

Sustainable management and development of fisheries flashcard



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ANNEX 13 INTRODUCTION

Ethiopia is a land-locked country and depends on its inland water bodies for fish supply for its population. The country's water bodies have a surface area estimated at 7 334 km² of major lakes and reservoirs, and 275 km² of small water bodies, with 7 185 km of rivers within the country (Wood and Talling, 1988). Current annual total fish production potential is estimated 51 481 tonne. It has, on average, grown by 10 percent per year. Current per capita fish production is less than 240 g per person per year.

Success in fisheries has been attributed mainly to a favorable economic policy, which attracts private sector participation and project assistance in

the fishery sector. The fishery is predominantly artisanal, currently involving 15 000 fishers (of which 5 000 are considered full-timers (FAO, 2003; ADA & FDE, 2004). Aquaculture in Ethiopia remains more potential than actual practice, despite the fact that the country's physical and socio-economic conditions support its development.

Extensive aquaculture in the form of stocking and enhancing artificial lakes, reservoirs and small water bodies has been practiced since 1975.

Aquaculture is recognized as an alternative means of achieving food security and poverty reduction in the rural area, and is now considered an integral part of rural and agricultural development policies and strategies. Though Ethiopians are traditionally meat eaters, eating habits have been shifting in favor of fish in areas and communities where there is regular and sufficient supply.

In those communities, annual fish consumption can exceed 10 kg/person. Ethiopia's favorable climate, as well as freshwater and biodiversity resources are under threat from mainly anthropogenic activities. The main environmental challenges the country is facing are: Increasing climatic variability, Pollution of surface and ground water bodies, Land degradation and soil nutrient loss, Loss of biodiversity through habitat alteration, Over-harvesting of natural resources (FAO, 2003).

The major environmental problems associated with fishery resource in Ethiopian water bodies are: ? depletion through over-fishing aggravated by use of destructive fishing gear and methods; ? eutrophication of the lakes and other forms of pollution; ? inadequate information on the fisheries

resources and the state of the aquatic environmental to guide management decisions; ? an inappropriate regulatory framework; and ? inadequate funding for the fisheries sector activities.

Therefore it has become necessary to give attention for the development and rational utilization of this resource through formulation of appropriate and environmentally sound fishery policy. Here we reviewed the policy from the environmental perspective. We come across to a conclusion that some of the policies have negative impacts on the environment even though they have developmental advantages at large. Unless some compromising is taken the negative impact towards the environment out smart the benefit. Thus we forward possible recommendations. | | POLICY SUMMARY | | | The objectives of this Policy are to conserve fish biodiversity and its environment, to avoid over-exploitation of fish resources, to | | increase the supply of fish of good quality and to expand the development of aquaculture.

The 13 articles of this Policy are dealing with | | different issue: Policy (1, 2 & 3) is concerned about the sustainable development of fisheries resource utilization and its integrated | | management. Policy (4 & 5) about Funding and investment aspects in fishery. Policy (6, 7 &8) dealing with issue of fishery Planning and | | policy making, effective system establishment on collection of relevant fishery information and its dissemination and development mechanism | | to overcome adverse environmental impact.

Policy 9, 10 & 11 concerned about aquaculture development, proper utilization of fishery products | | and ways of handling and national& foreign fish market issue. Policy 12 & 13 issues about human resource capacity

development and social, | | economic, environmental and technical investigation issues pertinent to fisheries. | | | SECTOR GOAL | | | | Contribute to the reduction of poverty through improvement of the food security of the rural populations and sustainable natural resources | | management. | | | | OBJECTIVES | | to conserve fish biodiversity and its environment, | to avoid over-exploitation of fish resources, | | to increase the supply of fish of good quality and | | to expand the development of aquaculture. | THE POSITIVE IMPACT OF THE POLICY TOWARDS ENVIRONMENT CONSERVATION Policy1. Sustainable management and development of fisheries Fisheries will be managed and developed to promote socially, economically and environmentally sustainable use and development of the resources.

