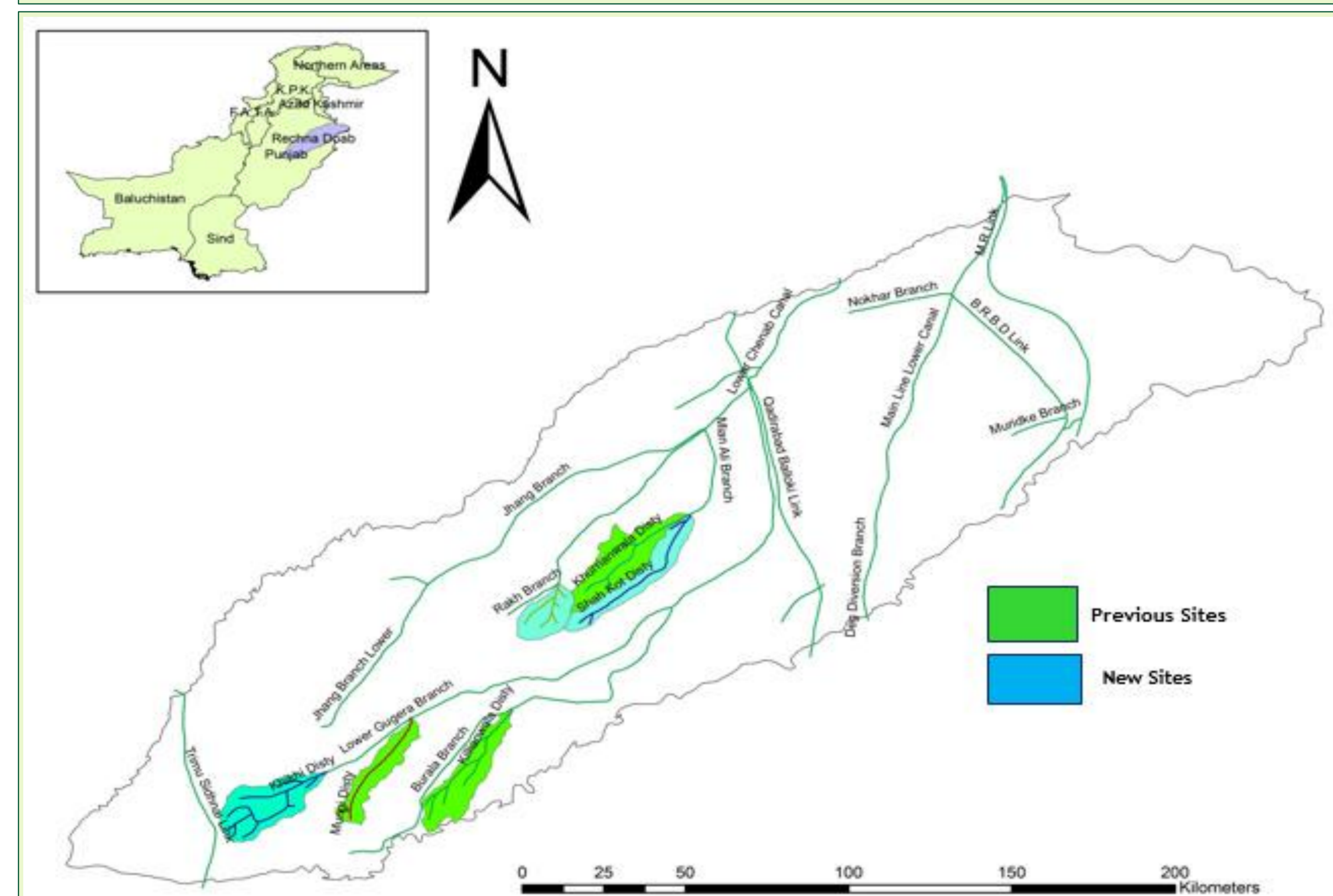


## Introduction

Although Pakistan has one of the largest contiguous irrigation systems in the world but it operates at a very low level of irrigation efficiency of 40%, which can be improved by adapting efficient on farm irrigation practices. These practices include watercourse improvement, laser land leveling and bed planting. These practices were carried out at three sites commanded by Lower Chenab Canal System East (LCCS) under a JICA funded project to demonstrate the impact of water saving technologies on crop yields. About 6000 ft (1829m) length of watercourses were improved, 2100 acres (850 ha) were leveled, 1000 acres (405ha) went under bed planting. Field data were collected and the analysis revealed that on the average, these practices saved irrigation water in the range of 20 to 70%, increased crop yields by 20 to 30% and increased net income to the farmers by 20%. The success of these practices, however, lies in creating awareness among the farmers, providing backup support and on field intensive trainings to the farmers.

