

Priority areas for R&D funding and collaboration:

- 1** Preparation of vulnerability maps for aquaculture production areas and conducting proper site selection
- 2** Improvement of culture techniques and protecting larval development through manipulation of seawater acidity level and temperature
- 3** Selection and use of strains tolerant to thermal and/or acid stress and domesticating air-breathing fish
- 4** Promotion of adopting stricter environmental monitoring systems
- 5** Identification of the effects of climate change on common microalgal/zooplankton species and various components of coral reef and mangrove ecosystems
- 6** Promotion of aquaculture as alternative livelihood for agri-farmers
- 7** Management and protection of coastal habitats

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responds to climate change through responsible aquaculture



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CLIMATE CHANGE threatens our fish supply

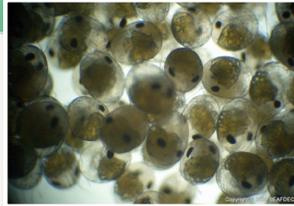
The change in climate over time, aggravated by human activities, has transformed our water resources. Some of its negative impacts include elevated carbon dioxide concentration in the atmosphere, global warming, loss of biodiversity, and disruptions along the food chain.

For aquaculture production that is dependent upon natural systems, climate change is a serious threat. Stakeholders should therefore look closely at the many implications of climate change on aquaculture which accounts for 43 percent of the world's food fish.

EFFECTS

Ocean acidification

- suppresses early development, growth, and reproduction of aquatic organisms
- reduces ecosystem's biodiversity
- increases incidence of outbreaks and/or vulnerability to diseases



Increase in water temperature

- decreases solubility of oxygen in water & increases oxygen requirement of aquatic animals, including cultured fish
- increases incidence of harmful algal blooms and aquatic animal diseases
- increases evaporation rate and hence water salinity



Increased sea level

- causes soil erosion
- causes saline intrusion into freshwater supplies and farm lands
- changes land use



Inundation of mangrove areas

- reduces areas for pond aquaculture due to inundation of mangrove areas



Frequent and intense storms

- negatively impacts fish farmers when cultured stocks and facilities are damaged or lost
- makes coastal communities more vulnerable



Drought

- reduces oxygen in the water which leads to fish mortalities
- reduces water supply; may lead to use conflicts



Faced with climate change, a global threat to food security, the Southeast Asian Fisheries Development Center (SEAFDEC) conducts research and development so fish farmers and communities can better adapt to the changing environment.

Through responsible aquaculture, enhanced production is achieved and the fragile balance of the aquatic ecology is safeguarded.

