# Recommendations for Promoting “Blue Growth” Policy

# Summary

**1. General**

The Planning Administration is promoting preparation of a “Policy Statement for Israel’s Marine Space” – a document aimed at preparing a long-term integrated strategy for the management, planning and development of Israel’s marine space in the Mediterranean Sea. The policy statement relates to different aspects of developing the marine and coastal space, including environmental and social aspects, **and from it may be derived the need to consider the economic aspects of developing Israel’s marine space in the Mediterranean Sea** and the economic policy required to actively promote sustainable economic activity in this space – known in the literature as **Blue Growth** policy – similarly to analogous programs that have been prepared in many countries and according to Israel’s commitment as a signatory to the ministers’ declaration on Blue Growth (Brussels 17/11/15).

 The summary below is based on extensive work that examined the blue growth policy of Israel’s marine space in the Mediterranean Sea according to methodological principles based on similar studies conducted by European Union countries (and on a specific study conducted by the European Union staff with respect to Israel), while adapting these methodological principles to Israel’s characteristics. As part of this study, we provide detailed explanation of the principles, the ranking model that was developed for the purpose of selecting the main fields of economic activity, and the principles and recommendations with respect to blue growth policy.

**2. Background**

The marine space is a new frontier of human development: the rate of world population growth and the increase in the standard of living heighten the need to develop the marine space as a source of new, essential resources for humanity. As a result, activities and uses in the marine space have increased in recent years. Nevertheless, development of the marine environment (or the coastal environment) requires us to contend with a range of managerial, economic and regulatory challenges in a way that facilitates correct spatial, thematic and functional balance between the different uses in the sea and conservation of the ecological values of the marine environment.

 To deal with these issues, an Integrated Marine Policy (IMP) has been developed in the western world. As part of this policy, there is recognition of the need for a “**blue growth**” policy that relates to **active** promotion of sustainable economic activity in the marine and coastal environment – both in established fields of activity (in which there is currently significant economic activity) and in promising new fields of activity – mostly by removing barriers, overcoming market failures and promoting innovation.

 The need to create a spatial and thematic balance when developing the marine space is particularly necessary in Israel where the development needs and the density of the expected uses in the coming years in the marine space (in the territorial and economic waters in the Mediterranean Sea) require wise planning and management of the space. Since Israel’s marine space is limited[[1]](#footnote-1), a situation may arise where the marine space will not be sufficient for new and innovative economic activities.

 Therefore, **it is very important to rank and prioritize the fields of maritime economic activities** and to focus resource allocation (space and budgets) to new and innovative fields that bring high returns to the economy.

**3. Blue Growth Policy – Methodological Principles**

Development of blue growth policy principles was conducted in the following stages:

* Mapping and classifying the types of maritime economic activities (MEA) relevant to Israel
* Conducting a SWOT analysis of these MEAs based on an opportunity/threat analysis (according to the trends in world maritime economy) and strengths/weaknesses analysis (according to the characteristics of Israel’s marine space on one hand and an analysis of Israel’s human and technological resources on the other hand).
* Comparative analysis of the economic potential of these MEAs and their rank according to relevance, economic potential, complexity of implementation and environmental effects.
* Defining strategic directions based on the MEA rank.
* Formulating blue growth policy principles, focusing on a number of MEA clusters that share resources, infrastructures and services.

**4. Trends in Maritime Economy**

An analysis of global maritime economy shows that in 2010 maritime economy contributed an added value of about 1.5 trillion USD (about 2.5% of the global added value) and employed about 27.2 million people around the world. An analysis of future trends in maritime economy relates to three scenarios as detailed in the table below:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Business as usual scenario** | **Optimistic scenario** | **Pessimistic scenario** |
| Global added value (billion USD) | 2,960 | 3,200 | 2,800 |
| Number of employees (million jobs) | 36.7 | 43 | 36 |

**The fields of maritime economy can be divided between two main sectors:**

* **Traditional branches** – existing fields of activity driven by market forces (such as tourism, shipping and gas and oil production)
* **New and innovative branches** – growing fields of activity (such as seawater desalination, marine agriculture and wind turbines) or on the threshold of growth (such as marine biotechnology, renewable energies).

Fulfilling the growth potential in these new and innovative fields is characterized by a lack or limitation of data and knowledge, risky conditions and uncertainty, challenging physical conditions and limited governance. Therefore, it is necessary to adopt a **blue growth policy** to promote these fields by formulating a general policy, integrated management of the marine space and public investment. Nevertheless, even this public activity (marine space management, coastal protection, monitoring, basic research, promoting technological R&D etc) creates economic activity and promotes employment, education and training in marine fields.

