FAO Regional Workshop on Opportunities and Challenges in Economic and Post-harvest Issues Related to Market Access for Fisheries and Aquaculture Products

Bali, Indonesia
1 - 3 October 2024

Ministry of Maritime Affairs

Government of Pakistan

The Aquaculture Development Context

Pakistan has plenty of natural water resources as fresh, marine and brackish waters. Pakistan has inland water covered area about 79,200km2. The length of coastline is about 1100 km with Exclusive Economic Zone of 350 nautical miles, that covers an about 290,270km2.

Fisheries sector provides employment to about 400,000 fisher or fish farmers and about 600,000 people in allied industries.

As per estimate, the total area covered by fishponds across all provinces is about 80,000 ha, mainly in Sindh and Punjab and few in other provinces (Balochistan, Khyber Pakhtunkhwa, Azad Kashmir, and Northern Area).

Challenges

Low Production and Poor Sustainability

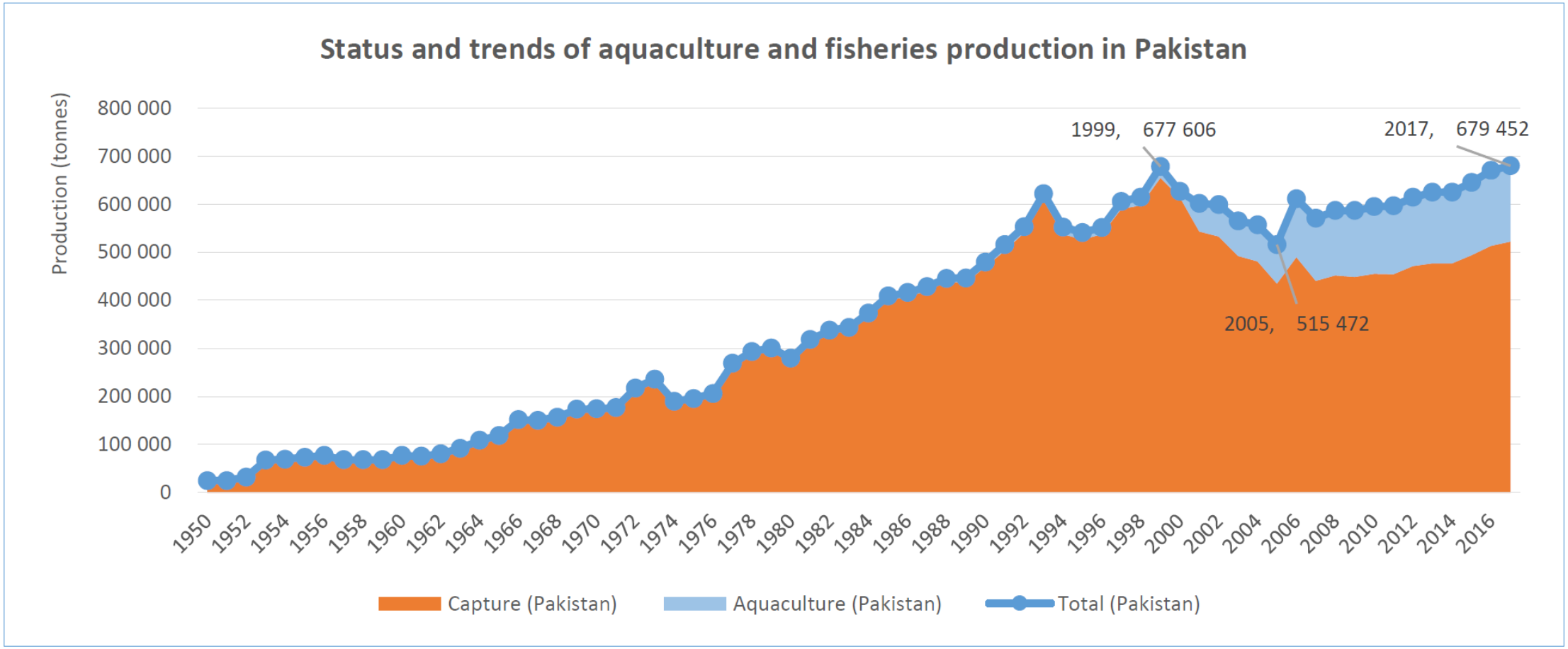
Fragmented value chain for exportable fish species

