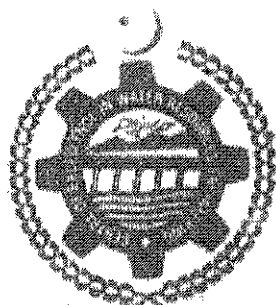


THESIS

CANAL WATER DISTRIBUTION AND ITS IMPACT ON FARMERS' INCOME



6531

By

**Muhammad Tousif Bhatti
(2003-PG-WRM- 03)**

For the Degree of

MASTER OF SCIENCE

IN

WATER RESOURCES MANAGEMENT

**CENTRE OF EXCELLENCE IN WATER RESOURCES ENGINEERING
University of Engineering and Technology, Lahore**

February 2005

ABSTRACT

The purpose of this study was to quantify inequity in canal water distribution and its impacts on income of the farmers in selected watercourses of selected distributaries. The study was conducted on Thaman distributary in district Kasur, and Bhagsari distributary in district Rajanpur of Punjab, Pakistan. Total 12 watercourses were selected in both the distributaries. Each distributary was divided into three reaches i.e. head, middle and tail reaches, and two watercourses were selected in every reach for detail study. For every watercourse, water discharge was measured at head, middle and tail ends and farmers' interviews were also conducted.

The results showed that there is significant equity of canal water distribution in Thaman and Bhagsari distributaries. The average values of Gini coefficient were 0.591 and 0.65 for Thaman and Bhagsari distributaries, respectively. Moreover, the water supply to the tail end farmers at selected watercourses was less than those at the head and middle of the watercourses. The average DPR values for all the watercourses at head, middle and tail of watercourses of Thaman distributary, were 0.87, 0.68 and 0.43 respectively. Similarly, the average DPR values for all the watercourses at head, middle and tail of watercourses of Bhagsari distributary, were 0.56, 0.50 and 0.30 respectively; showing the gap between the discharges received by the farmers and authorized discharge. Results also revealed that the tail end farmers had to spend more money to pump groundwater and net income of the farmers decreased with increase in distance from the outlets.

It was concluded from this study that inequity of distribution of canal water is found at tertiary (watercourses) level as well as at secondary (distributary) level of irrigation system, and canal water this inequity of canal water distribution has great impacts on farmers' income.