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# Challenges and Possibilities of Cross-Cutting Environmental Policies

Miguel Moreno Plata

Political Science and Urban Management, Autonomous University of Mexico City, Mexico City, Mexico

## Email address

[miguel.moreno.plata@uacm.edu.mx](mailto:miguel.moreno.plata@uacm.edu.mx)

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## Abstract

The complex and multidimensional nature of sustainable development is essential to explain the growing unsustainability in the world. The public policies implemented more than two decades ago have been ineffective. This situation is the result to various causes, but in the field of state and public administration stands out the lack of articulation between environmental policies and objectives of sustainability. It is not enough the political will of communities and institutions in the different geographical scales, because the lack or deficient coordination between ecological and social systems, including institutional arrangements, plays a fundamental role in the failure of public policy. The adoption of new approaches like the cross-cutting provides good chances to advance in the articulation of the various dimensions and scales of sustainable development, mainly to improve interactions between institutions and ecological processes. However, its adoption by the governments and public administrations faces serious challenges, many of which are related to the Weberian matrix of most of the current institutional arrangements. The possibilities of cross-scale policy depend, to a great extent, of deep transformations that affect the foundations and principles of bureaucratic organizations. This task should start by revising the legal framework that supports and favors the sectorial treatment of environmental and developmental problems; inasmuch that law is the cornerstone of public administration and the integration of the respective public agendas. The case of Mexico illustrates the limits and possibilities of cross policies within the current institutional arrangements face up to unsustainable trends in the contemporary world.

## 1. Introduction

Since its origins, environmental policy has a global vocation; perhaps for this reason the greatest expectations are almost always placed in international agreements such as the Framework Convention on Climate Change, and subsequent conferences in the scope of that international instrument, as the most recent COP-21 held in Paris.

This global approach makes harder the multidimensional analysis of environmental problems, including climate change, since it is overlooked the fact that the efficacy of environmental policies could depend in a great part on the possibilities of interaction of these policies in geographic, social and institutional level.

An approach that provides interesting possibilities in this field is the approach of cross-scale, because that could support the development of theoretical and instrumental arsenal to advance the articulation of the various dimensions and scales of the environmental agenda and sustainable development. The cross-scale field surpasses the

narrow institutional frameworks of state, market and civil society, as central institutions of modernity. However, by methodological considerations, this paper is limited to the state level and more specifically to the government and public administration.

The central assumption of this research is: the limits and possibilities of management and transversal policy should be analyzed in the framework of the central principles of the still prevailing bureaucratic organization in the vast majority of contemporary public administration; which means to qualify the notable differences between countries in different latitudes and levels of development, although the bureaucratic development is much greater in industrialized countries.

Within this context, in this paper the theoretical nature of cross-cutting policies are analyzed, highlighting those elements linked to the structure and processes of the environmental agenda and sustainability. A theme of great importance is the study of theoretical coordinates related to the complex and multidimensional nature of sustainable development, in which the environmental component is very important.

This paper also seeks to provide some evidence about the role of the legal system in the cross-cutting policies, so that the analysis of the Mexican case is highly relevant to enhance understanding of the limitations of the current institutional framework; in which case are pointed out some elements that demonstrate the structural and functional limits of environmental management, climate change, natural resources, energy transition, among other strategic issues of public administration in this area.

In sum, the conclusions aim to the need for reengineering the legal system in each dimension of sustainable development, including environmental protection as an essential component for a future reorganization of the state, government and public administration, to improve the chances of cross-cutting environmental policies.

## **2. The Complex and Multidimensional Nature of Sustainable Development**

For the purposes of this paper we can divide the evolution of the paradigm of sustainable development in two major approaches, namely: the first multidimensional model, anchored essentially in studies such as the Brundtland Commission (1992) and the second model, based on theoretical developments of frontier for addressing on issues related to the dynamic and complex nature of development processes.

According to the aforementioned Commission, sustainable development can be defined as one that can satisfy the needs of the present generations without compromising the ability of future generations to satisfy their own needs. This definition introduces a central component as it is the

intergenerational relationship. That is, since its origins the paradigm of sustainable development involves an essential element, which is the timescale. But it is not a conventional timescale, but essentially a new-style component. This timescale beyond the time horizon of a generation and, to that extent, introduces an important factor that makes us think and rethink the temporal component of the institutional environment and policies related to development.

The report released by the also called World Commission on Environment and Development (WCED) was conceived with the overall objective to guide policies aimed at achieving a balance between the socio-economic development and ecological conditions. From the above, this model has been represented as a structure sustained in the balance between economic, social and ecological conditions either as a triangle formed by the economy, environment and society [1]. From this, an agenda of sustainable development, where social and environmental implications of economic growth are included in the decision-making processes, is established; this approach is materialized in the so-called Agenda 21.

