development. Reference Guide to UN Country Teams (March 2017 Update). United Nations Development Group. 137 pp.

<https://undg.org/wp-content/uploads/2017/03/UNDG-Mainstreaming-the-2030-Agenda-Reference-Guide-2017.pdf>

<https://undg.org/document/mainstreaming-the-2030-agenda-for-sustainable-development-reference-guide-for-un-country-teams/>

³⁵ FAO. 2014. Report of the FAO Expert Workshop on Assessment and Monitoring of Aquaculture Sector Performance, Gaeta, Italy, 5-7 November 2012, FAO Fisheries and Aquaculture Report, R1063. www.fao.org/3/a-i3539e.pdf; and

Bondad-Reantaso M.G. & Prein, M. eds. 2010. Measuring the contribution of small-scale aquaculture: an assessment. *FAO Fisheries and Aquaculture Technical Paper*. No. 534. www.fao.org/docrep/012/i1138e/i1138e.pdf

- Advice on aquaculture zoning, site selection and area management under the ecosystem approach to aquaculture;^{36,37}
- Guidance on planning and management for the implementation of the Ecosystem Approach to Aquaculture³⁸
- Guidance in the development of national strategies on aquatic animal health and biosecurity;^{39,40,41,42}
- Guidance in the conduct of the FAO self-assessment on performance and capacity on aquatic animal health;⁴³
- Guidance in implementation of FAO Global Plan of Action on Antimicrobial Resistance 2016–2020;^{44,45}
- Integration of fisheries and aquaculture in the One World, One Health Platform – health people, healthy environment, healthy animals;
- Assistance on development of national aquaculture development policies, plans and strategies as well as on sustainable aquaculture investment projects, e.g. in Zambia;
- Advice and capacity development on implementation of the FAO Technical Guidelines for Aquaculture Certification,⁴⁶ and awareness raising of the GSSI benchmarking tool;⁴⁷
- Reviews of public-private partnerships and contract farming in aquaculture;
- Capacity development including extension and farmer field schools for scaling up integrated rice fish farming;⁴⁸

³⁶ Aguilar-Manjarrez, J., Soto, D. & Brummett, R. 2017. Aquaculture zoning, site selection and area management under the ecosystem approach to aquaculture. A handbook. Report ACS18071. Rome, FAO, and World Bank Group, Washington, DC. 62 pp. (www.fao.org/3/a-i6834e.pdf). FAO & World Bank. 2015. Aquaculture zoning, site selection and area management under the ecosystem approach to aquaculture. Policy brief. Rome, FAO. (www.fao.org/3/a-i5004e.pdf).

³⁷ FAO. 2016. Report of the FAO workshop launching the Blue Growth Initiative and implementing an ecosystem approach to aquaculture in Kenya, Mombasa, Kenya, 27–31 July 2015. FAO Fisheries and Aquaculture Report No. 1145. Rome, Italy (also available at www.fao.org/3/a-i5997e.pdf).

³⁸ FAO. 2010. Aquaculture development. 4. Ecosystem approach to aquaculture. FAO Technical Guidelines for Responsible Fisheries. No. 5, Suppl. 4. www.fao.org/docrep/013/i1750e/i1750e.pdf

Soto, D., Aguilar-Manjarrez, J. & Hishamunda, N. eds. 2008. Building an ecosystem approach to aquaculture. FAO/Universitat de les Illes Balears Expert Workshop. 7–11 May 2007, Palma de Mallorca, Spain. FAO Fisheries and Aquaculture Proceedings. No. 14. Rome, FAO. 2008. 221p.

³⁹ FAO. 2007. Aquaculture development. 2. Health management for the responsible movement of live aquatic animals. FAO Technical Guidelines for Responsible Fisheries. No. 5, Suppl. 2. Rome, FAO (available at: www.fao.org/3/a-a1108e.pdf).

⁴⁰ Subasinghe, R.P., McGladdery, S.E. & Hill, B.J. eds. 2007. Surveillance and zoning for aquatic animal diseases. FAO Fisheries Technical Paper. No. 451. Rome, FAO. 2004. 73 pp.

⁴¹ Arthur, J.R., Bondad-Reantaso, M.G. & Subasinghe, R.P. 2008. Procedures for the quarantine of live aquatic animals: a manual. FAO Fisheries Technical Paper. No. 502. Rome, FAO. 2008. 74 pp.

⁴² Arthur, J.R., Baldock, F.C., Subasinghe, R.P. & McGladdery, S.E. 2005. Preparedness and response to aquatic animal health emergencies in Asia: guidelines. FAO Fisheries Technical Paper. No. 486. Rome, FAO. 2005. 40 pp.

⁴³ FAO/Regional Commission for Fisheries. 2009. Report of the regional technical workshop on aquatic animal health. Jeddah, Kingdom of Saudi Arabia, 6–10 April 2008. FAO Fisheries and Aquaculture Report. No. 876. Rome, FAO. 2009. 119 pp.

⁴⁴ The FAO Global Plan of Action on Antimicrobial Resistance 2016-2020. www.fao.org/3/a-i5996e.pdf

⁴⁵ Bondad-Reantaso, M.G., Arthur, J.R. & Subasinghe, R.P. eds. 2012. Improving biosecurity through prudent and responsible use of veterinary medicines in aquatic food production. FAO Fisheries and Aquaculture Technical Paper. No. 547. FAO. 207 pp.

