Technology and Knowledge Transfer

Water Supply

Milind Sohoni

and Aditya, Pooja, Hemant, Vaishali, Om, Nikhil and several others

CTARA and CSE

UNICEF-WASH Innovations and Equity

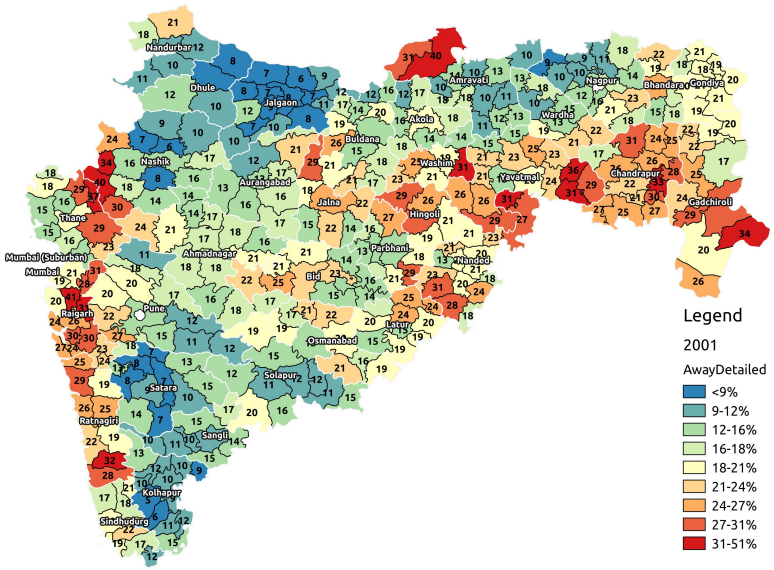
June 16-17, 2017, Lonavla

Broad Objectives Today

- Review the progress of joint interventions
- Good and *bad* practices, knowledge transfer, community processes
- Convergence within GoM departments and a state-level knowledge-sharing platform
- What to do about SDG 6
- Develop 4-5 key project areas

The development challenge

Percentage of Rural Households with Primary Source more than 500m away (2001)