In this context it is relevant to point out the major weaknesses of the cited approach:

- a) One of the main criticisms against the paradigm coined by the Brundtland Commission is its anthropocentric essence: the satisfaction of human needs is in conflict with the environmental limitations, and as a result, society and the environment are presented as separated pillars. This theoretical perspective leads to the idea of a dichotomy between the natural world and cultural; a dichotomy that, according to this view, can only be reconciled through economic development, a perspective that will lead to the predominance of the economic dimension.
- b) The importance of the economy is overestimated in the definition of the Commission: sustainable development does not postulate a stationary economy, it underlines that the problems of poverty and underdevelopment cannot be solved without a new era of economic growth [2]. On this issue, Seghezze (2009) stresses that the objectives of redistribution and equity could be, to some extent, contradictory to the goals of economic activity. This potential conflict between economic growth and sustainable development is even more evident in the industrialized countries, where goods and services will never be enough for the endless material needs. This ambivalence between the concepts of economic growth and the scarcity of environmental goods and services is perhaps the greatest weakness of the concept of sustainable development articulated by that Commission.
- c) The third limitation of the definition given by WCED is precisely the neglect or failure of the aspects related to time and space, which have not been explored with sufficiency; even though for years the consequences of this situation have been drawn.

Upon the recognition of these limitations, some of the newest theoretical developments have focused on the analysis of the spatial, temporal and institutional scales associated with governance, policies and management of sustainable development. For example, Young [3] is one of the pioneers in the exploration of this theoretical vein, particularly in studies of environmental governance and natural resources, which in a second stage, have moved towards multilevel treatment of the sustainable development and addressing environmental policies from the cross-cutting perspective.

To Termeer, Dewulf and Lieshout: "Cross-level issues are the result of cross-level interactions between multiple levels on a scale. Depending on the scale at hand, cross-level issues can take different forms, but generally problems result from the interdependence between levels" [4]. A typical problem of this nature is precisely the gap or mismatch between the scale of social organization and the biogeophysical scale of natural resources, environmental goods and processes in time and space. These imbalances are defined as situations where the scale of environmental change and the scale of social organization responsible for managing the environmental good or service fail to prevent one or more functions of socio-ecological systems be disrupted or altered significantly. According to Termeer, Dewulf and Lieshout (2010) and Cumming, Cumming and Redman [5], this situation will occur in three different assumptions:

- a) Spatial mismatches will occur when the spatial scales of institutions and spatial scales of ecosystems are not integrated in the most appropriate way;
- b) Temporary mismatches will occur if management time scales and time scales of the systems and ecological processes are not aligned properly;
- c) Functional mismatches will occur when the functional scales of the institutions are not aligned in a rational manner with the functional scales of ecological systems.

In this context, the mismatch between the spatial, temporal and functional scale between social and ecological systems may emerge either by changes in environmental or social level or in the dynamics of socio-ecological interactions. When the scales of social organization and environmental scale are mismatched, problems emerge on the agenda of the institutions responsible for the management or governance of socio-ecological systems. In some cases these problems may be evident, such as interruption or serious deterioration of environmental functions and the provision of environmental goods. In other situations, mismatches can be difficult to diagnose, what can be evidenced by the loss of the resilience of social-ecological systems.

According to Young (2002), the primary cause of these imbalances lies in the high institutional density, which increases the likelihood of poor interaction between the different institutional levels. They interact both in the horizontal and vertical plane. In the first case, we are talking about relationships at the same level of social organization (e.g. international institutions); while in the second case we refer to relations between different levels of social

organization such as the interactions between international, national and local institutions, which means that the levels of interaction emerge in a broad spectrum, that is, from micro to macro, either geographical or societal; while recognizing that the interactions that occur at the same level, as in the case of the institutions at national and sub-national and local order.

The model conceptualized on the three pillars of sustainable development (environmental, social and economic) represented a fundamental advancement for paradigm in question. However, the current reality, in which the main trends of unsustainable development have worsened in the various geographical scales (from the global to the local), shows the limits in the process of environmental policies.

In this context, the development of institutions and policies that can overcome the mismatch between social and natural scales is required. This means the need for new institutional arrangements that can impact favorably the implementation of multi-scale and multi-level policies; for which purpose, the cross-cutting can make significant contributions, especially at the organizational level, taking into account the spatial, temporal and functional interactions of socio-ecological systems and institutional arrangements.

### **3. The Cross-Cutting and Environmental Policy**

#### **3.1. The Bureaucratic Nature of Modern Public Administration**

The objective of this section is just stating some of the founding principles of the bureaucratic model of organization, whose ideal type was first theorized by the great German thinker Max Weber, through analysis of those principles that, from this perspective, could limit the possibilities of cross-cutting approach in contemporary public administration.

