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EUNETMAR
European Networking Group for Integrated Maritime Policy

COGEA
Consulenze per la Gestione Aziendale

POSEIDON Aquatic Resource Management Ltd

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azti tecnalia

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Eurofish International Organisation

CENTRO TECNOLÓGICO DEL MAR FUNDACIÓN CETMAR

Contents

0. General overview

Morphological structure of the coastline

- Cyprus is located in the Eastern Mediterranean and constitutes the third largest island in the Mediterranean. Cyprus has a coastline of 782 km[1], representing 0,54% of the total EU-22 coastline[2].
- Respectively, the island's coastal area (with a range of 10 km from the coast) covers 9.251km[2], representing 0,67% of corresponding EU's coastal area.

Population and related social condition for maritime areas

- The total population of Cyprus constituted of 862.011 inhabitants (in 2012). Since Cyprus is an island, 50% of its population lives in coastal areas[3], representing 0,18% of the total EU-22 population.
- The total work force of Cyprus is employed in coastal regions (378.300 persons based on 2012 data). Cypriot employees correspond to 0,19% of the total employed citizens of EU-22.
- In 2012, 52.000 persons (over 15 years of age) were unemployed, representing 0,22% of the EU-22.

Economic role of maritime areas over the national total

- Gross Domestic Product (GDP) for Cyprus was 17.406 million Euros in 2010, corresponding to approximately 21.000 Euros per inhabitant.
- Gross Value Added (GVA) for the same year was 15.719 million Euros, with the contribution of the following activities :

NACE Sector	GVA (mio EUR)		Employment (in 1000 persons)	
	Coastal areas	% on County total	Coastal areas	% on country total
Agriculture, forestry and fishing	372,6	100%	17,7	100%
Manufacturing	993,4	100%	34,6	100%
Construction	1.403,1	100%	37,1	100%
Wholesale and retail trade; transport; accommodation and food service activities; information and communication	4.317,0	100%	135,5	100%
Total NACE	**15.719,1**	**100%**	**390.9**	**100%**

[1] http://ec.europa.eu/maritimeaffairs/documentation/studies/documents/cyprus_climate_change_en.pdf
[2] http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-09-047/EN/KS-SF-09-047-EN.PDF
[3] CAMP Cyprus.

1. Marine and maritime activities

Table 1 - Indicators of relevant marine and maritime activities in Cyprus

Function/activity		GVA (EUR, billion)	Employment (*1000)	Number of enterprises	Further indicators	Source & Reference year
0. Other sectors						
0.1	Shipbuilding and ship repair	0,0062	0,17	49	Data refer to the repair and maintenance activity of ships and boats.	EUROSTAT (2010)
0.2	Water projects	0,0149	0,35	11		EUROSTAT (2010)
1. Maritime transport						
1.1	Deep-sea shipping	0,18	3,2	n.a	4,35 million tonnes transported 3,6% of goods transported by this modality in 2010	EUROSTAT (2010) CYSTAT (2010)
1.2	Short-sea shipping (incl. Ro-Ro)	0,11	1,9	n.a	2,65 million tonnes transported 38,1% of goods transported by this modality in 2010	EUROSTAT (2010)
1.3	Passenger ferry services	0	0	-		EUROSTAT (2010)
1.4	Inland waterway transport	n.a.	n.a	-	The activity is not present	EUROSTAT (2010)
2. Food, nutrition, health and eco-system services						
2.1	Fishing for human consumption	0,039	2,26	962 fishing enterprises (2009) and 2 fish processing	1,4 thousands landings	EUROSTAT, CYSTAT (2010) JRC(2012)
2.2	Fishing for animal feeding	0	0	0	The activity is not present	EUROSTAT(2010)
2.3	Marine aquaculture	0,0097	0,12	9	total production 5.015 tons	JRC, FAO (2012)
2.4	Blue biotechnology	n.a	n.a	-		-
2.5	Agriculture on saline soils	0,0069	0,39	n/a	15.100 ha from which 9500 ha are cultivated	EUROSTAT, JRC (2010)
3. Energy and raw materials						
3.1	Offshore oil and gas	0	0	0		EUROSTAT (2010)
3.2	Offshore wind	0	0	0		EWEA (2013)
3.3	Ocean renewable energy	-	-	-	The activity is not present	-
3.4	Carbon capture and storage	-	-	-	The activity is not present	
3.5	Aggregates mining (sand, gravel, etc.)	0	0	0	-	UEPG (2010)
3.6	Marine minerals mining	-	-	-	The activity is not present	
3.7	Securing fresh water supply (desalination)	0,0253	0,072	5	48,7 million m^3 the production of desalination plants	CYSTAT (2010)
4. Leisure, working and living						
4.1	Coastal tourism	0,463	16,8	543	12,5 million nights spent 1,8 million arrivals (non residents)	EUROSTAT (2010)
4.2	Yachting and marinas	n/a	n/a	200	No data are available. It is estimated that around 450-500 persons are employed in the sector	Experts knowledge
4.3	Cruise tourism	0,169	3,265	68	55 thousand cruise passengers embarked 380 thousand port-of call passengers	EUROSTAT,(2010) European Cruise Council (2011)
5. Coastal protection						
5.1	Protection against flooding and erosion	0,00096	n/a	n/a		Elaboration based on Eurostat (2010) and PRC (2009)
5.2	Preventing salt water intrusion					
5.3	Protection of habitats					
6. Maritime monitoring and surveillance						
6.1	Traceability and security of goods supply chains	n/a	n/a	n/a		
6.2	Prevent and protect against illegal movement of people and goods	n/a	n/a	n/a		
6.3	Environmental monitoring	n/a	n/a	n/a	45 persons are employed by DFMR in environment monitoring activities	

Table 2 - Overview of relevant marine and maritime activities in Cyprus

Function/activity		Activity overview	Socio economic indicators	Source & Reference year
0. Other sectors				
0.1	Shipbuilding and ship repair	Activity mostly concerns ships' and recreational boats repairs.	After a decline in employment in 2009 (a drop by 13,5%), the sector presented a positive growth almost 20% in 2010, reaching 0,17 thousand people. The added value of ship repairs and maintenance was 6,2 million euro (representing a 20% increase from 2009 to 2010,	EUROSTAT (2010)
0.2	Water projects	There are projects under development related to the construction and improvements of port and marina infrastructures.	Since 2008, the value added of water projects presented a three-fold increase (from 5,2 million euro to 14,9 million euro). Employment in water projects was increased by 38% in 2009 and 210% in 2010.	EUROSTAT (2010)
1. Maritime transport				
1.1	Deep-sea shipping	There are six Cypriot ports; Larnaca and Lemessos serve the largest percentage of sea cargo. Cyprus has the third largest fleet within the European Union and is classified as the 10th largest merchant fleet globally and the largest third-party ship management center in Europe.	Regarding traffic volumes, in 2009 transported goods decreased by 60% the major part of which (47%) was gained back during 2010. Approximately 4.500[4] employees staffed the ashore shipping companies. Cypriot ships employ 2.907 EU officers and 514 ratings corresponding respectively to 2,02% and 0,47% of the total European officers and ratings.[5]According to the Cyprus Investment Promotion Agency, shipping contributes over 5% of the Gross Domestic Product (GDP) for ship management and between 7%-8% of the GDP for ship owning (2011).	EUROSTAT, CYSTAT(2010) Cyprus Shipping Chamber
1.2	Short-sea shipping (incl. Ro-Ro)	Cyprus Short-sea Promotion Center is the responsible organization for promoting short-sea shipping aiming at the improvement of sector's contribution to national economy.	In 2010, short-sea shipping cargo represented 38,1% of the total transported goods to the main ports of Cyprus with a 15% increase from 2006. In 2011 this percentage reached almost 68% (this is also due to the improvement of data). In 2010, almost 2.000 people were employed in the activity. During the period 2008-2010 employed in the sector remained at the same levels with no significant variations	EUROSTAT (2010)
1.3	Passenger ferry services	The activity currently does not exist.	The companies that used to offer regular service from Greece to the Greek part of the island, with Haifa, Israel as the terminal port, suspended their services in 2001.	http://www.ferries.gr/salamis/
1.4	Inland waterway transport	The activity does not exist.	-	-
2. Food, nutrition, health and eco-system services				
2.1	Fishing for human consumption	Fishery sector has small contribution to GDP (0,3%) but it is considered as an important economic activity. Fish processing sector is a new sector which is growing fast. Regarding fish processing there are two major companies. Also, there are plans for the construction of new fishing shelters and the improvement of present infrastructures, for facilitating the activity.	In 2012 Cypriot fishing fleet consisted of 858 vessels, decreased by 47% from 2008. The total volume of landings in 2010 was 1,4 thousands seafood (-30% from 2008), with bogue and surmullet as major species landed. More than 1.400 persons are directly employed in the fisheries sector and another 1.000 persons indirectly to all cluster activities such as boats, retail, maintenance, equipment etc. The value of fish processing sector was estimated to 5 million euro (2011). More than 40 persons are employed in the specific activity.	Ministry of Agriculture, Natural Resources and Environment (2010) FAO, JRC (2012)
2.2	Fishing for animal feeding	The activity is not present	-	EUROSTAT (2010)
2.3	Marine aquaculture	Mariculture is the main type of aquaculture in Cyprus and it is carried out in the southern coast of the island. In terms of geography, the activity is mostly concentrated in the eastern of Limassol. It is an important activity in Cyprus showing increased rates of growth during the last 10 years. Research in the sector	In 2011, totally 260 persons were employed in the sector from which more than 90% to mariculture. During the period 2008-2010 employment decreased by 16% but the productivity of labour has increased. The value of production reached 32 million euro from which 16,2 million euros	Department of Fisheries and Marine Research, (2012)

[4] http://www.csc-cy.org/cyprus-shipping/2012-01-05-07-34-48.html

[5] European Commission (2011), Study on EU Seafarers Employment, Final Report, Retrieved 17/8/2013

Function/activity		Activity overview	Socio economic indicators	Source & Reference year
		is promoted by the Meneou Marine Aquaculture Research Station, which is mainly focused on the reproduction of new species.	came from exports.	FAO, JRC (2012)
2.4	Blue biotechnology	The activity is not present, but in 2009 there were two biotechnology companies active in food and nutraceuticals sector and Contract, Research and Manufacturing sector.	-	EUROPABIO (2009[6])
2.5	Agriculture on saline soils	Saline soils are present in Cyprus due to the use of salt-water for irrigation because of the scarcity of fresh water (Postiglione, 2002). Based on the estimation of JRC, 2,16% of the total agricultural area corresponds to saline areas.	Employment for 2010 is estimated to 0,39 thousands persons and respectively GVA at 0,006 million euro. [7]	JRC (2010) CYSTAT (2010) (elaboration of data)
3. Energy and raw materials				
3.1	Offshore oil and gas	There is currently no production of oil or natural gas, but natural gas resources have been discovered with additional exploration coming in the near future. In 2011, the U.S. company Noble Energy discovered the so-called Aphrodite field and estimates indicate that the field contains 7 Tcf of recoverable natural gas resources. An appraisal well has been drilled in Aphrodite field in 2013 and the early estimations indicate 5 Tcf natural gas resources. Through the 2nd Licensing Round, which was announced in 2012, five additional exploration licenses have been awarded (three to Eni/Kogas and two to Total).	It is not possible to identify and describe socio economic aspects, since the activity is still at a nascent stage.	Ministry of Energy, Commerce Industry and Tourism (2013)
3.2	Offshore wind	The activity is not present	-	EWEA (2013)
3.3	Ocean renewable energy	The activity is not present	-	-
3.4	Carbon capture and storage	The activity is not present, but in 2012[8] Cypriot government passed the law about carbon capture and storage that determines the legal framework of the activity	-	Department of Environment, (2013)
3.5	Aggregates mining (sand, gravel, etc.)	No aggregate mining is reported offshore.	-	UEPG (2010)
3.6	Marine minerals mining	The activity is not present		
3.7	Securing fresh water supply (desalination)	Cyprus faces the problem of limited water resources, which became more intense in the 1990's due to drought. At the same time, there is excess demand for drinking water consumption and for use in agricultural activities. Part of demand is satisfied by the operation of desalination plants. Currently, there are permanent and mobile desalination units for serving all the areas of the island while there are studies and further planning for the expansion of existing plants and the construction of new ones.	The activity employs a limited number of persons, while GVA generated was estimated to 0.025 million euro.	WATERINCORE (2012) Water Development Department (2013)
4. Leisure, working and living				
4.1	Coastal tourism	Cyprus is a major tourism destination in Europe and especially in the Mediterranean. The Cypriot Tourism Organization (CTO) has developed a strategy for the diversification of the domestic tourist product aiming at offering differentiated services, promoting new forms of tourism such as maritime tourism etc. Major source markets for the Cypriot tourist product are Europe and Russia.	In 2009, the tourism sector constitutes 10% of the national GDP. Negative growth rates were recorded during the period 2001-2009. Despite the financial crisis, since 2010, tourists arrivals and revenues increased. Significant number of persons is employed in the sector: indirect employment is estimated to around 60.000 persons[9].	CTO(2011) EUROSTAT (2010)

[6] http://www.biotechgate.com

[7] Due to lack of specialized data the estimation of the employment and GVA for the specific activity was based on the regional percentage of saline agricultural area, provided by the study of JRC.