Poor Market infrastructure

Inadequate Policy, Legal, and Institutional Support

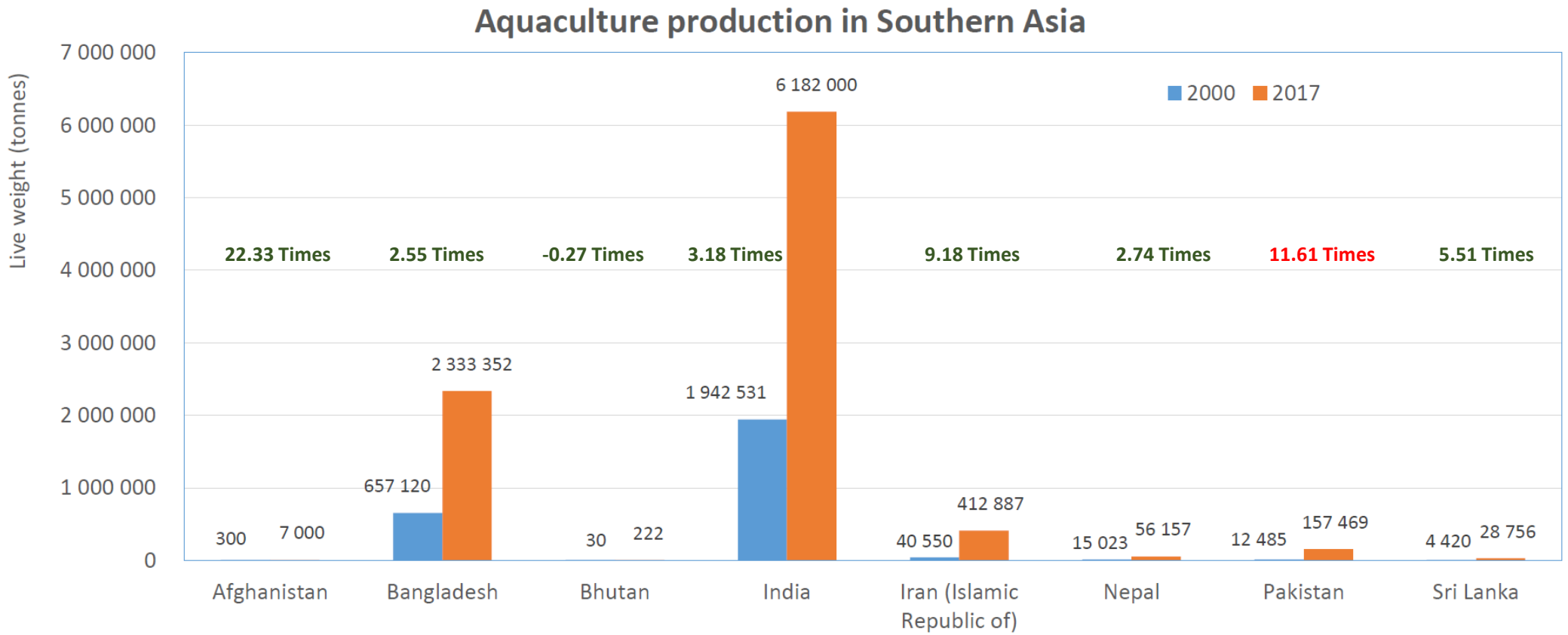
Lack of Credit and Marginalization of the Poor

Pakistan: Total fishery production declined from 677 606 tonnes in 1999 to 515 472 tonnes in 2005 due to reduced capture production; total production rebounded back to 679 452 tonnes in 2017, mostly thanks to increased aquaculture production.