**Furthermore, the OECD estimates that the ‘business as usual’ scenario in the marine space is not possible since without integrated management of marine and coastal resources, conflicts may arise between uses and harm to the marine environment, such that the hidden potential of new and innovative fields will not be fulfilled and even in existing uses (such as tourism) there will be a decrease leading to deterioration to the pessimistic scenario.** Within this framework, there is a need to enhance and promote the measurement of external expenses in maritime economy, to enable analysis of the desirable development with respect to environmental costs – a measurement that can promote technological and other solutions and allow economic development while maintaining constant balance with the environmental costs.

If such an integrated policy is adopted, the contribution of maritime economy in 2030 is expected to be in line with the optimistic scenario, namely, an added value of approximately 3.2 trillion USD and approximately 43 million employees.

**5. Maritime Economy in Israel – Current Situation**

An analysis of the current situation in the main branches of maritime economy in Israel raises the following insights:

* The current leading fields of maritime economy in Israel are the fields of freight transport (ports), natural gas production and seawater desalination – fields that are very necessary for the national economy and are expected to have a significant impact on its future development.
* Similarly, there is significant developmental activity in new and innovative fields including marine agriculture, marine biotechnology, renewable energies etc.
* Another field with economic potential is the construction of artificial marine structures – expanding beaches, construction adjacent to existing marine structures, and mainly artificial islands for different infrastructures in light of the land shortage along the coast.
* The central component of any blue growth program is the importance of integrated management of marine resources and improved marine regulation, control and enforcement as a basis for managing all of the routine and future activities in the sea. Today, the authority and responsibility for dealing with the public aspects of marine activities is divided between a range of different organizations. The result of this situation is that currently there is no hand coordinating and integrating between the different bodies to lead to a coherent planning, licensing and enforcement policy.
* One of the guiding principles of blue growth policy around the world is the need to promote basic marine research and data monitoring. Currently, there are still significant knowledge gaps with respect to the marine environment at all levels (meteorological, oceanographic, geological, ecological, biological eta); similarly there are gaps in the uniformity and quality of the information. The central claim is that investment in marine research will not only reduce knowledge gaps but will provide a basis for applied marine R&D and will be used as a basis for promoting and implementing new and innovative fields of activity in long-term MEAs. Therefore, the claim is that basic research has a very high economic return. In Israel, in addition to the current knowledge gaps there is an additional problem due to the decentralization of research efforts between different bodies, and partial and inaccessible monitoring of marine data.
* Another component of blue growth policy around the world is the need for education, training and academic marine education to create a core group of manpower in the marine professions at all levels. In Israel there is currently an acute lack of this type of manpower.