Justification Many of Ethiopia's fisheries are currently in a poor condition for a variety of reasons including over-exploitation and environmental degradation. Apart from being provide a livelihood to many dwellers around the water bodies communities. There is need for a paradigm that is focused on both biological aspects of fisheries and on social and environmental concerns. ? licensing of fishing will give benefit to control the natural resource in a sustainable way to control resource abuse and conservation of biological diversity (not allow free accesses). Regulation on introduction of fish species are important to avoid genetic dilution, disease transmission, competition over feed, niche and spawning ground which bring a long term extinction of indigenous species, changes in aquatic food chains, loss of biological diversity and the whole aquatic ecosystem disruption. Take care of socially unacceptable (taboo) fish species introduction. Policy 2 & 3

Decentralisation and community involvement in fisheries management &

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Regional, Zonal and community co-operation in fisheries management

Policy . 2

Stakeholders will be involved in the management of fisheries by devolving some decision-making responsibilities to local governments and communities. Policy . 3 Regional, Zonal and communities will co-operate in the management of shared fisheries and aquatic ecosystems. Justification Current fisheries management practices are largely based on command and control approach enforced through the criminal law. Experience in Ethiopia and elsewhere clearly shows that this approach is both costly and ineffective. Not effectively consulting communities and stakeholders means that inappropriate rules may be set.

The failure to effectively consult stakeholders and communities means such rules are often perceived to lack legitimacy, thus lessening the chances of compliance. Non compliance in turn leads to increased confrontation between the state and resource users, higher enforcement costs which governments may be hard pressed to meet and further degradation of the resource. Effectively consulting and empowering communities in the management of fisheries coupled with central oversight to check excesses will lead to more effective management of Ethiopia's fisheries.

Most water-bodies are shared between two or more regions, zones, weredas, and communities. As with any shared resource a harmonised approach to management is necessary, as are mechanisms to resolve conflicts and competition between communities in respect of access to and use of the resource. Although communities and regional governments try their best to

work co-operatively, experience shows that formal co-operative mechanisms and institutions are necessary to effectively manage shared fisheries resources. It is also important that such co-operative mechanisms receive full recognition in the policy.

Issues concerning shared water bodies fisheries resources help for mutual understanding in utilization and conservation of the natural resource among neighboring countries and regional administration which ensure sustainable development and last long utilization of the natural resource and help in taking an integrated mitigation measure before the biodiversity crisis pronounced. Appreciate the private sectors NGO's and communities contribution towards fishery biodiversity conservation and management. Policy 4, 12&13. Institutions and funding mechanisms, Human resource development & Research

Policy . 4 Sustainable institutions and funding mechanisms for improved fisheries management will be identified and established. Policy 12 The Government will promote comprehensive training and advisory programmes so as to build human resource capacity to increase levels of knowledge, skill and expertise in the public and private fisheries sub-sectors. Policy 13 Social, economic, environmental and technical investigation of issues pertinent to fisheries, including the development of appropriate technologies, will be promoted in response to fisheries development and management needs.

Justification A decentralised approach to fisheries management with effective central oversight necessarily entails the establishment of new fisheries management institutions. Since knowledge is power Continuous human

resource development is necessary for the sustainable development of any natural resource sector. Regarding fisheries management, new institutional arrangements will require the development of new skills and expertise at all levels, including communities and the less advantaged.

At the same time the development and introduction of sustainable new fishery and aquaculture practices as well as new skills and expertise regarding post harvest activities concerning fish quality and trading, will contribute to the growth of the sector. Recognition of research work gives leverage for sustainable utilization of the resource through scientific work which helps to look up on the well being of the biological diversity and ensure the healthy environment. The main research benefits to the fisheries and aquaculture will be derived from practical or applied research that is demand driven.

The concerns by the private sector, investors, communities and fisheries management institutions must be addressed through research. Such research will include scientific, biological, social and economic investigations to improve decision-making at all levels for effective fisheries management, development and utilisation. Policy5. Investment in fisheries Public, private sector and community based investment in the fisheries sector that is environmentally, socially and economically sustainable will be promoted.

Justification

Investment is necessary if there is to be growth in Ethiopia's fisheries sector and should be encouraged. In accordance with government policies, public investment would be limited to infrastructure of a public nature. However,

such investments could also be made on a partnership basis by the private sector including foreign investors and community based groups. The development of micro credit schemes will be essential to enable community groups and disadvantaged groups to benefit from investment opportunities. However, care is needed to avoid over-investment that may lead to overcapacity and environmental degradation.

