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Global Fisheries Governance and Case Study of Fisheries Governance of Autonomous Region of European Union – Azores

Katerina Tomkova
Luz Paramio

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Katerina Tomkova
Universidade dos Açores (DEG)

Luz Paramio
Universidade dos Açores (DEG e CEEAplA)

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RESUMO/ABSTRACT

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This article seeks to identify the key principles that should guide the definition of the Global Fisheries Governance and Management. A particular focus for this work has been the concept of participative governance and the co-management systems in which responsibility for management is shared between the world, regions, states and user groups, usually at the local level. Governance in the context of fisheries is divided in this article to three levels: the first dealing with issues of legal instruments, the second concerned with institutions and the third focusing on the construction of mechanism of management, in terms of economic, social and environmental values and principles to guide fisheries policy making along a consistent path of case study of fisheries governance in Azores.

Keywords: Evaluation; Global Fisheries Governance; Common Fisheries Policy; Fisheries Management; Fisheries Governance of Azores

Katerina Tomkova
Universidade dos Açores
Departamento de Economia e Gestão
Rua da Mãe de Deus, 58
9501-801 Ponta Delgada

Luz Paramio
Universidade dos Açores
Departamento de Economia e Gestão
Rua da Mãe de Deus, 58
9501-801 Ponta Delgada

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Abstract
This article seeks to identify the key principles that should guide the definition of the Global Fisheries Governance and Management. A particular focus for this work has been the concept of participative governance and the co-management systems in which responsibility for management is shared between the world, regions, states and user groups, usually at the local level. Governance in the context of fisheries is divided in this article to three levels: the first dealing with issues of legal instruments, the second concerned with institutions and the third focusing on the construction of mechanism of management, in terms of economic, social and environmental values and principles to guide fisheries policy making along a consistent path of case study of fisheries governance in Azores.
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1. Introduction

Fisheries are an important source of food and income for about 8 per cent of the world's population 520 million people) who depend directly or indirectly on the fishing sector (FAO, 2009). Adequate fisheries governance is necessary to guarantee the sustainability of fisheries-related activities. Global importance of fisheries is really important. Faced with global interconnectedness, new technological challenges, developments in international law and increasing international institutional co-operation the structure for decisions taken on fisheries issues is being transformed. Fisheries governance should show at least two main design characteristics: to recognize fisheries as a complex of adaptive systems and to treat social and ecological factors. Governance is a broad term used to describe the way governments are formed, how they exercise powers and the extent to which they are accountable to, and allow participation by, the public. Given widespread dissatisfaction with the CFP, it is of little surprise that 'governance' is also among the list issues in the Commission's Green Paper on the Future of the CFP. To understand this reluctant conversion in this paper the main objectives are collection the information about European policy implementation of field in Fisheries and Sea of Azores, analyzing the implementation of European fisheries policy components and analyzing fisheries governance throughout the legal instruments, institutions and mechanism from international to regional, supranational, national and local dimension – the local dimension = the case of Azores). This paper identifies a number of the principal transformations in fisheries policy-making in economics, international institutions and international law-making. It argues that these changes are the result of complex structural changes to the international political system.

Currently the number of actors is increasing as a result of the development of civil society, the fisher and the fisher community. Regionalization and decentralization do not bear a linear relationship, greater devolution does not result in greater participation. Co-management is now also a more complex process in fisheries

management. Governance, as interaction between state, civil society and the market, might not strengthen the most traditional of the interest groups (Vivero et all 2007).

The Azores archipelago is a group of nine volcanic islands situated on the Mid-Atlantic ridge. The islands and their contiguous shelf (<500 m depth) have an estimated area of 412 km^2, which represents only 0.4% of the Azores EEZ of about one million km^2. Fisheries in the Azores starred in the 1600s, long after the colonization of the islands in the early 15^{th} century (Isidro 1996).

2. Conceptual Methodology of Governance Fisheries in Azores

At first it is important to evaluate in general the Global Fisheries Governance which is based on collation of available material and literature sourced through the internet, from individuals, institutions and then to deeply focused to past and present projects in University of Azores; compilation of directly available statistics and studies; compilation of extensive lists of information sources (ministries, national statistical offices, national and regional professional organizations, chambers of commerce, etc.); analyzing instruments and dynamics of sustainability and sovereignty of the Sea of Azores; evaluation of Fisheries and Governance throughout:

1. Legal documents – categorization of **legal instruments by 3 dimensions:**

- with two indicators of qualities of legal instruments:

a) *Q1*: Kind of regulation (hard, medium, low);

b) *Q2*: Degree of implementation (hard, medium, low);

2. Institutions – two indicators of qualities of institutions:

a) *Q1*: Kind of institution (executive, NGO,research);

b) *Q2*: Degree of power (hard, medium, low);

3. Mechanism of management – two indicators of qualities of mechanism:

a) Q1: Kind of action (economic, social, environmental);

b) *Q2*: Degree of quality (past, present, future)

→From international to regional, supranational, national and local or "domestic" stage and analyzing the evaluation of Fisheries and Governance to the matrixes.

For evaluation of stakeholders influence and importance in Global Fisheries Governance is used the matrix of influence and importance and variables which are affecting stakeholders´relative power and influence with following steps:

1. defining variables:

a) *Q1*- within and between formal organizations:

- legal hierarchy;
- authority of leadership (formal, informal, political connections);
- negotiating position (strength in relation to other stakeholders).

b) *Q2* – for informal interest groups:

- social, economic and political status – degree of organization, consensus and leadership
- informal influence through links with other stakeholders
- degree of dependence on other stakeholders

2. brainstorming and taking time to understand stakeholders;
3. combining influence and importance to matrix diagram;
4. determining how and which stakeholder should participate in fisheries activities.

3. Global Fisheries Governance

Fisheries management has existed in some form since prehistoric times, initially arising as a response to local fishing pressures and the need for local management to

assure the sustainability of the fish stock (Coull 1993). During the 20th century, fisheries throughout the world began expanding both horizontally to explore new distant stocks and vertically to harvest deeper stocks, as technological advances in vessels, fish capture gear, fish processing, and storage facilitated this expansion (Degnbol 2004). These technological advancements were associated with new threats to global fisheries including overfishing and habitat destruction. Fisheries management is defined as: "the manipulation of aquatic organisms, aquatic environments, and their human users to produce sustained and ever increasing benefits for people" (Nielson 1993).