Sites Selected under the project on LCCS East



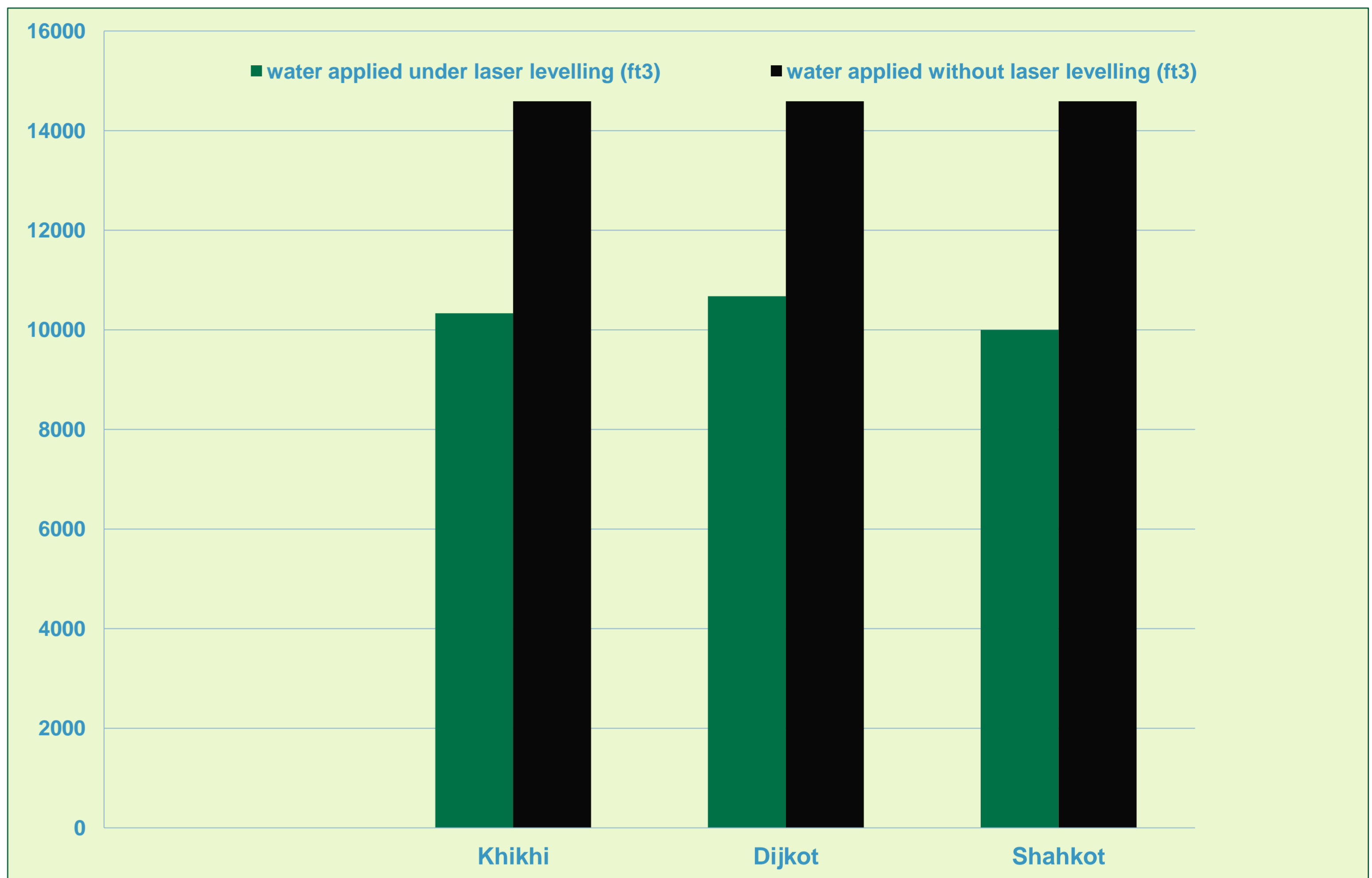
## Water Course Improvement

- Water losses in the water courses have been reported to vary from 30 to 50%.
- Water Management Research Centre, University of Agriculture Faisalabad (WMRC-UAF) improved three watercourses at three sites Lakhuana, Shahkot and Khikhi distributaries under JICA project.
- Three water courses of 2200 feet (671m) in length each at three sites were improved, which reduced the conveyance losses significantly in the range of 15 to 20%.
- Cropping intensity increased by 20 to 30% and crop yields was increased by 20%.
- Economic returns from lining of these water courses were increased by 20%.

## Laser Land Leveling

- At these three sites, 3000 acres (1214ha) were laser levelled, resulting in saving water, improving irrigation efficiency and increasing crop yields significantly.
- Efforts were made to involve and convince the farmers for adapting laser leveling technologies to receive the benefits in terms of water saving and yield increase.
- The results suggested that laser land leveling resulted in about 25% reduction in irrigation water application and an increase of about 30% in wheat yield as compared to conventional practices.

