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# THE FISHERIES AND AQUACULTURE COMPONENT OF RURAL DEVELOPMENT

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*Fisheries and aquaculture can provide a key contribution to food security and poverty alleviation. Fisheries and aquaculture policy is an instrument for the conservation and management of fisheries and aquaculture. It was created with the aims of managing a common resource. Fisheries policies and management strategies the world over is in a state of flux, continued attempts to use fisheries as the key to solving a complex web of social and economic issues threaten to overwhelm the basic fact that, if this resources are overfished, they will not sustain either social or development.*

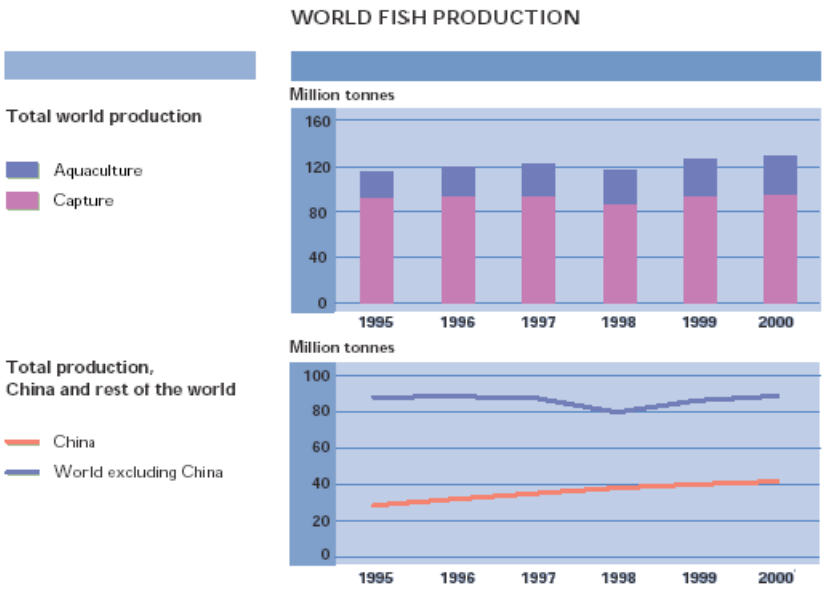
***Keyword:*** *fisheries and aquaculture resources, fisheries management, common fisheries policy, total allowable catches, financial instrument for fisheries and aquacultures guidance.*

## 1. Introduction

The objective of this article is to present the fisheries and aquaculture activities as a component of rural multisectorial development. Policy - makers and development agents are increasingly viewing aquaculture as an integral component of the search for global food security and economic development.

Fisheries and aquaculture can provide a key contribution to food security and poverty alleviation. Productivity gains in fisheries do not always imply long-term increases in supply. In fact, in wild capture fisheries such gains can ultimately lead to the demise of stocks and reduced production.

Total world commercial fishery production in 2005 – the total of marine and inland aquaculture and capture production – reached a new high of 130.25 million tonnes, an increase of 11.9 percent since 2000, reflecting enormous gains in aquaculture production, particularly in China.

