

Sengmoung Sithivohan 2007: Monitoring and Evaluation of Water Allocation in Huay Sone Irrigation Project, Nasaythong District, Vientiane Capital, Lao's People Democratic Republic. Master of Engineering (Irrigation Engineering), Major Field: Irrigation Engineering, Department of Irrigation Engineering. Thesis Advisor: Associate Professor Bancha Kwanyeu, Ph.D. 169 pages.

The objective of this study was to use WASAM 3.0 program to monitor and evaluation of water allocation in Huay Sone Irrigation Project using data of both dry and wet season during 2005-2006. The specific objectives are to understand the situation of water usage of the project, to monitor crop planting on weekly basis for more accurate water allocation, to calculate irrigation efficiency and delivery performance ratio, and to report water allocation schedule at zone level.

In using of WASAM Program in the Huay Sone irrigation project, Nasaythong District, the system was comprised of 3,000 rai in wet season and 1,200 rai in dry season. Two rainfall stations and three ETo stations were used in the analysis. The monthly average of ETo ranges between 116-183 mm. There are three crops considering in the project cropping patterns. Those are dry season rice, wet season rice and others crops. Weekly weighted crop coefficient for rice in the dry season is between 0.10-1.21; the coefficient in the wet season is between 0.09-1.10, and monthly weighted crop coefficient is 0.8 for the other crop.

The results of water use recommended by the WASAM 3.0 were close to the average actual delivery discharge since water from the storage reservoir was sufficient for crop water requirement. In monitoring of water allocation in 2005-2006, the results indicated that the average irrigation efficiency of the project in the dry season is 58 and 57 percent and the irrigation efficiency in the wet season is 48 and 49 percent respectively. The delivery performance ratio (DPR) of the project in dry season is 1.49 and 1.25, and the DPR in the wet season is 1.25 and 1.3. This irrigation efficiency is fair comparing to Kao Liao Irrigation Project in Laos PDR and Nongwai Irrigation Project in the northeast of Thailand. However DPR in the dry season and in the wet season are still higher than 1.00. Therefore water management should be improved for more precise water delivery considering crop water requirement, effective rainfall and planting area.



Student's signature



Thesis Advisor's signature

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