Fish for All Questionnaire:

An Analysis of Expert Opinion Prepared by the WorldFish Center
October 2002

Prepared by

WorldFish CENTER

Fish for All is an informed, inclusive public dialogue that aims to shape a vision for the future of aquatic life as it contributes to food security, better livelihoods and nutrition for the poor in developing countries. We recognize that the issues and solutions that impact the role of fish as food, as a source of livelihood and as a part of the environment extend beyond the fisheries sector. In order to get a broader view of the subject from people within and outside the fisheries sector, we sent out a questionnaire on the issues and solutions related to seven external pressures (i.e. water shortage; demographic changes; the social, political and institutional environment; unbalanced development; access and equity; governance; and climate change) which affect the sustainability of fish in the future. Respondents were presented a number of issues and solutions to consider under each of the external pressures. They were asked to highlight the most important issue or solution under each heading, limiting their choices to at most three items. Of the 386 questionnaires sent to a select group of senior scientists, policy makers, resource managers, community workers and academics, 137 responses were received. A detailed analysis of the responses is enclosed (Appendix I)

Summary of the most important issues

Respondents had definite and convergent views on the most important issues for each external pressure.

External pressure	Most important issue
Water shortage	• Withdrawal of water for other uses
Demographic changes	• Rapid rate of overall population growth and the degradation of the environment due to urbanization and development was seen as a more pressing issue than the increase in the number of fishers themselves
Social, political and institutional environment	• Lack of political will to eliminate subsidies was viewed as a more important issue to deal with than the pressure exerted by the market demand for fish
Unbalanced development	• Unsustainable land use patterns • Low priority given to aquatic resources in national environment and development programs
Access and equity	• Predominance of open access systems for fisheries

Governance	• Lack of resources for monitoring and enforcement contributed the most to policies and systems that favor unsustainable exploitation
Climate change	• Lack of understanding of the long term implications and synergistic effects on aquatic species and fisheries

Note on the suggested solutions

Participants had less convergent views on the preferred solutions, particularly on the issues related to unbalanced development, access and equity, governance and climate change. Respondents have consistently indicated that improved knowledge of the issues and substantial information for establishing policies and making decisions was an important solution to a number of the issues, particularly those related to water shortage, demographic change and social, policy and institutional environment. This highlights the responsibility of scientists to provide information and technology to ensure that the fish for food and livelihood and the environment that sustains them will continue to be available to poor people in the developing world.

Appendix I

Fish *for* All Questionnaire
Feedback from Respondents[1]

External Presures **Percentage of 'YES' response**

1. **Water shortage** (reduced water availability in terms of quantity and quality)

- **Issues:**
  - * Greater withdrawal for other uses. 74
  - * Increased variability of supply due to demand and drought. 47
  - * Salination. 16
  - * Pollution. 55
  - * Conflicts over use of water. 50
  - * No specific allocation of water for aquaculture or capture fisheries. 28

- **Solutions:**
  - * Improved knowledge on the present status, requirements and value of aquatic living resources for effective decision making. 75
  - * Explicit consideration in policies covering living aquatic resources. 66
  - * Enhanced water management practices/ technologies to minimize competition over use of water. 62
  - * Reforming institutions, greater collaboration across traditional agency boundaries and inclusion of technical experts and user groups. 58

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2. **Demographic change** (pressures and changes due to increasing population)

- **Issues:**
  - * Rapid rate of population increas. 76
  - * Migration from rural to urban areas. 32
  - * Pressures on the environment caused by urbanization and development. 75
  - * Shift of population to resource intact/rich areas. 35
  - * Rapid increase number of fishers. 39

- **Solutions:**
  - * Improved knowledge on the dynamics of demographic changes on living aquatic resources and workable models for dealing with them. 62
  - * Responsible population control management/policy (including empowerment of women). 58
  - * Alternative livelihood opportunities. 69
  - * Strengthen rural aquaculture. 43
  - * Regional development to move fishers from fishing. 27

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[1] The above figures are based on 137 respondents. Percentage of 'Yes' response indicates the number of respondents who had selected the item from the different options given.