New fisheries investments must therefore be economically, socially and environmentally sustainable. Policy. 6 Planning and policy making

Participatory planning and policy-making will form the basis of fisheries management. Justification Each water body, and therefore each fishery, is different and needs its own management approach. In addition, such are the complex dynamics of inland fisheries that the outcomes of management interventions cannot be accurately predicted, and wide fluctuations in resource levels can be caused by outside impacts such as El Nino events.

Fisheries management must therefore be based on a planning and policy making process that is itself dynamic and capable of responding rapidly and appropriately to changing circumstances. The involvement of stakeholders in planning and policymaking processes leads to better decision making and offers the opportunity for more timely management responses to rapid environmental changes. Fisheries management must go beyond narrow biology to look at social, economic, environmental and cultural impacts. Sometimes hard management decisions may have to be made, such as a decision to temporarily close a fishery.

Transparent and open processes are more likely to result in such decisions being considered acceptable by those most directly affected. Policy 7 Information Effective systems for the collection, compilation, analysis, storage and dissemination of information will be established for planning, management, monitoring and evaluation purposes. Justification As with any other natural resource, the availability of accurate and relevant information about fisheries resources is an essential pre-requisite for fisheries management. Indeed without such information, 'management' decisions are little more than guesswork.

Geographic Information Systems (GIS) is an essential requirement for spatial fisheries planning. Other relevant information includes fisheries data and statistics relating, for example to catch and effort levels, social and economic parameters can be gathered with the active participation of communities. Such information will also be necessary for the introduction of new funding mechanisms such as fish levies. In all cases information systems must be based on clearly defined objectives that are relevant to specific management tasks. Information is equally important in terms of monitoring the performance of fisheries management institutions.

Information systems must contain 'feedback loops' so that those who are affected can measure performance and promote accountability. In addition information must be available to all of the stakeholder community at their request. Fisheries Information Exchange allows smooth flow of information through integrated exchange of data on a centralized system to follow sustainable direction and to take mitigation measure when it goes wrong. ? It lessen information gap. ? It brings policy issue on the desk. ? Makes <https://assignbuster.com/sustainable-management-and-development-of-fisheries-flashcard/>

favorable ground for intervention ? To plan sustainable use of resource ? To seek investment alternatives To identify endangered and near extinct species ? To identify exploited and virgin stock Policy 8. The environment and fisheries Adverse environmental impacts on fisheries will be minimized and mechanisms will be established at appropriate levels to achieve this. Justification While the fisheries management process seeks to prevent the overexploitation of fisheries resources it must be recognised that many of adverse impacts on fisheries, and the aquatic ecosystems in which they are situated, are environmental in nature and result from activities that are outside the fishery itself.

These include large-scale development projects on water-bodies such as the construction of dams as well as the construction and operation of factories or mines that cause pollution. In addition the cumulative impacts of numerous smaller scale activities such as farming and the spread of human settlements can have significant adverse impacts on inland fisheries. These include sedimentation caused by erosion run-off caused by poor farming practices and de-forestation, pollution from human and animal wastes, the destruction of wetlands and near shore areas that are valuable fish breeding grounds.

The responsibility for controlling and preventing such activities lies with a variety of different government agencies and bodies. Impacts on fisheries can be enormous and are often over looked. Formal mechanisms are needed to promote a holistic approach to ecosystems that contain fisheries and to ensure that concerns of the fisheries sector are taken into account.

Assigning of higher concerned legal bodies (Federal or Regional Governments) who ensure the protection of environment on any intended development programmes or projects to be implemented on a particular basin will not have direct or indirect negative impact on the fisheries resource are important ? to compromise the degree of degradation of the natural fish habitat loss caused by different development activities to be implemented such as:

- Dam and reservoir construction which cause: Replacement of valuable fish spawning, sheltering and feeding ground into a flooding area due to construction of dams and reservoir.
- alteration of the microclimate which create a large surface area of evaporation result in changing in temperature which leads to an increase in salt concentration (salinity) bring loss of aquatic biota, change in feeding and spawning behavior and complete extinction of non-resistant biological diversity.
- Obstruction of migratory path way due to barriers created by dam or associated infrastructure disturb in feeding and spawning route of valuable species. Change in water regime due to increase or decrease in flood peak will bring significant impact on the spawning behavior of the fish since most fish used to triggered by increase in volume of water (flooding).
- Reduction in water quality and increased pollution due to decrease in water flow and activities held around the aquatic environment cause nutrient accumulation leading to uncontrolled eutrophication result in mass fish kill, depletion of oxygen, change in aquatic food chain, loss of biological diversity and environmental disruption.
- Landuse and urban development activity Water quality deterioration due to discharges of solid/ dissolved substances usually municipal, agricultural, mining and industrial wastes which bring pollution of aquatic environment, silting, sedimentation and eutrophication cause a

