

ECONOMIC OUTCOMES

Major economic benefits are from irrigation and hydropower and major costs are from inadequate water supply and sanitation, flood damage to property, water scarcity for agriculture and loss of ecosystem services.



Wheat



Rice



Sugarcane



Cotton

The four major crops responsible for around **80%** of agriculture water consumption currently contribute less than **5%** of total GDP and this share is in decline.

Livestock production uses very little water compared to irrigated cropping while it represents largest share of agricultural GDP

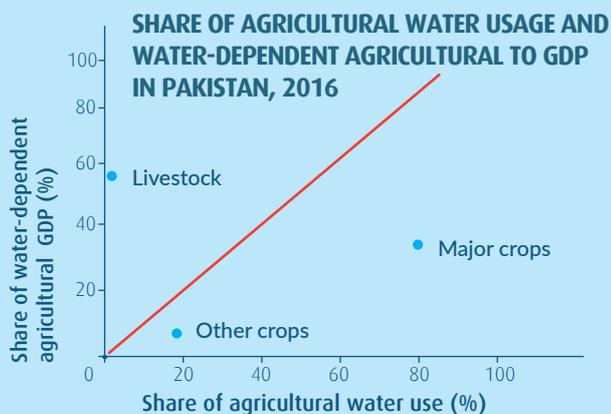
58%



share of agricultural GDP comes from livestock production

37%

share of agricultural GDP comes from major crops



LOW YIELDS PER HECTARE BY GLOBAL STANDARDS

Average yields for the major food crops are:

1.5 to 4.2

times below field potential.

2.1 to 5.6

times below international best practice.



PRODUCTION PER UNIT OF IRRIGATION WATER

Water productivity is significantly higher in Punjab than in Sindh even though yield per hectare is lower.

This is due to several factors:

- » Waterlogging and salinity impacts in Sindh
- » Groundwater provides greater irrigation control in Punjab
- » Water losses are a greater fraction of withdrawals in Sindh
- » Higher evaporative losses due to greater proportion of rice crop in Sindh

WATER PRODUCTIVITY (US\$/m³)



0.08
Punjab



0.06
Sindh

THE ECONOMIC RETURN FROM IRRIGATION WATER

The economic return from irrigation water has doubled over the last three decades.



Water productivity must improve markedly as potential to increase yields through additional inputs is limited.

POWER SECTOR OF THE COUNTRY

The share of hydropower in the total electricity generation mix has reduced from:



The reduction is because short-term planning has favoured thermal power.



THE ECONOMIC COST RELATED TO WATER

4% of GDP

Average annual losses associated with inadequate water supply and sanitation services, flood damages to property, and water scarcity in agriculture.

Additionally, there are costs due to loss of ecosystem services and indirect costs of water-related disasters.



Average annual losses due to flood

US\$ 800 M - 1.8 B



Annual agriculture losses

≥ US\$ 600 M



Degradation of Indus delta

US\$ 2 B



Soil salinity losses

US\$ 250 - 750 M

SOCIAL OUTCOMES

There is a high social cost of unsafe and unreliable availability of water impacting health and well-being. Extreme events (floods and droughts) may lead to short-term migration.

HUMAN HEALTH AND WELL-BEING

An estimated

20% to 40%

of hospital admissions and a large proportion of infant deaths have been linked to water-related diseases.



On average

110 children

die each day in Pakistan because of water-related diseases, poor sanitation and hygiene.

This equates to

39,000

children every year.

SOCIAL COST OF POOR WATER SUPPLY, SANITATION AND HYGIENE

Average time spent by women on collecting water

15% of their time

20 deaths / 100,000

Mortality rate



50-60 M people in Punjab & Sindh

People at risk due to arsenic contamination of water supplies

44% National

Over 50% in Balochistan and FATA

Childhood stunting

WATER-LED CONFLICT AND MIGRATION

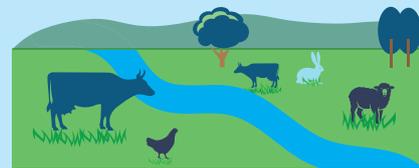
Short-term, temporary migration is a common response to droughts and floods, especially in Balochistan and Sindh.



In Tharparkar, Sindh during the 2014-17 drought

35% - 45%

of families migrated to barrage areas in search of labor and grazing for livestock.



ENVIRONMENTAL OUTCOMES

Environment resources and ecosystems are under increasing stress from high levels of water withdrawal, widespread water pollution, rapid urbanization, and agricultural expansion.

Consequences of environmental stress include biodiversity loss, declining fish stocks, and degradation of ecosystems in the Indus Delta and other parts of the Indus Basin.

Indus delta is the world's 5th largest delta home to more than

180 species

4 out of 8

plant species in the delta have disappeared in recent years



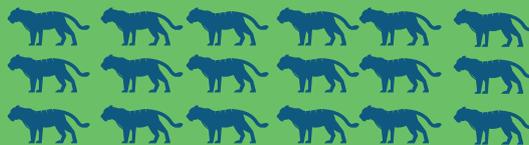
Degradation of the Indus delta has affected the lives of at least

1/2 M people



Adverse impacts on Ramsar sites that support

18 threatened mammal species



Shrimp production and the catch of the prized Palla fish has fallen by

90%



The catfish, *Glyptothorax kashmirensis*, for example, has suffered an abundance decline of more than

80% over 5 to 10 years,

given the preference of the species for fast-flowing habitat.



Tor putitora, or Himalayan Mahseer, abundance has declined by more than 50%. Trends suggest decline could reach 80%.