3. **Social, policy and institutional environment** (due to globalization, WTO, trade, subsidies, gap between north and south, terrorism etc)

- **Issues:**
  - * Demand for high trophic level species has led to depletion. 34
  - * Demand for high trophic level species has led to intensive culture leading to environment damage and heavy dependence on fish meal. 38
  - * Lack of political will for action to eliminate subsidies which lead to unsustainable harvest and culture practices. 50
  - * Increasing demand for endangered species. 18
  - * Increased access to major markets due to WTO leading to further exploitation. 28
  - * Increased competition at the expense of local fishers and farmers. 39
  - * Trade marks/standards/labels (including Eco-labels) are used as restrictions to markets. 16
  - * Lack of social mobility in poor communities. 31

- **Solutions:**
  - * Improved knowledge on the dynamics of market changes and globalization on living aquatic resources and workable models for dealing with them. 55
  - * Eco-labeling through greater participation of community. 23
  - * Consumer awareness to modify markets. 27
  - * Value addition to low trophic fish species. 35
  - * Regional collaboration in trade to address WTO issues. 28
  - * Identify focal points for control of international trade in unsustainably exploited high-value species. 28
  - * Development of mechanisms for better coordination between private and public sectors. 32
  - * Education to increase choices for the fishers' children. 28

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4. **Unbalanced Development** (overall development with focus on terrestrial problems)

- **Issues:**
  - * Unsustainable land use patterns in relation to aquatic resource. 72
  - * Aquatic resources are of low priority in national environment and natural resources development programs. 65
  - * Competing use of water bodies at the expense of fisheries. 54
  - * Development is focused on terrestrial systems or sectoral approach. 47

- **Solutions:**
  - * Improve stakeholder involvement in rural development and resources management. 76
  - * Balanced growth of rural sector. 18
  - * Development and dissemination. of better and environmentally sustainable technologies for aquaculture and capture fisheries. 57
  - * Inclusion of watershed management and integrated coastal zone management in regional and national development plans. 64
  - * Integration of fisheries to overall planning. 61

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5. **Access and equity** (non-equitable/reduced access for the poor)

- **Issues:**
  - * Open access systems and the 'tragedy of the commons' leading to over fishing. 70
  - * Access rights which do not have scientific basis or social acceptability. 55
  - * Inequitable sharing arrangement and unsustainable exploitation by distant water fishing nations. 49
  - * Non-equitable distribution of benefits from the local to the global scale. 53
  - * Access of migratory stocks. 16

- **Solutions:**
  - * Greater demarcation of the 'rights' and rights-based fishing. 66
  - * Greater devolution and community participation. 76
  - * Strengthen the capacity of developing countries for managing the EEZ. 61

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6. **Governance** (policies and systems that favor unsustainable exploitation)

- **Issues:**
  - * Lack of legislation to push for product certification systems. 33
  - * Lack of resources for monitoring and enforcement. 72
  - * Non participation of local communities. 64
  - * Gender issues not receiving appropriate attention. 23
  - * Lack of demarcation of responsibilities/authority and conflicts among local/ province or state/central or federal. 58

- **Solutions:**
  - * Mechanisms to ensure dialogue among local communities, administrative units and development agencies. 74
  - * Greater local community participation in policy making process. 74
  - * Improve legal and institutional framework for governance at different scales. 80

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7. **Climate change/variability** (expected /unknown levels of detrimental effects)

- **Issues:**
  - * Lack of understanding of the long term implications and synergistic effects of climate change on aquatic species and fisheries. 81
  - * Rising sea levels on coastal and fishing populations. 47

- **Solutions:**
  - * Better understanding of spatial and temporal vulnerability. 66
  - * Improve consensus between developing and developed countries for the implementation of climate change policies. 59
  - * Development of adaptation strategies from climate change. 56

Some general questions

8. Please rank by giving 1, 2, 3 within parenthesis (1 for the most important) the following reason(s) you feel fish is important for all	Rank 1	2	3
* Important for nutrition and food security.	55	31	5
* Important basis for livelihoods for the poor.	39	39	12
* Vital factor in the global environmental balance.	11	12	58