[8] http://www.cylaw.org/nomoi/arith/2012_1_71.pdf

[9] Country Profiler, Global Edition,2011

Function/activity		Activity overview	Socio economic indicators	Source & Reference year
4.2	Yachting and marinas	There are many small marinas and yacht harbours along the coast of Cyprus. The two major marinas are Larnaka Marina (450 berths) and St. Raphael Marina (approx. 230 berths) near Limassol. New marinas are under construction, or planned, in Limassol, Ayia Napa and Paphos.	Domestic market is limited. Approximately 200 persons are employed in the shore-based activities and another 150 seafarers are mainly officers in yachts. In the marina sector less than 100 are employed.	Ministry of Energy Commerce Industry and Tourism (2013) Experts knowledge
4.3	Cruise tourism	Cyprus is among the top ports of call in Europe and is currently a market destination. Despite the existence of national cruise companies, which start some of their cruise itineraries from Cyprus, the number of persons embarked from Cypriot ports is limited and they are used mainly as port of call.	According to the European Cruise Council, the passenger throughput for ports of Larnaca and Limassol was 380.278. Thus, the activity has significant impact to regional economy, which is mostly generated by cruise expenditures. The direct spending in 2010 was estimated to 59 million euros, representing 0.4% of total European expenditures The total employment in the sector is estimated to 1.143 persons. Total compensation reached 20 million euro.	ECC (2010)
5. Coastal protection				
5.1	Protection against flooding and erosion	The coastlines of Cyprus are under increasing pressures, due to the economic activities concentrated in coastal areas. The island has not experience any severe floods, while erosion constitutes a great threat. Currently, 38% of coastline is subject to erosion Coastal Section of the Ministry of Communication and Works is responsible for the protection of coastlines. The importance of the activity is predominately connected with the viability and sustainability of the activities developed in coastlines such as tourism.	From 1998 to 2008, Cyprus spent 0,45 million euro annually on the implementation of the Master Plans to protect coasts from erosion. Furthermore, the annual expenditure for monitoring the coast amounts to 0,35 million euro yearly. About 15,4 million euro should be spent to protect Cyprus against flooding and erosion the period 1998-2015.	Coastal Section of the Ministry of Communications and Works (2013)
5.2	Preventing salt water intrusion			
5.3	Protection of habitats			
6. Maritime monitoring and surveillance				
6.1	Traceability and security of goods supply chains	-	-	-
6.2	Prevent and protect against illegal movement of people and goods	Police Border Marine is responsible for the surveillance of the coastline and the territorial water. In 2010 nine incidents of illegal movement of people were recorded.	-	Cyprus Police[10] Annual Report (2011)
6.3	Environmental monitoring	The Department of Environment of the Ministry of Agriculture, Natural Resources and Environment supervises the implementation of policy and adoption of EU legislation. The Department of Fisheries & Marine Research (DFMR) is responsible, inter alia, for the Marine Strategy Framework Directive (2008/56/EC) and the monitoring of coastal waters under the Water Framework Directive (2000/60/EC). Moreover, the DFMR implements monitoring of the quality of coastal waters within MED POL Programme of UNEP/MAP as well as for other national needs The Marine Environment Division of DFMR has the responsibility of the environmental monitoring of coastal/marine waters, while the naval services of the DFMR are responsible for the vessels and for the combat of Oil pollution. Since the naval services are responsible for the vessels of the DFMR, it provides the means & support for DFMR personnel that conduct research, environmental monitoring and also fisheries control. The Division of Control and Structures of the DFMR is responsible for Fisheries Control. In 2011, the service realized 175 patrols.	A limited number of people are employed in this activity. The personnel of the Marine Environment Division of DFMR are 6 Officers & 2 Inspectors, of the Division of Control and Structures of the DFMR that is involved in fisheries control is composed by 5 Officers & 19 Inspectors and 13 persons (boat master, boat engineer, sailors) in the Naval Service of DFMR.	Ministry of Agriculture, Natural Resources and Environment, Annual Report (2011) Department of Fisheries & Marine Research website (2013) (www.moa.gov.cy/dfmr)

[10] http://www.police.gov.cy/police/police.nsf/All/8CEA7777C07DF57FC2257A4F0036AADB/$file/etisiaekthesi2011.pdf

2. Breakdown of maritime economic activities at regional level (NUTS 2) and selection of most relevant regions

No NUTS 2 subdivision exists in Cyprus. No further analysis has been therefore considered.

3. List of the 7 largest, fastest growing and with most future potential marine and maritime activities

3.1 Ranking order of the 7 largest marine and maritime activities

The table below presents the ranking order of the 7-largest marine and maritime activities based on the gross value added and the number of employees for the year 2010.

Table 3 - Ranking order of the 7 largest marine and maritime activities in Cyprus

Rank	Marine and maritime activities	GVA (billion EUR)	Employment (*1000)	Score
1.	Coastal tourism	0,4634	16,87	**10,75**
2.	Deep sea shipping	0,18	3,25	**3,04**
3.	Short-sea shipping	0,11	2	**1,56**
4.	Fishing for human consumption	0,039	2,26	**1,33**
5.	Cruise Tourism	0,11	0,57	**0,86**
6.	Water projects	0,014	0,35	**0,25**
7.	Securing fresh water supply	0,025	0,07	**0,16**

Coastal tourism

Coastal tourism ranks first among the largest economic sectors in Cyprus, with significant contribution to national GDP (10%) and more than 40.000 people employed in the sector.

Deep-sea shipping

Deep-sea shipping is also a significant contributor to the national economy while the port of Limassol is considered the largest third-party ship management center. The sector employs a significant number of persons accounting to more than 3.500 people.

Short-sea shipping

Short-sea shipping is another developed sector of Cyprus, since there are no other connections with European mainland employing almost 2.000 people.

Cruise tourism

Cruise tourism is also a well-established sector in the island. In international market, Cyprus ranks amongst the major European port of calls, while there are nationally based companies offering cruise packages.

Fishing for human consumption

Despite its marginal economic relevance, the fisheries sector is an important element in the economy of several coastal areas, since it generates income and work opportunities (it is the third-ranked maritime activity in terms of employment), thus contributing to the social and economic welfare of the local residents.

Water projects

Ongoing water projects, mostly related with port, marina infrastructures, irrigation projects etc have a significant contribution to the economy of the island.

Securing fresh water supply

Desalination emerged as the 7th largest activity in Cyprus. It has developed during the last years after the severe drought problems of the island. At present[11] there are 5 desalination plants.

3.2 Ranking order of the 7 fastest growing marine and maritime activities

Based on available data water projects, SSS, Deep Sea Shipping, cruise shipping, fishing for human consumption and securing fresh water supply are the seven marine and maritime economic activities which experienced a positive growth rate during study period. To this regard, the table below illustrates the dynamic of the fastest growing sectors in Cyprus, taking into consideration the evolution of the GVA and the number of employees in three-year period (2008-2010).

Table 4 - Ranking order of the 7 fastest growing marine and maritime activities in Cyprus

Rank	Marine and maritime activities	GVA (CAGR)	Employment (CAGR)	Score
1.	Water projects	69,3%	106,5%	**87,9**
2.	Short-sea shipping	36,4%	16,9%	**26,6**
3.	Deep-sea shipping	26,4%	17,4%	**17,4**
4.	Cruise Shipping	25,7%	-8,2%	**8,6**
5.	Securing fresh water supply	6,9%	8,6%	**7,8**
6.	Shipbuilding and ship repair	-2,3%	5,3%	**1,5**
7.	Fishing for human consumption	-13,1%	10,9%	**-1,1**

Water projects

Currently there are projects related to the construction and improvement of port infrastructures both for commercial and touristic purposes. Thus, in this period the GVA of the activity was tripled and the employment was quadrupled, which explain the very high values of employment, GVA, and the score related to this sector.

Short-sea shipping

Also, short-sea shipping presented a positive rate which is mostly attributed to the better monitoring of the activity and the provision of more sophisticated data. However, the sector is showing growing trends in terms of transported goods (+7% in 2010[12] compared to the previous year).

Deep-sea shipping

Deep-sea shipping is also among the fastest growing marine and maritime economic activities, accelerated by the legal framework which favors national registry and third party services.

Cruise tourism

Cruise tourism presents a constant development and market share over the last years, while recently foreign cruise companies have started to use Cypriot ports for starting their cruise itineraries, increasing the impact of the activities to supportive activities.

Securing fresh water supply

The development of desalination units presents positive growth rated mostly due to the number of implemented projects for securing uninterrupted supply of water both for human consumption and commercial reasons.

[11] Last desalination plant (the 5th) was inaugurated in August 2013.
[12] EUROSTAT, 2010.

Shipbuilding and ship repair

Shipbuilding and ship repair activity in Cyprus presented a positive growth rate in terms of employment but a negative trend in terms of GVA. Employment trend is also confirmed by the study of the Cluster Observatory according to which the average annual employment growth of shipbuilding industry during the period 2004-2009 was 10,23%[13]. Shipbuilding activity mostly concerns ships' repairs – basically realized in port zone - and repairs of yachts. The development of offshore sector it is expected to enhance further the development of the activity.

Fishing for human consumption

Regarding fishing activity, a decreasing CAGR for GVA (-13,1%) and a parallel increase of CAGR for employment (10,9%) is observed. This could be explained by the fact that during the period 2008-2012 fishing fleet decreased by 47%, but the number of employment increased by 24%.

3.3 Ranking order of the 7 marine and maritime activities with most future potential

The table below presents the 7 most future potential marine and maritime activities, which will be further analyzed in the next Section. The ranking order is the result of qualitative evaluation of the sectors based on the specific criteria of innovativeness, competitiveness, employment, policy relevance and spill-over effects.

