Hayri Deniz

Kilic Seafood Production Export-Import Inc.
Turkey

An expert in mariculture management, offshore farming and integrated coastal management, Dr. Hayri Deniz is director of overseas investment and international relations for Kilic Seafood Co., Kilic Holding.

He previously worked as an aquaculture researcher and director for several divisions of the Turkish Ministry of Agriculture and Rural Affairs.

Deniz served as a national coordinator for marine aquaculture zoning and sustainable development, and had administrative duties in several international fisheries organizations.

The Success Story Of Turkish Aquaculture

Hayri Deniz, Ph.D.
KILIC Holding – Kilic Seafood Company

SUCCESS STORY OF TURKISH AQUACULTURE

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KILIC Holding – Kilic Seafood Company

GOAL 2013, 7-10 October 2013, Paris / FRANCE

AQUACULTURE POTANTIAL

Resources	Numbers	Area (ha)
Natural Lakes	200	906.118
Dam Lakes	206	342.377
Man-made Lakes	952	27.032
Seas (total surface)	4	24.607.200
TOTAL	**1.362**	**26.000.000**

Additional, 33 rivers 177.000 km in length and coastal line 8.333 km

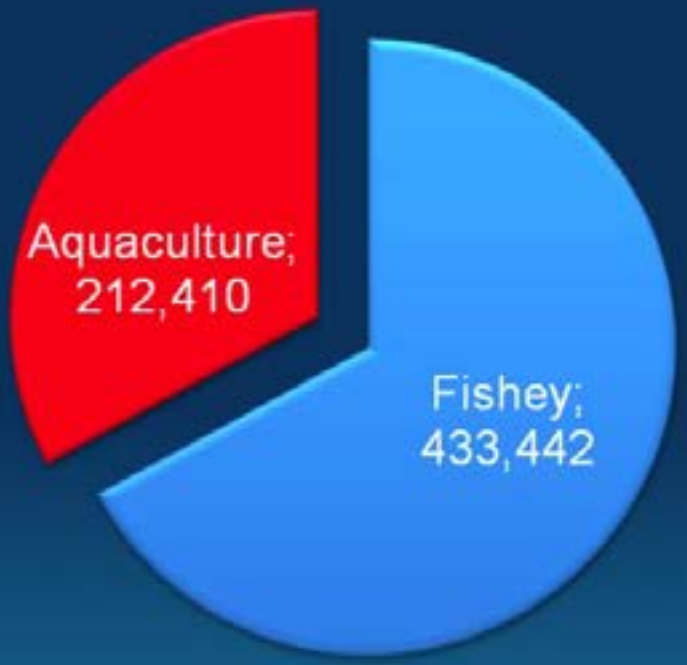
Turkey has 2nd longest coast line in the Mediterranean

FISHERIES PRODUCTION IN THE PAST DECADE

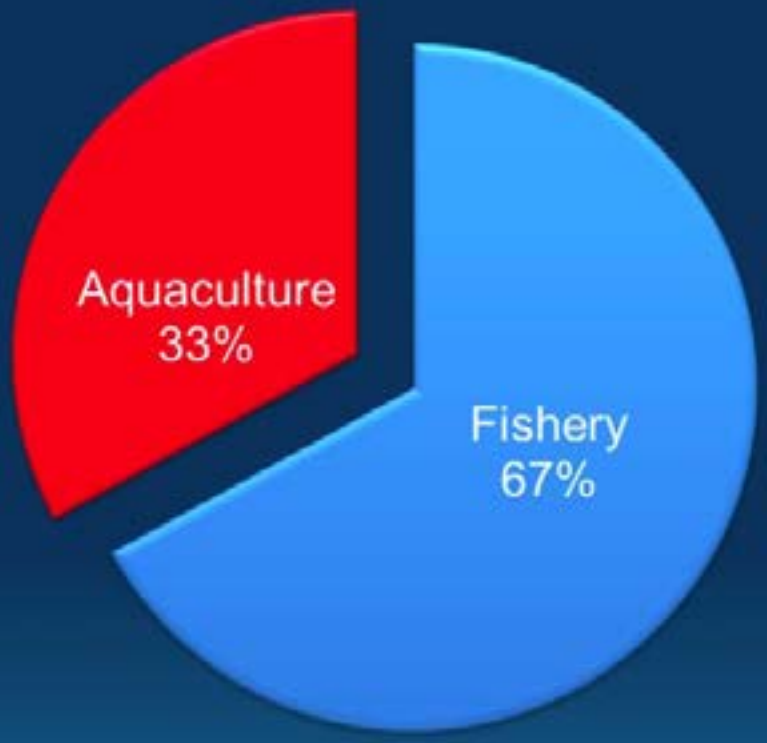
Year	Total Production (tons)	Aquaculture (tons)	Contribution of Aquaculture (%)
2002	627,847	61,165	9.74
2003	587,715	79,943	13.60
2004	644,492	94,010	14.59
2005	544,773	118,277	21.71
2006	661.991	128,943	19.47
2007	772.323	139,873	18.11
2008	646,310	152,186	24.00
2009	623,191	158,729	25.00
2010	653,080	167,141	26.00
2011	703,545	188,790	27.00
2012	644,852	212,410	33.00