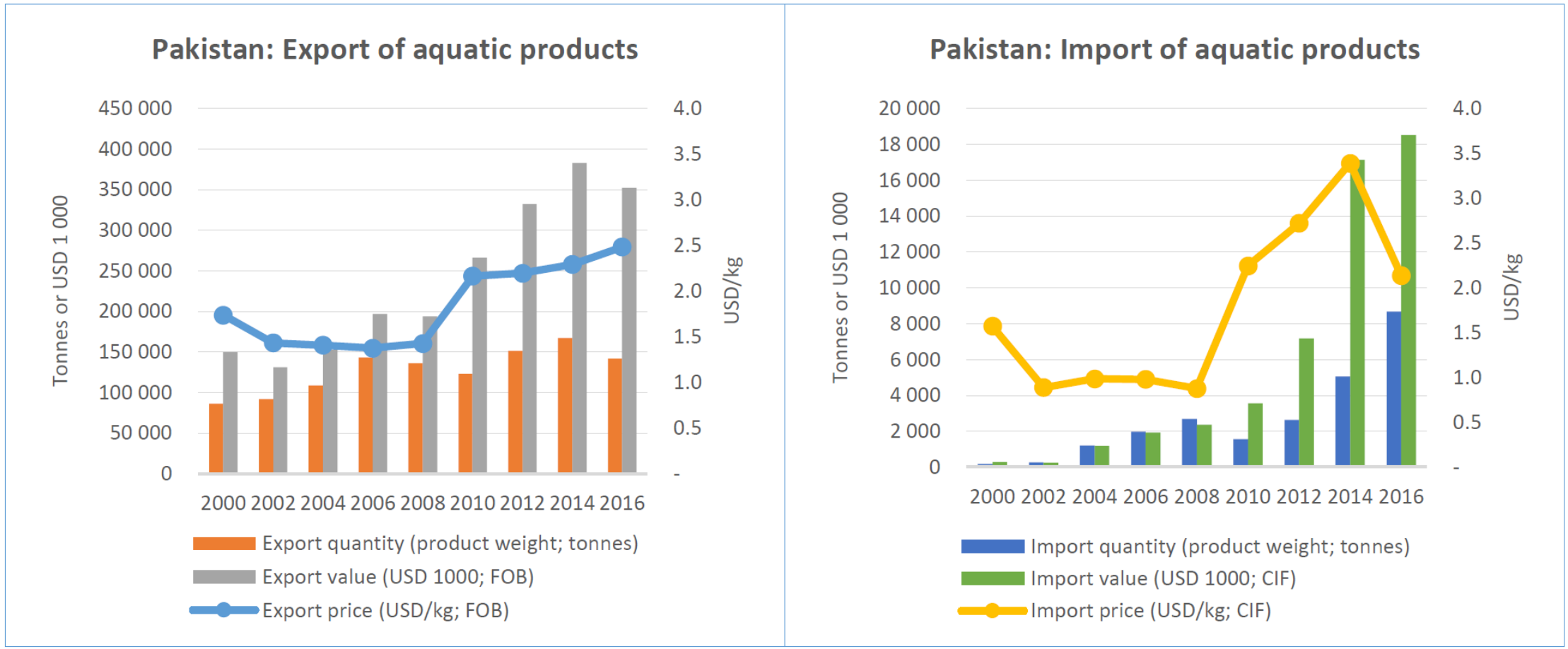
Data source: FAO Global Fishery and Aquaculture Production Statistics v2019.1.0, published through FishStatJ (March 2019; www.fao.org/fishery/statistics/software/fishstatj/en).
Notes: Constructed by the FAO WAPI Total Fishery Production Module; see Figure 5.1 in the FAO WAPI Aquaculture Production Module (WAPI-AQPRN v.2018.1) for a similar example (www.fao.org/fishery/statistics/software/wapi/en). Production covers all species measured in tonnage.

Pakistan: Aquaculture production increased more than tenfold, from 12 485 tonnes in 2000 to 157 469 tonnes in 2017.



Data source: FAO Global Fishery and Aquaculture Production Statistics v2019.1.0, published through FishStatJ (March 2019; www.fao.org/fishery/statistics/software/fishstatj/en).
Notes: Constructed by the FAO WAPI Aquaculture Production Module (WAPI-AQPRN); see Figure 3.3 in WAPI-AQPRN v.2018.1 for a similar example (www.fao.org/fishery/statistics/software/wapi/en). Production covers all species measured in tonnage.