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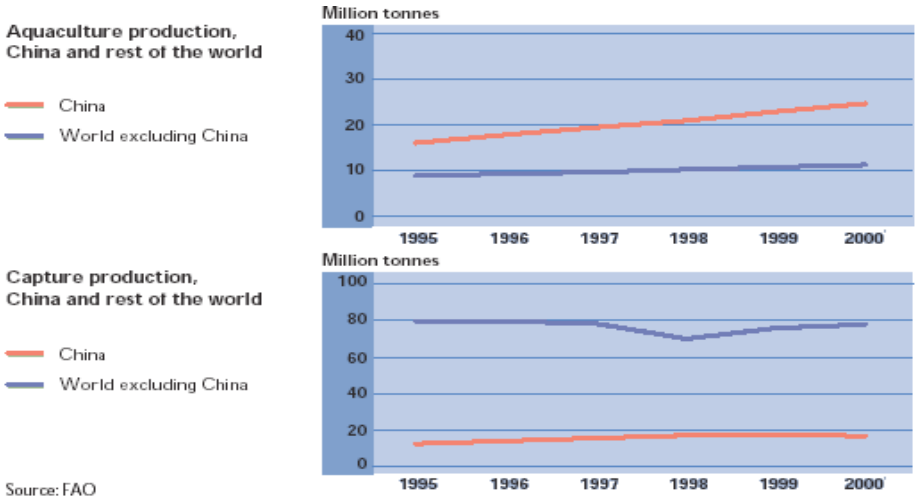
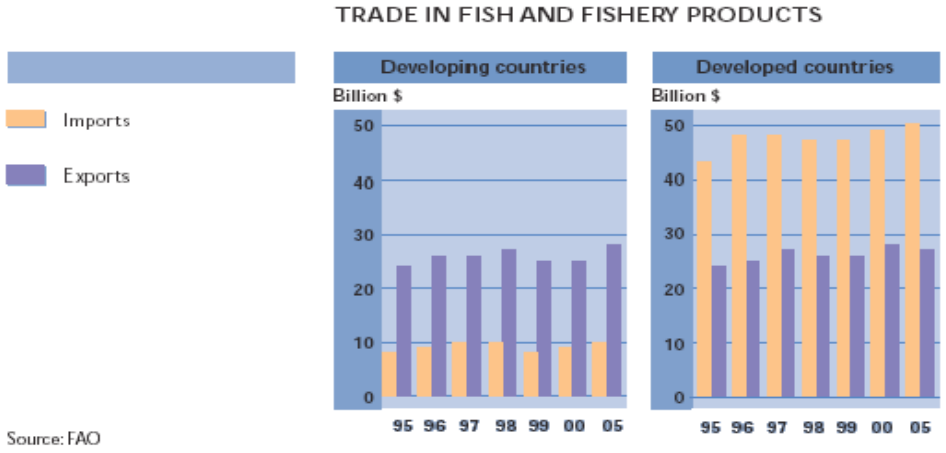



Excluding China, world production has remained flat, the 2005 figure of 88.68 million tonnes being only 0.8 percent greater than the 87.95 million tonnes achieved in 2000. However, the limited wild fish stocks in both oceans and inland waters place significant constraints on total wild capture production.




Total capture production, at 94.65 million tonnes in 2005, was only 3.0 percent higher than the 2000 level of 91.87 million tonnes (excluding China, production decreased by 2.1 percent). Aquaculture production is different from wild capture production. Total aquaculture production figures reveal the enormous potential of this source of food towards food security and poverty alleviation if the environmental impacts and other issues of sustainability relating to aquaculture facilities and to aquaculture production receive sufficient attention. Increasing by 45.3 percent from 24.5 million tonnes in 2000, total world aquaculture production reached 35.60 million tonnes in 2005, the bulk of it accounted for by China. Excluding Chinese production, world aquaculture production increased by only 27.5 percent between 2000 and 2005, to 11.02 million tonnes. These production gains have occurred in both inland and marine environments. Total world inland aquaculture production reached 21.20 million tonnes in 2005, an increase of 50.9 percent over the 2000 level of 14.04 million tonnes. World marine aquaculture production has similarly expanded, increasing by 37.8 percent from 10.45 million tonnes in 2000 to 14.40 million tonnes in 2005. In 2005, China alone accounted for 69 percent of total aquaculture production (72 percent of inland production and 65 percent of marine production). Total per capita supply of fish for human consumption has increased by 6.9 percent since 1995, from 15.32 kg to 16.38 kg in

2005, but excluding China it decreased from 13.36 kg in 1995 to 12.75 kg in 2005. In 2005, 99 million tonnes of fish supplied were used for food purposes, with 38 million tonnes attributable to China.