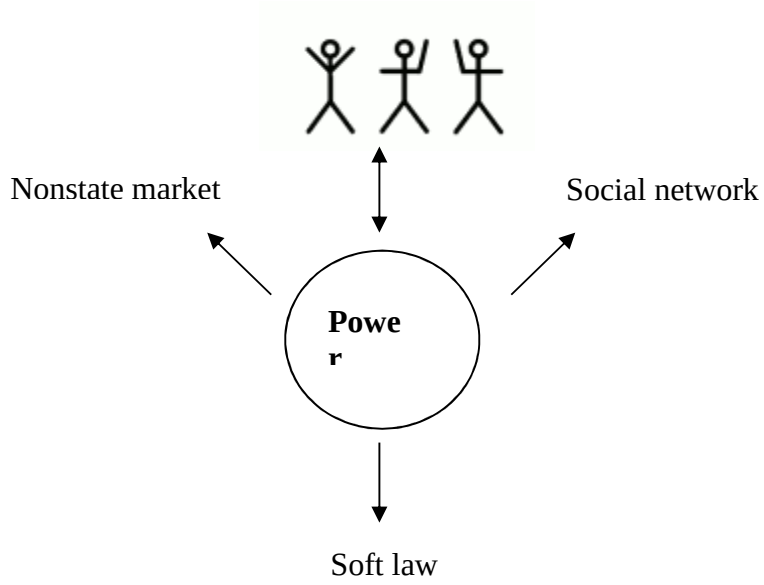
Fisheries management was seen as the tool to respond to the increasing international and global harvest pressure on fish stocks (Coull 1993). Accordingly fisheries management became more prominent during the second half of the 20th century (FAO 2006a). Past management strategies had proved ineffective in preventing unsustainable fishing of targeted fish stocks and changes had to be made (Degnbol 2004). Fisheries management, mirrored by fisheries science and their fisheries modeling tools, shifted from the focus of expanding and optimizing fisheries operations during the early to mid 1990s, to a focus on sustainable fisheries of targeted stocks, and then during the late 1990s, to ecosystem sustainability and applying the precautionary approach (Degnbol 2004). In general, fisheries management and its underlying science have changed during the past century, and continue to change while seeking a better management approach to attain sustainable fisheries.

Compared to the changes observed in fisheries management, however, fisheries governance has been slow in responding to the increasing internationalization and globalization of fish stocks. This difference in response rate may be due to the inherent difficulties of bringing together the authoritative entities, i.e., sovereign states and other actors that are needed to develop a successful, ideal governance structure for fisheries. Currently, the fisheries governance institutions for shared (high sea, migratory, and straddling) fish stocks are structured similarly to those used within a national boundary. There are however, some fisheries governance institutions that have been established to coordinate among national governance institutions and these differ somewhat from the national institutions. Nowadays there is a need for the reordering of the actually existing global fisheries governance institutions.

This reordering of institutions must result in 1) adopting interdisciplinary and inclusive management processes, including the views of all stakeholders; 2) possessing sufficient authority and enforcement powers to address both intra- and inter-generational concerns; 3) emphasizing soft law, social networks, and non state market-driven governance systems; and 4) resolving controversial issues, e.g., subsidies. It is these actually existing global fisheries governance institutions, and the need to evolve towards ideal global fisheries governance institutions to achieve sustainable global fisheries. Governance is not a synonym of the term management or of the term government.

Management, as defined by Sissenweine and Mace (2003), "is about action, … about the implementation-in a technical sense-of decisions and actions in accordance with rules (these decisions and actions do not have to be restricted to the implementation of the management tools per se, they can also relate to planning and assessment)."

Figure 1: Results of reordering of institutions



Governments can be viewed as a subset of governance that involves only the governmental actors and associated governmental institutions (Rosenau 1995). Governance "is about sharing responsibility and power; it is about setting the policy agenda," the decision-making process is "about the process of implementing managements actions" (Sissenweine and Mace 2003). Governance is more encompassing than government because of the comprehensive focus on the various phases of the policy-making process and because of the variety of institutions that are considered. These institutions include nonstate actors, governmental actors, hard (binding, as with treaties) and soft (nonbinding, as with the United Nations General Assembly resolutions and codes of conduct) law, formal and informal rules, understandings or norms that influence behavior, as well as so-called private governance, such as market mechanisms. Governance is then extended to ´global governance´ when it involves "…governing, without sovereign authority, relationships that transcend national frontiers" (Finkelstein 1995).

Governance is on occasion interpreted as an action executed by the government, especially the formal executive power institutions (Vivero). Kooiman (Kooiman 1999) defined it as the free play of participation and trade-off between the various social actors, and between the public and private sectors, without traditional government intervention, "coordination without a coordinator" or a type of "governing without Government"(Rosenau1992; Rhodes 1996). Governance could therefore be defined as a kind of social coordination that is born out of the constant interaction between social agents of all types. The concept is associated with the capacity for self-coordination that networks made up of a wide variety of public and private. State and transnational organizations and bodies possess (Vallés 2000).

From the 1990s and after 2000 the concept of governance burst onto the ocean and fisheries management scene, in an attempt to provide an explanation to a dynamic, complex, ever-changing, often crossborder reality in which social and institutional groups (State, market, civil society) with generally diverse interests interact (Vallega 2001). Governance holds basic social values and ethical principles to be issues of consideration and decision-making. The involvement of stakeholders, representing the state, the market and civil society is also essential (Kooiman 1999).

3.1 International law

This theme includes three binding instruments (one convention and two agreements) and ten legally non-binding instruments (which include the Code, plan of actions, and resolutions from meetings). The theme also includes resolutions from the United Nations General Assembly (UNGA) that are relevant to oceans and the Law of the Sea.

The United Nations Convention on the Law of the Sea (**UNCLOS** 1982), often referred to as the 'constitution of the sea', is one of the most significant international instruments of the 20th century. It establishes a set of rules for the oceans, covering ocean space, including navigation and overflight uses; territorial sea limits; conservation and management of living marine resources; protection of the marine environment; marine research regime; and a binding procedure for settlement of disputes between States. UNCLOS gave coastal States rights and responsibilities to manage and use fishery resources within their exclusive economic zones (EEZs). UNCLOS is supplemented by two agreements dealing, respectively, with seabed mining, and straddling and highly migratory fish stocks.

The United Nations Fish Stocks Agreement (**UNFSA**, 1995) provides a legal framework for the conservation and management of straddling and highly migratory fish stocks, based on the precautionary approach.

By the late 1980s, it was clear that fisheries resources could not be exploited in an uncontrolled fashion, and calls for new approaches to fisheries management began to be made. This was addressed at the International Conference on Responsible Fishing, (Cancun Conference, 1992). The outcome Cancun Declaration called for the preparation of an international code of conduct to address the issue of fisheries management. This declaration also contributed to the 1992 UNCED process and to Agenda 21. Subsequent to UNCLOS, in order to effectively control activities of the fishing vessels flying their flags, States adopted the 1993 Compliance Agreement at a conference of the Food and Agriculture Organization of the United Nations (FAO).

Following the **Cancun Declaration**, in 1995, the **Code of Conduct for Responsible Fisheries** was adopted. This establishes principles and standards for the conservation, management and development of living aquatic resources, with due respect for the ecosystem and biodiversity. The Code, a voluntary instrument, also recognizes the nutritional, economic, social, environmental and cultural importance of fisheries, and the interests of all those concerned with the fishery sector. Within the framework of the Code, FAO also adopted International Plans of Action (**IPOAs**), which are voluntary instruments elaborating the Code. There are four IPOAs:

- IPOA for reducing incidental catch of seabirds in longline fisheries;
- IPOA for the conservation and management of sharks;
- IPOA for the management of fishing capacity;
- IPOA to prevent, deter and eliminate illegal, unreported and unregulated (IUU) fishing.

