



联合国  
粮食及  
农业组织

Food and Agriculture  
Organization of the  
United Nations

Organisation des Nations  
Unies pour l'alimentation  
et l'agriculture

Продовольственная и  
сельскохозяйственная организация  
Объединенных Наций

Organización de las  
Naciones Unidas para la  
Alimentación y la Agricultura

منظمة  
الغذية والزراعة  
للأمم المتحدة

E

# COMMITTEE ON FISHERIES

## Thirty-fourth Session

1–5 February 2021

## STATE OF THE WORLD FISHERIES AND AQUACULTURE: INFLUENCING ACTION FOR SUSTAINABLE FISHERIES AND AQUACULTURE

### Executive Summary

This paper provides a summary of the 2020 edition of the State of the World Fisheries and Aquaculture (the SOFIA 2020 publication), including an update on the outreach and influence of the SOFIA publication since the last paper presented to the FAO Committee on Fisheries (COFI) in 2018. It reviews the role of the biennial flagship publication *The State of World Fisheries and Aquaculture* (SOFIA) within the global framework of the 2030 Agenda for Sustainable Development; in supporting the work of decision-makers in general and that of FAO in particular. The paper also draws attention to some specific messages in SOFIA 2020 concerning current status, recent trends and prospects in the fisheries and aquaculture sectors.

### Suggested action by the Committee

#### The Committee is invited to:

- underline the importance of FAO's role in reporting on the state of world fisheries and aquaculture, and advise on how COFI can best contribute to this and benefit from it;
- underline the relevance of SOFIA and advise on its role in the framework of the 2030 Agenda for Sustainable Development;
- note the timely release of SOFIA, which for future editions would be much facilitated if deadlines for submission of fishery statistics are respected by all countries, and provide advice on how the publication can be improved in future editions.

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

Mr Marc Taconet  
Senior Fishery Officer  
Email: [Marc.Taconet@fao.org](mailto:Marc.Taconet@fao.org)

## I. INTRODUCTION

1. The State of World Fisheries and Aquaculture (SOFIA) publication is usually launched shortly before or at the COFI opening Session. Recognizing the relevance of the subject of the state of world fisheries and aquaculture to the work of COFI, it was first decided to include a dedicated item in the Agenda for the Thirtieth Session of COFI in 2012.
2. Since 2015 when the 2030 Agenda for Sustainable Development was adopted with the 17 Sustainable Development Goals (SDGs), FAO and its Members are firmly engaged to achieving these goals, some of which are highly relevant to fisheries and aquaculture. Such engagement calls for new approaches and combinations in the ways policies, programmes, partnerships and investments are pulled together to achieve the common goals.
3. The purpose of the present document is to: (i) consider the role of SOFIA in supporting the work of decision-makers in general and that of FAO in particular within the global framework set by the 2030 Agenda; and (ii) present key information in SOFIA 2020 concerning the current status, recent trends and prospects in the fisheries and aquaculture sectors.
4. SOFIA is intended to facilitate a comprehensive, objective and global view of the fisheries and aquaculture sectors, particularly of emerging issues. SOFIA 2020 is the fourteenth edition in the biennial series, which started in 1994.

## II. ROLE AND INFLUENCE OF SOFIA PUBLICATION

5. Since the Thirtieth Session of COFI the relevance, quality and influence effectiveness of SOFIA publications at the science–policy interface were reported through specific studies<sup>12</sup> and evaluations conducted by FAO and confirmed by the Committee, and described in a recent publication<sup>3</sup>. Indicators have pointed to a clear and growing interest in SOFIA as measured by web traffic as well as media and citation analysis.
6. The user survey on SOFIA that was conducted through an on-line questionnaire in the second half of 2018 revealed that the World review (Part 1) is still attracting the most attention, mainly regarding the global trends produced from FAO's data and statistics, the status of fishery resources and questions related to trade. It also evidenced a strong interest regarding the fight against illegal, unreported and unregulated (IUU) fishing as analysed in Part 2. The overall consensus was that it was technically sound, accurate and credible and that it was very useful in complementing other resources.
7. Generally speaking, media coverage has grown over the last issues. SOFIA 2018 was launched with a press release and radio interviews on UN radio, distributed to radio networks worldwide and pitched widely to news outlets. SOFIA's launch resulted in various requests for interviews from major news outlets, including The Guardian, BBC, El Pais, and Reuters. Social media was utilized to promote the launch, and infographics were created to amplify messages of SOFIA to wider audiences. SOFIA 2018 was featured on the FAO home page and on regional office homepages, and the first SOFIA digital report, available in three languages, was instrumental in reaching even wider audiences.