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serious problem on fish and the ecosystem. Policy 9. Aquaculture

Aquaculture fish production will be increased so as to reduce the gap

between fish supply and the increasing demand for food fish. Justification

The farming of fish and crustaceans contributes to food security, household poverty eradication and for export market.

Aquaculture is more akin to agriculture than traditional capture fisheries and is easily integrated into household farming systems with potentially real impact on the protein intake of the rural poor. Fish can also be reared for commercial purposes especially in areas where no major artisanal fishery is pronounced. To be sustainable, aquaculture systems must fit within the social and economic context of the agricultural production systems in which they are found or introduced. In Ethiopia, there is absence of large-scale intensive or semi-intensive fish farms. Presence of policy issue on the establishment of quaculture is significantly important in: ? supporting the capture fishery to avoid over fishing and to fulfill the consumers demand ? bring efficient utilization of the natural resource, ? bring change in social structure ? use of new technologies, ? creation of new livelihood opportunities, ? social service improvement, ? growth of local as well as national economy, investment and in ? better water resource management practice establish by considering the main problems relating to the interaction of aquaculture with the environment: • competition over limited water resource The discharge of waste nutrients and their interaction in the wider aquatic environment • Effects of other discharges from aquaculture, e. g. medicines and chemicals Concerns relating specifically to antibiotic usage by the aquaculture industry are: • Development of drug resistance in fish

pathogens • Spread of drug resistant plasmids to human pathogens • Transfer of resistant pathogens from fish farming to humans • Presence of antibiotics in wild fish Impact of antibiotics in sediments on: rates of microbial processes; composition of bacterial populations; relative size of resistant sub-populations. ? Disease impacts on wild and farmed stocks ? Escapes from fish farms and potential effects on wild populations such as interbreed with wild population resulting in losses of genetic variability, including loss of naturally selected adaptations, thus leading to reduced fitness and performance. ? Sustainability of feed supplies - including research on plant meal substitution. Post-harvest fish quality and added value & 11.

Fish marketing and trade Policy 10 Measures will be promoted to ensure that the quality, wholesomeness, safety for human consumption and value of harvested fish and fishery products is secured and/or enhanced. Policy 11 Measures will be taken to achieve sustainable increases in the value and volume of fish marketed for national consumption and export. Justification Fish harvested from both the wild and from aquaculture is a highly perishable product. If not properly handled, it rapidly loses quality and economic value, putting human health, not to mention export markets, at risk.

As with other aspects of fisheries management, appropriate information is necessary to assess the extent of the problem and the effectiveness of any measures taken to address it, which can include the setting and implementation of rules and standards to preserve and promote fish quality.

Furthermore through improved practices and investment, value can be <https://assignbuster.com/sustainable-management-and-development-of-fisheries-flashcard/>

added through processing, packaging etc. Increases in the value and volume of fish traded will generate economic benefits for the fisheries sector. It will also improve consumer choice and increase the availability of a valuable source of protein.

Government policies in the agricultural and natural resource sectors seek to orient producers towards commercialisation rather than subsistence thus improving rural living standards. At the other end of the chain, increased exports will generate valuable foreign exchange. Nevertheless increased trade must be sustainable so as to avoid excess off-take. Handling of Fish Products issue allows provision of healthy fish products to the consumer enables to create fish disease free population. • use of new technologies e. g. refrigerator, smoking, salting, canning • Quality product provision • improve public health • cheap protein source increase • decrease medicinal expense • increase life expectancy and low mortality

GAPS ON THE POLICY TOWARDS ENVIRONMENT Policy 1. Sustainable management and development of fisheries ? The protection of water plant (macrophyte) is not included since most of the fish choose that part of the water for spawning and feeding purposes. And also the macrophyte acts as a natural filter for the incoming pollutants such as heavy metals and organic effluents.

