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KEY WORD : DEVELOPMENT PLANNING / RIVER BASIN ANALYSIS / MAEKLONG BASIN

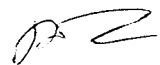
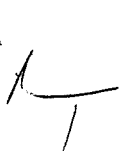
METAPUN CHALEEKUN : WATER MANAGEMENT FRAMEWORK FOR DEVELOPMENT PLANNING OF THE
MAEKLONG BASIN. THESIS ADVISOR : MR. CHAIYUTH SUKSRI, 334 pp. ISBN 974-635-104-4

A study on the processes and procedures for the development planning of the Maeklong river basin is aimed at finding an appropriated framework for water management by considering all utilizations of water from the Maeklong river, either by public or private users, under certain criteria which are in line with actual practices and with consistent procedures. Water allocation criteria are established for various study cases, according to types and priority of water users, to which higher priority is given to the 'in-catchment/basin' users. Water demands are established from actual data/information from 1965-1993 (for 29 years) and with additional hypotheses on water uses. A HEC-3 computer program is used to simulate, under different utilization conditions, a water balance within the basin to support an established procedure in setting up water allocation criteria and appropriated water allocation patterns for future development planning of the basin.

Reviews on existing plans on water utilization disclose that some are definite and yet some are not clear, particularly on the criteria for quantity estimation. This points out the important and necessity of the proper processes for setting up water allocation criteria to be used in the basin simulation, which should be clear and are acceptable, in order to improve the overall efficiency in managing water resources of the basin. The simulation process needs proper steps and procedures for setting up hypotheses which must take into account plans and constraints of various users in different sectors in establishing priorities and limits.

The results of the simulation, under various assumed processes on water management and various hypotheses on shortage criteria, show that there is sufficient water to satisfy the 'in-catchment/basin' demands for domestic, irrigation, salinity control and industrial uses as well as the water usage of the proposed Ratchaburi Power Plant. For irrigation purpose, there is sufficient water to supply an irrigable area of about 2.2 million rai in the wet-season and 1.8 million rai in the dry-season; and 45 cms of water could also be diverted for salinity control in the Thachin basin in the dry-season. However, when the 'out-of-basin' diversions are increased to 60 cms for the Thachin and 27.1 cms for domestic water supply according to the Metropolitan Water Works' future plan, the water availability will be sufficient for irrigate 2.0 million rai (in equivalent of rice) in the wet-season and for only 0.83 million rai (in equivalent of rice) in the dry-season.

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