---

<sup>1</sup> In-depth analysis on the impact of SOFIA, in partnership with Dalhousie University of Halifax Nova Scotia, as part of a project under the 'Environmental Information: Use and Influence' initiative

<sup>2</sup> Specific assessment conducted in 2014-15 by FAO's Office of Evaluation, within a broader overall evaluation of FAO flagship information products, assessed the extent to which SOFIA is achieving its intended outcomes

<sup>3</sup> Ababouch, L., Taconet, M., Plummer, J., Garibaldi L. & Vannuccini, S. 2016. Bridging the science–policy divide to promote fisheries knowledge for all: the case of the Food and Agriculture Organization of the United Nations. In B.H. MacDonald, S.S. Soomai, E.M. De Santo & P.G. Wells, eds. *Science, information and policy interface for effective coastal and ocean management*, pp. 389–417. Boca Raton, Florida, USA, CRC Press.

8. SOFIA remains regularly quoted in workshops, meetings, scientific papers, press articles and media outlets, as well as by partner international organizations. According to the Web of Science Core Collection, SOFIA 2018 has been cited 709 times in other scientific publications since its issuance.

9. Web traffic has continuously increased with every new issue, and still does: data from FAO's Document Repository regarding SOFIA 2018 shows an average of 25 086 views per month (all languages) over the period January-December 2019, a significant increase of 11 percent compared to the 22 653 views per month (all languages) of SOFIA 2016 over period July 2016 until December 2017, and 21 247 views per month for SOFIA 2014 over period (July 2014 – April 2016), based on comparable metrics. During 2019, SOFIA 2018 has reached a total number of views reaching 301 035, complemented with 24 497 views for the booklet and flyer of interest to a broader audience. In addition, the SOFIA digital report available for the first time in 3 languages under [www.fao.org/state-of-fisheries-aquaculture](http://www.fao.org/state-of-fisheries-aquaculture) was consulted by 69 292 users since the SOFIA launch. With these numbers, and as per previous editions, SOFIA 2018 remains once again the most downloaded FAO flagship publication.

10. Based on feedback received from internal and external reviewers on the precedent edition, including the user survey mentioned in paragraph 6, SOFIA 2020 was restructured into 3 major Parts. Part 1, the World Review, retains the format and process of previous years that presents global sectoral trends based on the Departmental statistics database. Part 2 focusses on sustainability issues that came to the fore in 2019–2020, including issues related to Sustainable Development Goal/SDG14 and its indicators for which FAO is the “custodian” United Nations agency. Part 3 looks forward covering projections (outlook) and emerging issues.

11. SOFIA 2020 is the product of a 15-months process that began in March 2019 with the formation of an editorial board, supervised by a core executive team chaired by the Director of the FAO Fisheries Division (NFI) and comprising staff from NFI and from the FAO Office of Communications. The editorial board met at regular intervals to plan the structure and content of SOFIA 2020, review progress and address issues. SOFIA 2020 was also reviewed by two independent experts.

### III. HIGHLIGHTS OF GLOBAL TRENDS IN SOFIA 2020

12. Global fish<sup>4</sup> production reached about 179 million tonnes in 2018, of which 82 million tonnes came from aquaculture production. Of the total, 156 million tonnes were used for human consumption, equivalent to an estimated annual supply of 20.5 kg per capita. The remaining 22 million tonnes were destined for non-food uses, mainly to produce fishmeal and fish oil (18 million tonnes). Aquaculture accounted for 46 percent of the total production and 52 percent of fish for human consumption.

13. Global capture fisheries production in 2018 reached a record 96.4 million tonnes, an increase of 5.4 percent from the average of the previous three years. The top seven producing countries accounted for almost 50 percent of total captures and the top 20 producing countries accounted for about 74 percent of the total capture fisheries production.

14. The increase was driven by marine capture fisheries, which increased from 81.2 million tonnes in 2017 to 84.4 million tonnes in 2018, although still below the all-time high of 86.4 million tonnes in 1996. Catches of anchoveta by Peru and Chile accounted for most of the increase in catches in 2018, following relatively low catches for this species in recent years, making it the top species, at over 7.0 million tonnes. Alaska pollock was second, at 3.4 million tonnes, while skipjack tuna ranked third for the ninth consecutive year, at 3.2 million tonnes. Finfish represented 85 percent of total capture production, with small pelagics as the main group, followed by gadiformes and tuna and tuna-like species.

