

Will the International Community Maintain the Marino Resource before the Environmental Ravages?

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Abstract

This article is intended to publicize the damage caused by the environment in natural resources, in this case fishery. This analysis addresses the international regulation and the proposal for the Kyoto Protocol to which the States must refer to both to improve the environment and to conserve the natural resources. This analysis is subject to a descriptive analytical study based on the complexity, sensitivity and vulnerability of economic acceleration in environmental effects on air, land and water. The exercise was a comparison between the European Union, Morocco and Mexico, in the 2006-2013 period, in the application of international norms in its internal policies, the problems that each of these countries faced for damages to the marine resource and how these were addressed, to reach clear and compelling results. In the analysis, we argue that, despite all the strategies in the different areas-titles, the results are not the expected, since the States and mainly the natural resources, depend on other key elements for the effectiveness in the phenomenon.

Keywords

Environment, Fishing, Kyoto Protocol, EU, Morocco, Mexico

1. Introduction

On the way to the positioning, internationalization and competitiveness abounded the signatures of trade agreements without awareness that such negotiations would put at risk natural resources such as energy, water and land, abused as a result of the processes of economic integration. The excessive industrialization, in conjunction with long distance marketing, has generated emissions of harmful gases and pollution, resulting in considerable

destruction of the environment during the last decades. Therefore, the effects of globalization on natural resources, the extent of a peremptory norm enables to both legal action and the protection of the environment by the States.

According to the initiative to preserve the ecosystem, this initiative resorts to action through the Public International Law (PIL) that protects the Law of the Sea (LS) and the International Environmental Law (IEL) that set forth enforceable rules to be applied to the States. Likewise, organizations such as: the United Nations (UN), Food and Agriculture Organization (FAO), United Nation Educational Scientific and Cultural Organization (UNESCO), World Meteorological Organization (WMO), United Nations Environment Program (UNEP), Intergovernmental Panel on Climate Change (IPCC), Kyoto Protocol (KP) and Agenda 21, create the framework where the actions of the international society regarding the environmental regulation are developed.

In according with this scheme, it is intended to demonstrate that there are two factors that main sources of marine pollution are, by one hand are agricultural, urban, industrial, radioactive, oil, garbage and chemical wastes, on the other hand, by global warming, derived from CO₂ emissions, which increases the temperature of the seas and exerts certain mismatches in the life of the resource. Facing this international framework, the States should apply international standards in its internal policies in a way that safeguards the natural resources. However, despite the proposed measures, there are still pending situations, also the expected results are not achieved. This analysis provides the actions taken by the European Union, Morocco and Mexico to comply with the stated guidelines but, above all, to take care of their biodiversity and their food security.

2. Methodology

This research is aimed to the application of descriptive analytical method also based on the theory of complex interdependence of Keohane and Nye (1997) [1], who show their arguments about economic acceleration results have led to disastrous consequences to humanity to face the phenomenon of global warming which exposes to the States to find the strategies to confront the event. On the other hand, Katzenstein, (1976) [2], Dahl (1957) [3], Tucker (1977) [4] and Holsti (2006) [5], discuss additional topics about the sensitivity and vulnerability faced by the States arising from applicable to its internal policies external policies. On this basis, use the collection and analysis of data and information from the survey of documents and literature mainly Public International Law (PIL) and its link with the Environmental Law (EL) also documents of International Governmental Organizations (IGO) headed by the United Nation (UNO) who are part of the initiative to generate the institutional platform that offers States the tools for decision-making. Likewise, will collect and analyse information from various international ministerial meeting preceded mainly of the Earth Summit in Rio de Janeiro [6] in which arise other organizations. To verify the application of the international regulations, it was analysed data from government agencies, European Union information of the Commission and European Parliament; of Morocco is mainly obtained from the Ministry of Energy, Mines, Water and Environment and finally Mexico's Secretariat of Environment and Natural Resources (SAGARPA) and the National Institute of Ecology and Change Climate in Mexico (NIECC). Considering that these sources of information are key systems regulatory States in its handling of domestic policies and decision-making to counteract the environmental problem. Whereas this frame of reference, is to carry out a complete analysis with which bring results respect to determine that international regulation is transcendental phenomenon which faces.

3. The Provision of International Regulations on the Protection of Natural Resources, According to the States

Liñán, (2007) [7] shows that, is essential to determine the restructure of international regulations, taking into account the rapid structural changes expressed in the International System and that the Law should be extended to new issues regarding: the regulation of territorial sea, the high seas and the conservation of the environment. Through the UNO, at the third Conference on the Law of the Sea, the jurisdiction of the seas was created through the Geneva Convention of 1958¹ and subsequently the United Nations Convention on the Law of the

¹Geneva Convention (1958): Arts. 1, 2, 3 which grant freedom to the States with regard to navigation and fishing on the high seas. Set 4 important conventions which are Freedom of fishing, navigation, placement of cables and submarine pipelines, airspace to fly on the high seas.

Sea of 1982².

Also, Zarca, (1999) [8] emphasizes that the United Nations establishes that there is no effective or efficient peace without development, nor is there durable or sustainable development without peace, *i.e.*, level of life, employment, hunger and poverty factors lead to imbalances of economic and social order. In the same vein, the Agenda 21 [9] indicates that, fishing, trade, shipping and tourism create the problems of chemical residues, sediments from the land and habitat destruction, which threaten sustainable development.

These sustainable development bases specify both the freedom of fishing and the limits of the coastlines of each State. All this is supported by an International Tribunal of the law of the Sea (ITLOS); responsible for resolving disputes between States as a result of both the implementation of the Agreement also the Convention. (Diez de Velasco, 2013) [10].

Likewise, the [11] recognizes that the primary sector is the foundation of preserving life and assumes that fishing is a source of primary activities for mankind, both economic and food-related.

