

## **Irrigation systems in ancient Yemen: Epigraphic and historical study**

This research project targets old South Arabian (Sabaic, Qatabanic, Minaic, and Hadramitic) epigraphic evidence relating to the irrigation systems and water course management in ancient South Arabia (Yemen). For the first time, these texts will all be collated and subject to study by means of archaeological study and linguistic sources, especially those of Classical Arabic and Yemeni dialect.

The hydraulic systems played a significant key role in the emergence of the early civilizations of mankind, including South Arabia. Flood irrigation has a long history and tradition in ancient South Arabia. The earliest hydraulic structures range back to the 4th Millennium BCE. South Arabian irrigation technology belongs to the most advanced irrigation technologies in ancient world and reached its peak with the construction of the great dam of Marib. Monumental hydraulic constructions are a technical innovation especially of the Sabaean in ancient South Arabia. Archaeological and geomorphologic investigations of ancient irrigation in Yemen over the last three decades brought to light the significance of irrigation systems for the development of society. Numerous ancient dams and deflector dams have been discovered in all parts of the country.

As a result of the enormous increase in available South Arabian epigraphic material in the last three decades, the lexical and historical analysis of the South Arabian epigraphic documents relating to water management and irrigation systems is an urgent task, not only for Sabaic studies, but also for Semitic studies in general: Among the thousands of South Arabian inscriptions, there are some texts that document the history of the construction of these water systems. Other texts inform us about water resources management, water rights and water management.

The primary purpose of the project is the comprehensive documentation and analysis of the South Arabian records linking to irrigation systems and water management.

The number of texts relating to irrigation have been estimated to be 160 in the first application. However, during the investigation, the result was that this number has been

underestimated and that the actual number is over 220 texts. The target in this application is to collect and edit ca. 220 texts and ca. 50 unpublished texts from the Sanaa National Museum and ca. 15 texts from the University of Leiden. In addition, some other aspects of socio-economic life that occurred during this research will be considered.

The roughly 285 texts relating to irrigation will be translated and investigated from an historical perspective. A dictionary of about 300 technical terms, which are mentioned in association with irrigation, will be delivered. A cultural and historical study of the water management in ancient South Arabia will be offered. This will be carried out based on the textual material, and dependent upon the analysis of the lexical-linguistic sources.

This pioneering project will be a fundamental contribution to the study of socio-economic structure in a traditionally arid region of the Middle East. The results will be published in English and will be made available as a handbook for Semitic Studies; as well as provide a substantial contribution to the cultural history of the ancient Near East and other related scientific disciplines.