FISHERIES PRODUCTION IN 2012 (tons)

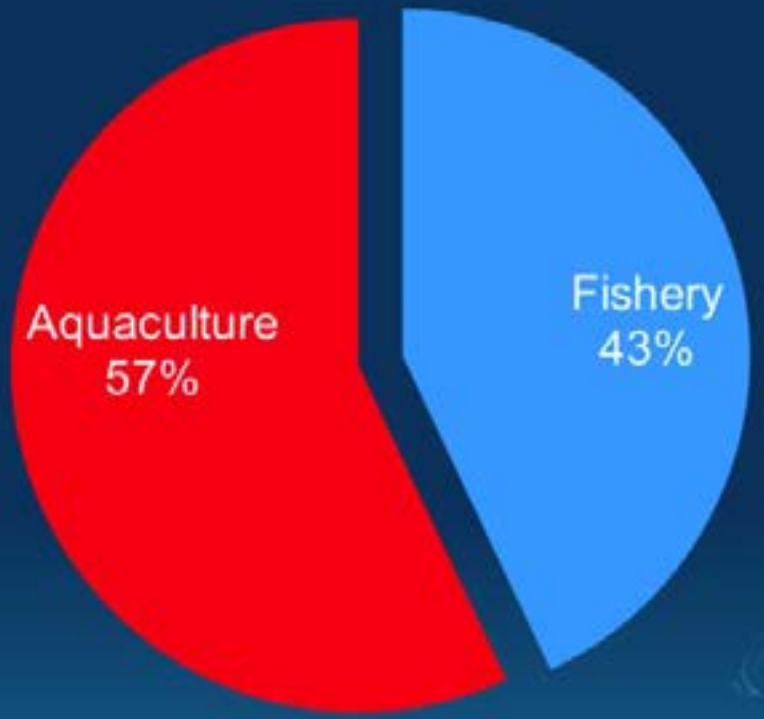
(644,852 tons)