The background of the Brunland Report (1987) and the coordination of the UN in the work carried out in the Earth Summit in Rio de Janeiro; reinforce the concept of sustainable ecological practice, control and analysis of pollution as fundamental aspects in regard to the natural resource. Therefore, these elements of practice, here lays the foundation that sustainable development has to be seen in a tripartite manner that given that the sustainability covers areas such as the environment, economy and society, aspects that are considered to be the platform of the world (Love, 2010) [12].

In addition to this entire organizational infrastructure referred to above, other significant conventions around the same environmental matter add up³, which include topics such as: the preservation of flora and fauna, the defence of the marine environment, the protection of the ozone layer, along with the creation of instances and other programs and projects that are involved in sustainable development. In the case of fishing, the law of the Protection of the Heritage of Fish (PHF) 1984 and 2006 was signed. The main factors that weighed to create and enforce regulations were the pollution of the seas and oceans arising from accidents, discharges or spills, the acidification of the sea, the lakes and the extinction of species (Riveros, 2010) [13].

In addition to these aspects that pollute the sea, the greenhouse effect produced by the liberalisation-commerce relationship (production, handling, storage, use and even the elimination of genetically modified products [OGM])⁴. Goldin y Van Der, (1992) [14] argues that the environmental organizations agree that it is necessary

²The Convention of the United Nations on the Law of the Sea (1982): Where the limits of territorial waters and the width should not exceed 12 nautical miles referring to articles 5 and 7 and the delimitation of the contiguous zone and 200-mile EEZ referred to in articles 33 and 57. Article 61 indicates that States must preserve their production and avoid the exploitation of its coastlines relevant to aspects of the environment. Article 62 regulates the licensing of fishing and catching, and establishes the obligation to report catches by domestic and foreign vessels. It also agrees, in article 74 the delimitation of the exclusive economic zone between States with adjacent coasts. Likewise, in article 170 states that companies carrying out fishing activity should refer to both the Convention and to the Convention on the protection, conservation and exploration, exploitation, marketing and fishing control policies.

³1972 3-United Nations Environment Programme (UNEP); 1973 International Trade of species of flora and fauna UN; 1986-Montego Bay, Law of the protection of the sea and the preservation of the marine environment; 1985 Vienna Convention protection of the ozone layer; 1987 Montreal Protocol supplementing the work of the ozone layer; 1989 Cale South movements transboundary of hazardous wastes and their elimination; 1992-Rio de Janeiro—CCNUCC—stabilization of gas emissions, completed; 1992. Nagoya, Japan Convention of Biological Diversity Convention (CDB) was held and attended by 193 countries with a strategic plan with 20 points to stop the disappearance of species by 2020. One does not sign, they also committed themselves to double the contributions for the countries of the South to be used in biological preservation programs, but they do not cite the amount; 1994 Paris, Fr. the NUY Convention on combating the desertification; 1997 KP-subscribed within the work of the Earth Summit in Rio de Janeiro in 1992, which was adopted in 1997 and started in 2005, which contemplated the issue of gas emissions and was not ratified by 55 industrialized countries. OECD East Europe, Ukraine and Russia committed to limit their emissions to 5% from now to 2012; 2001 Stockholm Convention on organic pollution where about the organic pollution, through which the environment is protected by prohibiting the pass of certain chemical components, the most toxic known by humanity; 2009 the Copenhagen agreement which has been signed by USA (BASIC) Brazil, South Africa, India and China to reduce their emissions of gas. A quick financing of 20 billion dollars for the most vulnerable States that adapt to the impact of climate regulation has been legally provided for. China did not accept to submit to an outside review on its reduction of gases; 2012.-18 UN Conference second period of the KP which commits the EU, Australia and a dozen of industrialized countries to report, on Dec 2020 report 15% of the gas emissions (GES) of the world.

⁴GMO—Genetically Modified Organism—Both a plant and an animal can be modified by using techniques of genetic engineering, transgenesis and cisgenesis, for this analysis fish were mentioned. The purpose of this alteration is to give new properties, this strategy works especially for marketing as the use of these techniques increases the production and becomes more resistant to the contamination of diseases and strengthens to remain in difficult means. The measurement of the consequences has not been done yet regarding the natural resource and the intention is to continue developing studies to implement them, the patent has a very high cost. Regarding the agriculture, the pollution supposes the genetic pollution, as a transgenic plant can pass it altered genes to another, possibility that s studied given that the irreversibility would be a risk, together with the obtaining of the patents. *To follow this analysis see the texts of Los Organismos genéticamente modificados y el medio ambiente de Sol García pp 29-36 (The genetically modified organisms and the environment of Sun García pp 29-36); Science Technology and society in North America of Edit Antal pp 1-11; A critical reading of the discourse of popular science, the case of the Genetically Modified Organisms by Alicia Massarini.*

to analyse the impact of trade on the environment policy, as the results of liberalization are incompatible with the ecosystem. In the [15] Agenda 21, proposes the DIP to focus on the legislative improvement of the DCS and the evaluation of the existing international agreements.

In this intention, Gros, (2013) [16] considers that the freedom of trade and industry, are public liberties with constitutional requirements of States that should be considered to be under the subjection of inspection systems. However, the norms of international economic interventionism have been institutionalized with disadvantage for the environment, including integration and globalization processes.

Thus, if the direct reference to the ecological damage is not explicit in the law, it must be defined and exposed within the law, so that there is responsibility for the consequences on the environment, according to the consensus of the CI. It is necessary to agree on sanctions between those who perform the damage, given that the economic damage falls in the health and well-being of the activities Guillot (2010) [17].

The Hansen, J. *et al.* (2010) [18] study indicates that the trajectory of the earth and oceans regarding the global warming, mark variability since 1920, but with no real trend. However, in the mid-1940s started a significant warming (0.3°C), followed by a cooling in the sixties. It is from the Seventies that an accelerated warming in the planet (0.5°C) is noticed, being this constant outlined in the following decades, in modern meteorological records that, since year 2000 have recorded considerable increases and indicate that 2010 was the warmest year.