The most recently adopted voluntary instrument to elaborate the **Code is the Strategy for Improving Information on Status and Trends of Capture Fisheries**. This provides a framework, strategy and plan for the improvement of knowledge and understanding of fishery status. The basic principles of the Code are reflected in these instruments.

The importance of sustainable fisheries and the need to incorporate ecosystem considerations in fisheries management plans were highlighted at the Conference on Responsible Fisheries in the Marine Ecosystem (**Reykjavik Conference**, 2001).

UNCLOS, the 1995 Fish Stocks Agreement and the 1993 Compliance Agreement are the three important legally binding instruments on issues related to

oceans and fisheries management, while the other instruments are non-binding or voluntary.

3.2 Relations of global and Azores Fisheries Governance

International fisheries institutions have expanded to create a network of global co-ordination. Over the past 50 years, fisheries policy making has developed from a position of minimal international co-operation and the pre-occupation of individual states, into a range of organisations holding authority on global fisheries manage-ment. Global politics is conceived of as a multilevel system in which local, national, regional and global political processes are inseparably linked. In global governance it is hard, if not impossible, to discern a hierarchy among forces that drive politics beyond the state level. These forces include power relations, interest-based interstate bargaining, as well as norms and advocacy networks.

Table 1: Typology and timeline of governance and institutional reforms in fisheries

	Reforms					
Time period	Technology	Fishery jurisdiction	Trade and food safety standards	Aquaculture development	Instruments and conventions	Legislative reforms
1950s to 1960s						
1970s to 1980s	✓	✓	✓	✓	✓	
1990s to present		✓	✓	✓	✓	✓

The changes in fisheries take many forms such as technological improvements, increase in fishery jurisdictions, new trade and food safety standards, development of aquaculture, international instruments or conventions, and legislative reforms (Table 1). Technological advancements have been instrumental factors in augmenting the fish trade. The expansion in aquaculture processes and quality has led to a new type of fish production. Improved techniques in the processing of fisheries products have facilitated the speed of production large-scale modern fishing practice bears little resemblance to the romantic image of a local fishing boat taking a daily catch. The socio-economic impact of technological developments is becoming increasingly evident. Employment in marine fishing has been declining steadily since the 1970s. Small-scale fishermen, often at the lower level of the decision-making scale, are particularly at risk: more efficient large-scale fishing threatens their existence (OECD 2000). These changes may directly or indirectly have an impact on poverty reduction and environmental integrity. Institutional changes may be influenced and driven by international agreements and conventions or by the dominant paradigm of the time regarding the problems and appropriate solutions to those problems. In complying with international agreements and conventions, or formulating solutions, national governments may choose to create new institutions or abolish existing ones, pass new legislations leading towards decentralization of authority, support research to improve technology, or institute new processes. One of these courses of action may be dominant at one time or another, and may conflict or be in harmony with existing institutions and practices. Moreover, there will be differential impacts among the different sectors involved in fisheries and

aquaculture, e.g. fisheries, fish farmers, traders, fish workers, importers and exporters, as well as the different levels of government.

Table 2: Changes in paradigm and governance and institutions in fisheries at different time periods

		Dominant paradigm			
Governance and Global Institutional Responses		Unexploited potential	Peak and early signs of resource crises Economic growth	Sustainable development	Access rights Social equity Poverty elimination Multi-functionality and eco-system approaches
	Global	Freedom of the seas	EEZs, UNCLOS, common heritage of mankind	Brundtland Report	Trade liberalization, MDG, WSSD
	National	Open access	• Expansion of jurisdiction of coastal states • Sharing and licensing agreements through joint ventures with distant water fishing nations • Modernization of fishing fleets • Monitoring, control and surveillance system • Aquaculture revolution • Export of Western stock assessment and management techniques	• Environ-mental regulations • Integrated coastal zone management • Participatory approaches in fisheries management • Biodiversity • Local ecological knowledge	• Environmental regulations • Integrated coastal zone management • Participatory approaches in fisheries management • Biodiversity • Local ecological knowledge
	Local		• Increased effort • Conversion of mangroves into fishponds • Privatization		• Coastal resource management planning • Establishment of MPAs
		1950s -1960s	1970s - early 80s	Mid-1980s - early 90s	Mid-1990s - 2000
		Time period			

Table 2 illustrates the paradigmatic shifts in fisheries and how these have influenced governance and institutional changes at the global, national, and local levels. The 1950s and 1960s saw the early development of fisheries before the advent of technological breakthroughs that would revolutionize fish harvesting and production. The “freedom of the seas” dominated the thinking among fishing nations. The following decade saw the declaration by coastal states of exclusive economic zones up to 200 nautical miles (n.m.), increasing territories under national jurisdiction, with concomitant modernization of fishing fleets and harvesting technologies. By the end of the decade, alarm bells were being sounded about the crisis in the world’s resources. The beginning of the 1980s ushered in new thinking about the world’s oceans, from the “freedom of the seas” to the “common heritage of mankind” with the passage of the United Nations Convention on the Law of the Sea (UNCLOS) in 1982. During the same decade, the framework of sustainable development was laid down by the Brundtland Commission.
By the 1990s, concern about property rights and social equity dominated the discussions, and countries moved towards participatory approaches to resource management and decentralization. This decade saw the establishment of marine protected areas as a tool for fisheries management.

4. Evaluation of Azores Fisheries Governance

4.1Disjuncture: law

Regional

RFMOs play a key role in the global system of fisheries management. They are the main mechanism for achieving cooperation between them and between coastal states and fishing nations. They are also essential for the effective management of international fisheries. The basic objective is to provide RFMO effective platform for international cooperation to States agreed on measures on the conservation and management with regard to sea. Formal cooperation between States through fisheries management organization dates from the early twentieth century, but increased more rapidly since 1960. There are 38 regional fisheries management organizations around the world: 20 advisory bodies and 18 RFMOs.

FAO defines RFMO as "intergovernmental fisheries organization or arrangement, which have the power to determine the fishing measures for conservation and fisheries management." Some of them, such as the International Whaling Commission (IWC) and the Organization for the Conservation of Salmon in the North Atlantic Ocean (NASCO), have very specific mandates, or dealing with different species.

