

**FAO INPUTS IN RELATION TO RESOLUTION A/RES/69/245  
CONCERNING “OCEANS AND THE LAW OF THE SEA”  
FOR THE REPORT OF THE SECRETARY-GENERAL TO THE SEVENTIETH SESSION OF THE  
UNITED NATIONS GENERAL ASSEMBLY**

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suitability of geographical locations for aquaculture. Climate-related physical and chemical changes are linked to yet growing carbon dioxide emissions, which are being absorbed in large part by the aquatic systems and trigger substantial shifts of aquatic ecosystems and related services important for food security and livelihoods around the globe.

Climate-related changes that affect ecological functions and the frequency, intensity and location of extreme weather events include changes in

intensity of weather events. One must note that many fishing and coastal communities already subsist in precarious and vulnerable conditions because of poverty and rural underdevelopment, with their well-being often undermined by overexploitation of fishery resources and degraded ecosystems. As the vulnerability of fisheries and fishing communities depends not only on their exposure and sensitivity to change, but also on the often lacking ability of individuals or systems to anticipate and adapt, these communities tend to be among the most vulnerable.

The broader development and food security threats of climate change are increasingly well recognized and are now a major priority for local, national and international action. The issues and implications relating to fisheries and aquaculture in general and for coastal and riparian communities in particular, are enormous and yet poorly identified, ranging from distributional shifts, productivity and seasonality changes, to habitat restructuring. The sector, and the aquatic environments on which it depends, also have potentially important roles in greenhouse gas emission, management and mitigation, with significant issues and impacts of fuel and energy use, and major implications in 'blue carbon' management and its global ecosystem value. Though often overlooked or neglected amidst broader development concerns, the fisheries and aquaculture sectors have unique issues and vulnerabilities with respect to climate change, and these require specific and well considered responses.

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Special Report on climate change and oceans and the cryosphere (SROCC) and the IPCC Special Report on Climate Change, Land Use and Food Security.

To support the downscaling of knowledge and planning within the sector, thirteen regional or sub-regional workshops<sup>7</sup> were organized around the globe in Africa<sup>8</sup>, Latin America<sup>9</sup>, Benguela Current<sup>10</sup>, Pacific SIDS<sup>11</sup>, Caribbean<sup>12</sup>, Lake Chad Basin<sup>13</sup>, APFIC region<sup>14</sup>, Near East/North Africa<sup>15</sup> as well as a national workshop in Vietnam along the lower Mekong Delta and in Myanmar. These workshops brought together climate change experts with fisheries and aquaculture experts to review current scientific knowledge and define priority activities to guide actions and investments in the near future.

The EAF-Nansen Project

received from countries and are being addressed as far as resources allow. Each project proposal development process has implemented a participatory approach and has supported national and regional workshops, which have contributed to broadened understanding of climate change implications and to strengthened government capacities. Climate variability and change are also being incorporated into fisheries and aquaculture development projects, such as the EAF Nansen and GEF International Waters projects (e.g. Bay of Bengal LME and the Canary Current LME) as well as through the work of the Department to implement the Ecosystem Approach to Fisheries and Aquaculture.

Support to adaptation actions has also been provided by initial reviews of adaptation actions in the sector<sup>22</sup>, the co-organization of a global climate change adaptation in fisheries and aquaculture conference held in August, 2016<sup>23</sup>, and piloting of integrated environmental monitoring systems to assist early warning and prevention for the sector with the purpose of developing guidelines and or manuals for environmental monitoring that takes in consideration climatic variability and climate change<sup>24</sup>.

Legal aspects of climate change impacts were also tackled in support of Pacific Small Island Developing States (Pacific SIDS) threatened by sea level rise and implications for the areas under their jurisdiction. In particular, options for policy and legal mitigation and adaptation response were considered to address risks which sea level rise may pose by causing shorelines to recede thus decreasing the size of the sea areas under the jurisdiction of Pacific SIDS including the exclusive economic zones (EEZs). Existing marine jurisdictional areas of the Pacific SIDS, if not preserved, will negatively affect the ability and interest of the Pacific SIDS to continue to have access to and manage marine living resources.

#### *Resilience/ Risk reduction*

In addition, the Fisheries and Aquaculture Department is developing partnerships at global, regional and national levels to improve preparedness for and response to disasters,

Moreover, FAO is developing guidelines on the use of “Spatial technology”, such as satellite remote sensing for disaster assessment and emergency preparedness for aquaculture; FAO is also developing a micronutrient rich fish based by product that can be used to increase nutrition in emergency context. FAO has completed a ‘Fisheries and Aquaculture Emergency Response Guidance’ including a training package to develop national and regional capacity and enhance the quality and accountability of response to emergencies affecting the fisheries and aquaculture sector along the value chain.

In addition, support was also provided to assess current practices of freshwater tilapia farming in the Philippines, identify critical gaps, and make appropriate recommendations to increase resilience to climate



FAO Fisheries and Aquaculture Department with respect to climate change issues and development responses, and its coherence and operational effectiveness with respect to more localized delivery through regional and subregional offices. The goal of the program is to enable people, communities and States to meet their social and development objectives effectively while responding to the additional challenges imposed by climate change on fisheries and aquaculture. The purpose of the program is to support Member States and partners in mitigating, and adapting effectively to, the impacts of climate change for fisheries, aquaculture and aquatic ecosystems, through policy development, knowledge development and exchange, normative outputs, practical demonstrations, and capacity building. The broad lines of the strategy were endorsed by COFI members.