The parameters described (Figure 1), are reflected in the sea level, in the period 1900-2010 raised 0.19 MTS., and will continue increasing due to the contribution of global warming to the melting of the Antarctica and Greenland glaciers, trend that will continue during the present century. The consequences of the increase in temperature involve several changes in the sea and coastlines, and become a challenge for the long-term well-being and sustainability policies for the environment, agriculture and fishing (Martens *et al.*, 1998) [19].

The environmental phenomenon has projected in the warming of the oceans, both in the seabed and in the top layer. The issue of salinity during the period 1871-2010 has led to changes in precipitation and evaporation, situation which, if continued, and due to the concentration of CO₂ will cause that the oceans will continue warming up during the 21st century, thus affecting the ocean circulation.

In these scenarios, the [20] brings its projections for year 2100, which indicate that the increase in the annual average temperature on the planet ranges from 1 to 3.5°C and the global mean increase in the level of the sea is between 15 and 95 cm; situations that trigger changes in spatial and temporal precipitation. This heating process would be the largest in the last 10,000 years. The effects of climate change in the humidity, temperature and rainfall change strongly threaten the supply of freshwater, the fisheries and the biodiversity, given that the global warming has led to the migration of plant and animal species because of the disturbance in their phases of reproduction.

The problem requires to carry out immediate solutions at international level; detecting that the category has joined the international agenda as a priority of the entire CI, both because of its social impact and the impact in the field of food safety incident in the fishing category.

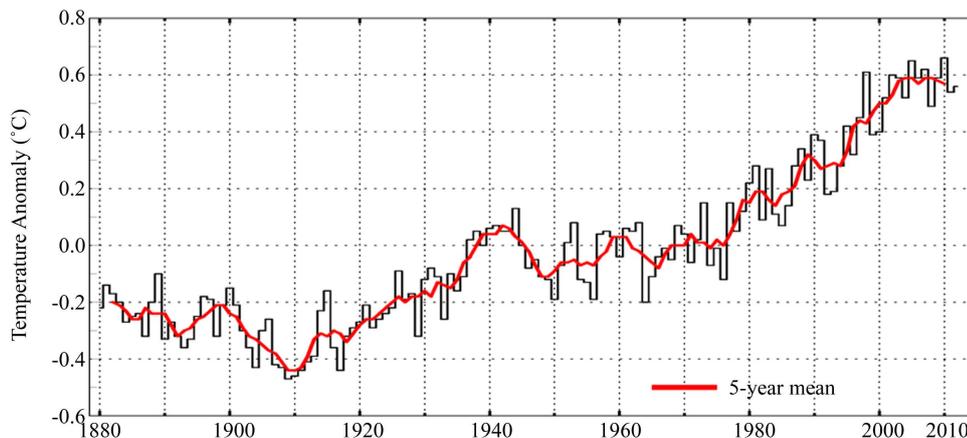


Figure 1. Global Temperature Anomalies (1880-2012) (Land + Ocean). Source: CDIAC—J. Hansen, R. Ruedy, M. Stato, y K. Lo, “Global surface temperature change” NASA Goddard Institute for Space Studies. <http://www.giss.nasa.gov>

4. The Environment and Its Repercussion on the Marine Resource

The UNEP in its 2007 report stated that the problems that currently afflict the CI are the climate change, the rate of expansion of species and the food shortages for the population. It is clear that these three elements are bonding and depend on the climate change, a problem that represents immediate collective and global action. The greenhouse effect in the atmosphere, in addition with the emissions of all countries, is a cumulative mix of pollution that is harmful to the ecosystem, so the CI international cooperation is necessary to deal with the challenges and circumstances of mitigation.

The mitigation of CO₂ emissions requires human intervention to reduce the sources or to enhance the sinks of CO₂. This measure, together with adaptation to climate change, contributes to the objective expressed in article 2 of the CMNUCCC⁵. One of the activities of the [21] is to make assessments of mitigation at different governmental, economic sectors and society levels, studying the different methods and actions performed by each country to mitigate emissions.

The mitigation of CO₂ emissions is imminent; with this, you can prevent the temperature rise, action that generates changes in the land and seas as a result of the agricultural and fishery sectors. On earth it produces droughts and the effect on the seas is salinity, temperature changes and pollution that even cause the death of individuals and in other less drastic cases, diseases. All these problems are reflected in the scarcity of food, effect on the security, poverty, education, culture, human rights, sustainable economic development and cooperation (Pearson y Rochester, 2000) [22].

So that, it is necessary to put mechanisms in place, to make the environment an inherent part of the trade negotiations and to count with the commitment of the States to exercise the economic liberalization with respect for the environment (Khor, 2011) [23].

The proposal of the CI has been the KP; where two important aspects are involved: one that States adhere to the 1990 emission indexes and, the other, the provision of CDM/CER⁶ mechanisms to mitigate emissions and to help the developing countries modernize their economies. These provisions intend to control the emissions and so, improve the ecosystem, thus trying to safeguard the natural resource. In the case of fishing, the repercussions are certain: slowdown and problems to support the needs of the States, being fishing a practice that generates significant economic activity within the international marketing.

5. Internal Policies Applied by the States with Regard to the Rescue of the Marine Resource: European Union, Morocco and Mexico's Case

5.1. European Union

Undoubtedly, the EU is focused on taking forceful action to mitigate CO₂ emissions, proposing to reduce them by 30% for 2020 and 80% by 2050 compared to 1990 levels established by Kyoto, if it wants to achieve sustainable well-being for the population in various sectors, mainly to protect the agricultural-fishery sector, seeking the implementation of green technologies in the industry (Nieto, 2005) [24]. For such purpose, the EU has urged to review and restructure the specific projects secured in the Agriculture Community Program (ACP) that has been in development since 1962⁷. The decision of the [25] to reform this program is intended to procure en-

⁵UNFCCC—the goal established by the organization is “the stabilization of gas concentrations with greenhouse effect in the atmosphere at a level that will prevent dangerous anthropogenic interferences in the climate system. That level should be achieved in a sufficient period of time to allow ecosystems to adapt naturally to climate change, ensure that food production is not threatened and allow economic development to proceed in a sustainable manner”.