Supranational

The Common Fisheries Policy was first formulated in the Treaty of Rome, which was part of the Common Agricultural Policy, and during the formation of the two policies became independent. Community competence to order the fisheries management measures are integrated in the provisions of the common agricultural policy (Article 38-43 of the Treaty on the Functioning of the EU). In 1983 the Council adopted Regulation (EEC) No. 170/83, which established a common fisheries policy based on the principle of a new generation of relative stability. This was followed by three important events that had an impact on the size and structure of the fleet, when Greenland withdrew from the Community in 1985, joined Spain and Portugal in 1986 and the unification of Germany in 1990, why was followed by another Regulation (EEC) No. 3760 / 92 of 1992, which sought to reduce inequalities between fleet capacity and fishing potential social impacts and fishing effort. Since this regulation

failed to stop overfishing, it was necessary reforms in the form of an additional 3 regulations adopted in 2002:
1) Council Regulation (EC) no. 2371/2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy
2) of Regulation (EC) no. 2369/2002 amending Regulation (EC) no. 2792/1999 on detailed rules and arrangements regarding Community structural assistance in the fisheries sector
3) Council Regulation (EC) no. 2370/2002 establishing an emergency Community measure for scrapping fishing rules
Since there continues to deterioration of fish stocks was in place further reform of the CFP in order for European fisheries policy in the 21st century. Consultation of the reforms carried out since 2009, and May 1, 2013, agreement was reached on fishing. Along with the Lisbon Treaty was granted greater legislative powers of Parliament under this agenda and allowed him to participate in the formation of SRP.

EU Natura 2000 - undersea mountains and peaks are in accordance with European Union Directive on Habitats, part of the Natura 2000 network of protected areas large area (at least 60%) of habitats in the waters around the Azores, in the interests of the Community and the Member States.

National

The main objective of the national fisheries policy, particularly since 2002, is to maintain the sustainability of the sector and to reverse the negative trend of recent years. To achieve this goal, several steps were taken to support the recovery and stabilization in the fisheries sector. Structural modernization of the fishing industry, as well as the processing industry and the aquaculture industry, are also supported under this plan for fisheries management. These objectives are in line with the EU Common Fisheries Policy. The current national system management includes setting annual TACs and quotas for some species and fishing areas, the application of technical measures for the conservation of resources and reduction of fishing effort.

Portuguese fisheries policy is therefore implemented under the common fisheries policy, without prejudice to additional national legislation in general mode, which is indicated in Legislative Decree no. 278/87 of 7 July 1987, as amended by Legislative Decree no. 383/98, of 27 November 1998 and applicable regulations. Regulation no. 383/98 in fact strengthened the basic principles on which the CFP is especially responsible for: the precautionary approach, intergenerational solidarity, equality and non-discrimination.

The basic national legislation on technical measures is reflected in Decree no. 43/87 of 17 July 1987 as part of a Decree no. 7/2000 of 30 May 2000 and regulations governing the use of fishing gear. Community legislation in this area is Council Regulation (EC) no. 850/98 of 30 March 1998.

In support of the third Community, a new type of organizational structure for management, monitoring, evaluation and control initiatives under the Operational Programme for Fisheries (MARE) was established by Legislative Decree no. A-54/2000 of 7 April 2000. Technical, administrative and financial management of each operating a sectoral initiative is solved by governing body whose powers are defined in Article 29 of Legislative Decree no. a-54/2000 of 7 April 2000. It is the governing body required under Regulation (EC) no. 1260-1299. Review of legislation was also made regarding the minimum size for commercially important species, in order to harmonize the rules concerning inland marine waters outside and the open sea.

Local

Changes in the organizational structure of the Regional Government of the Azores, which are contained in the local Decree no. 33/2000 / A, were introduced as part of the so-called. Follow-up and effective response to new requirements in support of the third Community.

Other changes were necessary in the administration of Prodesi, Operational program for economic and social development in the Azores, which bring into line with the new structure of the organization, together with the appointment of the governing body that is specified in Legislative Decree no. 122/2001 of April 17, 2001 .

In the framework of local laws, Azorean fisheries applied each legislative decrees or orders. For example Decree no. 1/2014 of 10 January 2014 authorized the catch limit. In addition, the Regional Legislative Decree no. 19/2013 / A - FUNDOPESCA on salaries in the fisheries sector, Decree No. 73/2008 - PROPESCAS that establishing a program to support investments in fishing ports, Decree no. 70/2013 - the trade in fish, Decree no. 20/2013 - the Forbidden directed fishing of certain species, the Regional Legislative Decree no. 9/2007 / A dated 19 April, the directed fishery marine animals, plants and animal species in the Portuguese EEZ (Azores).

Table 3: Level of implementation of legal power

Kind of regulation / Level	Hard	Medium	Low
International	++		
Regional	++		
Supranational		+	
National			+
Local			+

Level of implementation ++ high + medium - low

4.2Disjuncture: institutions

International

International fisheries organizations are the United Nations, in particular the Food and Agriculture Organization (**FAO**). FAO monitors the activities of these bodies: Committee on Fisheries (**COFI**) and Subcommittee on Aquaculture - **COFI / AQ**. **PAcF** - Global partnership for climate change, fisheries and aquaculture - is a voluntary initiative of the global level of about 20 international organizations and institutions, industry and common interest in the field of climate change in the interaction with global waters, natural resources and their social and economic consequences. Within the UN, a number of major international institutions established under the United Nations and engaged in fishing. The Convention on Biological Diversity (**CBD**), Commission on Sustainable Development (**CSD**) is a discussion forum created following the United Nations Conference on Environment and Development (**UNCED**, Brazil, 1992) and regularly deals with fisheries issues. United Nations Secretariat of the UN Convention on the Law of the Sea and monitor its implementation through its Division for Ocean Affairs and the Law of the Sea (**DOALOS**). This division is also the Secretariat of the International Tribunal for the Law of the Sea (**ITLOS**).

There are also international and non-governmental organizations dealing with fisheries, either exclusively or as part of a broader mandate. Among them: **Greenpeace**, International Coalition for Fishery Association (**ICFA**); International team to support people working in fisheries (**ICSF**); International Union for Conservation of Nature (**IUCN**); World Wide Fund for Nature (**WWF**).

Figure 2: Graphic image of the types of stakeholders at various levels of Global Fisheries Governance

