INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT (IFAD)

SUBMISSION TO NAIROBI WORK PROGRAMME ON AVAILABLE AND IMPLEMENTED TOOLS AND METHODS FOR ADAPTATION PLANNING PROCESSES, GOOD PRACTICES AND LESSONS LEARNED IN RELATION TO ADAPTATION PLANNING PROCESSES ADDRESSING THE AREAS OF WATER AND ECOSYSTEMS

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Guidelines for Integrating Climate Change Adaptation into Fisheries and Aquaculture Projects

This study, which is available at http://www.ifad.org/climate/asap/fisheries.pdf describes a range of multiple-benefit options for integrating climate change adaptation and mitigation into IFAD interventions in the fisheries and aquaculture sectors, based on a review of relevant literature on climate change, the fisheries and aquaculture sectors, and related activities of other international organizations.

Climate change is transforming the context in which the world's 55 million fishers and fish farmers live and work, posing a major threat to their livelihoods and the ecosystems on which they depend. For millennia, small-scale fisheries and fish farmers have drawn on their indigenous knowledge and historical observations to manage seasonal and climate variability, but today the speed and intensity of environmental change is accelerating, outpacing the ability of both human and aquatic systems to adapt.

The changes already being witnessed include warming of the atmosphere and the oceans, changes in rainfall patterns and increased frequency of extreme weather events. The oceans are becoming increasingly saline and acidic, affecting the physiology and behaviour of many aquatic species and altering productivity, habitats and migration patterns. Sea level rise, combined with stronger storms, severely threatens coastal communities and ecosystems. The world's coral reefs are under threat of destruction over the coming century. Some inland lakes and water bodies are drying up, while in other areas destructive flooding is becoming a regular occurrence. In many cases it is the poorest communities in the poorest countries that are most vulnerable to these changes.

Most of the measures proposed in the study are not new concepts or ideas but have been proven time and again in practice to provide a range of benefits to and increase the resilience of small-scale fishers and fish farmers, as well as the ecosystems on which they rely. This approach is in line with ASAP's first principle of scaling up tried and trusted approaches.

Summary of Key Multiple Benefit Actions

Climate Challenges	Potential multiple-benefit actions
Increase climate resilience of small scale fishers and fish farmers	• Reduce overfishing and excess capacity • Implement the ecosystem approach to fisheries and aquaculture management (incl. ICZM, MPAs). • Establish natural resource co-management regimes with community groups and

	fishers and fish farmers associations. • Strengthen the knowledge base and climate change advisory capacity of fisheries and aquaculture extension workers. • Invest in key infrastructure and ecosystem rehabilitation projects, favouring a 'no-regrets' approach. • Encourage diversification of livelihoods and income sources, including non-fisheries related activities. • Invest in research to develop/identify new commercially viable strains of aquaculture species tolerant of low water quality, high temperatures and disease. • Promote integrated aquaculture and agriculture systems, including using flooded/saline land and water bodies.
Increase capacity to manage short and long term climate risks and reduce losses from weather related disasters	• Establish early warning systems, safety-at-sea, and disaster risk reduction and preparedness plans. • Rehabilitate coastal ecosystems which provide protection from storms and waves (mangroves, wetlands, marshes and coral reefs). • Increase access to financial services and insurance mechanisms. • Encourage establishment of small scale fish nurseries to facilitate restocking after disasters. • Improve aquaculture development planning and zoning.
Reduce and/or sequester Greenhouse Gas Emissions	• Introduce more fuel efficient boats and encourage use of static fishing gear rather than towed gear like trawls. • Promote the culture of low trophic level species and aquatic plants in polyculture/Integrated Multi Trophic Aquaculture systems. • Identify opportunities to access carbon finance for mangrove planting or restoration.