WHEN THE CITY MEETS THE SEA: A GLOCALIZED COASTAL ZONE MANAGEMENT MODEL

YARON KLEIN
Atarim, Tel-Aviv-Jaffa Coastline, Israel

ABSTRACT
In the past several decades, the need to protect the environment is a leading concern in international policy. Chiefly, the massive coastal construction which overloads the seas and shores and damages one of the most important natural resources. Hence, in order to allow development with minimum environmental harm, the concept of sustainability was formed. Various sustainable environmental plans and policies were established, however a "one-size-fits-all" plan is impossible due to the intricate and dynamic nature of the coastal environment worldwide. Diverse activities, interests and problems require different management strategies that are unique to countries, regions and, ultimately, a local scale. This paper analyzes the tension between international environmental legislation and their local implementation, while offering an initial glocalized coastal zone management model that takes all these aspects into consideration. Notably, this study proclaims that mankind can enjoy the natural resource without overusing it, as long as the coastline management embraces a holistic viewpoint that will combine all the forces working at hand, while being adjusted and localized to the Israeli setting.
Keywords: coastal environment, natural resource, sustainability, glocalization, coastline management, marine programmes.

1 INTRODUCTION

In recent decades, the necessity to protect the environment is a leading concern in international policy. For instance, the massive coastal construction is overloading the seas and shores and one of the most important natural resources is being damaged. Therefore, in order to allow development with minimum environmental harm, the idea of sustainability was born. Sustainability means balanced development that aims to minimize the environmental damage. It welcomes the future and the on-growing urban needs, while combining it with logical coastal strip management [1].

Numerous sustainable environmental plans and policies were established, but a "one-size-fits-all" plan is impossible since the coastal environment worldwide has a complex and a dynamic nature of interactions, and therefore, management framework must be applied to a defined geographical limit. Different activities, interests and issues deliver different management strategies that will always be unique to countries, regions and ultimately on a local scale [2].

The Israeli coastal context is a complex one, with diverse, sometimes-contrasting, stakeholders' interests. The author of this paper is the CEO of "Atarim", a governmental company and a municipal corporation which specializes in the development and planning of tourist sites, cultural compounds and leisure areas in Tel Aviv-Yafo, with a great emphasis on coastline conservation, development and management.

Based on field experience, this paper aims to analyze the tension between international environmental legislation and their local implementation, while offering an initial glocalized coastal zone management model that takes all these aspects into consideration. The paper contends that humanity can enjoy this natural resource without overusing it, as long as coastline management will embrace a holistic viewpoint that will combine all the forces working at hand, while being adjusted and localized to the Israeli setting.

2 INTERNATIONAL MARINE PROGRAMMES

In the last few decades a powerful worldwide process occurs. This process is known as "Globalization" – an international integration of ideas, products, economies, etc., as a result of the growing interdependencies of countries, regimes, societies and technology. This process is holistic and effects every aspect including the environment and, thus, people's lives [3], [4].

As part of the massive change brought by the globalization process, universal and local environmental challenges rise. Global warming, air and water pollution, overfishing, oil spills, to name a few, are all part of the fast-developing modern era. Under these circumstances, an environmental monitoring and regulation has become a must, so that the human's effect on nature will not harm the ecosystem's balance [5].

This approach got center stage among supranational and international bodies such as the EU and the UN, but also amongst national governments around the world, that have started cooperating with each other, in order to create foreign and interior environmental policies to protect the environment in the new global order. Owing to these combined and mutual efforts, marine environment is highlighted, due to the fact that most of the world's population reside along the coastlines, and the coastline provides a place for human activities, economic and social wise.

The environmental awareness is reflected in numerous international legislations, treaties and agreements signed between international bodies, nation states and other relevant actors. For instance, examples include the European Environment and Health Ministerial Board (EHMB) – the political body and driving force of international policies in environment and health for implementation of the commitments made in the European environment and health process (WHO); and the European Environment and Health Task Force (EHTF) – a leading international body for implementation and monitoring of the European Environment and Health Process with the support of WHO, UNECE, UNEP and other relevant institutions in order to encourage Member States to update, modify or strengthen existing environmental policies [5].

A central programme is the Barcelona Convention – which is also known as the Protocol on Integrated Coastal Zone Management in the Mediterranean. It was adopted in 1976 and aimed to protect the Mediterranean Sea against pollution and to promote integrated management of coastal zones, landscape and ecological interests, and a rationale use of natural resources through means of protection, conservation and rehabilitation of the marine environment [6].