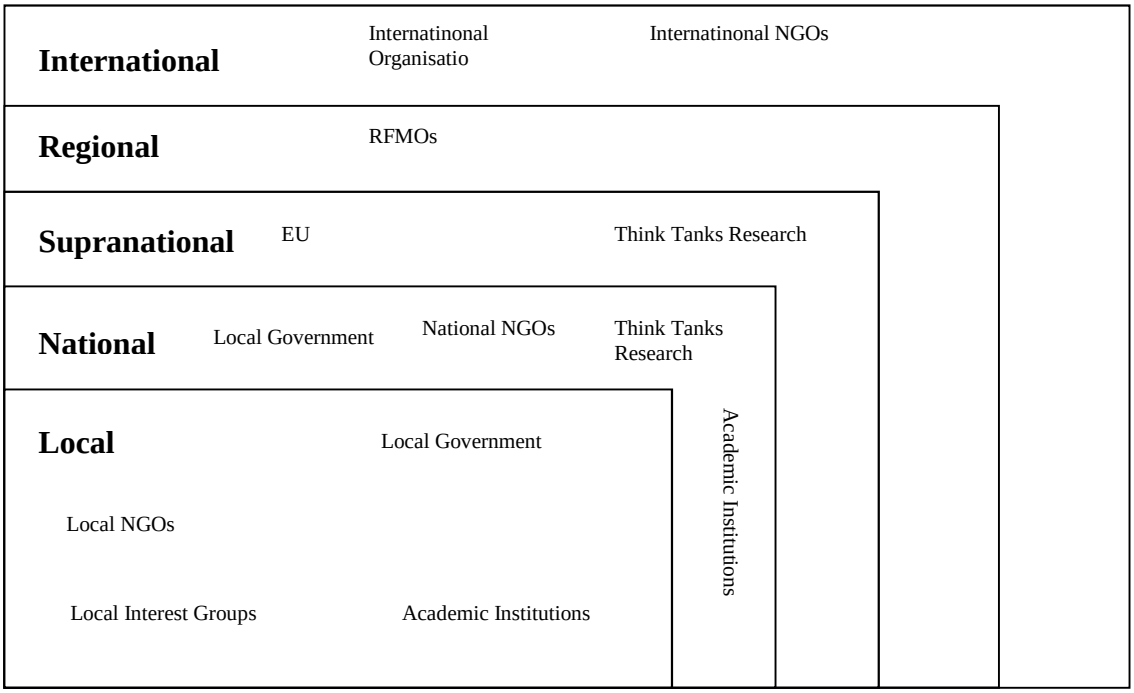


Table 4: Power of International institutions

Stakeholder \ Kind of power	Executive	NGO´s	Research
FAO	++		++
PaCFA	+		
CSD	++		
DOALOS	+		
ITLOS	++		
Greenpeace		+	
ICFA		-	
ICSF		-	
IUCN		++	
WWF		+	
Level of power	++ hard	+ medium	- low

Regional

RFMOs are international organizations, composed of the countries with fishing interests. Some of them deal with all the stocks found in certain areas, while others focus on specific highly migratory species, especially tuna in the entire of geographic areas.

Organizations are open to individual countries in the region ("Coast States") and the country with a share in fisheries issues. Some RFMOs have only an advisory role, most of them have management powers to set catch limits and fishing effort, technical measures and control duties. Specifically, this article is dedicated to the area of the northeast Atlantic in the case study - the Azores, which is the main reason for further description of certain organizations only: ICCAT - The International Commission for the Conservation of Atlantic Tunas; Commission for the Northwest Atlantic Fisheries; North Atlantic Salmon Conservation Organization (NASCO); International Council for the Exploration of the Sea (ICES); OSPAR Commission.

Supranational

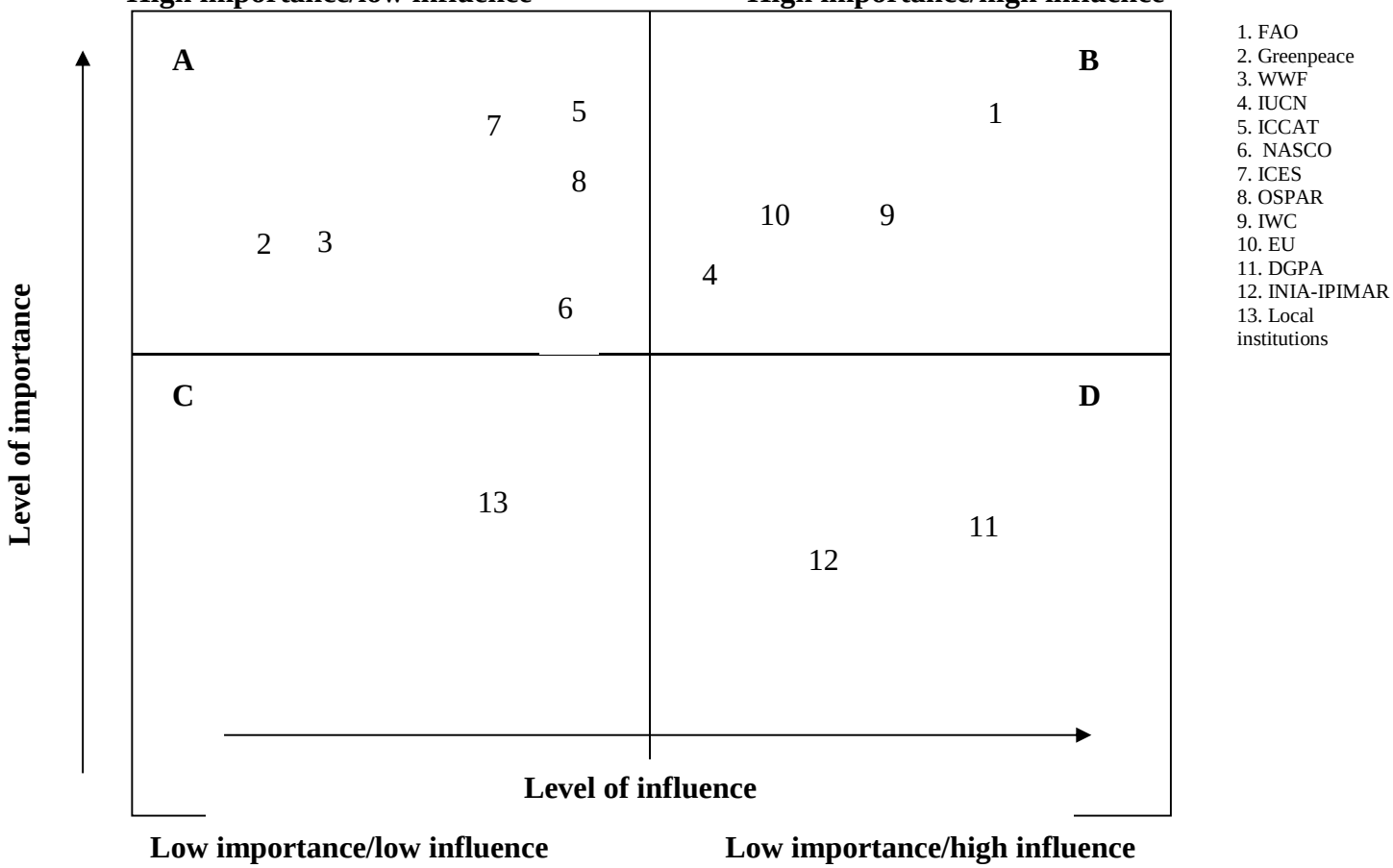
The delegation of fishery policy at supranational level is responsible to the European Union can be viewed as evidence of declining state-centric governance. In practice the EU states still have considerable power in implementing decisions made at the EU headquarters in Brussels. For instance, EU member states can thwart those decisions by trying to influence the Commission, the Council, in legal cases, before the European Court of Justice. Currently, there are few global governance institutions with the power to bind member states, indeed they are the exception rather that the rule. The EU with its current 28 members is the world´s biggest market for fishery products and third largest fishing power (France 2006).

A series of research studies conducted as part of the various EU Framework Programmes have in recent years explored possible alternatives to the management systems that predominate in European institutions with a single common denominator – to strengthen the participation of the whole gamut of social actors in order that reforms, characterized by the hefty reduction in the fishing effort, might be taken on board and the EU fishing policy thus given greater legitimacy and credibility. One working hypothesis that has been accepted is excessive centralism on the part of the Commission, the disadvantage of which is the distancing of those it is administrating. Consequently, the need to begin a process of devolution that might allow the traditional actors in the fishing industry to regain a lead role is being looked at. A plethora of concepts relation to devolution and participation have been considered with the aim of establishing new regulatory frameworks for fisheries management and the relationship between the industry and the institutions (EC 2004; EC 2001).