The Modern public administration continues supported, in a fundamental way, in bureaucratic organizations, it understood as those based on a sectorial nature management, according to the classical approach, theorized by Max Weber. According to this author, the central element of bureaucratic organization is the limited competition in a rational and objective manner. This means that the organizational effectiveness depends in large part on the extent to which these organizational qualities are achieved. Thus, according to Weber [6], bureaucratic administration has the following characteristics:

- The principle of administrative competence essentially means: A field of duties objectively and services limited by a distribution of functions; which involves the distribution of powers arranged normatively, that is, by legal or regulatory provisions.
- Thus, the principle of permanent powers established by the legal system, it supports the authority and superiority of modern bureaucratic organization, including public organizations.

- The principle of administrative hierarchy, that is, the establishment of authorities with powers of regulation and control; an organization based on relations of command / obedience, i.e., a system highly hierarchical, both structurally and functionally, it that presupposes a system of command and subordination tightly organized.
- The principle of formalization. This bureaucratic principle is translated colloquially in the expression of "comply with to the file by", which means that the operation of the bureaucratic machinery is based on an organized set of files and documents, which in many cases are quite chaotic.

Consequently, officials and administrative staff in the bureaucratic organization must also have a set of attributes: a defined jurisdiction, an administrative hierarchy, as well as a rigorous discipline and administrative supervision, and a high level of expertise and formality.

Moreover, it is also noteworthy that rationality and technical superiority of bureaucratic administration depends essentially on the law. In this regard Max Weber is emphatic, when saying that modern public administration is based on the principle of functional competence which, in turn, is based on rules of whether constitutional or legislative nature.

From this perspective, it is clear that most governments and public administrations are still underpinned by the bureaucratic model; since the basic principles are remain valid, despite the emergence of so-called post-bureaucratic models. In the case of Mexico, government is essentially of a bureaucratic nature, including environmental and climate change management.

### **3.2. The Cross-Cutting in the Government and Public Administration**

Firstly the concept of cross-cutting encompasses two fundamental dimensions: incorporates elements of organizational order and also acts as an emerging principle of public administration, trying to give answers to certain public issues that go beyond the areas of competence of the various public organizations, while that also aims to achieving common objectives to these same institutions [7].

Into this order of ideas, the transversality as political and organizational need emerges from the interaction between diversity and the growing complexity of social reality on the one hand, and the demands and limitations of the technique, technology and organizational structures, on the other hand. From this perspective, this approach is seen as a mechanism of adaptation to a multidimensional and polyhedric reality; as it would be the case of the problems related to unsustainability at global, regional, national and local levels.

From the above the limits of contemporary administration can be established, on the face of a new public agenda characterized by its high density and an increasing unprecedented complexity. We refer to a class of social, political, economic and environmental issues related with phenomena such as climate change and other contemporary environmental problems.

We agree on that reality is not cross-cutting: reality is complex and therefore more multidimensional and multifaceted and not so much cross-cutting. According to Serra (2005), the transformation of this reality requires that organizations, especially the public ones, be able to perceive the multidimensionality and it be adjusted to maximize their ability to adapt to this situation. From this perspective, the transversal management in the conventional sense is a useful tool, but limited to interpret and analyze these complex and multidimensional realities of XXI century. Then, an important theoretical vein is the exploration of a new class of cross-cutting, that is, one that can widely absorb the multi-scale and multi-dimensional nature of the processes and social phenomena

Accordingly, if we agree that the cross-cutting approach is a limited alternative available to the public administration to address the many facets of the new and complex reality, it is necessary to think about a new type of transversality, namely, one capable to cross, articulate and harmonize the dense institutional arrangements from a socio-ecological perspective.

Definitely, from perspective of Serra (2005), the transversality seeks to incorporate some of these new perspectives into the processes and areas of activity of public organizations. From the multifaceted vision and, based on the ability to select the most relevant mainstreams, taking also into account the organizational capacities, cross management can become an effective tool to change the new realities of public policy; thus, the transversality is conceived as an instrument of support for the deployment of new instruments and intervention capabilities on this multidimensional reality.

On this matter there are two general approaches, namely:

The first perspective considers the cross-cutting approach as anti-bureaucratic reaction. According to Echeverria (1998) this approach emerges as an attempt to break the famous vicious circle of bureaucracy. The principle of specialization in the division of labor in bureaucratic organization contributes to favor the sectorial treatment of the problems. From this perspective it is possible to distinguish two aspects:

First, this approach can be assumed as a mechanism for strengthening horizontal coordination between different political or administrative entities. Bureaucratic organizations, as a logical consequence of the principles of hierarchy and specialization that are inherent to them, tend to perform their functions in a sectorial manner, while the coordination functions correspond to superiors. The difficulties of the hierarchical coordination model are increasingly apparent in large bureaucracies, including public organizations. Thus, the horizontal cross-cutting is an instrument that facilitates the relationship for joint work of various units, where each one provides knowledge and skills with a relative degree of specialization for the best achievement of common organizational goals [8].

