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SUB-COMMITTEE ON AQUACULTURE

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SUPPLEMENTARY DOCUMENTATION AND ANALYSIS TOWARDS THE PREPARATION OF SUSTAINABLE AQUACULTURE GUIDELINES

The development of the Sustainable Aquaculture Guidelines is part of an effort made by the Aquaculture Branch (FIAA) of FAO to provide a technical background to the branch's Global Programme on Sustainable Aquaculture of the FAO Blue Growth Initiative. This Session Background Document was prepared in support to COFI:AQ/X/2019/8 and provides additional information on the following items:

- 1) FAO Technical Guidelines for Responsible Fisheries available in support to Sustainable Aquaculture Development.
- 2) Examples of some FAO and non-FAO guidelines and tools available in support to Sustainable Aquaculture Development.
- 3) Existing FAO tools in support to the implementation of the CCRF.
- 4) Existing guidelines for the various provisions of the CCRF - Article 9 survey.
- 5) Existing guidelines for the FAO guide for transforming Food and Agriculture to achieve the SDGs.
- 6) Links between the 20 actions of the FAO guide for transforming Food and Agriculture to achieve the SDGs and the 45 provisions of the Code of Conduct for Responsible Fisheries - Article 9 survey.
- 7) Suggested list of thematic modules, guidelines and needs for SAG.

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Item 1: FAO Technical Guidelines for Responsible Fisheries available in support to Sustainable Aquaculture Development

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 - Aquaculture development. 6. Use of wild fishery resources for capture-based aquaculture FAO Technical Guidelines for Responsible Fisheries No.5 Suppl. 6⁷ (2011).
 - Aquaculture development. 5. Use of wild fish as feed in aquaculture FAO Technical Guidelines for Responsible Fisheries No.5 Suppl. 5⁸ (2011).
 - Aquaculture development. 4. Ecosystem approach to aquaculture FAO Technical Guidelines for Responsible Fisheries No. 5 Suppl. 4⁹ (2010).
 - Aquaculture development. 3. Genetic resource management FAO Technical Guidelines for Responsible Fisheries No. 5 Suppl. 3¹⁰ (2008).
 - Aquaculture development. 2. Health management for responsible movement of live aquatic animals FAO Technical Guidelines for Responsible Fisheries No. 5 Suppl. 2¹¹ (2007).
 - Aquaculture development. 1. Good aquaculture feed manufacturing practice FAO Technical Guidelines for Responsible Fisheries No. 5 Suppl. 1¹² (2001).
5. Responsible fish utilization. FAO Technical Guidelines for Responsible Fisheries No. 7¹³ (1998).
6. Responsible fish trade. FAO Technical Guidelines for Responsible Fisheries. No. 11¹⁴ (2009).
7. Information and knowledge sharing. FAO Technical Guidelines for Responsible Fisheries No. 12¹⁵ (2009).

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Item 2: Examples of some FAO and non-FAO guidelines and tools available in support to Sustainable Aquaculture Development

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¹⁹ <http://www.fao.org/docrep/012/i1359e/i1359e.pdf>

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⁷⁸ https://www.who.int/water_sanitation_health/publications/gsuweg3/en/

⁷⁹ <https://www.sustainablefish.org/Media/Files/Aquaculture/2018-Best-Practices-for-Aquaculture-Management>

⁸⁰ [https://www6.inra.fr/coordination_piscicole/content/download/3475/34631/version/1/file/GuideEVAD_EN\[1\].pdf](https://www6.inra.fr/coordination_piscicole/content/download/3475/34631/version/1/file/GuideEVAD_EN[1].pdf)

⁸¹ https://cmsdata.iucn.org/downloads/acua_en_final.pdf

⁸² <http://www.aquamedia.org/Docdownload.asp?ID=B488944A4D07060305D5>

⁸³ <https://uved-formation-aquaculture.cirad.fr/content/download/4311/32058/version/5/file/HACCP+in+aquafarms.pdf>

⁸⁴ <http://www.fao.org/docrep/006/Y5043E/Y5043E00.HTM>

⁸⁵ <https://www.unglobalcompact.org/>; <https://www.unglobalcompact.org/what-is-gc/mission/principles>;
[https://www.unglobalcompact.org/docs/publications/UN Global Compact Guide to Corporate Sustainability.pdf](https://www.unglobalcompact.org/docs/publications/UN_Global_Compact_Guide_to_Corporate_Sustainability.pdf)

⁸⁶ <http://www.un.org/en/universal-declaration-human-rights/>;
https://www.ohchr.org/EN/UDHR/Documents/UDHR_Translations/eng.pdf

Item 3: Existing FAO tools in support to the implementation of CCRF

Tool	URL
Aquaculture Feed and Fertilizer Resources Information System (AFFRIS)	http://www.fao.org/fishery/affris/affris-home/en/
Aquatic Genetic Resources - A valuable and unexplored reserve of biodiversity for food and agriculture	http://www.fao.org/aquatic-genetic-resources/home/en/
Database on Introductions of Aquatic Species	http://www.fao.org/fishery/introsp/search/en
Documents published by the Fisheries and Aquaculture Department	http://www.fao.org/fishery/publications/search/en
EAA toolbox	Available soon on the model of the EAF toolbox http://www.fao.org/fishery/eaf-net/toolbox/en
FAO Aquaculture Newsletter (FAN)	http://www.fao.org/fishery/publications/fan/en
FAO Aquaculture portal	http://www.fao.org/aquaculture/en/
FAO yearbook. Fishery and Aquaculture Statistics	http://www.fao.org/fishery/publications/yearbooks/en
Fishery and Aquaculture Statistics	http://www.fao.org/fishery/statistics/en
Global Gateway to Geographic Information Systems (GIS), Remote Sensing and Mapping for Aquaculture and Inland Fisheries	http://www.fao.org/fishery/collection/gisfish/en
National Aquaculture Legislation Overview (NALO)	http://www.fao.org/fishery/collection/nalo/en
National Aquaculture Sector Overview (NASO)	http://www.fao.org/fishery/naso-maps/naso-home/en/
National Aquaculture Sector Overview (NASO) Aquaculture Fact Sheets	http://www.fao.org/fishery/naso/search/en
National Aquaculture Sector Overview (NASO) Maps	http://www.fao.org/fishery/naso-maps/naso-maps/en/
Regional Aquaculture Networks	http://www.fao.org/fishery/statistics/networks/en
The African Water Resource Database (AWRD)	http://www.fao.org/fishery/gisfish/id/2389
World Aquaculture Performance Indicators (WAPI)	http://www.fao.org/fishery/statistics/software/wapi/en

Item 4: Existing guidelines for the various provisions of the CCRF - Article 9 survey

Provision of the CCRF survey		Guidelines
Part 1: Essential management instruments and measures		
<i>1. The country has... / In the country</i>		
1.1	Aquaculture policy	<p>Aquaculture planning: policy formulation and implementation for sustainable development. http://www.fao.org/docrep/012/i1601e/i1601e00.pdf</p> <p>Aquaculture governance and sector development http://www.fao.org/3/a-i7797e.pdf</p> <p>Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf</p> <p>Planning and Management for Sustainable Coastal Aquaculture Development http://www.gesamp.org/publications/planning-and-management-for-sustainable-coastal-aquaculture-development</p>
1.2	Aquaculture development plan	<p>Aquaculture planning: policy formulation and implementation for sustainable development. http://www.fao.org/docrep/012/i1601e/i1601e00.pdf</p> <p>Aquaculture governance and sector development http://www.fao.org/3/a-i7797e.pdf</p> <p>Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf</p>
<i>2. Regulatory measures to support aquaculture development</i>		
2.1	Access rights to land and water bodies	<p>Voluntary guidelines on the responsible governance of tenure of land, fisheries and forests in the context of national food security http://www.fao.org/docrep/016/i2801e/i2801e.pdf</p> <p>Land and water – the rights interface http://www.fao.org/docrep/007/j2601e/j2601e00.htm</p>
2.2	Registration of aquaculture farms and hatcheries	<p>Aquaculture governance and sector development http://www.fao.org/3/a-i7797e.pdf</p> <p>Establishing Legal, Institutional and Regulatory Framework for Aquaculture Development and Management http://www.fao.org/docrep/003/AB412E/ab412e05.htm</p>
2.3	Zonation (area for aquaculture, or aquaculture systems or for species culture)	<p>Aquaculture zoning, site selection and area management under the ecosystem approach to aquaculture A handbook http://www.fao.org/3/a-i6834e.pdf</p> <p>Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf</p> <p>Planning and Management for Sustainable Coastal Aquaculture Development http://www.gesamp.org/publications/planning-and-management-for-sustainable-coastal-aquaculture-development</p> <p>Aquaculture zoning, site selection and area management under the ecosystem approach to aquaculture. Full document http://www.fao.org/3/a-i6992e.pdf</p> <p>Aquaculture zoning, site selection and area management under the ecosystem approach to aquaculture. A handbook http://www.fao.org/3/a-i6834e.pdf</p> <p>Aquaculture zoning, site selection and area management under the ecosystem approach to aquaculture. Policy Brief. Rome. http://www.fao.org/3/a-i5004e.pdf</p>
2.4	Carrying capacity (limits set on density)	<p>Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf</p> <p>Cage and Pen fish farming - Carrying capacity models and environmental impact http://www.fao.org/docrep/005/AD021E/AD021E00.HTM</p>