These policy guidelines, drawn from different international documents, provide a directing framework for any shore activity, and a basis for creating local programmes. In some countries around the world, these policy guidelines are legally binding, such as in the Californian Policies of Coastal Act. Others are mere recommendations and are not legally binding. Either way, some relevant principles worth mentioning are: (1) The beaches are a public asset: (a) preserving the public designation of the beach; (b) maintaining free public access to the beach; and (c) Transparent, open and joint planning process; and (2) Planning principles for urban beaches: (a) Planning the coastal strip under a holistic and general point of view; (b) Planning and developing the coastal strip on the basis of a comprehensive environmental analysis; (c) Preserving the coastal strip free of construction; (d) Only necessary infrastructure will be situated along the coastal strip; (e) Distancing of intensive construction from the coastal strip; (f) Preserving scenic and historical values necessary for the character and appearance of the city; (g) Giving preference to projects of reconstruction and renovation; and (h) Encouraging the use of environmentally friendly public transportation.

Maritime boundary, which was considered in the past as a border and a trading bridge between countries, has received a new dimension in the last few decades in the image of discovering the ability and potential to use it for more economic, social and environmental purposes. Especially, the deep seas and economic waters beyond the shores, became a very important space nowadays for the development of new uses, like the production of renewing alternative energy, which is added to other historical uses such as fishing, boating, trading, gas, oil and resource mining etc.

The sea, which was once perceived as endless and unlimited, has become crowded, with many bodies struggling on controlling, using and developing it. At the same time, the entrance of other economic bodies to the maritime space is endangering the sensitive ecological system, and therefore endangers the public resources, since unlike the land and according to different treaties and worldwide legislative traditions, the marine resources are common property and public assets.

To deal with maritime conflicts, many countries have started to develop spatial marine plans, with an aim to allow for a more effective use of the marine space and in order to manage the intersection between all the uses this space holds, while preserving the ecosystems that provide human society its economic and social needs. Following are some examples of spatial plans put together and implemented by developed countries in the last few years, while examining professional guidelines and recommendations made by the Commission for Intergovernmental Oceanographic (IOC) of UNESCO. The idea behind these plans is to supply information and tools for maritime spatial planning, so that such management will be held while balancing between the different developmental needs, the necessity to preserve the marine ecosystems and fulfilling the national economic and social needs of each country.

The guideline document published by the IOC-UNESCO recommends ten steps that are needed for the composition and implementation of marine spatial plans: identifying needs and establishing authority; obtaining financial support; organizing the process through pre-planning; organizing stakeholder participation; defining and analyzing existing conditions; defining and analyzing future conditions; preparing and approving the spatial management plan; implementing and enforcing the spatial management plan; monitoring and evaluating performance; and lastly – adapting the marine spatial management process [7].

The guidelines were based upon a review of eight spatial programmes made by leading countries in that field: Norway, Holland, Belgium, Germany, England, the state of Massachusetts in the US, Canada and Australia. In most cases the central motive to initiate such national plans is the need to resolve conflicts between different sectors that are active in the marine environment.

3 LOCAL IMPLEMENTATION OF INTERNATIONAL MARINE PROGRAMMES

Since international environmental policy needs to be implemented locally, i.e., in the national and municipal level, various studies are being executed in the last few years in order to examine the intersection between the international environmental legislation, policy making and promotion, and the national implementation and extension of that point of view. It also rises from the understanding that even though we live under a globalized regime, a global outlook doesn't override locality, rather it adapts to local conditions, a phenomenon that is known as "glocalization" [4]. The coastal environment worldwide has a complex and a dynamic nature of interactions, and therefore, management framework must be applied to a defined geographical limit. Different activities, interests and issues deliver different management strategies that will always be unique to countries, regions and ultimately on a local scale [2].

Different spatial plans around the world have adopted different boundaries and legal incidence, based on the considerations of each state. For instance, Germany applied its marine spatial plan on all its economic waters, while Massachusetts applied it on the limited territory under its sovereignty, i.e., three marine miles. The Massachusetts plan was under the American Federal plan, which included the entire territorial waters. None of the countries reviewed apply their plan specifically on the adjacent area.