⁶Kyoto Protocol—The KP defines the architecture of the carbon market by setting quantified reduction targets for developed countries greenhouse gas emissions, and determining, in addition, that the countries annex 1 (developed countries) can cover a portion of their quota of emissions through this method called flexibility mechanism: the clean development mechanism (CDM) which enables the transfer of certificates of reduction of emissions (CER) countries annex 1 from projects in countries not annex 1.

⁷The Community Agricultural Programme (CAP) created in 1962 but which is attributed with 4 stages of functioning, being his first stage during the post-war crisis with the need to activate the agricultural and livestock production, with the aim of offering people food at an affordable price, with the second stage, in the 80's encloses the overproduction, grant and sometimes the donation of production, started a period of change due to the Earth Summit, thus consolidating the third stage in the 90's in which it perseveres in supplying internal and external markets but including the rural development policy to reach sustainable development, approves the 2003 reform with the approval of the decoupling and conditionality, which means the freedom of producers to produce products according to the needs of markets and to care for the environment during their productive processes, the fourth stage is focused on the Agenda 2000 and the Treaty of Lisbon, where the agricultural vision looks towards equality among the producers, the reduction of direct subsidies and others regarding the agricultural path towards 2020 and beyond. Under the PAC we find the Community Fishing Programme that looks after fishing issues, their management, organization, finance, foreign trade, legal and other issues related to third countries. For a better approach to these programs see the EUR-LEX website.

vironmental control of food production. In the case of agriculture, the measures are to establish areas of ecological interest, rotation of crops and afforestation and transformation technologies.

According to the [26], this action is the result of understanding to agriculture as a sector sensitive to the greenhouse effect, should be dealt with the land of organically to avoid weakening, droughts, pests and Acceleration processes of maturation of the products.

Massot (2000) [27] and the FAO (1992) [6] argue that, while the earth and its production continue to be ecologically manipulated, the sea will be also benefited. Given this same agricultural action, the EU, through the PAC, serves the ecological regulation and the policies of the productive agricultural sector, in such a way that those strategies are reflected in the ecological and economic system to achieve a sustainable European production.

Since the Earth Summit in Rio de Janeiro, the need of agriculture respectful of the environment is emphasized, especially in the means used to work, fertilise and disinfect the land. During the same summit, the Agenda 2000, which reaffirms to promote food as part of sustainable agriculture security was agreed. However, the CAP should stimulate the farmers so they diversify the production, improve the marketing and restructure the exports, as these items correspond to the main processes of the exploitation of the land.

In relation to these new mechanisms, the reforms made to the ACP in 2003, are mainly addressed towards two concepts: decoupling and cross-compliance. The first concept is addressed towards production regarding market demand and the second towards the farmers, in order to respect the environmental regulations, what has to be reflected in health and agricultural welfare with an impact on the tertiary sector worldwide.

Hoogeveen (2013) [28] and [29] indicate that, the agriculture is a contributor to climate change, given that with the use of fertilisers and pesticides, which go directly into rivers, lakes and the sea, it pollutes the water and the air; such processes influence the health and well-being of the society and of the resource. The strategy is to deploy an agricultural format in organic farming, adapting to the changes of stations, mainly regarding the growth and the rain.

In order to establish the new agriculture, without pollution, it is of vital importance to have the appropriate specialized technology, generating good agricultural and environmental practices that the benefits extend into other sectors, including fishing. As previously mentioned, Sea resort is affected by climate change, and industrial processes, both by agricultural processes, combined to generate instability and impair their metabolism.

The provision of an ecological agriculture can generate the benefit of fishing, in this case, the EU has been decisive in establishing the Community Fishing Program (CFP) inside of the CAP, project that tends to watch and respect the scheduling and the promotion of stocks, determine the criteria for access to fishing and promote the transparency of fishing information. For the challenges of the fishing industry, also the necessary technologies for the treatment of sewage and, more specifically, to dredge the port infrastructure have been set.

In addition to CAP-FCC programs, a new instance, the Energy Environment Package (EEP) attending the EU's commitment to the KP and the Agenda 21 has been created in response to the needs of the natural resource. This entire platform created as a resource to meet the conditions of climate change that turn into a cascade; on Earth drought and deforestation are produced; in the sea, the heating of water harms the natural resource, thus causing, in some cases, death and, in other cases geographical changes, actions that are reflected in the scarcity of resources.

Parallel to this problematic, we see the current diet changes in the community population, which show a 10% drop in the consumption of red meat with respect to 1995, replaced by a selection of poultry, fish and seafood, fruit and vegetables. Derived from these developments, the EU action has been to lower the effects of the polluting elements on the marine resource that affect consumers directly.

The situation of the EU is complicated, given that, despite the searching and application of measures to control and reduce the CO₂ emissions and redirection of ecological methodologies, the problems of the fishing sector also has to do with the provision of such resource to its population. The EU fishing annual intake average demand per capita, ranges around 21 kilos and affects reproductive capacity and has an impact on the exploitation generated by the intense activity.

The perception of the European Commission regarding the importance of the fishing sector (2015) includes, in the CFP, the policies of the sector, specifically regarding catch quotas and the preservation of the species in the long term by means of; the administration of its European fleet management, the conservation of fish stocks and the guarantee of sustainability of the sector, preventing the threat of the population size and productivity in the long run.

5.2. Morocco

The position of Morocco in the international arena is transcendental given that, despite being a developing and emerging country it counts with an important fishing sector derived from its Mediterranean and Atlantic Maritime branches. Derived from international agreements, Morocco has to meet regulations and generate strategies to deal with environmental problems and to protect the natural resources.

