



NATURAL CAPITAL ACCOUNTS

Pakistan

**Regional Training Workshop on SEEA Asset Accounts for
Sustainable Development**

Background

- **Rising climate risks**
 - Pakistan faces intensifying heatwaves, floods, and droughts.
- **Natural wealth eroding**
 - Per capita natural capital dropped from **USD 5,982 (2014)** to **USD 2,376 (2018)** — a **60% decline** in just 4 years.
- **Environmental degradation**
 - silently undermining GDP growth, livelihoods, and food security.
- Lack of coordinated data = **blind spots** in planning and resource management.
- **Natural Capital Accounting (NCA)** provides the missing link between **economic planning** and **resource sustainability**.

NCA - Pakistan

Literature review

- Reviewed cases of NCA practices of neighbouring countries

Framework Established

- **Physical asset accounts**
 - Focused on **land, forest, water, and minerals**

Land accounts approach defined

- **Practice is to use Land cover and Land use**
- Adopted a **mixed land cover-land use model**

Initial work initiated on sectoral accounts

- **Forest accounts** – preliminary compilation underway
- **Water accounts** – baseline work initiated
- **Mineral accounts** – groundwork started

Data sources identified

- Relevant agencies and datasets mapped for each resource

Land Accounts 2010-11

000 Km²

Category	KPK	Baluchistan	Sindh	Punjab	Pakistan
Built-up	1.70	1.29	3.32	6.87	13.18
Cropland	22.16	29.63	62.64	125.09	239.51
Plantation	0.24	0.69	1.25	2.62	4.81
Forest	9.26	3.93	1.15	3.26	17.61
Grass land	17.49	22.44	6.47	20.92	67.32
Barren Land	14.74	287.90	54.78	43.05	400.47
Wet Land	0.71	1.37	11.48	3.57	17.13
Snow and Glaciers	8.26	-	-	-	8.26
Total	74.56	347.25	141.09	205.38	768.28

Source FAO, 2014, 2016, 2017

Physical Asset Accounts Agriculture land Use

(000Sq.Km)

Category	Opening Stock July 2015	Addition to stock	Reduction in stock	Closing stock June 2021	Average Annual Growth Rate (2015-2021)
Cropland	156.47	7.29	6.57	157.20	0.09
Current fallow	71.00	4.86	12.08	63.78	-2.12
Subtotal	227.47	12.15	18.64	220.98	-0.58
Forest	39.98	7.58	1.72	45.85	2.78
Culturable Waste	82.59	1.69	3.19	81.08	-0.37
Subtotal	122.57	9.27	4.91	126.93	0.70
Total	350.04	21.42	23.56	347.91	-0.12

The background of the slide is a vibrant green with a bokeh effect of out-of-focus light circles. Stylized green leaves and branches are scattered across the frame, particularly on the left and bottom edges. The title "Forest Accounts" is centered in a bold, black, sans-serif font.

Forest Accounts

Detail of Forests in Pakistan 2012-13

(By legal status)

(000 Hectares)

Category	Sub-Category	KPK	Punjab	Sindh	Balochistan	GB	AJK	Total
State Forests	Reserved	94	337	405	125	0	567	1528
	Protected	471	220	464	371	74	0	1600
	Un-classed	105	113	13	0	0	0	231
	Resumed	36	2	111	0	0	0	149
Private Forests	Guzara	279	68					347
	Communal	50				279		329
	section 38	8	14	0	0	0		22
	Choas Act				3			3
	Miscellaneous	875	15	0	371	461	0	1722
Total		1918	769	993	870	814	567	5931

Detail of Forests in Pakistan 2012-13 (By vegetation type)

(000 Hectares)

Forest Type	KPK	Punjab	Sindh	Baluchistan	GB	AJK	Total Area	Percentage
Coniferous	760	58	0	125	315	408	1666	36.96
Riverain	0	71	281				352	7.81
Scrub	308	274	1	371	38	9	1001	22.21
Mangrove	0	0	328	2			330	7.32
Mazari Land	24						24	0.53
Irrigated Plantation	0	172	111				283	6.28
Linear Plantation	2	14	0	1	0	0	17	0.38
Miscellaneous	750	84					834	18.50
Total	1,844	673	721	499	353	417	4507	100.00

The background of the slide features a soft-focus, bokeh-style image of green leaves and stems, primarily concentrated on the left side. Overlaid on this are several large, semi-transparent, light green circles that create a layered, ethereal effect across the entire background.

