

# **Water Energy Nexus Activity (WENEXA) Project – The Governance Angle**

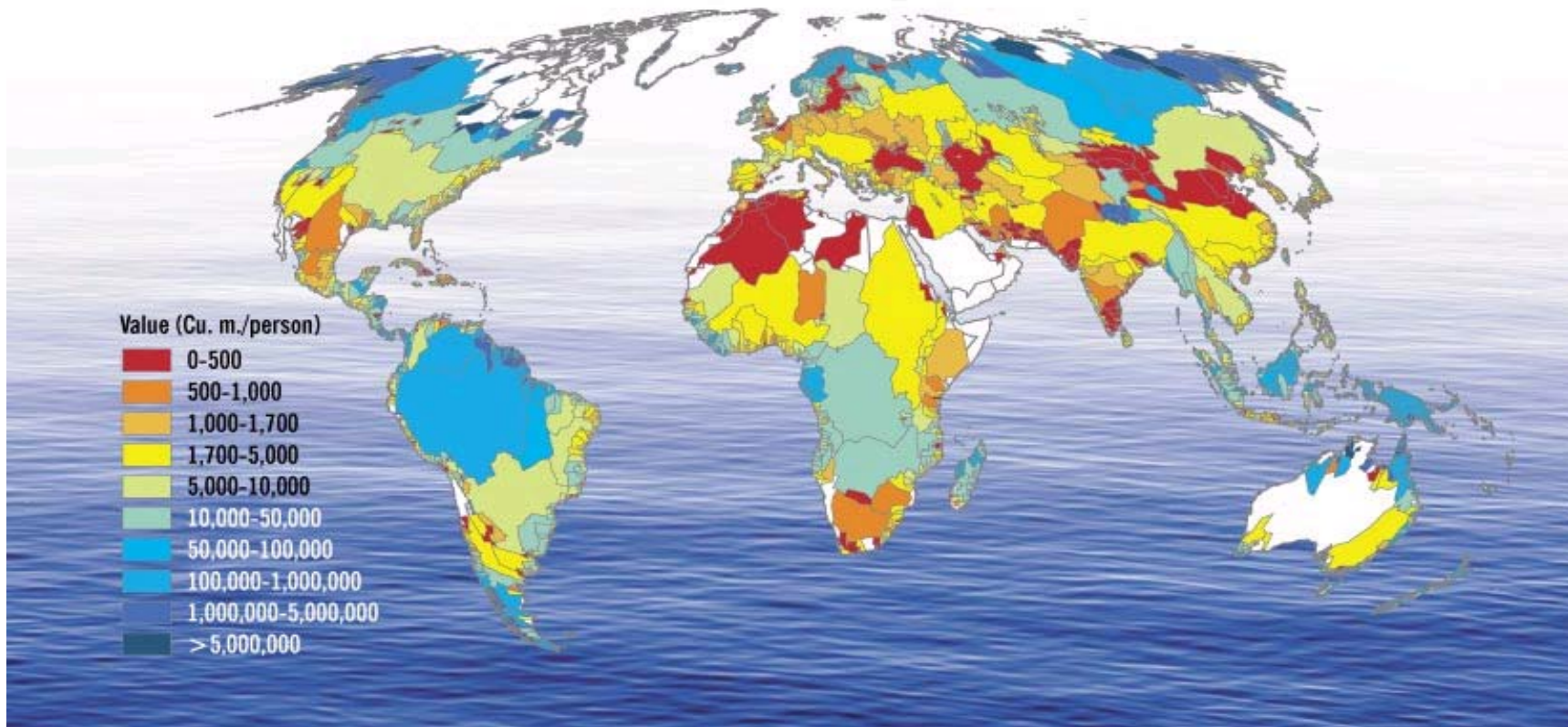
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**John Armstrong**