2.5	Environmental assessment and monitoring	<p>Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf</p> <p>Environmental impact assessment and monitoring in aquaculture http://www.fao.org/docrep/012/i0970e/i0970e00.htm</p> <p>Understanding and applying risk analysis in aquaculture http://www.fao.org/docrep/011/i0490e/i0490e00.htm</p>
2.6	Effluents	<p>Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf</p> <p>Monitoring the ecological effects of coastal aquaculture wastes http://www.fao.org/docrep/006/W3242E/W3242E00.HTM</p>
2.7	Feeds (environmental impact, quality, food safety issues)	<p>Good aquaculture feed manufacturing practice http://www.fao.org/3/a-y1453e.html</p> <p>Use of wild fish as feed in aquaculture http://www.fao.org/3/a-i1917e.html</p> <p>Study and analysis of feeds and fertilizers for sustainable aquaculture development http://www.fao.org/docrep/011/a1444e/a1444e00.htm</p> <p>Improving feed conversion ratio and its impact on reducing greenhouse gas emissions in aquaculture http://www.fao.org/3/a-i7688e.pdf</p> <p>On-farm feeding and feed management in aquaculture http://www.fao.org/docrep/019/i3481e/i3481e.pdf</p>
2.8	Seeds (as environmental issue e.g. source – wild, hatchery)	<p>Use of wild fishery resources for capture-based aquaculture http://www.fao.org/docrep/015/ba0059e/ba0059e00.htm</p> <p>Genetic resource management http://www.fao.org/3/a-i0283e.html</p>
2.9	Water abstraction	<p>Environmental impact assessment and monitoring in aquaculture http://www.fao.org/docrep/012/i0970e/i0970e00.htm</p>
2.10	Use of alien species along the lines of FAO's or OIE's or CBD's provisions (including potential transboundary issues)	<p>Development of aquatic genetic resources: A framework of essential criteria http://www.fao.org/3/ca2296en/CA2296EN.pdf</p> <p>Genetic resource management http://www.fao.org/3/a-i0283e.html</p> <p>FAO mechanisms for the control and responsible use of alien species in fisheries http://www.fao.org/docrep/009/a0113e/A0113E02.htm#ch2.1.1</p> <p>Mechanisms of the Convention on Biological Diversity for the control and responsible use of alien species in fisheries http://www.fao.org/docrep/009/a0113e/A0113E02.htm#ch2.1.2</p> <p>Seminar: Elements of Technical Guidelines for the Control and Responsible Use of Alien Species in Fisheries and Aquaculture: Key issues and Opportunities for Africa http://www.fao.org/fishery/docs/DOCUMENT/cifa/cifa13/6e.pdf</p> <p>Promoting the implementation of International Codes of Practice and Guidelines for the Responsible Use of Alien 1 and Genetically Modified Aquatic Species in African Fisheries and Aquaculture http://www.fao.org/fishery/docs/DOCUMENT/cifa/cifa12/cifaxii20024.pdf</p> <p>Health management for responsible movement of live aquatic animals http://www.fao.org/3/a-a1108e.html</p> <p>Procedures for the quarantine of live aquatic animals http://www.fao.org/docrep/010/i0095e/i0095e00.htm</p>
2.11	Movement (within country and across borders) of live animals along the lines of FAO or OIE	<p>Health management for responsible movement of live aquatic animals http://www.fao.org/3/a-a1108e.html</p> <p>Development of aquatic genetic resources: A framework of essential criteria http://www.fao.org/3/ca2296en/CA2296EN.pdf</p> <p>Procedures for the quarantine of live aquatic animals http://www.fao.org/docrep/010/i0095e/i0095e00.htm</p> <p>Risk analysis for movements of live aquatic animals http://www.fao.org/docrep/015/i2571e/i2571e.pdf</p>
2.12	Impacts on biodiversity	<p>Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf</p> <p>Mechanisms of the Convention on Biological Diversity for the control and responsible use of alien species in fisheries http://www.fao.org/docrep/009/a0113e/A0113E02.htm#ch2.1.2</p> <p>Tilapias as Alien Aquatics in Asia and the Pacific: A Review http://www.fao.org/docrep/007/y5728e/y5728e00.htm</p>

2.13	Escapes	Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf Addressing aquaculture–fisheries interactions through the implementation of the ecosystem approach to aquaculture (EAA) http://www.fao.org/docrep/015/i2734e/i2734e03h.pdf Review of environmental impact assessment and monitoring in salmon aquaculture http://www.fao.org/docrep/pdf/012/i0970e/i0970e01f.pdf
2.14	Stocking and restocking	Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf Genetic resource management http://www.fao.org/3/a-i0283e.html Addressing aquaculture–fisheries interactions through the implementation of the ecosystem approach to aquaculture (EAA) http://www.fao.org/docrep/015/i2734e/i2734e03h.pdf
2.15	Food safety (along the lines of <i>Codex Alimentarius</i>)	<i>Codex Alimentarius</i> http://www.fao.org/fao-who-codexalimentarius/ Understanding The <i>Codex Alimentarius</i> http://www.fao.org/3/a-i5667e.pdf Assessment and management of seafood safety and quality http://www.fao.org/3/a-i3215e.pdf
2.16	Use of drugs, chemicals and other substances	Responsible use of antibiotics in aquaculture http://www.fao.org/3/a-a0282e.pdf Towards safe and effective use of chemicals in coastal aquaculture http://www.fao.org/docrep/meeting/003/w6435e.htm
2.17	Fish health management along the lines of FAO or OIE	Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf Fish health and quarantine http://www.fao.org/docrep/003/W7499E/w7499e23.htm
Part 2: Support mechanisms that facilitate the implementation of the regulatory measures listed in part 1		
3. <i>In the country there is... / In the country...</i>		
3.1	Government monitoring, data collection and analysis system on aquaculture	Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf Coordinating Working Party on Fishery Statistics http://www.fao.org/cwp-on-fishery-statistics/handbook The State of World Fisheries and Aquaculture (SOFIA) http://www.fao.org/fishery/sofia/en FAO yearbook http://www.fao.org/fishery/publications/yearbooks/en
3.2	Consultation with stakeholders in formulating the Aquaculture Policy and/or Aquaculture Development Plan	Aquaculture governance and sector development http://www.fao.org/3/a-i7797e.pdf Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf Report of the Expert Consultation on Improving Planning and Policy Development in Aquaculture http://www.fao.org/docrep/pdf/011/i0205e/i0205e00.pdf Aquaculture planning: policy formulation and implementation for sustainable development. http://www.fao.org/docrep/012/i1601e/i1601e00.pdf
3.3	Participation of farmers associations in sector development and management	Aquaculture governance and sector development http://www.fao.org/3/a-i7797e.pdf Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf Aquaculture farmer organizations and cluster management Concepts and experiences http://www.fao.org/docrep/014/i2275e/i2275e.pdf Involving Stakeholders in Aquaculture Policy-making, Planning and Management http://www.fao.org/docrep/003/AB412E/ab412e32.htm
3.4	Aquaculture is integrated in coastal development and management plans	Planning and management for sustainable coastal aquaculture development http://www.fao.org/3/a-y1818e.pdf Guidelines for the Promotion of Environmental Management of Coastal Aquaculture Development http://www.fao.org/docrep/T0697E/T0697E00.htm