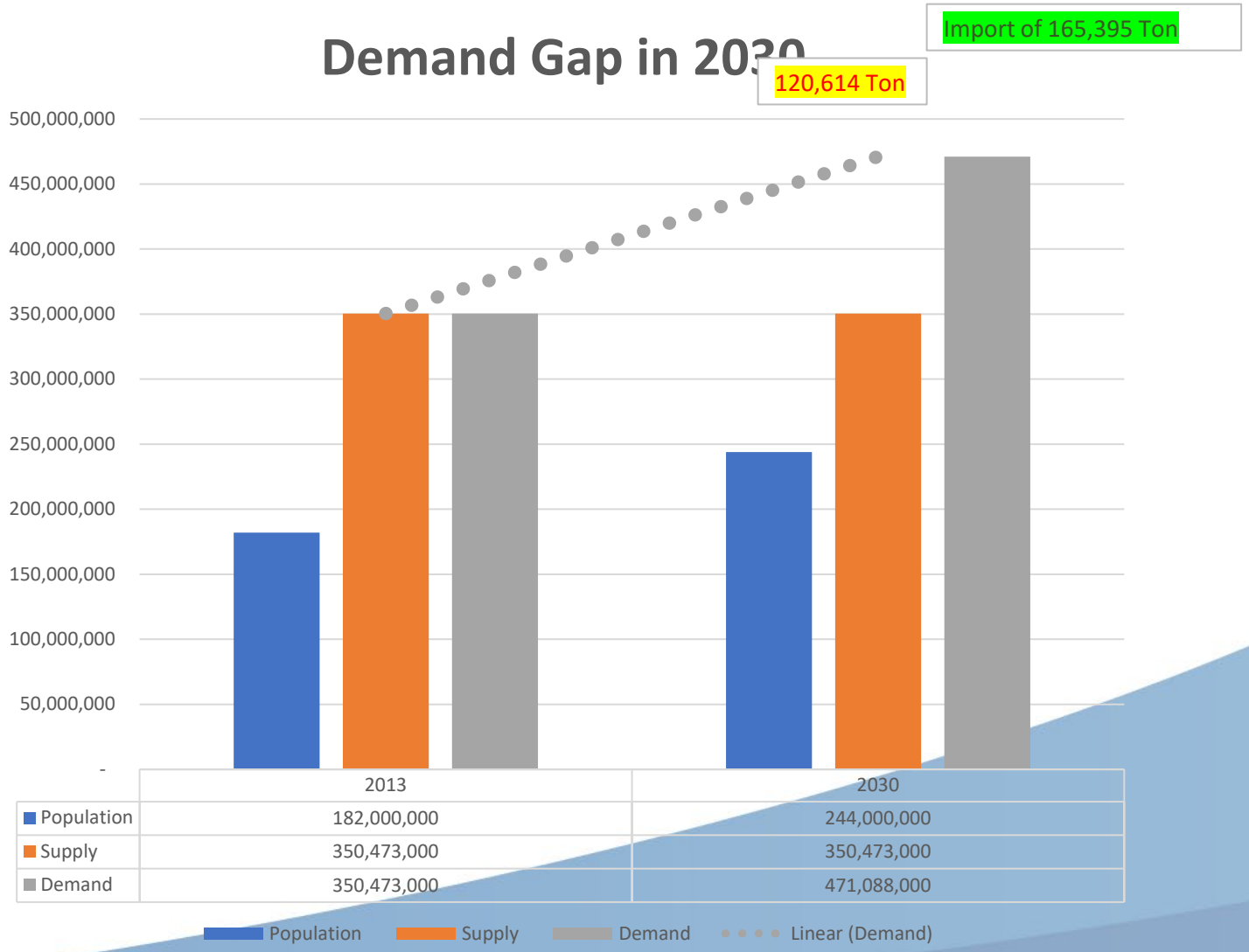
Pakistan: Status and trends of fish trade



Data source: FAO. 2018. Fishery and Aquaculture Statistics. Global fisheries commodities production and trade 1976–2016 (FishStatJ) (www.fao.org/fishery/statistics/software/fishstatj/en).
Notes: Constructed by the FAO WAPI Fish Trade Module; see Templates 45–47 in the WAPI prototype for examples (www.fao.org/fishery/statistics/software/wapi/en). Includes all aquatic commodities recorded in the data source. CIF = Cost, insurance and freight; FOB = Free on board.

- As per FAO study, based on 2013 baseline for population of 182 million, fish consumption is 1.93 kg per capita fish consumption and total fish consumption was 350,473 tons. FAO project that in 2030 on the same consumption rate, Pakistan will need 471,088 ton of fish to feed 244 million population will be required by the country's 244 million population in 2030. Therefore, fish demand gap estimate driven by population growth in Pakistan would be 120,614 ton till 2030.

- If this demand need to be covered entirely by fish farming, aquaculture production would need to grow 3.4% per year otherwise (current rate is 2%) Government will pay on import of fish US$ 186.95 Million/annum.



