

# Practical Aquaculture 2

By

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## الاستهلاك الاقليمي

### Fish consumption, countries of the Near East countries in kilograms per capita (original figures in grams per day from FAOSTAT 2006)

	1969-1971	1979-1981	1990-1992	1995-1997	2000-2002
Egypt	2.6	5.1	8.4	9.1	15.0
Iran, Islamic Rep. of	0.7	1.5	4.4	4.7	4.7
Jordan	1.8	3.6	3.6	5.8	5.1
Kuwait	9.5	12.4	5.8	12.4	8.0
Lebanon	4.0	0.7	2.9	7.7	11.3
Libyan Arab Jamahiriya	5.1	7.7	8.0	6.9	6.9
Palestine, Occupied Tr.	-	-	-	0.7	0.7
Saudi Arabia	4.0	9.9	5.8	6.6	7.3
Sudan	1.5	1.5	1.5	1.5	1.8
Syrian Arab Republic	1.5	2.6	0.7	1.5	2.6

Sturgeon hatchery in Islamic Republic of Iran. Besides aquaculture, culture based fisheries is a significant sector in Iran. Production of hatchery bred sturgeon fry for stock enhancement in the Caspian Sea is a regular activity of the Iranian Fisheries authorities



## تربية الأسماك في الدول العربية

### Aquaculture Kuwait

تربية الأسماك في الكويت حديثة نسبيا  
وألان توسعت لتجهيز الطلب المحلي

نوعين من أنظمة التربية

1 Nile tilapia (*Oreochromis niloticus*) culture in concrete tanks using brackishwater on agricultural farms

2 culture of gilthead seabream (*Sparus aurata*) and sobaity seabream (*Sparidentex hasta*) in cages in Kuwait Bay

الصليبية

الوفرة

العبدلي

56 مزرعة

تربية البلطي

الانتاج السنوي

110 طن 2000 – 275 طن 2004

التربية في الاقفاص

الانتاج السنوي من 2000

– 2003

طن 250

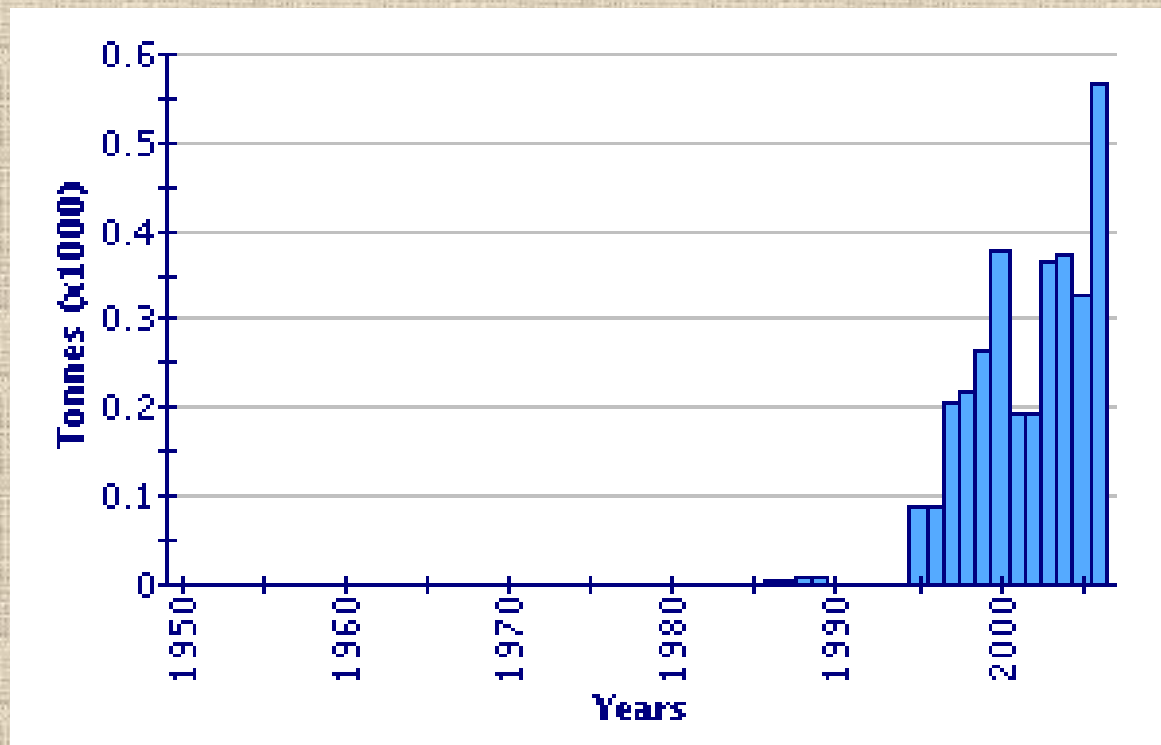
شركة خاصة (بوبيان)