Table 5 - Ranking order of the 7 marine and maritime activities with most future potential in Cyprus

Rank	Marine and maritime activities	Score
1-2	Deep-sea shipping	++++++
1-2	Securing fresh water supply	++++++
3-5	Marine aquaculture	+++++
3-5	Coastal tourism	+++++
3-5	Cruise tourism	+++++
6	Offshore oil and gas	++++
7	Environmental monitoring	++++

Deep-sea shipping

- **Innovativeness**: it is characterised by the participation of institutions and other relevant bodies to research programs aimed at improving the performance of the sector and the environmental efficiency of the Cypriot fleet .**Score assigned: +**
- **Competitiveness***:* Cyprus has the 10th largest merchant fleet globally and the 3rd at European level, while Cypriot registry is constantly upgraded and promoted as 'Flag of Progress and Quality'. The diversification of fleet's structure as well its modernisation, in combination with the favouring tax regime resulted in 2011 more than half of the fleet's tonnage to be under 10 years old reflect the improved standards of the Cyprus registry and its high competitiveness. There is also high expertise and know-how in ship-management operation making Cyprus an international ship-management centre. **Score assigned: +**
- **Employment***:* The sector has positive impact on employment figures (seafarers and on-shore personnel), especially to shore based personnel due to the large number of headquarters and other satellite business located in the island. **Score assigned: +**
- **Policy relevance***:* Shipping is considered an important activity for the economy of the island and thus a number of incentives are provided through the new tonnage tax system applicable from 2010. **Score assigned: +**

[13] http://www.clusterobservatory.eu/eco/uploaded/pdf/1346836021947.pdf

- **Spill-over effects***:* shipping (and especially deep-sea shipping) can trigger transformation and upgrade of current port and shipping infrastructures that can increase port capacity and can serve maritime traffic (e.g. Liquefied Natural Gas for shipping) **Score assigned: +**
- **Sustainability:** Protection of the marine environment is a priority for Cyprus. In this context all relevant international and European legislation is applied and ships flying the Cypriot flag fully comply with environmental regulations. **Score assigned: +**

Securing fresh water supply (desalination)

- **Innovativeness**: There is applied research from national institutions regarding the use of renewable sources of energy and particularly of solar energy (Concentrated Solar Power and Desalinated Sea Water) in the operation of desalination plants. Also, the country participates in transnational research programs aiming at supporting research in the field of desalination (ex. MEDRC). **Score assigned: +**
- **Competitiveness***:* Due to the application of innovative solutions, the sector can be considered competitive, which can be further enhanced with specific intervention regarding the support of research in wider scale and networking with other countries possessing relevant technology. **Score assigned: +**
- **Employment***:* The sector has a marginal but positive impact on employment in the phase of its operation, while employment figures increased in the phase of the construction of plants. Positive also impact can have in the research field. **Score assigned: +**
- **Policy relevance***:* Water security is a priority for Cyprus. In this context Cyprus has developed a specific framework for the management of its water resources. Political relevance in further developing the activity emerges also in international cooperation efforts aimed at exchanging expertise. **Score assigned: +**
- **Spill-over effects***:* desalination activity generates upgrade of current infrastructures so as to become more energy efficient. **Score assigned: +**
- **Sustainability:** The consumption of energy and air pollution are the major concerns derived from the operation of plants. In this context, alternative energy models are applied for the mitigation of the negative environmental effects. Furthermore, water resources management is applied from Cypriot government in order to guarantee water supply in sustainable way. **Score assigned: +**

Marine aquaculture

- **Innovativeness**: The activity is dynamic in terms of innovation: research on new species cultivation, new mooring standards, seawater analyses are aimed at diversifying production and increasing the quality of the product. **Score assigned: +**
- **Competitiveness***:* A major component of the competitiveness of the Cypriot mariculture sector is the existence of favouring physical conditions, compared to other countries located in the Med region, sufficient infrastructures and specialized personnel. More than half of the domestic production of seabream and seabass is exported. **Score assigned: +**
- **Employment***:* Marine aquaculture gives an important contribution to the employment figures of the island with almost 2.500 people employed in the sector, while the potential expansion of the activity and the development of cluster activities can have further positive impact on the creation of new job positions. **Score assigned: +**
- **Policy relevant:** Cyprus has a specific legislative framework regarding aquaculture (licensing, operation, monitoring) integrated with other laws and policies regarding water pollution and water management. Also, the expansion and diversification of the activity is promoted through operational programs, where specific national priorities are set. **Score assigned: +**

- **Spill-over effects***:* Port infrastructures are not efficiently used, could be converted as well shore based facilities for supporting the distribution of aquaculture products. **Score assigned: 0**
- **Sustainability:** The DFMR conducts on a yearly basis a number of inspections in order to secure the alignment of the activity (and related plants) to national environmental regulations, for protecting both marine environment and secure human health **Score assigned: +**

Coastal tourism

- **Innovativeness**: Currently, innovation in the sector is limited and connected to the development of specific services (e.g. e-services) for tourists designed in regional level. It is stressed though, that in national strategy innovation and information technology is recognized as tools for raising the competitiveness of the sector and enhancing its performance. **Score assigned: 0**
- **Competitiveness***:* In 2012 the Cypriot tourism sector ranked 29th in competitiveness in World Ranking. Even though the sector is facing specific challenges, regarding its infrastructures and it still remains a competitive actor within the international tourism, mostly due to its image and the qualitative services. **Score assigned: +**
- **Employment***:* Tourism is a traditional activity in Cyprus and thus a significant number of people are employed in the sector, directly and indirectly, reaching around 60.000 people. The orientation of national tourism policy is expected to have a great effect on employment. **Score assigned: +**
- **Policy relevance:** CTO (the Cypriot Tourism Organization) has developed a specific strategy for the sector, where specific objectives are set, aimed at overcoming deficiencies and setting new alternative forms of tourism. The limitation of seasonality is also a main objective of the strategy. **Score assigned: +**
- **Spill-over effects***:* Existing tourism infrastructures could be converted for the development of new products in order to serve the new trends of international demand. **Score assigned: +**
- **Sustainability:** Environment is a major component of the Cypriot tourism. In this context environmental regulations and programs are applied such as Blue Flag and Natura 2000. **Score assigned: +**

Cruise tourism

- **Innovativeness**: There is no innovative activity regarding cruise tourism. **Score assigned: 0**
- **Competitiveness***:* Cyprus is among the major destinations of East Med, with almost constant market shares during the last years, mostly due to the special characteristics of the destination (climate, attractions, tradition, nature etc). Infrastructural extensions and new services will further enhance the competitiveness of the domestic sector. **Score assigned: +**
- **Employment***:* The sector currently employs a not negligible number of persons, since there are two Cypriot cruise companies and peripheral services developed for supporting the sector. The impact on employment can be strengthening in the context of CTO suggestions regarding the provision of incentives for attracting cruise companies and differentiation of the product. **Score assigned: +**
- **Policy relevance***:* There is not a specialized strategy regarding cruise tourism, but within the wider context of tourism policy. Relevant favouring tax regime is also applicable for cruise businesses. Cruise development is recognized from Cyprus and thus the construction of the new cruise terminal in Limassol port is in progress. **Score assigned: +**
- **Spill-over effects***:* Touristic infrastructures could be used for serving cruise tourism while cluster activities could be benefited by specializing their services and products. Furthermore, National strategy of tourism suggests the enrichment and improvement of the shore excursions programs,

the creation of thematic routes as well the organization of special events In order to increase the time spent by cruise ships in ports, and attract tourists for longer land stays. **Score assigned: +**

- **Sustainability:** There are no signs of congestion and thus the sector does not add specific pressures to the destination. Regarding ships' operation all environmental regulations when in port are followed. **Score assigned: +**

Offshore oil and gas

- **Innovativeness**: Currently the sector is under development and thus no innovative applications can be reported. **Score assigned: 0**
- **Competitiveness***:* Under development. It should be highlighted that, based on the scientific research regarding the deposits founded and the international interest expressed on bidding procedures, the sector can be considered potentially competitive. Moreover, favouring business environment is a main component which will affect positively sectors' attractiveness and competitiveness. **Score assigned: +**
- **Employment***:* Offshore Oil and Gas is a new activity in the island, which should have a significant positive economic effect on the Cypriot economy. It is estimated that the job opportunities created for Cypriot concerns mostly the construction of the relevant terminal and the operation phase (distribution and export) of the platform. Also, apart from the direct employment, other sectors will take advantage of this new activity (e.g. shipping) and therefore employment figures will be further enhanced. **Score assigned: +**
- **Policy relevance***:* The sector is considered of high priority and in this context EU laws and Directives have been issued in order to regulate the activity. Apart from legislation, Cyprus has been very active in conducting international agreements. **Score assigned: +**
- **Spill-over effects***:* There are port infrastructures that could be used for serving the sector. **Score assigned: +**
- **Sustainability:** It is estimated that the sector will be developed in a sustainable way since the Cypriot Government has already conducted a Strategic Environmental Assessment regarding licensing phase while Preliminary and full Environmental Impact Assessments are required for exploration and exploitation phase respectively. Furthermore, Cyprus has ratified Offshore Protocol[14]. **Score assigned: 0**

Environmental monitoring

- **Innovativeness**: Marine Environmental Division participated in programs focusing on the monitoring of seawater, ecology and biodiversity conservation. There are also research centres focusing on water quality and its effect to specific activities. **Score assigned: +**
- **Competitiveness***:* this not a purely economic activity and monitoring services are provided by the state. Effectiveness of monitoring systems is correlated to public sector organization, technology used, available personnel and targeting. Cyprus has been very active in monitoring its environmental resources. **Score assigned: ?**
- **Employment***:* Specific departments are involved, employing only a specific number of persons. The use of technology for monitoring environment and current financial state of the country implies that the impact on employment cannot be significant. **Score assigned: 0**
- **Policy relevance***:* Healthy environment is a prerequisite for a large number of economic activities and component of quality of life. In this context, Cyprus has aligned its national policy with the

[14] Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil. Link.

correspondent European, drafting relevant frameworks and management plans and conducting impact assessment studies as well monitoring studies.**Score assigned: +**

- **Spill-over effects***:* Research units and coastal and port infrastructures could be equipped and potentially used for the development of a monitoring station network in the country. **Score assigned: +**
- **Sustainability:** the environmental monitoring has a significant importance for the development of an array of economic activities such as aquaculture, coastal tourism, securing fresh water supply etc. Ecological damage and degraded marine environment can affect the production, performance and profitability of multiple sectors and consequently the national economy. Especially, currently with the evolution of offshore oil and gas activities, monitoring becomes even more important for securing the adverse of risks and ensures qualitative marine resources. **Score assigned: +**

4. Growth scenarios for 6 of the most relevant and promising marine and maritime activities

Below a synoptic overview of the 7 largest, fastest growing and with most future potential activities is provided:

Table 6 - Sets of top-7 activities ranking in order of size/growth/future potential

Top-7 current size	Top-7 recent growth	Top-7 future potential
Coastal tourism	Water projects	Deep-sea shipping
Deep sea shipping	Short-sea shipping	Securing fresh water supply
Short-sea shipping	Deep-sea shipping	Marine aquaculture
Fishing for human consumption	Cruise Shipping	Coastal tourism
Cruise Tourism	Securing fresh water supply	Cruise tourism
Water projects	Shipbuilding and ship repair	Offshore oil and gas
Securing fresh water supply	Fishing for human consumption	Environmental monitoring

Based on the table above which summarizes the results presented in the previous section and in the Country fiche annex, the following marine and maritime activities have been identified to be the most relevant and promising in Cyprus:

Table 7 - The 6 most relevant and promising marine and maritime activities

6 most relevant and promising marine and maritime activities
Deep sea shipping
Securing fresh water supply
Marine aquaculture
Coastal tourism
Cruise tourism
Offshore oil and gas

4.1 Overview of the 6 most relevant and promising marine and maritime activities

Deep sea shipping

The approval by the European Union, in 2010, of the new expanded Cyprus's tonnage tax system, generates a competitive business environment, which is expected to attract new ships in the Cyprus registry and can affect the size of the shipping cluster. In this context demand for specialized ship management services can be increased and consequently the number of employees in the sector.