CONTRIBUTION OF AQUACULTURE IN FISHERIES IN 2012



Volume

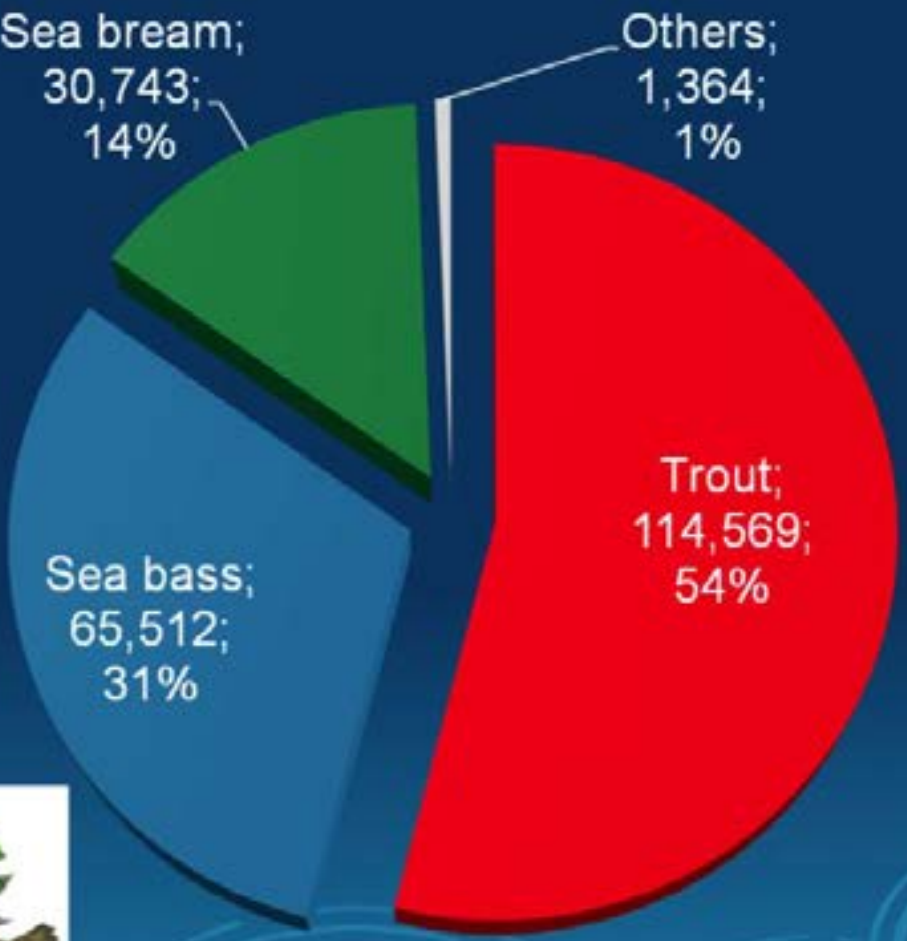


Value

AQUACULTURE PRODUCTION BY SUB-SECTORS IN 2012

Inland Aquaculture	**111.557 tons**
Trout	111.335
Carp	222
Marine Aquaculture	**100.857 tons**
Trout	3.234
Sea bream	30.743
Sea bass	65.512
Other	1.364
TOTAL	**212.410 tons**