تربية نوعين في 73 قفص

الاصبغيات تستورد من  
اليونان وفرنسا وغيرها  
(الان بدا انتاجها محليا)

116 340 الحجم الكلي

## Reported aquaculture production in Kuwait (from 1950) (Fao Fishery Statistic)



## Aquaculture Egypt

### تربية الأسماك في الدول العربية

Nile tilapia  
grey mullet  
1961

common carp

تربية الأسماك نشاط قديم لكن  
التربية الحديثة بدأت 1930s

الآن 14 نوع اسماك ونوعين من القشريات

تتركز في منطقة دلتا النيل

انظمة تربية مختلفة

تربية في مياه شروب

تربية في مياه عذبة

تربية الأسماك في مصر حاليا اكبر  
مصدر للأسماك تشكل 51% من انتاج  
الأسماك الكلي 98% منها قطاع خاص

تربية في مياه بحرية  
وتربية القشريات  
مازالت غير متطورة

تربية شبه مكثفة

1990 تنافس الزراعة  
مع تربية الاسماك

عدد المفاقرس زاد من 14 في  
1988 الى 230 في 2004

تربية في مكثفة في  
احواض ارضية  
وأسمنتية تتطور  
بسرعة الان

عدد معامل تصنيع العلائق  
لأكثر من 12 معمل في  
السنوات الاخيرة

# Aquaculture Egypt

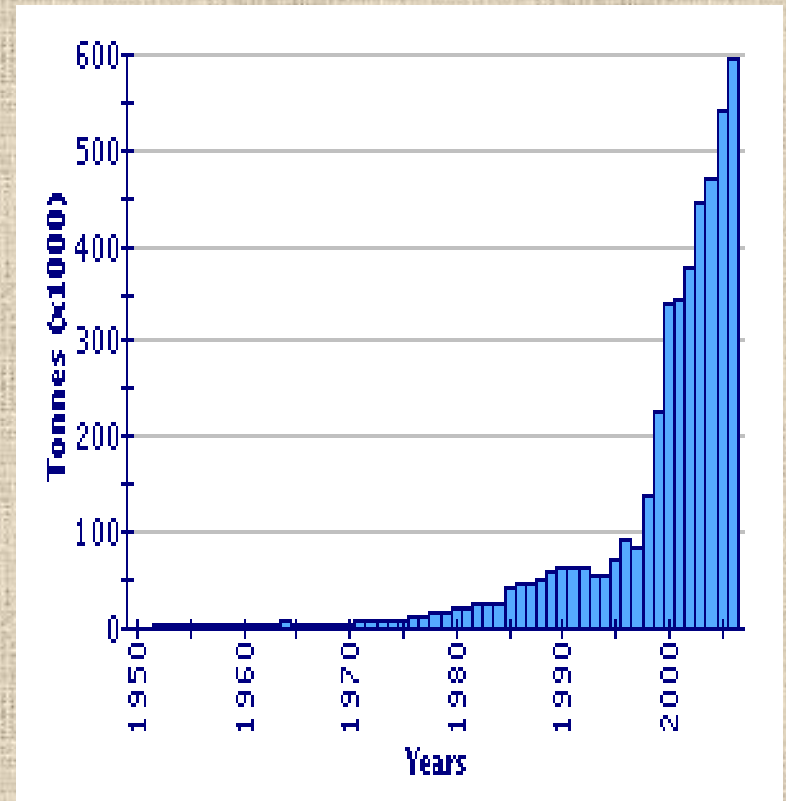
## تربية الأسماك في الدول العربية

الانتاج الكلي وصل في 2003 الى 445100 طن بقيمة تسويقية بلغت 584 مليون دولار

### مواقع نشاط تربية الأسماك في مصر



### Reported aquaculture production in Egypt (from 1950) (Fao Fishery Statistic)



members of **RECOFI** (**R**egional **C**ommission for **F**isheries, within the framework of FAO), namely **Bahrain, Iran (Islamic Republic of), Iraq, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.**



Offshore salmon cage farm in Canada. The technological advancements in systems design and construction help in mitigating environmental impacts and improving production efficiency.



Oyster racks in Canadian waters. Culture of molluscs is considered highly environmentally friendly as they do not require any inputs for growth and utilizes nutrients from the surrounding waters. Integrated mariculture is increasingly practiced with fish, molluscs and seaweeds cultured in close proximities.