**6. SWOT Analysis of the Branches of Maritime Economy in Israel**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category** | **Economic Field** | **Barriers and Market Failures** | **Potential** **(Short-Term)** | **Threats / Opportunities** |
| **Marine Transport Services** | **Ports and harbors** |  | Significant expected future growth in the extent of loading and unloading | The possibility of freight transshipment and of being a land bridge  |
| **Coastal transport** | Creation of a terrestrial backup is highly problematic | Unclear business potential |  |
| **Hi-tech services to docks and ports**  | Investment in R&D to promote the field of marine innovation | Can act as a catalyst for development of marine hi-tech products in a broad range of fields | High-quality manpower infrastructure based on the knowledge and experience of released navy soldiers |
| **Provision of Food and Intermediate Products** | **Fishing** |  | Low economic potential | The total amount of fish in the eastern Mediterranean Sea is diminishing |
| **Marine agriculture** | The problem of storms must be solved | High economic potential | The significant increase in fresh fish consumption and the price of fish increases profitability |
| The need for terrestrial backup areas has not been solved |
| Requires investment in applied R&D for establishment of farms in the deep sea |
| **Marine biotechnology** | Requires significant investment in R&D | Significant development potential | High-quality manpower infrastructure in the field of biotechnology |
| Conflicts with polluting uses |
| **Provision of Energy, Water, Raw Materials and Infrastructure Services** | **Crude oil and gas** | Management to prevent conflicts with clean uses and protection of the marine environment | Potential for thousands of BCM gas | On the other hand – this is a non-renewable resource with a ~30-year impact |
| An option to exploit gas for GTL (problematic due to high costs) |
| **Wind turbines** |  | Probably not profitable | Average wind speed is too slow for commercial use |
| **Solar farms** | The problem of storms has not been solved | Unclear profitability |  |
| **Renewable (other) energies**  |  | Probably not profitable | Average wave height, characteristics of high and low tide and temperature differences are too low for commercial use |
| **Underwater cables** |  | Unclear chances of realization | Option to turn Israel into a HUB for underwater cables to Europe and the East |
| **Sand production** |  | Great economic potential – due to the fact that a lack of sand prevents realization of many infrastructure projects | Threats stemming from environmental effects |
| Opportunities stemming from the need for sand management – for protection of cliffs and for construction of artificial structures |
| **Seawater desalination** | Management to conserve the water and environmental quality is needed – to prevent conflicts with polluting uses | Great importance to the economy in light of the continued decrease in annual rainfall | Israel is considered to be a world leader in desalinationStudy of the effect of desalination products on the environment is required |
| **Tourism** | **Coastal transport** | The need for a terrestrial backup has not been solved | Target audience unclear, as is the expected demand |  |
| **Recreational fishing** | The total number of fish is dwindling | Unclear | Increased regulation and enforcement on recreational fishing |
| **Diving tourism** | Requires expansion of nature reserves | Niche tourism – but has potential |  |
| Requires investment in marketing and development |
| **Sailing tourism and passenger terminals** | Requires investments in marketing and development of complementary products | Considered to be low-priority tourism – due to the low expenses of such tourists in Israel and the short leisure time | Highly sensitive to the geopolitical situation |
| **Yachts and marinas?** | In conflict with competing uses | Israelis own more than 3,000 yachts, of which about 50% are anchored abroad  | New trends in recreational sailing – create new opportunities |
| **Artificial Structures** | **Artificial islands for infrastructure** | Requires in-depth research to examine the effect on the coastal structure, the sand transport regime and how to deal with the storm problem | Activity with great economic potential – release of attractive land in areas of demand for residential and commercial etc. use | The land shortage in the country’s center increases the economic profitability |
| There is still no clear conceptual plan for planning, location and principles for establishing artificial islands |
| Very high establishment cost |
|  | **Artificial beaches** | Requires in-depth study of the effects on the coastal structure and the sand transport regime | Can serve as a basis for extending the coastline (coastal tourism) combined with a cliff protection program and as a site of marine agriculture | Erosion of the coastline requires a solution for coastal tourism |
| **Public Products** | **Conservation of beaches and cliffs** | Implementation is problematic because of a shortage of sand | An absence of treatment of the cliffs may lead to great economic damage |  |
| Local municipalities have yet to formulate a plan for land protection |
| **Protected marine and coastal areas** | Conflicts with polluting uses |  | There is a need to conserve marine biodiversity |
| **Marine nature reserves** | Conflicts with polluting uses | Infrastructure for development of diving tourism |  |
| **Protection of the marine and coastal environment** | Lack of sufficient enforcement infrastructure | Serves as infrastructure for developing ‘clean’ branches of maritime economy – seawater desalination, marine agriculture, marine biotechnology | Leading issues in IMP programs in the west |
| Conflicts with polluting uses |
| **Marine research** | Lack of guidance for research activity – coordination and pooling and definition of knowledge gaps in accordance with the global standard (metadata) | Marine research is considered to be highly profitable as a basis for developing all fields of maritime economy | Israel has a high quality manpower infrastructure that allows high-level research in collaboration with applied R&D (hi-tech) |
| Mechanism for pooling and sharing research products from the private sector |
| **Monitoring** | Partial monitoring – does not consider all parameters | Routine monitoring of all marine parameters and its dissemination to the public is used as a knowledge base for developing all fields of maritime economy | Sharing and transparency of research products from the private sector |
| Lack of monitoring equipment infrastructure |
| The information must be made accessible to the public and to relevant bodies |
| **Marine training and academic education** | Lack of manpower for marine professions | Infrastructure for training manpower for marine professions and core group of academic experts are the basis for the development of all fields of maritime economy | An academic infrastructure to facilitate creation of a core group of academics exists |
| **Surveillance, control and enforcement** | An absence of coordination and pooling of resources among regulatory bodies | Creating of a regulatory and enforcement infrastructure is essential for maritime economy activities and for reducing conflicts between uses | The policy statement defines the need and the responsibilities |

