Advocacy Project

A New Vikasvaad and
the role of knowledge

Milind Sohoni, CSE and CTARA, IIT Bombay

The agenda

- The questions of development and possible answers
- How is development delivered - Structure of society
- The knowledge deficit and how to bridge it
- Unnat Maharashtra Abhiyan
- Its problems and a more detailed structure
- Whats next
- A historical and sociological digression

Advocacy: **Advising the customer rather than the producer of a public service, good.**

Broad Developmental Questions

Why did Chiplun flood again? Were the reservoir gates really open?

How many did die in Covid 19? How many hospital beds should we prepare for?

Why are there potholes on our roads?

Why is their persistent malnutrition?

How did Powai lake get polluted right under the very nose of the top engineering institution in India?

Questions: Unexpected events and also regular course. Most related to the performance of the state, and some the market.

More structure…

Knowledge : Do we know how to (eventually) solve these?

Agency: Do we (or can we) have the agencies who will do it?

Incentive and Realization: Do we know how to pay these agents - money, prestige, value?

Some diagnoses

Politicians are corrupt. They do not take correct decisions. They focus on wrong issues.

People are undisciplined and do not take care. They don't pay taxes. People are uneducated and foolish.
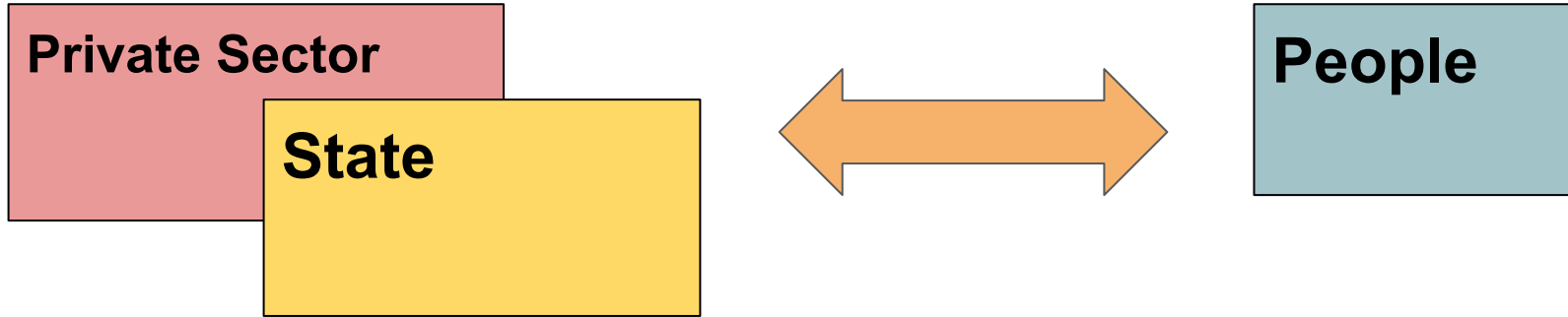
The state is excessively bureaucratic and slow.

The top bureaucracy is competent, but that is not so, lower down,

The top bureaucracy is not competent. The state does not have the capacity to do all these things.

There is no money for all these things. People cannot afford these things.

The simplest model of society

Private Sector

State

People

People being served by state and private agents. Note that both sides are frequently the same persons, but in different roles. A bus-conductor staying in a colony, or an auto-driver in a slum, or a an executive in a tony neighborhood.
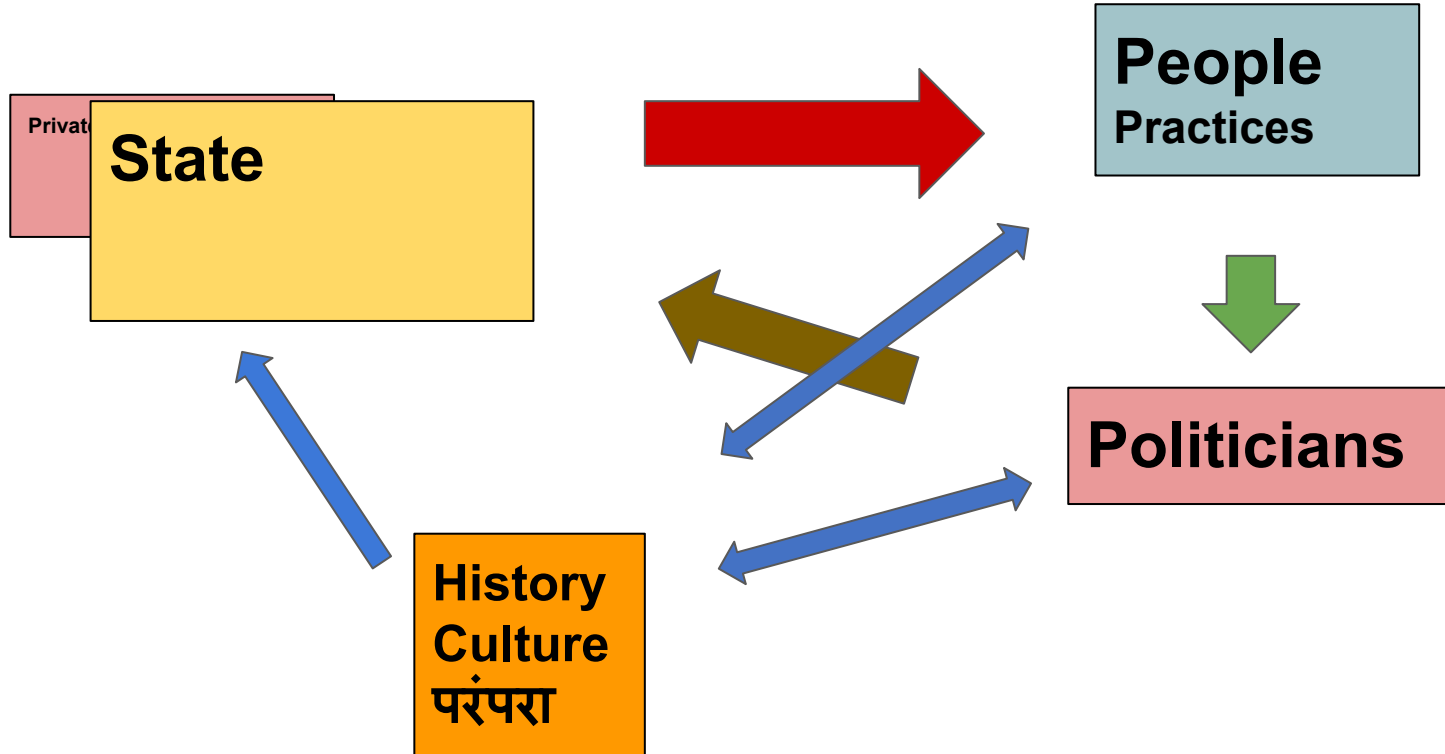
But this is no good in analysing what to do…