Under this approach it is clear that we are witnessing a paradigm that aims to overcome the bureaucratic sclerosis that characterizes most modern public organizations. In this context:

The cross-cutting equals to reinforce of horizontal coordination, in face of the constraints of vertical coordination. It involves the search for channels of relationship between units without moving up the chain of command, or wrest the power of decision to the organization. The cross-cutting is a bet on the coexistence of specialization and interdisciplinary treatment of the problems. The cross-cutting can be applied within a single organization and between different organizations, crossing its borders on the base of the structure to contribute to the joint management of common problems through coordinated policies [9]. This aspect assumes great importance in the process of policy coordination on the different levels of government; crucial issue in federal systems such as the case of Mexico.

Secondly, the cross-cutting can be assumed as an instrument of vertical coordination for internal management, from the assumption that coordination is a process shared between two or more organizations to address common problems. From that perspective, the hierarchy principle would continue assuming a key role in the cross-cutting policies.

On the other hand, the second perspective considers the cross-cutting as an internal organizational tool. In a first approach, the cross-cutting can give the impression that it is a concept oriented to the inter-organizational aspect. However, the transversal approach could be assimilated as a tool for internal reorganization designed to manage, within each organization, an issue that it is not explicitly referred in the basic organizational structure, which requires, for a proper treatment, the intervention of one or more units. From this point of view of Serra (2005), it is clear that cross-management involves, in good measure, the review of principles such as competition and specialization of public organizations, especially those with bureaucratic stamp.

In short, in the field of public administration, the cross-cutting approach could be applied on structural and functional level, as well as in the definition, design, implementation and evaluation of policies, provided that it be recognized as a constitutive principle of the new institutional arrangements in the various areas of government and the contemporary public administration.

### 3.3. Exploring the Cross-Cutting Policy

The genesis of the cross-cutting policy dates back to the struggle waged by Italian activists in the late twentieth century. However, this concept has acquired a certificate of naturalization in academia in the late twentieth century. Originally, the concept of cross-cutting policy was applied to a democratic practice that takes two meanings of current relevance: refers to a process that, on the one hand, focuses on common issues, without being arrogantly "universalistic" and on the other, it emphasizes differences, without being paralyzed by it. From this perspective, the cross-cutting policy is the practice whereby in crossing creatively, and to that extent, redefine the borders that establish the geographical, political and social differences in the world [10].

An important fact is that since its initial formation, transversal policies have been expanding its scope -since gender policies and anti-discrimination- until arriving to policies associated with sustainable development, environmental protection and social and solidary economy in the local territory.

The crossing policy approach is based on the following key elements:

- First, from an etymological point of view it is recognized that the world is seen differently depending on the position of the observer and analyst, so then, none positioning of the actors in the policy process is definitive, because this posture depends in large degree on the knowledge, whose process is also relative and unfinished.
- Second, a central component of the cross-cutting policy is the dialectical relationship between difference and equality, because the essential function of the first is to support rather than replace the second.
- Third, the cross-cutting policy is based on a conceptual and operative differentiation between position, identity and values. This means that people who belong to the same social class may have very different positions on the face the social problems or those with similar position or identity may show very different social and political values [11].

From our point of view, this means that the essential nature of the cross-cutting policy is the dialectical relationship between principles and political and social interests at play, as well as between the various actors located in different social and geographic scales. Thus, its function is to establish bridges and canals of negotiation on the policies in a range of scales:

- a) In the geographical scale, the function of the cross-cutting policy is "to cross", "to link" and "to bring closer" the processes located in various scales, from the global to the local;
- b) In the social scale, the fundamental role of cross-cutting policy is the establishment of canals and bridges of interaction between actors located in different institutions, whether businesses, organizations of civil society and governments;
- c) Within the time scale, the central role of cross-cutting policy is the establishment of points of interaction between the policies of short, medium and long term; even beyond the time horizon of current generations.

Thus, the cross-cutting policies have the following key features:

- a) From the process perspective, the cross-cutting implies, to a large degree, a sort of assemblage or articulation of policies from various levels of government, market and civil society.
- b) Despite the apparent dichotomy between horizontal policies and vertical policies, both could be complementary, as the first ones are ineffective without the others.
- c) The cross-cutting policy starts from the recognition of

the differentiated power of the actors, because this multiplicity of interests causes that negotiations and agreements, both of nature political, technical and operational, have a high cost [12] [13].

- d) The cross-cutting policies presuppose a careful monitoring on connections and responsibilities [14], which it means that the exercise in the system of territorial and functional competence should be done without a excessive formalism, that is, the effectiveness of this type of policies demands great flexibility.
- e) The cross-cutting policies are of variable nature in the social, geographical or temporal dimension, that is, such policies cannot be designed forever nor may be implemented or assessed in the same manner for long periods of time. This also means that one cannot privilege *a priori* any policy, given that it could prioritize different proposals from various points of view of the actors.

