

AGRICULTURAL WATER MANAGEMENT- NEED FOR A PARADIGM SHIFT

Dr Kamalam Joseph
CWRDM
Calicut- 673 571

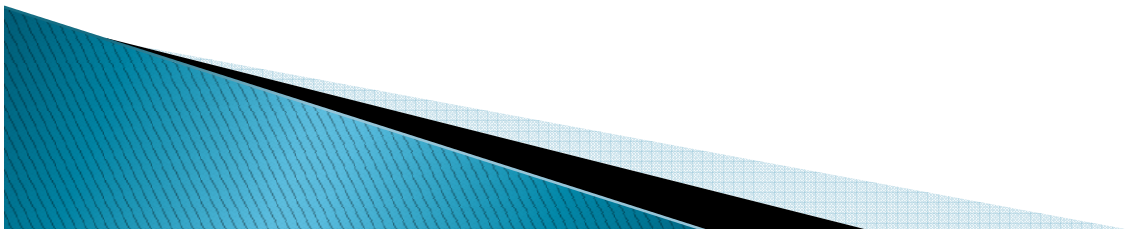
KERALA'S PROJECTED WATER REQUIREMENT (MCM)

Water requirement	2025	2050
Irrigation	557	611
Domestic	43	62
Industries	37	67
Power	19	33
Inland navigation	7	10
Env./ Ecology	5	10
Evaporation losses	42	50
Total	710	843

- ▶ Agriculture is both a victim and a culprit of water shortages anywhere in the world



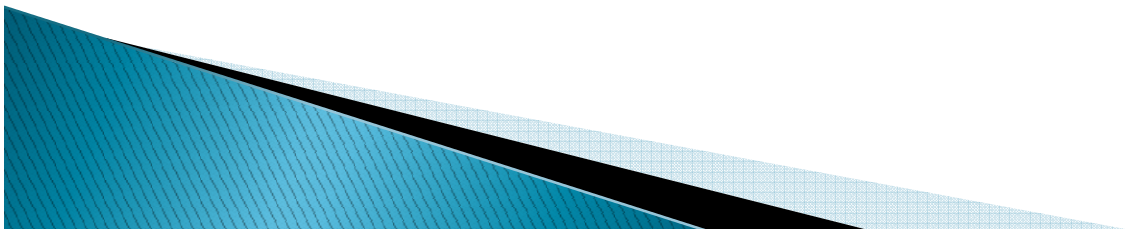
- ▶ The water footprint in agri. is large. One calorie – 1 litre of water
- ▶ Upto 70% of water taken from rivers and gw is used to irrigate agricultural land
- ▶ Water use efficiency remains very low with more than 50% water losses



The water crisis would spiral out of control if not handled in time.

The challenges lie in the development of:

- technological measures
- managerial measures
- scientific strategies
- policy interventions
- good governance



Technological measures

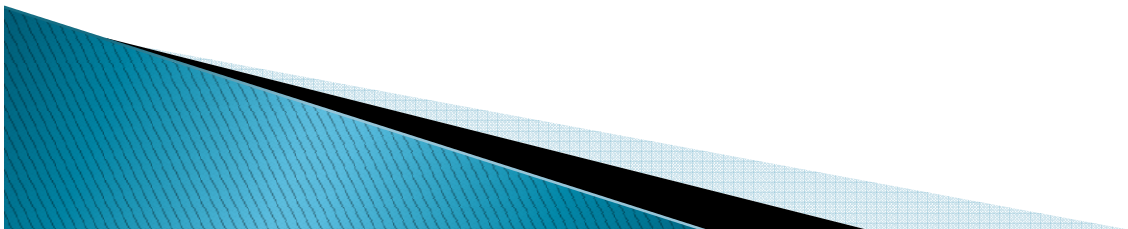
- ▶ Rain water management



- ▶ Irrigation management

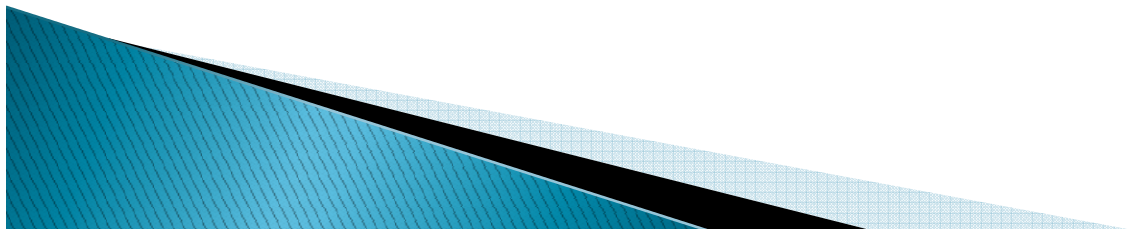


- ▶ Drainage management



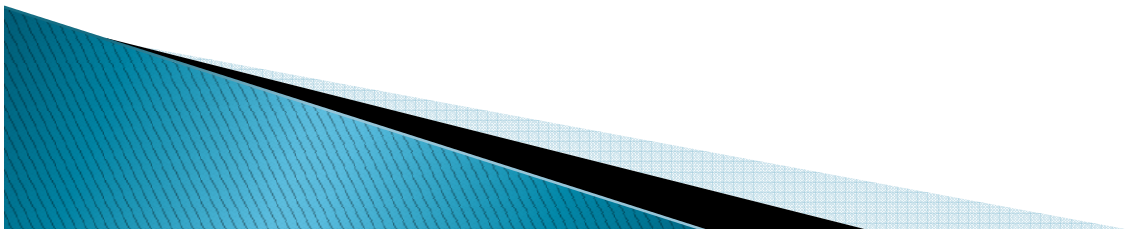
Irrigation management

- ▶ System management and water allocation
- ▶ Irrigation methods (surge, micro, cablegation, underground)
- ▶ Deficit irrigation
- ▶ Zonation
- ▶ Crop production technologies (cropping systems, bio-engineering technologies)