The world before Man-ki-baat

Private Sector
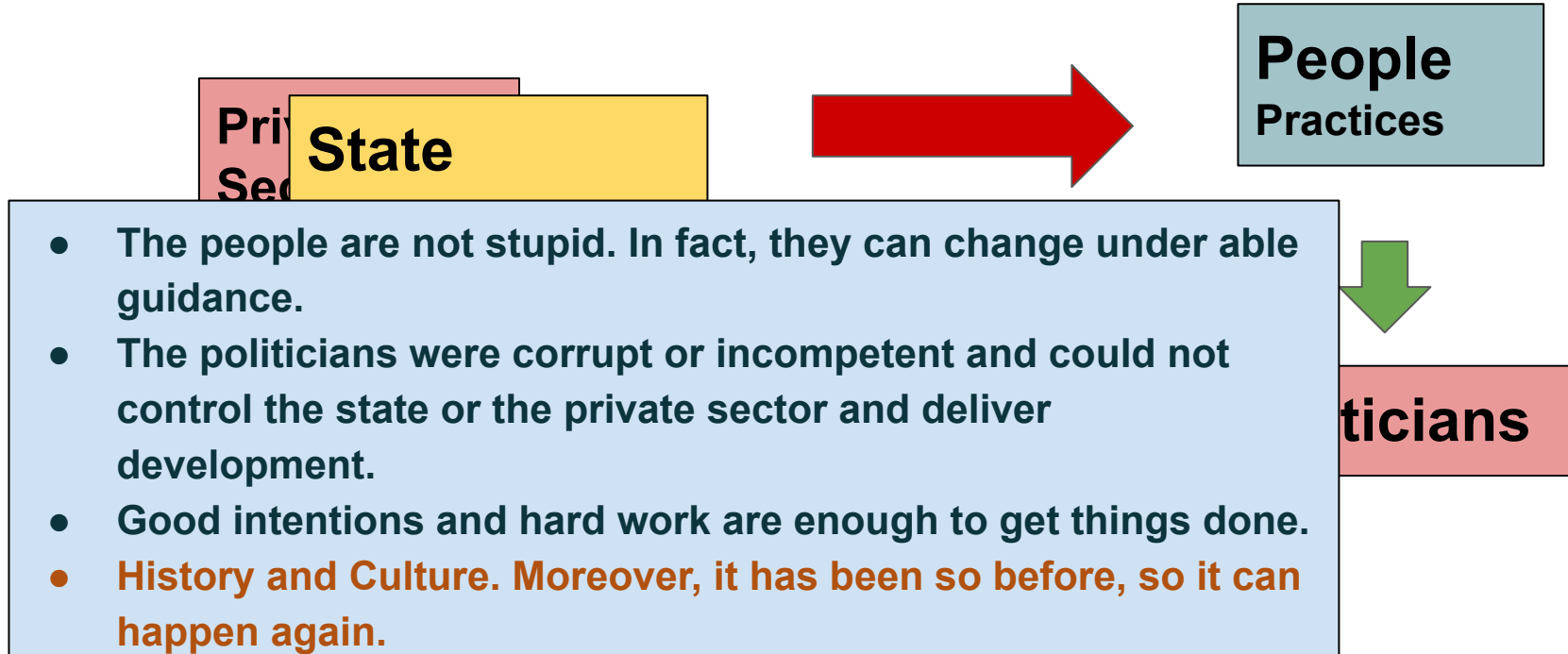
State

People

ADR
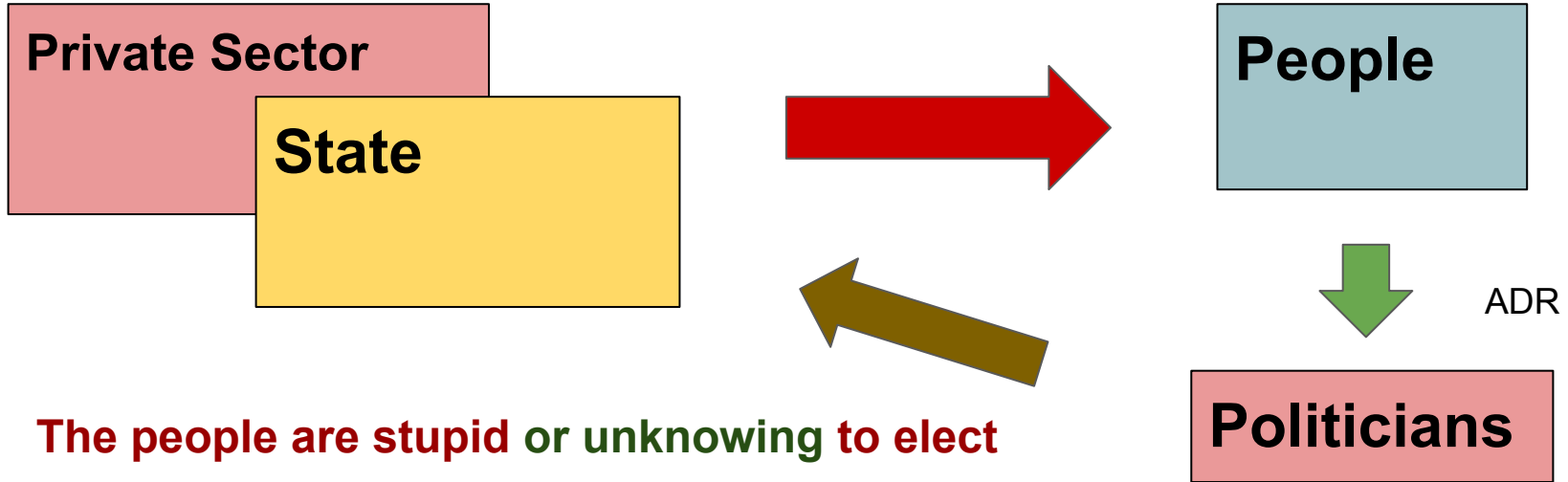
Politicians

- **The people are stupid or unknowing to elect corrupt and incompetent politicians.**
- **The state is incompetent and the private sector, uncaring.**

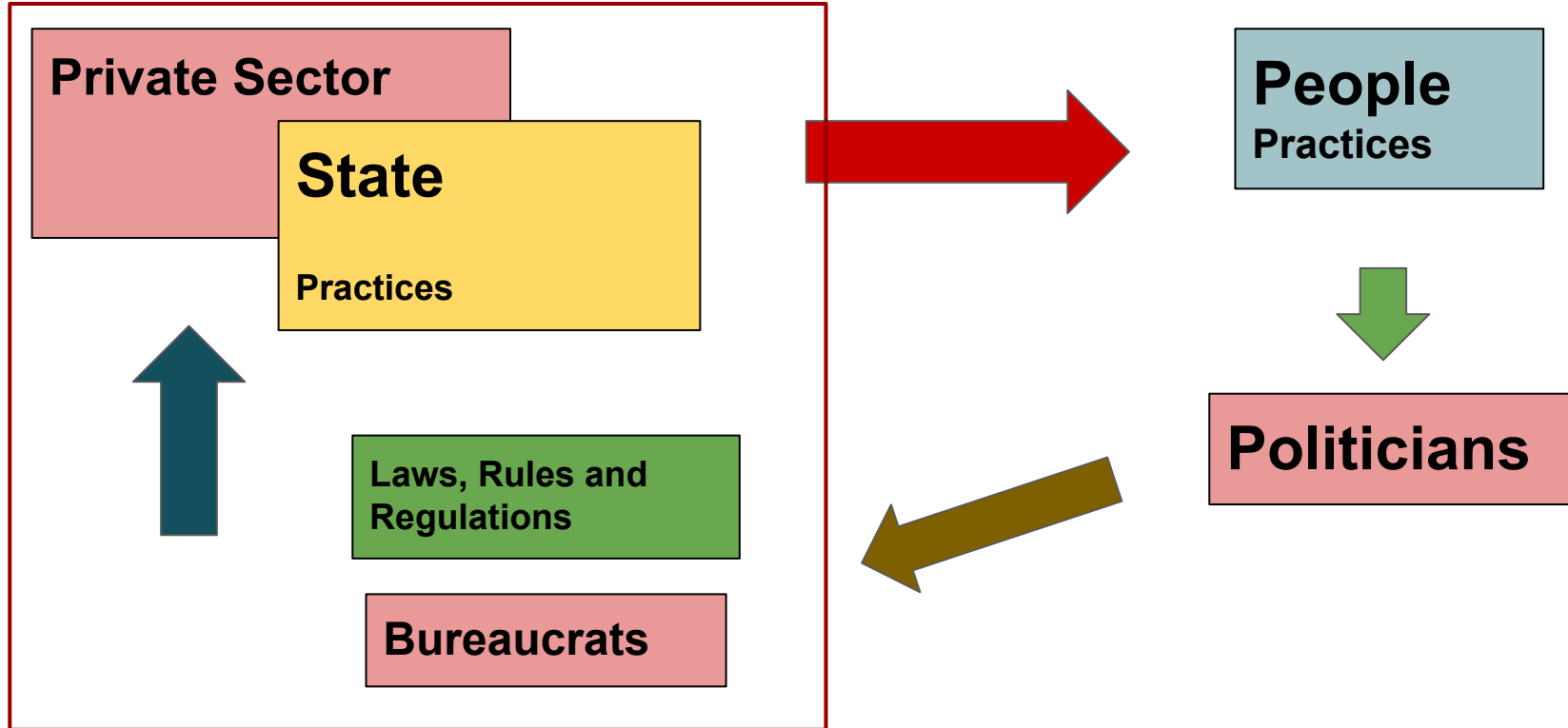# Man-ki-baat world of high school : जाणता राजा Leadership

Man-ki-baat world of high school : Wise Leadership

Private Sector

State

People
Practices

Politicians

- The people are not stupid. In fact, they can change under able guidance.
- The politicians were corrupt or incompetent and could not control the state or the private sector and deliver development.
- Good intentions and hard work are enough to get things done.
- History and Culture. Moreover, it has been so before, so it can happen again.