A few reasons for the development of cross-cutting policies are:

- a) Firstly, the cross-cutting policies emerged as a reaction to the inefficiency and ineffectiveness of vertical policies, at an early stage in areas of sensitivity high political and social, such as gender issues and the fight against discrimination.
- b) Secondly, the cross-cutting policies also emerged as an alternative for performance improvement of public organizations in their deal with old problems of development and underdevelopment, with the primary aim of improving coordination between actors in the local territory, including companies and civil society organizations.
- c) The cross-cutting policies also require the adoption of a strategic approach in the policies process that includes political support, as well as human, technological, financial and material resources.
- d) Finally, the incorporation of cross-cutting approach in the different organizations requires the redesign of procedures, and the redistribution of powers and responsibilities among the organizations of public administration and levels of government [15].

On the other hand, from the complex and multidimensional nature of environmental management and sustainable development it is important to note the following:

- The temporal dimension involves the inclusion of the criterion of inter- and intra-generational equity; particularly to incorporate the interests of present and future generations.
- The social dimension implies the recognition of the need for a systemic agenda between the environmental, social and economic dimensions of development policies.
- The geographical dimension essentially presupposes the inclusion of mechanisms for policy integration in the various geographical scales from the global to the local, including national and regional levels.

In sum, the multi-scale and multidimensional nature of

the paradigm of sustainable development could make a fundamental contribution to the development of cross-cutting approach; since the latter could experience a qualitative transformation in its nature, and to that extent, also change its role: the articulation of the different scales and dimensions of development processes. In short, it comes outline a rediscovered cross-cutting, same that crosses its borders beyond the confines of the scales and social and natural systems, including institutional arrangements.

## 4. The Public Administration and Environmental Cross-Cutting Policy: The Case of Mexico

### 4.1. The Sector Administration in Environmental Issues

The contemporary public administrations are complex organizations. The Mexican public administration is no exception, as it is comprised of various entities and agencies of sectorial nature. In this universe, we should add the autonomous public agencies, which in a broad and functional sense are also part of the public administration; the above while still considering to the state and municipal governments. In this first approach it is possible to perceive the great Mexican institutional density, such as we shall clarify in the following sections.

The Organic Law of the Federal Public Administration and various substantive laws establish an administrative organization, which structurally and functionally it is integrated by various administrative sectors. Thus, environmental management corresponds to the Ministry of Environment and Natural Resources; however, the management of natural resources falls to other agencies and administrative units, also them:

- a) The Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food, in whose functional domain is located the management and policies concerning fishing, which is a strategic natural resource from a social, economic and environmental point of view.
- b) The National Forestry Commission, decentralized public organism created by decree dated April 4, 2001, is the responsible for implementing policies, plans, programs and projects for sustainable forest development. The Governing Board of this agency is comprised of the Ministry of Environment and Natural Resources; Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food; Ministry of Social Development and the Ministry of Agrarian, Territorial and Urban Development, also of other agencies.
- c) The National Water Commission was established by decree dated January 16, 1989, as a decentralized unit. According to the National Water Law, the Commission is the highest organism of technical, regulatory and

consultative character of the Federation in the field of integrated water resources management. For this purpose, it is organized in two ways:

- At national level, it has a technical council and a general director. The Technical Council is comprised of the following agencies: Ministry of Environment and Natural Resources; Ministry Agriculture, Livestock, Rural Development, Fisheries and Food; Ministry of Social Development; Ministry of Energy; Ministry of Economy and by the Mexican Institute of Water Technology, and others agencies.

Broadly, these two units are perhaps the most advanced case of inter-sectorial agencies on the public administration of the country, since in their integration are involved various units of federal government.

- In the hydrological regional level, the National Water Commission has agencies and River Basin Councils: the first ones are units technically, administratively and legally specialized; last ones are consultative organisms which are composed both by representatives of various agencies of the federal government as by state governments in each administrative region.

It is worthy mentioning that the economic development administration corresponds mainly to the Ministry of Economy; Ministry of Energy and Ministry of Tourism; while the administration of social development is a function of the Ministry of Social Development; Ministry of Public Education and Ministry of Health. From this organization the respective public agendas are established, which are essentially of sectorial character, with few cross-cutting instruments, whether in the field of environmental policy or sustainability.

On this assumption, we find the first great contradiction between the organization of public administration and the complex nature of sustainable development. While the structure and functioning of the administration are still underpinned by a sectorial organization and the basic principles of bureaucracy, sustainable development increasingly requires organizations and transversal processes. In this context, an urgent task is the redesign of the organization and processes of the policies for sustainable development. However, this task faces a series of organizational barriers and the interests of various groups of political and economic sectors.

In this line of thought, the first important limitation to undertake a profound transformation of public administration lies in the legislation of sectorial nature that prevails in relation to the environment, natural resources, climate change and energy transition; essential components of policies for environmental sustainability, while recognizing the importance of other dimensions of sustainable development.

