治水辩证法

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Dialectics on Water Conservancy

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目 录

目 录

目 录

目 录

目 录

目 录

目 录

目 录

水利规划是为开发利用水资源、防治水旱灾害而制定的总体措施安排，水利建设和发展应在正确的水利规划指导下进行。因此，水利规划至关重要。要做好新形势下的水利规划，必须正确处理整体与局部、近期与长远、硬件与软件等方面的关系，认真把握好调查研究、方案拟定、影响评价和方案论证四个环节，在此基础上，构建完整的水利规划体系，实施水利规划的动态管理。

Contents

ter circulation but also affects the establishment of a rational price system and economic regulation mechanism from water supply and water drainage to treatment and recovery of used water according to the marketing economic rules and regulations. The water resources administration system should be reformed to realize an integration of water conservancy as to guarantee a sustainable utilization of water resources.

The central task at present of agriculture and rural work in China is to actively promoting the strategic adjustment of agriculture and rural economic structure. Water conservancy is one of the most active factors in the big system of agriculture and rural economic structure. The layout of irrigation works shall adapt to the changes of adjustment of agricultural production structure and the layout of water supply works shall meet the requirement for the development of small towns and township enterprises. Measures of water and soil conservancy shall be taken to create a natural environment that is more suitable for existence and development of people.

With the strategic adjustment of agriculture and rural economic structure, the construction in small towns and cities will have a large development and the construction of water supply facilities will become an extremely important part and even a "leading" part. The BOT mode can be adopted to expedite the

construction of water supply works in towns and cities. The biggest attraction of this mode to the government is the non-responsibility of funds, and the introduction of foreign funds used for the construction of projects without the debts of government. And the operating corporation of the project can obtain a relatively long term and stable economic benefit.

The sedimentation situation in the major rivers of China becomes worsened and its consequent flood prevention problem also becomes serious day by day. To solve this problem, one shall look into both its root causes and outward signs and integrate short term with long term, take comprehensive treatment measures, and adhere to a long term and persistent treatment. According to a preliminary analysis, the annual investment for treatment of sedimentation in the major rivers of China shall be no less than RMB¥ 1 to 1.3 billion.

China is one of the countries occurring the most serious loss of soil and water. The important factor for drafting a guiding policy of soil and water conservation is the balance among ecological, economic and social benefits. The soil and water conservation, with an unsolved technical problem, shall never be a mass movement. An effective treatment mode in a comprehensive way for local conditions shall be studied, exemplified and spread, quickening the applied research of "3S" technology and

establishing a perfect conservation evaluation system. To speed up the progress of treatment, the investment channels shall be further broadened to render more assistance by the national policy, and strengthening the organizing behavior of the government towards the markets.

Comprehensive utilization of multipurpose dam projects and its social evaluation **104**

To realize a scientific policy-making for comprehensive utilization of the multipurpose dam projects, a social assessment and evaluation shall be conducted, including macroscopically economic, environmental and social effects. Based on these contents, a reasonable and practical evaluation system shall be established. To give the policy-maker a clear concept of "good" or "poor" about the scheme when the evaluation has no identical dimension, the said social evaluation shall adopt a systematic fuzzy analysis method.

Management of contracts for the construction of international hydraulic and hydroelectric projects **129**

The management of construction of international hydraulic and hydroelectric projects shall be focused on the management of contracts. The managing persons of the relevant contracts must establish intense contract sense and law sense, familiar with the standard contract terms and international practice. The claim treatments shall be listed as the important contents in management of contracts for construction of international hydraulic and hydroelectric projects in China. To meet the re-

quirement of construction and management of projects, a highly qualified supervision engineer's contingent shall be built up and its operation mechanism shall be standardized.

From the experience of Yangtze River flood fighting and emergency treatment in 1998 and the revealed relevant problems, the drafting of the Yellow River flood prevention scheme must be based on the most adverse conditions. A timely and exact hydrological prediction is of a vital importance and a great effort shall be made to build up a perfect flood prevention system. In the flood prevention work, "prevention is more important than emergency treatment" shall be always in mind. The flood prevention work shall be done with existing laws to be followed and to be strictly executed.

The existing problems in the recent Yellow River treatment and utilization can be listed as follows: 1) capability of the runoff flow rate to fulfill the demands; 2) problem of construction of control and guiding projects at the downstream; 3) problem of the deposits and sedimentation of the river bed after Aishan; 4) problem of the flood detention area at Beijin Dyke. Whether or not the Yellow River can be harnessed for a long time with safety relates to the dealings of following problems: 1) problem of the treatment of Loess Plateau; 2) problem of

functions of the main stream reservoir at the middle reach of the river; 3) problem of the relation between transferring water from South to North and the Yellow River treatment; 4) problem of the change of river course at the lower reach of the Yellow River.

Frequent dry-out at the lower reach of the Yellow River has led to frequent water crises of the residents along the banks, especially those in outfall region, causing serious damages to the industrial and agricultural production. The deposits and sedimentation in the river bed at the lower reach especially in the main river course are increased, making the flood discharge capacity be lowered and the ecological system get worsened. The said dry-out is not only the inevitable outcome of the contradiction between supply and demand of water resources, but also a reflection of the existing shortcomings in the traditional administration system. To solve this problem, the current administration system must be reformed, giving the organizations their due administrative functions, working out a detailed water distribution scheme for the low flow years and particularly low flow years, strictly implementing an uniform control and distribution, strengthening the responsibility at various levels, regulating the amount of water introduced by using economic levers. The state and the governments at all levels should issue the preferential policies to encourage practicing economy in using water, too. In the long run, the ultimate solution to the dry-out in the Yellow River shall be to implement the pro-

ject of transferring water from South to North.

The three difficult technical problems in treatment of Haihe River basin can be listed as follows: 1) problem of the sedimentation at the outfall; 2) problem of the extension of flood prediction period; 3) problem of realizing both functions of reservoirs to prevent floods and fight droughts. The basic thoughts to solve these problems shall be given as follows: through a study of sedimentation mechanism, to discharge sedimentation into the sea with the help of ocean tiding drive. The main approaches to extend the flood prediction period shall be given as follows: in addition to the current modern technical means, a great effort shall be made in applied research of weather forecast on a hydrological basis. The key technical problem to realize both functions of reservoirs to prevent floods and fight a drought is to rationally determine the water level limit at floods. This problem can be solved under the prerequisite of guaranteeing the reservoirs safe in flood prevention through a study of flood prediction and control, installment flood control, flood random analogue analysis in flood seasons, fuzzy analysis in flood seasons etc. several approaches.

The problem to prevent floods in the Songhuajiang River basin shall be finally solved by building up a complete flood pre-