---

<sup>4</sup> Unless otherwise specified, throughout this publication, the term “fish” indicates fish, crustaceans, molluscs and other aquatic animals, but excludes aquatic mammals, reptiles, seaweeds and other aquatic plants.

15. Catches from inland fisheries were at their highest ever at 12.0 million tonnes, accounting for 12.5 percent of total capture fisheries production in 2018. However, this continuously rising trend in inland fisheries production may be misleading, as the increase in catches can partially be attributed to improved reporting and assessment at the country level. Sixteen countries produced more than 80 percent of the total inland catch, with Asia accounting for two-thirds of global inland production since the mid-2000s. Inland catches continue to be important for food security in Africa, which accounts for 25 percent of global inland fisheries catches.

16. In 2018, world aquaculture fish production reached 82.1 million tonnes and 32.4 million tonnes of aquatic algae, bringing the total to an all-time high of 114.5 million tonnes. Looking at fish farming; 89 percent of the global total in volume terms in the last 20 years originates in Asia. China has produced more farmed aquatic food than the rest of the world combined since 1991, although its share in world aquaculture production declined from 59.9 percent in 1995 to 57.9 percent in 2018.

17. In 2018, aquaculture fish production was dominated by finfish (54.3 million tonnes – 47 million tonnes from inland aquaculture and 7.3 million tonnes from marine and coastal aquaculture), molluscs, mainly bivalves (17.7 million tonnes), and crustaceans (9.4 million tonnes). Fed aquaculture (57 million tonnes) has outpaced non-fed aquaculture, the latter accounting for 30.5 percent of total aquaculture production in 2018 compared with 43.9 percent in 2000.

18. The contribution of world aquaculture to global fish production reached 46.0 percent in 2018, up from 25.7 percent in 2000. At the regional level, aquaculture accounted for 42.0 percent of total fish production in Asia (excluding China), 17.9 percent in Africa, 17.0 percent in Europe, 15.7 percent in the Americas and 12.7 percent in Oceania.

19. Inland aquaculture produced most farmed fish (51.3 million tonnes, or 62.5 percent of the world total, compared with 57.7 percent in 2000). The share of inland finfish production decreased gradually from 97.2 percent in 2000 to 91.5 percent (47 million tonnes) in 2018, while production of other species groups increased, particularly through freshwater crustacean farming in Asia, including that of shrimps, crayfish and crabs.

20. Global food fish consumption increased at an average annual rate of 3.1 percent from 1961 to 2017, a rate almost twice that of annual world population growth (1.6 percent) for the same period, and higher than that of all other animal protein foods (meat, dairy, milk, etc.). In per capita terms, food fish consumption increased from 9.0 kg (live weight equivalent) in 1961 to 20.5 kg in 2018, by about 1.5 percent per year.

21. In 2018, an estimated 59.51 million people were engaged (on a full-time, part-time or occasional basis) in the primary sector of fisheries and aquaculture. In total, around 20.53 million people were employed in aquaculture and 38.98 million in fisheries, a slight increase from 2016. Women accounted for 14 percent of the total, with shares of 19 percent in aquaculture and 12 percent in capture fisheries. Most are small-scale, artisanal fishers and aquaculture workers, mainly in developing countries. The highest numbers of workers are in Asia (85 percent), followed by Africa (9 percent), the Americas (4 percent), and Europe and Oceania (1 percent each). When post-harvest operations data are included, it is estimated that one in two workers in the sector is a woman.

22. The total number of fishing vessels in 2018 was estimated at 4.5 million, a 2.8 percent decrease from 2016. Asia still had the largest fishing fleet, estimated at 3.1 million vessels, or 69 percent of the total, in 2018. Africa's vessels represented 20 percent of the global fleet. The global total of motorized vessels remained steady at 2.86 million vessels, or 63 percent of the total fleet, with Asia having almost 75 percent (2.1 million motorized vessels). This steadiness masks various regional trends, including decreases from year 2000 in Europe and 2013 in China due to efforts to reduce fleet sizes. Most (86 percent) of these motorized vessels were less than 12 meters Length Overall (LOA). Worldwide, fishing vessels of at least 24 m LOA were estimated at about 67 800 in 2018.

