

The Urbanization of Coastal Zones between Urban Management, Legislation and Sustainable Development: the Case of Algeria

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ABSTRACT

Coastal zones are areas of great economic, social and cultural opportunities and as such have witnessed an unprecedented urbanization growth. Population growth, waterfront revitalizations and tourism generated megalopolis coastal areas in many parts of the world. The Mediterranean coast, beside its major cities has developed intense seaside tourism resulting in environmental degradation, and subsequent acceleration in biogeochemical cycles, including coastal erosion. Recent environmental concerns and sustainable development approaches stressed the irreparable destruction of coastal zones' wealth in the absence of a strictly controlled growth.

This paper first presents the current condition of the coastal zones in Algeria, then reviews some cases of coastal management approaches from various countries around the world, and finally presents a critical review of the Algeria's recent coastal policy and regulations aiming for a sustainable coastal approach and management.

KEYWORDS: Sustainable Coastal Management, Legislation, Urbanization, Planning, Algeria

1. INTRODUCTION

The coastline is a geographical entity that calls for a specific policy of development, protection and enhancement. It is a zone of contact between the earth and the sea which is today an increasingly coveted space, thus accentuating its fragility (Becet, 2002). The public perception of coastal zones has dramatically changed in the last 100 years. For a long time, it was considered as an empty, undesirable, or even *repulsive* zone (Corbin, 1990). Then, it was reserved to social elites which enjoyed "sea bathing" in a handful of seaside stations. It is only with the general implementation of the paid leaves that the "seaside boom" occurred. Since then, public opinion progressively became aware of the treasures of the coastal fringe, which led to strong pressures from its different users (developers, tourists, fishermen, industry etc.). The economic and social importance of the seaside increased causing major conflicts in land use.

The emergence of environmental concerns and sustainable development stressed the irreparable destruction of coastal zones' wealth in the absence of a strictly controlled growth. Coastal zones call for urgent consideration and improvement in policies, planning and management in order to retain their economic, social and environmental benefits (Clark, 1992; FAO, 1998).

This paper first presents the current condition of the coastal zones in Algeria, then reviews some cases of coastal management approaches from various countries around the world, and finally presents a critical view of the Algerian government recent policy for sustainable coastal management.

2. OVERVIEW OF THE ALGERIAN COASTAL ZONES

The Algerian coastline extends over 1,622 km. It is a fragile ecosystem under constant threat of degradation due to the concentration of population, economic activities and infrastructure along its narrow coastal strip. The population distribution is highly uneven over the national territory. The spatial structure of the population is polarized in the north of the country in general and especially on the "coastal strip" that borders the Mediterranean Sea with a width varying from 50 to 100 km from east to west. It is in this narrow coastal band of 45,000 km² (1.9% of the territory) that 36% of the Algerian population is concentrated (274 inhabitants / km²), while a mere 10% of the population is dispersed across the Sahara that stretches over 87% of the national territory (ONS RGPH; 2008).

In addition to the high concentration of the permanent population, the Algerian coast is the preferred destination of an additional summer population. Currently, there are no precise figures on the total number of vacationers, however, as an indicator of this large scale, 9 million visitors were accounted for in the single city of Oran and its popular coastal road (source: Fire Department County of Ain El Turk). Undoubtedly, this high population density has led to excessive urbanization and its negative impacts are visible all throughout the coastline.

The national urbanization rate increased from 26% in 1962 to 59.4% in 1998 and 66.5% in 2008, led at 80% in 2008 (ONS RGPH; 2008). This rapid urbanization has grown at the expense of agricultural land. The former agricultural area lost to forced urbanization was estimated at 8,790 ha in the once fertile *Mitidja* plains, 2,850 ha in the hills of the Sahel, 1,010 ha in the coastal and central highlands in the central region of the country and 5,470 ha for the sole region of Oran. By themselves these coastal regions around the three main coastal cities have lost 17% of their total agricultural land. Natural sites (beaches, dunes, streams, etc.) around major coastal cities and industrial sites (Algiers, Oran, Annaba) have not been spared either.