In [11] we notice that the Moroccan fishing productive average ranges around 1,004,836 tonnes per year, as shown in **Table 1**. In the years that have reported less capture we notice this occurs for two reasons: global warming that damages the fishing in two senses: migration of species to other areas and or death. The programs implemented by the government have to do with the respect for young production, reproduction and illegal fishing.

The main sources of marine pollution are agricultural, urban, industrial, radioactive, oil, waste garbage and some chemicals that are found in the atmosphere. The drawbacks observed in Moroccan territory, become two important aspects: the greenhouse effect and wastes that are discharged in the Atlantic and Mediterranean, which have influence in the entire fishery sector. In order to deal with these issues; the Moroccan government (2010) inserted external regulations in their internal politics, action that is reflected in the issuance of laws and institutions to address the problem. In addition, the provisions of the KP on the CDM/CER mechanism, which appoint Morocco as the receiver of such projects, which application will take place in the EU first, have been activated.

Consequently, and pursuant to the KP, the EU (within Annex I of the KP) CER projects are attributed, which are implemented with CDM projects with Morocco. Both parties are subject to such provisions regarding the commitment to reduce and control CO₂ emissions to pursuit the rescue of the ecosystem, mainly the marine resource.

All this platform is intended mainly to serve the sectors of: transportation (infrastructure) and treatment of wastes, both potential polluters of the Moroccan Maritime branches. This proposal is considered by the Ministry of Territorial Planning, Water and Environment and the Ministry of Mines, Water, Energy and Environment (MMWEE) who are responsible for developing projects that generates alternatives for: management of waste, industrial processes, afforestation and deforestation, renewable energy and energy management (Pérez y Jimenez, 2007) [30].

Along with this action, the policy of waste by means of its Decree: Law 28 - 00 concerning the management and disposal of waste is implemented. This law explicitly stipulates that the intervention in industrial waste and household has a direct impact on marine species, and that, in order to maintain the species both the MMWEE and the NPW must adhere to such Law.

The Moroccan Government agencies analyse the actions and progress bound to a national programme in the period 2013-2020 in which the conclusion of the actions regarding the incidence of wastes is defined as shown in **Table 2** and **Table 3**.

Table 1. Moroccan fishing production 2003-2012.

Year	Tons
2003	918,643
2004	918,151
2005	1,026,395
2006	876,878
2007	879,469
2008	997,127
2009	1,165,062
2010	1,136,240
2011	958,907
2012	1,171,496

Source: Own elaboration with FAO data. Yearbook Fishery Statistics-Summary.

Table 2. National waste management plan 2013—Morocco.

Concept	Amount	Comments
Total Population (April 2013)	32.85 millions of inhabitants	Urban population 19.38
Population served by a professional collection service	14.34 millions of inhabitants	
Waste produced annually	6.85 millions of tonnes produced by total population.	Urban population 5.38 m/tonnes. Rural population: 1.47 m/tonnes. By urban inhabitant: 0.28 m/tonnes
Services	4.33 millions of tonnes of DMA are collected by professionals.	Still missing to control 1.69 m/tonnes
Annual Costs	1779 millions of dirhams	For services pending an average investment of 540 dirhams per DMA is estimated.

Source: Own elaboration with data from the Ministry of Energy, Mining, Water and Environment.

Table 3. Forecast of waste treatment in 2020—Morocco.

Objective in Number Concept	2016	2020
Collection rate of DMA in urban centres	85%	90%
Burying rate in the dumping sites for urban DMA	85%	100%
Rehabilitation and closing of existing spontaneous discharges		100%
Classification index of material products		100%

Source: Own elaboration with data from the Ministry of Energy, Mining, Water and Environment.

Undeniably, the Moroccan coasts are of great importance to community fishing, mainly for the EU-Spain that is historically plants in these waters. If for the community fishing industry this means fishing, work and food, for the Moroccan society it means improving the way of life of its population, its housing and industry infrastructure as well as the optimization of the management of natural resources.

5.3. Mexico

For Mexico, it is necessary to take into account three major issues: the existence of maritime branches in the Atlantic and Pacific, the nature of the political and economic relations with the EU, and its position as an active member of the OECD. Such aspects take us to go deeper into the behaviour of the country with respect to its participation in CO₂ emissions, the commitment regarding the KP and the measures and strategies addressed to take care of the environment.

The measure considered based on the international regulations, is the reinforcement and revision of the legal instruments developed in: the National Fishing and Aquaculture Letter, Fishing and Aquaculture Management Plans and the Mexican Official Standards. Under this legislation the following is considered: Fishing Law, regarding catches, the Marine Ecological Laws regarding close seasons, the development of productive chains to capture, process, timely marketing and sustainable use of fishery [31].

Sarukhan *et al.* (2009) [32] and Magaña y Gay (2002) [33] agree that Mexico is a country conceptualized as mega diverse, as it houses between 60 and 70 of the world's known biodiversity. Its patrimonial seas contain many ecosystems and species with the most varied forms of life, Mexico has forests, two large coastal sea and desert areas. The seasons are significant for the country, given that the broad ecosystem provides what is necessary for life. However, due to the climate change, these have been altered having a clear effect on the farming, crops and living resources.

Studies carried out by [34] on the present and future of Mexico regarding the climate change, revealed data about the modification and fluvial precipitation, humidity of soil, drought, desertification, depletion of forests caused by fire records, alteration of hydrological basins and increase of the sea level with an impact on the coastal and marine ecosystem. As recent events demonstrate, the country is vulnerable to precipitation, in this case El Niño-La Niña phenomena, which are considered as a variability of the temperature of the sea, and have

great impacts during summer and winter, causing cold fronts, rains, hurricanes and increased activity of eruptions (Camacho, 2009) [35].