3.5	Aquaculture is integrated in watershed management or land use development plans	<p>Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf Planning and Management for Sustainable Coastal Aquaculture Development http://www.fao.org/docrep/005/y1818e/y1818e00.htm The potential of spatial planning tools to support the ecosystem approach to aquaculture http://www.fao.org/docrep/012/i1359e/i1359e.pdf</p> <p>Aquaculture zoning, site selection and area management under the ecosystem approach to aquaculture. Full document http://www.fao.org/3/a-i6992e.pdf</p> <p>Aquaculture zoning, site selection and area management under the ecosystem approach to aquaculture. A handbook http://www.fao.org/3/a-i6834e.pdf</p> <p>Aquaculture zoning, site selection and area management under the ecosystem approach to aquaculture. Policy Brief. Rome. http://www.fao.org/3/a-i5004e.pdf</p>
3.6	Integration of aquaculture in community development planning	<p>Aquaculture governance and sector development http://www.fao.org/3/a-i7797e.pdf</p> <p>Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf Aquaculture farmer organizations and cluster management: concepts and experiences http://www.fao.org/docrep/014/i2275e/i2275e.pdf Aquaculture development http://www.fao.org/tempref/docrep/fao/003/W4493e/W4493e00.pdf</p>
3.7	Ecosystems functions are considered in aquaculture planning and development (e.g. wildlife sanctuary, water quality improvement, recreational, as well as greenhouse gas mitigation, carbon sequestration)	<p>Building an ecosystem approach to aquaculture http://www.fao.org/docrep/011/i0339e/i0339e00.htm Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf Aquaculture farmer organizations and cluster management: concepts and experiences http://www.fao.org/docrep/014/i2275e/i2275e.pdf Aquaculture development http://www.fao.org/tempref/docrep/fao/003/W4493e/W4493e00.pdf</p>
3.8	There is an incentive system for farmers to restore or rehabilitate resources degraded by their aquaculture activities (e.g. mangrove, other forests, salt marshes, abandoned lands, polluted water bodies, degraded soil)	<p>Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf Aquaculture farmer organizations and cluster management: concepts and experiences http://www.fao.org/docrep/014/i2275e/i2275e.pdf Habitat rehabilitation for inland fisheries http://www.fao.org/docrep/008/a0039e/a0039e00.htm</p>

3.9	Practices are adopted that lead to improvement in the sustainability of aquaculture farms (i.e. better management practices or BMPs, good aquaculture practices or GAPs, codes of practice, etc.)	Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf
3.10	Application of the polluter-pays principle	Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf
3.11	Investment in aquaculture research	Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf Aquaculture governance and sector development http://www.fao.org/3/a-i7797e.pdf
3.12	Investment in aquaculture extension and training	Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf Introducing the farm business school A training package http://www.fao.org/3/a-i4565e.pdf
3.13	Investment in infrastructure and facilities that support aquaculture development	Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf
Part 3: Enhancing mechanisms that would improve the effectiveness of the measures and mechanisms listed in parts 1 and 2		
<i>4. In the country there are... / In the country...</i>		
4.1	Mechanisms are in place to ensure that livelihoods of the local communities are benefited and not adversely impacted when developing aquaculture	Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf Environmental impact assessment and monitoring in aquaculture http://www.fao.org/docrep/012/i0970e/i0970e00.htm OECD-FAO. 2016. Guidance for Responsible Agricultural Supply Chains. http://mneguidelines.oecd.org/OECD-FAO-Guidance.pdf OHCHR. 2011. UN Guiding Principles on Business and Human Rights. http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf
4.2	There are voluntary certification system/s that promote the practice of responsible aquaculture	Technical guidelines on aquaculture certification http://www.fao.org/3/a-i2296t.pdf Private standards and certification in fisheries and aquaculture http://www.fao.org/docrep/013/i1948e/i1948e.pdf
4.3	Farms are covered by government assistance scheme in case of disasters	Fisheries and aquaculture emergency response guidance http://www.fao.org/3/a-i3432e.pdf Disaster response and risk management in the fisheries sector http://www.fao.org/docrep/010/a1217e/a1217e00.htm Supporting disaster response and preparedness in aquaculture http://www.fao.org/docrep/012/a1363e/a1363e18.pdf Guidelines for the fisheries and aquaculture sector on damage and needs assessments in emergencies http://www.fao.org/3/a-i3433e.pdf

4.4	Farmers have access to institutional credit	Microfinance and aquaculture: guidelines and case studies http://www.fao.org/docrep/006/Y5043E/Y5043E00.HTM
4.5	Aquaculture farmers have access to commercial insurance	Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf Aquaculture insurance http://www.fao.org/docrep/pdf/010/a1455e/a1455e02.pdf Fishery and aquaculture insurance in China http://www.fao.org/3/a-i7436e.pdf Microfinance and aquaculture: guidelines and case studies http://www.fao.org/docrep/006/Y5043E/Y5043E00.HTM
Part 4: The level/degree of capacity to support the measures in parts 1 to 3		
<i>5. The country has... / In the country...</i>		
5.1	Capacity of the national research system to provide knowledge, information, technology, advice to policy, planning and management	Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf
5.2	Capacity of the extension systems to disseminate and utilize the outputs from the national or external research systems in support of aquaculture development	Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf
<i>6. Specific capacity (of State) on:</i>		
6.1	Health management	OIE Aquatic animal health code http://www.oie.int/en/standard-setting/aquatic-code/
6.2	Environmental management	Ecosystem approach to aquaculture http://www.fao.org/docrep/013/i1750e/i1750e.pdf
6.3	Food safety	<i>Codex alimentarius</i> http://www.fao.org/fao-who-codexalimentarius/
6.4	Conflict management	Aquaculture governance and sector development http://www.fao.org/3/a-i7797e.pdf OECD-FAO. 2016. Guidance for Responsible Agricultural Supply Chains. http://mneguidelines.oecd.org/OECD-FAO-Guidance.pdf OHCHR. 2011. UN Guiding Principles on Business and Human Rights. http://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf
6.5	Preparedness to respond to disasters	Fisheries and aquaculture emergency response guidance http://www.fao.org/3/a-i3432e.pdf Guidelines for the fisheries and aquaculture sector on damage and needs assessments in emergencies http://www.fao.org/3/a-i3433e.pdf
6.6	Preparedness to manage the risk impacts from climate change	Fisheries and aquaculture emergency response guidance http://www.fao.org/3/a-i3432e.pdf Guidelines for the fisheries and aquaculture sector on damage and needs assessments in emergencies http://www.fao.org/3/a-i3433e.pdf

Item 5: Existing guidelines for the FAO guide for transforming Food and Agriculture to achieve the SDGs

	Provision	Guidelines	SDGs
Principle 1: Increase productivity, employment and value addition in food systems			
i	Facilitating access to productive resources, finance and services	<p>Save and grow - A guide to the sustainable intensification of smallholder crop production http://www.fao.org/ag/save-and-grow</p> <p>Sustainable agricultural mechanization platform http://www.fao.org/sustainableagricultural-mechanization</p> <p>Voluntary guide for national seed policy formulation http://www.fao.org/3/a-i4916e.pdf</p>	1 2 5 7 8 9 14 15
ii	Connecting smallholders to markets	<p>Developing sustainable food value chains Guiding principles http://www.fao.org/3/a-i3953e.pdf</p> <p>FAO sustainable food value chain knowledge platform http://www.fao.org/sustainable-foodvalue-chains/what-is-it</p> <p>Entrepreneurship Development Training Manual http://www.fao.org/sustainablefood-value-chains/training-andlearning-center/details-materials/en/c/277441/</p> <p>Innovative risk management strategies in rural and agriculture finance http://www.fao.org/3/a-i6940e.pdf</p> <p>Technical guidelines on aquaculture certification www.fao.org/3/a-i2296t.pdf</p> <p>Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries (Revision 1); and from Inland Capture Fisheries http://www.fao.org/docrep/012/i1119t/i1119t00.htm http://www.fao.org/docrep/014/ba0001t/ba0001t00.pdf</p>	1 2 5 8 9 11 12 14 15
iii	Encouraging diversification of production and income	<p>Neglected and underutilized species community (managed by Bioversity International) http://www.nuscommunity.org/about-us/neglected-underutilized-species</p> <p>LEAP- Livestock Environmental Assessment and Performance partnership Programme http://www.fao.org/partnerships/leap</p> <p>FAO Diversification Booklet Series http://www.fao.org/sustainable-foodvalue-chains/training-and-learningcenter/details/en/c/274790</p> <p>Sustaining livestock diversity E-module http://www.fao.org/ag/againfo/programmes/en/genetics/Guidelines.htm</p>	1 2 8 11 15
iv	Building producers' knowledge and develop their capacities	<p>Global Farmer Field Schools Platform http://www.fao.org/farmer-field-schools</p> <p>FAO Research and Extension Portal http://www.fao.org/research-andextension</p> <p>A decision guide for rural advisory methods http://www.fao.org/3/a-i8141e.pdf</p> <p>FAO Capacity Development Portal http://www.fao.org/capacity-development</p> <p>FAO capacity development learning courses http://www.fao.org/capacitydevelopment/resources/fao-learningmaterial/learning-courses</p>	1 2 4 5 8 9 13 15