The coastline harbors undeniable incentives to tourism development. Since independence in 1962, and unlike other Mediterranean countries, Algeria has not granted to the tourism sector a substantial role in its various national development programs. In reality, there is no policy to manage and promote tourism, even less in a sustainable manner, in spite of the fact that in 1966 the Tourist Development Zones (ZETs) were created. Currently the majority of ZETs were diverted from their original purpose, and their land plots used to implement residential subdivisions and multi-family housing compounds of questionable quality.

The coastline in Algeria is also characterized by a concentration of industrial activities. For instance, no less than 5,242 industrial units are located along coastal areas, or 51% of the national park, including 60 industrial units carrying major pollution risks (MATE, 2003). The oil industry is a positive and desirable activity, essential for any social and economic development. However, it has monopolized the best coastal sites and developed at the expense of other sea-related uses. It also includes substantial risks to neighbouring human settlements and the marine environment and generates waste, toxic emissions and contaminated wastewater.

3. MANAGEMENT PROCEDURES AND COASTAL PROTECTION: SOME EXAMPLES FROM AROUND THE WORLD

3.1 International Measures and Procedures

There are a number of international measures and procedures aiming at the protection of coastlines. Among the international procedures for the protection and conservation of coastlines are the "protected areas". Their implementation along the coastline is based on a legal procedure that requires a public declaration of intent, featuring a justification and a statement of objectives. The procedure must be integrated into the planning projects at a national level and legislated to provide them with the crucial legal protection.

The Ramsar Convention or the convention on wetlands on the other hand is an intergovernmental treaty that embodies the commitments of its members for a sustainable use of all

wetlands in their territories. The number of Ramsar sites exceeds 2000 covering more than 500,000 km² of protected areas under the Convention (Ramsar Convention on Wetlands, 2013).

The integration of coastal areas in the World Heritage of Humanity is an international procedure for coastal protection. Coordinated by UNESCO, it can dedicate a site with unique natural or cultural features. The registration process is part of the Convention of Natural and Cultural Heritage adopted in 1972 and now ratified by 190 states. As of 2013, the World Heritage List currently includes 981 sites, of which 193 are natural sites (World Heritage List, 2013). Finally, the classification as Biosphere Reserve marks the willingness on the part of managers to seek ways to develop natural resources economically for the benefit of local populations.

The classification of coastal zones under the Ramsar Convention, the World Heritage and Biosphere Reserve sites is negotiated between international conservation bodies (IUCN, UNESCO), states, regions and local governments. These procedures provide a framework within which national policies are added to coastal protection.

3.2 National Policies;

3.2.1 Regulatory Measures

Most European countries set regulatory measures to protect their coastlines. For instance, in France, in order to enable a better control of coastal development, the law of January 3rd, 1986 on the management, protection and enhancement of the coastline, stated the following: the "littoral" (coastline) law has regulated building development on the coast. Among the provisions of this Act appear the safeguarding of sensitive areas, prohibition of road construction along the shoreline and coastal roads, the full protection of a 100-meter fringe back from the shoreline, and generally the encouraging a development further away from the coastline. The principle of development was chosen to push the buildings as much as possible to the interior (Secrétariat Général de la Mer, 2013; Becet, 2002).

In Spain, the "*ley de costas*" (Shores Act) passed in 1988, was set out to protect the shoreline from an overwhelmingly aggressive tourism-building industry. It defines a number of protected areas along the coast. On one hand, it guarantees a 6-meter wide public path. It also ensures a protection zone of 100 to 200 m (if municipalities and autonomous communities consent) in which no construction is allowed. The pedestrian access to the sea must be provided every 200 m and automobile access every 500 m.