These climatic phenomena have deteriorated activities such as: agriculture, energy, fishing, aquaculture, transportation, human settlements, tourism and health and, obviously, elements such as air, water and land, which, in turn, affect the welfare of human beings and of the natural resource. Since the decade of the 1990s, the Mexican government carries out a series of studies on emissions with a greenhouse effect, vulnerability, mitigation and adaptation to climate change.

The studies performed (DOF and the PECC) the increase in emissions from 1990 to 2006 is determined, and it is stated that the problem lies in the use of soil, wastes, processes and energy. About these indicators and scenarios of Mexico, the IPCC and the UNFCCC carried out studies to detect the vulnerability of Mexico regarding the climate change and CO₂ gases emissions, which's result is presented in a First National Communication⁸ [36].

Results of the PCN showed that, the country is places among the top 15 biggest emitters of CO₂ and among the 20 with higher emissions per capita, in addition to this indicative it was observed that the hydrological cycle is linked to the occurrence of El Niño and La Niña. The El Niño phenomenon is seen as the most significant as it is a modulator of rainfall in Mexico, thus affecting the economic activities that depend on water. As a result of these types of phenomena, the fishing sector in Mexico is heavily damaged by extreme weather. In 1998, the El Niño caused decrease in the fishing of sea urchin, abalone, lobster and other species, and the losses were of around 70 million dollars.

The result of the studies carried out by the IPCC show that the problem in Mexico lies in: predicting the periods of rain, this action intends to retain water in dams for agriculture, reforestation for carbon dioxide capture, preservation of moisture in the ground, recovering of forests, as well as controlling wastes and sewage that affect fisheries.

Likewise, the problem is related to four important aspects: the lack of dissemination of weather forecasts, the understanding between scientists, producers and government, the technical capacity and the availability of financial resources. It is important to mention that Mexico already has launched some measures, mainly in the management of water for the agricultural sector.

In addition, measures towards sustainable development aimed at shoring up the fisheries sector, energy efficiency in the improvement of the fuel, energy consumption, use of renewable sources, modernization of industry using advanced technologies, processes in the agricultural sector, changes in land use, modernization of transport and practices to avoid deforestation, erosion and desertification have been considered.

The perceptions of the [37] and Lluh, (2011) [38] regarding the ecosystem in the Mexican northeast, the area with the largest biological productivity, include amplitude in tropical, temperate marine and temperate-tropical transition species. This area is facing difficulties arising from the climate change, mainly reflected in: the redistribution of the potential large scale change of populations of fish, national and international economic imbalances, reduction in the contribution of fisheries and, finally, in reduced availability in the diet.

These types of consequences have already been recorded, during the warm years of the El Niño, tropical species expand their geographical distribution and the tropical species of temperate-tropical origin contract their populations toward the tropical end of the stream in California, as it is the case of the sardine. Because of the sea temperature alterations, fish suffer instability and are dispersed among different geographical spaces, also the alteration in the capture of different species, in tonnage and in years, in which the variation can be seen by climate change is considered.

The fertilization of coastal waters, caused by El Niño in the northeast of the country, has impact on the cost of catch falls, due to the variability and difficulty in the sustainability of marine resources, especially when rainfall seem to be more severe. For this reason, the Mexican government has proposed its projections, with the firm decision to execute all possible mechanisms to combat global warming, and binds to the guidelines offered by the KP, where Mexico positions as a recipient of the CDM mechanism and enables this action with CER projects with EU.

The management linked to the KP, led to the reception of projects for Mexico, which were applied mainly in the agricultural sector, category to which 80% of them were assigned, of waste management on hog farms and

⁸[36] PCN—In addition to the First National Communication, there are other communications that inform on the advances, both of CDM projects and of the country needs to achieve the goal of mitigation of CO₂ emissions, the last communication was the fifth national communication presented in the United Nations Framework Convention in November 2012.

cattle stables. Other projects that are linked in the provision were linked to energy, such as the free distribution of low consumption compact fluorescent lamps for the population living in extreme poverty, as a result of the EU-CER project approved by the Mexican Assigned National Authority (DNA) (Meiattini, 2009) [39].

In fact, the projects were applied in Mexico but the positioning of such projects did not reflect the expected results due to: type of project, difficulty for the local population to get involved in projects, lack of knowledge, the process itself, the high costs and the long term required to achieve the desired benefit.

However and based on the important biodiversity of Mexico, it not only involved that national agencies had to manage and implement CDM support, but also that other organisations wanted to engage in these activities, with the main purpose of transferring knowledge and practice in the improvement of the environment. These organizations are: the German Agency for International Cooperation (GIZ), the Spanish Agency for International Cooperation for Development (SAICD), the French Development Agency (FDA) and the Ministry of Environment, Food and Rural Affairs of the United Kingdom (ISFD-WSSD).

The purpose of the application, of both the programs as the project is, in part, to reduce the vulnerability in the fishery, addressed to: fishing communities, fishermen, infrastructure, and, in general, all the agents and elements involved in the activity. In addition to the programs/projects already applied, it is expected to: increase the number of acres of coastal protected areas, undertake health campaigns for aquaculture, regulation programs, promote responsible fishing, recover damaged fisheries, protect endangered marine species, reduce the fishing effort, enact temporary or permanent closures, replace subsidies with incentives for good practice and monitor the coastlines.

Mexico has laid down objectives and goals for the sector; strengthen the indexes generated in 2010, which reveal that, in fishing and aquaculture, 1.62 mt/tonnes were captured, out of which 76.9% was for human consumption, 22.7% for indirect consumption, and 0.4% for industrial use. Fishing contributed with 86% of the production and 14% of aquaculture, indicators that show the importance of the sector regarding the food issue.

The problem is, in part, the modernization in the developing countries, as expressed by Ehrenfeld, (2003) [40], the incorporation of new technologies worldwide is slow, developed countries have this, so it is hard to try to beat them in this topic, but for the less advanced countries it is complicated because of their own cultural barriers contemplating that the technological changes have their own inertia. It is true that technological development is highly dependent on power and wealth.