World import and export figures for fish and fishery products reveal the potential of these products for revenue generation. Despite a slump in the late 1990s, exports of fish and fishery products from developing countries or areas have increased by 84.4 percent since 1995, to $28.3 billion in 2005. Imports of fish and fishery products in these countries also increased by 84.3 percent over the same period, and at $9.5 billion represented about one-third of their exports. For more than a decade, the developed countries or areas have consistently been net importers of fish and fishery products. In 2005, imports by the developed countries reached $49.9 billion, compared with exports of $27.1 billion.


The largest export commodity category of fish (fresh, chilled or frozen) saw exports increase by 17.0 percent in volume (reaching 12 506 430 tonnes) and 13.0 percent in value (to $23.4 billion). The largest increase in exports from 2000 to 2005 occurred in what was, in 2000, the smallest (in terms of absolute tonnage)9 commodity category – canned crustaceans and molluscs. Indeed, world exports of these increased by 55.8 percent in volume terms, to 574 056 tonnes, and by 27.1 percent in value terms, to $3.91 billion.

China is the world's leader in aquaculture production following a steady development during the last three decades. Identification and analysis of the issues and factors that motivated aquaculture development in China could play a critical role, not only in understanding the future of aquaculture in China, but also in shaping aquaculture development in many parts of the world. The European Community developed the common fisheries policy. This policy takes into account the biological, economic, social and environmental dimensions of fishing. Implementation of the community fisheries policy follows as main goals:

- conservation of fisheries resources and responsible fishing;
- organization fishing beyond Community waters;
- restructuring of the fishing sector;
- common organization of the market;
- enforcement of the law in the fishing sector;

**2. Fisheries and aquaculture management**

Fisheries management efforts are increasingly complicated by the impacts of a

diversity of other activities – such as urbanization, shipping, tourism, deforestation and industrial wastes – on the heavily interdependent elements of the aquatic environment. There is growing recognition that principles, policies and mechanisms for identifying and prioritizing the uses of aquatic areas must be put in place so that the impacts of other sectors' activities on fisheries can be addressed. The need to implement ecosystem-based fisheries management is also being emphasized.

In both inland and marine fisheries, the pressures of intensified use, combined with other sectors' intensified use of areas in which fisheries occur, are slowly but surely refocusing fisheries management on ways of allocating limited fisheries resources among growing numbers of stakeholders.

There is growing recognition that overfished resources cannot serve as social security nets or food sources without creating civil strife over who can gain access to, and consume, the remaining fish and that overfished resources cannot be used as a platform from which to promote the ongoing support of profitable industrial fleets. Conflicts and conflict management are becoming key elements of fisheries legislation and management rapidly expands to accommodate social, economic and environmental considerations.

In short, the demands of fisheries management has grown beyond the need to address purely biological issues, and must now address and attempt to resolve an array of social concerns and multiple-use issues. As a result, there is an urgent need to reconsider the use of many of the management approaches that have been used to date. Current management is a steadily growing collective will in the international community of politicians and civil society to recognize and support the key role that fisheries play in economic development, food security, poverty alleviation and human health. Developing countries are continuing their efforts to clarify the linkage between development activities and sustainable resource use. Both population and economic growth are putting enormous additional pressures on inland and marine fisheries resources as contributors to food security and providers of a social safety net. At the same time, the use of domestic fisheries to generate foreign exchange is exacerbating allocation issues between artisan and industrial fleets. The challenges facing developing countries, together with the need for capacity building, are making management a difficult task, but there are growing signs that these efforts will have an enduring positive effect on civil and economic development.

In developed countries, legislated principles of sustainability are driving fisheries management efforts to reserve the effects of previous overfishing, and efforts to address overcapacity are receiving considerable attentions, although progress is slow. However, as developed countries focus on reducing overcapacity, increasingly intricate technical and social issues are complicating the efforts of fisheries managers. The impact of displacement and redeployment – of both people and vessels – are becoming the most important, difficult and contentious elements of fisheries management.