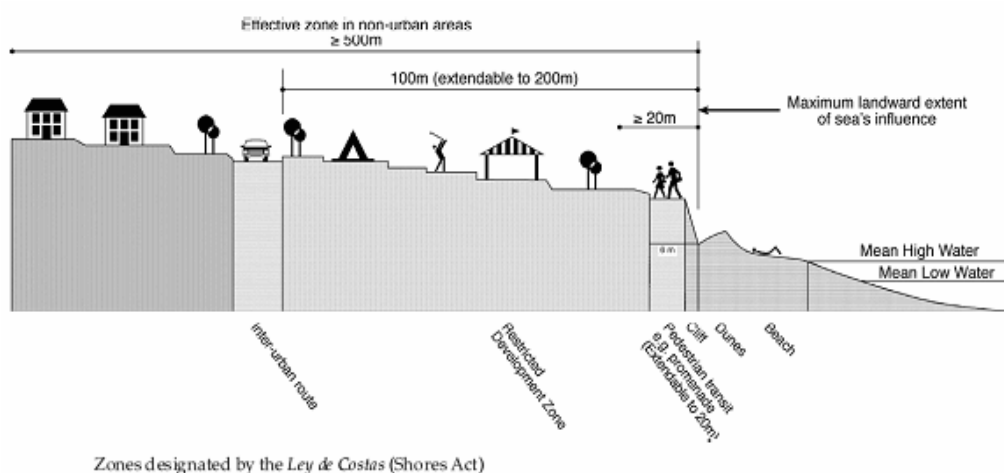


Figure 1: *The Ley de Costas* Zones, the Spanish Shores Act (Source: Betterton- Jones, 2011)

In Portugal, protection depends on the coastline type. Outside urban areas, the minimum protected space covers a 200-meter wide band for cliffs, rocks and dunes. This distance is brought to

500 m for rib roller beaches, mudflats and marshes. In Italy, there is also a specific system of coastal public property and no construction is allowed on a strip of 300 m, unless a development plan is submitted and approved by the authorities. In Greece, the coastal strip in which all construction is prohibited extends over a width of 150 m. In Turkey, the unbuildable strip must be a 100 meters wide.

Scandinavian countries generally have more restrictive measures. Denmark holds probably the most rigorous law of coastal conservation. Coastal protection is enshrined in the law of conservation, adopted in 1992 and revised in 1994, which extended the coastal protection strip from 100 to 300 m. All throughout Sweden, the coast is protected by a band of 200 m or 300 m (if the regional government agrees), while 70% of the coastline is declared area of national interest, which limits development opportunities.

In Europe, the adoption of regulatory limitations to urbanization directly along the shorelines is almost the rule in all countries, even if the width of the protected strip varies. Only Great Britain, Ireland, Belgium and the Netherlands have not yet resorted to similar tools.

3.2.2 Importance of Land Agencies

Several systems of coastal protection through procurement procedures of coastal areas by organizations dedicated to the conservation of coastlines usually complement the regulatory framework (Miossec et al, 1999).

Hence, in Great Britain the desire to keep intact the natural beauty of the coastline despite heavy pressure from industry and tourism has been expressed since 1895. In addition to specific protected areas (national parks and natural reserves), there are an additional 150 sites representing 900 km of coastline belonging to the "National Trust", an organization that became the largest private landowner in the country (480,000 ha in 1996). It is a tax-exempt organization with authority to receive donations, bequests and inalienable properties. It allows free public access to its sites while maintaining a reduced infrastructure, activities and a permanent population. Its 2.5 million members constitute a social force to reckon with that keeps real estate speculators and developers at bay.

In the U.S., the "Coastal Zone Management Act" has been implemented since 1972 in 34 of the 35 coastal states. It aims to establish a national policy and develop a national management, development and protection program of land and marine resources in coastal areas. It serves also as a general framework for various programs developed by the states. It should be noted that in the U.S. there was not really a clear national policy regarding coastal risk. This gap is the result of the critical role of private property, which considerably limited the possibilities of intervention (local people usually expect financial assistance from local and federal governments only in time of emergency). This situation implies that technical solutions and legislation have mostly evolved under the pressure of events. The best example is the heavily politically charged debates that have often accompanied the passage of tropical cyclones affecting the formidable Atlantic coastlines.

