In 1989, the 15th UN Environment Council adopted the "Statement on Sustainable Development". In 2010, both Chinese and ASEAN leaders issued a joint statement on sustainable development. Governments and enterprises choose sustainable development, they need to build a circular economy system. In this process, it is beneficial to form a circular economy model. Sustainability can boost incentives for businesses and policies to model a circular economy. Sustainable development is a prerequisite for the formation of a circular economy model.

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CHINA'S WATER RESOURCES AND TRENDS IN THEIR USE

According to the results of the 2nd National Water Resources Evaluation of the Ministry of Water Resources of China recently, China's average annual precipitation is 6108 trl. m^3 (648 mm), and the average annual average water resources of surface water and groundwater updated through the water cycle are 2177 trl. m^3 [1]. Among them, surface water 2167 trl. m^3, groundwater 0,81 trl. m^3, due to surface water and groundwater conversion, mutual recharge, deducting the double calculation of 0,71 trl. m^3, and river runoff does not repeat the amount of groundwater resources of about 0,1 trl. m^3. China's per capita water resources of 2200 m^3, there are currently 16 provinces (regions, cities) per capita water resources (excluding transit water) below the serious water shortage line, there are 6 provinces and regions (Ningxia, Hebei, Shandong, Henan, Shanxi, Jiangsu) per capita water resources less than 500 m^3, the population of China is expected to increase to 1,6 billion by 2030, per capita water resources will fall to 1,750 m^3. The situation of water resources in China is serious in the future.

Table – Dynamics of water resources in China

Date	Precipitation throughout the country, mm	The country's total water resources, million m^3
2014	622,30	26263,9
2015	660,80	26900,8
2016	730,00	31273,9
2017	664,80	27746,3
2018	682,50	26323,2
2019	651,30	29041,0
2020	706,50	31605,2
Average	674,02	28450,6

From the trend of Chinese mainland total water resources, in the last 20 years or so, due to environmental changes, such as land use and cover changes caused by climate change and human economic activities, China's water resources have changed to varying degrees, precipitation and water resources have decreased slightly, especially in northern China (e.g. North China), the trend of water resources decreasing is more obvious. The emergence of the years of persistent dry water in the water-scarce areas of the north, as well as the adverse factors such as the Yellow River, Huaihe River, Haihe River and Han River, which encountered the same dry year, aggravated the contradiction between the supply and demand of water resources in the north.

At present, China's water resources are mainly reflected in the following characteristics.

The total amount is rich and the per capita share is low. With an average annual water resource of 21,77 trl. m^3, China ranks 6th in the world, with an average runoff depth of about 284 mm, 90% of the world average and 6th in the world. Although China's total water resources are abundant, the average share is very small. The per capita share of water resources is 2200 m^3, about a fourth of the world's per capita, ranking 110th in the world and ranked as one of the world's 13 poor water countries. The average share of arable land is 28,32×103 m^3/ha, which is only 80% of the world average.

The inter-year distribution is uneven, drought and flood disasters are frequent, and the contradiction between supply and demand of water resources is prominent. The ratio of maximum and minimum runoff between years, the medium river south of the Yangtze River is below 5, and the northern region is more than 10, and the interannual change of runoff has obvious continuous plump years and continuous dry years. The distribution during the year is more water in summer and autumn, less water in winter and spring. Most areas of the year for four consecutive months of precipitation accounted for more than 70% of the year, short-term runoff is too concentrated, easy to cause flood disasters. For example: 199 is a year of abundant water, the country's river runoff than the normal year 624,7 bil.

m^3, of which the Yangtze River is 349,1 bil. m^3 (36,7% more), the Songhua River is more than 69,3 bil. m^3 (90,9% more), the Yangtze River, Nenjiang River has a major flood disaster. In 2001, the drought was severe, the runoff of rivers and rivers in most parts of the country was low, and the Songhua River, Liaohe, Haihe, Yellow River and Huaihe River were 23% to 67% less water than normal years, and the Yangtze River was 6,9%, only the southeast, south China coast, southwest and northwest inland water abundant.

Soil erosion throughout the country. In 2020, the country has a total area of 2,7 mln. km^2 of soil erosion. Among them, hydraulic erosion area of 112 mln. km^2, wind erosion area of 1,6 mln. km^2. According to the intensity of erosion, the area of mild, moderate, strong, extremely strong and severe erosion is 1,7 mln. km^2, 0,46 mln. km^2, 204 mln. km^2, 15,3 mln. km^2, 0,01 mln. km^2 and 0,17 mln. km^2 accounted for 63%, 17%, 7,5%, 5,7% and 6,2% of the total area of soil erosion in China, respectively. Compared with 2019, the national soil erosion area decreased by 0,18 mln. km^2, a decrease of 0,67% [2].

The distribution of the region is uneven, and the soil and water resources do not match. The Yangtze River basin and its southern region account for only 36,5% of the country's land area, and its water resources account for 81% of the country's total; The Huai River Basin and its northern region account for 63,5% of the country's land area, and its water resources account for only 19% of the country's total water resources. The population of northern China accounts for 2/5 of the total population, but the share of water resources is less than 1/5 of the total water resources.

Low utilization rate of water resources and serious pollution. China's agricultural water irrigation utilization coefficient is 0,3 to 0,4; while developed countries reached 0,7 to 0,8. With the rapid development of economic construction, the population is increasing, especially the urban population is expanding rapidly, and the discharge of polluted wastewater in the whole country is growing rapidly. At present, the national industrial and urban life waste sewage discharge annually reached 445×10^8 m^3, of which about 80% were discharged directly into the water without treatment, causing large areas of water pollution, resulting in the deterioration of the water environment.

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