



Preliminary study on hydrogeological characteristics and groundwater resources in Cambodia

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Abstract: Cambodia has abundant rainfall and surface water resources, but its distribution is uneven and the water conservancy infrastructure is weak, so, groundwater has become an important source of water supply, industry and irrigation water in some parts of the country. There are not specialized hydrogeological surveys nationwide in Cambodia, as well fully recognition and assessment for groundwater resources and overall planning for groundwater development and utilization, the groundwater in some areas is excessive and over-mining, which leads to water environment problems, such as groundwater depletion, ground subsidence and deterioration of water quality in partial areas, that serious impacts on the sustainable development of local economic and social communities. Through a large amount of data collection and field hydrogeological survey, the research work of the national hydrogeological characteristics and groundwater resources is carried out, and the research shows that: [U+2460] There is no strong water area in the whole country, among them, medium-rich water areas account for about 58.90 percent of the total land area, and the weak water area accounts for about 33.19 percent, and the strong water area accounts for about 7.91 percent [U+FF1B] [U+2461] The whole country is divided into five groundwater resource units, the average groundwater recharge resources in the whole country is about $415.80 \times 10^8 \text{ m}^3$ and the recharge modulus is $22.91 \times 10^4 \text{ m}^3/\text{km}^2\text{a}$ by the calculation of coefficient of infiltration coefficient [U+2462] The average annual allowable amount of groundwater in the whole country is about $311.58 \times 10^8 \text{ m}^3$, the amount of groundwater exploit in the country used to domestic water is estimated to be about 400,400 m³ / day, accounting for 61.9% of the total water consumption [U+FF1B] [U+2463] According to Chinese standard, among 30732 groups of water samples collected throughout the country, [U+2164] class water samples of 26656, accounting for 86.74% of the total, [U+2163] class water samples of 1568 and other water quality is better, according to Cambodian standard, a total of 22162 water samples with high arsenic levels of drinking bad for your health. The results can provide technical basis for the development and utilization of groundwater resources, the solution of groundwater environment and the technical basis of comprehensive water resources planning in Cambodia.

Keywords: Hydrogeology; Groundwater resources; Rich water area; Supply resources; Permitted extraction; Water quality; Groundwater environment