Principle 2: Protect and enhance natural resources			
v	Enhancing soil health and restore land	<p>Global Soil Partnership http://www.fao.org/global-soil-partnership</p> <p>Voluntary Guidelines for Sustainable Soil Management http://www.fao.org/3/a-bl813e.pdf</p> <p>WOCAT (World Overview of Conservation Approaches and Technologies) http://www.wocat.net</p> <p>COLLECT EARTH Augmented visual interpretation for land monitoring http://www.openforis.org/tools/collectearth.html</p> <p>Global guidelines for the restoration of degraded forests and landscapes in drylands http://www.fao.org/3/a-i5036e.pdf</p>	1 2 11 12 15
vi	Protecting water and manage scarcity	<p>Coping with water scarcity, an action framework for agriculture and food security http://www.fao.org/docrep/016/i3015e/i3015e.pdf</p> <p>Water accounting and auditing A sourcebook http://www.fao.org/3/a-i5923e.pdf</p> <p>Water and the rural poor -Interventions for improving livelihoods (sub-Saharan Africa and Asia) http://www.fao.org/3/a-i0132e.pdf http://www.fao.org/3/a-i3705e.pdf</p> <p>On-farm practices for the safe use of wastewater in urban and peri-urban horticulture http://www.fao.org/docrep/016/i3041e/i3041e.pdf</p> <p>IPPM Integrated pest management (training, outreach) http://www.fao.org/agriculture/ippm/activities/pesticide-risk-reduction</p> <p>Technical Guidelines for the implementation of the International Code of Conduct on Pesticide management http://www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/code/list-guide-new</p>	1 2 6 7 8 9 11 12 14 15
vii	Mainstreaming biodiversity conservation and protect ecosystem functions	<p>Guidelines for Developing a National Strategy for Plant Genetic Resources for Food and Agriculture http://www.fao.org/3/a-i4917e.pdf</p> <p>Voluntary Guidelines for the Conservation and Sustainable Use of Crop Wild Relatives and Wild Food Plants http://www.fao.org/documents/card/en/c/8f366de9-08a8-42ad-aae1-4f8f6822420e/</p> <p>Guidelines on animal genetic resources http://www.fao.org/ag/againfo/programmes/en/genetics/Guidelines.html</p> <p>Principles for the assessment of livestock impacts on biodiversity (LEAP partnership) http://www.fao.org/3/a-i6492e.pdf</p> <p>Sustaining livestock diversity E-learning tools http://www.fao.org/ag/againfo/programmes/en/genetics/Guidelines.html</p> <p>Fishery Resources Monitoring System (FIRMS) http://firms.fao.org</p> <p>Mainstreaming ecosystem services and biodiversity into agricultural production and management in East Africa & in the Pacific Islands http://www.fao.org/3/a-i5603e.pdf http://www.fao.org/3/a-i6505e.pdf</p>	1 2 6 11 12 14 15
viii	Reducing losses, encouraging reuse and recycling, and promoting sustainable consumption	<p>Community of practice on food loss reduction http://www.fao.org/food-loss-reduction</p> <p>FAO bioenergy website http://www.fao.org/energy/bioenergy</p> <p>FAO technical platform on the measurement and the reduction of food loss and waste http://www.fao.org/platform-food-losswaste</p> <p>Global Save Food Initiative http://www.fao.org/save-food/background</p> <p>Bioenergy and Food Security (BEFS) Approach http://www.fao.org/docrep/019/i3672e/i3672e.pdf</p> <p>Assessing the sustainability and replicability of integrated food energy systems A guidance document http://www.fao.org/docrep/019/i3669e/i3669e.pdf</p> <p>Small-scale aquaponics food production Integrating fish and plant farming http://www.fao.org/3/a-i4021e.pdf</p>	2 7 12

Principle 3: Improve livelihoods and foster inclusive economic growth			
ix	Empowering people and fighting inequalities	<p>Right to Food http://www.fao.org/docs/eims/upload/214344/rtfg_eng_draft_03.pdf</p> <p>FAO online Toolbox on decent rural employment http://www.fao.org/rural-employment/toolbox</p> <p>FAO's work on youth employment http://www.fao.org/rural-employment/workareas/youth-employment</p> <p>Guidance on addressing child labour in fisheries and aquaculture http://www.fao.org/docrep/018/i3318e/i3318e.pdf</p> <p>CEDAW Guidelines A tool for gender-sensitive agriculture and rural development policy and programme formulation http://www.fao.org/docrep/017/i3153e/i3153e.pdf</p> <p>Gender, rural women and development (Dimitra) http://www.fao.org/dimitra/home</p> <p>Realizing women's rights to land in the law A guide to report on SDG 5.a.2. http://www.fao.org/3/I8785EN/i8785en.pdf</p>	<p>1</p> <p>2</p> <p>5</p> <p>8</p> <p>10</p> <p>13</p> <p>14</p> <p>16</p>
x	Promoting secure tenure rights	<p>FAO Tenure Portal http://www.fao.org/tenure</p> <p>Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests http://www.fao.org/docrep/016/i2801e/i2801e.pdf</p> <p>Responsible governance of tenure E-learning http://www.fao.org/elearning/#/elc/en/courses/VGGT</p> <p>Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication http://www.fao.org/3/i4356en/I4356EN.pdf</p>	<p>1</p> <p>2</p> <p>5</p> <p>8</p> <p>9</p> <p>13</p> <p>14</p>
xi	Using social protection tools to enhance productivity and income	<p>FAO Social Protection Portal http://www.fao.org/social-protection</p> <p>Strengthening coherence between agriculture and social protection to combat poverty and hunger in Africa A framework for analysis and action http://www.fao.org/3/a-i5386e.pdf</p> <p>Strengthening coherence between agriculture and social protection to combat poverty and hunger in Africa Diagnostic Tool http://www.fao.org/3/a-i5385e.pdf</p> <p>Social analysis for agriculture and rural investment projects http://www.fao.org/elearning/#/elc/en/course/SA</p>	<p>1</p> <p>2</p> <p>5</p> <p>8</p> <p>10</p> <p>13</p> <p>14</p>
xii	Improving nutrition and promote balanced diets	<p>FAO Nutrition Portal http://www.fao.org/nutrition</p> <p>Toolkit on nutrition-sensitive agriculture and food systems http://www.fao.org/nutrition/policiesprogrammes/toolkit</p> <p>Home-Grown School Feeding Resource Framework http://www.fao.org/3/i8724en/I8724EN.pdf</p> <p>Key Recommendations for Improving Nutrition through Agriculture and Food Systems http://www.fao.org/3/a-i4922e.pdf</p>	<p>1</p> <p>2</p> <p>3</p> <p>5</p> <p>12</p>

Principle 4: Enhance the resilience of people, communities and ecosystems			
xiii	Preventing and protecting against shocks: enhancing resilience	<p>KORE - Knowledge sharing platform on resilience http://www.fao.org/in-action/kore</p> <p>Framework for Action for food security and nutrition in protracted crises (CFS-FFA) http://www.fao.org/3/a-bc852e.pdf</p> <p>Resilient Livelihoods Disaster Risk Reduction for Food and Nutrition Security Framework Programme http://www.fao.org/3/a-i3270e.pdf</p> <p>Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists (SHARP) & SHARP Background document http://www.fao.org/in-action/sharp/en/ http://www.fao.org/3/a-i4495e.pdf</p> <p>E-agriculture strategy guide (piloted in Asia-Pacific countries) http://www.fao.org/3/a-i5564e.pdf</p> <p>Resilience good practices http://www.fao.org/in-action/kore/goodpractices</p>	<p>1</p> <p>2</p> <p>9</p> <p>11</p> <p>13</p> <p>14</p>
xiv	Preparing for and responding to shocks	<p>Global Information and Early Warning System (GIEWS) on food and agriculture http://www.fao.org/giews</p> <p>Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (EMPRES) http://www.fao.org/ag/againfo/programmes/en/empres/home.asp</p> <p>Food chain crisis early warning system http://www.fao.org/food-chain-crisis</p> <p>FAO Desert Locust Information Service (DLIS) http://www.fao.org/ag/locusts/en/activ/DLIS/dailyphotos/index.htm</p>	<p>1</p> <p>2</p> <p>9</p> <p>13</p> <p>14</p>
xv	Addressing and adapting to climate change	<p>FAO Climate Smart Agriculture Portal and sourcebook http://www.fao.org/climate-smartagriculture</p> <p>Economic and Policy Innovations for Climate-Smart Agriculture (EPIC) program http://www.fao.org/climatechange/epic/projects</p> <p>Nationally Appropriate Mitigation Actions (NAMAs) learning tool http://www.fao.org/3/a-i4642e.pdf</p> <p>REDD+ Reducing Emissions from Deforestation and Forest Degradation http://www.fao.org/redd</p> <p>Ex-ante Carbon Balance Tool http://www.fao.org/tc/exact/carbonbalance-tool-ex-act</p>	<p>1</p> <p>2</p> <p>11</p> <p>13</p> <p>14</p>
xvi	Strengthening ecosystem resilience	<p>Agroecology knowledge hub http://www.fao.org/agroecology</p> <p>LADA- land degradation assessment and potential for sustainable land management manuals http://www.fao.org/nr/kagera/tools-and-methods/lada-local-levelassessment-manuals</p> <p>Landscapes for life Approaches to landscape management for sustainable food and agriculture http://www.fao.org/3/i8324en/i8324en.pdf</p> <p>Globally Important Agricultural Heritage Systems (GIAHS) http://www.fao.org/giahs</p>	<p>1</p> <p>2</p> <p>13</p> <p>14</p> <p>15</p>