**7. Comparative analysis of fields of activity according to the prioritization model**

 Based on an analysis of the current situation, a two-stage comparative analysis was conducted to rank the MEA fields:

* Stage one – Go/No analysis of the relevance of the economic field to Israeli conditions with respect to two main parameters:
	+ Dependence of the economic field on the meteorological, geological and oceanographic characteristics of the eastern Mediterranean Sea.
	+ Dependence on the geopolitical situation.
* Stage two – comparative ranking of the MEA relevant to Israel in a scoreboard model in which each field is weighted according to 3 clusters of parameters:
	+ Contribution to the national economy – estimate of the contribution of each economic field to GDP and employment.
	+ Complexity of implementation – estimate of the complexity of implementing projects in the economic fields with respect to the extent of private and public investment, allocation of marine and coastal space and the possibility for conflict with other uses.
	+ Sustainability – estimate of the scale of environmental damage involved in implementing the field.

According to this weighting, the ranking of MEA is presented below:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **High priority fields** | **Intermediate priority fields** | **Low priority fields** |
| **Market-oriented fields[[2]](#footnote-2)** | * Ports activity
* Natural gas production
* Seawater desalination
 | * Solar farms
* Diving tourism
 | * Sailing tourism
* Ferry services
* Tourist coastal sailing
 |
| **Policy-oriented fields[[3]](#footnote-3)** | * Improving marine regulation
* Protecting beaches and cliffs
 | * Protected marine spaces
* Marine nature reserves
 |  |
| **Mixed fields[[4]](#footnote-4)** | * Artificial islands
* Artificial beaches
* Sand management
* Research activity, innovation and marine development
* Hi-tech for docks and ports
* Marine agriculture and biotechnology
* Marine academic education and training
 | * Development of marinas
 |  |

**The economic fields ranked as high priority** are fields with significant economic potential with respect to outcomes and employment. Israel’s blue growth policy must focus on promoting these fields – including creating a managerial and physical infrastructure that will facilitate pooling of resources on one hand and creating balances to enable sustainable development of these fields. Therefore, **a necessary condition for promoting fields with high economic potential is integrated management of the marine space.**

**High-priority economic fields** are divided into a few main groups:

* **Established market-oriented fields** – mainly ports activity, gas production and seawater desalination facilities – fields that are by largely ‘market-oriented’ – developed by the private sector, although they require government regulation (including management, planning, supervision and enforcement) due to potential clashes with other uses[[5]](#footnote-5).
* **Fields related to coastal management and establishment of marine structures** – such as establishment of artificial islands and beaches, protection of beaches and cliffs and sand management. These fields are linked by interactions stemming from mutual impacts on sand transport and coastal structure and necessitate shared research and planning.
* **Fields related to education, training, research and development** (mainly mixed projects) – including a marine education and training system, basic marine research, a marine monitoring system and applied R&D (mainly in the fields of seamanship, marine agriculture and marine biotechnology).

Similarly, it is important to emphasize **development of localized projects with significant regional and urban potential** (i.e., in specific geographical regions along the coast line), mainly activity related to developing tourism, developing a marine research infrastructure etc.

**8. Blue Growth Policy – Principles and Recommendations**

Based on the findings of the ranking model, the main principles and recommendations for blue growth policy in Israel are presented below:

**8.1. Values**

* Maritime economy will be developed according to and as part of ‘Israel’s marine space policy’ – a comprehensive policy for the country’s marine space, which gives consideration to integrating among activities in the sea while maintaining a constant balance between economic, environmental and regulatory considerations. Maritime economy and development is a component of this integrated approach.
* Environmentally-supervised development – due to the great importance of conserving the natural marine environment for humans and for economic activity in the sea, the development of economic activity in the sea must be conducted under efficient environmental supervision, based on strategic vision and a comprehensive environmental policy. Furthermore, when analyzing the different fields of economic activity it is necessary to define a methodology for assimilating the external costs of the environmental harm carried by the fields of activity and to assimilate these ‘environmental fees’ in the economic activity.
* Development of maritime economy based on knowledge, research and innovation – measuring maritime economy according to accepted standards, a national vision of training and educational needs, efficient exchange of knowledge and information between sectors, efficient accessibility to high-quality information and data and encouragement of innovation and technology.
* The policy will be based on ‘clusters’ of economic activities in the sea – encouraging synergy between fields and activities to pool resources and minimize tension/conflict in the marine space.