Vikasvaad 1.0 - The Indian state

Private Sector

State

Practices

Laws, Rules and Regulations
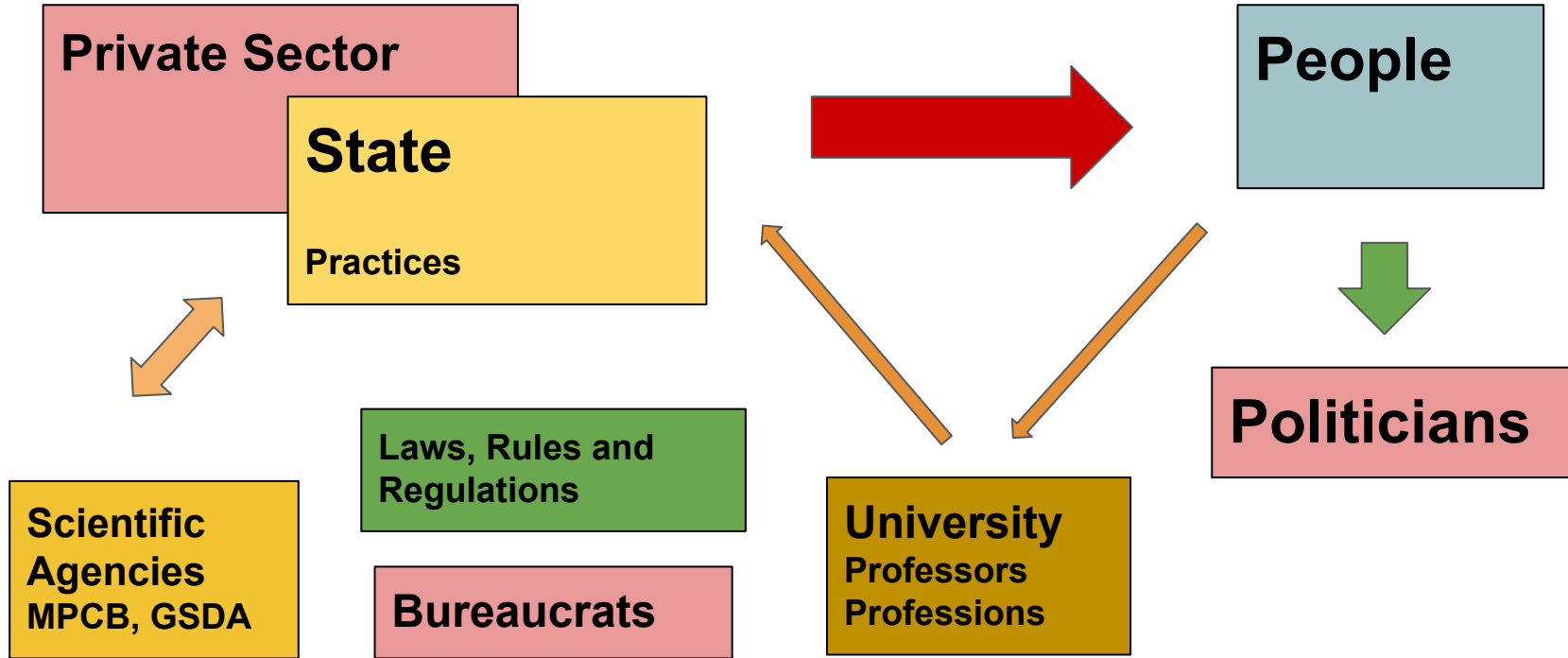
Bureaucrats

People
Practices

Politicians

The Indian State

A recognition that the state has:
1. Some rules, laws and regulations which are to be formulated with the help of bureaucrats.
2. Each department of the state has practices which encode the way its agents function and record its outcomes.
3. Bureaucrats have to ensure that the departments and the private sector observes the rules and regulations.
4. They also have to ensure that the practices and the laws etc. are updated as the situation changes or as policy changes.

- **How are policies and practices to be designed? The super-competent IAS**
- **The salience of the Bureaucrat and the ability of the Politician to manage them. Wise leadership as a key determinant of development outcomes.**

The Indian Knowledge State

Private Sector

State

Practices

People

Politicians

Laws, Rules and Regulations

Scientific Agencies
MPCB, GSDA

Bureaucrats

University
Professors
Professions

The Knowledge Agencies

The University - Certification-based - synchronized with the rise of the government job - state funded, but neither Nalanda nor the land-grant state university.

- Training manpower for standard set of professions and positions.
- Satisfying statistical requirements of gross enrollment
- **Regulating legitimate knowledge and creating a vested salaried interest called teachers to mediate with youth political thought.** <mark>The graphite rods in the reactor.</mark>
- Providing standard consultancy to state agencies

The State Technical Agencies

- Cadre of state-salaried scientists.
- Provide technical, regulatory and policy support to state agencies in standard ways.

  <mark>And yet all committees headed and filled with bureaucrats.</mark>

- DES and DPO: provide economic and financial data for state budgets
- SPVs such as MMRDA

Broad Questions - The Indian Knowledge state will fail

How many did die in Covid 19? How many hospital beds should we prepare for? Political and bureaucratic failure. No district level statistician. No standard processes for recording status of hospitals.

Ahmednagar, as on 8th June, 2021	ICU-Beds/lakh	Days to Death
Public hospitals	15	4.9
Private Hospitals	55	9.4

Oxygen: Grand failure. Basic Errors.

Broad Questions - The Indian Knowledge state will fail

Why are their pot holes on our roads? Solvable in Man-Ki-Baat world and current methods. Tendering and contracting weaknesses can be overcome by leadership. But where are the ready mixes?

Why did Chiplun flood again? Were the reservoir gates really open? Insufficient measurement and analysis by WRD or universities. No regular reporting with MoUD. Nothing that the divisional commissioner, the WRD secretary, the EE can do. Kolhapur - 6 month committee - a problem which would need 3-4 years of intense work and about 5-10 Masters projects.

Look inside….

MSRTC
Shahapur
Taluka Bus
Depot 2014
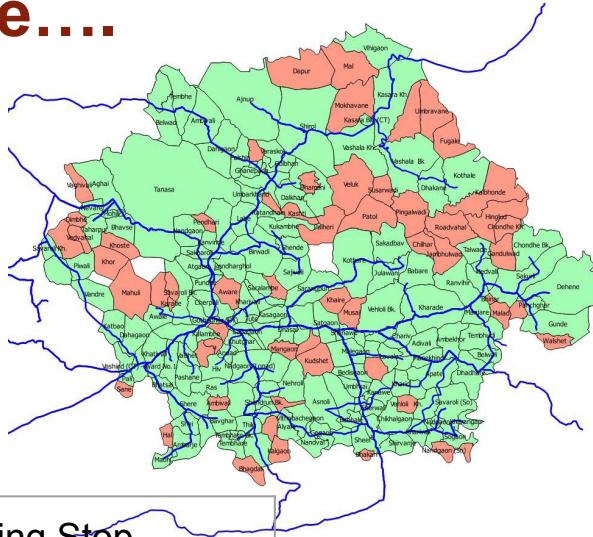
Staff Strength	1.05 lakhs
Number of Buses	15500
Staff per Bus	5.79
KM per Bus per Day	310 km
KM per Staff Per Day	54 km
Fuel Efficiency	4.76 km/liter

Punctuality at Starting Stop	
Early	7%
0-10 min.	45%
10-20	23%
More than 20 min.	19%

Category	Normalized EPKM Range	Trip Profitability
A	>Rs 43	15 %
B	Rs 22-43	40 %
C	<Rs. 22	45 %

So how are students coming to school?