Principle 5: Adapt governance to new challenges			
xvii	Enhancing policy dialogue and coordination	<p>FAO Policy and Governance Portal http://www.fao.org/policy-support/governance</p> <p>FAO Partnership Portal http://www.fao.org/partnerships</p> <p>Monitoring and Analysing Food and Agricultural Policies (MAFAP) programme http://www.fao.org/in-action/mafap/home</p> <p>Global Agenda for Sustainable Livestock http://www.livestockdialogue.org</p> <p>Global Partnerships for Responsible Fisheries http://www.fao.org/fishery/fishcode</p> <p>CFS-Committee on World Food Security http://www.fao.org/cfs</p>	<p>1</p> <p>2</p> <p>5</p> <p>6</p> <p>7</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p>
xviii	Strengthening innovation systems	<p>Good practices in building innovative rural institutions http://www.fao.org/docrep/015/i2258e/i2258e00.pdf</p> <p>Innovative markets for sustainable agriculture http://www.fao.org/3/a-i5907e.pdf</p> <p>Towards inclusive Pluralistic Service Systems Insights for innovative thinking http://www.fao.org/3/a-i6104e.pdf</p>	<p>1</p> <p>2</p> <p>5</p> <p>9</p> <p>12</p> <p>14</p>
xix	Adapting and improving investment and finance	<p>Investment Learning Platform http://www.fao.org/investment-learningplatform/home</p> <p>Agricultural Investment Funds for Development http://www.fao.org/3/I8226EN/i8226en.pdf</p> <p>Ending poverty and hunger by investing in agriculture and rural areas http://www.fao.org/3/a-i7556e.pdf</p> <p>Rural invest A tool for project design http://www.fao.org/support-toinvestment/knowledge-resources/learning-tools/ruralinvest</p> <p>Portal on Incentives for ecosystem services http://www.fao.org/ecosystem-servicesbiodiversity/incentives</p>	<p>1</p> <p>2</p> <p>9</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p>
xx	Strengthening the enabling environment and reforming the institutional framework	<p>FAO SDGs website Tracking progress http://www.fao.org/sustainabledevelopment-goals/tracking-progress</p> <p>Monitoring SDG indicators E-learning tools http://www.fao.org/sustainabledevelopment-goals/indicators</p> <p>Monitoring evaluation and impact assessment E-learning tool http://www.fao.org/elearning/#/elc/en/courses/MEIA</p> <p>Global strategy to improve agriculture and rural statistics http://www.gsars.org</p> <p>FAOLEX FAO database on national laws and regulations http://www.fao.org/faolex</p>	<p>1</p> <p>2</p> <p>5</p> <p>6</p> <p>7</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p>

Item 6: Links between the 20 actions of the FAO guide for transforming Food and Agriculture to achieve the SDGs and the 45 provisions of the Code of Conduct for Responsible Fisheries - Article 9 survey

		Principle 1				Principle 2				Principle 3			Principle 4			Principle 5					
		Facilitating access to productive resources, finance and services	Connecting smallholders to markets	Encouraging diversification of production and income	Building producers' knowledge and develop their capacities	Enhancing soil health and restore land	Protecting water and manage scarcity	Mainstreaming biodiversity conservation and protect ecosystem functions	Reducing losses, encouraging reuse and recycling, and promoting sustainable consumption	Empowering people and fighting inequalities	Promoting secure tenure rights	Using social protection tools to enhance productivity and income	Improving nutrition and promote balanced diets	Preventing and protecting against shocks: enhancing resilience	Preparing for and responding to shocks	Addressing and adapting to climate change	Strengthening ecosystem resilience	Enhancing policy dialogue and coordination	Strengthening innovation systems	Adapting and improving investment and finance	Strengthening the enabling environment and reforming the institutional framework
		i	ii	iii	iv	v	vi	vii	viii	ix	x	xi	xii	xiii	xiv	xv	xvi	xvii	xviii	xix	xx
Part I: Essential management instruments and measures																					
1.1	Aquaculture policy																				
1.2	Aquaculture development plan																				
2.1	Access rights to land and water bodies																				
2.2	Registration of aquaculture farms and hatcheries																				
2.3	Zonation (area for aquaculture, or aquaculture systems or for species culture)																				
2.4	Carrying capacity (limits set on density)																				
2.5	Environmental assessment and monitoring																				
2.6	Effluents																				

↑ ... can contribute to ...

		Principle 1				Principle 2				Principle 3				Principle 4			Principle 5				
		Facilitating access to productive resources, finance and services	Connecting smallholders to markets	Encouraging diversification of production and income	Building producers' knowledge and develop their capacities	Enhancing soil health and restore land	Protecting water and manage scarcity	Mainstreaming biodiversity conservation and protect ecosystem functions	Reducing losses, encouraging reuse and recycling, and promoting sustainable consumption	Empowering people and fighting inequalities	Promoting secure tenure rights	Using social protection tools to enhance productivity and income	Improving nutrition and promote balanced diets	Preventing and protecting against shocks: enhancing resilience	Preparing for and responding to shocks	Addressing and adapting to climate change	Strengthening ecosystem resilience	Enhancing policy dialogue and coordination	Strengthening innovation systems	Adapting and improving investment and finance	Strengthening the enabling environment and reforming the institutional framework
		i	ii	iii	iv	v	vi	vii	viii	ix	x	xi	xii	xiii	xiv	xv	xvi	xvii	xviii	xix	xx
2.7	Feeds (environmental impact, quality, food safety issues)																				
2.8	Seeds (as environmental issue e.g. source –wild, hatchery)																				
2.9	Water abstraction																				
2.10	Use of alien species along the lines of FAO's or OIE's or CBD's provisions (including potential transboundary issues)																				
2.11	Movement (within country and across borders) of live animals along the lines of FAO or OIE																				
2.12	Impacts on biodiversity																				
2.13	Escapes																				

↑ ... can contribute to ...

		Principle 1				Principle 2				Principle 3				Principle 4			Principle 5				
		Facilitating access to productive resources, finance and services	Connecting smallholders to markets	Encouraging diversification of production and income	Building producers' knowledge and develop their capacities	Enhancing soil health and restore land	Protecting water and manage scarcity	Mainstreaming biodiversity conservation and protect ecosystem functions	Reducing losses, encouraging reuse and recycling, and promoting sustainable consumption	Empowering people and fighting inequalities	Promoting secure tenure rights	Using social protection tools to enhance productivity and income	Improving nutrition and promote balanced diets	Preventing and protecting against shocks: enhancing resilience	Preparing for and responding to shocks	Addressing and adapting to climate change	Strengthening ecosystem resilience	Enhancing policy dialogue and coordination	Strengthening innovation systems	Adapting and improving investment and finance	Strengthening the enabling environment and reforming the institutional framework
		i	ii	iii	iv	v	vi	vii	viii	ix	x	xi	xii	xiii	xiv	xv	xvi	xvii	xviii	xix	xx
2.1	Stocking and restocking																				
2.1	Food safety (along the lines of <i>Codex Alimentarius</i>)																				
2.1	Use of drugs, chemicals and other substances																				
2.1	Fish health management along the lines of FAO or OIE																				
Part 2: Support mechanisms that facilitate the implementation of the regulatory measures listed in part 1																					
3.1	Government monitoring, data collection and analysis system on aquaculture																				
3.2	Consultation with stakeholders in formulating the Aquaculture Policy and/or Aquaculture Development Plan																				

↑ ... can contribute to ...