**May 26, 2003**



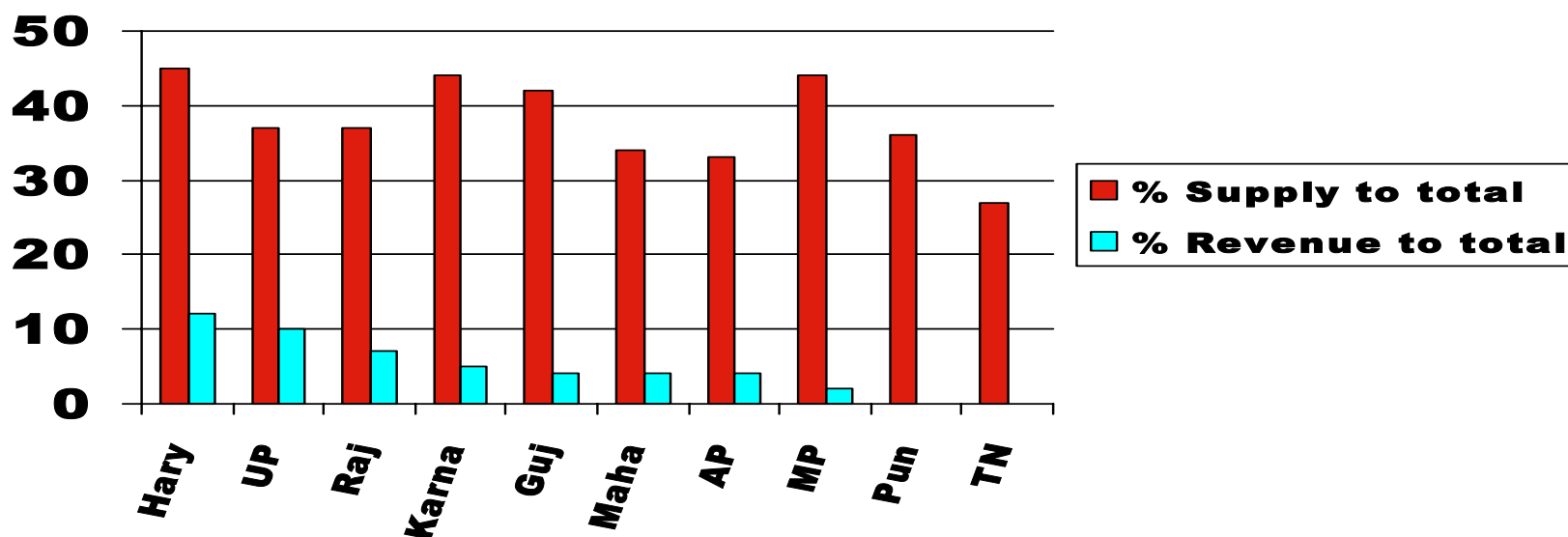
## **Demand for water is fast outstripping supply leading to conflicts over quantity and quality issues**



***India possesses 5% of the World's fresh water but is home to 16% of global population; water use efficiency for irrigation is approximately 65% and power use efficiency for extracting ground water is only 28%.***