Trout farm in Iran. Iran is known for trout and sturgeon aquaculture. Trout farms are located in hilly areas and are fed with running water. The industry is expanding and the number of farms is increasing

Kelp farmer in DPR Korea.

Kelp is the largest produced seaweed in the world.

It is farmed in many countries.

Farming seaweeds like kelp is easy and requires little resources, however, it generates good income





## Features of a fish pond

Although there are many kinds of fish ponds, the following are the main features and structures associated with them in general:

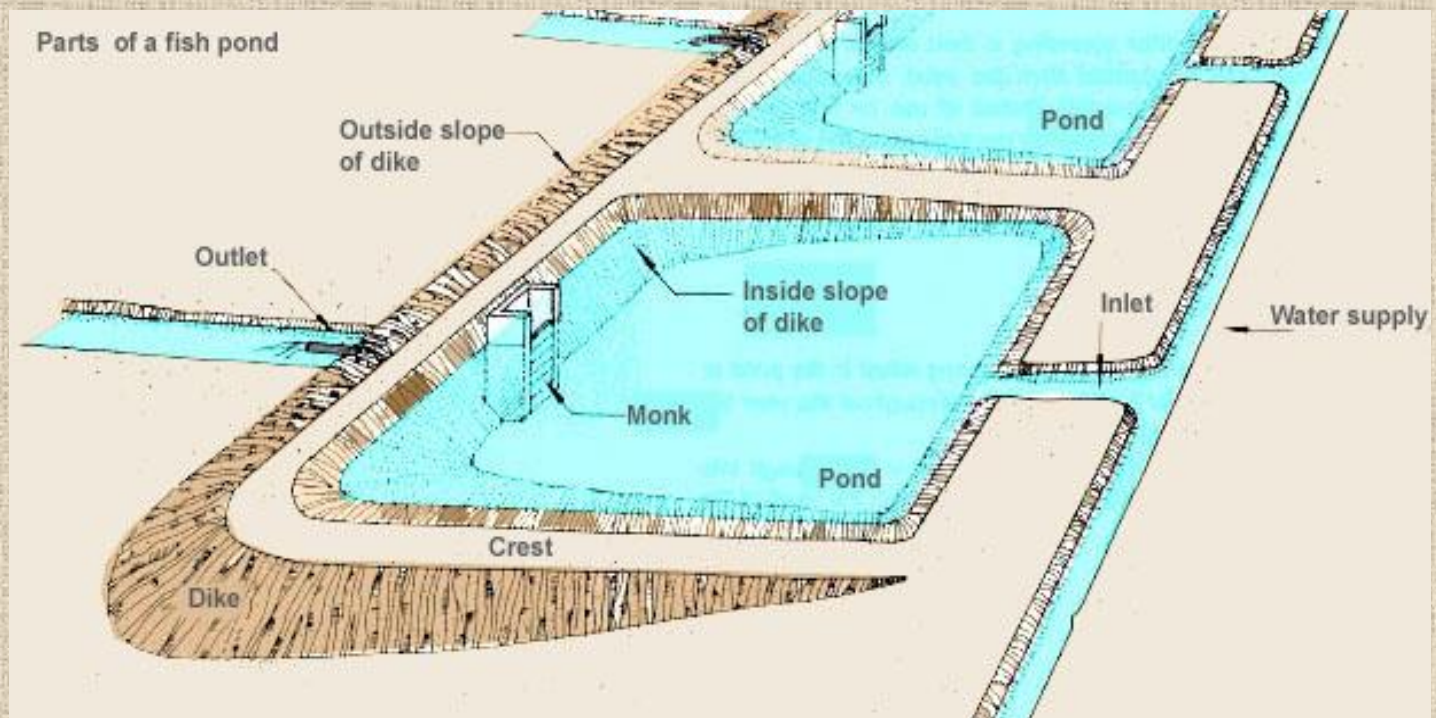
**pond walls or dikes**, which hold in the water;