In most cases the initiator of the plan is a governmental authority. Sometimes, a designated national authority is responsible for the marine spatial plan, such as NOAA in the US. The average period of time it takes to plan and approve the programme is one year to four years.

Generally, most of the reviewed plans follow the recommended IOC-UNESCO guidelines, even if they preceded it in some cases. They share common characteristics, and therefore it is possible to point out to subjects or fields attended, their priorities, etc. The common fields of interests found in the reviewed programmes are: environment, society, economy, governability, research and information. The methodologies adopted are varied, and so are the processes of decision making, motives, purposes and goals.

For instance, the English Programme, known as "The East Inshore and East Offshore Marine Plans" is led by The Marine Management Organization. It includes the North Sea, a maritime boundary of about 7,500 km^2 of water, every programme takes two years and the motive was a conflict between wind energy farming, gas energy, oil and marine reservation. Public participation is intensive through all the stages of the programme [8]. While the German plan, known as the "Planning Act of 1997" and the "2004 amendments establishing spatial plans for the EEZ" is covering the North and Baltic Sea and is led by Hydrographic and Maritime Federal German Agency. The conflict that led to the programme was between initiatives of wind energy, maritime transport and reservation. The three years programme uses consultants, while the public is not directly involved [9].

The widespread methodology used to establish goals is the Integrative Management Approach that is based on ecosystems, which provides a management frame for the current and future marine activities and uses, based on the principle of preserving it as a functioning ecosystem that will serve future generations as well.

In the American context, another glocal model was structured (WEDG Model) for the purpose of managing the waterfront due to local events, such as Superstorm Sandy, destructive flooding, gas and electricity shortages – conditions that were harshen because of climate change. WEDG planners understood, based on those incidents that the waterfront is a utility on which we all depend upon, hence shoreline projects need to allow us to live beside the water, instead of tussling it [10].

This glocal model strives for a better waterfront design that will result in resilient, accessible waterfronts through establishing guidelines as strategies to improve public access and support recreation, enliven the waterfront, support economic development, improve water quality, restore and protect shorefront habitats, improve governmental regulation, and increase resilience to climate change [10].

The program gave the Waterfront Alliance the opportunity to work on projects in Harlem River Park and Hallets Cove in collaboration with the NY City Department of Parks and Recreation and the New York City Economic Development Corporation. Until now, this cooperation has led to cleaner waterways, expanded ferry service, and new waterfront parks. The planners also aspire that all the thousands of waterfront stakeholders and their sometimes-conflicted interests – maritime businesses, park administrators, developers, homeowners, government regulators and scores of others who control and manage the waterways – will balance and support sustainability [10].

With input from hundreds of waterfront experts, WEDG planners created guidelines and an incentive-based ratings system. The result, according to their words is "a logical, easy-to-use tool for any urban or suburban waterfront, with scorecards tailored for three types of uses: Residential/Commercial, Parks, Industrial/Maritime. Within these three types of uses, waterfront projects earn credits in seven categories: (1) Site Selection and Planning; (2) Public Access and Interaction; (3) Edge Resiliency; (4) Ecology and Habitat; (5) Materials and Resources; (6) Operations and Maintenance; (7) Innovation" [10].

Moreover, besides the above reviewed localized plans, another project that is worth mentioning is the Mare Nostrum project, since it deals with the Mediterranean coastal zones. It is an EU cross-border research that aimed to investigate the regulation and decision making process in regard to planning and construction along the Mediterranean shores and their implementation. It was held by a team of researchers and participants from Greece, Malta and Spain, as well as Israel. The project examined Mediterranean coastlines for 3 years, while comparing different measurements cross-countries. The findings suggested that in countries such as Spain, Turkey and Greece, illegal coastal construction is so widespread to a point where in some places no legal constructions can be found. Contrary to these findings, the project found that relatively to other Mediterranean countries, in Israel the coasts are well protected from acts of construction and development [11], [12].

4 THE ISRAELI CONTEXT

The EU and Israel have a long history of mutual interdependence and ongoing collaboration in the fields of politics, culture, industry, trade and science with a developed system of agreements. In addition, the EU has special interests working with Israel on varied topics due to the geographical location of Israel along the Mediterranean shores and with proximity to many EU Member States. One of those issues is the environmental one. This involves sharing knowledge and expertise, provision of financial and technical support for creation of environmental legislation and more. Israel greatly benefits from this cooperation, as the EU has created some of the most progressive environmental policies in the world and has an increasingly dense network of legislation that extends to all areas of environmental protection, including: air pollution control, water protection, waste management, nature conservation, and the control of chemicals, biotechnology and other industrial risks [13].