Water Accounts

Water Accounts

- Water is studied with reference to both its **supply and demand**.
- The supply side of water consists of water availability or resources.
- Water resources are collectively called inland water.
- ***The inland water resources are further classified into surface water and ground water***
- The availability of surface water depends upon hydrology.
- Pakistan comprises three hydrologic units: the Indus Basin, the Kharan Desert system, and the Makran coastal drainage.
- The major source of surface water is the Indus River and its major tributaries

Inland Water Availability - Surface Water

Water Source	Area Million Hectares
Rivers and Streams	3.10
Canals and Drains	0.35
Lakes	0.13
Dams and Reservoirs	0.20
Deltaic Area	0.70
Fish farms and Ponds	0.06
Total	4.53

Source: GOP, 2007; TDAP 2021

Data requirement										
S. No.	Name of District	Values in Kilometers		Values in 000 Hectares						Total Water Bodies
		Rivers & Streams	Canals and Drains	Lakes	Reservoir s	Tanks & Ponds	Fish Farms	Brackish Water	Deltaic Area	

Water Accounts - River Basin

- River basin or catchment area plays important role in any water related analysis.
- River Catchment area refers to the geographical area of land where all the precipitation falling within that area is collected and drains into river.
- **Pakistan can be divided into three main basins, the Indus Basin, the closed basin of the Kharan desert and the Makran coastal basin.**
- Indus Basin is the largest basin in Pakistan. The area of the Basin is 566,000 km² and spread over four provinces of Pakistan.

Water Accounts River Basin

Name of the river (KPK)	Catchment area (Km ²)	Average annual flow MAF
Swat River	14,000	3.54
Panjkora	13,000	2.6
Kabul River	66,000	19
Siran River	1,255	0.47
Kuram	4,552	1.52
Tochi	4,938	
Gomal Zam	8,651	
Tank Zam	2,357	
Sheikh Haider Zam	453	
Chodwan Zam	921	2.47
Draban Zam	1,096	
Total	117,223	29.6

Data requirement					
S. No.	Name of River Basin	Total Catchment Area	District wise Drainage Area	Average Water resource potential	Utilizable Surface Water Resources
		Square Kilometer	Square Kilometer	Million Acre Feet	Million Acre Feet

Water Storage Capacity 2018 Cont...

S.No	Name of Province	Completed		Ongoing	Proposed	Total (No.)	Storage capacity MAF
		Total Dams	Large Dams				Completed
1	Punjab	59	59	9	2	70	0.26
2	Sindh	26	2	3	5	34	0.04
3	Khyber Pakhtunkhwa	41	36	6	13	60	0.53
4	Balochsitan	332	191	31	65	428	0.23
	Sub-Total	458	288	49	85	592	1.06
	WAPDA Mega Dam	9	9	7	12	28	18.22
	Grand Total	467	297	56	97	620	19.28

Source: GOP_2018

Data Requirements						
S. No.	Name of Dam	Area	Status		Storage Capacity	District
		Square KM	Completed (Year)	Under construction	000 Acre Feet	

Way Forward

	Stakeholder Engagement
Secure primary data access	Forest, Irrigation, Mining departments etc.
Improve data quality & consistency	Urban Units, Meteorology, IRSA, SUPARCO
Mobilize technical support	Engage donors & development partners

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Thanks