AQUACULTURE PRODUCTION BY SPECIESS IN 2012

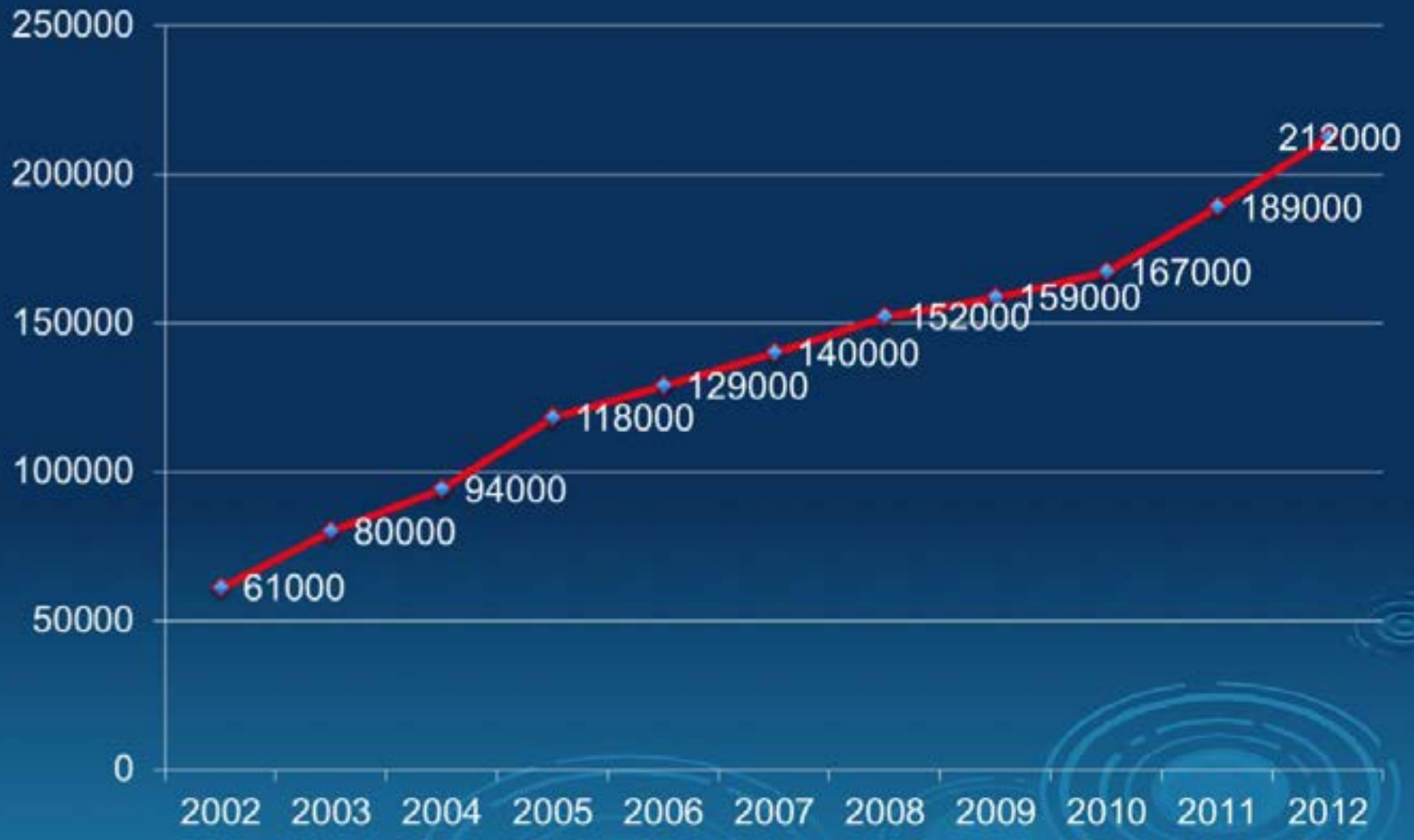


FISH FARM NUMBERS AND CAPACITIES IN 2012

(by 1th July 2012)

Farm type	Number	Capacity (tons/year)
Inland fish farms	1.883	193.420
Marine fish farms	408	242,322
TOTAL	**2.291**	**435,742**

AQUACULTURE GROWTH TREND IN THE PAST DECADE (tons)



REGULATIONS RELATED AQUACULTURE

- ✓ Fisheries Law (MoFAL - 1982)
- ✓ Environmental Law (MEU - 2006)
- ✓ Aquaculture Regulation (MoFAL - 2004)
- ✓ Environmental Impact Assessment Regulation (MEU - 2002)
- ✓ Regulations Governing the Control of Water Pollution (MEU - 1983)
- ✓ Notification on Site Selection (MEU - 2007)
- ✓ Communiqué on the Monitoring of Marine Fish Farms (MEU -2009)

MoFAL : Ministry of Food Agriculture and Livestock
MEU: Ministry of Environment and Urbanism