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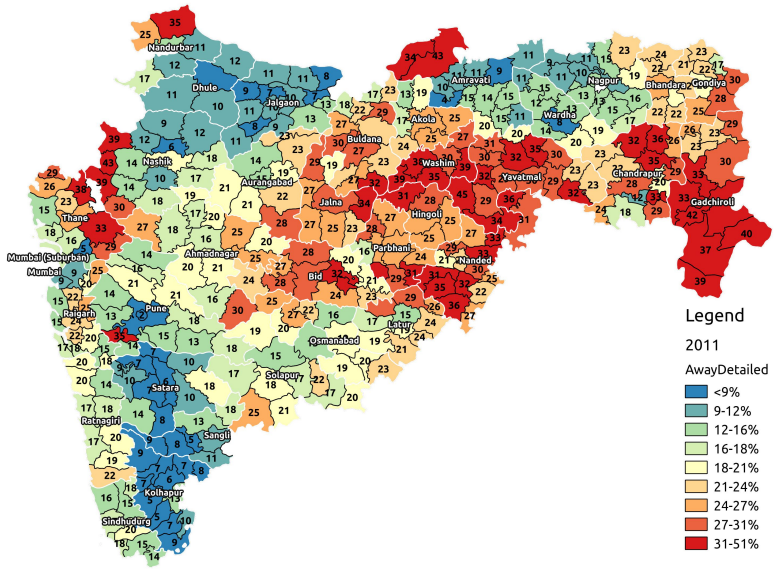
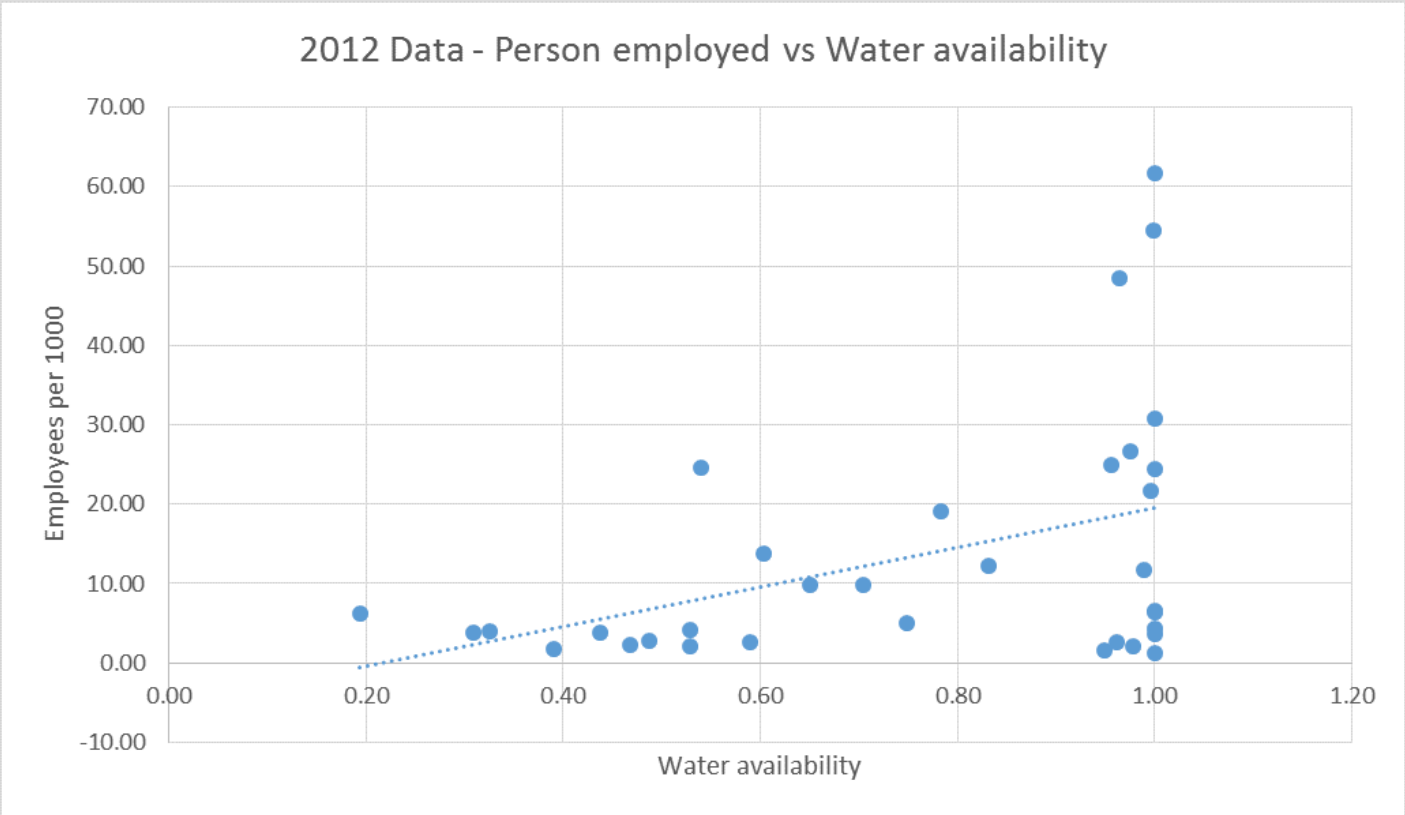


