About Madhya Pradesh

- Average rainfall 800 mm per year (Chambal Basin - Average)
  - Maximum : 1329 mm
  - Minimum : 456 mm
- All rivers are rain fed/Low flows/ no flow from Dec to May
- Main cropping Season :
  - Rabi (Winter-Oct-Mar)
  - Kharif (Monsoon June-Sep)
- Total water use in Agriculture : 88%
- Water use efficiency in irrigation 38% to 54%

Water Use Efficiency vis-a-vis Climate Change

- Western Madhya Pradesh – Newaj and Kalisindh sub-basins of State are almost on the verge of desertification
- To mitigate spatial and temporal variation within the basins, variation in rainfall intensity and observed changes in rainy days, no flows in non monsoon seasons – Water Use Efficiency plays a pivotal role.
  - Storages of maximum limit of techno-economically feasible two reservoirs in both basins of 600 MCM were planned.
  - This is the last hope and maximum impounding doable with any water resource within basin.

Water Use Efficiency vis-a-vis Climate Change

- Does it mitigate the impact of climate change within the region?
  - No – With existing water use efficiency of State
- So how does it be done?
  - Improving Water application efficiency at farm levels
- So how it could be possible in Irrigation Project?
  - By providing Water at Farm level through the highly efficient pressurized pipe irrigation system
  - Improving water use efficiency from 45% to 80%
  - Covering the 2,10,000 Ha of land of Rajgarh district by both projects (Almost doubling the area).

Mohanpura Project – Distribution Network

- Schematic Layout of Automation/SCADA System at Mohanpura Major Irrigation Project
Typical Layout of a 20Ha Chak

IRRIGATION Rotation at 20Ha Chak

IRRIGATION SCHEDULE

<table>
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<th>Shift No</th>
<th>Man Valve</th>
<th>Area Ha</th>
<th>Flow lps</th>
<th>Daily Cycle</th>
<th>4 Day Cycle</th>
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Structure of WUA command area

3.4 lps 397560 liters/day 23.50 mm x 3 Days 70.5024 mm

20-40Ha Chak
50-200Ha Chak
500-2000Ha WUA Command Area
**Challenges /Discussion**

- Switching from flow to micro irrigation
  - At design/planning level
  - Changing mind set of farmers
- Implementation of projects
  - Contract management
  - Design flexibility
  - Land acquisition

**Thanks**