Finally, the case of Mexico is relevant for its coastal and fisheries production, but that the sector faces two important dilemmas can be seen: the climate changes that are present mainly in its coasts of the Northwest as well as waste (industrial-home) that goes directly to lakes and coastal ending then at sea, where damaging species in two senses: death or change of geographical area.

6. Discussion and Conclusion

Through the previous analysis, it is clear that the international regulations to deal with the problem of climate change have been overflowed, although there is legislation to take care of the seas and coasts, the contamination of the environment continues, consequently, if we want to restore the ecosystem also the natural resource, a stricter international regulation is required.

The aspects that influence the phenomenon are: on the one hand, the production, industrialization, commercialization and modernization, which are aspects that increase CO₂ emissions and, on the other hand, the population growth that affects the increase in emissions but also in the increase of consumption of natural resources.

The CI proposals have become diverse, but the KP has been relevant since, though its measures and mechanisms, the States adjust its internal policies to lower the damage to the natural resource, in this case, for fishing. The analysis focused on the European Union, Morocco and Mexico enables elucidating the gravity in four dimensions: mitigate and/or control CO₂ emissions, the modernization of the States, the slowing down of fishing and the effectiveness of external/internal policies.

In the foreground, there is the constant and marked development/underdevelopment difference. The European Union as a global power (within Annex 1 of the KP) addresses the problem with alternatives of a developed area, while the cases of Morocco and Mexico (aside from Annex 1 of the KP) as least developed States and with an emerging quality, that deal with the problems immerse in underdevelopment.

The problems detected by the EU are two: one in the agricultural sector as a heavy polluter and the other in the consumption of natural resources by the population. To deal with this situation, the EU adopts the guidelines

of the protocol and applies them, first of all, through the restructure of its pre-set programs (1962) such as PAC-CFP that serve the agricultural-fishing sector. These reforms correspond to the treatment of land organically by applying technology in crops as well as afforestation and transformation.

Regarding the consumption effect, the EU has designed programmes and projects to slowdown the ship-captures—close seasons in order to preserve the. It should be noted that, to give attention to the agricultural restructuring and the slowing down of the fishing, the EU counts with state-of-the-art technology and patents that can achieve the objective considering that to the extent that the land is treated the results will be reflected in the fishing.

The cases of Morocco and Mexico face different problems, starting with the need to reflect the application of the international standard in their internal laws. This involves, in a first phase, the creation of laws, instances and programs, *i.e.*, enable an internal platform that provides the basis to create and teach strategies to deal with the inconveniences, action that remains in each of the States.

In parallel, to detect climatic changes, they face disadvantages in port infrastructure, industrial and home wastes and communication media. However, Morocco and Mexico to counteract emphatically these incidents due to lacking technology, patents and financial resource, is limited aspect that makes them dependent on other States, although the topic has been run in the foreground making relevant changes in its domestic legislation.

Also, for both countries, the phenomenon of climate warming in the fishery sector has an impact in two ways: on the one hand the warming of sea and acidity of the water, caused by the greenhouse effect, which spread disorders in marine resource, and on the other hand, industrial waste and household that flow into rivers, lakes and finally into the sea causing pollution of water and consequently the natural resource, that terminates or changes of geographical area or ends in death.

Facing this environmental-fishing imbalance, the strategy of applying CDM/CER has not been enough for any of the three parties analysed. It is observed that, obtaining better results in the fishery sector does not depend on the application of the rules but rather on time, as these are long-term strategies. For the fragile States this is still dependant on the transfer of technology and patents, as well as on sufficient financial resources to adapt, as they are the most affected by the phenomenon. Perhaps the proposals provided by the IC via the Protocol could be efficient if they are restructured, considering that the environmental sector has overflowed any standard, time, status and condition considering that the operation actually contains the depletion of marine resources and avoids the risk in food safety.

References

- [1] Keohane, R. and Nye, J. (1977) *Power and Interdependence: World politics in Transition*. Little Brown.
- [2] Katzenstein, P. (1976) *International Relations and Domestic Structures: Foreign Economic Policies of Advanced Industrial States*. *International Organization*, **30**, 1-45. <http://dx.doi.org/10.1017/S0020818300003726>
- [3] Dahl, R. (1957) The Concept of Power. *Behavioral Science*, **2**, 201-215. <http://dx.doi.org/10.1002/bs.3830020303>
- [4] Tucker, R. (1977) *The Inequality of Nations*. 1st Edition, Basic Books, New York, 97.
- [5] Holsti, O.R. (2006) *Theories of International Relations. Making American Foreign Policy*. Taylor and Francis Group, New York, 313-344.
- [6] FAO (1992) *Earth Summit. 1st. United Nations Conference on Environment and Development (UNCED). Rio de Janeiro, Agenda 21-1992*. <http://www.fao.org/rioplus20/74932/es/>
- [7] Liñán, A. (2007) *The Law of the Sea. Monographs*. <http://www.monografias.com/trabajos44/derecho-del-mar/derecho-del-mar2.shtml>
- [8] Jean Claude, Z. (1999) *International Relations*. Ed. Ellipses, París, 155-159.
- [9] ONU (1992) *New York Agenda 21. DPI No. 1298, USA, 1-66*.
- [10] Diez de Velasco, M. (2013) *Institutions of Public International Law. 18th Edition, TECNOS, 947-951*.
- [11] FAO (2006) *Summary Information on Fishing by Countries, Doc. FID/CP/MAR Avril 2006. Le Royaume Du Maroc Données Économiques Générales*. <http://www.fao.org/fi/oldsite/FCP/fr/mar/profile.htm>
- [12] Love, P. (2010) *Fisheries While Stocks Last? OECD, Insights Organization for Economic Cooperation and Development*. Paris, 1-152.
- [13] Riveros, E. (2010) *Natural Resources and International Public Law. KAS, Study Serial No. 3, Chile, 1-48*.