9. Would you like to be acknowledged as one of the authors of the collective summarized output that will be fed to the panelists of the Fish for All summit (this output will be included in the final printed Summit proceedings along with the panel deliberations and key papers).	79

Summary of response under 'Others'[2] column for the issues and solutions under each pressure

1. Water shortage

Other Issues

- Deforestation and soil erosion leading to siltation of rivers
- Inefficient utilization of water for agriculture and other uses

Other Solutions

- Translating the improved knowledge into a simple framework and technical guidelines understood by all stake holders
- Appropriate legislation for efficient water use and mechanism to enforce such laws

2. Demographic change

Other Issues

- Resource intensive lifestyles have contributed to environment degradation and overexploitation
- Pressures on aquatic environment that result from the breakdown in services due to population increase

Other Solutions

- Reduce new entrants to fisheries through education and alternate livelihood opportunities

3. Social, policy and institutional environment

Other Issues

- Lack of political will to enforce management framework

[2] For the seven pressures identified, the respondents were asked to provide additional issues and solutions.

- Too little public sector investment in aquaculture and fisheries compared to private sector which has led to unbalanced distribution of benefits

Other Solutions

- Political awareness of the economic value of goods and services from aquatic resources
- Reduce control of the demand driven market which has led to unsustainable exploitation

4. Unbalanced development

Other Issues

- Inadequate understanding of land-water interactions

Other Solutions

- Include aquatic ecosystems in models of integrated watershed management

Better implementation of regulations and laws on watershed and coastal zone management

5. Access and Equity

Other Issues

- Traditional systems of management have been replaced, alienating local people

Other Solutions

- Develop management system and "rights-based" policies based on the assessment of the extent and distribution of stocks and resources
- Establish institutional and legal reforms and build capacity to demarcate “rights” and enforce“rights-based” policies
- Reduce incentives and subsidies to poor fishers following FAO’s code of conduct for responsible fishing
- Inclusion of local and traditional rights to "common" resources with viable, democratic and legitimate co-management approaches
- Establish sanctuaries and marine reserves and codify tenurial rights
- Reduce excess capacity based on natural resource and socio-economic criteria
- Introduce a self-sustaining tax based revenue system under which the users pay for the rights to fish and the revenue is utilized for building up services (i.e. research, extension and development).
- Develop workable approaches for management of transboundary resources

6. Governance

Other Issues

- Failure of government to devolve management authority at national and local levels
- Lack of political commitment towards baseline assessments of resources and scientific management.
- Lack of coordination within and among government, private and other sectors
- Complex institutions and administrative bottlenecks created by inappropriate laws and rules

Other Solutions

- Increase awareness of policy makers on the complexity of fisheries management
- Improve the science behind fishery resource management and build capacity to manage resources at all levels of governance (from local to national)

- Integration within public and private sectors and code of conduct for responsible fisheries /sustainable aquaculture utilized to improve cooperation between government and private sector.
- Gender mainstreaming in policies and increase women's participation in all local to national organizations related directly or indirectly to aquatic resource management

7. Climate Change/Variability

Other Issues

- Insufficient or conflicting data
- Limited political will to address climate change issues
- Limited capacity to address climate change and plan remedial actions

Other Solutions

- Information and education campaign at all levels on the importance of understanding climate change to ensure that decision makers understand the science of climate change.
- Prioritize and implement research needed for facing the altered environment particularly on the effects of saline and thermal changes

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Summary of respondents comments[3] on additional reasons – 'Why Fish is Important for All'

- Fish production has higher multiplier effect in the national economy and hence important from the point of view of income and employment without much externalities.
- Fish is an important anchor to all aspects of sustainable development — nutrition, livelihood, trade, science, biodiversity
- Fish products are healthier than other animal products
- Aquaculture which contributes to rural development can reverse the migration of rural population to urban areas
- Fish contributes to the country's GDP and serves as an important means to earn foreign exchange.
- Recreational fishing and ornamental fish are a source of enjoyment, employment and earning (EEE).
- Fishery resources offer scope for building harmonious arrangements among richer and poorer nations, taking advantage of the technological capabilities of some countries and fishery resources of others.

[3] The respondents were asked to provide additional reasons as to why they consider 'fish is important for all'.