In the next section we will proceed to the analysis of part of the sectorial legislation at the federal level, in order to identify those elements that prevent or limit the cross-management of the policies in the Mexican case

## **4.2. The Institutional Framework of the Mexican Environmental Policy and Legislation**

In general terms good legislation is the starting point to ensure an effective decision-making process at various levels of government, so an articulated legal system is a central component for the effectiveness of environmental policies and the sustainability [16]. In this regard it is important to stress the significance of legislation as the first institutional input in the process of public policy in this area, as they should be designed and implemented in a variety of geographical, temporal and social scales. Otherwise there is a risk of increased contradictory sectorial policies, as is evident in the programs of environmental protection and fighting against poverty.

### **4.2.1. The Legislation on Environmental Protection**

The General Law of Ecological Balance and Environmental Protection is the regulatory framework for environmental policy and management at various levels of government, since it is a framework law. That legislation reiterates the principle of sectorial environmental stewardship, which Article 6 states that the powers conferred on the Federation shall be exercised by the Ministry of Environment and Natural Resources.

This law provides for horizontal coordination between the various departments or agencies of the federal government, when the functions or remit are linked to natural resource management and environmental policies. As it regards to intergovernmental coordination mechanisms, it contemplates the possibility that the federal government and the governments of the states and municipalities sign agreements or coordination agreements to resolve environmental problems of common character.

### **4.2.2. The Legislation on Natural Resources**

Other highly relevant regulatory sectoral are the laws related to the management of natural resources, such as the General Law for Sustainable Forest Development, National Water Law and General Law on Sustainable Fisheries and Aquaculture.

The General Law for Sustainable Forest Development establishes the National Forest Service and the institutional framework for the integration of tools, policies, services and actions in this sector. This system is comprised by the Ministry of Environment and Natural Resources; Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food and Ministry of National Defense, in addition to the Federal Attorney of Environmental Protection, National Forestry Commission and state governments and the Federal District Government.

Moreover, the General Law on Sustainable Fisheries and Aquaculture establishes the coordination between the Ministry of Environment and Natural Resources and Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food, mainly in the preservation and restoration of protected

natural areas and of coastal ecosystems, lagoons and internal waters.

With regard to intergovernmental coordination, that law provides for the integration of the National Council of Fisheries and Aquaculture, as an intersectorial forum for coordinating policies, programs and projects for the promotion, regulation and control of fishing activities. This Council is composed of the departments and agencies of the federal government and state governments.

#### 4.2.3. The General Law on Climate Change

This legislation is the first law of its kind among emerging countries and has several contributions, such as the National System for Climate Change, which has the following functions:

- a) To serve as a permanent mechanism of competition, collaboration, coordination and cooperation on national climate change policy;
- b) Promote cross-cutting application of national climate change policy in the short, medium and long term between the three levels of government;
- c) To coordinate the efforts of the federation, the states and municipalities for the actions of adaptation, mitigation and vulnerability reduction on climate change;
- d) To promote concurrence, entailment and matching of the programs, actions and investments of the three levels of government, as part of the national strategy and the national program on climate change.

The National System for Climate Change consists of the Interministerial Climate Change Commission, Climate Change Council, the National Institute of Ecology and Climate Change, the governments of the states as well as representatives of national associations of local authorities and of Congress of the Union.

However, the Interministerial Climate Change Commission is a permanent body composed mainly by the Ministry of Environment and Natural Resources; Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food; Ministry of Economy; Ministry of Tourism; Ministry of Social Development; Ministry Energy and Ministry of Public Education. The essential functions of the aforementioned Commission are:

- a) The coordination of actions of the agencies of the federal government.
- b) The formulation and implementation of policies, programs and projects to mitigate and adapt to climate change.
- c) Development of criteria for cross-cutting and comprehensiveness of public policies on climate change [17].

The General Law on Climate Change is a pioneering statute for providing some elements for the management and cross-cutting policy. But this effort is insufficient in the extent that in other policy areas, particularly in environmental protection and exploitation of natural resources, is not adopting the same approach.

Into the federal public administration also sticks out the

creation of the National Institute of Ecology and Climate Change, decentralized public agency, whose effectiveness has serious problems because even though exerts two closely related functions, the truth is that there is no clarity about mechanisms of politics and transversal management.

#### 4.2.4. The Legislation for the Energy Transition

In this category are the Law for Sustainable Use of Energy, the Law on the Use of Renewable Energies and Financing of Energy Transition and the Law for the Promotion and Development of Bioenergy.

The first law regulates the sustainable use of energy through optimal use in all processes and activities. This law establishes the National Commission for the Efficient Use of Energy and the Consultative Council for Sustainable Use of Energy. The first is a decentralized agency of the Ministry of Energy, whose powers are to promote energy efficiency; to develop methodologies for quantifying emissions of greenhouse gases from operating activities, production, processing, distribution and consumption of energy. The second is a consultative organism whose purpose is the assessment of the objectives, strategies, actions and goals of the National Program for Sustainable Use of Energy [18].

The Law on the Use of Renewable Energies and Financing of Energy Transition recognizes the use of renewable energies as an issue of public interest, and in the framework of the national strategy for energy transition, establishes the responsibility of the Mexican State for energy efficiency and sustainability, through reduction of hydrocarbon as a primary energy source.