Securing fresh water supply (desalination)[15]

Despite the rainfalls of the recent years and the current ability of the island to satisfy water supply needs[16], droughts still remain a concern, especially when confronting within the wider context of climate change and the predictions about the future changes in the pattern of rainfall levels. Moreover taken into consideration the adverse effects on economic sectors[17] and the recent actions of the country for international collaborations in the field, justify the importance of the sector and the potential of future development, applying new energy efficient and cost effective solutions. Research on the field focuses on the development of new methods of desalination aiming at increasing energy efficiency of the method and reducing environmental side effects.

[15] Cyprus has a high Water Exploitation Index (appr. 45%), which indicates severe stress on water resources and unsustainable water use. (Eurostat,2010)
[16] http://www.moa.gov.cy/moa/wdd/Wdd.nsf/reservoir_en/reservoir_en?OpenDocument
[17] http://www.ucy.ac.cy/data/ecorece/Zachariades_21-37.pdf

Marine aquaculture products

Marine aquaculture is recording upward trends over the last years. Climate conditions and good quality of waters favours the development of the sector. In terms of innovation, research centers conduct research on the diversification of production and the cultivation of new species, contributing that way to the enhancement of the competitiveness of the sector. There is a specific fishery policy implemented aiming at improving business environment and ensuring the sustainable development of the activity.

Coastal tourism

Cyprus has long experience and tradition in the tourism sector. Qualified personnel and know-how are two major elements of the regional sector. Currently, a strategic plan for the tourism sector has been formed aiming at the development of new touristic products, emphasizing the importance of nautical and maritime tourism, and the diversification of the current image of the destination, as precondition for improving its competitiveness. Furthermore, a number of projects mostly related to transport infrastructures have been developed. Regarding sustainability, national strategy recognizes the importance of natural environment as a core component that contributes to the differentiation of the destination and improves touristic experience. In this context Cyprus implement environmental programs such as Blue Flag and all European environmental directives.

Cruise Tourism

Cyprus is among the major destinations of the Med region. The strategic location of the island and the proximity to established destinations such as Greece, generates favouring development conditions. In this field, there is cross border cooperation for the exchange of knowledge and expertise as well as for the development of promotion. The existence of local cruise companies, which serves the international demand, in combination with the improvement of port infrastructures, strengthens the competitiveness of the sector. Moreover, at a political level, the sector has been recognized as one of the most important in the Cypriot blue economy and a number of measures have been suggested within tourism strategy for enhancing the attractiveness of the sector.

Offshore oil and gas:

Cyprus is heavily dependent on imported energy. The increased energy demand in combination with the position of the island and the lack of interconnections with energy infrastructure makes the discovery of oil and gas in Cyprus a promising sector which can contribute not only to tackle the energy problem of the island but also to settle as one of the leading export sectors. Cyprus has prioritized the development of the activity and a several policy actions have been developed related to Exclusive Economic Zone and licensing procedures. High importance is given to the environmental dimension of the activity and thus strategic environmental assessment regarding hydrocarbon activities offshore Cyprus has been conducted. Regarding jobs, it is estimated that the activity could affect employment mainly due to the development of complementary services.

4.2 Description of the nature of each of the 6 marine and maritime activities and value chain

Deep Sea Shipping

Cyprus is the 10th largest Ship Registry worldwide with a fleet under the Cyprus flag of 1.014 vessels for a total gross tonnage of 20,7 million. In addition, the Cypriot merchant fleet ranks third in the European Union with a percentage of about 11% of the total fleet of the 27 EU Member States.

Cyprus is also one of the largest crew management center in the world and the largest third-party ship management center in Europe. More than 150 ship owning, ship management and shipping related companies maintain offices and conduct international activities from Cyprus collectively, controlling a fleet of 2.400 ships with 48 million gross tonnage.

The Cyprus Port Authority is the public body responsible for governing the Cypriot ports. Cyprus has the commercial ports of Lemessos and Larnaka, the industrial ports of Vasilikos, the old port of Lemesos, Paphos and the port at Latchi (is predominately used by recreational boats) and the oil terminals at Moni, Vassiliko and Dhekelia. Recent port development in progress of island includes the projects of deepening the port of Limassol and the construction of new passenger terminal.

In 2010, 6,9 million tonnes were handled in Cypriot ports presenting an increase of 2,2% from previous year (mar_mg_aa_cwh), corresponding to 0,2% of the European total.

Central element of the value chain is the large fleet under Cypriot flag, the 10th largest registry in the world. Ship owing and management companies are major components of the value chain of the activity, generating the demand for supportive services. Other components of the chain are classification societies, ship insurance companies, ship chandlers, bunkers as well as port operators and logistic companies for handling the cargo reaching Cyprus ports. In this context, the maritime administration covers an important role: it is responsible for the implementation of shipping policy, attracting new ships to the national registry, implementing and enforcing laws and regulations and monitoring the safe and secure performance of the sector.

Securing fresh water supply (desalination)

The drought of the 1990's reduced the water reserves both on the surface and in underground reservoirs. In view of the increasing water demand for consumption and for use in agriculture, Cyprus authorities decided to proceed with the construction of sea water desalination plants. Desalination of sea water was first introduced in 1997 with the operation of Dhekelia Desalination Plant followed by Larnaca Plant (2001), Moni Plant (2008), and Episkopi Plant (2013). Plants in Dhekelia, Larnaka, and Episkopi Plants[18] have been constructed under Built-Own-Operate-Transfer contracts. Today the water demand for the provinces of Nicosia, Larnaca, Famagusta and Limassol is in total 72.500.000 m³/ year while desalination contributes a minimum of 64.192.000 m³/ year, which is approximately 88% of the total demand in drinking water.

Table 8 - Desalination plants in Cyprus

	DHEKELIA	LARNACA	MONI	EPISKOPI
Start of Production	1997	2001	2008	2013
Capacity (m3 per day)	60.000	62.000	20.000	50.000
Minimum Production (m3 annually)	19.770.000	21.352.500	6.570.000	16.500.000

The value chain in water treatment activity is basic since the desalination plants are limited and working under a predefined regulatory framework. The State is involved at all levels and it guarantees and supervises all the stages of the production and distribution of water. Value chain includes equipment companies and supportive activities, desalination plants, the State and final consumer.

Marine aquaculture

Aquaculture is an important activity of Cyprus' primary sector. 81% (vs 70% in 2007) of total fisheries production originates from aquaculture. The sector of aquaculture is not a new one in Cyprus, since the first efforts for the development of the activity dated back at the beginning of the 70's, with the construction of the first research center in the east side of the island, in Gastria. However, the first private marine fish hatchery started its operations in the mid of 1980 with production of gilthead seabream and European seabass fingerling. The main type of aquaculture carried out in Cyprus is marine aquaculture, located only in the southern coasts of the island. The most used culture method is the open-sea cage. On average, farms are installed at a distance of 1 to 4 km from the shore[19].

[18] In August 2013 the 5th desalination plant was inaugurated in Limassol, with a capacity to produce up to 40.000 cubic metres of desalinated potable water daily.

[19] Vassiliou, Menicou,Charalambides, DeCew and Tsukrov,2012 http://www.waset.org/journals/waset/v67/v67-44.pdf

The aquaculture value chain has four linked sections: farming, harvesting, processing and distribution. Throughout the farming sequence, high standards of hygiene and fish welfare are ensured. The processing activities take place in specialised facilities where the final product is produced (whole fishes or parts of it but also value added products such as ready-to-heat ones). The freshness and quality of fish products is ensured by effective packaging and an unbroken cold-chain distribution to the final consumer.

Coastal tourism

Cyprus is a major tourist destination in Europe. Warm climate, natural resources, multicultural diversity, well organized services and facilities are some of the characteristics of the sector that result in the attraction of more than 2 million tourists per year. Tourism has been a major sector in the Cypriot economy since 1980 and it still employs an important number of Cypriot residents. Diversification of Cypriot tourism and opening to new markets are core strategies currently pursued by policy makers. Due to the fact that arrivals start from April till October, future planning involves also repositioning of Cyprus in the international tourism market as winter destination. Major source markets for Cypriot tourism are the UK, representing 39% of total visitors (2012), and Russia (19% of total). Cyprus has also focused on the improvement of airport infrastructures and marinas (e.g. Limassol Marina, the first full service super yacht marina in Cyprus).

At a first level, there are various agents that take part in the value chain such as the intermediaries whom make it possible to carry out these activities including the travel agencies, tour operators and the carriers of the passengers (e.g. airline, cruise lines etc). In addition, during the tourists' stays, various players are essential part of the chain, mainly hotels, food and beverage retailers and HORECA sector. Currently, the provision of e-services for the promotion of Cyprus has been recognized as core element of the value chain.

Finally, all the activities are "supervised" by the public authorities who set the relevant regulations after consulting all main players and relevant associations.

Cruise tourism

Despite the global economic crisis, the cruise industry continues to show steady growth. The number of people choosing a cruise holiday in Europe has more than doubled in the past decade attracting almost a million passengers from outside Europe.

Cyprus is among the major ports of call in Europe, also due to its proximity to major cruise destinations such as Greek islands and Israel, and in 2010 the island welcomed to more than 380,7[20] thousands cruise passengers. During 2010, 45 cruise ships included Cyprus in their itineraries, resulting to 276 calls[21]. Apart from foreign cruise companies there are also national providers offering cruise packages and a number of companies which operate in the sector. More in general, it is worth to mention that the island is a destination market but has not yet managed to become a cruise homeport, excepted for few instances.

Value chain includes the cruise companies and the ports, which are the biggest player of the value chain. Especially as regards ports, they provide a number of treating services to cruise ships such as bunkering, watering etc. Travel and tourist agents are involved in the promotion of cruise packages and the organization of shore excursions. Moreover, in the case of cruise ships starting a cruise from a Cypriot port, a number of supportive activities are developed such as supplies and transport services.

Offshore Oil and Gas

Over the past few years, Cyprus has been developing systematic actions and plans in the oil and gas sector in order to strengthen the security of energy supply, to enhance energy self-sufficiency and to shield the country's geostrategic role. The Republic of Cyprus announced the 1st Licensing Round Offshore Cyprus in 2007 and one exploration license has been awarded to Noble Energy International Ltd for exploration block 12. On 11th February 2013 the Government signed with Delek and Avner the assignment of 30% of the

[20] ECC (2010)
[21] http://www.cpa.gov.cy/CPA/userfiles/file/Annual_report_2010.pdf

rights of Noble Energy International Ltd in Block 12. Through the 2nd Licensing Round, which was announced in 2012, five additional exploration licenses have been awarded, three to ENI/KOGAS for exploration blocks 2, 3 and 9 and two to Total for exploration blocks 10 and 11.

In September 2011, Noble Energy began exploratory drilling in block 12 and few months later (28 December 2011) a natural gas discovery, which initially estimated to 7 Tcf, was announced (Aphrodite gas field). An appraisal well has been drilled in Aphrodite field in 2013 and the early estimations indicate 5 Tcf natural gas resources.

The recent discovery of substantial gas deposits in Cyprus's Exclusive Economic Zone (EEZ) turns Cyprus is very promising and Cyprus has the potential to become a major player in the oil and gas sector.

At Vasilikos, a new oil transshipment is under construction and the first phase of development is scheduled to conclude in early 2014. Planning of the Cyprus government also includes the construction of a liquefied natural gas (LNG) facility at Vasilikos supplied with natural gas from the country's offshore territory but could also incorporate natural gas from elsewhere in the eastern Mediterranean. In the prospect of new discoveries to be made in other blocks elsewhere in the Levant Basin, LNG terminal in Vasilikos would be able to coop with demand. Almost 4.800 new job positions (during all drilling, constructional, operational and distributional phases and all educational backgrounds) will be opened[22].