In France, the CELRL (*Conservatoire de l'Espace Littoral et des Rivages Lacustres*) is a management body of the coastal areas with an original mission of an ecologist developer. It is a financial and legal services instrument capable of implementing the protection and preservation needs expressed by the local communities, local governments and associations. Its role is to complement the regulatory action by the acquisition of land that meets specific criteria.

The Netherlands is a low-lying country prone to flooding. The Dutch have excelled in building dams, which made them indispensable to control flooding (Miossec, 1999). However, the repeated storms made this defense system vulnerable. The Dutch experts have defined in 1990 a baseline for the coast (basal coastline) to be maintained at all cost. This baseline is set at the national level. The 300,000-member strong of the *Natuurmonumenten* association leads an active role and protects numerous coastal sites.

In Tunisia, the Agency for the Development and Coastal Protection (APAL) has been established in 1995 by the Ministry of Environment and Regional Development with input and assistance from the French Conservatory of Coastline and Riparian Shores. It identifies threats to the coast, beaches and marine environment and has yet to develop into clear regulatory protective measures (APAL, 2013).

The national experiences presented above indicate at varying levels the progression of the idea of coastal protection and preservation. They also highlight the fact that despite the different orientations, the same concern was treated according to national political traditions.

4. Development and Coastal Management in the Context of Sustainable Development in Algeria

4.1 International Level and National Legislation

Algeria adhered to the 1976 Barcelona Convention in January 1980. Similarly, the Protocol for the Protection of the Mediterranean Sea against Telluric Pollution, was ratified in 1982, and came into force in 1983. The adoption in April 3, 1982 in Genoa of the Protocol concerning Specially Protected Mediterranean Zones and its ratification in 1985 came into force in Algeria in 1986. On April 28, 2004, Algeria ratified the Barcelona Convention by Presidential Decree No. 04-141. The Protocols to the Convention are under consideration. In addition, Algeria ratified more than 13 agreements, the 1966 International Convention on Load Lines, 1976, and the 1979 UNEP Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) in 2005.

The control and management of coastal areas in Algeria is rather recent. The 90-29 Planning and Land Management Law of December 1, 1990 is the first text that defined "specific provisions to certain parts of the territory" dealing with coastal areas. The provisions of this text apply to all islands, islets and a strip of land with a minimum width of 800 meters along the shoreline, including all the wetlands and their surroundings up to 300 meters wide is defined as a coastline. In addition any construction on a strip of land 100 meters wide from the shore is considered non-aedificandi (non-constructible). However, buildings requiring the immediate vicinity of water are allowed (Article 45 of 90-29 Law).

The provisions of this Act did not prevent the sprawl of urbanization in coastal areas. Worse, these areas experienced significant degradation due to unauthorized extraction of sand and anarchic beach use. It was not until February 5th, 2002 that a specific "coastline" law was enacted; the 02-02 Law related to the protection and enhancement of the coastline. This law defines three bands or strips in the coastline, in which restrictions on urbanization are enacted (Figure 2).

