Participation and Globalization 
in Water System Building

Guest Editors' Introduction

Decision-making processes in water management have drastically changed within just a few decades. The ambitious water development plan for the neighboring islands of Java and Madura, Indonesia, is a case in point. This plan was proposed in 1979 by the retired civil engineer W.J. van Blommestein. Van Blommestein is mostly known for the Van Blommestein (or Afobaka) reservoir in Surinam, South America. Completed in 1965, this reservoir was crucial for the achievement of independence by this former Dutch colony in 1975. Earlier, in the late 1940s, Van Blommestein presented a “welfare plan” to improve the social and economic position of the western part of Java, which was adopted by the government of the Indonesian republic that was founded in 1949. The 1979 Van Blommestein plan for Java and Madura sought to achieve similar goals by similar means on a larger scale. In order to address the needs of, among others, agriculture, industry and shipping, it was proposed to transport water from the wet west to the dry east of Java and also to the dry Madura through the construction of a number of interconnected reservoirs and a siphon between the islands. The Indonesian government welcomed Van Blommestein’s new plan. It seemed to fit well with the existing development needs and technological development trends apparent in Java, however, despite strong support from the Indonesian government, Van Blommestein’s new large scale, multi-purpose plan was not executed. The reasons behind this are pertinent to the subject matter of this issue.1

In this particular case, the decision making was not dominated by the Indonesian government and not limited to considerations of a sheer technological nature. Decision making took place in a broader, international institutional setting. In this new playing field, the project failed to attract crucially needed foreign capital due to skepticism regarding the viability of the plan. A Dutch mission was negative about the plan, among other reasons because the introduction of new high yielding rice varieties meant that the food needs of Indonesia’s population could be met. In addition, engaged scientists and others brought forward objections of a social and

ecological nature. The construction of large reservoirs would force large numbers of people to move, i.e. produce forced transmigration, and would disturb the delicate relationship between man and nature, e.g. large reservoirs would facilitate the spreading of malaria.

Van Blommestein’s 1979 plan aimed at an efficient use of scarce water resources and thus dealt with a problem that has become all too common today throughout the world. Problems of water supply have always been with man, but at the beginning of the twenty-first century these problems seem to be more urgent than ever. Processes like population growth, expansion and intensification of agriculture, urbanization and industrialization have greatly increased the pressure on water resources. Moreover, human interference in nature’s water cycle has, despite the obvious beneficial effects of creating the necessary conditions for social development, detrimental effects. Unanticipated problems like subsidence, salinization of agricultural lands, desert formation (e.g. the Aral lake) and declining fish and wildlife habitat further worsen the case. Consequently, the sustainable provision and control of freshwater to support human development has been identified as one of the major challenges of the new century (World Water Commission, 2000).

Water problems not only seem to be more serious than ever, they have also changed character. Here we would like to point to two challenges to water management in particular: “globalization” and “participation.” First, as the example of Van Blommestein’s 1979 plan shows, water management is no longer a predominantly local concern. Growing populations and increasing interdependency among peoples, due to (economic) specialization, also enlarge the scale of water problems. Correspondingly, these problems are increasingly dealt with in larger, even global institutional settings. Secondly, increasingly various groups and nations, all having their own interests and values, are demanding a say in water management.

Earlier problem solving methods and decision making structures are often disqualified today as too “technocratic” due to the nature of the groups involved with providing the “solution.” The engineers and state bureaucrats forming these groups are seen as inadequately qualified and too isolated to deal with modern water problems. In the search for new methods and structures in water management, participation has become a new point of departure. New players and concerns have been granted access to the decision-making processes and, consequently, new types of solutions are being suggested.

This special issue seeks to explore further the character of the current problems in water management and the kind of solutions these problems ask for, especially in view of the diversity of groups, interests and values involved. The new challenges in water management require new theoretical concepts and frameworks of analysis. This issue takes as its point of departure one of the most promising approaches in this respect: the Large Technical Systems (LTS) approach developed by the American historian Thomas Hughes and others (see below for references). This approach emphasizes how hydraulic engineering, like other types of engineering, is being applied within the context of complex networks of technical artifacts and