Village Name	Distance (Village Centroid to School) (in km)			Travel Mode Choice			
	Village centroid to bus/road network	Bus/road network	Distance from bus/road network to school	Village centroid to road	Bus/road network	Distance from bus/road network to school	Remark
Jambulwad	0.408	7.203	0.103	Walk	Jeep/walk	Walk	
Ranvihir	2.482	2.085	0.103	Walk	Bus	Walk	
Bhinar	1.057	3.732	0.103	Walk	Walk	Walk	
Kharade	0.603	2.218	0.103	Walk	Walk	Walk	
Talwade	0.836	4.745	0.103	Walk	Jeep	Walk	
Malad	1.887	6.981	0.103	Walk	Walk	Walk	Road is there but no bus
Dehene	2.287	11.569	0.103	Walk	Bus	Walk	
Hinglud	1.042	7.219	0.103	Walk	Walk	Walk	
Panchghar	0.410	10.207	0.103	Walk	Bus	Walk	
Chondhe Bk.	1.250	13.303	0.103	Walk	Bus	Walk	
Chondhe Kh.	3.799	13.303	0.103	Walk	Bus	Walk	

Drinking Water
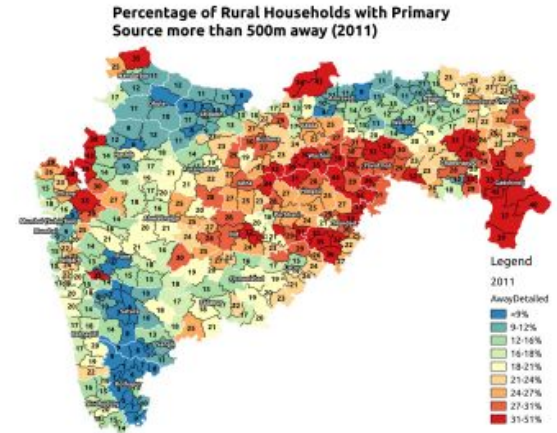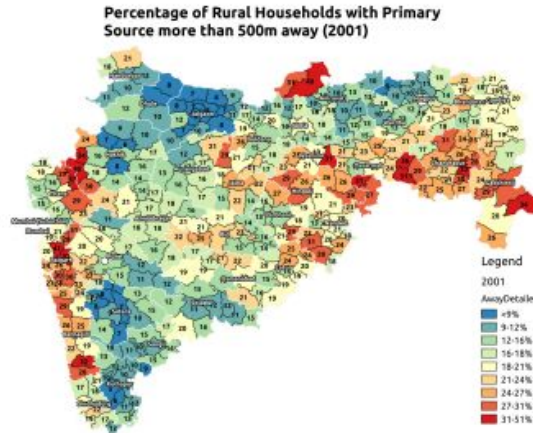
Two GPs in Karjat Taluka 2011-12 -

Inability to factually report current status that most schemes are failing within 10 years.

Nothing could be done in the then workflows.

Table 4: PWS Scheme Status Summary

Mograj GP	Pre-reform	Post-reform	Ashramshala Scheme[5]	Total	Tembhare GP	Pre-reform	Post-reform	Total
Total number of schemes	4	5	1	10	Total number of schemes	1	6	7
Failed	4	3	0	7	Failed	0	1	1
Partly functional	0	1	0	1	Partly functional	1	1	2
Functional	0	1	1	2	Functional	0	1	1
Under construction	0	0	0	0	Under construction	0	3	3

Source: Field Study data

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

Legend
2001
AwayDetailed
- <9%
- 9-12%
- 12-16%
- 16-18%
- 18-21%
- 21-24%
- 24-27%
- 27-31%
- 31-51%

Percentage of Rural Households with Primary Source more than 500m away (2011)

Legend
2011
AwayDetailed
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Drinking Water

Two GPs in Karjat Taluka 2011-12 -

Inability to [...]
current sta[...]
schemes a[...]
10 years.

Nothing [...]
in the the[...]

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							3	3

Knowledge Failure: Most are routine.

Inability to document the situation, analyse and adapt procedures and practices.

Conclusion: Many of the problems beyond the capacity of the wise politician.

Legend
2011
AwayDetailed
<9%
9-12%
12-16%
16-18%
18-21%
21-24%
24-27%
27-31%
31-51%

The Indian Knowledge State - Post-Independence
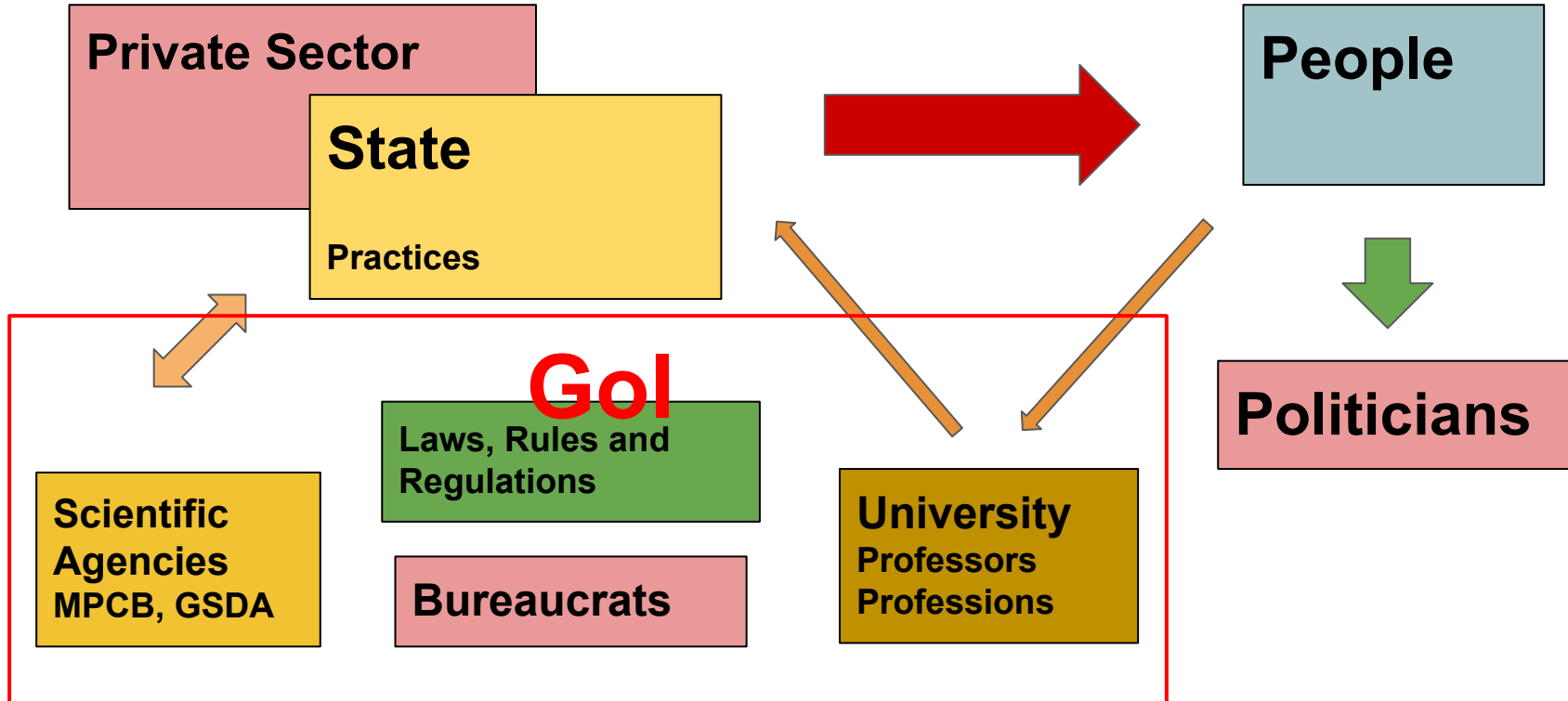
The Nehru plan- How GoI planned to influence