Currently the activity does not exist. The Republic of Cyprus is expected to evolve in a relatively short period from a status whereby it is not even an importer of gas, to one where it participates across its value chain; including production of gas; its transportation and use in the local market; liquefaction; and marketing of available export volumes internationally, alone or in collaboration with Israel.

4.3 Description of economic and infrastructural scenario

Deep sea shipping

According to the Central Bank of Cyprus, in 2009, the financial contribution of ship-management to the country's GDP amounted to 4,5%. The entire shipping industry contributes more than 5,5% of the total GDP. It is estimated that approximately 4% of the world's fleet is managed from Cyprus. 87% of the ship owning and ship management companies established and operating from Cyprus are of EU interests. Cyprus is amongst the top-five countries in the world with the largest number of third-party ship management companies. The sector employs directly about 4.500 shore-based personnel, 3.420 Cypriot and European seafarers. The annual revenues of the government from fees and taxes paid by these companies is around 8,5 million euro. Despite the global economic recession the sector is still growing. Specifically, revenues from the ship management services in 2012 presented a 2% increase compared to 2011[23]. During 2012, more than half of the revenues of the industry were generated by ship management services (crew, technical and full management). Furthermore, there are two elements that can enhance further the contribution of the sector both in national level and in European level. These are: the fully upgraded tonnage tax system, which is expected to attract new ships in the national registry and the interventions in port infrastructures.

Major players in the sector, from the side of the State, are the Department of Merchant Shipping of the Ministry of Communications and Works and the relevant associations, such as Cyprus Shipping Chamber and Cyprus Union of Shipowners. From the side of the market there are many important players[24], indicatively some of them are: Intership Navigation Company Ltd, Bernhard Schulte Ship management, Unicom Management Services, and Columbia Ship management Ltd, , Schoeller Holdings Ltd, Reederei NORD Ltd, Marlow Navigation Co. Ltd, Uniteam Marine Ltd, etc.

[22] Human Resource Development Authority of Cyprus, 2012
[23] Ship Management Survey, 2012 (http://www.centralbank.gov.cy/media/pdf/SM_Survey_Jan-June12.pdf)
[24] http://www.cipa.org.cy/cyprus-investment-sectors/shipping/

Deep sea shipping can contribute to the environmental sustainability of Europe-as being an environmental friendly transport mean. Regarding Cypriot shipping industry, this is fully aligned with relevant European and international environmental and safety regulations. Furthermore, Cypriot institutions participate in a variety of European projects regarding the improvement of ship efficiency and the application of eco-friendly technologies.

Securing fresh water supply (desalination)

The government planned to expand desalination production of fresh water. As a result the number of enterprises and persons engaged in the process are increasing. Specifically, in 2008 only two companies were providing services. In 2009, this number was doubled and 60 people were employed. In 2010 another company started operation, resulting to a total number of five companies. Regarding the added value, in 2009, this was 22 million euro, while in 2010 an increase of 15% was recorded.

Policy Makers and main stakeholders are the Council of Ministers (overall responsibility for the Implementation Plan), Ministry of Agriculture, Natural Resources and Environment, Water Development Department, Ministry of Interior, Ministry of Finance, Planning Bureau.

Market's main players are Joint venture Caramondani Desalination Plants Ltd, Larnaca Water Partners (joint venture between IDE and OCEANA from Israel), Mekorot Development & Enterprise, Logicom, Demetra.

Although the operation of desalination units is considered to be responsible for a number of environmental effects such as greenhouse gas emissions and degradation of marine environment, it remains the only climate independent source of water, which can ensure economic viability and social stability[25]. At national level, universities conduct research on the environment sustainability of desalination plants and particularly on the use of alternative sources of energy for improving the energy efficiency of plants.

Marine aquaculture

Production recorded upward trends during the last years and in 2011: total production reached 5.015 tonnes (of which 65% were seabream and 32% seabass) for a value of 32 million euro, increased by 43% from previous year. Concerning the evolution of the production of seabream this has been doubled from 2001, while the respective of seabass from 300 tonnes in 2001 reached 1.651 tonnes in 2011. In 2011 there were nine marine open sea cage farms, three private marine fishery hatcheries and a shrimp hatchery/breeding unit.

The added value of the sector in 2010 was 16,3 million euro. The total direct employment in the sector was 1.400 in 2010 increased by 43% with respect to the previous year. The indirect impact of aquaculture in employment is estimated to 1.000 persons, employed in cluster activities.

The sector is strongly export-oriented: out of 5.000 tonnes produced in 2011, more than half (2.908 tonnes) were exported, valued 16,2 million euro. Compared to the previous year, in 2011 exports of aquatic products increased by 29%. As a result of the total value of exported aquaculture products, the trade balance in fisheries products presented significant improvement. This result reflects and emphasizes the importance of aquaculture in the economy of Cyprus

Main Player of the sector are Kimagro Fishfarming Ltd, Seawave Fisheries Ltd, Blue Island Fish Farming Ltd and Telia Aqua Marine.

The main players and the policy makers-stakeholders are involved in many stages of the value chain in Marine aquaculture. Aquaculture sector is regulated by the Ministry of Agriculture, Natural Resources and Environment, through the Department of Fisheries and Marine Research (DFMR). The activity supply chain also includes the producers (fish farming companies), retailers, exporters, transporters, sellers, and finally the consumers.

[25]http://www.futuredirections.org.au/publications/food-and-water-crises/166-desalination-a-viable-answer-to-deal-with-water-crises.html

Offshore aquaculture can contribute further to the sustainable development of the regional sector and especially the establishment of farms in deeper waters, since it could respond to the current state of limited space, mitigating potential conflicts regarding coastal uses. Marine aquaculture development can contribute also to the preservation of widely consumed species.

Coastal tourism

Opposite to the positive expansion of the international sector in the period 2000-2010, Cyprus experienced a downward trend in tourism arrivals of 2,1% per year. In 2001 the number of tourism arrivals reached 2,7 million and the corresponding tourist receipts accounted for 2,2 billion euro. Till 2009, the sector experienced a decline of almost 20% in tourist arrivals. From 2010, the trend has been reversed and an increase of 1,5% was recorded. In the last two years, tourist arrivals reached 2,39 million in 2011 (+10%) and 2,46 million(+3%) in 2012 respectively. Tourist receipts in 2001 was 2,2 million euro while in 2010 1,5 million euro, recording a 2,6% rate of decrease per year. From 2010 and after, the sector experience a positive growth rate in tourist receipts surpassing 10% in 2011 and 2012. It has to be highlighted that Cyprus is among the top 20 tourist regions in the EU-27 (2011 data).

In 2000, tourist sector constituted almost 23% of the Cypriot GDP but due to the recession and the decreased numbers of tourist arrivals, in 2009 this percentage reached 10%.

Table 9 - Tourists arrivals and revenues in 2010, 2011, 2012

	2012	2011	2010
TOURISTS ARRIVALS[26]	2.464.908	2.392.228	2.172.998
CHANGE %	3,0%	10,1%	1,5%
REVENUE (in Million)	1.927,7	1.749,3	1.549,8
CHANGE %	10,2%	12,9%	3,8%

Republic of Cyprus, Statistical Service,2013

Main institutional players are the Ministry of Energy, Commerce, Industry and Tourism and especially the Cypriot Tourism Organization which is responsible for tourism policy. Further stakeholders are the Cyprus Hotel Association, the Association of Cyprus Tourist Enterprises and the Association of Cyprus Travel Agents.

From the side of the market, main players are: Leptos Group, Lordos Hotels, Tsokkos Hotels, Aqua Sol Hotels, Louis Group, Salamis Group, Kanika Group, Mantovani Plotin Travel Ltd etc.

The promotion of physical environment is currently perceived as source of competitive advantage, which can enhance tourism experience. Furthermore, the current strategy for alteration of the profile of the national sector, in combination with the clear objective of developing and promoting qualified service, is expected to enhance the sustainable development of the sector while preserving natural resources.

Cruise Tourism

In 2008, cruise passengers amounted to 376.000, while this number dropped in 2009 by 14% to increase again in 2010 by 18%. In 2010, Cyprus ranked amongst the major European ports-of-call with more than 380.000 passenger throughputs. This fact could be partially be explained by the emergence of new destinations and the fact that the region in general was affected by the political instability of neighbor countries and cruise companies preferred safer destinations. Regarding the number of embarkations, 55.000 (or 1% of the passengers embarked from European ports) passengers started their cruise itinerary from Cyprus. Respectively, in 2011 cruise passengers visited the island amounted to 303.000.

The contribution of the cruise sector to Cypriot economy[27] is estimated to 59 million euro which mostly came from the expenditures of cruise passengers during their visit in the island. Compared to year 2008,

[26] Data for March 2012 are based on estimates
[27] ECC (2011)

expenditures present an upward trend of 28%. In 2010, around 600 people were directly employed in the sector, which generated an estimated GVA of 169 million euro, increased by 9% from previous year. In 2011 direct spending reached 56 million while persons employed were 1.100 people.

Port improvements are expected to favor the development of sector providing upgrading services and secure infrastructures.

Main Players of the sector are Cyprus Port Authority –which is responsible for the port policy, CTO, Louis Hellenic Cruises, Salamis Cruises

Currently the cruise tourism receives criticism due to its mass character and the impacts generated to the environment. However, cruise tourism can contribute to the sustainability of destinations' areas given the fact that natural resources are part of the experience of the visitor, which must be protected. Furthermore, destinations with major environmental problems usually exceed their carrying capacity limits creating conditions of imbalanced development. Given the fact that Cyprus has not reached its carrying capacity and in combination with measures for mitigating any negative impact, cruise tourism should not have negative effects on the environment.

Offshore Oil and Gas

The companies which are operating at the current stage offshore Cyprus are Noble Energy International Ltd, Delek, Avner, ENI, KOGAS, Total.

Offshore oil and gas sector can be claimed to be of high risk regarding environmental protection (due to the severe effects of a potential accident). A Strategic Environmental Assessment (SEA) study regarding the hydrocarbon licensing program within the Exclusive Economic Zone of the Republic of Cyprus, was prepared by the Ministry of Energy, Commerce, Industry and Tourism and approved by the Department of Environment in 2008. The licensees for hydrocarbon activities offshore Cyprus are bound to follow and comply with the results and recommendations of the SEA. According to the Assessment of Environmental Impact from Certain Projects Law, for the exploration drilling it is necessary the submission of a Preliminary Impact Assessment (EIA) Report and for the exploitation drilling it is necessary the submission of a full Environmental Impact Assessment (EIA) Study. Additionally, the Republic of Cyprus has signed and ratified the Protocol for the protection of the Mediterranean Sea against pollution for exploration and exploitation of the continental shelf and the seabed and its subsoil (Offshore Protocol) in 2001. The Offshore Protocol entered into force in 2011. Competent authority according to the Offshore Protocol is the Minister of Agriculture, Natural Resources and Environment. The Protocol covers the offshore exploration and exploitation of hydrocarbons, including the seismic surveys.

Moreover, the development of the national sector activity is expected to substitute the use of oil with locally produced gas and thus to have a positive impact on lowering greenhouse gas emissions and make the economy greener by replacing other fossil-fuels[28] while improving its energy security.

4.4 Regulatory environment of the maritime economic activity

Deep sea shipping

In the 1960's Cyprus introduced a key legislation providing ship managers and owners a more simplified and tax-efficient business environment, which was the beginning of Cyprus transformation in a global hub for ship owning and ship management services. The new Cyprus Tonnage Tax System was approved by the European Commission in March of 2010. The new Merchant Shipping (Fees and Taxing provisions) Law of 2010[29] covers issues concerning ship ownership, ship management and vessel chartering. The new Cyprus Tonnage tax System increased competitiveness and made Cyprus more attractive for ship managers, owners and charterers.