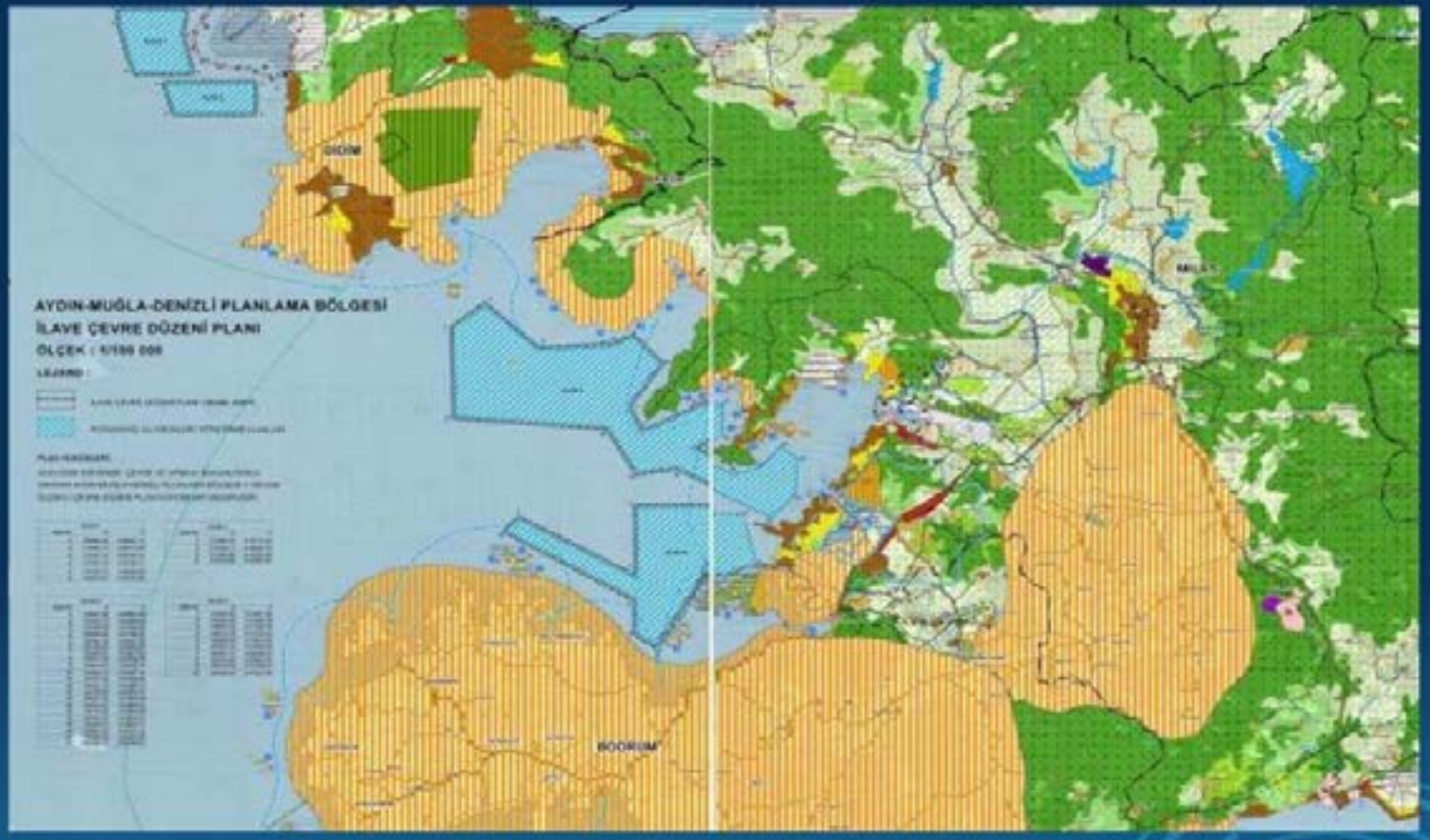
PRIORITIES

- ✓ Implementation of environmentally sustainable aquaculture practice
- ✓ Integration of mariculture in coastal zone management plans
- ✓ Developing of environmental monitoring for aquaculture
- ✓ Diversification of species for aquaculture and restocking
- ✓ Improvement of market channels
- ✓ Developing of organic aquaculture
- ✓ Conservation of endangered species
- ✓ Improve the international cooperation

FUTURE AIMS

- ✓ Production
  2023 500.000 ton
- ✓ Export
  2023 1 billion US $
- ✓ Consumption
  2023 16 kg

ALLOCATED ZONES FOR MARICULTURE



The new mariculture zones entered into force as part of the overall coastal zone plans and management in 2008

FACING WITH PROBLEMS / STARTING OF PLANNING PRACTICES

- ✓ Marine aquaculture was started with sea bream and sea bass in closed and sheltered bays by using traditional, small size wooden cages in 1985.
- ✓ Problems have been mainly occurred between mariculture and other sectors such as tourism, environmental protection, maritime, recreation etc. in Aegean and Mediterranean coasts which were already established most of sea bass and sea bream farms.
- ✓ First marine aquaculture zones were determined in 1988 and were provided moving of sea farms in these zones.

NEW RULES AND PERSPECTIVES

- ✓ However, current allocated zones had been started deficient for new applications because of rapid developments of aquaculture technique; cage-made, fish feed technology.

- ✓ Therefore, studies on determination of aquaculture zones were reviewed several times because of the circumstances of aquaculture which were developed and alternated.

- ✓ After new Environmental Law in 2006, new aquaculture zones were determined once again with consensus of all related institutions according to the current regulatory provisions and inshore marine farms were moved to new allocated offshore mariculture zones.

TURNING CRISES TO ADVANTAGE

- ✓ Aquaculture sector faced several serious problems and conflicts with the other sectors using same seas and coastlines which are also suitable at same time for other coastal sectors by reason of advanced development.

- ✓ Up to now, all progressed developments and encountered difficulties in the sector have been turned to advantage and restructuring themselves for either public bodies or private sector.