Fisheries Contribution

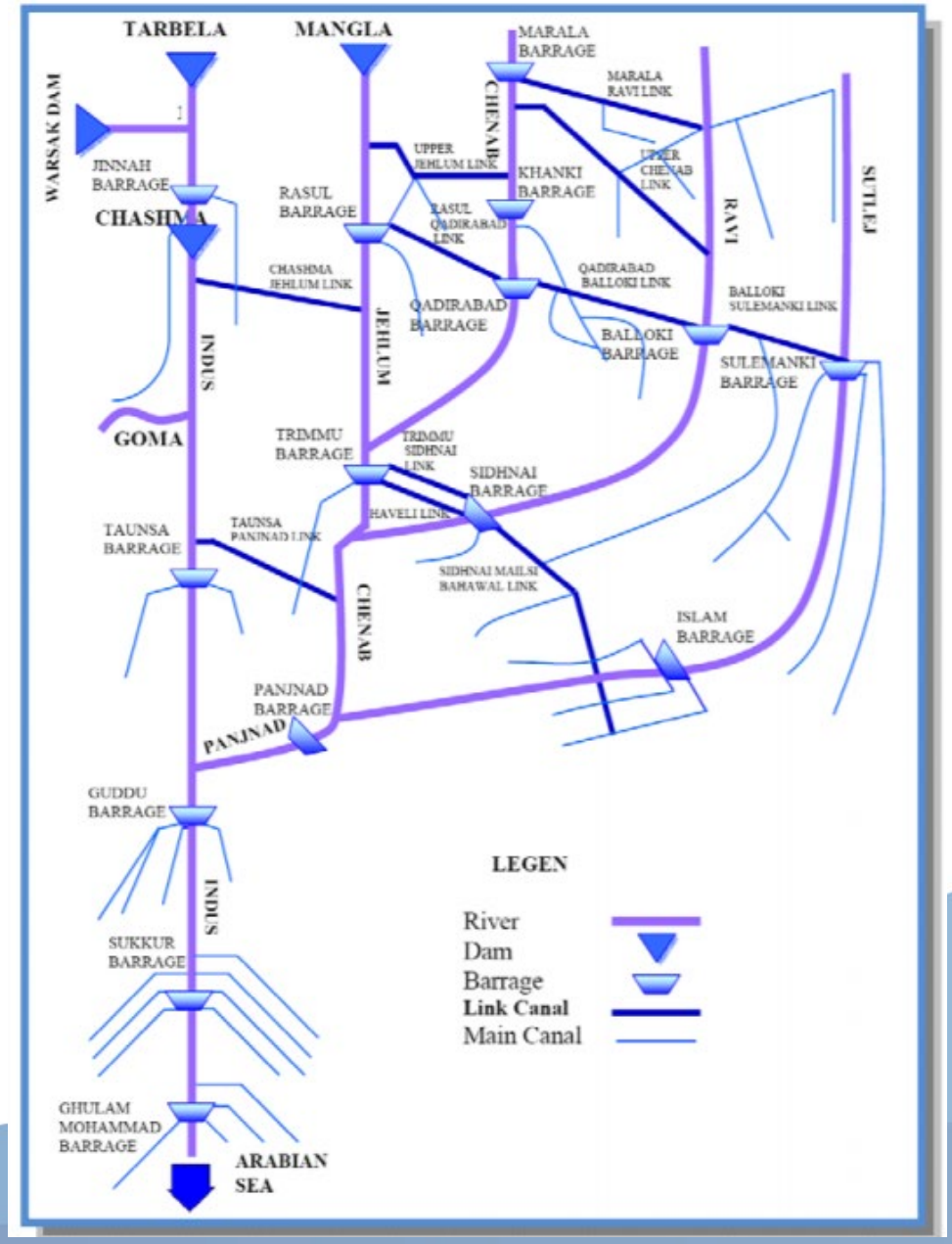
- To National GDP 0.3%
- To Agriculture GDP 1.3%
- Source of livelihood:
  - ❖ Direct Fish Farmers & fishermen 4,00,000
  - ❖ Ancillary Industries 6,00,000
- Per capita fish consumption 2.0 Kg

(World average per capita fish consumption: 20.3 Kg)

INLAND WATER RESOURCES (M.ha)

• Rivers	3.19
• Dams/Canals	0.15
• Lakes	3.14
• Indus Delta	0.38
• Flood area	1.00
• Fish Farms	0.07
• **Total:**	**7.93**

INDUS RIVER SYSTEM



Existing Status of Fish Farming

Geographic Region	Area (Acres)	Farms	Production (tons)	Species	System
Punjab	44,000 (150,000)	7,800 (30,000)	78,140 (150,000)	Mainly Carps	Polyculture Semi-intensive Extensive
Sindh	1,24, 412	3,218	67,798	Carps	Polyculture Extensive
Khyber Pakhtunkhwa	2,746 (15000)	349	412 (10,000)	Carps & Trout	Polyculture Extensive Intensive
Balochistan	1000 (5000)	100	1000 (5000)	Carps & Trout	Polyculture Extensive Intensive