[28] http://www.pwc.com.cy/en_CY/cy/publications/eum/assets/cyprus_hydrocarbon.pdf

[29] http://www.mcw.gov.cy/mcw/dms/dms.nsf/3acf710d541a3e29c2257500004c21df/f92067c0c99a295fc225772e00332bd0?OpenDocument

As a member of the EU, Cyprus has a regulatory framework that is harmonized with EU requirements. Furthermore, Cyprus is part of all major Conventions of the International Maritime Organization and of the International Labour Organization. National legislation relating to the shipping industry, inter alia, includes:

- The Merchant Shipping (Registration of Ships, Sales and Mortgages) Laws of 1962- 2005
- The Merchant Shipping (Fees and Taxing Provisions) Law of 2010
- The Merchant Shipping (Masters and Seamen) Laws of 1963-2002
- The Maritime Labour Convention 2006 (Ratification) and for Matters Connected Therewith Law of 2012[30] ;

Cyprus was one of the first countries to approve detailed legislation[31] allowing armed guards aboard Cypriot-flagged vessels in June 2012 as a way to combat the growing international threat of piracy (The Protection of Cyprus Ships against Acts of Piracy and Other Unlawful Acts Law of 2012)[32].

The agreement regarding the future macroeconomic adjustment that signed between Eurogroup and Cyprus will not affect the Shipping sector leaving the Department and the Register of Cyprus ships to operate as usual according to the Ministry of Communications and Works announcement of the 27th of March 2013. Cyprus tonnage tax system is 'locked' for ten years since it complies with the European Union State Aid Policy unlike the other tonnage tax schemes. The situation which has emerged in which banks are the main problem of Cyprus does not have direct or indirect effect on the maritime business sector since the banks in Cyprus, historically, have not been active in ship financing. Thus the recent developments are not affecting and have had no impact on the financing of Cyprus ships.

Competent Authority: The Cyprus Department of Merchant Shipping (www.shipping.gov.cy)

Shipping Associations: The Cyprus Shipping Chamber and the Cyprus Union of Shipowners are the shipping associations of the maritime industry in Cyprus, (www.csc-cy.org, www.cus.com.cy) representing the interests of ship-owners and ship-managers, promoting the interests of Cyprus shipping and enhancing the reputation of the Cyprus flag, among other priorities. The specific regulatory environment generates long term stability, while offering favouring financial conditions, especially regarding tax regime (tax tonnage instead of tax on actual profits). The wider legislative regime aims at improving safety, enhancing flagging to the Cypriot registry and consequently improving competitiveness, maintaining know- how, generating employment and holistically promoting the development of the sector.

Securing fresh water supply (desalination)

EU Legislation

- Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy

Cyprus (national) Legislation

Law for Water and Soil Pollution Control, which was introduced in 2002, is part of the broader legislation for the protection of the environment from all kinds of pollution (industrial or not). Also, the Water Protection and Management Law, 13(I)/2004 scope is to prevent further deterioration of aquatic ecosystems and to protect and improve their situation in terms of their water needs, to ensure the progressive reduction of pollution of all water, to promote sustainable water use based on long-term protection of water resources.

Furthermore, the Integrated Water Management Law, 79(I)/2010, which was brought into force in 2010, ensures the fullest coverage of reasonable water needs for domestic, agricultural and industrial uses. It also ensures the use of water in a sustainable manner based on long term protection of available water resources, addresses the current or future unbalanced water supply and demand.

[30] http://www.mcw.gov.cy/mcw/dms/dms.nsf/3acf710d541a3e29c2257500004c21df/2233c4ab908e8b05c2257a4f003dbd07?OpenDocument
[31] http://www.mcw.gov.cy/mcw/dms/dms.nsf/listlegislation_en/listlegislation_en?OpenDocument
[32] http://www.cyprusprofile.com/en/sectors/maritime-and-shipping

The Quality of Water Intended for Human Consumption Law was enacted in May 2001 (Law No.87 (I) / 2001), fully covering contemporary requirements to safeguard drinking water quality. The law provides for the abolition or reduction and control of water pollution in Cyprus, for the best protection of the natural water resources and the health and well being of the population. It also provides for the protection and improvement of the environment and the animal and plant life in water.

Marine aquaculture

- Aquaculture Law 117(I) / 2000 and its amendments until 2010
  http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/All/54B3A3A9422D24B84225778B002A5BAC/$file/N.117(I).2000.pdf?OpenElement
- Aquaculture general Regulation 274/2000 and its amendments until 2010
  http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/All/6E4FDFA8585C45454225778A002FB89C/$file/N.161(I)-2002.pdf?OpenElement
- Law 161(I) / 2002 and 68(I) / 2004 regarding the organizations of aquaculture producers and relevant regulations 201/204 and 346/2006
  http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/All/6E4FDFA8585C45454225778A002FB89C/$file/N.161(I)-2002.pdf?OpenElement
  Law 106(I)/2002: The control of water pollution and soil
  Law 13(I)/2004: Protection and Water Management
  Law 407(I)/2007: Law regarding the Pollution of water
  http://www.cyprus.gov.cy/portal/portal.nsf/gwp.getGroup?OpenForm&access=0&SectionId=business&CategoryId=Legislations&SelectionId=Laws%20regarding%20aquaculture&print=0&lang=en

Legislative regime in Cyprus specifies conditions, procedures for licensing, rules of operation and foresees cases of recalling of the licences and penalties in cases of violation of the rules. High importance is given to the sustainability of the sector and thus environmental assessment is required in the context of securing people's health and protection of the environment. The improvement of bureaucratic procedures could facilitate the development of the sector.

Coastal Tourism

Cyprus has a developed legislation, focused on guiding development and regulatory controls paying attention to the coastal area. Parallel policies for the management of coastal resources (fisheries, marine habitats, water, agriculture, tourism, liquid and solid wastes, road traffic, etc.) are designed and implemented by competent authorities under their own legal and administrative framework.

Legislation related to tourism in general also applies to coastal tourism as following:

- The Hotels and Tourist Establishments Laws 1969 to 2000
- The Hotels and Tourist Establishments (General) Regulations 1985 to 2002
- The Hotels and Tourist Establishments (Tourist Camping) Regulations 1977
- The Hotels and Tourist Establishments (Complex of Tourist Villas) Regulations 1993
- The Hotels and Tourist Establishments (Traditional Buildings) Regulations 1993 and 2000
- Denied Boarding Compensation EEC Regulation No 295.91
- Law Regarding the unfair commercial practices towards consumers N.103(I)/2007
- Law regarding organized travels, vacations, and tourist guides 1998[33]
- The Catering and Entertainment Establishments Laws 1985 to 2000
- Establishment and operation of tourism and travel offices No 41(I) of 1995
- The Law on the Management of Bathing Water Quality (No. 57(I)/2008 with the objective of protecting public health and the environment.
  http://www.visitcyprus.biz

As suggested the legal framework of tourism requires specific reforms for corresponding to the contemporary needs of tourism sector, especially regarding the hotels and tourist establishment laws so as

[33] http://www.acta.org.cy/consumers-services/laws-related

to facilitate the activity, to provide incentives for the upgrade of infrastructures and treat seasonality. Also, specific interventions required the facilitation of visa procedures and the treatment of red tape.

http://www.visitcyprus.biz

Cruise tourism

Law 51 (I) 1998-Law on organised trips, vacations and tours legislation: the law set all the rules and the necessary framework concerning on trips, vacations and tours in general including cruise tourism[34]

Errore. Riferimento a collegamento ipertestuale non valido. There no legislative restrictions regarding the preconditions for home-porting. Merchant Laws also apply in the cases of cruise ships flying the Cypriot flag**.** The formulation of a specific strategy for the sector it could facilitate the development of the sector.

Offshore Oil and Gas

As a member of the EU, Cyprus has aligned its energy policy with the EU laws and transposed all relevant EU Directives into national law. The Hydrocarbons (Prospection, Exploration and Exploitation) Law 4(I) / 2007 (Hydrocarbons Law) transposes Directive 94/22/EC on the conditions for using authorizations for the prospection, exploration and production of hydrocarbons, into national law. In this context there are the Hydrocarbons (Prospection, Exploration and Exploitation Regulations of 2007 and 2009.

Legislation[35] foresees the procedures and rights of successful bidders for exploration and exploitation. Furthermore, the activity is developed under the relevant legislation regarding[36] "The Continuous Zone Law" (2004) and the "Declaration of the EEZ Law" (2004). In this context a series of agreements have been signed with its neighbor countries such as Egypt, Lebanon and Israel. As favoring element of the current legislation regarding the sector is the low corporate tax for attracting investments.

The Ministry of Agriculture, Natural Resources and Environment is the competent authority for the implementation of the Offshore Protocol under the Barcelona Convention which amongst others grants authorization for activities concerning exploration and / or exploitation of the mineral resources in the Mediterranean Sea.

Legal framework regarding the sector is clear regarding all the stages of the production, facilitating licensing procedures. As favoring element of the current legislation, applied also in the sector, is the low corporate tax for attracting investments

[34] http://www.mcit.gov.cy/mcit/mcit.nsf/All/D8F54B1DAA4F2458C22571AA002618A4?OpenDocument
[35] http://www.mcit.gov.cy/mcit/mcit.nsf/All/A6D222B09D72E659C2257441002EE9BE?OpenDocument
[36] http://www.kpmg.com/CY/en/IssuesAndInsights/ArticlesAndPublications/Documents/Publication/Cyprus-Oil-Gas-Current-Developments-and-Opportunities.pdf

5. Growth drivers and barriers to growth for the 6 most promising marine and maritime economic activities

Tables below provide an overview of growth drivers and barriers to growth summarising both benchmark and SWOT analysis.

Table 10 – Growth drivers and barriers to growth for Deep-sea shipping

DEEP-SEA SHIPPING	Growth drivers	Barriers to growth
Maritime research	- Research from maritime institutes	- Limited scientific resources –high risk of undertaking "expensive" research
Development and innovation	- High Quality Fleet - Competitive tonnage-tax system - Responsible "Open Registry"	- Limited dedicated marine technology related programs of studies
Access to finance	- Self-finance ability of the sector	- Limited interest from national bank institutions to ship finance
Smart infrastructure	- Existence of sufficient port infrastructures and current national investment plan for developing and redeveloping infrastructures and superstructures	- Turkish restrictive measures against vessels that fly the Cyprus Flag - Closed ports
Maritime clusters	- Strong ship management sector, with location of many companies - Strong clustering with linkages with the international market	- No ship building industry - Limited ship repair activity- especially compared to registered vessels
Education, training and skills	- Know-how and expertise in ship management - Qualified workforce	- No barriers identified
Maritime spatial planning	- Under development	- Under development
Integrated local development	- Contribution through Corporate Social Responsibility programs, charities and philanthropic activities	- Small domestic market
Public engagement	- Stable framework conditions and favouring legislative regime - Committed maritime administration	- Red Tape

Table 11 – Growth drivers and barriers to growth for Securing fresh water supply

SECURING FRESH WATER SUPPLY	Growth drivers	Barriers to growth
Maritime research	- Research from universities and pilot application of the use of alternative forms of energy such as solar thermal energy for the operation of desalination units	- Limited funding resources and personnel for research
Development and innovation	- Sufficient infrastructure of high productivity - Existence of mobile plants - Small scale private desalination units	- Environmental impacts from the operation of desalination units-high mitigation cost - High energy consumption
Access to finance	- BOT financial method	- No barriers identified
Smart infrastructure	- Sufficient infrastructure of high productivity - Existence of mobile plants	- High cost of infrastructures
Maritime clusters	- No clusters identified	- No clusters identified
Education, training and skills	- Universities have departments that can provide the specialized personnel needed	- No specialized courses; no specialized personnel
Maritime spatial planning	- There are specific criteria for the location of plants – environmental impact assessment required. MSP rests however under development	- Under development
Integrated local development	- Strong links with other economic sectors such as tourism and agriculture	- Public awareness due to environment effects
Public engagement	- Dedicated administration - International relations with other countries for collaboration and transfer of know-how	- Potential threat due to limited resources for establishing measures for mitigating climate change through the use of new technologies in the field - Limited funded for relevant research

