

M.Sc THESIS

EVALUATION AND STUDY OF PARTICULAR FAILURES OF
SMALL DAMS IN POTHOHAR PLATEAU OF PUNJAB



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ABSTRACT

Small dams are an important source of both primary and productive water for rural communities. Small dams, in Pothohar region, are of great importance. It is against this background that this study was carried out to assess the current physical condition of the small dams in the area of study and the factors responsible for this condition. The failures of these dam may prove to be catastrophic.

After reviewing literature and past cases of failures of dams throughout world it was found that research on small dams is lesser than large and medium sized dams. The causes of failure may be differential settlement, seepage, backward erosion and overtopping. Other causes include structural failure of the material used in dam construction and inadequate maintenance.

Three small dams are selected because of their poor physical condition. Domeli dam spillway washed out. Settlement of crest in Lehri dam and seepage in Jawa dam were observed. The physical condition was thus not in line with the recommended condition. Conditional survey was conducted during field visit, information was collected and analyzed according to recommended guidelines for construction of small dams. The reasons can be broken down into improper construction and maintenance. Published and unpublished literature was reviewed. It was concluded in the study that the risk of failure of small dams in the area is high and security of water availability is threatened. This study can help in identifying areas for improvement and also taken as precaution in future. Some suggestions for modifying current engineering practice for these kinds of problems are made.

Key words: Evaluation, failures of small dams, Small dams, Pothohar region