In the near future, FAO will continue providing support to Member countries for the implementation of field projects aiming at strengthening the knowledge base on climate change impacts on the fisheries and aquaculture sector; identifying context-specific and suitable adaptation measures in close consultation with local communities; supporting the development of climate resilient policies and building capacity for climate change adaptation at local and national level. Ongoing projects in the Caribbean, Latin America, Africa and Asia will provide a set of lessons learnt that will be used to develop technical guidance on climate change adaptation for the fisheries and aquaculture sector. It is expected that adaptation guidance includes a toolbox describing suitable instruments that Member countries can use to foster institutional and management adaptation, strengthen the resilience of the fisheries and aquaculture sector, as well as dependent communities, and facilitate alternative or diversification of livelihoods.

A number of global reviews will be carried out with the purpose to provide scientific and technical knowledge and guide policy makers. A review of direct and indirect effects of ENSO (El Niño-La Niña) on marine and inland fisheries and aquaculture is underway. The review will also assess the economic impacts of ENSO on the sector and will identify potential actions to respond to the various phases of ENSO.

A global review on ocean acidification impacts on the fisheries and aquaculture sector will take stock of the current scientific knowledge available and will assess the vulnerability of the sector and the potential impacts throughout the value chain and the estimated economic costs. The review will also propose methodologies to measure ocean acidification.

FAO will support the development of a review on climate change impacts on inland fisheries, pulling out the outcomes of various initiatives and efforts and providing a global assessment of inland vulnerabilities to climate change.

Collaboration with partners will continue for the development of global conferences and regional workshops, in support of knowledge exchange on impacts of climate change and response actions.

During UNFCCC COP22, the role and importance of oceans in climate change adaptation and mitigation was reiterated and the fisheries and aquaculture sector gained more visibility. As a result, FAO will strengthen its support to Member countries in their efforts to mobilize financial and technical resources for the identification and implementation of adaptation and mitigation measures. Efforts will be pursued to ensure a proper representation of the fisheries and aquaculture sector in Green Climate Fund project proposals.

Relevant publications include:

Assessing water availability and economic, social and nutritional contributions from inland capture fisheries and aquaculture: an indicator-based framework. FAO Fisheries and Aquaculture Technical Paper No. 602. Rome, Italy. 2016.



FAO Workshop on Developing an Environmental Monitoring System to Strengthen Fisheries and Aquaculture Resilience and to Improve Early Warning in the Lower Mekong Basin. FAO Fisheries and Aquaculture Proceedings No.45. Rome, Italy. (In preparation).

Developing an Environmental Monitoring System to Strengthen Fisheries and Aquaculture Resilience and to Improve Early Warning in the Lower Mekong Basin. FAO/NACA Workshop 25-27 March, 2015. FAO Fisheries and Aquaculture Proceedings 45. 2017. <http://www.fao.org/3/a-i6641e.pdf>

Assessing water availability and related economic social and nutritional contributions provided by inland capture fisheries and aquaculture: an indicator-based framework - A compilation of water-related indicators in selected African and Asian countries. FAO Fisheries and Aquaculture Circular No. 1116. (In press)

Lessons learned in water accounting: the fisheries and aquaculture perspective. FAO Fisheries and Aquaculture Technical Paper No. 599. Rome, Italy. 2016.

Aquaculture diversification as an adaptation approach to climate change and other external forcing factors. FAO Fisheries and Aquaculture Technical Paper. Rome, Italy. (In preparation).

Proceeding of FAO/GSI Joint Workshop on Reducing Feed Conversion Ratios in the Global Aquaculture to reduce carbon and other footprints and increase efficiency. FAO Fisheries and Aquaculture Proceedings No.45. Rome, Italy. (In preparation).

Climate change and food security: risks and responses. Rome, FAO. 2016. <http://www.fao.org/3/a-i5188e.pdf>

Climate change implications for fisheries and aquaculture: Summary of the findings of the Intergovernmental Panel on Climate Change Fifth Assessment Report. FAO Fisheries and Aquaculture Circular No. 1122. Rome, Italy. 2016. <http://www.fao.org/3/a-i5707e.pdf>

Desarrollo de un sistema de monitoreo ambiental para mejorar la prevención y capacidad de adaptación al cambio climático de las comunidades pesqueras y acuícolas: caso de estudio estero

Gap analysis of national and regional fisheries and aquaculture priorities and initiatives in Southern and Eastern Africa in respect to climate change and disasters. FAO Fisheries and Aquaculture Circular No. 1095. Rome, FAO. 2014. <http://www.fao.org/3/a-i3756e.pdf>

Gap analysis of national and regional fisheries and aquaculture priorities and initiatives in Western and Southern Africa in respect to climate change and disasters. FAO Fisheries and Aquaculture Circular No. 1094. Rome, FAO. 2014. <http://www.fao.org/3/a-i3753e.pdf>

Report of the FAO/NEPAD Workshop on Climate Change, Disasters and Crises in the Fisheries and Aquaculture Sector in Southern and Eastern Africa, Maputo, Mozambique, 22 to 24 April 2013. Rapport de l'Atelier FAO/NEPAD sur le changement climatique, les catastrophes et les crises dans le secteur des pêches et de l'aquaculture en Afrique australe et orientale, Maputo, Mozambique, 22-24 avril 2013. FAO Fisheries and Aquaculture Report/FAO Rapport sur les pêches et l'aquaculture No. 1055. Rome, FAO. 2014. <http://www.fao.org/3/a-i3843b.pdf>

Report of the FAO/NEPAD Workshop on Climate Change, Disasters and Crises in the Fisheries and Aquaculture Sector in West and Central Africa, Accra, Ghana, 1–