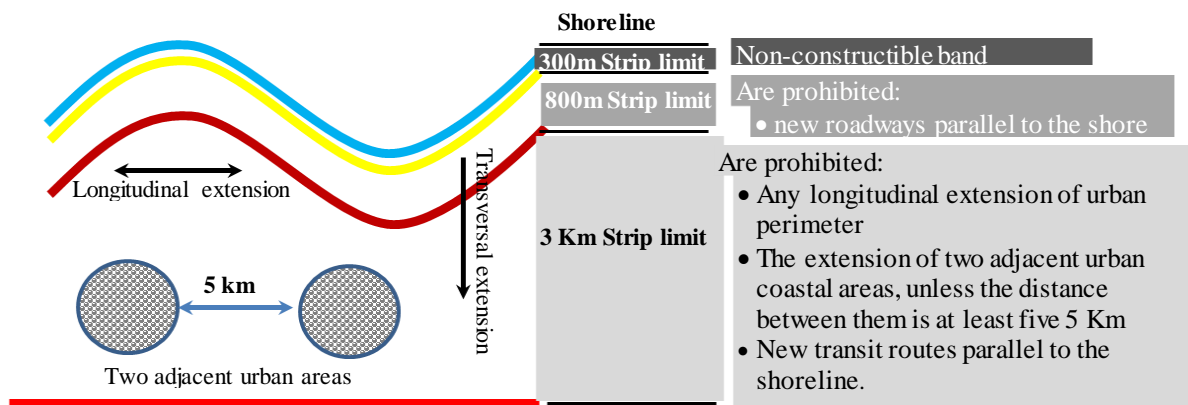


Figure 2: The Coastline law (Algeria) and the definition of regulated coastal strips

Strip 1: Width = up to 300 Meters. This is the unbuildable band up of 300 meters wide from the shore depending on the sensitivity of the coastal environment. This strip includes the natural shoreline within which are banned vehicular circulation and parking (except for service vehicles, security and beach maintenance vehicles).

Strip 2: Width = 800 Meters. In this strip are prohibited: new roadways parallel to the shore (Paragraph 1 of Article 16). However, because of topographical configuration of the site, or businesses that require the immediate vicinity of the sea, an exception is considered.

Strip 3: Width = 3 Km. In this strip, are prohibited: a) any longitudinal extension of urban perimeter; b) The extension of two adjacent urban coastal areas, unless the distance between them is at least five 5 Kms; and c) the new transit routes parallel to the shoreline. Buildings and land uses directly related to economic activities authorized by planning instruments within the 3-km strip are regulated.

Undeniably, the promulgation of the law on shoreline protection and enhancement constitutes a progress in the establishment of conditions for sustainable development of this strategic area of the country. The involvement of all stakeholders is clearly highlighted in Chapter 1 of the law which deals with the fundamental principles and specifies that the involvement and coordination of actions between the national and local governments, organizations and field associations in a perspective of sustainable development is required.

At the time of its promulgation, the 'Coastal Law' required 11 legal texts for its effective implementation. Since then, six executive decrees were established between 2004 and 2009 showing the constant effort of the MATE to address the issue. The decrees included a number of considerations such as the conditions for the realization of new roadways parallel to the shoreline, defining the terms and conditions of the buildings and land uses in the coastal strip, the occupation of the natural parts bordering the beaches and the extension of the non-constructible area, laying down the conditions for development of the Coastal Management Plan, its content and the modalities of its implementation.

4.2 Specific Instruments: Benefits and limitations of the Coastal Development Plan;

Following the promulgation of the law, a coastal development plan called *Plan d'Aménagement Cotier* (PAC) has been established to protect coastal areas and the municipalities adjacent to the sea. It includes all the provisions laid down by the laws and regulations and the provisions of this coastal zone Act. The coastal development plan (PAC) resulted in:

- The delineation and physical materialization of coastal natural areas of ecological value and the expansion of urban boundaries.
- The coastline lot plan (de facto environmental and land use)
- The establishment of an ecological balance and the identification of uses and threats to the environment.

The land register (cadastre) assessed the total coastal area to approximately 400,000 ha with a coastline depth varying between 2.5 km and 23 km. At the national level, 41 relevant areas and 47 sensitive natural areas have been identified. 32 islands and 208 islets, 26 wetlands and 2 wetland systems, 54 dunes and sand bars, 138 forests, 71 marine and terrestrial areas of ecological interest and 33 sites were also listed.