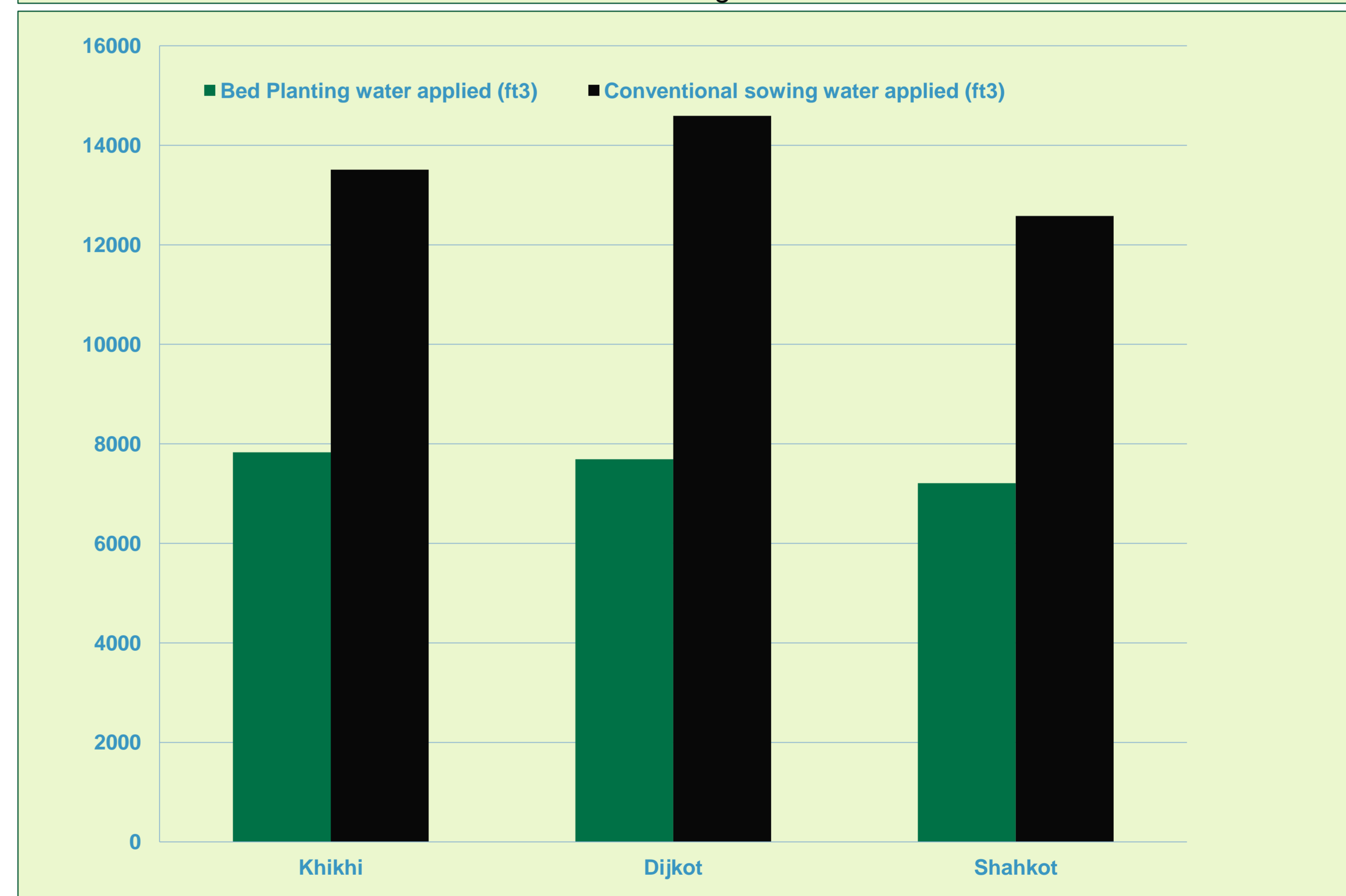
Comparison of water applied (ft<sup>3</sup>) per irrigation per acre under Laser Land Levelling and with out Laser Land Levelling



## Bed Planting

- Project target for this activity was 3000 acres (1214ha) with 1000 acres (405ha) on each site. The activity was performed on 3000 acres (1214ha) indicating that farmers have been convinced for this technology.
- Bed-furrow planting has potential of water saving of 30-50% and increase in yield for wheat (5 to 10%) with improved fertilizer use efficiency, which addresses dire need of the country both for water savings and food security.
- The economic benefits derived by using bed technology ranged from 20 to 30% in comparison to traditional sowing of crops.

Comparison of water applied in (ft<sup>3</sup>) per irrigation per acre under bed planting and conventional sowing



## Summary and Conclusions

- Water Course improvement reduced the conveyance losses significantly in the range of 15 to 20% and cropping intensity increased by 20 to 30% and crop yields was increased by 20%.
- Water management practices of laser land leveling and bed planting have potential to save water in the range of 20 to 40% and increase in net return to the farmers by 20 to 30%.