

Basin short profile

Name	Yellow River	Country	China				
Area	795,000 km ²	Altitude	From 5,400 m to the sea				
Rainfall/Evapo	1956-00 average rainfall (as shown in right-side table) ETo ranges Varying 850-2500 mm in upper reach, 1100-1500 mm in middle reach, and 1000-1100 in lower reach		Time Period				
			1956-70	1971-80	1981-90	1991-00	AVG
		Upper	380	374	373	360	372
		Middle	570	515	529	456	523
		Lower	733	689	616	614	671
	Basin	482	451	455	413	454	
Land Use	75% of the basin lands are covered with mountains and hills, while plain areas account for only 17%. The basin has 12 million ha of arable land, 10 million ha of forests, and 28 million ha of pastoral lands. The average per capita arable land is 0.12 ha (1.5 time China's national average).						
Irrigation	Total irrigated area of 7.5 million ha (46% of arable land, against only 4% in 1949). Four major irrigation districts: Ningmeng, Fenwei, Henan, and Shandong) over 20,000 hectares.						
Water Indicators	Average per capita water resources is 553 m ³ . (7.5% of world average, 22% of China's average)						
		Water Use in Yellow River Basin by Sector (Bm3)					
	Average (98-2000)	Ag.	Ind.	Domestic		Total	
				Urban	Rural		
	Total	40.4	6	1.8	1.5	49.8	
Share	81%	12%	4%	3%	100%		
	The average irrigation withdrawal rate in 2000 was 5,000 m ³ /ha, (low rate indicating competition over water and likely high water use efficiency in the basin). The 48.4 bcm of water utilizable in 2000 are 35 bcm river water and 10.7 bcm groundwater, plus 2.7 bcm from outside the basin. Depletion from human withdrawal: 36.6 bcm (76% of utilizable water). 4.9 bcm (10%) outflow to the sea, and 6.9 bcm (14%) as unaccounted surface evaporation or other unrecorded losses.						
Drinking water	River water and well water						
Main crop(s)/yield	Food crop sown areas (1000 ha): Rice 278, Wheat 7987, Maize 4131, Soybean 1089, Tubers 1787, Other cereals 2799 Food crop yields in tons/ha: Rice 0.0-7.2, Wheat 2.4-4.0, Maize 4.3-6.2, Soybean 1.1-1.9, Tubers 2.5-3.6, Other cereals 1.1-1.9 (rainfed-irrigated)						
Population	Total population (2000): 110 million (8.7% of China), or 189 million (14.9% of China) if the flood area of the lower reach is included. Urban population: 26.4% (29% China's average).						
Floods and droughts	Flood and droughts were the twin disasters in the long history of the Yellow River basin. The Chinese government spent a great effort in dam construction and dike repairs (with a no-river-breach achievement since 1949). Flood threats remain but water scarcity becomes						
Groundwater	Groundwater has been extensively utilized in the basin since the tube-well boom in late 1950s. In 2000 groundwater abstraction reached 10.7 bcm within the basin and 2.7 bcm outside the basin. Groundwater pumping increased by 5.1 bcm over the past 2 decades, causing aquifer draw down.						
Environmental and health issues	With the river's unique nature of heavy sediment load, the number one consideration of environmental water is the river flow needed for flushing the sediments. The requirement accounts for 20 bcm or one third of the average annual flow in past four decades. With the river almost fully utilized at present and with industrial growth, urbanization and agricultural demand further claiming water resources, the challenge to balance human demand with ecological needs will be vitally serious and difficult to be met. Sewage discharge is the main cause for the deteriorating river quality. About 5 bcm of wastewater						

	enter the river every year, which accounts for 15% of the total river flow. The drastically reduced flow outgoing to the sea has made the shoreline backwards and swamp land losses in the river mouth area.
Protected areas	Soil erosion control on the Loess Plateau represent the No 1 need of basin nature conservation.
Land/labor	Aging population and low education degree are main concerns. More farmers would shift to cities if without adequate policy direction. Agricultural labor may be on a falling trend in the next years.
Land tenure	Like other basins in China, lands used to the state property during 1949-1980 before China's reform. Private land ownership starts in the basin but still in a small scale.
Water Management	The Yellow River Conservancy (YRCC) is the YR basin authority. However, the provincial governments have heavier votes on basin water allocations. YRCC itself is in a slow but right transition from an engineering agency to river basin authority.
Allocation rules	The most functioning rule is the historic/present status of allocations among the 9 Provinces in the basin. Water rights, pricing policies are being increasingly discussed but haven't been seriously implemented. China's State Council is the final decision maker on basin water allocation.
Hydropower	Hydropower capacity of 11.1 million KW and electricity production of 40 billion KWH per year.
Legal framework	A new China Water Law was published last year. The Law intends to give more power to the basin authorities for better water management. The Law also calls for transition from the engineering, traditional water use to resource-oriented, modernized water utilization in China. The legal status of YRCC and its power in basin management, will be strengthened with the new law. Water user associations are well developed in most of irrigation districts. A feature of the organization in China is the combination of irrigation business with village governmental entity, which makes the water management effective but without much farmers' freedom in practice.
Politics, Civil Society	Various policy reform proposals and "white papers" available at YRCC, awaiting implementation.
Future developments	No river flow augmentation in next 15-20 years before the west route of South-water-north project materializes; likely limited water saving potential from irrigation; complicated water allocation issues between upper and lower reaches; increasing pollution loads in the basin; and the forever-existing river sediment problems causing river channel rises and floods. All those will remain in the basin as constraints when looking into future water development.

YR Basin Map