**pipes or channels**, which carry water into or away from the ponds;

**water controls**, which control the level of water, the flow of water through the pond, or both;

**tracks and roadways** along the pond wall, for access to the pond;

**harvesting facilities** and other equipment for the management of water and fish



## *According to the water source*

Spring-water ponds

Rain-fed ponds

Pump-fed ponds

Seepage ponds

Ponds can be fed from a water body

## *According to the means of drainage*

Undrainable ponds

Drainable ponds

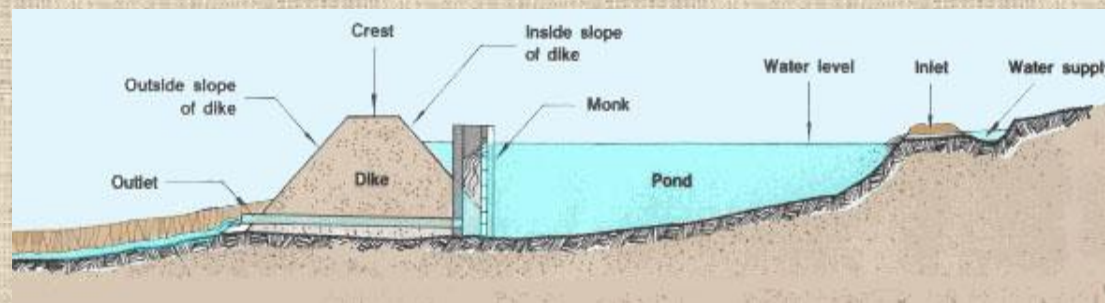
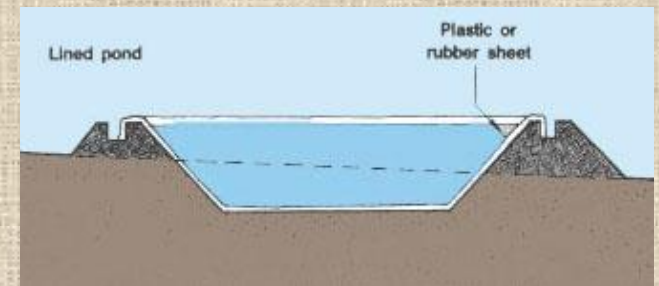
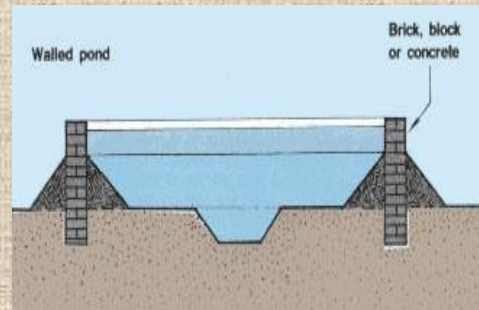
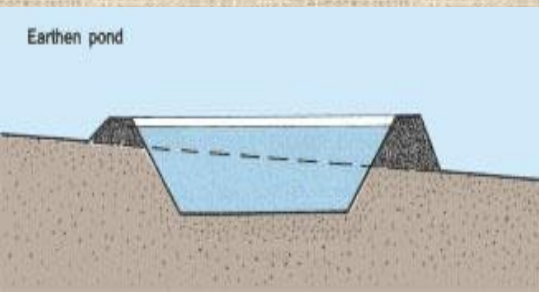
Pump-drained ponds

## *According to the construction materials*

Earthen ponds

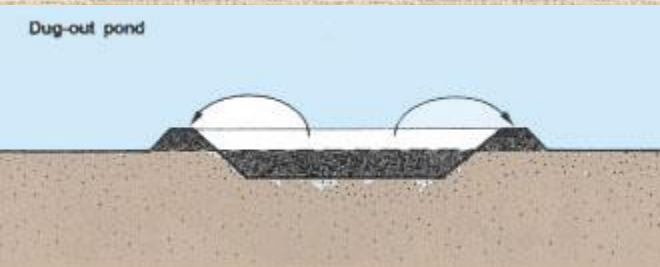
Walled ponds

Lined ponds



## ***According to the construction method***

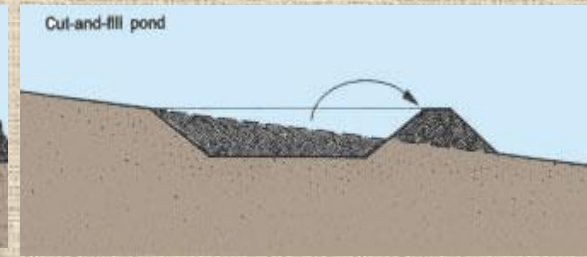
### **Dug-out ponds**



### **Embankment ponds**



### **Cut-and-fill ponds**



## ***According to the use of the pond***

spawning ponds for the production of eggs and small fry;  
nursery ponds for the production of larger juveniles;  
brood ponds for broodstock rearing;  
storage ponds for holding fish temporarily, often prior to marketing;  
fattening ponds, for the production of food fish;  
integrated ponds which have crops, animals or other fish ponds around them to supply waste materials to the pond as feed or fertilizer;  
wintering ponds for holding fish during the cold season