The EU is a unique intergovernmental and supranational union that aims to enhance political, economic and social cooperation. To achieve these aims, the EU has divided its activities into three pillars: 1) the European Community with responsibility for internal market policies, agriculture, competition policy, immigration, asylum, as well as economic and monetary union; 2) common foreign and security policy; and 3) police and judicial cooperation in policy matters. The decision-making styles differ among the pillars. The first is supranational; the second is primarily intergovernmental; and the third is also intergovernmental. Fisheries was recognized as an important resource that needed to be managed as a common resource by the initial six founding states in 1957. These six states identified fisheries as one of the few topics upon which a common policy was explicitly agreed, and they included fisheries under the same heading as agricultural products (Rome Treaty, Article 38).

Nowadays there are these Institutions in European Union which deal with fisheries: Directorate-General for Maritime Affairs and Fisheries; Advisory Councils (ACS); Regional Advisory Council for Overseas fleet and the Community (LDRAC); Scientific, Technical and Economic Committee for Fisheries (STECF); European Parliament - Committee on Fisheries; The Agriculture and Fisheries (AGRIFISH); The European Environment Agency (EEA); Economic and Social Committee; Committee of the Regions; The European Maritime Safety Agency– EMSA; Fisheries Control Agency (EFCA); The Fishing Alliance (EAA).

Figure 3: Importance/influence Matrix of stakeholders in Global Fisheries Governance



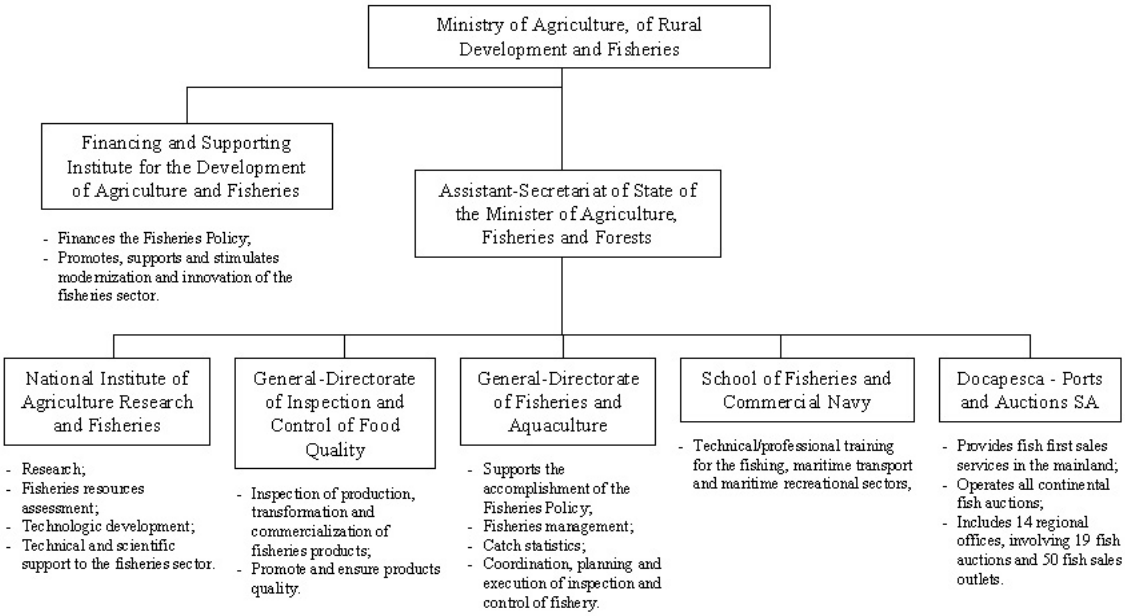
This matrix is used to capture the degree to which each stakeholder has influence over the relevant issues and their level of interest. It maps the stakeholders according to their influence and power in relation to the intervention. The definition of influence is based according to the power that stakeholders have over a project (concerning fisheries issues) – to control what decisions are made, facilitate its implementation, or exert influence that affects the project negatively. The extent to which the stakeholder is able to persuade others into making decisions. The definition of importance is according to the priority given to satisfying stakeholders´ needs and interests through the project concerning fisheries.

National

The main institution responsible for fisheries management is the Directorate-General of Fisheries and Aquaculture (DGPA), in association with the Assistant-Secretariat of State and the Ministry of Agriculture, Fisheries and Forests. The National Institute of Agriculture Research and Fisheries (INIA-IPIMAR), as well as the Producer Organizations and Shipowner's Associations, are consulted and have an advisory role in

the decision-making process. INIA-IPIMAR is also responsible for fish stock assessments within the International Council for the Exploration of the Sea (ICES) and the Northwest Atlantic Fisheries Organization (NAFO) frameworks. INIA-IPIMAR uses information collected during research surveys and in fishing ports, and also the catch statistics provided by DGPA. At a national level, INIA-IPIMAR has also the role of proposing technical measures to protect and maintain fish stocks.

Figure 4: National level of fisheries institutions



Source: http://www.fao.org

Local

In Azores are a few organizations and interest groups involved in fishing and the social context of fisheries. One of these associations is **APEDA**, or an Association of Producers and Marine Species of the Azores, which was founded in 2002. The objectives are to take appropriate measures, to ensure the rational exercise of pelagic, small crustaceans and mollusks and improve the conditions of sale or valuation fish caught.

Another important organization is **Porto Abrigo**, which develops its activity, fishing activities of producers who want to combine fishing effort in order to achieve a common level of production and activities while promoting a sense of collective responsibility. Organisation for fishing and watching the fish in the Azores - **POPA** was established as a response to increased fishing of tuna and intentional harassment of cetaceans in 1998, have the status of Friend of the Sea, which confirms that the Azores fishery is sustainable and environmentally friendly, where is the excessive use of resources and damage to ecosystems associated with them. With the great success of this organization was satisfied the European Union, which co-funded this project in 2005.

There is also **UMAR** - feminist-oriented organization that gives women in social awareness and ensuring equality between women and men. For a long time was fishing in the Azores for many people, mostly men the main source of livelihood. The woman was not business visibility in the fisheries sector. They were considered only as wives, mothers, sisters of fishermen. University of the Azores has also created **DOP** - Department of Oceanography and Fisheries, which is involved in various activities in these areas while trying to better understand the dynamics of this region, its biological,

physical, chemical and geological context with other oceanic regions of the world. There are many departments that are interested in Fisheries at University of Azores, for example the Centre of Applied Economics Studies of the Atlantic (CEEApIA) and other stakeholders at UAC. Institute of Marine Research - **IMAR** was created in 1991 as a private non-profit organization. Its founding members are the majority of universities in Portugal, which undertake to conduct research in the field of marine science and technology. The general objective is to develop marine science and technology in Portugal, through the integration of different disciplines and to support scientific collaboration.