As part of Israel's commitment to the environment, it has signed a long list of bilateral agreements with many countries in the Middle East, Europe, Asia and America: The Barcelona Treaty; International Convention on Civil Liability for Oil Damage (CLC); International Convention for the Prevention of Pollution from Ships (MARPOL); Oil Pollution Act Amendments of 1973 (OILPOL); International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) and so on, and also passed several progressive laws and dozens of regulations that were created under the authority of those laws – that relate to Israel's marine and coastal environment.

Tel-Aviv is a metropolis known to be the economic, cultural, media and art center of Israel. It inhabits major central institutions such as the Israeli banking system, Tel-Aviv Stock Exchange, international embassies, newspapers and media editorial boards, the national theatre, philharmonic orchestra and other national cultural centers. It attracts over a million tourists per year. It is also known as the "White City", which refers to a biggest collection worldwide of over 4,000 buildings built in a unique form of the Bauhaus Style in Tel-Aviv from the 1930s and on [14].

Tel-Aviv is located in the southern Israeli Coastal Plain, on the Mediterranean coastline, on calcareous eolianite soil, with two rivers flowing on its ground: the Yarkon River and Ayalon, and it is the second biggest city in the country, after the capital of Jerusalem. Its

coastline stretches along 14 km, and is considered to be a central component of its inhabitants' life and in its image as a coastal city. A major part of the coastal strip is used for leisure and recreational activities open to the wide public, mainly as a bathing beach, promenades and parks. A small part of it is used for other activities, some which are closed for the public.

The coastal strip also includes four harbours: Reding, Tel-Aviv's port, Jaffa's port and the Marina, and it divides into three main parts: the northern strip – from the border of Herzeliya-Tel-Aviv in the north, to the Yarkon River in the South; Central strip – From the Yarkon River in the north to the Sea Walls Promenade in Jaffa to the south; Southern strip – from Jaffa's port in the north, to the border of Tel-Aviv and Bat-Yam to the south. Most of the bathing beaches are located at the central strip.

The Blue Lung is the name this paper uses in order to describe the coastal strip of Tel-Aviv-Jaffa, since it includes the blue sea, the marine ecology, the blue flag programme and the green of sustainability and environmental protection. The Blue Flag is a voluntary programme established in France in 1985 by the Foundation for Environmental Education (FEE), which is a non-governmental and a non-for-profit organization, now consisting of 65 organizations in 60 member countries in Europe, Africa, Oceania, Asia, North America and South America, with an aim to promote sustainable development through environmental education. The programme grants a certification for a beach, marina or sustainable boating tourism operator, once they meet stringent standards, such as water quality, safety, environmental education and information [15]. On Tel-Aviv-Jaffa's coastal strip there are five Blue Flag beaches, out of 13. The reason for this respected achievement is due to the big effort Tel-Aviv's municipality is putting in rehabilitating, reserving and renovating central sites along the sea shore – such as Tel-Aviv's port, Gordon's public pool, Independence Park, Charles Clore Park, Jaffa's port, etc.

Tel-Aviv's coastline became the most important public space in the city. In that sense, Tel-Aviv resembles other coastal cities such as Barcelona, Malaga and Boston that have decided to reconnect to their beaches. Therefore, it is of no surprise that some claim that in our current reality, preserving the beaches and the public access to them is extremely important due to the necessity of preserving what is left of them. The beaches have become a rare resource that is highly used, not always for the benefit of the public. Thus, there is an ongoing discussion regarding two conflicting values: On the one hand, the development of infrastructure, roads, sidewalks, hotels, businesses and residential construction along the coastline, and on the other hand, preserving and maintaining sustainable development to protect the environment.