Other Metrics as well

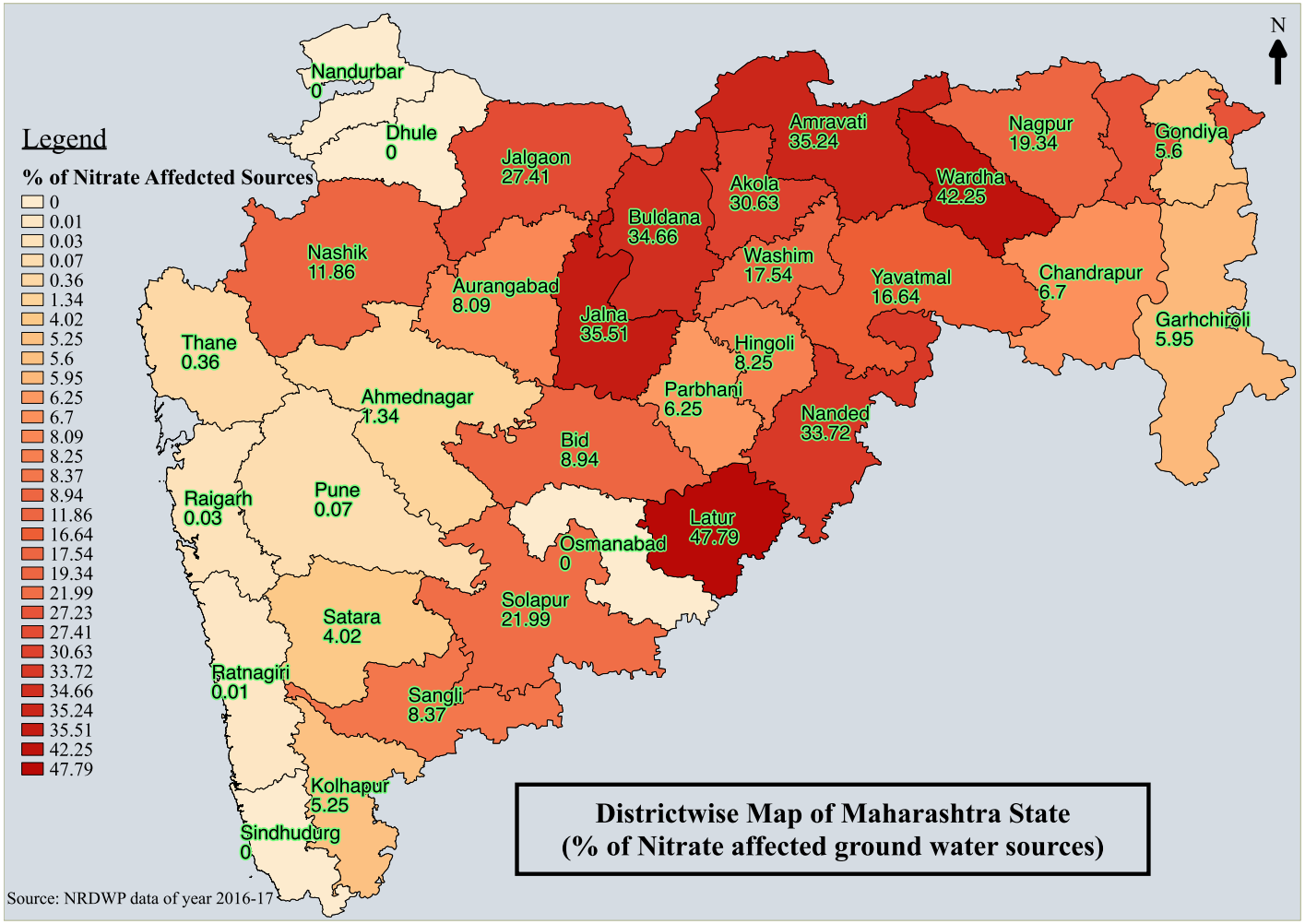
- Year-round access to DW-74%.
- droughts, chulhas, public transport, small manufacturing etc.
- missing : institutions, community and private sector

District-wise Urban water QoS



Severe Impact on Job Creation.

Water Quality-Nitrate



Different paradigm required?.