- ✓ Recently, Turkish Government has developed a National Marine Aquaculture Development Plan (NMADP) to minimize conflicts and provide stable ground for the future growth of the aquaculture sector. To prevent impacts of the fish farms some measures were introduced with other stakeholders.

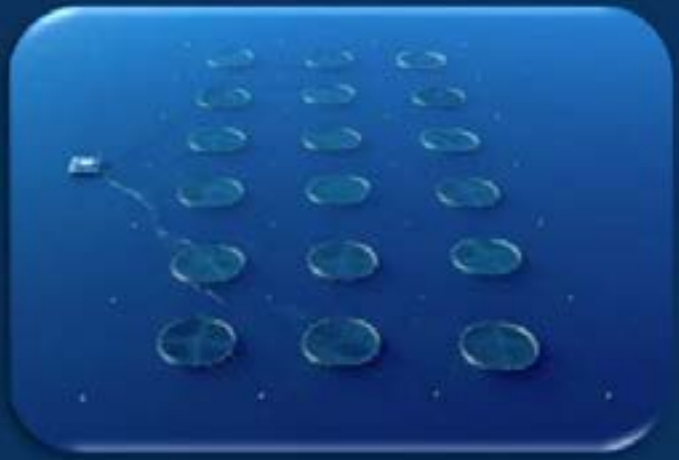
SUCCESSFUL SPATIAL PLANNING POLICY

- ✓ New regulations is into force and existing ones is amended which meet requirements and coherent with EU regulations.
- ✓ Aquaculture Legislation was amended and aligned with EU regulations including fish welfare in 2009.
- ✓ In addition, Notifications related site selection and monitoring for marine fish farms were put into effect 2007 and 2009 respectively.
- ✓ Eventually, all the parties realized that separate planning is not enough for sustainable management of sector and they decided to make integrated coastal plans by all stakeholders.

CONCLUSIONS

Although it is very young, there have been showed very important improvements in aquaculture sector:

- ✓ In 2002-2012, the increase on aquaculture production, as a volume was 247%.
- ✓ Turkey now has a 25 % share of the European sea bream and sea bass market.
- ✓ Aquaculture was recorded fastest growing sector in Turkey in the past two years.
- ✓ Turkey is the 3rd fastest growing country in the World in the aquaculture.
- ✓ Turkey has occupied first place in trout and sea bass production, second place in sea bream among European countries.
- ✓ Approximately 25.000 people are employed in the sector.
- ✓ Latest developments in the aquaculture sector place Turkey in an important position both in the Mediterranean basin and among the European countries.



HIGHLIGHTS OF KILIC SEAFOOD COMPANY

LEADING REGIONAL AQUACULTURE PLAYER

- ✓ The leading aquaculture company in Turkey with a total capacity of 50,000 tons
- ✓ Core sea bass and sea bream businesses complemented by strategic trout and fast growing meager businesses
- ✓ Kilic Deniz constituted 29 % and 12 % of total Turkish sea bream and sea bass production in 2012, respectively
- ✓ Kilic Deniz accounts for more than half of the total juvenile capacity in Turkey with its capacity of 394 million units
- ✓ Significant biomass expansion achieved at the end of 2012 will result in substantial sales volume growth in 2014 without further considerable investment in juveniles and the need for marine merchandize fish

Seabream

Seabass

Meagre

Trout

VERTICALLY INTEGRATED BUSINESS MODEL

Kilic Deniz has expanded its **operations through new investments and capacity increases by implementing a fully vertically integrated business model**