The proposed boundaries of the coastal area were made on the basis of physical criteria. At the cliffs, the area was defined to be 800 m and at relatively flat areas, it was set at 3 km. The delineation of relevant and sensitive priority areas was based on criteria of activity (concentration of urbanization, industrial zones, structural facilities, etc.). These criteria are based primarily on a strong pressure due to urbanization, and the multiplication of points of wastewater discharge directly into the sea without any preliminary treatment. This delineation of natural areas reflects also the natural assets and tourism-related coastal sites. To date, 15 coastal provinces of the Algerian coast were covered by PAC

4.3 Implementation feasibility and limitations of the Coastal Development Plan

The benefits of the Coastal Development Plan (PAC) are undeniable. The implementation feasibility however remains to be adequately developed in coordination with the long term established urban planning tools. The General Plan of Development and Urbanism (*Plan Directeur d'Aménagement et d'Urbanisme Général - PDAU*) and the Land Use Plan (*Plan d'Occupation des Sols - POS*) are the two primary urban planning tools requiring a coordination of measures and actions with the coastal Development Plan. The *PDAU* sets basic directions of development for the areas in question. It also determines the general purpose of land use, and the nature and course of major infrastructure facilities. The *PDAU* must be compatible with the Coastline Development Plan and sets the terms of reference

of the *POS*. In Algeria, the *POS* is a regulatory planning instrument conducting a policy of protection. In compliance with the *PDAU*, the *POS* sets out in detail the rights of land use and buildings.

In this context, it is essential that the “protection” of the coastal development part needs to be extended to the maximum at the expense of the "development" aspect. Hence, the specific planning provisions of the coastline should not be conditioned by the qualification of coastal town but that of a coastal ecosystem. In other words, physical criteria would replace administrative ones and specific rules should apply to the coastline of the entire area constituting a natural coastal ecosystem, the depth of which will be set at 3 km. It should be noted that in, the government has defined the coastline on internal administrative legal criteria, namely the boundaries of existing administrative areas

It should be noted that the *PAC* can be considered as a regional plan since it can cover several provinces or *Wilayas*. However, the notion of region in Algeria does not exist at the echelon of governance with executive powers. It has no authority over other communities. In this context, it is easily questionable how can the regional coastal planning and coastal areas be managed.

Some legal ambiguity remains: the coastline is recognized as an area which has its own planning instruments: the *PAC* and the management plans established by Executive Decree No. 07-206 of June 30, 2007. However, its integration to other administrative territories and other planning tools (such as *PDAU* and *POS*) remains yet to be established.

A sustainable coastal development should take place within a clear legal framework that takes into account the hierarchy of standards and planning instruments (Figure 3):

