

# GROUNDWATER DEVELOPMENT IN XINJIANG ARID ZONE OF NW CHINA

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Based on recent studies (1996--1999), the following three problems are discussed in this paper:

(1)Groundwater's basic characteristics of it's role in water-land use planning. Plain area is about 2/3 of total area of Xinjiang ( $166 \times 10^4 \text{ km}^2$ ). Total annual recharge of groundwater in plain area accounts for  $395 \times 10^8 \text{ m}^3/\text{a}$ , and total exploitable resources of that is  $252 \times 10^8 \text{ m}^3/\text{a}$ . Now only 15% of total exploitable groundwater resources has been used, whereas 2/3 of surface water has been used. In the coming 21<sup>st</sup> century more attention should given to groundwater and it's conjunctive use with surface water.

(2)Groundwater has been developed quite uneven in Xinjiang, and are intensively used in northern piedmont area of Tianshan mountain. Awareness of water-saving leads to practice water-saving irrigation technique. Two examples are given to illustrate efficiency of water-saving up to 50% (Hutubi farm and 90<sup>th</sup> farm).

(3)In contrast, in Tarim basin groundwater use accounts only for less than 10% of exploitable groundwater resources. Farmland irrigation depends on surface water, but drainage system was inadequately constructed. Negative effects of overusing surface water exist, such as secondary soil salinization and decrease of river flow. Considerable reduction of Tarim river flow has caused serious deterioration of ecological condition of lower reach of Tarim river, which is being solved with participation of geologists.