



Environmental Compliance and Climate Risk Management in Aquaculture

The genesis of environmental compliance

The concept of environmental compliance emerged following the environmental crisis that took place during the 1960s and '70s, which affected all industrialized economies. In response to the catastrophe, the US Government (USG) adopted the National Environmental Policy Act, 1970, and Title 22 of the Code of Federal Regulation, Part 216 (22CFR216), 1977 (revised and finalized in 1980). The initiatives encouraged other governments, and inter-governmental and international institutions (e.g. World Bank) to adopt relevant regulations. The Government of Bangladesh (GOB) adopted the Bangladesh Environment Conservation Act, 1995 (amended 2010), and Environment Conservation Rules, 1997 (amended 2002).



A fish farmer is harvesting fish from his gher in Khulna

The benefits of environmental compliance

Environmental compliance is not just a legal requirement but an essential and effective tool for project cycle management. This is revolutionary for many reasons including:

- a) it makes a project more sustainable and competitive;
- b) it ensures that appropriate environmental safeguards are adopted;
- c) it provides guidance to avoid harming people and the environment; and
- d) it strengthens development outcomes and helps to safeguard reputations

Why does USAID ensure environmental compliance?

The 22CFR216 made USAID legally responsible and accountable to ensure environmental compliance in all of its activities. USAID complies with this responsibility jointly with its grantees, sub-grantees, and beneficiaries. USAID also complies with the regulations and standards of the host country and other inter-governmental agencies (e.g. World Bank, UNEP, ILO, etc.). However, in case of a conflict between host country regulations and the USG, the latter takes precedence.

The practice of environmental compliance in the Activity

The Feed the Future Bangladesh Aquaculture and Nutrition Activity received environmental clearance under Mission IEE, Asia 17-078 on 9 August 2017. The IEE was then translated into a management/operational plan, which is called an Environmental Mitigation and Monitoring Plan (EMMP). The prime objective of the EMMP is to ensure that there are no or minimal negative impacts on the environment and people. In order to develop the EMMP, the Activity listed all the proposed and anticipated interventions in a participatory way. Then the interventions were categorized, and analyzed against the legislation and standards set by the GOB, USG, and several inter-governmental agencies; and then developed into mitigation actions, monitoring indicators, responsibility and schedule. The EMMP was approved by USAID on 16 September 2018.

In order to execute the EMMP efficiently, a handbook has been developed based on the considerations as specified in the EMMP and PERSUAP, 2015 and 2018 (Pesticide Evaluation Report and Safer Use Action Plan). As part of awarding a sub-grant, Environmental Due Diligence (EDD) is being conducted and a

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mitigation plan is also provided based on the proposed interventions. WorldFish staff were trained in environmental compliance, and the process is being extended to the sub-grantees. The Activity assists the sub-grantees to include environmental issues in training, communication, good aquaculture/agriculture practices, and good manufacturing practices.

Field Visit Reporting templates are developed to monitor whether the environmental mitigation actions are being implemented by the sub-grantees, and whether the mitigation actions are effective and sufficient. WorldFish staff will use these templates to report using the Activity's Management Information System (MIS) Platform, which also facilitates USAID's Data Quality Assessment. In order to encourage environmental compliance, the Activity is developing a number of communication materials including video clips and posters.

How could aquaculture affect the environment?

The following potential environmental threats might take place as a result of aquaculture interventions:

- Bio-safety might be disrupted if invasive alien fish species are introduced;
- Food safety might be disrupted if harmful substances are used as chemicals, aqua-medicinal products (AMPs) or additives by fish feed millers, hatchery operators, fish growers, and/or food-fish processors.;
- Aquaculture might take place in an environmentally sensitive area or in protected areas;
- The increased use and discharge of chemical fertilizers, pesticides, pharmaceutical products and fish metabolic and fecal waste may harm the surrounding environment causing algal blooms, oxygen depletion or pollution impacting aquatic ecosystems, wildlife and human health.

The key environmental compliance issues in aquaculture

In order to minimize these risks the following mitigation measures must be taken:

- Only fish species that are specified in the Activity's Handbook should be used in hatcheries and grow-out ponds.
- Only "approved" chemicals, pharmaceutical

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products, and additives specified in the Activity's Handbook should be used, they should be applied at recommended dosages and stored safely.

- Farms should avoid discharging untreated waste water into surrounding ecosystems or where discharges must occur, the wastes should comply with discharge consents specified in the farm license conditions.
- Rotten and contaminated feeds must not be used.
- Packaging wastes such as polythene bags, feed-bags and chemical/AMP-containers should be disposed of as specified in the Handbook.
- Cleaning, disinfection, and personal hygiene should be ensured in hatcheries and grow-out ponds.

Climate risk management in aquaculture

The adverse impacts of climate change threaten to roll back decades of progress in reducing poverty and improving economic growth. Therefore, climate risk management (CRM) has become a priority. Climate and weather events such as annual rainfall patterns and temperatures have shaped our aquaculture management calendar. However, we rarely use daily or weekly weather data to make decisions to manage risk.

CRM is a new way of making extension and promotion of aquaculture interventions sustainable. CRM content cannot be the same for all ponds so making sure that it is relevant is a great challenge. It requires climate service providers to establish practical interactions with fish growers that help them to avoid or minimize weather induced risks. Once farmers start to benefit, they may be willing to pay for the service, securing the sustainability of the service providers. WorldFish is establishing partnerships with professional organizations to develop ICT-based climate service platforms to assist smallholder fish growers to understand and react to the risks of weather events based on the current context of their individual ponds, thereby avoiding or minimizing negative impacts.