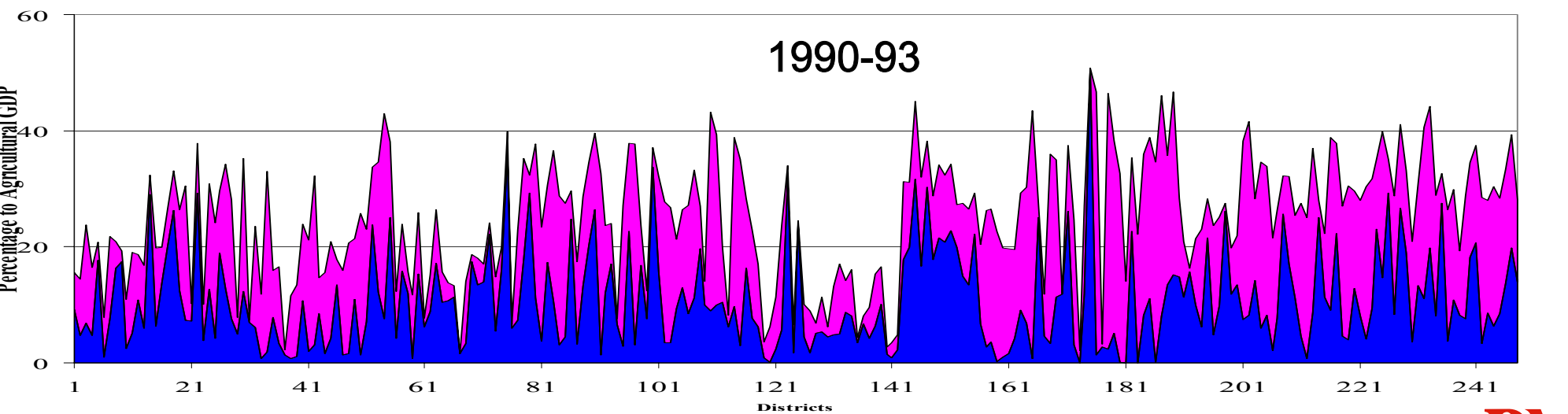
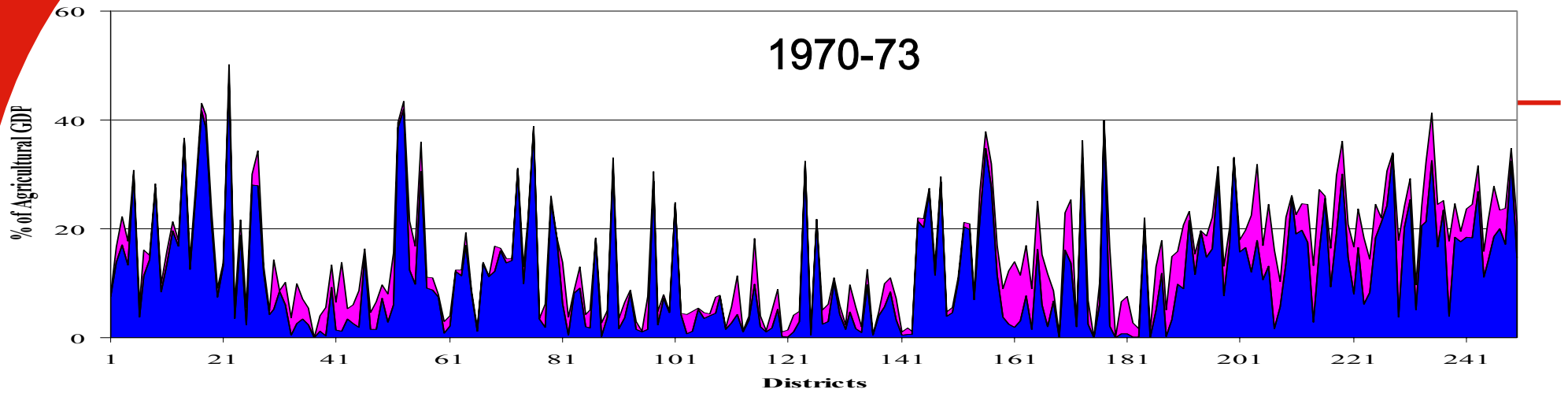
## Power sector loss is a huge drain on national as well as state fiscal resources

1999/2000 Revenue Contribution of Agricultural Sales



Aggregate power sector loss to the State is Rs 300 billion (US\$ 6 billion) which corresponds to 50% of the national health budget and almost 200% of the education budget. **Main culprit is large commercial loss** dominated by highly subsidized power supply to agriculture (20 million pump-sets connected)

# Groundwater Drives Irrigated Agriculture in India



■ % contribution of SWI to Agricultural GDP ■ % contribution of GWI to Agricultural GDP



## Why is the GOI Interested?



*Can u get this farmer in Maheshwaram A.P. to pay higher tariffs and place a meter on his pump?*

- ***Emerging national crisis in water quality and availability & power access, availability and affordability***
- ***85% of water and 30% of electricity are used in agriculture***
- ***Electricity and water demand will double in next 25 years***
- ***Energy and water shortages- for 65% rural population- impact disproportionately women and children***
- ***GW now meets over half of water demand***
- ***Lack of coordinated policies for water and energy sectors.***

## Water-Energy Nexus (WENEXA) Project

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**WENEXA is a USAID funded “pilot project” to demonstrate energy and water sector joint policy making and applications**

**Current project kick-off April 2002 – ending October 2003**

WENEXA is working at.....
Electricity distribution lines
Farm level
Aquifer level

## **Maheshwaram Pilot Project area**

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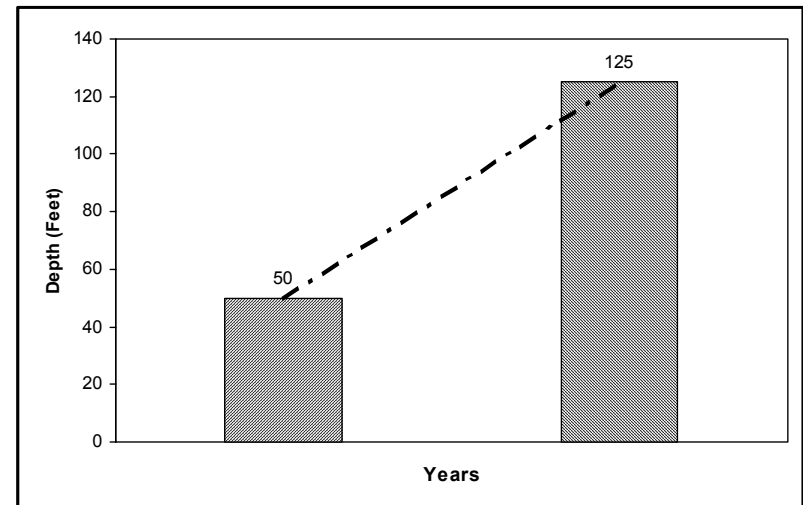
### **Project Area Synopsis:**