Table 12 – Growth drivers and barriers to growth for Marine aquaculture

MARINE AQUACULTURE	Growth drivers	Barriers to growth
Maritime research	- Laboratories conduct research on new species cultivation , fish biology, marine ecology, seawater analysis, mooring standards etc - Established international research links	- Risks of undertaking large scale research - Limited funding to research
Development and innovation	- Use of open sea technology - Export sector	- Small size of farms –low production volume and low technological development - Increased competition from European and non European producers - Distance from main European markets
Access to finance	- European funding represent concrete opportunities for financing the sector	- Limited funding to research
Smart infrastructure	- Existence of relevant infrastructure to support production and distribution of aquaculture products	- Inadequate port and land facilities
Maritime clusters	- No clusters identified	- No clusters identified
Education, training and skills	- High educated and qualified personnel	-
Maritime spatial planning	- Concentration of production units in the South of the island (unofficial mariculture zone)	- Limited sites available for new farms establishment
Integrated local development	- Important number of locals are employed in the sector	- Lack of cooperation among producers for promoting local production - Increase of other activities can affect the development of the mariculture sites currently licensed - Conflict with tourism and bathing water quality - Environmental impacts from aquaculture accumulative high mitigation cost
Public engagement	- Dedicated administration monitoring the quality of the production	- Licensing procedures and bureaucracy

Table 13 – Growth drivers and barriers to growth for Coastal tourism

COASTAL TOURISM	Growth drivers	Barriers to growth
Maritime research	- Research on coastal and marine tourism (ex. economic, environmental impact etc)	- Limited financial sources
Development and innovation	- Climate conditions, short distance among major attractions, qualitative services	- Lack of sufficient funding for further improvement of services and development of new forms of products - Expensive destination - Competition from emerged non EU destinations - Dependency from tour operators - Weakened hospitality image
Access to finance	- Presence of incentives for the modernization of local touristic product	- Current difficulties to attract new investments - Difficulties of SME''s to access private finance - Limited sources for research
Smart infrastructure	- Wide scale infrastructures and provision of e-services	- Ageing infrastructures
Maritime clusters	- Strong linkages with major stakeholders of the sector	- Need for closer cooperation related to spatial planning and cluster development
Education, training and skills	- Well educated personnel	- No barriers
Maritime spatial planning	- Under development	- Under development
Integrated local development	- Existence of relevant legislation applied in local level - Tourism board design local development activities and plans	- Overconcentration of economic activities in coastal areas - Loss of productive resources - Environmental pressures
Public engagement	- Existence of associations participating to policy process - Tourism boards design local development activities and plans	- Low priority from co-responsible public services - Difficulties for Regional Boards to implement strategies, mostly due to limited funding - Red tape

Table 14 – Growth drivers and barriers to growth for Cruise Tourism

CRUISE TOURISM	Growth drivers	Barriers to growth
Maritime research	- Presence of research concerning sector's related areas such as ships' technology, environment and economy	- Limited financial resources
Development and innovation	- Existence of national cruise companies - Port infrastructures(existed and under development)	- Unstable political conditions of neighbouring countries
Access to finance	- PPP legislation	- Limited financial resources for interventions in city level and support of the regional tourism boards
Smart infrastructure	- Port infrastructures(existed and under development)	- Ageing accommodation infrastructures
Maritime clusters	- No specialized cluster	- No specialized cluster
Education, training and skills	- Experienced personnel	- No specialized courses
Maritime spatial planning	- Under development	- Under development
Integrated local development	- Promotion of local production to cruise passengers - No conflict with other maritime activities	- Potential competition among cruise tourists and conventional tourists - Possible environmental pressures
Public engagement	- Development planning - Support promotional centres	- Limited funding

Table 15 – Growth drivers and barriers to growth for Offshore oil and gas

OFFSHORE OIL AND GAS	Growth drivers	Barriers to growth
Maritime research	- Extensive and ongoing research for the discovery of new resources	No barriers identified
Development and innovation	- Substitution of imported oil products with produced gas[37]	- Unstable conditions with neighbouring countries
Access to finance	- PPPs are supported	- High cost of infrastructures
Smart infrastructure	- Investments on infrastructures in order to convert them for the purpose of supporting the activity.	- No barriers identified
Maritime clusters	- No clusters	- No clusters
Education, training and skills	- Existence of university degree programs - Training programs	- Limited possibilities for locals to be employed to the preliminary phase of exploitation - Training programs of limited duration
Maritime spatial planning	- Exclusive economic zone	- Competition for space
Integrated local development	- Developed shipping industry - Development of complementary sectors and supportive sectors	- Competition with currently developed activities such as aquaculture plans already located in the area and tourism
Public engagement	- Favoring legislative framework regarding the attraction and establishment of companies - Favoring tax system - International tax treaties for encouraging investments	- Relative limited resources regarding institutional capacity may lead to discouragement of investments (institutional capacity) - Ability of various bodies to collaborate and to produce expertise for facilitating the development of the sector

37 http://oilgas.flemingeurope.com/webdata/2679/The%20Offshore%20Discovery%20in%20the%20Republic%20of%20Cyprus%20%20Monetisation%20Prospects%20and%20Challenges.pdf p. 12

6. Analysis of maritime strategies at regional and national level, as well as those under preparation and their links with Smart Specialisation Strategies

The table below presents a logical diagram on policies/interventions towards maritime activities and the Blue Growth objectives. The table illustrates the following:

- **"Strategic Development Plan, 2007-2013**" describes the growth strategic goals of Cyprus, based on eight interrelated development axis, related to competitiveness, research and innovation, social cohesion, environment, quality of life, accessibility, human capital and regional and rural development. Thus development plan is naturally connected to all identified marine and maritime economic activities and, then, linked with all Blue Growth areas.
- **"Cyprus River Basin Management Plan, 2011":** it describes the objectives and the measures for achieving the environmental objectives within Water Framework Directive. The specific management plan is connected with the treatment of water resources thus is directly connected with "Marine aquaculture", "Securing fresh water" and "Coastal tourism", affecting the performance of these activities. Water treatment is essential for the performance of the aforementioned sectors and thus the management plan anticipates all the necessary measures and actions related to the protection and monitoring of water resources as derived from relevant Directives.
- **"National Strategic Plan for Fisheries, 2007-2013":** it describes the general objectives and measures of Cyprus in relation with the fisheries sector. Particularly, among the main objectives of the Strategic Plan are: the sustainable management of fisheries resources, the sustainable development of aquaculture, processing and trading, improvement of the competitiveness of the sector, the development of fishery areas and development of fisheries infrastructures and the protection of the marine environment. In this context the National Plan is aligned with the objective of Blue Growth regarding contribution to the overall improvement in human diet and more qualitative merchandise, preservation of fish stock, sustainable aquaculture and diversification of coastal communities' activities. These objectives are supported through a number of measures related to collection of data, the application fishery research, the full application of the Common Fisheries Policy, the modernization and extension of aquaculture farms, application of quality systems, environmental monitoring etc.
- **"Strategic Plan for Tourism, 2011-2015'':** Main objectives of the Strategic Plan for Tourism are the improvement of the contribution of tourism to GDP and the viability of sector's enterprises, the promotion of the country as centre of tourism and entrepreneurship as well as international center for tourism activities, the sustainable exploitation of natural and cultural resources, the improvement of management systems of infrastructures, the introduction of new forms of tourism and the enhancement of a cluster of multiple highly competitive tourism products. In this context, the objectives of the Plan are aligned with the objectives of Blue Growth regarding 'health environment', 'increase growth potential of activities' and 'increase the attractiveness of coastal areas'. Suggested measures aim at increasing the competitiveness of the domestic sector through the enhancement of diversified tourism products, the promotion of alternative forms of tourism, improvement of infrastructures, exploitation of advanced technology for the promotion and management of tourism and protection of the environment as source of competitive advantage for the Cypriot industry.
- **"Strategic Environmental Assessment Concerning Hydrocarbon Activities within the Exclusive Economic Zone":** the aim of the strategic environmental assessment is to assess the environmental effects originating from the implementation of projects derived from licensing programs. Objectives of the assessment are the assessment of hydrocarbon activities that is expected to occur, description of control measures, measures for environmental protection and sustainable use of resources. In this context, the study concludes with specific recommendations for mitigating the

negative effects of the activity. In this context, suggested interventions are directly connected with the enhancement of energy resources and reduce greenhouse gas emissions.

- **Strategic Environmental Assessment concerning Desalination Plants (2010):** The aim of the Strategic Assessment is the evaluation of the environmental effects derived from the Desalination Plants, which anticipates the construction of a number of projects aiming at tackling water supply in the urban and touristic regions of the island and further contributing at the efficient management of water resources. This is linked with specific objectives of the Blue Growth regarding the 'increase of the attractiveness of coastal areas' and ' increase of growth potential of activities'. Specifically, water supply is of high importance for ensuring the quality of life for the residence and also a precondition for the development of other economic activities such as coastal tourism, agriculture etc. The assessment suggests specific measures for mitigating the negative externalities originating from the operation of the desalination plants, contributing to sustain environmental conditions and consequently a healthier environment.

Summarizing the core objectives of the aforementioned strategies and development plans, these are based on two major axes: the **economic and the environmental dimension of the maritime activities, as preconditions for ensuring the sustainable development of the activities and consequently the quality of life for the residents**. In this context, focus is given to measures that improve the business environment and support the activity of the SME's.

Moreover, within strategies funding opportunities (mostly from operational programs) and incentives are provided for improving the quality of current services and the development of new ones, aimed at diversifying local production and enhancing the overall competition of the related economic activities. Furthermore, specific measures and actions are described in the context of protecting natural resources.

Most strategies are dedicated to specific activities but the outcome of the applied measures and the results of monitoring mechanism affect the performance of many other sectors (for example the monitoring of the aquaculture production is an activity aimed at ensure the quality of production, but this measure is indirectly connected with the quality of water resources and consequently to the quality of the environment of coastal areas). Therefore, **strategies create many synergies across multiple sectors/branches of economic activity**. The lack of MSP (currently under development) is a factor that affects the growth potential of activities since there is no integrated planning for available sites and the activities that can be developed.