Table 5: Power of Local institutions

Kind of power / Stakeholder	Executive	Environmental	Research
APEDA	-	+	+
Porto Abrigo	+	+	+
POPA	++	+	+
UMAR	+	-	+
UAC - DOP	++	++	++
IMAR	+	+	++
UAC - CEEApIA	+	++	++
Level of power	++ hard	+ medium	- low

4.3 Mechanism of Management in Azores fisheries

Economic mechanism

Migratory fish stocks are often species of high commercial value—tuna provides an example, being important economically and as a source of food. Due to modern technologies in fishing techniques, fish catching on the high-seas is highly competitive. In addition the high seas do not have the national claims held within EEZ areas so the incentive to maximise profit is increased (GATT 1991).

Fisheries management sets of incentives facing fishers, and in doing so changes their behavior. In some cases, management imposes additional costs on their operation directly (e.g. limiting output, or inefficient technology mixes arising from input controls), while in other cases, costs are imposed indirectly through a new set of incentives created (e.g. displacement of fishers from one area has an impact on other fishers already operating in the areas to which they move). There is a growing policy shift internationally away from sectoral management of fisheries to more integrated management of the marine environment. The rationale for this shift is the need to recognize the interdependencies between the multiple activities that compete for ocean space (capture fisheries, aquaculture, shipping, offshore exploration, etc.), and the need to account for the impact one sector may be having on another. For example,

commercial fishing affects the catch of recreational fishers, and offshore windfarms displace fishing activity. In practical terms, the move from a sectoral to an integrated policy puts a much greater emphasis on marine spatial planning (Barange 2005).
Planning and management of maritime space is one of the three pillars of National Strategy for the Sea. There is now a long tradition of Marine protected areas (MPA) in the Azores to afford protection to a wide variety of near shore and offshore habitats and constitute a network essential to MSP and conservation policies and to an ecosystem vision. In 80´s and 90´s there were 9 regional 'reserves' + 34 limpet MPAs. There were no management plans small reserves, under-representative, dispersed, reduced compliance of both reserves and MPAs, ineffective, maybe counterproductive. The 1st marine management plan established 18 marine SCIs under the Commission decision from 2001. (C/2001/3998) Also NATURA 2000 implemented the Habitats directive MPAs – MPs: maré (Azores 1999 – 2002); OGAMP (Azores, Madeira, Canary islands (2003 – 2004) and marmac (Azores – Canay 2005 – 2006). In 2010 was established uniform, operational management of Island Nature Parks (9): gathers all MPAs from Natura 2000 (SACs) and other regional MPAs inside territorial waters (24 nm) and island is the management unit.

In order to administrate and manage the protected areas of the Azores, the *Secretária Regional do Ambiente e do Mar* (*Regional Secretariat of the Environment and Sea*) established the following management units:

- **Island Nature Parks** (Portuguese: *Parque natural de ilha*), the *PNI*s are basically island management units, that encompass all the protected domains within each individual island;
- **Marine Parks of the Azores** (Portuguese: *Parque Marinho dos Açores*), the *PMA*s which, outside the oceanic limits of the Azores, integrates a specific management designation to areas that may fall within or without the Economic Exclusion Zone of the Azores/Portugal; and
- **Local protected areas** (Portuguese: *Áreas protegidas de importância local*), created by local authorities to safeguard natural spaces, and include local parks, gardens, lookouts or comparable structures/spaces, that also include the*Reservas Florestais de Recreio* (*Recreational Forest Reserves*). (Região Autonoma dos Açores/Assembleia Regional, ed. (6 June 2006).

The current strategy of the fishing resource management mechanism of the Azores is based on the EU common fisheries policy, namely through the total allowable catch (TAC) for each species of fish.

Unlike fishery quotas, the Regional Government of the Azores introduced technical measures such as minimum landing size or weight, minimum mesh size restrictions in the licenses for some specific devices (eg. Trammel nets), area and time closures and bans on the use of a particular device. An example is the regulation prohibiting the use of deep-water trawls, which recently became EC Regulation (EC 1568/2005).

The main human activities in Azores include fishing and shipping. Improving local infrastructure resulting from grants from the European Union and the development of a flourishing tourism industry has resulted in a slow decline in population. The growth of the cruise industry has led to a significant increase in the size of cruise ships sailing in the region. Tourism has great importance for the economy of the Azores. There is increasing coastal activities, as well as eco-tourism, especially whale watching. Fishing activities within the region are very diverse, including coastal fishing and deep sea fishing on several undersea mountain ridge Rekjanes. Other human activities are:

sand and gravel extraction (only around the Azores), transport, laying communication cables and military activities.

Social mechanism

Closely in cooperation with the economic mechanism is also related to the mechanism of social and environmental. All three of these mechanisms are linked. The Azores, islands and isolated, socially and economically dependent on fisheries as the production of direct and indirect employment as the main source of production destined for foreign markets as a source of food supply for the local population. In 1998, a total of 94,612 people employed in the Azores, 3048 were fishermen and 873 worked in this industry for processing of fish, the fishing industry as a whole consisted share of 4.1% (3.2% for hunting, and 0.9% for processing). The most important activities in the processing of fish is tuna canning industry, which provides around 89% of the total number of jobs in this sector. The sector is characterized by high levels of female employment, which ranges from 75% to 80% of total employment in this sector. Wholesale and retail trade of fishery products is a total of 237 jobs, of which 57% is in the islands own fish market. Households in fishing communities are usually large, has an average of seven members. Ten percent of the jobs are tuna related while 90% are in the artisanal sector. On average, fishers are active 48% of the year. Tuna are the most important functional group in terms of catch. Tuna are seasonally present in the area, migrating and feeding around the islands. Only 30 Azorean boats fish within the EEZ. Boats are generally 28 – 32 m long. Boat size has increased through time (Pereira, 1995) and recently seven new boats were built and fishing power increased, all supported by subsidies (Rogério Feio, Dept. Oceanography and Fisheries, University of the Azores, Horta, Azores).

Subsides, financial support, economic assistance or government financial transfers are just four of the most commonly used names for payments that governments provide to the fisheries sector. The use of different definitions can partially be explained by the purpose for which the various analyses of subsidies have been undertaken. A range of issues can be of interest to policymakers, such as the impact of subsidies on trade, general economic variables (such as fishing capacity and profitability), social structure (for example, coastal communities and income distribution) or the environment (for example, the fish stocks, by-catches and the broader marine ecosystem) (OECD 2000).

The OECD has tried to do a typology that classifies subsidies according to some of their characteristics, as indicated below with some of the examples of each:

1. budgetary subsidies

a) direct (such as: grants or payments to consumers or producers);

b) fiscal policies (such as: fiscal credits, exemptions, allowances, exclusions and deductions, rate relief, tax deferrals, and preferential tax treatments);

2. public provision of goods and services below cost (for example, provision of infrastructure and complementary/utility services or research financing);

3. capital cost subsidies (such as, preferential loans, loan or liability guarantees, debt forgiveness);

4. policies that create transfers through market mechanism

a) domestic - oriented policies (such as price regulations, quantity controls, government procurement policies)

b) trade - oriented policies (for example, import and export tariffs and non-tariff barriers).