		Principle 1				Principle 2				Principle 3			Principle 4			Principle 5					
		Facilitating access to productive resources, finance and services	Connecting smallholders to markets	Encouraging diversification of production and income	Building producers' knowledge and develop their capacities	Enhancing soil health and restore land	Protecting water and manage scarcity	Mainstreaming biodiversity conservation and protect ecosystem functions	Reducing losses, encouraging reuse and recycling, and promoting sustainable consumption	Empowering people and fighting inequalities	Promoting secure tenure rights	Using social protection tools to enhance productivity and income	Improving nutrition and promote balanced diets	Preventing and protecting against shocks: enhancing resilience	Preparing for and responding to shocks	Addressing and adapting to climate change	Strengthening ecosystem resilience	Enhancing policy dialogue and coordination	Strengthening innovation systems	Adapting and improving investment and finance	Strengthening the enabling environment and reforming the institutional framework
		i	ii	iii	iv	v	vi	vii	viii	ix	x	xi	xii	xiii	xiv	xv	xvi	xvii	xviii	xix	xx
3.3	Participation of farmers associations in sector development and management																				
3.4	Aquaculture is integrated in coastal development and management plans																				
3.5	Aquaculture is integrated in watershed management or land use development plans																				
3.6	Integration of aquaculture in community development planning																				

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... can contribute to ...

		Principle 1				Principle 2				Principle 3			Principle 4			Principle 5					
		Facilitating access to productive resources, finance and services	Connecting smallholders to markets	Encouraging diversification of production and income	Building producers' knowledge and develop their capacities	Enhancing soil health and restore land	Protecting water and manage scarcity	Mainstreaming biodiversity conservation and protect ecosystem functions	Reducing losses, encouraging reuse and recycling, and promoting sustainable consumption	Empowering people and fighting inequalities	Promoting secure tenure rights	Using social protection tools to enhance productivity and income	Improving nutrition and promote balanced diets	Preventing and protecting against shocks: enhancing resilience	Preparing for and responding to shocks	Addressing and adapting to climate change	Strengthening ecosystem resilience	Enhancing policy dialogue and coordination	Strengthening innovation systems	Adapting and improving investment and finance	Strengthening the enabling environment and reforming the institutional framework
		i	ii	iii	iv	v	vi	vii	viii	ix	x	xi	xii	xiii	xiv	xv	xvi	xvii	xviii	xix	xx
3.7	Ecosystems functions are considered in aquaculture planning and development (e.g. wildlife sanctuary, water quality improvement, recreational, as well as greenhouse gas mitigation, carbon sequestration)																				
3.8	There is an incentive system for farmers to restore or rehabilitate resources degraded by their aquaculture activities (e.g. mangrove, other forests, salt marshes, abandoned lands, polluted water bodies, degraded soil)																				

↑ ... can contribute to ...

		Principle 1				Principle 2				Principle 3				Principle 4			Principle 5				
		Facilitating access to productive resources, finance and services	Connecting smallholders to markets	Encouraging diversification of production and income	Building producers' knowledge and develop their capacities	Enhancing soil health and restore land	Protecting water and manage scarcity	Mainstreaming biodiversity conservation and protect ecosystem functions	Reducing losses, encouraging reuse and recycling, and promoting sustainable consumption	Empowering people and fighting inequalities	Promoting secure tenure rights	Using social protection tools to enhance productivity and income	Improving nutrition and promote balanced diets	Preventing and protecting against shocks: enhancing resilience	Preparing for and responding to shocks	Addressing and adapting to climate change	Strengthening ecosystem resilience	Enhancing policy dialogue and coordination	Strengthening innovation systems	Adapting and improving investment and finance	Strengthening the enabling environment and reforming the institutional framework
		i	ii	iii	iv	v	vi	vii	viii	ix	x	xi	xii	xiii	xiv	xv	xvi	xvii	xviii	xix	xx
3.9	Practices are adopted that lead to improvement in the sustainability of aquaculture farms (i.e. better management practices or BMPs, good aquaculture practices or GAPs, codes of practice, etc.)																				
3.10	Application of the polluter-pays principle																				
3.11	Investment in aquaculture research																				
3.12	Investment in aquaculture extension and training																				
3.13	Investment in infrastructure and facilities that support aquaculture development																				

↑
... can contribute to ...

		Principle 1				Principle 2				Principle 3			Principle 4			Principle 5					
		Facilitating access to productive resources, finance and services	Connecting smallholders to markets	Encouraging diversification of production and income	Building producers' knowledge and develop their capacities	Enhancing soil health and restore land	Protecting water and manage scarcity	Mainstreaming biodiversity conservation and protect ecosystem functions	Reducing losses, encouraging reuse and recycling, and promoting sustainable consumption	Empowering people and fighting inequalities	Promoting secure tenure rights	Using social protection tools to enhance productivity and income	Improving nutrition and promote balanced diets	Preventing and protecting against shocks: enhancing resilience	Preparing for and responding to shocks	Addressing and adapting to climate change	Strengthening ecosystem resilience	Enhancing policy dialogue and coordination	Strengthening innovation systems	Adapting and improving investment and finance	Strengthening the enabling environment and reforming the institutional framework
		i	ii	iii	iv	v	vi	vii	viii	ix	x	xi	xii	xiii	xiv	xv	xvi	xvii	xviii	xix	xx
4.5	Aquaculture farmers have access to commercial insurance																				
Part 4: The level/degree of capacity to support the measures in parts 1 to 3																					
5.1	Capacity of the national research system to provide knowledge, information, technology, advice to policy, planning and management.																				
5.2	Capacity of the extension systems to disseminate and utilize the outputs from the national or external research systems in support of aquaculture development																				
6.1	Health management																				

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↑ ... can contribute to ...

		Principle 1				Principle 2				Principle 3				Principle 4			Principle 5					
		Facilitating access to productive resources, finance and services	Connecting smallholders to markets	Encouraging diversification of production and income	Building producers' knowledge and develop their capacities	Enhancing soil health and restore land	Protecting water and manage scarcity	Mainstreaming biodiversity conservation and protect ecosystem functions	Reducing losses, encouraging reuse and recycling, and promoting sustainable consumption	Empowering people and fighting inequalities	Promoting secure tenure rights	Using social protection tools to enhance productivity and income	Improving nutrition and promote balanced diets	Preventing and protecting against shocks: enhancing resilience	Preparing for and responding to shocks	Addressing and adapting to climate change	Strengthening ecosystem resilience	Enhancing policy dialogue and coordination	Strengthening innovation systems	Adapting and improving investment and finance	Strengthening the enabling environment and reforming the institutional framework	
		i	ii	iii	iv	v	vi	vii	viii	ix	x	xi	xii	xiii	xiv	xv	xvi	xvii	xviii	xix	xx	
6.2	Environmental management																					
6.3	Food safety																					
6.4	Conflict management																					
6.5	Preparedness to respond to disasters																					
6.6	Preparedness to manage the risk impacts from climate change																					

Item 7: Suggested list of thematic modules, guidelines and needs for SAG

Thematic module ⁸⁷	FAO guidelines ⁸⁸	Useful references and toolkits ⁸⁹	Comments/Needs ⁹⁰	Principle ⁹¹
Contributing to Sustainable Development Goals				
Aquaculture and the 2030 Agenda	[30] Transforming food and agriculture to achieve the SDGs	[60] Guidelines for aquaculture management in the SADC region [62] Best Practices for Aquaculture development [63] Sustainable Development indicators in aquaculture [64] Sustainable development of Mediterranean aquaculture-Environment	Needs aquaculture-specific guidelines	ALL
Aquaculture and the CCRF		[60] Guidelines for aquaculture management in the SADC region [62] Best Practices for Aquaculture development [63] Sustainable development indicators in aquaculture [64] Sustainable development of Mediterranean aquaculture-Environment		ALL except
Poverty alleviation, hunger eradication and aquaculture	[23] Voluntary guidelines on the right to adequate food		[SDG] Not covered by existing guidelines	
Dealing with trade-offs between different SDGs in aquaculture	[30] Transforming food and agriculture to achieve the SDGs		Needs aquaculture-specific guidelines	ALL
Governing and planning aquaculture development				
Precautionary principle/ Precautionary approach	[TG 2] Precautionary approach to capture fisheries and species introductions [TG 5.3] Genetic resource management [TG 5.5] Use of wild fish as feed in aquaculture [TG 5.9] Development of aquatic genetic resources		[CCRF] Not covered by existing guidelines Still needs update	
Governance	[TG 5.7] Aquaculture governance and sector development [TG 5.9] Development of aquatic genetic resources [30] Transforming food and agriculture to achieve the SDGs		No need to update	5

⁸⁷ The current list has been developed by considering the 45 provisions of the CCRF (Table 2), the gap analysis between CCRF requirements and existing guidance made by Barg (2013, paragraph 9 of the working document) and the gap analysis between 2030 Agenda's SDG and existing guidance made by FAO (2017, paragraph 12 of the working document).