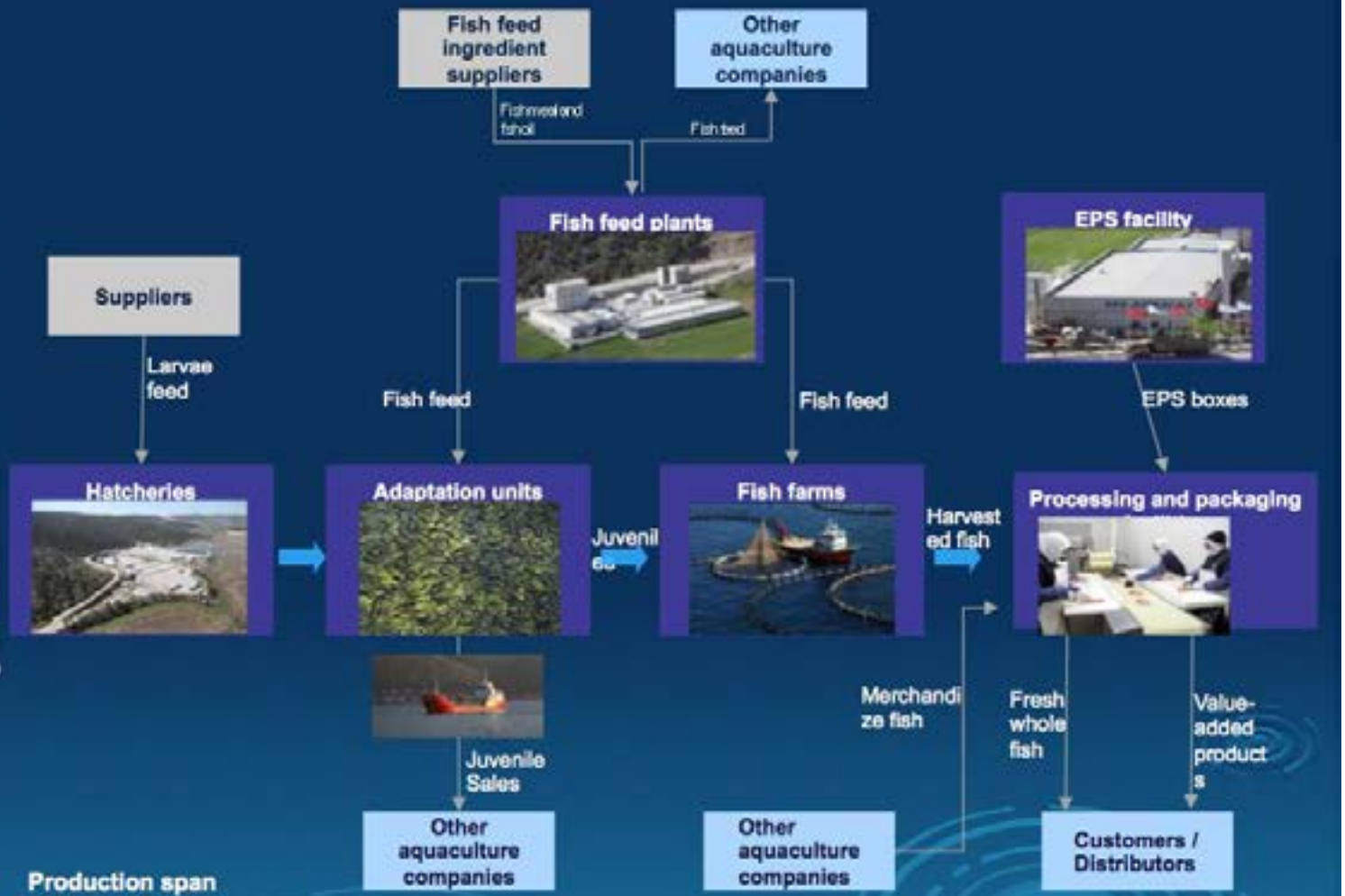
Today, the vertically integrated operations extend from production of fish feed and juvenile fish to production of packaging boxes, processing and packaging of harvested fish

Facilities are located in close proximity to each other, lowering logistics costs and making harvesting and processing flawless

Flow of operations is tracked by the SAP system[1], which was integrated in 2011

Aqua Manager[2] project has been launched and is expected to be up and running by June 2013. Aqua Manager optimizes the cage operations through accurate feeding and monitoring of biomass

In addition to the fleet used in harvesting, Kilic Deniz owns 3 large sea vessels to transport juveniles to Tunisia and other domestic players



Production span

- Hatchery: 2 months
- Adaptation unit: 2 months
- Cages: 10-18 months (depending on species)

Notes:

1 The modules are: (i) material management, (ii) product planning, (iii) sales and distribution, (iv) financial accounting, (v) controlling and (vi) human resources

2 An integrated ERP for cages, hatcheries and adaptation units

Land based trout farm

Trout cage farm in dam lake

Offshore sea farming (sea bass & sea bream)

THANKS FOR YOUR ATTENTIONS

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Please visit
http://www.kilicdeniz.com.tr/
for more information