5 A LOCALIZED MODEL OF COASTAL ZONE MANAGEMENT

Although Israel has been recognized and awarded as preserving its coastlines better than other countries [12], [15], further means are needed to make wise decisions in the long run as well, in regard to the marine environment and resources. At the moment, the Ministry of Environmental Protection [13] is responsible for the formulation of a nationwide, integrated and inclusive policy for the protection of the environment, including coastal and marine protection. The ministry operates on three levels: national, regional, and local. At the national level, the ministry is responsible for developing an integrated and comprehensive governmental policy, as well as strategies, standards, and priorities for environmental protection. To this end, the ministry has professional divisions and departments that deal with a myriad of environmental issues, as well as with its administrative mechanisms and public relations, including the implementation of treaties, agreements and regulations, but further marine attention is necessary as explained above.

In a country with limited land resources, such as Israel, and in coastal cities such as Tel-Aviv, where the coastal strip is not big and the open spaces are scarce, there is a need to protect the long term interest of the public in preserving the land and scenery value, and to balance between the need for commercial and industrial development and nature preservation, while deciding the scope of land use. Fig. 1 presents all the stakeholders involved in coastal management in the Israeli context.

In light of the above issues, the localized coastal zone management model should express not only the need for urban development in order to promote different social needs connected to improving people's residency and boosting the economy and employment opportunities around them; but also the need of a rationale and careful approach for land use, based on the importance of preserving open spaces for agriculture and natural scenery purposes, i.e., a localized model for coastal zone management should be based on a holistic approach [16] that will take the five main aspects (five building blocks), which are illustrated in Fig. 2, into consideration.
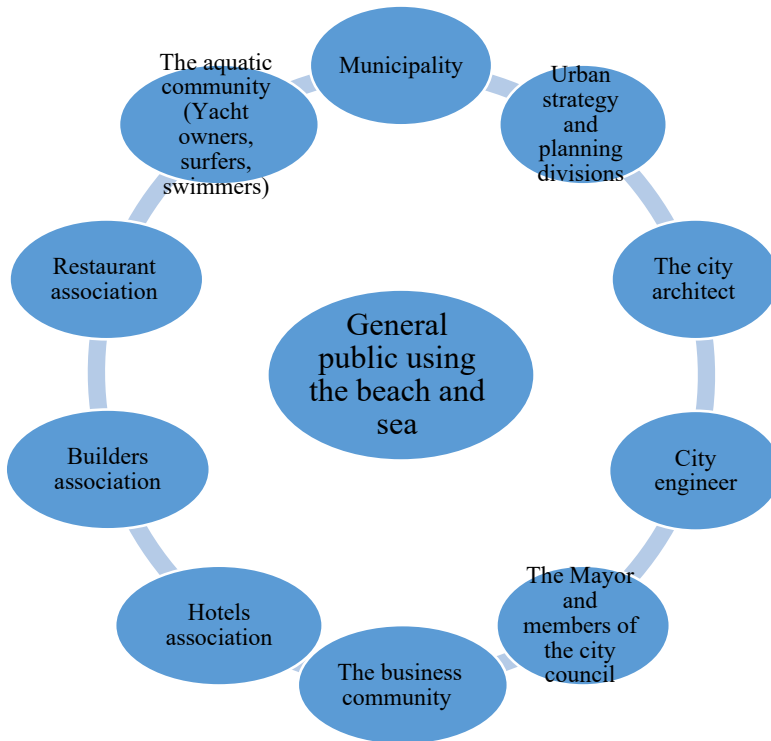

Figure 1: Stakeholders involved in coastal management in the Israeli context.

Figure 2: The five main aspects of coastal zone management.