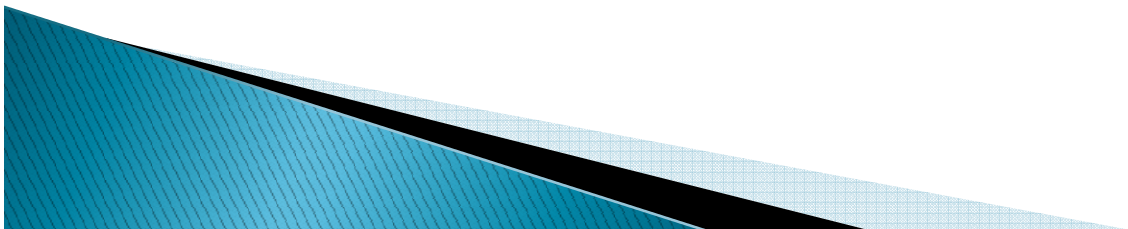
Management measures

- ▶ System level management strategy (Supply management – Demand management – Demand management by allocated efficiency)
- ▶ Types of management (Participatory irrigation management – Privatisation??? – Public private partnership)
- ▶ Information management (MIS, flexible)



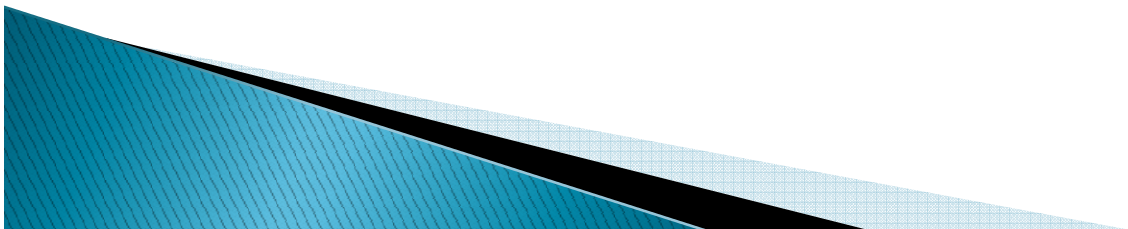
R & D needs

- ▶ On technological aspects, action research, policy analysis and on HRD
- ▶ Legal & socio-economic aspects of irrigation
- ▶ Networking and coordination of research in institutions



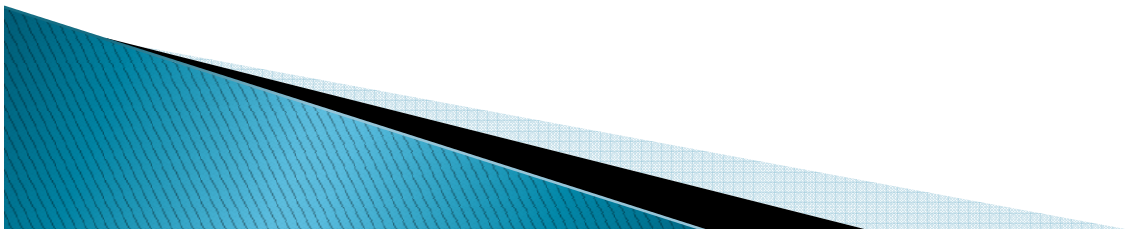
Policy interventions

- to increase the econ, physical & mngmt efficiency
- focusing on design & devt. of water resources infrastructure from multiple use system perspective
- to increase WUE (crop selection, consumption form, food trading, water pricing, incentives)



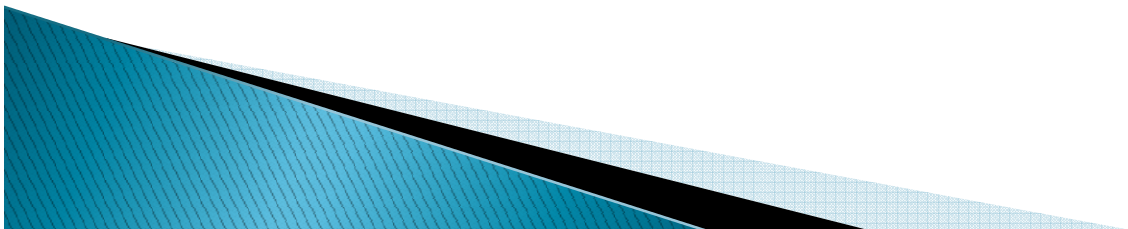
So far, an effective agriculture water policy has not been successful in Kerala

- small holding size, lack of measuring control structures, political opposition, lack of respect to equity, no incentive



Need for a good governance in WM

- ▶ To investigate how the current approaches to water allocation must evolve to address scarcity, complexity, uncertainty inherent in the system
- ▶ To achieve transparency, accountability & protection of broad public interest
- ▶ Bring together those who manage and those who are managed
- ▶ Provide the needed security and flexibility to the water users – & mitigating any general adverse impacts on water quality and environment.
- ▶ GG Should start where rain drops fall.....



- ▶ 1% increase in water productivity in food production makes available in theory– at least an extra 24 lpcd
- ▶ Continued efforts for improving the water productivity and water use efficiency will take agricultural water management sector to measured heights without causing any adverse effect on the other water demanding sectors
- ▶ Therefore, investing in agriculture and in agriculture water management is an alternative strategy for freeing water for other purposes and safeguarding the environment!!!

THANK YOU



Dr Kamalam Joseph
Scientist F & Head,
TEED, CWRDM
kj@cwrmdm.org