How GoI planned to influence

IIT, IIM, SPA
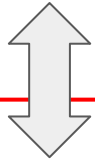AIIMS, JNU

CGWB, C
ISI, RRI

UGC,
E

DRDO, ISRO, DAE

Regulations

Scientific Agencies
MPCB, GSDA

Bureaucrats

University
Professors
Curriculum
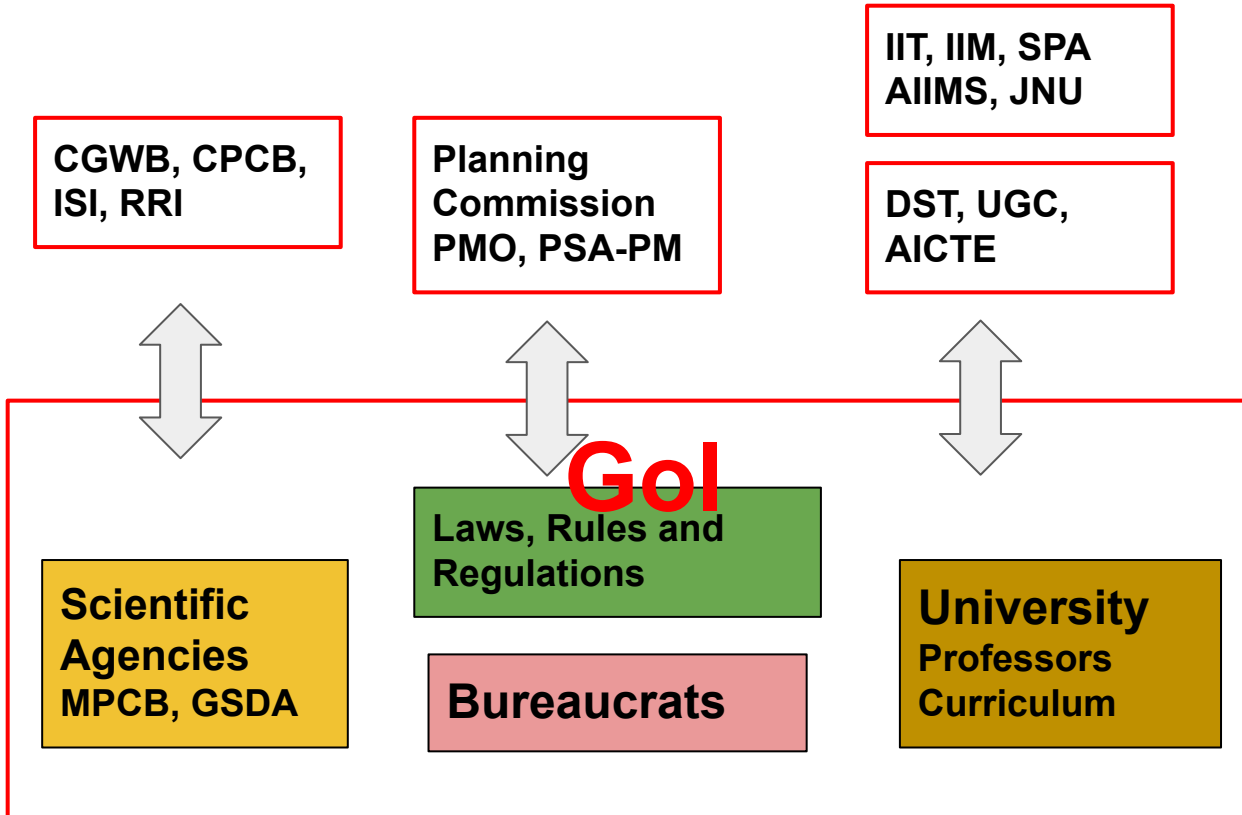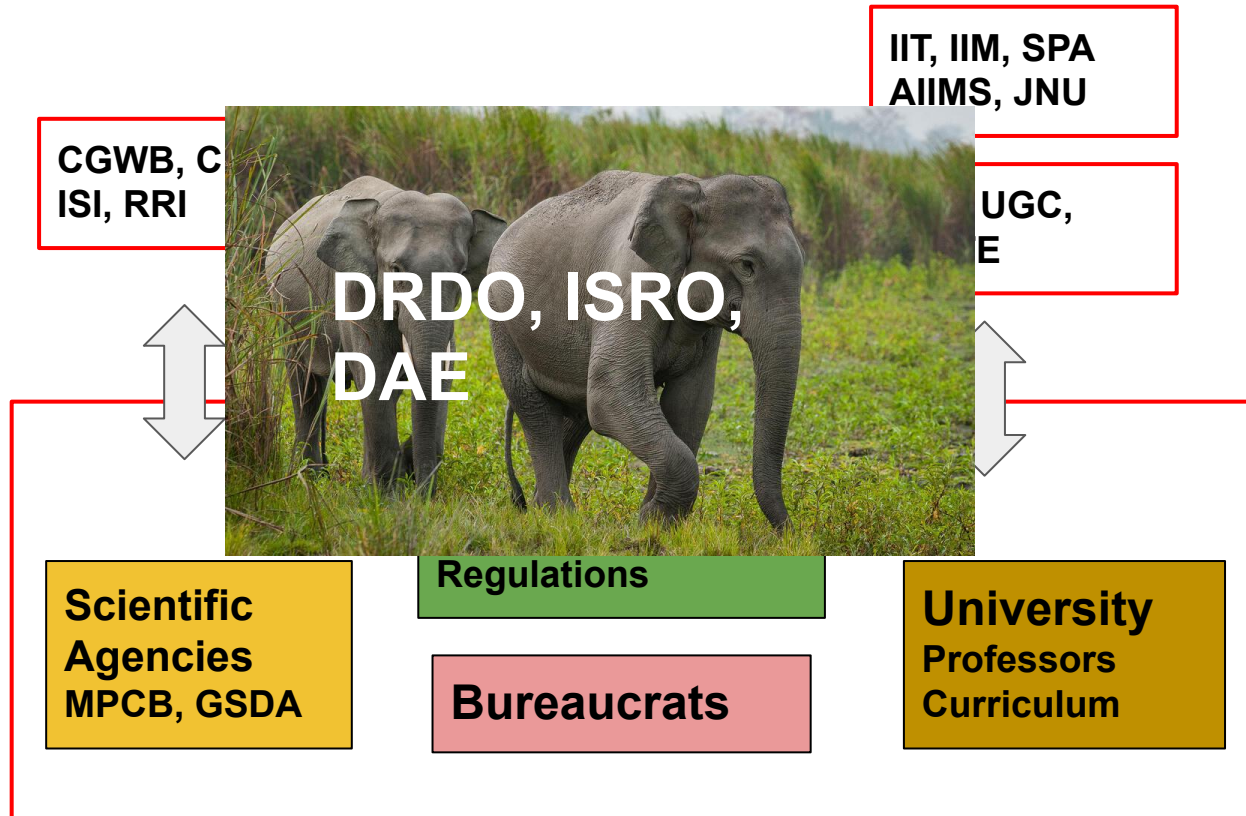
How GoI planned to influence

CGWB, CPCB, ISI, RRI, ICAR

Planning Commission PMO, PSA-PM

IIT, IIM, AIIMS, J
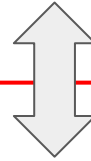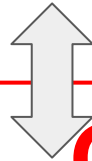
DST, UG AICTE

GoI

Laws, Rules and Regulations

Scientific Agencies MPCB, GSDA

Bureaucrats

Univ Profes Curric

Explicit constitutional provisions - either sole ownership or heavily loaded.

Science & Technology, gathering data and statistics, setting standards.

Most public research funding concentrated in GoI. Or through state S&T commissions - miniscule.

Most state-level departments have zero R&D funding.

Most curricula, teaching loads, promotions are regulated.

Now through competitive exams, most school curricula (indirectly) regulated too.

How GoI planned to influence

CGWB, CPC
ISI, RRI, ICA

IIT, IIM,
AIIMS,

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Science & Technology, gathering data and statistics, setting standards.

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a, teaching loads, promotions

competitive exams, most
school curricula too.

Scientific Agencies
MPCB, GSDA

Bureaucrats

Curric

Most GoI knowledge institutions are unaccountable - the ultimate रेवडीs

Each is a story by itself.

Example : IIT

The primary objectives of IITs are as follows:

o To create an environment that encourages freedom of thought and pursuit of excellence and inculcate the necessary vision and self-discipline to achieve excellence.

o To build a solid foundation of scientific and technical knowledge and to prepare competent and motivated engineers and scientists.

o To kindle an entrepreneurial spirit among the students.

o To prepare the students to become outstanding professionals and contribute to nation building.

An Indirection

University of Illinois

The University of Illinois at Urbana-Champaign is charged by our state to enhance the lives of citizens in Illinois, across the nation and around the world through our leadership in learning, discovery, engagement and economic development.

We will be the pre-eminent* public research university with a land-grant mission and global impact.

The p

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o To prepare the students to become outstanding professionals and
contribu

Clear role for the university

Enhance the lives, citizens, Illinois, engagement, economic development, public research, land-grant mission

Table 1. Placements (2013) of undergraduate and postgraduate students of major departments in IIT Bombay

Sector	Engineering	Finance	Consulting	IT
Super-GG	25 (27.7)	10 (35.0)	7 (54.0)	42 (51.3)
GG	116 (7.9)	82 (11.7)	110 (9.6)	102 (10.0)
IG	54 (6.5)	19 (7.2)	11 (5.8)	28 (7.2)
GI	24 (9.3)	10 (14.2)	10 (5.2)	5 (9.3)
II	64 (6.5)	13 (9.5)	8 (5.8)	22 (7.9)

GG, Global company serving a global market (e.g. Bank of America or General Electric); II, Indian company serving Indian markets (e.g. Ambuja Cement or Tata Motors); IG and GI are similarly explained, i.e. Indian company serving global markets and global company serving Indian markets respectively (e.g. Infosys and Hindustan Unilever). Super-GG are placements to positions situated abroad. The figures, e.g. 116 (7.9), indicates the number placed and the average annual salary in lakhs of rupees.

The students (2013) have clearly chosen not to serve the Indian customer or work for the Indian companies.

The promise of global citizenship.