Based on the array of data presented beforehand such as existing models (e.g., the WEDG model, the Integrative Management Approach), international environmental policies (especially the ICZM that was drafted with the cooperation of the UN the EU and 21 member countries), policy guidelines, international documents, programmes and recommendations, this paper structured (as presented in Fig. 3) an initial model that takes all these complex aspects into consideration (international legislation, different stakeholders interests and local context). The aim of the model is to integrate the different aspects of coastal zone management which were tackled and developed in the international, national and municipal level and present them in a comprehensive yet concise manner.
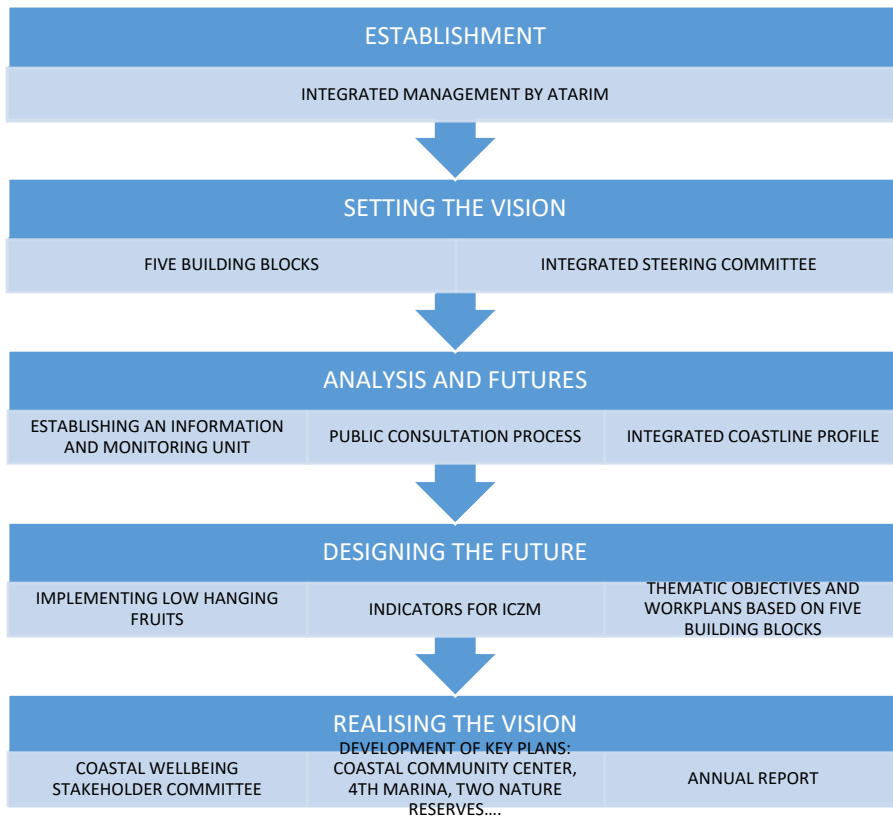

Figure 3:   Holistic motel that incorporates international legislation, different stakeholders interests and local context.

The first stage of the model is "Establishment". It refers to the stage of unifying the coastal strip management. Tel-Aviv's coastal zone is managed by a number of different companies, dealing with, among other things: ports, marinas and industrial compounds' management. Some other companies are governmental, and a few of them are municipal corporations. The necessity to unify the management is critical, due to the fact that there is a need of one common language, uniform rules, one policy, strategic thought and plan, and of course – a full synergy between all the various compounds.

The second stage in the model is "Setting the vision", which includes two sub-sections. The first is establishing an integrated steering committee of all the actors along the coastal zone, with cooperation of the local authority; the second subsection is setting the vision, while using the five building blocks mentioned beforehand: Nature–Resident–Community–City–World.

The third stage of the model is "Analysis and futures" which marks the beginning of the translation of the vision into actual alternatives. This stage is divided into three parts: (1) Gathering an integrated coastline profile with the cooperation of academic institutions and such, in order to predict the different effects of the climate, wave height, marine ecology, storms and tsunamis – data that can be assessed by the managing body; (2) Establishing an information and monitoring unit that will serve as a knowledge base, a center of all the data collected, in order to build a detailed picture of the coastal uses, occupancy, land reserves, economy and seashore activities; and (3) The last part is public consultation process, which takes into consideration the opinions and interests of the city residents.

The fourth stage of the model is called "Designing the future" and it entails three processes: The first is implementing low hanging fruits, i.e., gradual realization of simple or ongoing projects; the second process is indicators for ICZM, i.e., adjusting municipal projects and sustainable beaches to the model, tools of assessment and regulations of the ICZM; and the third one is thematic objectives and work plans based on the five building blocks.

The fifth and last stage of the model is "Realising the vision", which refers to combining all the forces that work in every step of the process, including a deeper look into the future.

6 CONCLUSION

We live in a world where nature is disappearing and being harmed by men. Some of these damages are unfixable and they affect animals, flora and fauna, the environment and ultimately – mankind [1]. This fact forces states and coastal cities to adopt a general approach harmonizing the relations between men and their surroundings. Among other things, this means creating a policy that will combine the needs of the growing population and the creation of beneficial infrastructure, while taking into consideration other aspects. Notably, a fine balance is needed between the individual interests and the public rights, between preserving the environment and other public interests, between the needs of the present and the future.