Analysis

- State agencies - downward spiral of poor practices, poor output. Small size.
- New knowledge -
  - design of PWS, SW and GW assessments, tertiary network and schedules
  - role of planning, linkages of irrigation and DW in both quality and access
  - small-urban water and sanitation systems- New Practice Area
- New Mechanisms and New Platforms
  - University interaction - applied research, better understanding of civil society and new ways of engagement
  - given current compulsions-graduated entry of private and civil-society agencies
  - new avenues for fresh graduates to engage professionally

A unique and welcome GR (15th June 2015)

- Every new PWS must undergo 3rd-party assessments, one at 30% and another at 60%.
- Every CEO-ZP to identify govt. college to perform these assessment. 1% of capital costs to be paid.
- Selected college must form an inter-disciplinary cell, prepare success criteria, advise on good practices!

Remarkable on many counts.

- Reporting to CEO and not EE! Assessment team and not a faculty member from Civil Engg.
- Partnership with colleges, the right site for new knowledge and new engagements to develop.
- Recognition that assessment *must* be done by inter-disciplinary and uninterested agents.

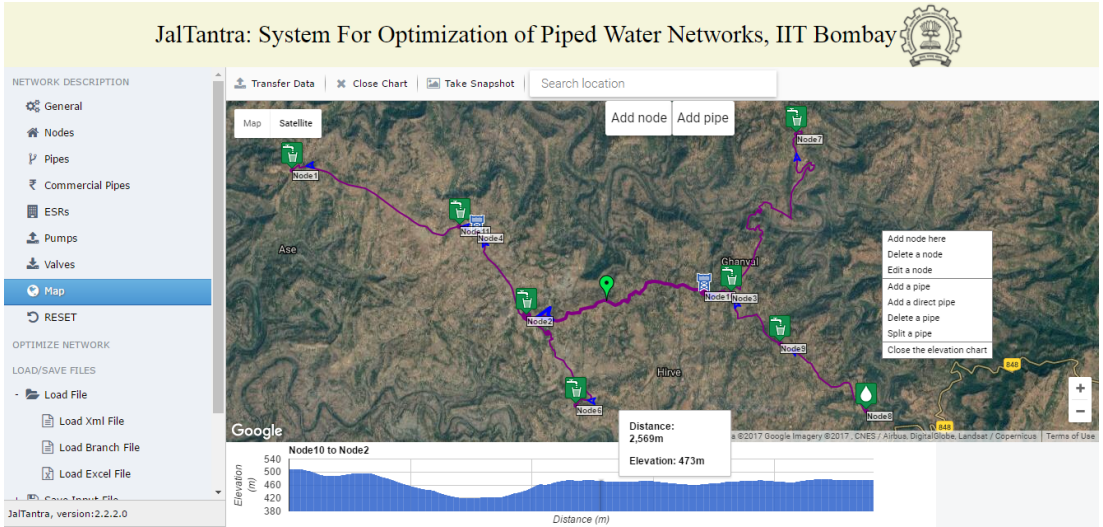
Palghar and Thane

District	Palghar	Thane
Number of schemes	19	12
Sanctioned amount	Rs. 28.2 Cr.	Rs. 6.4 Cr.
Minor Problems (Source)	9/19	10/12
Major Problems (Design)	7/19	9/12

Learnings

- Technology sound.. Shortcomings in technological processes
- Yield tests missed in all GW-based schemes.
- Detailed survey missing (all). Actual delivery schedule not computed.
- Major design changes to fit final delivery. Scheme at risk.
- Financially, positive returns already for GoM.
- Broader participation of regional colleges. Training. Curricula. Research.

Jaltantra-GIS-based design tool



- Partnership between university and government in line with UBA/UMA
- Indigenous, robust, versatile and caters to Indian design scenarios
- Approved for official use by MJP, RWS engineers trained at MEETRA
- Adaptability is important as new areas of interest emerge such as capital vs. operational costs, scheme augmentation etc.