Largely arbitrage in the global job market

27

Table 3. Number of papers with phrase in the title and with at least one author from India (Scopus)

Topic (phrase)	All years preceding 2003	2003–09 (TEQIP I)	2010 onwards (TEQIP II)
Neural network	692	1818	2467
Fuzzy logic	110	327	759
Wavelets	96	905	1846
Genetic algortihms	262	989	1373

Table 4. Number of papers with phrase in the title and with at least one author from India (Scopus)

Topic (phrase)	All years preceding 2003	2003–09 (TEQIP I)	2010 onwards (TEQIP II)
Water supply	84	74	87
Sanitation	30	51	63
Groundwater models	11	29	70
Public transport	5	15	25
Power grid	12	56	288

Nor have our professors (2015)

Now - Climate Change, AI-ML and new plastics to achieve Sustainable Development Goals.

Main departments unlikely to work on development problems. Doubtful if they have the temparament or the capability.

The policy route - of advising the producer through evidence - should be deemed as failed…

What is to be done?

What is to be done?

Simplify…Localize

Go to Tier-II state colleges and their teachers as alternate producers of knowledge

What is to be done?

MSRTC

Bus despatch times were not logged.

Occupancy was not tracked.

College and school timings, weekly markets etc. were not used.

Follow up with PWD on road condition was not done.

IT-based tracking was not done.

Rural Water Supply

Groundwater sources were not tested.

Energy costs were huge. Appropriate community analysis was not done.

Key *wadis* were missed in design.

Many of the assets were of poor quality. But they were never checked.

What is to be done?

MSRT

Bus de... not
logged.

Occupa... ...propriate

College... ...done.
markets

Follow ...esign.
conditio...

IT-base... ...poor

- The analysis and the corrective actions were simple enough.
- Moreover, they could be codified as standard "consultancy reports" .
- These could be executed by suitably trained, but ordinary college students as B.Tech projects with the support of faculty members or staff.
- There are many locations - bus depots, agri. electricity, anganwadis, PHCs, PWS, GPs and towns.
- These could enhance the reputation of the institution and the skill-set of the student.
- This could benefit the enterprise.

Advocating Idea : The Great Alignment

Steps

1. Demonstrate in a concrete sectors how new knowledge will improve outcomes - GR 15th June 2015
2. Argue that this is also a matter of higher education
3. Prepare the state to engage.
4. Prepare the University to Engage

Governance and Job Description

Research and Curricula

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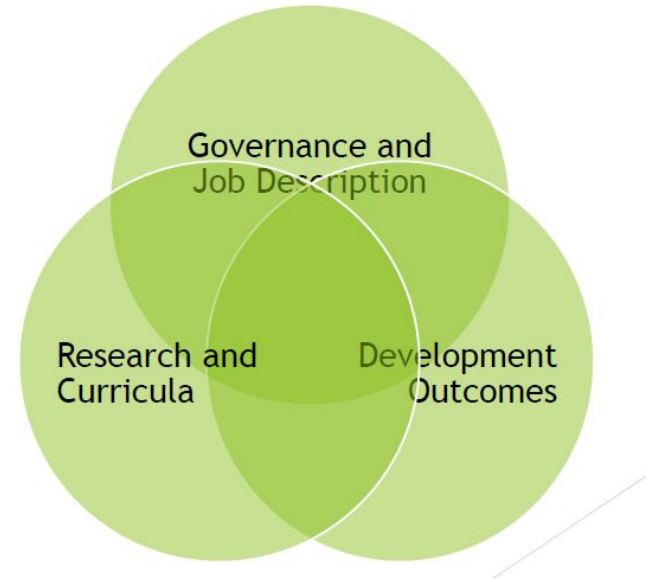
District	Palghar	Thane
Number of schemes	19	12
Sanctioned amount	Rs. 28.2 Cr.	Rs. 6.4 Cr.
Minor Problems (Source)	9/19	10/12
Major Problems (Design)	7/19	9/12

Leg-work done by CTARA

The Old University

Private Sector

State

Practices

People

Prepare
Employees

Join, Support

University
Professors
Professions
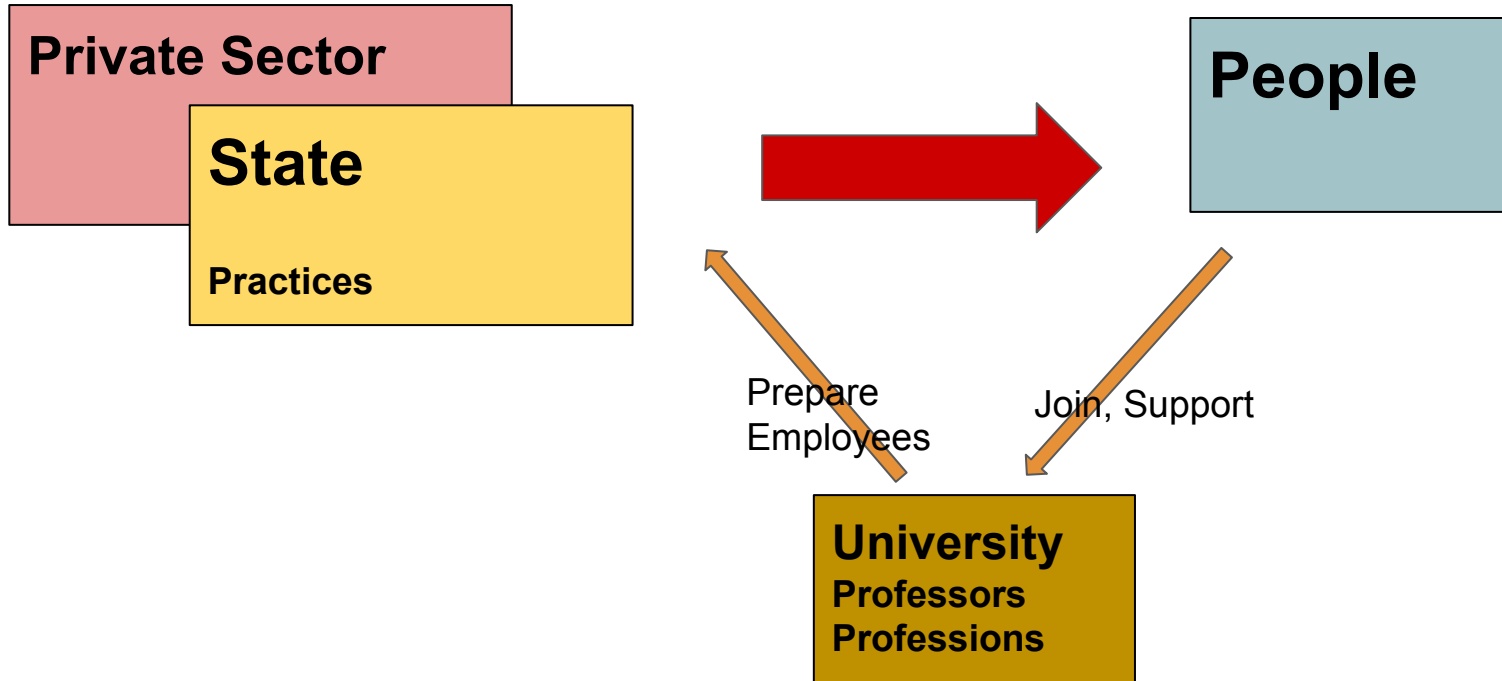
The New University - USA (land-grant), Japan, Korea…