Technical measures (gear, time and area restrictions) continue to dominate fisheries management efforts as methods for achieving the conservation of fish stocks. Such measures are globally recognized as having the potential to be effective, particularly in fisheries where overcapitalization is not a problem. However, there is also an increasing awareness that there are issues of overcapitalization in many fisheries and that, in such cases, these types of fisheries management measures have either failed to result in the conservation or sustainable use of fish stocks, or have only succeeded at considerably cost to society.

Furthermore, as resources become scarcer and are shared by increasing numbers of users, there is a growing awareness that the escalating economic and social costs arising from the use of technical measures need to be compensated for. Thus, as civil society is demanding both stock sustainability and an accounting of economic and social costs of managing fisheries resources, there is inevitable pressure on managers to consider new or, at the very least different approaches. The use of incentives that affect fishers' behavior and create opportunities for both conservation and economic efficiency is gradually drawing more attention. Despite the inherent benefits of such incentive-based quotas, territorial use rights and transferable quota systems, their uptake and application in the fisheries arena are not rapid. One possible alternative to the use of win-win approaches is the consistent and persistent growth of market-based business strategies, such as ecolabelling schemes, which aim to harness market forces and create financial rewards

for people working in fisheries and satisfying sustainability and various criteria. In many instances, discussions regarding the adoption of incentive-based systems tend to be dominated by concerns relating to initial allocation formulas, consolidation and the exit and entry of participants – all of which can be accommodated in the design process. These concerns understandable because such management strategies create very strong market incentives and tend to be implemented as a last resort when fisheries stocks are under pressure, overcapitalization is present and participants are unlikely to be in a position to alter their investment strategies. Unfortunately, however, discussions also tend to ignore the many lessons to be learned from the numerous worldwide for coping with just such design concerns.

At present, in part because the incentives generated by many regulatory controls are not being considerate, fisheries management efforts regarding overcapacity are primarily concentrating on measuring, coping with and reducing it. Although such efforts are much needed, more emphasis should be placed on management strategies that prevent the initial development of overcapacitiy, thus avoiding the difficult and socially disruptive consequences of trying to reduce it.

**3. The fisheries and aquaculture policy**

Setting aquaculture as a priority in the development of the fisheries sector. Before 1979, the guiding principles for fisheries and aquaculture emphasized marine fisheries and fishing and tended to underrate freshwater fisheries and aquaculture. This policy led to the fisheries and aquaculture. This policy led to the slow development of aquaculture. Thereafter, the government issued a series of regulations to protect fishery resources and to make aquaculture development one of its priorities. Targets were set and means of achieving them defined. Guided by these general principles and policies, which were supplemented by other relevant and more specific policies, Chinese aquaculture development recovered from stagnation. By 1985, output from freshwater and marine water aquaculture had reached 3 090 000 tones, accounting for about 43 percent of the combined capture fisheries and aquaculture output. The Common Fisheries Policy (CFP) is the EC's instrument for the conservation and management of fisheries and aquaculture. It was created with the aims of managing a common resource and meeting the obligation set in the original Community Treaties. Wild fish are a natural and mobile resource that is considered common property. The treaties creating the Community stated that there should be a common policy in this area; that is, common rules adopted at the Community level and implemented in all Member States.The CFP came into existence in 1983, although the first elements of this policy had already been introduced in 1970. Since then, it has been developed and adjusted continuously in accordance with international developments and changes within the EC itself. The CFP takes into account the biological, economic, social and environmental dimensions of fishing. Its implementation entails the following main issues and related measures.

**Conservation and responsible fishing**. The EC policy for the conservation of fishery resources focuses on:

- limiting fishing effort through a strict licensing system;
- restricting catch volumes by setting total allowable catches (TACs) and establishing technical measures to minimize the occurrence of discards;
- promoting more selective fisheries by establishing technical measures related to mesh sizes, selectivity devices, closed areas and seasons, minimum fish and shellfish landing sizes and limits of by-catch;
- reducing fishing capacity to a level compatible with fishery resources availability;
- adapting management to fishing areas shared between the Community and third parties through active membership in nine regional fisheries bodies.