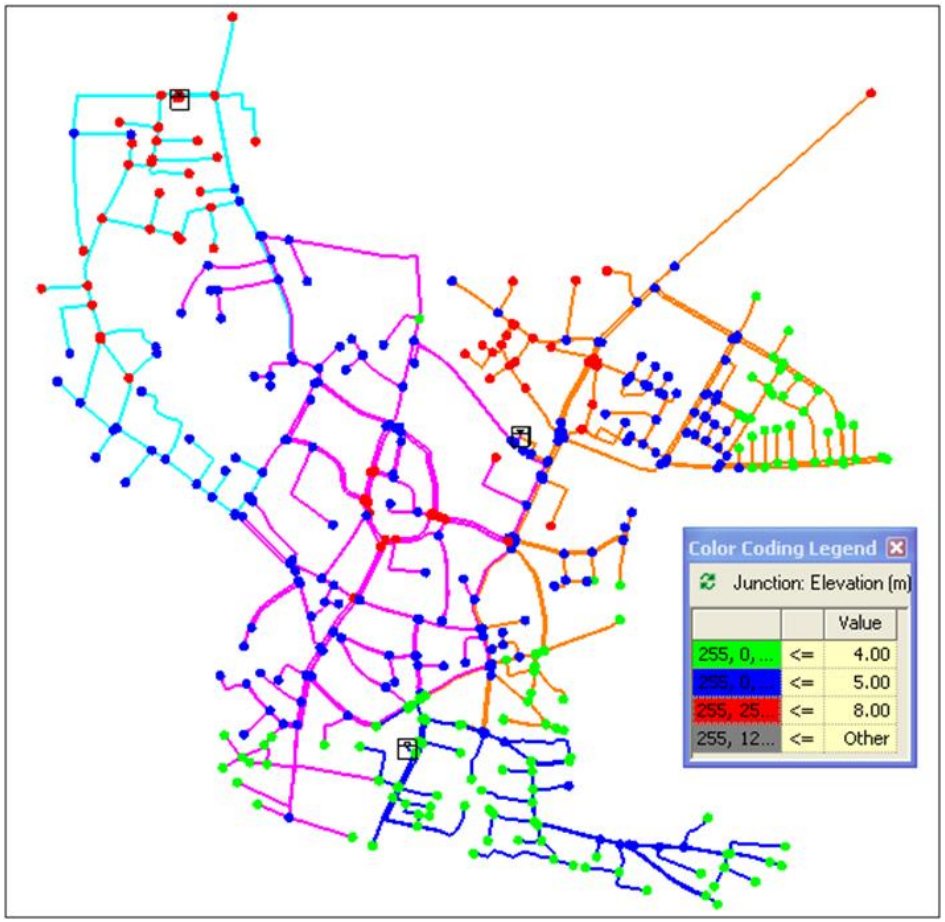
MSNA

What was expected

- Understand Current Status
- Improve bulk metering

in Alibag and 3 other cities

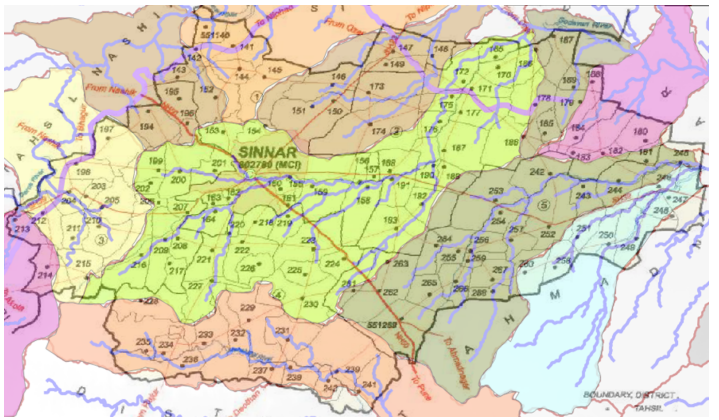
- poor service areas unidentified
- current operations undocumented