Private Sector

State

Practices

People

Study, Analyse Provide new job definitions, new processes

Prepare Employees

Join, Support

University
Professors
Curricula

Report, Advise, Study, Guide

Seek Civil Society Role, Innovate on Pedagogy
Analyse, Motivate, provide new role models.
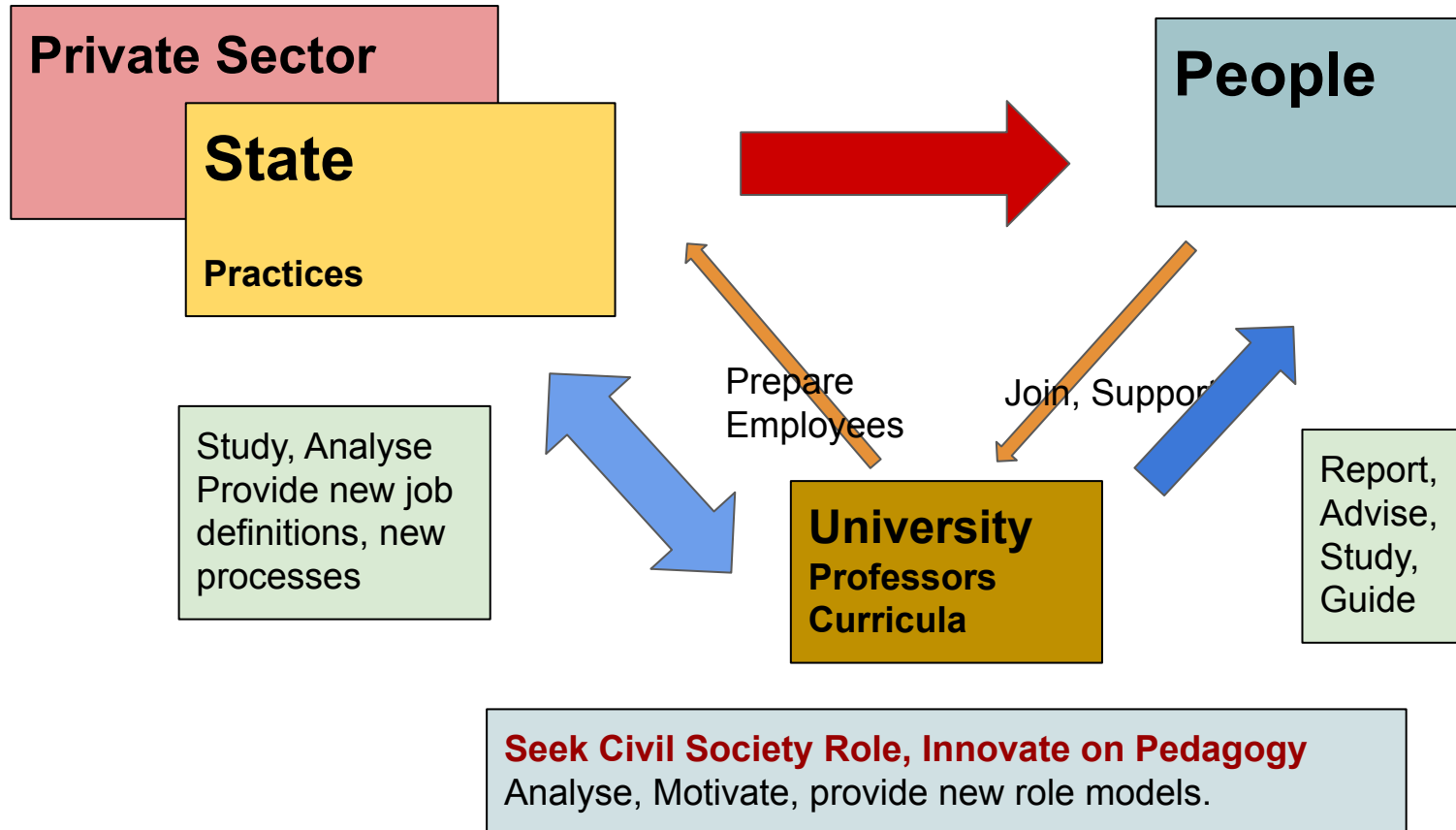
Unnat Maharashtra Abhiyan : Program Objectives and Description

Connecting HTE with the development sector

Preanble :

- Reform teaching, curricula and research in HTE to align with development objectives

- Train future professionals for development Objectives

- Enable institutes to work with regional agencies to help them and become resource and knowledge center - Through Key GRs

- Provision of Data, Analysis and Funding

- Provide mechanism for citizens to approach institutions

GR (13th January, 2016)

UMA Institutes

Map of Maharashtra showing UMA institute locations:

- GCOE, Jalgaon
- UDCT, NMU, Jalgaon
- SSVPS Deopur, Dhule
- VNIT, Nagpur
- GCOE, Amravati
- GH Raisoni COE, Nagpur
- PRMITR Badnera, Amravati
- GCOE, Aurangabad
- MIT, Aurangabad
- GCOE, Chandrapur
- Amrutwahini COE, Sangamner
- BVB's SPCOE, Mumbai
- ICT Matunga, Mumbai
- IIT Bombay, Powai
- VJTI Matunga, Mumbai
- SGGS IOE&T, Nanded
- BVUCOE, Pune
- COEP, Shivajinagar, Pune
- BATU Lonere, Raigad
- KBP COE Satara
- SVERI COE Pandharpur
- Walchand COE, Solapur
- GCOE, Karad
- RIT Islampur, Sangli
- TKIET Warnanagar
- PVPIT Budhgaon, Sangli
- GIT Khed, Ratnagiri
- KIT Kolhapur
- Walchand COE, Sangli
- DYPCET Kolhapur
- DoT Shivaji University, Kolhapur

Legend:
- 🟢 UMA Phase 1 colleges (19)
- 🟡 UMA Phase 2 colleges (12)

Selection on the basis of ability to carry out the required engagement.

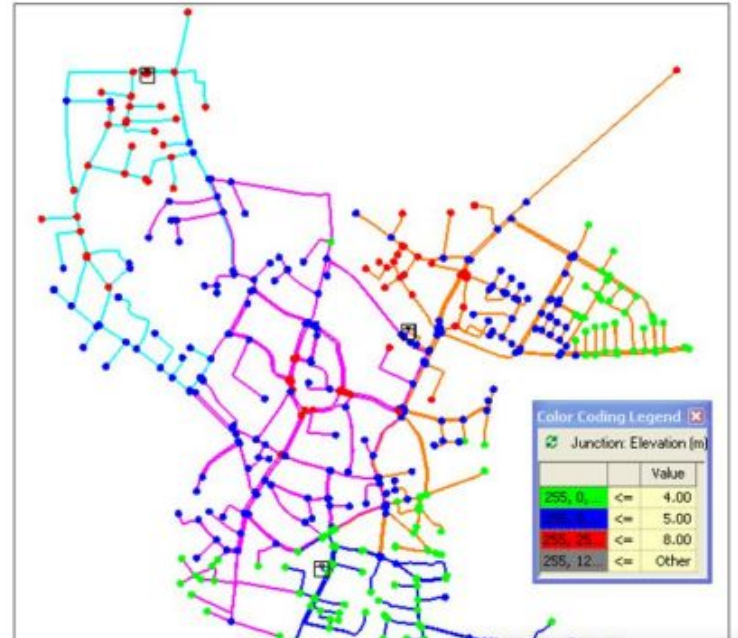Total Participating Institutes : **75**
- Technical Institutes : 35
- Govt. Polytechnic : 40

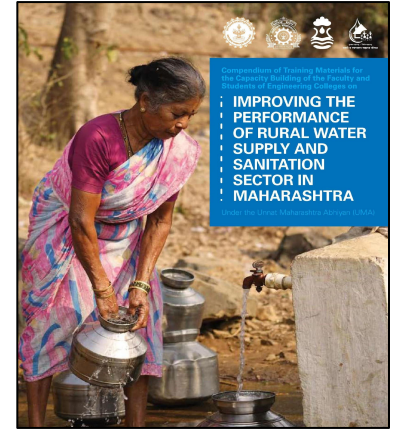Next 2 Years : 3-4 Science/Arts college in each district

Strategy

1. Build Case studies in chosen sectors and show benefits.
2. Canvas for instrument / GR from department
3. Offer workshop for UMA colleges.
4. Bring funding and make a course and even a Textbook!
5. Build pressure on Universities to adopt in curricula.

Mainstream liaison with department. Do great research. Comprehend how the state works!