⁴⁶ FAO. 2011. Technical guidelines on aquaculture certification. www.fao.org/3/a-i2296t.pdf

⁴⁷ GSSI Global benchmarking tool. <http://ourgssi.org/assets/GSSI-Benchmarking-Tool/2016-07-09-Tool-fact-sheet-web.pdf>; www.fao.org/in-action/globefish/news-events/details-news/en/c/338120/

⁴⁸ FAO. Scaling-Up Integrated Rice-Fish Systems. Tapping ancient Chinese know-how. South-South Cooperation. www.fao.org/3/a-i4289e.pdf

- Facilitating youth employment in aquaculture;⁴⁹
- Mainstreaming gender in aquaculture;⁵⁰
- Enabling stakeholder dialogues on decent work in fisheries and aquaculture.⁵¹

42. The achievement of the SDGs is closely associated with countries' capacity and engagement to address the complex challenges of sustainable development in an integrated and coherent manner. In order to support this, FAO has, at technical level, developed a general framework and an approach to mobilize action towards sustainable development across agriculture, forestry, fisheries and aquaculture in the spirit of the 2030 Agenda. The Common Vision for Sustainable Food and Agriculture, especially principle 5 on governance mechanisms, can provide useful guidance for aquaculture planning and management, and stakeholders concerned with sustainable aquaculture are invited to consider the key elements⁵² of governing transformation towards sustainable food and agriculture in the framework of the 2030 Agenda:

- 1) Country ownership and leadership
- 2) Cross-sector, integrated approaches and policy coherence
- 3) Multi-stakeholder approaches and partnerships
- 4) Alignment of investments, public and private
- 5) Focus on actions with measurable results

43. The overarching framework and the approach of the Common Vision are submitted for consideration to the COFI Sub-Committee on Aquaculture (as well as to other FAO's Technical Committees) in view of encouraging more effective and coherent action within aquaculture and across other agricultural sectors in implementing the 2030 Agenda.

⁴⁹ FAO. 2016. Aquaculture and youth employment in Africa, www.fao.org/resources/infographics/infographics-details/en/c/217122/; see also: FAN (no.55): Section on Aquaculture updates by region: Sub-Saharan Africa. www.fao.org/3/a-c0382e.pdf.

⁵⁰ FAO. 2013. Mainstreaming gender in fisheries and aquaculture: A stock-taking and planning exercise. www.fao.org/3/a-i3184e.pdf.

⁵¹FAO Blue Growth blog. 2016. Exploring solutions to promote decent work in fisheries and aquaculture. www.fao.org/blogs/blue-growth-blog/exploring-solutions-to-promote-decent-work-in-fisheries-and-aquaculture/en/; Scoping study: www.fao.org/3/a-i5980e.pdf

⁵² COAG/2016/4: Agriculture and the 2030 Agenda for Sustainable Development (www.fao.org/3/a-mr022e.pdf). 25th Session of the Committee on Agriculture (2016).

Annex 1: Contribution of sustainable aquaculture guidance and initiatives to SDGs

	Sustainable Development Goal	CCRF	CCRF Technical guidelines	Bangkok Declaration and Phuket	Blue Growth Initiative (including EAF/EAA⁵³)
1	End poverty in all its forms everywhere				
2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture				
3	Ensure healthy lives and promote wellbeing for all at all ages				
4	Ensure inclusive and quality education for all and promote lifelong learning				
5	Achieve gender equality and empower women and girls				
6	Ensure availability and sustainable management of water and sanitation for all				
7	Ensure access to affordable, reliable, sustainable and modern energy for all				
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all				
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation				
10	Reduce inequality within and among countries				
11	Make cities and human settlements inclusive, safe, resilient and sustainable				
12	Ensure sustainable consumption and production patterns				
13	Take urgent action to combat climate change and its impacts				
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development				

⁵³ Ecosystem Approach to Fisheries and Aquaculture (EAF/EAA).

15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss				
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels				
17	Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development				

Annex 2: SDG indicators for which FAO is “Custodian Agency”⁵⁴

Target No.	SDG Target	Indicator
2.1	By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.	2.1.1 Prevalence of undernourishment
		2.1.2 Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)
2.3	By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.	2.3.1 Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size
		2.3.2 Average income of small-scale food producers, by sex and indigenous status
2.4	By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.	2.4.1 Proportion of agricultural area under productive and sustainable agriculture
2.5	By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.	2.5.1 Number of plant and animal genetic resources for food and agriculture secured in medium or long term conservation facilities
		2.5.2 Proportion of local breeds, classified as being at risk, not-at risk or unknown level of risk of extinction
2.a	Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries.	2.a.1 The agriculture orientation index for government expenditures

⁵⁴ FAO, 2017. FAO and the SDGs. Indicators – Measuring up to the 2030 Agenda for Sustainable Development (www.fao.org/3/a-i6919e.pdf).

2.c	Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility.	2.c.1 Indicator of (food) price anomalies
5.a	Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws	<p>5.a.1 (a) Percentage of people with ownership or secure rights over agricultural land (out of total agricultural population), by sex;</p> <p>and (b) share of women among owners or rights-bearers of agricultural land, by type of tenure</p> <p>5.a.2 Percentage of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control</p>
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	<p>6.4.1 Change in water use efficiency over time</p> <p>6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources</p>
12.3	By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses	12.3.1 Global food loss index
14.4	By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics	14.4.1 Proportion of fish stocks within biologically sustainable levels
14.6	By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation[c]	14.6.1 Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing

14.7	By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism	14.7.1 Sustainable fisheries as a proportion of GDP in small island developing States, least developed countries and all countries
14.b	Provide access for small-scale artisanal fishers to marine resources and markets	14.b.1 Progress by countries in adopting and implementing a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries
15.1	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	15.1.1 Forest area as a percentage of total land area FAO
15.2	By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	15.2.1 Progress towards sustainable forest management FAO
15.3	By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	15.3.1 Percentage of land that is degraded over total land area
15.4	By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development	15.4.2 Mountain Green Cover Index FAO