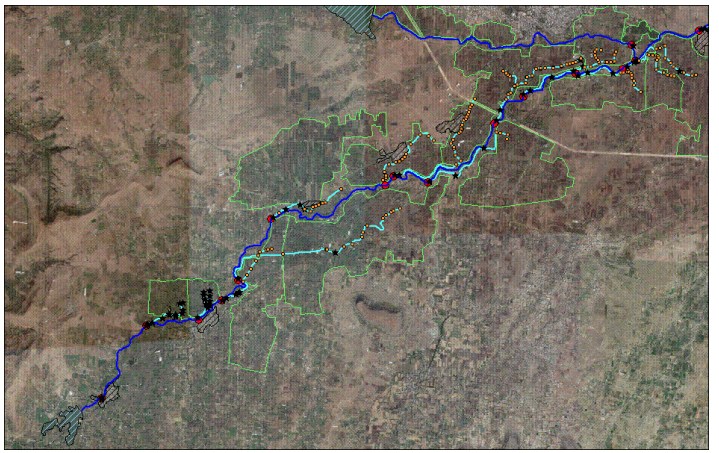


Evaluate MSNA and fill gaps! Save money, bring efficiency

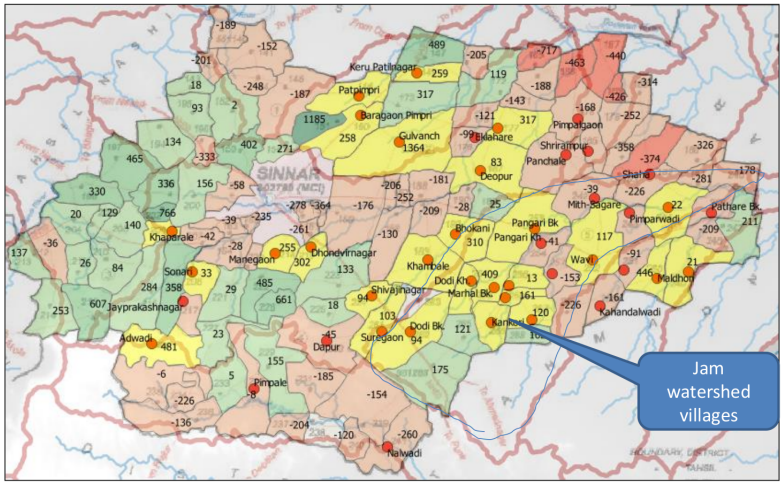
Another Example - Irrigation and DW nexus

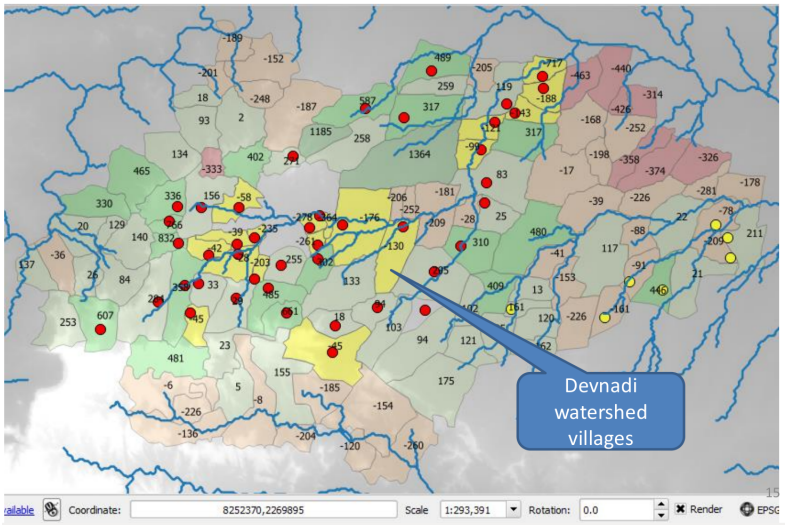
- Yuva-Mitra, Sir Dorabjee Tata Trust as clients.
- To examine the performance of diversion-based irrigation in Dev river watershed of Sinnar
- Sinnar taluka-variety of regimes-high rainfall areas in west to drought-prone in east.
- Extensive and modern agriculture-vegetables, poemgranate, grapes etc.
- At the same time, many villages with water stress.





Broader Connection





- Methodology: GW, crop-water demand, supply, allocation, DW
- Water balance frameworks crucial for overall water security
- DW stress related to cropping pattern through GW
- Equity: public provisioning of DW essential for landless and marginal/rain-fed farmers. Where is WSSD is JYS?