Among the agencies that establish those regulations are the Energy Regulatory Commission and the Renewable Energy Advisory Council, whose main task is the adoption of laws, policies and methodologies to regulate the generation of electricity from renewable energies. It also establishes the Fund for Energy Transition and Sustainable Use of the Energy, whose technical committee is composed of agencies such as the Ministry of Energy; Ministry of Environment and Natural Resources; Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food and the Federal Electricity Commission [19].

Moreover, the Law on Promotion and Development of Bioenergy establishes as the primary mechanism for the inter-sectorial coordination to the Interministerial Commission on Bioenergy Development, comprised of the Ministry of Environment and Natural Resources; the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food and the Ministry of Energy. The functions of the aforementioned Commission are linked to the policies, plans and programs on bioenergy; including the definition of coordination mechanisms between the different sectors of the federal government and intergovernmental coordination mechanisms.

The legislation related to the transition energy is a paradigmatic reference of a disjointed legislation, which results in a multitude of multi-sector agencies, whose



institutional malfunction is the first major hurdle for cross-cutting policies in this area, without mentioning the null cross-cutting prospect with the climate change agenda.

This situation becomes even more chaotic with the energy reform initiated in the last two years that includes the amendment of various constitutional provisions and the adoption of different laws on exploitation, processing and marketing of hydrocarbons and geothermal energy, which implied the creation of various public agencies.

## 5. The Cross-Cutting and Problems in the Financing of Environmental Policies

As already noted, a first component of an effective public policy is the legal framework. A second important element is the design and allocation of financial resources by means of Expenditure Budget of the Federation, which in Mexico is an annual exercise that corresponds to both the Federal Executive, through the President of Republic, and the Congress of the Union, through the Chamber of Deputies.

A main argument of this paper is that the dispersion of law in areas such as environment, climate change and energy transition is a fundamental factor for the ineffectiveness of public policies in the environmental dimension of sustainable development. While it is true that the lack of cross-environmental policies has its origin in the laws of nature sector, so it is that the prospect of cross-cutting is also absent in other stages of policy process beyond the formulation phase, mainly in the allocation of budgetary resources and in the execution phase. In this section we want to address issues related to the dispersion of financial resources in several functional and administrative areas.

On the analysis of the Expenditure Budget of the Federation for the year 2015 were detected four major financial items related to environmental sustainability: a) Special Concurrent Program for Sustainable Rural Development, b) Integral development of indigenous peoples and communities, c) Adaptation and mitigation on climate change and d) National Strategy for Energy Transition and Sustainable Use of Energy.

The Special Concurrent Program for Sustainable Rural Development was integrated by nine sectoral programs, with the participation of 9 Ministries. In environmental matters, the Program on Sustainability of Natural Resources had a budgetary ceiling of 15,803 million of Mexican pesos. In this area, the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food applied an expenditure of 8,613 million of Mexican pesos, distributed in 4 programs and 11 sub-programs, such as the Bioenergy and Sustainability and the Fisheries and Aquaculture integral and sustainable arrangement, which have some degree of environmental, social and environmental sustainability content. Within this category, the Ministry of Environment and Natural Resources exercised an amount of 7,190 million of Mexican pesos, which were allocated to two programs and

four sub-programs, such as the Regional Sustainable Development and to combat forest fires. Important to note that in this same Special Concurrent Program is the Program in Prevention and Risk Management as a component of the area of competitiveness, the implementation corresponded to the Ministry of Agrarian, Territorial and Urban Development, which had the amount of 206 million of Mexican pesos.

The budget for the integral development of indigenous peoples and communities amounted to 77, 545 million of Mexican pesos, which was exercised by nine ministries and distributed in 59 budget items. The Ministry of Environment and Natural Resources exercised a total of 3, 244 million of Mexican pesos, which were distributed in 8 budgetary categories, composed of six programs, one concerning public function and other for works and infrastructure.

Moreover, budget allocations for the National Strategy for Energy Transition and Sustainable Use of Energy amounted to 19, 108 million of Mexican pesos, spread over five administrative branches, corresponding at the same number of units; the largest allocations corresponding the Ministry of Energy, it exerted a total budget of 18, 635 million of Mexican pesos, representing 97.5%; while at the opposite extreme is the case of the Ministry of Environment and Natural Resources, which accounted for only 3.2 million of Mexican pesos.

During the same fiscal year 2015, the resources allocated to public policies related to adaptation and mitigation on climate change amounted to a total of 40, 663 million of Mexican pesos, which were distributed among 11 ministries and one decentralized agency (National Council of Science and Technology). Also, these resources were exercised by 60 budget line items: 1 in the area of policies, 18 in programs, 3 in activities, eight in funds, four in works and projects, 23 in public functions and 23 on unspecified categories. Within the programs whose implementation corresponded to the Ministry of Environment and Natural Resources, the most representative were the following: Temporary Employment Program, Payment for Environmental Services National Forestry Program, National Forestry Program Forest-Development and the National Forestry Program on Protection-Forest. In the functional scope of the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food are the following: Program to Promote Agriculture, Program to Promote Fisheries Productivity and Aquaculture, Livestock Development Program and the Comprehensive Rural Development Program; while in the jurisdiction of the Ministry of Energy, the most important was the Fund for Energy Transition and Sustainable Use of Energy.