They have to include in the protection scheme of the policy. ? The policy doesn't show way of improvement on ecological crisis done by already introduced exotic species on native species. ? Lack of integration with other policies e. g. Land use, water, mining etc. ? Introduction of unacceptable fish species to the local community. Policy 8. The environment and fisheries ?

Waste water discharge management system not considered for: ? Future <https://assignbuster.com/sustainable-management-and-development-of-fisheries-flashcard/>

establishment of recreational centers and other developmental activities by the water sides, ?

And for those already established one. ? Levels of effluent are not standardized. ? Impact of agriculture inputs (fertilizer, herbicides and pesticides) around and near the surrounding water bodies not considered. ? Damping of solid wastes and effluents from the municipal sewage, industries, garages and fuel station where not given direction how they have to be discharged for the established one and no any future direction for the new establishment. ? There is no consideration of allowance of free accesses to the community to entertain the beauty of nature.

Policy 9. Aquaculture ? Conflict over limited water resource ? Uncontrolled immigration into the project area ? Destruction or modification of vulnerable or valuable ecosystems ? Conflict between existing populations and new comers. ? Increased pressure on natural resources. ? Damage or loss of natural beauty (beach), cultural relics ? Loss of fishing site which may result in change in job, ? “ Culture shock” from exposure of secluded communities to aggressive outside influences ?

Increased availability of alternative culture fish production system may adversely affect the capture fishery economy ? Decrease accessibility to water for drinking, irrigation, recreation due to the construction of barrier such as fence. ? Decrease in livelihood opportunities for traditional fishermen
RECOMMENDATION ? Effort must be made to minimize damage or loss of sites of cultural/recreational/ecological importance ? Proximity to

conservation areas may require the creation of buffer zone ? Adequate provision of amenities for those relocated and those who move into an area ?

The type of project must ensure the provision of a sustainable income for fishermen ? Implement an environmental management system which ensures environmental responsibility at all levels ? New development activities sited as a sufficient distance from environmentally sensitive areas where practically possible. ? Environmental monitoring during construction and operation developmental activities should be done. ? Delineation of location of waste dumps ? Proper provision must be made for the management and disposal of waste and sewage ?

The sitting of dam or reservoir construction scheme must be decided to avoid disturbance or destruction of:

- Sensitive or biologically rich ecosystems
- Sites of cultural/historical significance
- Settlements of religious or scientific value

• Adequate health care facilities must be provided ? Incorporation of sewage treatment facilities with the establishment of recreational centers and construction of fish way (fish ladder) for migratory fishes. ? Restocking of depleted water ? Restocking of the endangered species by captive breeding ? Restoration of the degraded ecosystem

CONCLUSION

Ethiopia, in spite of being a signatory to the Ramsar Convention on Wetlands and the Convention of Biological Diversity, the existence of the fishery policy will be significant to enable a sustainable development and environmentally safe rational utilization of the resource, enable to conserve fish biodiversity and its environment as well as to prevent and control over-exploitation of the

fisheries resource. Fishes are ichthyofaunas that lives, reproduce, nurse their young ones and grow in water . They are an important and renewable natural resource that knows no local or international boundaries.

If not properly managed, a fishery may collapse together with all the investments that go with it. It will become extinct due to unwise utilization of the resource so the presence of such policy necessary to conserve biological diversities as well. In line with the broader policy framework of the Poverty Eradication Action Plan, the National Environmental Policy , the National Fisheries Policy will provides strategies to ensure sustainable exploitation of the fisheries resources at the highest possible levels, thereby maintaining fish availability for both present and future generations without undermining the environment.

The general principal is that government should be provided with a flexible system of managing, utilizing and conserving the fisheries resources of the country together with an institutional structure to achieve the same. If the above gaps get solution with the direction of environmentally sustainable use and development of the resources considering the needs of present generations without compromising the ability of future generations to meet their needs. Fisheries will contribute sustainable development towards improvement of the countries social and economic aspects as the time of the policy implementation.

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ANNEX 1 FISHERIES RESOURCES DEVELOPMENT POLICY OF ETHIOPIA

(2ndDraft) (Here we attached the policy draft and Fisheries development and Utilization Proclamation 315/2003)