23. Based on FAO's monitoring of assessed marine fish stocks, the proportion of fish stocks that are within biologically sustainable levels decreased from 90 percent in 1974 to 65.8 percent in 2017 (a 1.1

percent decrease since 2015), with 59.6 percent classified as being maximally sustainably fished stocks and 6.2 percent underfished stocks. The maximally sustainably fished stocks decreased from 50.8 percent in 1974 to 42.6 in 1989, and then increased to 59.6 percent in 2017, partly reflecting improved implementation of management measures. In contrast, the percentage of stocks fished at biologically unsustainable levels increased from 10 percent in 1974 to 34.2 percent in 2017. In terms of landings, it is estimated that 78.7 percent of current marine fish landings come from biologically sustainable stocks.

24. In 2017, among FAO's Major Fishing Areas, the Mediterranean and Black Sea had the highest percentage (62.5 percent) of stocks fished at unsustainable levels, followed by the Southeast Pacific (54.5 percent) and Southwest Atlantic (53.3 percent). In contrast, the Eastern Central Pacific, Southwest Pacific, Northeast Pacific and Western Central Pacific had the lowest proportion (13–22 percent) of stocks fished at biologically unsustainable levels. Other areas varied between 21 percent and 44 percent in 2017. In general, it is becoming increasingly clear that intensively managed fisheries have seen decreases in average fishing pressure and increases in average stock biomass, with many reaching or maintaining biologically sustainable levels, while fisheries with less-developed management systems are in poor shape. This uneven progress highlights an urgent need to re-adapt and replicate successful policies and measures in the light of the realities of specific fisheries, and to focus on creating mechanisms that can effectively develop and implement policy and regulations in fisheries with poor management.

25. In 2018, about 88 percent (156 million tonnes) of world fish production was utilized for direct human consumption, as compared to 67 percent in the 1960s. The remaining 12 percent (22 million tonnes) was used for non-food purposes, of which 82 percent (or 18 million tonnes) was used to produce fishmeal and fish oil. Live, fresh or chilled fish still represented the largest share (44 percent) of fish utilized for direct human consumption, followed by frozen (35 percent), prepared and preserved fish (11 percent) and cured fish at 10 percent.

26. Fish and fishery products remain some of the most traded food commodities in the world. In 2018, 67 million tonnes, or 38 percent of total fish production, were traded internationally. Following a sharp decline in 2015, trade recovered subsequently in 2016, 2017 and 2018, with respective annual growth rates of 7 percent, 9 percent and 5 percent in value terms. Overall, the value of global fish exports increased from USD 7.8 billion in 1976 to peak at USD 164 billion in 2018, at an annual growth rate of 8 percent in nominal terms and 4 percent in real terms (adjusted for inflation). Over the same period, global exports in quantity increased at an annual growth rate of 3 percent, from 17.3 million tonnes.

#### **IV. HIGHLIGHTS ON PARTS 2 AND 3**

27. Part 2 named “Sustainability in Action” focusses on sustainability issues that came to the fore in 2019–2020, including issues related to Sustainable Development Goal (SDG) 14 and its indicators for which FAO is the “custodian” United Nations agency. It opens with a special section marking the twenty-fifth anniversary of the Code of Conduct for Responsible Fisheries (the Code) and reporting on the progress made since the Code's adoption in 1995. Other sections cover various aspects of fisheries and aquaculture sustainability, from assessing, monitoring and reporting to securing, policy development and implementation. The latter is considered within the overall context of mainstreaming biodiversity in fisheries and aquaculture, climate change mitigation and adaptation strategies and food and nutrition security policies.

28. Part 3 ‘Outlook and emerging issues’ provides modelled projections and prospective trends of the future of fisheries and aquaculture up to 2030, including the main issues and uncertainties which might affect the medium-term outlook. It also features an ongoing study for illuminating hidden (unreported) harvests, new technologies and practices that can improve significantly the ways in which we can generate, interpret and communicate fisheries data and sustainability issues, The Progressive Management Pathway for Improving Aquaculture Biosecurity and the main findings and recommendations of the 2020 FAO International Symposium on Fisheries Sustainability.

## **V. ADDENDUM ON COVID-19**

29. While the 2020 edition of The State of World Fisheries and Aquaculture was nearly completed, the coronavirus disease (COVID-19) pandemic spread around the world and emerged as one of the greatest challenges to be faced since the creation of FAO. Fisheries and aquaculture being one of the sectors most impacted by the pandemic, an addendum on COVID-19 has been prepared with the intention to summarize the rapidly evolving impacts and to provide a baseline for interventions and policy advice.