**Fishing beyond Community waters.** The EC has exclusive competence in international relations in the domain of fisheries. It is empowered to undertake international commitments towards third countries or international organizations in matters relating to fisheries. The European Commission, on behalf of the Community, negotiates fisheries agreements with third countries and participates in various regional fisheries organizations. The EC has concluded 21 fishing agreements with third countries and is currently a member of nine regional fisheries organizations. The EC is also member of FAO.

**Restructuring the fishing sector.** Restructuring of the EC fisheries sector relies heavily on the implementation of the structural policy, the purpose of which is to adapt and manage the development of

structures (the equipment required to produce goods and the organization of production processes) in the fishing and aquaculture industry. EC assistance in the fisheries sector is provided under the Financial Instrument for Fisheries Guidance (FIFG). The FIFG aims to:

- contribute to the achievement of a lasting balance between fisheries resources and their exploitation;
- strengthen competitiveness and the development of economically viable businesses in the fishing industry;
- improve market supply and increase the value that can be added to fish and aquaculture products through processing;
- help revitalize areas that are dependent on fisheries and aquaculture.

**Common organization of the market.** The EC set up a system for the common organization of the market for fisheries and aquaculture products almost 30 years ago. Since July 1996, the common market organization in fisheries and aquaculture products has been being adapted to increased globalization of markets, greater dependence on imports, continued scarcity of resources, change in consumption patterns and concentration and vertical integration within the distribution chain. The common organization of the EC market has four components:

- common marketing standards for quality, grades, packaging and labeling of both EC and imported fishery products;
- producers' organizations, which are voluntary associations of fishers that are established to help stabilize markets (their role is to protect fishers from sudden changes in market demand);
- a price support system that sets minimum prices below which fish products cannot be sold. Financial support is available to producers' organizations if they have to take fish and shellfish off the market, store them for later use or process them;
- rules for trade with non-EC countries.

**Enforcement of the law in the fishing sector.** The 1992 review of the CFP stressed the need to make the policy more effective. A new control regulation, created in 1993, reinforced the role of surveillance and extended the CFP's domain of action from that of direct conservation measures to one that also included implementation of structural policy, marketing, transport and sale of fish and shellfish. The new regulation also encouraged harmonization of the proceedings and penalties against wrongdoers across the EC. Information technology was to be used to complement traditional monitoring methods. The setting up of a Vessel Monitoring System (VMS) has also substantially strengthened fishing surveillance. This will be achieved through measures aimed at meeting several CFP objectives:

- responsible and sustainable fisheries and aquaculture activities that contribute to healthy marine ecosystems;
- an economically viable and competitive fisheries and aquaculture industry that benefits the consumer;
- a fair standard of living for those who depend on fishing activities.

## 4. Conclusions

Fisheries and aquaculture can be developed in a sustainable manner to generate food and jobs and improve the income and livelihoods of rural and urban populations, thus alleviating hunger and poverty. The engine for economically resilient and sustainable fisheries and aquaculture is the government's will and resolve to establish sound policies to support and develop the sector. Full employment of productive factors, including human resources, continuous improvements in the legal and regulatory framework for the development of the sector, and scientific breakthroughs in production technologies will strengthen aquaculture and ensure its sustainability. Thereby making it a good contributor to the country's overall economic growth through the supply of food, employment and foreign exchange and the creation of infrastructure, especially in rural areas.

The fisheries and aquaculture policies represent a component of rural development policies. The fisheries and aquaculture activites offers the perspective of multisectorial development in rural areas.

## References

- *Zahiu L., 1999, Management agricol, Editura Economică, Bucureşti;*
- *Zahiu L., Dachin A., 2001, Politici agroalimentare comparate, Editura Economică, Bucureşti;*
- *Zahiu L., Toncea V., Lăpuşan A., Toderoiu F., Dumitru M., 2003, Structuri agrare şi viitorul politicilor agricole, Editura Economică, Bucureşti;*
- *FAO yearboock, 1990 - 2005*