Other subsidies (general and specific) commonly transferred from governments to the fisheries sectors have also been identified. These are, for example: fuel credits, payments for access to foreign fisheries, subsidisation of vessel construction, price support for fish products and products derived from fisheries, preferential loans and/or grants for transport of fish products, preferential loans and/or grants for processing of fish products, unemployment benefits and other social benefits for people employed in fisheries, worker retraining programs, export promotion programs, sponsored vessel insurance, construction or running of harbours and related facilities.
FAO identified four sets of subsidies:
Set 1: subsidies correspond roughly to what the man in the street commonly understands by the term 'subsidy'. The experts defined this as government financial transfers that reduce costs and/or increase revenues of producers in the short term.
Set 2: subsidies are any government intervention, regardless of whether they involve financial transfers that reduce cost and/or increase revenues of producers in the short term.
Set 3: subsidies expand upon set 2 subsidies by adding the short-term benefits to producers that result from the absence or lack of intervention by governments to correct distortions (imperfections) in production and markets that can potentially affect fisheries resources and trade.
Set 4: subsidies include all government actions — including the absence of correcting interventions — that potentially can affect positively or negatively the benefits of firms active in the fishery sector, also in the long run. (Expert Consultation in December 2000).

Environmental mechanism

There are no problems of over-exploitation in the Azores because of safety management objectives were not always followed and the Azores fleet manifested mainly small-scale fisheries using highly selective fishing techniques. There is also a large number (17) of marine protected areas in the Azores after the adoption of conservation and self-regulatory measures to ensure sustainable fisheries. Another example of these measure, which was adopted at the regional level is the ban on hunting around the islands within three miles of the coast. Located in the mid-Atlantic ridge, in a very sensitive geological area covered by the Euro-African and Asian and North American plates combine the Azores EEZ are hydrothermal vents rich ecosystems inhabited by unique, but very sensitive species. Any excessive use of resources will require complex and slow process of recovery and development of the fishing effort must therefore be carefully monitored. The liberalization of access to the exclusive economic zone of the Azores from strong fleets that use highly predatory devices raises significant concerns in the region, especially with regard to highly sensitive ecology of the area

.

The European Commission adopted an action plan for fisheries enforcement in Portugal, which provides for greater coordination between the mainland and the autonomous regions, Azores and Madeira. The plan was designed in partnership with the Portuguese authorities to ensure that Portugal fully complies with the requirements of the EU Regulation on the control of fisheries, 2010, and the new Common Fisheries Policy, so that fishing becomes sustainable. The various institutions involved in inspections - Navy, Air Force, National Guard and fisheries authorities of the Azores and Madeira - we also have to coordinate and share its resources more effectively. The fisheries control system was designed to ensure that only authorized quantities of fish are caught, to collect the data required to manage the fishing opportunities and to ensure that the rules and penalties apply to all fishermen in the same way throughout the EU.
The audits also serve to ensure traceability of fishery products throughout the supply chain, the net to the plate. The rules and control systems in fisheries are agreed at EU level, but it is up to national authorities and inspectors of Member States of the EU give them application. The action plan focuses on the catch registration system in order to ensure that we collect the essential data for more effective monitoring (Bruxelas adopta plano de acção de controlo das pescas em Portugal 2014).

Table 6: Mechanism of fishery management

King of action / Degree of quality	Economic	Social	Environmental
Past	-	-	-
Present	++	+	++
Future	+	++	+
Degree of quality:	++ high	+ medium	- low

In economic terms in the past were many things weak, for example whale hunting, low financial support from the EU, low level of accountability, in social terms discrimination of women at powerful jobs positions and in environmental terms weak protection of fishing areas. But nowadays within the growing globalization and modernization there are financial support from the EU, highest level of accountability, equal rights for men and women, whale watching – eco tourism, greater competitiveness and more thinking to future generation – sustainable development.

5. Conclusion

Fisheries management and associated science have rapidly evolved in their understanding of the needs for the successful, sustainable management of fisheries by shifting from a species focus to an ecosystem approach. Globalization has a role in terms of limiting a state´s sovereignty and autonomy, and in moving towards the ideal global fisheries governance. The scope of the threat to fisheries resources requires a

more holistic ecosystem based governance approach, an ideal global fisheries governance. Nowadays it is need to move towards a global fisheries governance system. This need for an ideal global fisheries governance approach extends to the need for better coordination and sharing of research findings from all levels of governance: local, national, supranational, regional and international. Decision-making at international, regional and national levels is increasing, displaced from the state level. There are significant transformations in fisheries policy-making in international economics, international institutions and international law-making, which alter the state authority in fisheries management. The decision-making at international, regional and national levels is increasing, displaced from the state level. At issue is the emergence of fisheries decision-making at the global, national and regional levels. This article exposes the key changes to formal state authority with respect to the international, national and regional institutions and law in light of governance of fisheries issues. State authority is still important in international relations and fisheries issues are being dealt with globally. States retain an important role in implementation. There is necessary co-operation with the international, regional and national levels.

Mechanism of fisheries management at local level, especially concerning case study Azores, is emerging to manage fisheries issues in economic, social and environmental fields. Local level management is attributed specific functions and also non-state actors are integrated into decision-making process. Decision-makers more often consult relevant interest groups to resolve disagreements particularly between economic and environmental positions. My recommendations concerning case study Azores Fisheries Governance are: The legal status needs to be resolved when the sub-decree on community fisheries management is officially approved and the support mobilization needs to be coordinated. Cooperation between the local authorities needs to be strengthened in order to stop illegal fishing activities. In economic matters, effective fisheries management can improve the likelihood for sustainable fisheries and ensure fair and equitable access and allocation of fishery resources and profits. In social ways, the ability of the ocean to continue to meet the increasing demand for wild-caught seafood will be compromised if fisheries management does not reduce excessive fishing pressure. Effective fisheries management can help to ensure that the ocean will provide an adequate and reliable supply of fish and seafood in the future. And in environmental case, fishing pressure affects ocean ecology, species, and habitats through overfishing, bycatch of non-target species, and the use of fishing gear or techniques that damage or destroy habitats. Effective fisheries management can minimize negative ecological issues by including sustainable fishing practices.

Fish exist across multi-levels of authority, fishing takes place increasingly across local, regional and international levels. Independent state-centred management cannot possibly regulate the variety of networks, fishermen and practices in existence. Given that stock levels are ever-more endangered, tensions between diverse interests will increase and competition for access to resources will become more intensive. It is only by unification of various levels and networks of fisheries that stocks may be responsibly managed. State authority still plays an important place in decision-making policy, but jointly with the regional, supranational and international levels. Fish are not boundless and our mutually dependent planet is inclining to a multi-levelled approach to act in rsponse to an ecological, economic, and political crisis.

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