From the analysis of these financial categories of Expenditure Budget of the Federation can establish the following considerations:

- a) The lack of a cross-cutting perspective in environmental public policy permeates virtually all stages of the process, including the phases of design, implementation and execution; which is particularly evident in the budget allocation process.
- b) The above is a factor that limits the effective use of

financial resources in the Mexican federal government, since this situation favors the dispersion and duplication of budget allocated to functions, policies and programs. This is the case of the Payment for Environmental Services National Forestry Program and the National Forestry Program Forest- Development, both considered in the field of resources for adaptation and mitigation of climate change as in the expenditures destined for integral development of indigenous people and communities;

- c) Beyond the dysfunctions resulting from the lack of cross-cutting tools in the field of public finances, there are a number of institutional weaknesses on the programming and budgeting process, which are evident in the lack of systematization, coordination and coherency in budget allocations, since the resources are allocated without distinction to functions, policies, programs, activities, and even to budget categories not specified; the above increases duplicity, opacity and inefficiency in the implementation of the various programs.

Moreover, based on the analyzed evidence, we could make the following policy recommendations:

- The establishment of budget categories for the creation and strengthening of institutional capacities for the incorporation of cross-cutting in both design and implementation of public policies;
- Conducting exercises of financial engineering and programming in order to unify and systematize the processes related to the functions, policies, programs, projects and activities; with emphasis on zero-based budgeting in the field of environmental sustainability management.

## 6. Conclusions

From the analysis of a part of the academic literature we can deduce that sustainable development have a multidimensional, complex, dynamic and interactive nature, since its main dimensions are interacting in a dynamic and differentiated manner in the various geographical, temporal and institutional scales. This "mismatch" between the scales and institutional levels and ecological scales would be the main cause of failure of the policies on sustainable development. Consequently, we need a new institutional architecture to improve the coupling between these scales, and in turn encourage the development of mechanisms to reduce the areas of "friction" resulting from the interactions between different dimensions, systems and scales of sustainability.

From this line of reasoning, the cross-cutting approach can also make interesting contributions to environmental policies and sustainability. This requires the design of structures and processes of a cross-character at the state level, of government and public administration; which presupposes the development of public organizations beyond the classic bureaucratic model. This does not necessarily mean the

elimination of the bureaucratic paradigm, but rather, a public administration rediscovered and redesigned from the complex and dynamic nature of sustainable development. To do this, a first step would be to become flexible the principle of sectorial responsibilities within the public administration and the establishment of agencies with authority, knowledge, resources, and overall institutional capacities for the design and implementation of public policy transversal.

In this line of argument, it also would be recommendable to create multisystem organisms that integrate the various subsystems in each dimension of sustainability. In the environmental field, the first step would be the formation of organizations of character transversal that articulate both functions environmental and natural resource protection and sustainable use of vital resources such as forests, fisheries and agriculture.

The Mexican institutional framework for sustainable development is based primarily on the fundamental principles of bureaucratic organization. Under this approach, the organization of public administration is characterized by a rigid system of division of powers that is based on a formula of sectorial nature, which constitutes a major obstacle to cross-cutting policies.

Current legislation favors the sectorial treatment of problems associated with sustainable development. This situation becomes particularly critical in the environmental dimension, where we find a policy and an institutional dispersion in management of environment, natural resources, climate change and energy. This disjointed, dispersed and contradictory legislation is a central component to the malfunction of the institutional framework of public administration.

From our point of view, we need to review the existing legal regime from the perspective of socio-ecological systems, whose first stage would be the systemic integration of the subsystems related to climate change, environmental protection and exploitation of natural resources. Thus, a consistent and systemic legal framework could be based, among other elements in adopting the cross-cutting approach as an organizational and functional principle in environmental management, to subsequently cover other areas of sustainability, such as economic and social development because without these components, the environmental policy could be quite ineffective, as evidenced by the meager results of current policies.

In this context it is also highly relevant to explore the possibility of moving towards a re-engineering of the legal regime in main dimensions of development; allowing, at first, advance the integration of each area of sustainability, to later develop mechanisms and instruments to improve institutional interaction in the process of environmental policies and of sustainability; which means, among other things, the development of theoretical and methodological scaffolding supported on the concept of socio-ecosystems.

It is also appropriate to stress the importance of a reorganization of public administration at all levels of government, in order to incorporate organizations, processes,

structures, systems and functions more suited to the complex and multidimensional nature of the paradigm cited. In short, the adoption of cross-cutting approach will allow the reduction of bureaucratic structures, the decrease of costs, as well as policies more effective in this field.

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