- 1. Maheshwaram watershed extends approx. 60 sq. km**
- 2. Ground water and one surface water tank are the main source of irrigation water**
- 3. 6 Villages of around 35,000 population**
- 4. 2 Main electric feeders**
- 5. 1,250 connected and ratified pump sets as per AP CPDCL records**
- 6. 30% area under paddy which is grown by almost all the land holders depending on their capacity to irrigate**
- 7. Substantial fallow lands**

***Challenge is to improve power delivery and water resources management in pilot area through community actions***

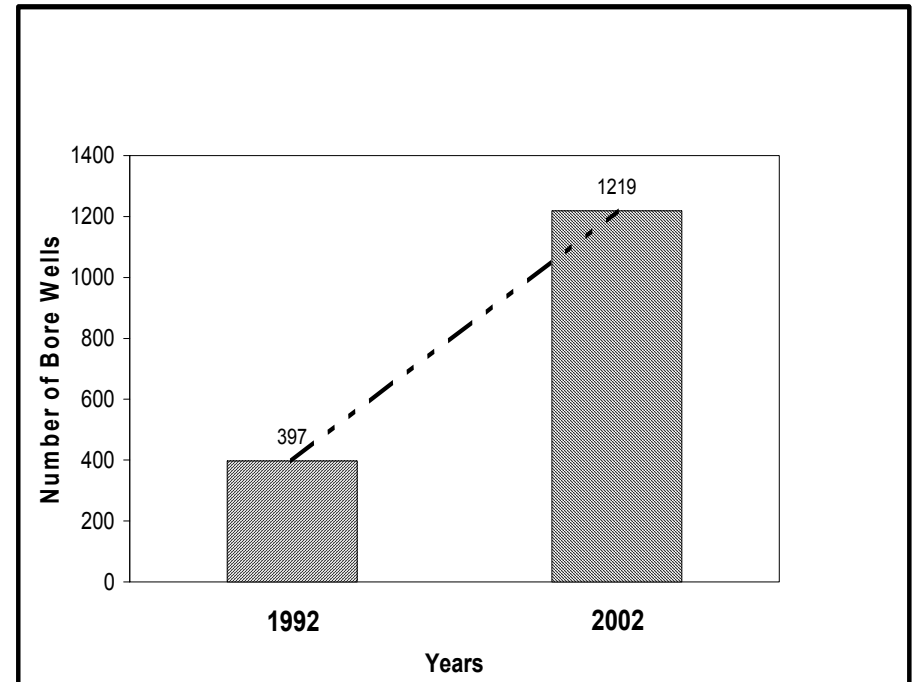
## Maheswaram Field Findings- Increase in Depth of Bore Wells is a Fact

Name of the Village	Depth (Feets)	
	10 Years Back (1992)	At Present (2002)
Mankhal	60-80	100-120
Sirigiripuram	50-70	100-120
Gangaram	50-70	100-130
Maheshwaram	50-70	100-120
Tummaluru	60-80	110-140
Mohabatnagar	50-60	100-120
<b>50</b>		<b>125</b>



## Maheswaram Field Findings- Increase in Number of Bore Wells is a Reality

Name of the Village	Bore Wells	
	10 Years Back (1992)	At Present (2002)
Mankhal	118	367
Sirigiripuram	31	113
Gangaram	23	89
Maheshwaram	128	371
Tummaluru	78	215
Mohabatnagar	19	64
<b>Total</b>	<b>397</b>	<b>1219</b>