- [14] Goldin, I. and Van Der Mensbrugge, D. (1992) Trade Liberalization: What's at Stake? OECD Development Centre Policy Brief No. 5, OECD Development Centre, Paris, 13. <http://dx.doi.org/10.1787/288158367171>
- [15] UNEP (2010) Marine and Coastal Ecosystem-Based Management: An Introductory Guide to Managing Oceans and Coasts Better, 12 Global Meeting of the Regional Seas Convention and Action Plans, Bergen, Norway, August 2010, 34.
- [16] Gros, M. (2013) Leçons de Droit de l'environnement. Ed. Ellipses, Paris.
- [17] Guillot, P. (2010) Droit de l'environnement. 2nd Edition, Ellipses, Paris.
- [18] Hansen, J., Ruedy, R., Sato, M. and Lo, K. (2010) CDIAC, Global Surface Temperature Change. *Reviews of Geophysics*, **48**, RG4004.
- [19] Martens, R., Slooff, R. and Jackson, E. (1997) Climate Change, Human Health and Sustainable Development. *Bulletin of the World Health Organization*, **75**, 583-588.
- [20] IPCC (1997) Regional Impacts of Climate Change: Vulnerability Assessment. Summary for Policymakers Special Report of Working Group II of the IPCC Intergovernmental Group of Experts on Climate Change. 1. <http://www.ipcc.ch/pdf/special-reports/spm/region-sp.pdf>
- [21] IPCC (2014) Intergovernmental Panel on Climate Change. Estructura y misión sobre informes en emisiones CO₂. http://www.ipcc.ch/home_languages_main_spanish.shtml
- [22] Pearson, F. and Rochester, M. (2000) International Relations. Overall Situation in the 21st Century Bogotá, Colombia. Ed. McGraw-Hill Interamericana, S.A., Mexico, 13-17 and 304-433.
- [23] Khor, M. (2011) The Foundations of Sustainable Development. Review of policies No. 6, 1-4 August 2011, South Centre.
- [24] Nieto (2005) Climate Change and Kyoto Protocol: Effects on Employment, Health and the Environment. ICE: Kyoto Protocol, May-2005, No. 822, 1-25.
- [25] Parlamento Europeo (2015) The Instruments of the Common Agricultural Policy and Its Reforms. http://www.europarl.europa.eu/aboutparliament/es/displayFtu.html?ftuId=FTU_5.2.3.html
- [26] OCDE (2012) Agricultural Policy Monitoring and Evaluation 2012. OECD Publishing, Paris, 27.
- [27] Massot, M. (2000) The CAP between the Agenda 2000 and the Millennium Round: Do to the Pursuit of a Policy in Defense of Agricultural Multifunctionality? Spanish Magazine of Agrosocial and Fishing Studies No. 188, 9-66.
- [28] Hoogeveen, Y. (2013) Europe's Agriculture: How to Make Food Affordable, Healthy and "Green". EEA Newsletter, Issue 2013/2, 16 December 2013. <http://www.eea.europa.eu/articles/europe2019s-agriculture-how-to-make>
- [29] AEMA (2010) The Marine Environment: Pressures on Marine Biodiversity. Biodiversity Fishing. <http://www.eea.europa.eu/es/articles/el-medio-marino>
- [30] Pérez, A. and Jiménez, F. (2007) Environment. Moroccan Perspectives, Threat or Business Opportunity? *Economic Bulletin of ICE*, No. 2918, 1-8.
- [31] Diario Oficial de la Federación (DOF) (2012) Decree Whereby the General Climate Change Law Is Issued. Chamber of Deputies of the H. Congress of the Union, Mexico, Process Legislative Decree 243 of the LXI Legislature.
- [32] Sarukhán, J., *et al.* (2009) Natural Capital in México City. Synthesis: Current Knowledge, Evaluation and Prospects for Sustainability. National Commission for the Knowledge and Use of Biodiversity, Federal Government, México, 21-63.
- [33] Magaña, V. and Gay, C. (2002) Vulnerability and Regional Adaptation to Climate Change and Its Environmental, Social and Economic Impacts. Secretariat of Environment and Natural Resources, México, *Ecological Gazette*, No. 65, 7-23.
- [34] SEMARNAT (2007) Mexico Climate Change. National Institute of Ecology, SEMARNAT, Ministry of Environment and Natural Resources. <http://www2.inecc.gob.mx/publicaciones/gacetitas/154/cclimatico.html>
- [35] Camacho, M. (2009) Effect of "El Niño" and "La Niña" Phenomena in the Reproduction of the Axe China *Atrina maura* (Sowerby, 1835) (Bivalvia: Pinnidae) in the Ensenada de La Paz, B. C. S., Mexico. Master's Thesis, IPN, Interdisciplinary Center of Marines Sciences. <http://www.repositoriodigital.ipn.mx/handle/123456789/13666>
- [36] SEMARNAT (2009) First National Communication. INECC: National Institute of Ecology and Climate Change, México. <http://www.inecc.gob.mx/cpcc-lineas/634-cpcc-commal-1>
- [37] SEMARNAT INECC (2012) Fifth National Communication to the United Nations Framework Convention on Climate Change. México, 1-441. <http://unfccc.int/resource/docs/natc/mexnc5s.pdf>
- [38] Lluch, D. (2011) Project PEACC-BCS Fishing Report. http://www.spyde.bcs.gob.mx/cgds/files/proyectos/PEACC/Reporte_Final_PESCA_PEACC-BCS.pdf
- [39] Meiattini, S. (2009) Progress of the Clean Development Mechanism. Challenge between Economic Investment and

Cooperation. *Environment Online Magazine*, **7**, 1-22.

- [40] Ehrenfeld, D. (2003) *Globalization: Effects on Biodiversity, Environment and Society*. Conservation and Society. 1.1. SAGE Publications, Thousand Oaks, 99-111.



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