Other areas

- Large SW-based rural DW grid. AP, Gujarat.
- Separation of drinking water and domestic use water. Karnataka.
- Recognition of DW as a service. Broader Participation of civil society. Tamil Nadu.
- Innovations in Operations. MP.
- Small-town urban operations, MSNA.Maharashtra.
- 24×7: what does it imply? Maharashtra
- Jal Yukta Shivar-widespread DW stress. WSSD missing in Ist stage. Maharashtra
- **Research**. Groundwater, PWS delivery schedules, socio-economics of large grid operations.

The Unicef agenda

- Good and *bad* practices, knowledge transfer, community processes
- Convergence within GoM departments and a state-level knowledge-sharing platform
- What to do about SDG 6
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What are the take-aways

- Technology-gadgets *as well as* processes and institutions. Focus on new knowledge *as well as* new mechanisms of delivery.

- Knowledge transfer, community processes
  - More and stronger participatory GRs (e.g., 15/06/2015 GR)
  - Linking GPDP with regional institutions via standard knowledge products.
  - Unnat Maharashtra Abhiyan (UMA): January 13th, 2016, HTE. A network of institutions.
- Convergence within GoM departments and a state-level knowledge-sharing platform
  - Who. UMA-MEETRA to report on problems and practices.
  - How. More research support-DST and state S&T council.
  - At. DPC or suitable planning body.
  - Supported by. Civil society, Unicef.

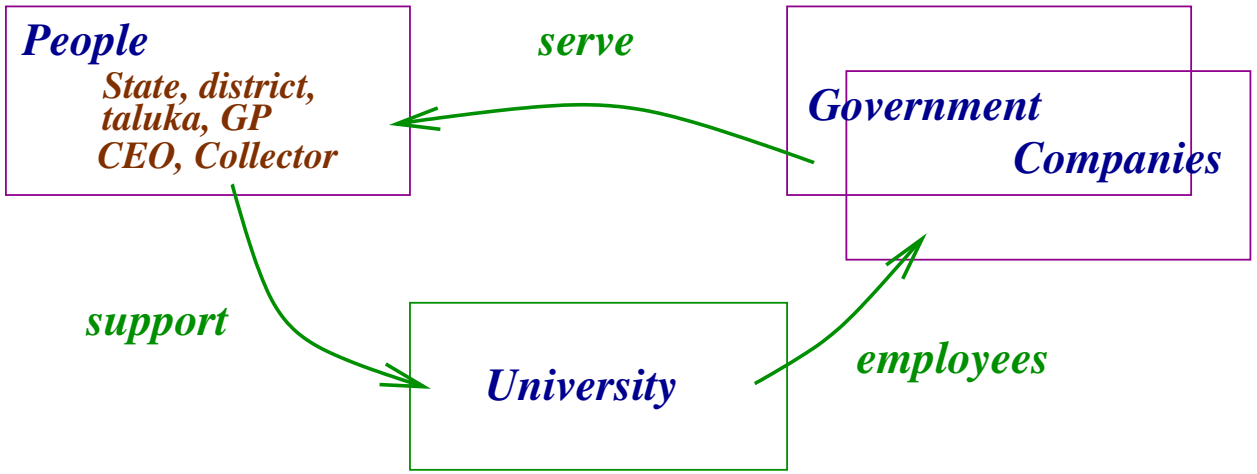
continued...

- What to do about SDG 6

  According to a 2013-2014 Global Analysis and Assessment of Sanitation and Drinking-Water survey, 83 per cent of the 94 countries surveyed reported that procedures for stakeholder participation were clearly defined in law or policy.

- Develop 4-5 key project areas-Fund coordination and accountability, rather than interventions or training.
  - Strengthen engagements between higher education and WASH agencies
  - Develop journal/platform to report on problem areas and solutions
  - Operate through fellowships and white-papers.