According to Churchman [17] "On a very basic level, the very essence of public space is that everyone should have the right to be in that space and to use it in whatever way suits them, within the boundaries of local norms of behaviour. The participation of the people who might be the possible users of the spaces in the decisions making process as to the design and planning of such spaces is considered the best way to achieve procedural justice and a good fit with their needs and preference".

In the light of this concern, numerous sustainable environmental plans and policies were established, but, unfortunately, a "one-size-fits-all" plan is impossible since the coastal environment worldwide has a complex and a dynamic nature of interactions, and therefore, management framework must be applied to a defined geographical limit and to a local scale [2].

The Israeli coastal context is a complex one, with diverse, sometimes-contrasting, stakeholders' interests, hence it provides a profound insight into productive and sustainable coastline management. The combination of field experience, existing models which were implemented around the world, international and national environmental policies, documents, guidelines, programmes and recommendations have allowed the creation of a five stages model. A holistic model that references the tension between international

environmental legislation and their local implementation, and offers an initial glocalized coastal zone management model that takes all the varied aspects into consideration.

This paper contends that we can enjoy the natural resource without overusing it, as long as coastline management will embrace a holistic viewpoint that will combine all the forces working at hand, while being adjusted and localized to the Israeli setting.

REFERENCES

[1]   Taylor, D.E., The rise of environmental justice paradigm. *American Behavioral Scientist*, **43**(4), pp. 508–580, 2000.

[2]   This-Eng, C., Essential elements of integrated coastal zone management. *Ocean and Coastal Management*, **21**, pp. 81–108, 1993.

[3]   Albrow, M. & King, E. (eds), *Globalization, Knowledge and Society*, Sage: London, 1990.

[4]   Robertson, R., Glocalization: Time-space and homogeneity-heterogeneity. *Global Modernities*, eds M. Featherstone, S. Lash & R. Robertson, SAGE, 1995.

[5]   Bridges, G., Grounding globalization: The prospects and perils of linking economic processes of globalization to environmental outcomes. *Economic Geography*, **78**(3), pp. 361–386, 2002.

[6]   United Nations, United Nations Environment Programme Mediterranean Action Plan (UNEP/MAP). http://web.unep.org/unepmap/.

[7]   UNESCO, Marine spatial planning: A step by step approach toward ecosystem-based management, 2009. http://unesdoc.unesco.org/images/0018/001865/186559e.pdf.

[8]   HM Government, East inshore and east offshore marine plans, 2014. www.gov.uk/government/uploads/system/uploads/attachment_data/file/312496/east-plan.pdf.

[9]   UNESCO-IOC, www.unesco-ioc marinesp.be/msp_practice/germany_north_baltic_seas.

[10]   Waterfront Alliance, Shape your waterfront: How to promote access, resiliency and ecology at the water's edge. Introducing waterfront edge design guidelines, 2016. http://waterfrontalliance.org/wp-content/uploads/delightful-downloads/2016/02/Waterfront-Alliance-WEDG_Brochure_Final_Jan-2016.pdf.

[11]   Mare Nostrum, Final report: Legal-institutional instruments for Integrated Coastal Zone Management (ICZM) in the Mediterranean, 2016. http://marenostrumproject.eu/wpcontent/uploads/2014/02/Mare_Nostrum_Project_Final_Report.pdf.

[12]   Zafrir, R., While EU study praises Israel for taking care of its beaches, environmental activists less than satisfied. *Haaretz*, 24 May 2013. www.haaretz.com/israel-news/while-eu-study-praises-israel-for-taking-care-of-its-beaches-environmental-activists-less-than-satisfied.premium-1.525715.

[13]   Israel Ministry of Environmental Protection, www.sviva.gov.il/English/Pages/HomePage.aspx.

[14]   UNESCO, decision text, 2009. http://whc.unesco.org/archive/2009/whc09-33com-20e.pdf.

[15]   Blue flag, www.blueflag.global/.

[16]   Williams, A. & Micallef, A., Beach Management: Principles and Practice, Earthscan: London, 2009.

[17]   Churchman, A., The importance of public space for people of varied characteristics, needs and preferences. *Environmental Policy and Landscape Architecture, CGL-Studies 18*, ed. H. Fischer, S. Ozacky-Lazar & J. Wolschke-Bulmahn, AVM, Műnchen, pp. 129–138, 2014.