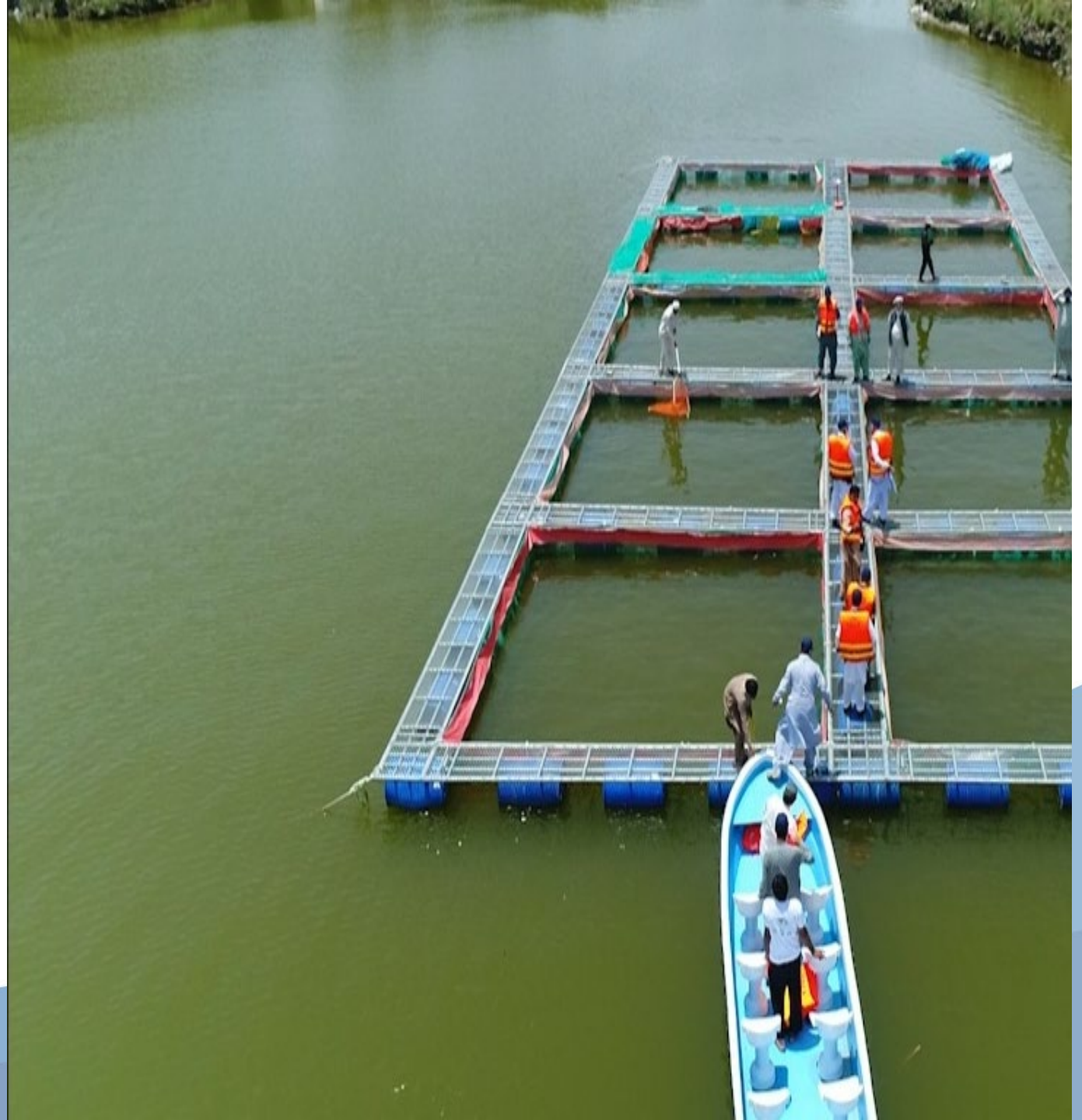
(*un-subsentiated data)

Fish Production

- **Fish Production** **873,900 M.tons**
  - **Marine** **503,400 M.tons**
  - **Inland Water** **370,500 M.tons**