**8.2. Principles**

Israel’s blue growth policy must be based on two main components:

 **8.2.1. Establishment of a Management Infrastructure**

**Establishment of a system for managing the marine space – that will enable development of integrated healthy maritime economy:**

* Creating the required planning, management and regulatory balance between established existing uses (mostly market-oriented uses) and innovative uses with economic potential.
* Coordination, pooling and direction of activity in fields with synergy and/or mutual impacts in the format of integrated functional clusters.

The management system of the marine space will deal with a wide range of activities including:

* Formulating a strategic plan and an action plan for the short term
* Formulating planning and development policy
* Formulating licensing and supervision policy for activities in the marine space
* Creating ‘arbitration mechanisms’ to facilitate a balance among the different uses of the marine space
* Management, supervision and enforcement of environmental conservation in the marine space (including within protected marine spaces)
* Formulating a methodology for assimilating external costs in MEA
* Integration, coordination and direction of ‘cross-office’ activity

**The managing body will establish ‘clusters’ to facilitate efficient, coordinated management of the activities in two main content spheres:**

* **Marine knowledge cluster – higher education, research and technology**

A cluster that will promote, coordinate and allocate budgets for the following issues:

* Defining an action plan for promoting marine training and higher education
* Establishing a national monitoring system
* Establishment/maintenance of a national database for the Mediterranean Sea
* Direction and coordination of an infrastructure for basic marine research
* Promoting applied R&D for developing marine technologies
* Formulating principles for measuring economic / social / environmental parameters in the marine space
* Nurturing marine heritage and culture: promoting information education and marine sports in order to expose the public to the sea, building heritage and commitment to the marine environment
* **Marine structures and coastal protection cluster**

This cluster will deal with the range of activities related to establishment of artificial islands, expansion of beaches, protection of beaches and cliffs and sand management – including:

* Coordinating the administrative, planning and regulatory activity related to the establishment of artificial structures in the sea
* Establishing a unified research infrastructure
* Managing the establishment of artificial structures together with marine protection and sand management

**8.2.2. Promoting and Encouraging Activity in Fields with Economic Potential**

**Promoting specific activities and projects with extensive governmental involvement to facilitate removal of obstacles and/or budget allocation – including assistance in developing physical infrastructure (terrestrial backup, ships and equipment), assistance in promoting research and overcoming market failures – all in accordance with the policy and action plan that will be outlined by the relevant administrative system.**

The government assistance system will deal with two main issues:

* **Promoting economic fields with obstacles and market failures**

Removing obstacles and allocating financial sources in fields such as: education and training, promoting all research and R&D activities for marine hi-tech, marine agriculture and biotechnology, marine environment protection, protection of niche tourism with a marine emphasis etc.

* **Local projects**

Promoting MEA in regions along the Mediterranean coastline where there is under-exploitation of the sea and the coast as a resource for promoting economic development – such as the Carmel coast, Sulam Tzur, Ashkelon coast etc.

**8.3. Action plan**

 **To promote blue growth policy, activities must be conducted at two levels:**

* **For the short term**

To table a **decider protocol**; within the framework of this protocol the relevant government ministry directors will be required to prepare a work plan for implementing blue growth principles, which includes the ministry’s long-term vision, targets for the next five years and the budgets that will be allocated for achieving these targets. This program will be formulated according to the principles of the ‘Marine Space Policy Statement’ and the ‘Recommendations for Promoting Blue Growth’ that were prepared by the Planning Administration

* **For the medium term**

To include promotion of blue growth within the responsibilities of the body that will be established to manage the marine spaces, based on the objectives and targets that will be set in accordance with the Marine Space Policy Statement and the Recommendations for Promoting Blue Growth that were prepared by the Planning Administration, and periodical updates. The activity will included examination of options for developing specific fields and projects and the required budgets, in collaboration with the bodies managing the marine space, the relevant local municipalities and the relevant government ministries – including the type of integration between the regional development plan and the overall policy.

1. Approximately 195 km of Mediterranean Sea coast and a coastal water area of less than 4,000 km2. [↑](#footnote-ref-1)
2. Economic activity conducted and led by private entrepreneurs – for profit [↑](#footnote-ref-2)
3. Activity conducted by government/public bodies, intended to produce ‘public products’ [↑](#footnote-ref-3)
4. Activities that combine public and private bodies [↑](#footnote-ref-4)
5. For example the potential clash between developing natural gas production potential and seawater desalination [↑](#footnote-ref-5)