⁸⁸ This includes the documents produced by FAO (e.g. Annex 1, FAO technical papers etc.), by FAO and its partners (e.g. FAO and World Bank etc.) or recommended in official FAO documents (e.g. OIE). References in square brackets correspond to Annex 1 [TG number] or Annex 2 [number].

⁸⁹ This includes all other documents.

⁹⁰ E.g. "Up-to-date", "Needs to be developed", "Needs to be improved in some areas (to be specified)" etc. [CCRF] refers to gaps identified by Barg (2013), [SDG] refers to gaps identified by FAO (2017) and [Update] refers to changes occurred after the two previous publications.

⁹¹ In the FAO Common Vision:

- Principle 1: Increasing productivity, employment and value addition in aquaculture
- Principle 2: Protecting and enhancing natural resources
- Principle 3: Improving livelihoods and fostering inclusive economic growth
- Principle 4: Enhancing the resilience of people, communities and ecosystems
- Principle 5: Adapting governance to new challenges

Thematic module ⁸⁷	FAO guidelines ⁸⁸	Useful references and toolkits ⁸⁹	Comments/Needs ⁹⁰	Principle ⁹¹
Stakeholder participation and empowerment	[TG 5] Aquaculture development [TG 5.4] Ecosystem approach to aquaculture [TG 5.7] Aquaculture governance and sector development [TG 5.9] Development of aquatic genetic resources [30] Transforming food and agriculture to achieve the SDGs		[SDG] Not covered by guidelines [Update] Satisfactorily covered by [TG 5.7]	
Aquaculture planning and policy	[TG 5] Aquaculture development [TG 5.4] Ecosystem approach to aquaculture [TG 5.6] Use of wild resources for capture-based aquaculture [TG 5.7] Aquaculture governance and sector development [14] Aquaculture planning		[SDG] Adaptive planning not covered by existing guidelines	
Spatial planning and zoning	[TG 5.4] Ecosystem approach to aquaculture [1] [2] [3] [4] Aquaculture zoning, site selection and area management	[48] Atlas of aquaculture potential in coastal Kenya		
Enabling environment: ✓ Infrastructures and facilities ✓ Equipment ✓ Financing ✓ Research ✓ Extension ✓ Capacity development ✓ Networks	[TG 4] Fisheries management (research) [TG 5] Aquaculture development [TG 5.2] Health management for responsible movement of live aquatic animals (research) [TG 5.4] Ecosystem approach to aquaculture [TG 5.7] Aquaculture governance and sector development (research) [TG 5.9] Development of aquatic genetic resources [TG 7] Responsible fish utilization (research) [TG 12] Information and knowledge sharing [16] Responsible investment in agriculture and food systems	[26] Introducing Farm Business School		
Legal and administrative framework	[TG 5] Aquaculture development	[52] Establishing legal, institutional and regulatory framework for aquaculture development and management		
Tools and instruments to incentive, control and manage aquaculture development	[TG 5.4] Ecosystem approach to aquaculture [TG 5.7] Aquaculture governance and sector development		Should be developed to include all the administrative (registration), financial, regulatory etc. instruments and tools, and not just the Polluter-pays principle	
Specific capacity of State	[TG 5.9] Development of aquatic genetic resources		[SDG] Capacity development of institutions not covered by existing guidelines	
Resource sharing and international/transboundary cooperation	[TG 5] Aquaculture development [TG 7] Responsible fish utilization [TG 11] Responsible fish trade [TG 12] Information and knowledge sharing			
Monitoring, data and statistics	[TG 5] Aquaculture development [TG 5.4] Ecosystem approach to aquaculture [TG 5.5] Use of wild fish as feed in aquaculture [TG 5.6] Use of wild resources for capture-based aquaculture [TG 5.7] Aquaculture governance and sector development [TG 5.9] Development of aquatic genetic resources [TG 11] Responsible fish trade	[31] Indicators to monitor sustainable aquaculture in the Mediterranean and Black Sea [34] Indicators for the sustainable development of finfish Mediterranean aquaculture [35] GFCM consultation on the application of art. 9 of the CCRF [63] Sustainable Development indicators in aquaculture		

Thematic module ⁸⁷	FAO guidelines ⁸⁸	Useful references and toolkits ⁸⁹	Comments/Needs ⁹⁰	Principle ⁹¹
Leaving no-one behind				
Equity, human rights, access and opportunity for all	[TG 5.9] Development of aquatic genetic resources [TG 7] Responsible fish utilization [57] Guidance for responsible agricultural supply chains [58] UN guiding principles on business and human rights		[SDG] Not covered by existing guidelines	
Gender in aquaculture			[CCRF] Not covered by existing guidelines Needs to be developed	
Youth employment in aquaculture			Needs to be developed	
Capacity development	[TG 5] Aquaculture development [TG 5.9] Development of aquatic genetic resources	[26] Introducing Farm Business School		
Preventing conflicts and building collectively				
Access rights to land and water bodies	[TG 5] Aquaculture development [20] Voluntary guidelines on the responsible tenure of land, fisheries and forests	[40] Land and water – the rights interface		
Local communities and livelihoods	[TG 4] Fisheries management (socio-economic dimensions) [TG 5] Aquaculture development [TG 5.4] Ecosystem approach to aquaculture		Needs to be developed	
Collective management of common resources	[TG 4] Fisheries management (socio-economic dimensions) [TG 5] Aquaculture development [TG 5.6] Use of wild resources for capture-based aquaculture			
Conflict resolution schemes	[TG 5.4] Ecosystem approach to aquaculture		Needs to be developed	
Farmers' collaboration, clusters and professional associations	[TG 5] Aquaculture development [TG 5.4] Ecosystem approach to aquaculture	[26] Introducing Farm Business School [46] Aquaculture farmers organizations and cluster management		
Aquaculture as a business				
Business management	[TG 5] Aquaculture development [12] Doing aquaculture as a business for small- and medium-scale farmers	[26] Introducing Farm Business School (training) [27] Doing aquaculture as a business (training) [39] Commercial aquaculture (training) [67] Microfinance in fisheries and aquaculture	Includes record keeping, accounting, investment, cash flow management, credit, capacity development	
Risk management and insurance	[TG 5] Aquaculture development [TG 5.3] Genetic resource management [10] Risk analysis in aquaculture	[28] Aquaculture insurance in China [49] Aquaculture insurance [66] HACCP in aquafarms		
Site selection	[TG 5] Aquaculture development [TG 5.1] Good aquaculture feed manufacturing practice [1] [2] [3] [4] Aquaculture zoning, site selection and area management		[SDG] Not covered by existing guidelines	
Environmental impact assessment and monitoring	[TG 5] Aquaculture development [TG 5.1] Good aquaculture feed manufacturing practice [TG 5.4] Ecosystem approach to aquaculture [24] EIA and monitoring in aquaculture	[55] EIA and monitoring in salmon aquaculture [64] Sustainable development of Mediterranean aquaculture-Environment	[SDG] Not covered by existing guidelines	
System construction, engineering, maintenance or rehabilitation	[TG 5.1] Good aquaculture feed manufacturing practice			
Storage and stock management (feeds, inputs, equipment etc.)	[TG 5.1] Good aquaculture feed manufacturing practice			

Thematic module ⁸⁷	FAO guidelines ⁸⁸	Useful references and toolkits ⁸⁹	Comments/Needs ⁹⁰	Principle ⁹¹
Better Management Practices and codes of practices	[TG 5.4] Ecosystem approach to aquaculture	[65] Sustainable development of Mediterranean aquaculture-Responsible practices and certification		
Human and labour rights Decent work and acceptable working conditions	[TG 5.1] Good aquaculture feed manufacturing practice [41] Protocol to the Forced Labour Convention [42] Fundamental principles and rights at work [43] Guide to International labour standard [44] Introduction to International labour standard [45] Multinational enterprises and social policy [56] Guidelines for multinational enterprises [58] UN guiding principles on business and human rights		[CCRF] Not covered by existing guidelines [SDG] Not covered by existing guidelines	
Corporate social responsibility			[CCRF] Not covered by existing guidelines	
Biodiversity and genetic resources				
Biodiversity, habitat, ecosystems functions and aquaculture	[TG 5] Aquaculture development [TG 5.4] Ecosystem approach to aquaculture	[19] Valuing coastal ecosystems [47] Habitat rehabilitation for inland fisheries [64] Sustainable development of Mediterranean aquaculture-Environment		
Genetic resource sharing and conservation	[TG 5] Aquaculture development [TG 5.3] Genetic resource management [TG 5.9] Development of aquatic genetic resources		[SDG] Not covered by existing guidelines [Update] Covered by [TG 5.9]	
Species introduction and transfers for aquaculture purposes	[TG 2] Precautionary approach to capture fisheries and species introductions [TG 5] Aquaculture development [TG 5.2] Health management for responsible movement of live aquatic animals [TG 5.3] Genetic resource management [TG 5.9] Development of aquatic genetic resources [5] Risk analysis for live aquatic animal movements [6] Quarantine [7] Responsible use of alien species [8] Responsible use of alien species [21] Responsible use of alien and GMO aquatic species in Africa [22] Control and responsible use of alien species [62] OIE aquatic animal health code	[18] Tilapia as alien aquatics	[CCRF] Not covered by existing guidelines	
Domestication and endangered species	[TG 5] Aquaculture development			
Broodstock management and genetic improvement for aquaculture	[TG 5] Aquaculture development [TG 5.3] Genetic resource management [TG 5.9] Development of aquatic genetic resources			
Use of GMOs in aquaculture	[TG 5] Aquaculture development [TG 5.3] Genetic resource management [TG 5.9] Development of aquatic genetic resources [21] Responsible use of alien and GMO aquatic species in Africa			
Polyploidy, hybridization and other genetic manipulations (YY etc.)	[TG 5.3] Genetic resource management [TG 5.9] Development of aquatic genetic resources			