- **Export**

Quantity (m.t)	Revenue (US$)
199 M.tons	452 million



Fish Hatcheries in Pakistan Excluding Private

Sindh	Punjab	Khaber Pakhton	Balochistan
1. Hawks Bay Fin fish and shell fish hatchery, Karachi 2. Fish Hatchery Chilya Thatta 3. Fish Hatchery at Badin 4. Prawn and Fin fish Hatchery Jamshoro 5. Carp hatchery Bubak Dadu 6. Carp hatchery Mandodero Sukkur 7. Carp Fish Hatchery Dokri, Larkana	1. Hasilpur Bahawalpur 2. Fish Nursing Unit, Rakh Khanpur Muzaffargarh 3. Carp & Fish Trout Fish Hatchery Murree Rawalpindi 4. Kotli Arian Sialkot 5. Mahseer Fish Hatchery Hattian, Attock 6. Central Fish Seed Hatchery Lahore 7. Fish Seed Hatchery Chhenawan Gujranwala 8. Fish Seed Hatchery Rawal Town Islamabad Rawalpindi 9. Fish Seed Hatchery Faisalabad Faisalabad 10. Fish Seed Hatchery Mianchannu Khanewal 11. Fish Seed Hatchery, Bahawalpur Bahawalpur 12. Fish Nursing Unit, Kotli Arian Sialkot 13. Fish Nursing Unit, Farooqabad Sheikhupura 14. Fish Nursing Unit, Shahpur Sargodha 15. Fish Nursing Unit, Fateh Jang Attock 16. Fish Nursing Unit, Pir Mahal T.T. Singh 17. Fish Nursing Unit, Pirowal Khanewal	1. Shinu Mansehra 2. Madyan Swat 3. Alpuri Swat 4. Dubair Kohistan 5. Kalkot Dir 6. Jaghoor Chitral 7. Bombret Chitral 8. Allai Batgram 9. Ichrian Mansehra 10. Charbanda Mardan 11. Tanda Kohat 12. Ratta Kulachi D.I. Khan 13. Sher Abad Peshawar 14. Badakhel 15. Mahseer Hatchery Malakand Agency	1. Fish hatchery Quetta 2. Fish hatchery Dera Murad Jamali

Total- 41

PRODUCTIVITY ANALYSIS OF POND FISH CULTURE (Tons/Ha./Year)

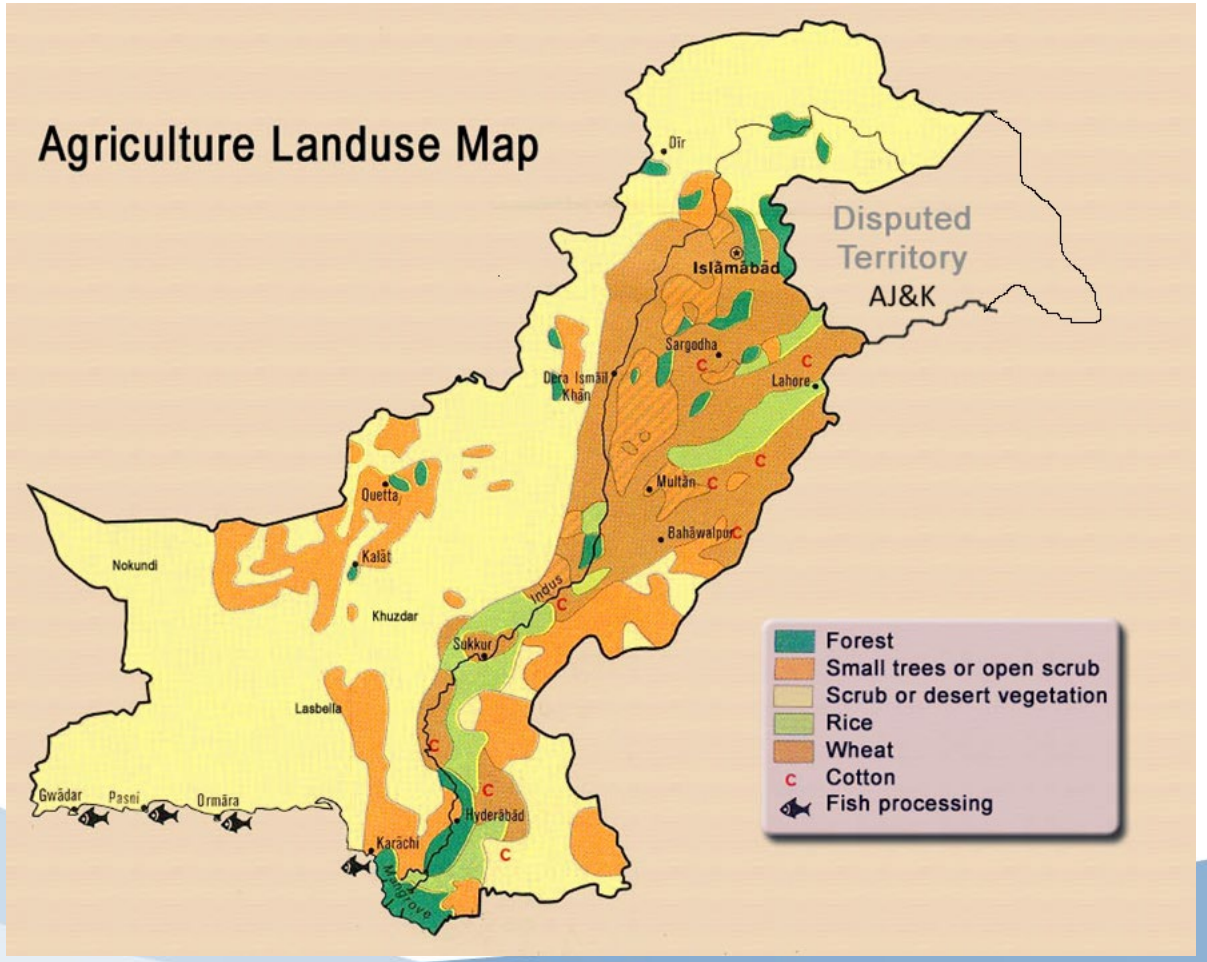
NAME OF PROVINCE	PRODUCTIVITY
PUNJAB	2.5 – 3.7
SINDH	1.5 – 2.5
NWFP	1.2 – 2.0
BALUCHISTAN	1.5-2.5