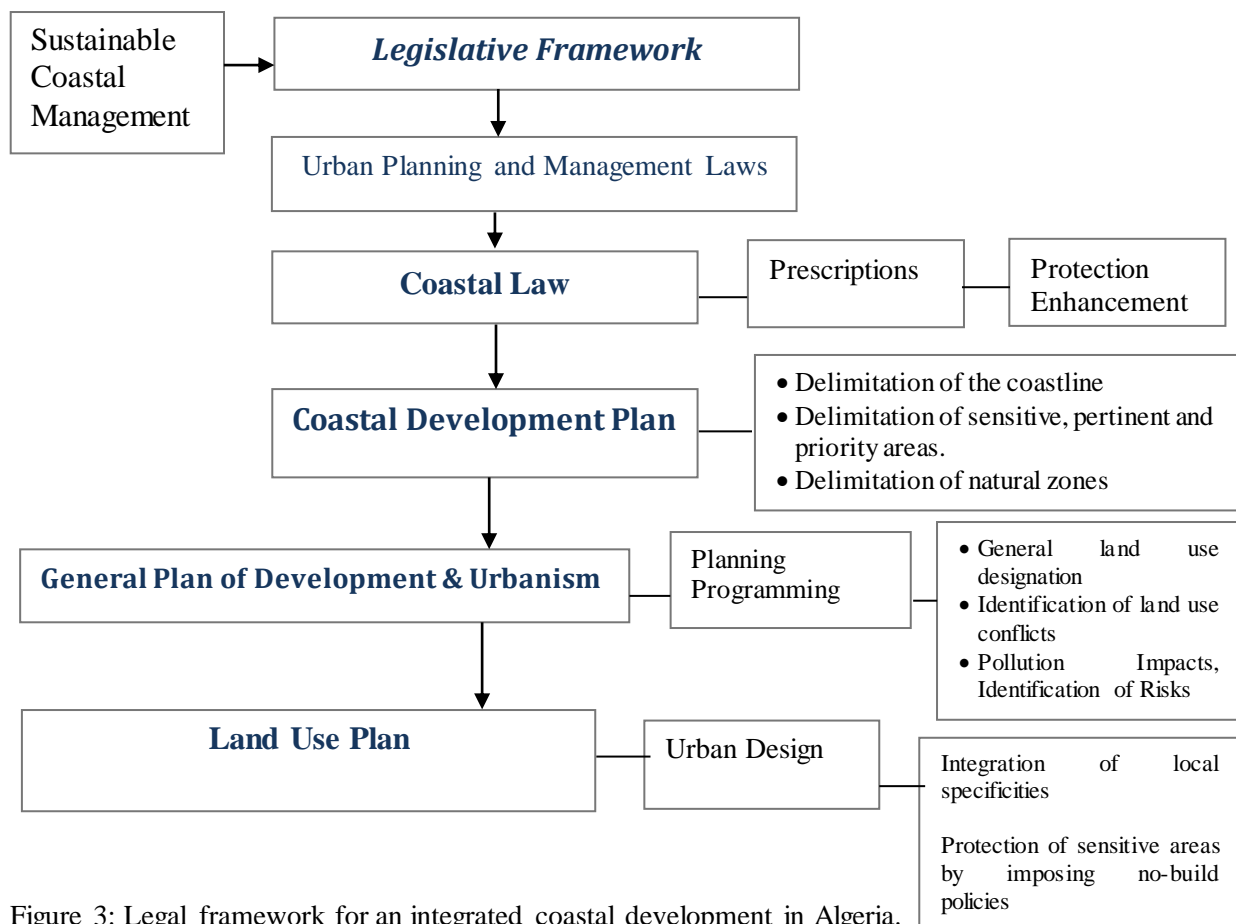


Figure 3: Legal framework for an integrated coastal development in Algeria. (Kacemi, 2004)

Following the promulgation of the ‘Coastal Law’, it is urgent to make not only the *PDAUs* of all coastal municipalities compatible, but also the already approved *POSs* with the provisions of the ‘Coastline Law’, which states that ‘under the management and planning tools involved, state and local authorities must: a) Ensure direct extension of existing urban centers to remote coastal areas and the

sea coast. b) Rank in the coastal planning documents such areas classified and impose easements non-constructible, sites of cultural and ecological tourism, landscape character. c) Encourage and work for transfer to appropriate sites, existing industrial facilities whose activity is considered detrimental to the coastal environment. "

5. CONCLUSION

This paper examined the conditions of the coastal zones in Algeria which are characterized by an extremely high concentration of population and activities. The review of coastal management regulation in some countries around the world showcased policies and regulations that define zones of non-urbanization as well as a number of additional protection measures. The rather recent promulgation of the Algerian "Coastal Law" is undeniably a step ahead in the recognised need for an integrated coastal zones protection and adequate management. However, the critical review of its implementation feasibility highlights gaps and discrepancies in its application.

An Integrated coastal management in Algeria is not a concept that remains to be invented, the "Coastal Law" clearly states that " It involves the coordination of actions between the state, communities, organizations and associations working in this field and is based on the principles of sustainable development, prevention and care "(Article 3). However, it is not enough to promulgate a legal text. This will not yield any benefits if it is not translated into a clear policy that involves all stakeholders. Coordination and cooperation between the various actors both at central and local levels are essential for the proper functioning of a policy of integrated coastal management. Moreover, human and financial resources must be made available to each stakeholder. .

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