The Big Picture - What used to be



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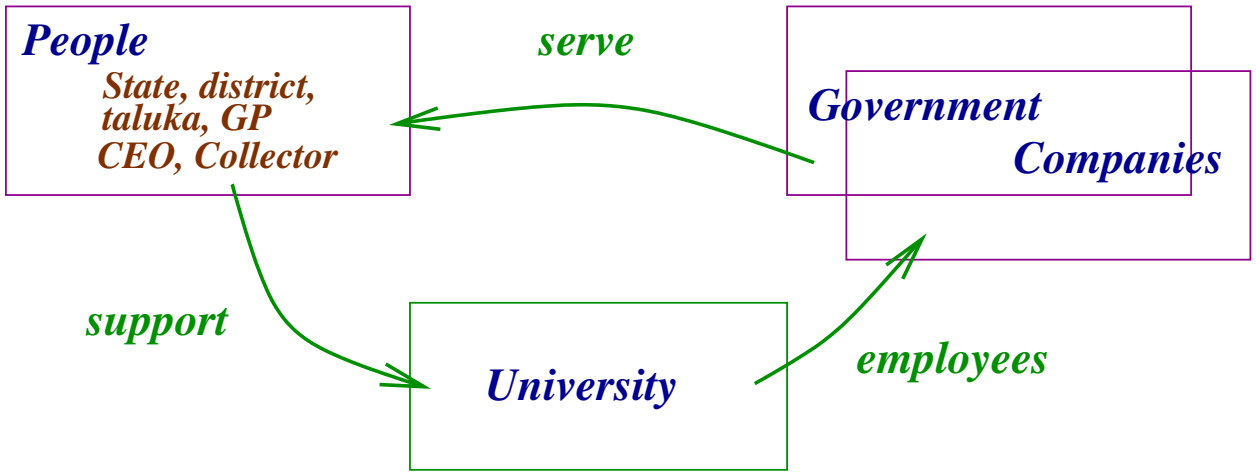
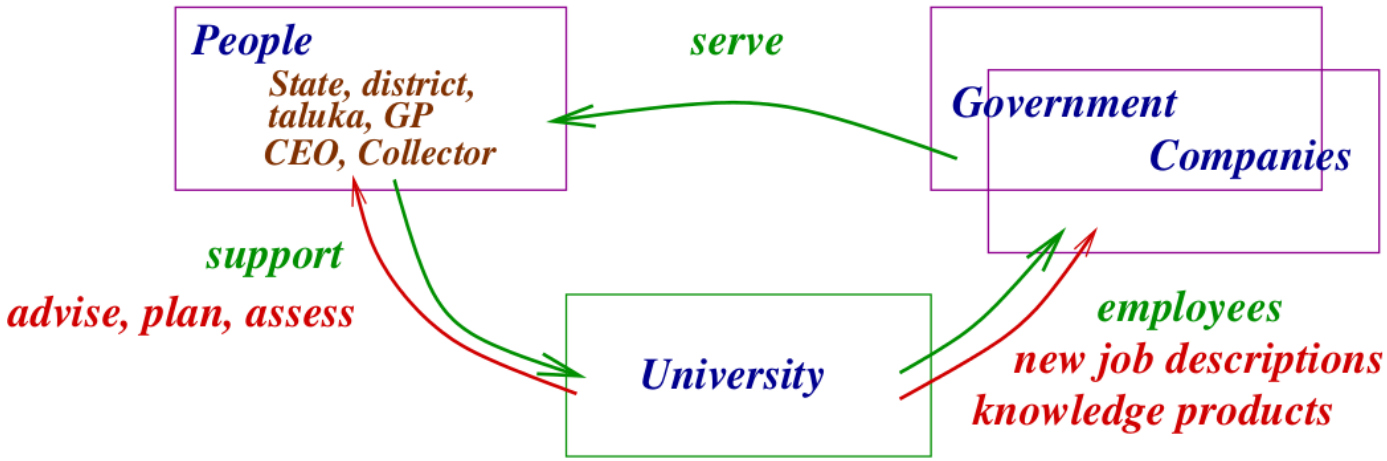


What we now need...



Thanks