Source: FAO Mission Report, 2003

DEVELOPMENT POSSIBILITIES ALREADY EXPLORED

- GIFT Tilapia and Pangasius spp. has successfully been introduced in Pakistan with cage/pond culture technologies
- 7 tilapia hatcheries and 2 Pangasius Hatcheries have been established and producing more than 20 million Tilapia seed.
- **Shrimp culture** in coastal area has been successfully experimented and now commercial operations have been started by private sector
- Trial of Sea bass farming have also been conducted successfully.

Available Saline land suitable for Aquaculture



AREA

(million acre)

Total area of Pakistan: 197

Area under cultivation: 54

Total saline area: 4.67

Punjab: 1.11

Sindh: 2.32

KP: 1.23

Shrimp Farming Potential Revenue

	Area (million acres)	Output (tonnes)	Value at export price (@$7.5/kg)
Per acre		1.6	$ 7,500
2.5% saline land	0.12	0.2 million	$ 1.7 billion
5% saline land	0.23	0.4 million	$ 3 billion
11% saline land	0.50	0.95 million	$ 3.75 billion
25% saline land	1.10	2.1 million	$ 15.7 billion
Entire saline land	4.67	8.9 million	$ 66.7 billion

Shrimp Farming Efforts in Pakistan

Previous Trials

- Experiments by Liption- abandoned for logistic issues
- Experiment by Sindh Fisheries-in 1990s and 2000s, with no success due to unavailability of input value chain.
- Experiments by FDB (2015-20): farm operation in Sindh, produced 125 tons, exported to UAE, first time farmed shrimp exported.

New Initiative since 2020:

- FDB and Government of Punjab experiments in Punjab, some private farmers also tried and successfully produced shrimp.
- In 2024-Punjab: Punjab Government shrimp farming operation on about 100 acres,
- In 2024: Alkarim and Rahawa Farms in Sindh: about 50 Acreas.
- In FDB established a 15 acre model shrimp farm and service center for farmers for supply of acclimatized shrimp seed. Will start function in 2025.

- Issues:
  - Seed and feed are two major bottlenecks.
  - One shrimp feed mill established in Pakistan and two Shrimp Nurseries have been established (import nauplii and supply PLs to farmers)

Planned Priority Actions

- **Establish Regulatory Framework** for aquaculture management: including enactment of laws and rules.
- **Provide enabling environment** for aquaculture development: Develop consensus on aquaculture policy, strategy and action plans.
- **Expand Aquaculture production**: intensification, diversification, cluster farming, land reclamation and Mari-culture
- **Develop Infrastructure**: Strengthen institutions, build capacity, establish farms, hatcheries, feed mills and processing plants.
- **Build Capacity** through Training: comprehensive training programs
- **Export promotion**: Product development and promotion of Brand Pakistan

THANK YOU