ASSESSMENT OF TRADITIONAL DRAINAGE SYSTEM WITH SPECIAL REFERENCE TO KARNATAKA STATE, INDIA- A CASE STUDY

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Presentation outlines

- Introduction
- Methodology
- Results and Discussion
- Impact Of Traditional Drainage System On Ensuring Better Drainage

INTRODUCTION

- India accounts for 5101 major dams for irrigation and hydro power also highest irrigated area in the world.
- Among the top ten drained area in the world India stands 6th position (5.80 m ha).
- 65 % of the population engaged in Agriculture.
- 30 % of the total cropped area (3 m ha) is under irrigation in Karnataka State.
The study was carried out as on farm in fifty farmers field during 2012-14. Red sandy loam was the predominant soil type of the study area. Study area is located on mid reach of the command area. The first year was spent in interacting with farmers, visiting their field, refining the methodology. During second year collection of data on drained water, crop yield and feedback.
The annual water drained from the cultural drainage system was 250 m$^3$ ha$^{-1}$. Among the systems ridges and furrow system with highest water drained (358.50 m$^3$ ha$^{-1}$ annum$^{-1}$).

The mechanical drainage system drained 698 m$^3$ ha$^{-1}$ annum$^{-1}$. The broad bed furrow drained 730 m$^3$ ha$^{-1}$ annum$^{-1}$.

Among the biological drainage system bamboo (7300 m$^3$ ha$^{-1}$ annum$^{-1}$) and eucalyptus (3650 m$^3$ ha$^{-1}$ annum$^{-1}$) drained higher than the traditional methods 4107 m$^3$ ha$^{-1}$ annum$^{-1}$.
RESULTS AND DISCUSSION

- The use of appropriate crops viz. Banana, Baje Rice, Water melon, Buffalo grass.. has drained on an average of 704.58 m$^3$ ha$^{-1}$ annum$^{-1}$.
- In addition, the above crops yielded economic returns.
ECO FRIENDLY SYSTEM

BIOLOGICAL SYSTEM
IMPACT OF THE STUDY

• For short term (3-6 months) drainage improvement cultural methods can be adopted.
• For better drainage in mid duration (6-9 months) both cultural and mechanical drainage system are highly suitable.
• The locations with permanent and long duration (> 1 year) drainage problem combination of cultural, mechanical and biological drainage system are more appropriate.
• Locations without options for drainage treatment still crops like Rice (Oryza sativa.L), Baje (Acorus calamus.L), Banana (Musa paradisiaca.L), Water melon (Citrullus lanatus), Buffalo grass (Boutelova dactyloides .L).
• The traditional drainage system resulted in more human energy use for imposing various field operations by creating employment. provide better livelihood.

PRACTICE TO POLICY