Table 16 - Policies/interventions towards marine and maritime activities and the Blue Growth objectives

Level	Strategies	Objectives	Most relevant and promising maritime activities	Links to BG Objectives	
National	Strategy development Plan 2007-2013[38]	Enlargement of the productive dynamics of the economy and productivity improvements by boosting the diversification of economy toward high-value -added services Protection of the environment and improvement of the quality of life. Participation of all people in the benefits associated with growth, consolidation of conditions for social cohesion, justice and full employment. Protection of the environment and improvement of the quality of life. Reorganisation and modernization of public administration and of the broader public sector in general, at all levels. Reinforcement of production of innovation as well as of research and growth. Promotion of the dissemination of new technologies and the knowledge society. Elimination of access problems, Constant growth of human capital. Rational and balanced regional and rural growth.	Marine aquaculture	- Contribution to the overall improvement in human diet and more quality merchandise - Diversification of coastal communities activities - Preservation of fish stock- sustainable aquaculture - Promote aquaculture based and the exchange of best practice	Aquaculture
			Securing fresh water Coastal tourism &Yachting Cruise Tourism	- Health environment - Increase the growth potential of activities - Increase the attractiveness of coastal areas	Maritime, Coastal and Cruise Tourism
			Offshore oil and gas Deep Sea Shipping	- Enhance efficiency of harvesting the European energy resources - Minimize land-use requirements of the power sector - Reduce the European greenhouse gas emissions - Advance in technology - Security supply - Provider of mass market products - High added value specialized products	Blue Energy Marine and Mineral Resources Blue Technology
National	National Strategic Plan for Fisheries, 2007-2013[39]	Improvement of the competitiveness of fisheries sector. Sustainable management of water resources regarding the fisheries sector. Encouraging the economic viability of companies. Improvement of operational control. Guarantee food safety and the health of farmed species. Exploitation of the comparative advantages of Cyprus (geographic location, climate conditions, business interest).Integration of environmental considerations and reduction of environmental impacts. Improvement of legal and institutional framework.	Marine aquaculture	- Contribution to the overall improvement in human diet and more quality merchandise - Diversification of coastal communities activities - Preservation of fish stock- sustainable aquaculture - Promote aquaculture based and the exchange of best practice	Aquaculture
National	Cyprus River Basin Management Plan 2011	Prevention of further deterioration and protection of the status of all water resources. Promotion of sustainable water management through long-term protection of available water resources. Progressive reduction of groundwater pollution. Protection of the aquatic environment by implementing measures to reduce pollutant discharge and eliminate discharges of toxic. Contribution to the confrontation of extreme events floods and drought.	Marine aquaculture	- Contribution to the overall improvement in human diet and more quality merchandise - Diversification of coastal communities activities - Preservation of fish stock- sustainable aquaculture - Promote aquaculture based and the exchange of best practice	Aquaculture
			Securing fresh water	- Health environment - Increase the growth potential of activities - Increase the attractiveness of coastal areas	Maritime, Coastal and Cruise Tourism
National	Strategic Plan for	Increase in total direct and indirect tourism	Coastal tourism & Yachting / Marinas	- Health environment	Maritime, Coastal and Cruise Tourism

[38] http://www.planning.gov.cy/planning/planning.nsf/0/4B7FCB229CEB4B88C225750C003EF3DA/$file/sxedio_anaptyxis_small.pd
[39] http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/DMLnationalstrategic_en/DMLnationalstrategic_en?OpenDocument

Level	Strategies	Objectives	Most relevant and promising maritime activities	Links to BG Objectives	
	Tourism 2011-2015[40]	receipt. Provision of suggestions concerning the phenomenon of seasonality. Improvement of the viability of tourism enterprises. Upgrading the overall tourism experience offered by providing an enhanced tourist product with significant value added.	Cruise tourism	- Increase the growth - potential of activities - Increase the attractiveness of coastal areas	
National	Strategic Environmental Assessment Concerning Hydrocarbon Activities within the Exclusive Economic Zone[41]	Description and evaluation of the environmental effects of implementing hydrocarbon activities. Propose of reasonable alternatives taking into account the objectives and the geographical scope of the plan.	Offshore oil and gas	- Enhance efficiency of harvesting the European energy resources - Minimize land-use requirements of the power sector - Reduce the European greenhouse gas emissions -Security supply	Blue energy
National	Strategic Environmental Assessment concerning Desalination Plants	Description and evaluation of the environmental effects from the implementation of Desalination Plan.	Securing fresh water supply	-Health environment - Increase the growth - potential of activities - Increase the attractiveness of coastal areas	Maritime, Coastal and Cruise Tourism

[40] http://www.visitcyprus.com/media/Downloads/Strategy/Executive_Summary_Tourism_Strategy_2011_2015.pdf
[41] http://www.pwc.com.cy/en/publications/eum/appendixv/strategic_environmental_assessment.pd

The following table shows in more details the interconnections with Smart Specialization Strategies, encompassing all 12 strategies' horizontal directions. According to this table:

- "**Strategic Development Plan, 2007-2013**" is naturally connected to all identified maritime activities and, then, linked to most of the Smart Specialization Strategies. Particularly, Strategic Development Plan was the result of a Public Dialogue, where public authorities, District Administrations, local development bodies, representatives of business and citizens participated in the procedures. Within the Strategic Development Plan the role of new technologies is identified and further recognized as a factor which affects the competitiveness of Cypriot economy while strategic goal is the improvement of the entrepreneurship and the business environment by promoting the use of information and communications technology, encouraging public-private partnership, modernizing and improving institutional framework, developing specialized infrastructures etc. Research is also identified as a determinant which affects the sustainable development of the country and thus strategic goals promotes the increase of the financial contribution of the private sector, the upgrading of research infrastructures, the strengthening of national research system and its linkage with production. Green Growth is also recognized within the general axis of improving and protecting the environment. Main objective is to preserve a wealth environment and to implement the principle of sustainable development. In this context the Plan anticipates the implementation of relevant regulations, the construction of necessary infrastructures, public information and education, development of management systems, promotion of RES etc. Also, improvement of access and interconnectivity is promoted by the adoption of measures for improving and extending infrastructures. Culture is another important axis of the development plan. Overall, priorities and measures aimed at creating a friendly business environment for SME's, promotes culture, green growth, internationalization.
- **"National Strategic Plan for Fisheries, 2007-2013"** is linked with the objectives of Smart Specialization Strategies related to the creation of an innovative and friendly business environment for SME's since funding priority is given to small enterprises. Furthermore, national strategy is connected with the objective of research infrastructure, centers of competencies and science parks since it anticipates a number of activities related to the creation and improvement of research infrastructure and the promotion of innovative technologies. Also, National Plan was a clear orientation for supporting Green Growth since includes actions for the protection of the environment and the domestic production, the exploitation of soft forms of energy, the protection of specific species and the promotion of biological products.
- **"Cyprus River Basin Management Plan, 2011":** Objectives of the Management Plan is predominately linked with the Smart Specialization Strategies objective of Green Growth. Management Plan includes an extensive analysis as well the needs, alternative scenarios and measures implemented for the preservation and management of water resources the quality of which affects the growth potential of the region and the attractiveness of the area since aquaculture and mostly tourism will be affected by the degradation of these resources.
- **"Strategic Plan for Tourism, 2011-2015"** is connected to "Coastal tourism & Yachting" and "Cruise Tourism" MEAs and are related to the strategies of "Cultural and creative industries" and "Internationalization". More specifically, Strategy includes specific suggestions and measures for improving the image of the domestic sector, improving its competitiveness so as to increase its attractiveness and performance in a more international perspective. Infrastructures are a vital component for internationalization of the sector since these improve accessibility and improve all kind of services in the range of all the activities of the supply chain. Also, the promotion of alternative forms of tourism and the promotion of cultural and regional characteristics for the creation of new touristic products is aligned with the objective of cultural and creative industries. Strategy recognizes alternative products as mean for solving seasonality problems and are directly connected with the objectives for sustainable touristic development.

- **"Strategic Environmental Assessment Concerning Hydrocarbon Activities within the Exclusive Economic Zone"** is directly linked with Green growth, since the number of suggested measures and activities concerns the mitigation of potential side effects of the activity while proposing mitigation measures for the ensuring the sustainable development of the sector. Beyond the scope of the environmental assessment, strategic assessment is also connected to Internationalization, since the sustainable exploitation of the resources can enhance the export orientation of the activity

In general national strategies are connected with the wide range of Smart Specialization Strategies. The outcome from the implementation of these strategies emerge two major issues related to the competitiveness and support of SME's and the funding of research (0.5% of the budget but lower from the average 2% of Europe) as not well promoted, resulting to lower levels of competitiveness (no diversification of production), low levels of innovation (limited cooperation of research institutions with enterprises for developing innovative services and products), and ineffective use of natural resources. This state affects also the employment conditions in the island.

Table 17 - Policies/interventions towards marine and maritime activities and the Smart Specialization Strategies[42]

Level	Strategies	Objectives	Most relevant and promising maritime activities	Links to Smart Specialisation Strategies
National	Strategy development Plan 2007-2013[43]	Enlargement of the productive dynamics of the economy and productivity improvements by boosting the diversification of economy toward high-value -added services. Protection of the environment and improvement of the quality of life. Participation of all people in the benefits associated with growth, consolidation of conditions for social cohesion, justice and full employment. Protection of the environment and improvement of the quality of life. Reorganisation and modernization of public administration and of the broader public sector in general, at all levels. Reinforcement of production of innovation as well as of research and growth. Promotion of the dissemination of new technologies and the knowledge society. Elimination of access problems, Constant growth of human capital. Rational and balanced regional and rural growth.	Deep Sea Shipping Marine aquaculture Securing fresh water Coastal tourism &Yachting Cruise Tourism Offshore oil and gas	Innovation friendly business environment for SME's Research infrastructure, centres of competence and science parks Universities-enterprise cooperation Digital agenda Key enabling technologies Cultural and creative industries Internationalization Financial engineering instruments Innovative public procurement Green Growth Social innovation
National	National Strategic Plan for Fisheries, 2007-2013[44]	Improvement of the competitiveness of fisheries sector. Sustainable management of water resources regarding the fisheries sector Encouraging the economic viability of companies. Improvement of operational control Guarantee food safety and the health of farmed species. Exploitation of the comparative advantages of Cyprus (geographic location, climate conditions, business interest). Integration of environmental considerations and reduction of environmental impacts Improvement of legal and institutional framework.	Marine aquaculture	Innovation friendly business environments for SMEs Research infrastructure, centres of competence and science parks Green growth
National	Cyprus River Basin Management Plan 2011[45]	Prevention of further deterioration and protection of the status of all water resources. Promotion of sustainable water management through long-term protection of available water resources. Progressive reduction of groundwater pollution. Protection of the aquatic environment by implementing measures to reduce pollutant discharge and eliminate discharges of toxic. Contribution to the confrontation of extreme events floods and drought.	Marine aquaculture Securing fresh water	Universities-enterprise cooperation Green Growth
National	Strategic Plan for Tourism 2011-2015[46]	Increase in total direct and indirect tourism receipt. Provision of suggestions concerning the phenomenon of seasonality. Improvement of the viability of tourism enterprises. Upgrading the overall tourism experience offered by providing an enhanced tourist product with significant value added.	Coastal tourism &Yachting Cruise Tourism	Cultural and creative industries Internationalization
National	Strategic Environmental Assessment Concerning Hydrocarbon Activities within the Exclusive Economic Zone[47]	Description and evaluation of the environmental effects of implementing hydrocarbon activities. Propose of reasonable alternatives taking into account the objectives and the geographical scope of the plan.	Offshore oil and gas	Internationalization Green growth

[42] Smart Specialisation Strategies (S3) used for this logical analysis have been defined on the basis of the S3 horizontal approaches (or RIS horizontal priorities), as defined in the Guide to Research and Innovation Strategies for Smart Specialisation, available at http://s3platform.jrc.ec.europa.eu/en/c/document_library/get_file?uuid=e50397e3-f2b1-4086-8608-7b86e69e8553. See the Country fiche guide for more details at http://www.cogeaspa.it/blue-growth-study/country-fiches/?lang=en.

[43] http://www.planning.gov.cy/planning/planning.nsf/0/4B7FCB229CEB4B88C225750C003EF3DA/$file/sxedio_anaptyxis_small.pdf

[44] http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/DMLnationalstrategic_en/DMLnationalstrategic_en?OpenDocument

[45] http://www.moa.gov.cy/moa/wdd/wdd.nsf/all/1AE1F4E1B33E432CC22578AF002C0E71/$file/RBMP_EN.pdf?openelement

[46] http://www.visitcyprus.com/media/Downloads/Strategy/Executive_Summary_Tourism_Strategy_2011_2015.pdf

[47] http://www.pwc.com.cy/en/publications/eum/appendixv/strategic_environmental_assessment.pdf

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This Country fiche has been compiled according to a common methodology adopted in the framework of this Study and more specifically in Task 2.

A "Country fiche Guide" and a detailed methodology ("*Methodology for identifying and estimating Maritime Economic Activities using NACE and other data*") are available at http://www.cogeaspa.it/blue-growth-study/country-fiches/?lang=en

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