Thematic module ⁸⁷	FAO guidelines ⁸⁸	Useful references and toolkits ⁸⁹	Comments/Needs ⁹⁰	Principle ⁹¹
Banking aquatic genetic resources	[TG 5.3] Genetic resource management			
Efficient use of resources and recycling				
Resource use efficiency and waste	[TG 5] Aquaculture development		[SDG] Resource use efficiency and waste not covered by existing guidelines	
Nature of environmental capacity or limits to growth			[SDG] Not covered by existing guidelines	
Carrying capacity	[TG 5.4] Ecosystem approach to aquaculture [9] Carrying capacity models		Needs to be updated?	
Wild and farmed seeds	[TG 5] Aquaculture development [TG 5.4] Ecosystem approach to aquaculture		[SDG] Resource use efficiency and waste not covered by existing guidelines	
Stocking density, polyculture, fertilization and natural productivity	[TG 5] Aquaculture development	[38] Feeds and fertilizers for sustainable aquaculture		
Unwanted organisms (plants, fish etc.) management				
Feeds (natural, homemade and commercial)	[TG 5.4] Ecosystem approach to aquaculture [36] On-farm feeding and feed management	[37] Improving FCR [38] Feeds and fertilizers for sustainable aquaculture	[SDG] Resource use efficiency and waste not covered by existing guidelines	
Use of fish and fishmeal in aquaculture feed	[TG 5.4] Ecosystem approach to aquaculture [TG 5.5] Use of wild fish as feed in aquaculture [TG 7] Responsible fish utilization (bycatch)		[CCRF] Locally developed feeds not covered [SDG] Resource use efficiency and waste not covered by existing guidelines Issues with the use of other human local food as aquaculture feed ingredients (e.g. maize etc.)?	
Water abstraction and conservation			[SDG] Resource use efficiency and waste not covered by existing guidelines	
Water quality management	[TG 5.4] Ecosystem approach to aquaculture			
Effluent and wastes management/disposal	[TG 5] Aquaculture development [TG 5.4] Ecosystem approach to aquaculture		[SDG] Wastes not covered by existing guidelines	
Wastewater use	[TG 5] Aquaculture development [TG 5.4] Ecosystem approach to aquaculture [61] Wastewater and excreta use in aquaculture	[33] Monitoring the ecological effects of coastal aquaculture wastes		
Energy			[SDG] Resource use efficiency and waste not covered by existing guidelines	
Preventing losses and wastes				
Escapes	[TG 2] Precautionary approach to capture fisheries and species introductions [TG 5.4] Ecosystem approach to aquaculture			
Theft prevention				
Predator control in aquaculture	[TG 5] Aquaculture development			
Reducing losses and wastes	[TG 7] Responsible fish utilization		[SDG] Resource use efficiency and waste not covered by existing guidelines	
Animal well-being and stress				
Artificial lighting, heating and rearing conditions in aquaculture				
Live aquatic animal transport				
Use of drugs, chemicals and other substances	[TG 5] Aquaculture development [TG 5.4] Ecosystem approach to aquaculture		[CCRF] Not completely covered by existing guidelines Including hormones, AMR etc.	

Thematic module ⁸⁷	FAO guidelines ⁸⁸	Useful references and toolkits ⁸⁹	Comments/Needs ⁹⁰	Principle ⁹¹
Biosecurity and aquatic health management	[TG 5] Aquaculture development [59] OIE aquatic animal health code			
Slaughtering				
Specific technologies				
Stock enhancement and culture-based fisheries	[TG 5] Aquaculture development [TG 5.3] Genetic resource management [TG 5.4] Ecosystem approach to aquaculture		[CCRF] Not covered by existing guidelines	
Capture-based aquaculture	[TG 5.6] Use of wild resources for capture-based aquaculture			
Aquaponics	[50] Small-scale aquaponic food production		No need to update	
Inland mariculture				
Integrated agriculture-aquaculture				
Aquaculture in altitude			Many tropical areas where aquaculture is practiced are located in altitude	
Urban aquaculture				
Offshore and high-seas aquaculture				
Integrated approaches and synergies				
Integration and complexity			[SDG] Not covered by existing guidelines	
Collective management of shared resources	[TG 5.6] Use of wild resources for capture-based aquaculture		[SDG] Not covered by existing guidelines	
Aquaculture in integrated coastal management	[TG 3] Integration of fisheries into coastal area management [32] GESAMP (2001) [1] [2] [3] [4] Aquaculture zoning, site selection and area management		Needs update?	
Aquaculture in watershed management or land use development plans	[TG 5.4] Ecosystem approach to aquaculture [1] [2] [3] [4] Aquaculture zoning, site selection and area management			
Aquaculture in community development planning	[TG 5.4] Ecosystem approach to aquaculture			
Ecosystem Approach to Aquaculture	[TG 5.4] Ecosystem approach to aquaculture [1] [2] [3] [4] Aquaculture zoning, site selection and area management	[13] The Ecosystem Approach to Aquaculture ten years on [51] Aquaculture-fisheries interaction and EAA		
FAO Blue Growth Initiative		[13] The Ecosystem Approach to Aquaculture ten years on [29] The FAO Blue Growth Initiative in Eastern Africa		
Agroecology in aquaculture				
Climate-smart aquaculture				
Aquaculture value chains, consumers, markets and social acceptability				
Communicating aquaculture	[TG 5.3] Genetic resource management [TG 5.6] Use of wild resources for capture-based aquaculture [TG 5.9] Development of aquatic genetic resources		[CCRF] Not covered by existing guidelines	

Thematic module ⁸⁷	FAO guidelines ⁸⁸	Useful references and toolkits ⁸⁹	Comments/Needs ⁹⁰	Principle ⁹¹
Marketing of aquaculture products (live, dead, processed)				
Labelling of inputs used in aquaculture	[TG 5] Aquaculture development			
On-farm processing in aquaculture				
Fair and productive aquaculture value chains	[TG 5.4] Ecosystem approach to aquaculture [TG 7] Responsible fish utilization [TG 11] Responsible fish trade [57] Guidance for responsible agricultural supply chains		[SDG] Not covered by existing guidelines	
Nutritional value of aquaculture products				
Traceability, food safety and consumer protection against frauds in aquaculture	[TG 5] Aquaculture development [TG 5.6] Use of wild resources for capture-based aquaculture [TG 7] Responsible fish utilization [17] Codex alimentarius	[66] HACCP in aquafarms		
Quality certification and voluntary schemes	[TG 5.1] Good aquaculture feed manufacturing practice [TG 5.4] Ecosystem approach to aquaculture [TG 7] Responsible fish utilization [25] Technical guidelines on aquaculture certification	[53] Private standards and certification in fisheries and aquaculture [65] Sustainable development of Mediterranean aquaculture-Responsible practices and certification		
Global trade requirements and aquaculture, especially for small-scale producers	[TG 7] Responsible fish utilization [TG 11] Responsible fish trade			
Resilience and emergencies				
Emergencies and early warning systems	[1] [2] [3] [4] Aquaculture zoning, site selection and area management [11] Damage and needs assessment [12] Disaster response and preparedness [15] Emergency response guidance	[54] Disaster response and risk management	[CCRF] Not covered by existing guidelines NOW??	
Assistance schemes				
Resilience in aquaculture			[SDG] Not covered by existing guidelines	
Climate change and aquaculture				