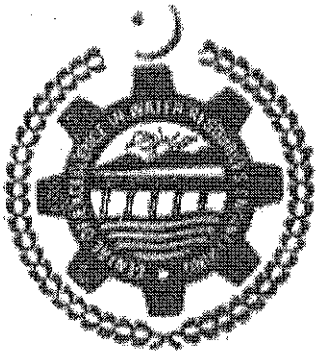
THESIS

ASSESSING THE IRRIGATION WATER AVAILABILITY AND DISTRIBUTION SYSTEM FOR DARMALAK DAM



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ABSTRACT

Darmalak dam site is located on Moramzai Toi west of Lachi. The dam site can be approached from Lachi, located on Kohat-Bannu Road, through jeep able track. The proposed command area under the dam is located closed to the dam site on right bank of Moramzai Toi. The main purpose of the present study is to optimize the small dam capacity, through reservoir operation studies, in order to develop a flood water storage reservoir satisfying the irrigation supplies to the selected CCA of the land downstream of the dam site and estimating the environmental impacts assessment of the study area on the other environment agents along with giving some procedural steps to develop the irrigation systems in the study area. Hence it is necessary to develop a flood water storage dam at all those sites where reasonable flood water is generated. They can help in improving the economy of the area by increasing agricultural activities. Moreover in drought the water retained by dam can also be used for drinking purpose rather than using it for irrigation in water scarce areas. The potential development and analysis for small dams at relevant site should be a significant factor for planners and designers.

From this study it is found that the 4% of the live storage of Darmalak Dam Reservoir can be used for drinking water supply to a population of 15,482 persons in the project area. This would need water treatment in the form of slow sand filters. The proposed cropping intensity comes to 100% per annum comprising maize 20%, K. vegetables 10%, K. fodder 6%, Wheat 45%, R. vegetable 3%, Onion 4% and Orchards 6%. To obtain the proposed crop production the improved agricultural practices and the

recommended fertilizer doses, improved seed and plant protection measures should be adopted. Farm input supply centers and fruit nurseries should be established in the vicinity of the project area. Rural infrastructure like road and markets should be improved for efficient disposal of marketable surplus Darmalak Dam is environmental friendly with no significant environment impacts. Wherever needed, however, mitigation measures have been proposed and a monitoring program has been outlined. It is recommended to obtain the proposed crop production that the improved agricultural practices and the recommended fertilizer doses, improved seed and plant protection measures should be adopted. High delta crops should be avoided and Ground nut may be included as cash crop.