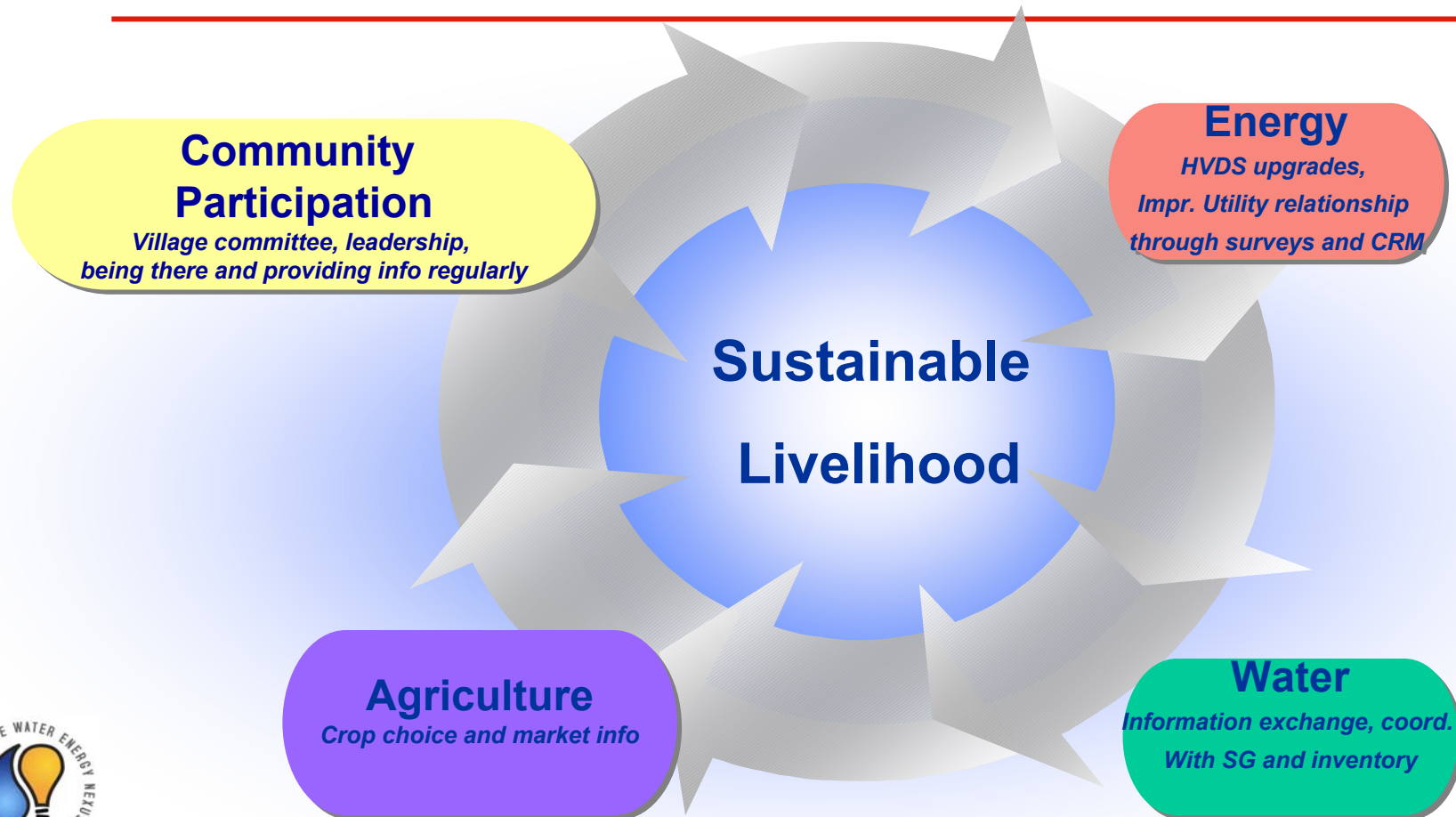


## What We are Doing

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- **Formation of User Groups**
  - *Forming village level groups to undertake distribution and O&M functions*
  - *Developing outreach and training material*
  - *Developing the charter for these groups*
  - *Organic linkage with water use*
  - *Linkage with different state departments in rural development*
- **Research**
  - *Water balance paper and Rural distribution manual/ WENEXA web-site/ GW legal and regulatory paper finalization.*
  - *Metered vs non-metered tariff supply paper*
  - *Developing crop budget*
  - *Communication strategy for rural water and power user.*
- **Policy**
  - *Formation of a policy level steering group for different departments in AP and possibly at Delhi.*
  - *Policy Round table*

# Better Energy and Water Governance Means Improved Livelihood in Maheshwaram



## **Expected Outcome**

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- **Improvement in the power supply both in terms of quality and duration of service**
- **Exploring franchising model for local power distribution through transformer association/village committees**
- **Active participation in improvement of water table through water harvesting, use of efficient irrigation techniques and focus on crops with best return for water used**
- **Effective Communication Campaign for energy - water conservation and extension of the communication program beyond the pilot area**
- **Development of optimum crop budgets for different farmers groups**