

Adapting to Climate Change: The Ecosystem Approach to Fisheries and Aquaculture in the Near East and North Africa Region

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The FAO/WorldFish Center Workshop on Adapting to Climate Change: the Ecosystem Approach to Fisheries and Aquaculture in the Near East and North Africa took place in November, 2009 to identify and address the impacts created by climate change in the region, and how the Ecosystem Approach to Fisheries (EAF) and Aquaculture (EAA) can be utilized for the management and adaptation of fisheries and aquaculture in the face of these impacts. The workshop was attended by 27 participants from 14 countries from the region, and by FAO and WorldFish Center staff.

The impacts of climate change will affect and change the industries of fisheries and aquaculture, therefore affecting food security and livelihoods in the region. The predicted impacts are not standard or consistent across the region as one country's loss may be another country's gain. Regardless of the specific losses and gains, food security, the stability of supply, availability, access and utilization will all be impacted. The workshop was structured through working group sessions divided into three main topic areas, namely: a) identifying climate change impacts on fisheries and aquaculture; b) identifying adaptation/management strategies for priority impacts/issues; and c) understanding regional and sub-regional capacities for the implementation of adaptation strategies. The working group sessions used the EAF and EAA as the framework for discussion, and used the following three categories to act as guidelines throughout the workshop: (i) biophysical well-being; (2) social and economic well-being; and (3) governance and ability to achieve.

Outcome of Working Sessions

1. Identifying climate change impacts on aquaculture. The selected priority issues revealed a focus primarily on water quality in the ecosystem/

biophysical well-being category, while climate events, red tide, freshwater limitation and fish mortality and fish diseases are all of concern.

The issues prioritized with respect to social and economic well-being reflected a demand-led approach; food security and food safety were raised as key issues, while job losses were considered less important. The issues raised in aquaculture fairly evenly reflected different components of the production process. The issues raised under governance/ability to achieve were of a technical nature for the development of aquaculture (eg. policies, monitoring systems).

2. Identification of adaptation strategies in aquaculture. Possible adaptation strategies were discussed, and a number of strategies were highlighted as effective for implementation at different scales; the appropriate scales for aquaculture determined as farm level, watershed level and country level. Some of the adaptation strategies included: monitoring systems, biosecurity frameworks, standards setting, food safety controls, better management practices (BMPs), increased investment in research, and creating incentives for diversification.

While issues such as costs, ease of institutional change, and availability of technical expertise were raised in the discussion of these options, the overall capacity for the implementation of these strategies was not a primary factor for choosing them and reserved for the final session. Additionally, the discussion also addressed how adaptation strategies could be applied at one level, while being enhanced at further levels, e.g. BMPs applied at farm level, enhanced at the watershed level and again at the national level. Regional cooperation for certain issues such as setting standards was highlighted as key for effective implementation.



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Workshop participants, speakers and organizers at closing of the workshop

3. Regional and sub-regional capacity for adaptation strategies. The final working group session addressed the capacity of the sub-regions (Near East and North Africa) to effectively implement the adaptation strategies from the previous working group session. The working groups considered adaptation strategies and then assessed the sub-regional capacity for implementation of these strategies using the following indicators/criteria: (1) institutional capacity; (2) financial capacity; (3) human capacity; and (4) willingness.

Adaptation strategies were assessed based on each of the above criteria, and then an analysis was undertaken in the plenary discussion to determine where capacity strengths and weaknesses exist in the sub-regions. As aquaculture varies between countries in the same region, it was difficult to cast an overall vote on issues; while initiatives and planning for the integration of aquaculture and other sectors was limited to specific countries and non-existent in others.

Institutional capacity in all regions is quite good, encompassing research, administration, policy and legal framework. However, operational capacity (finance and human) is moderate to low in all regions, and this is something that will pose an important challenge that must be considered when designing adaptation strategies.

Conclusions

While reducing the vulnerability of capture fisheries and aquaculture is an objective of some strategies in the region, it has yet to be effectively implemented. It is clear that the fisheries and aquaculture industries must adopt adaptation strategies on a variety of levels in order to adequately prepare for the impacts of climate change. It is generally acknowledged throughout the region that preparation for climate change is necessary; however, the required capacity to effectively implement appropriate strategies still needs to be developed. Information and experience sharing between countries and sub-regions could reduce the negative impacts of this gap in capacity in certain countries.

A common understanding of the EAF and EAA concepts is developing, and an effort is now made to incorporate the principles of EAF and EAA in policies at national levels, in certain countries. However, there is still much to do to make these principles operational in the practical management of fisheries. Lack of institutional, financial, human and willingness capacity for implementation at the local, national, regional (including watershed) levels must be recognized and addressed in order to successfully implement the concepts of EAF and EAA in the subregions. ■