Color Coding Legend

Junction: Elevation (m)

		Value
255, 0,	<=	4.00
	<=	5.00
255, 2	<=	8.00
255, 12	<=	Other

IMPROVING THE PERFORMANCE OF RURAL WATER SUPPLY AND SANITATION SECTOR IN MAHARASHTRA

GIS Framework for Taluka Bus Transportation Analysis and Provisioning
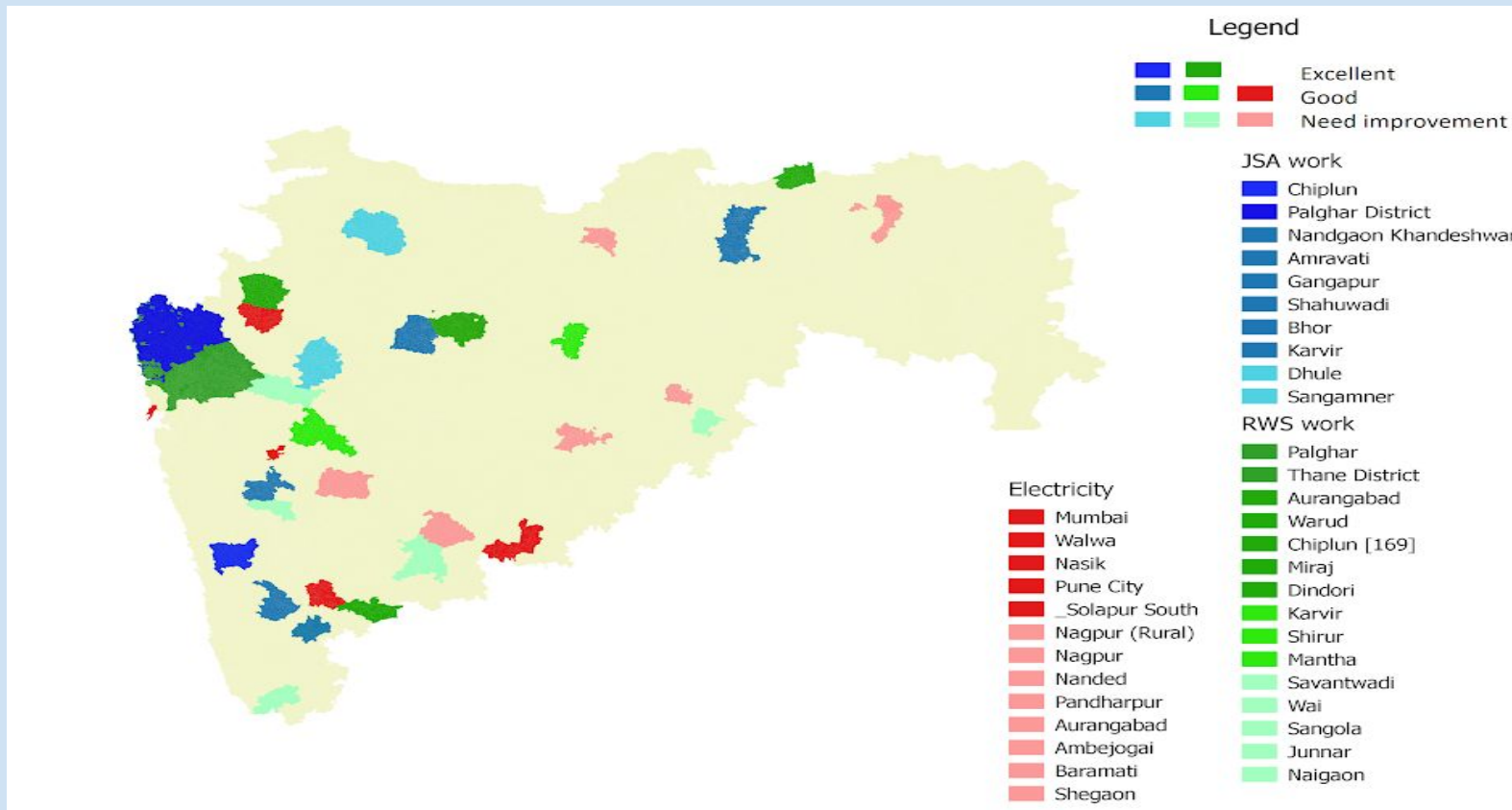
submitted by

Anshu Kant

For the award of the degree of

Master of Technology

Under the supervision of

Milind A. Sohoni
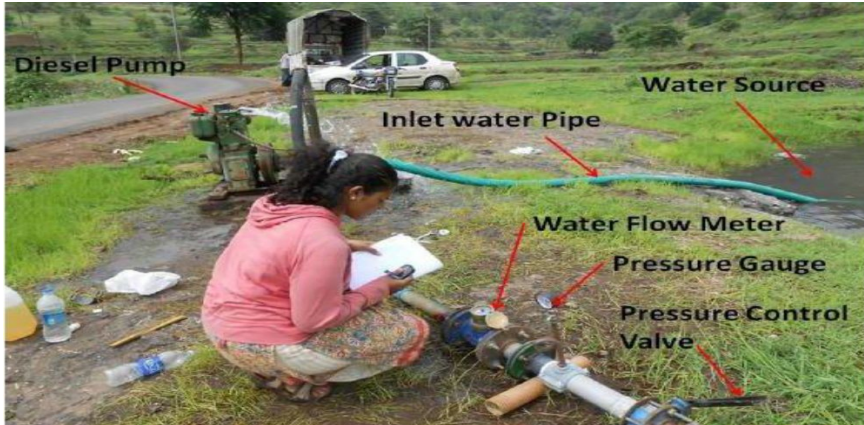Professor CTARA and CSE
IIT Bombay

Apaji Institute of Mathematics and Applied Computer Technology
Banasthali Vidyapith
Banasthali - 304022 (India)
Session: 2019-2020

Jalyukta Shivar, Rural Water Supply and Electricity: UMA Colleges and Talukas

Field Work

UMA : Key GRs

HTE	13th Jan. 2016.	Main UMA GR, Listing of Colleges and Topics: enabling student projects and faculty research, 17 TEQIP Colleges
Planning	7th Apr. 2016	UMA Institute : Source of funds, up to 25% of District Innovative fund.
HTE	**15th June 2016**	**UBA-UMA GR Topics, Guidelines, District Coordinating Institutes**
HTE	5th July. 2017	Empanelment of 12 private colleges under UMA in addition to the original list
HTE	25th Oct. 2018	Provision of funds for UMA Scheme.
Planning	25th Sept. 2018	UMA colleges are empaneled as TPA, Appointment of DPO as District Nodal Officer and M&E fund (0.5% of the Annual Plan) can be accessed by UMA. (Reference - GR. 26th Sept. 2017)
WCD	6th Mar. 2019	Empanelment of UMA colleges for TPI of Jalyukta Shivar
HTE	26th Aug. 2019	Approval for disbursement of F.Y 2019-20 funds.
WSSD	14th Jul. 2020	Empanelment of selected UMA colleges for TPI of WSSD.
WRD	12th Apri, 2021	Procedures to take R&D work of WRD, Listing of sample work.

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HTE	5th July. 20	al list
HTE	25th Oct. 20	
Planning	25th Sept. 2	Nodal Officer and M&E GR. 26th Sept. 2017)
WCD	6th Mar. 20	
HTE	26th Aug. 20	Approval for disbursement of FY 2019-20 funds.
WSSD	14th Jul. 2020	Empanelment of selected UMA colleges for TPI of WSSD.
WRD	12th Apri, 2021	Procedures to take R&D work of WRD, Listing of sample work.

**Considerable
GoM Buy-In
But harder Academia
Buy-In**

Sample Projects Funded by HTE GoM 2022-23
Standard line item in budget now!

S.N	Topic / Theme	Duration
1	Helping MSME by linking them with Engg. Colleges (Pilot with two colleges)	6 man-months
2	Mumbai University faculty and college training on Case study methodology in Curriculum	10 man-months
3	Thematic workshop on MSEDCL Agri. Feeders	10 man-months
4	Thematic Workshop on Third Party Audit for Water Resources Department Projects.	10 man-months
5	"Unnat Maharashtra Abhiyan" orientation workshop for Government Polytechnics	2 man-months
6	Study of outcomes of Engg. Education in 3 institutions.	10 man-months
7	Preparation of Census and related GIS sets for MH	10 man-months

Hurdles and Limitations

1. Little participation of the top 5-6 (state) colleges. The same incentive mismatch as in the IITs.
 - 70% students in MNC arbitrage, 30% in core sector
 - **Faculty disinterest -** secure salary, easier to work on Fuzzy Logic and gain promotion points
 - Institutional funk
2. Better participation from regional private institutions - about 10 success stories. Even here student, faculty distraction, institutional weakness, inability to sustain engagement with district authorities.
3. No real support from district administration or liaison by regional HTE officers
4. **Aspirational dysfunction** - prefer to spend 2-3 years dreaming about 40K IT job than take up 20K job or work on development sector and earn 40K. **Classic rent-seeking.**
5. **Extremely counter-productive GoI messaging - sunrise sectors of biotechnology, robotics, mechatronics, IoT, block-chain, AI-ML** - **NOT ONE HONEST STUDY IN FIVE DECADES**
6. Not-transferable. Works in Maharashtra where the Weberian state still exists.

Hurdles and Limitations

1. Little ... s.
   - 70% ...
   - Facu... s
   - Insti...
2. Bett...
   stud... rict
   auth...
3. No ...
4. **Asp...**
   take...
5. **Extr...**
   robo...
   DEC...
6. Not-...

On the Whole:

Success 35%.

Exhausting - Needs a second Bottom-Up Front
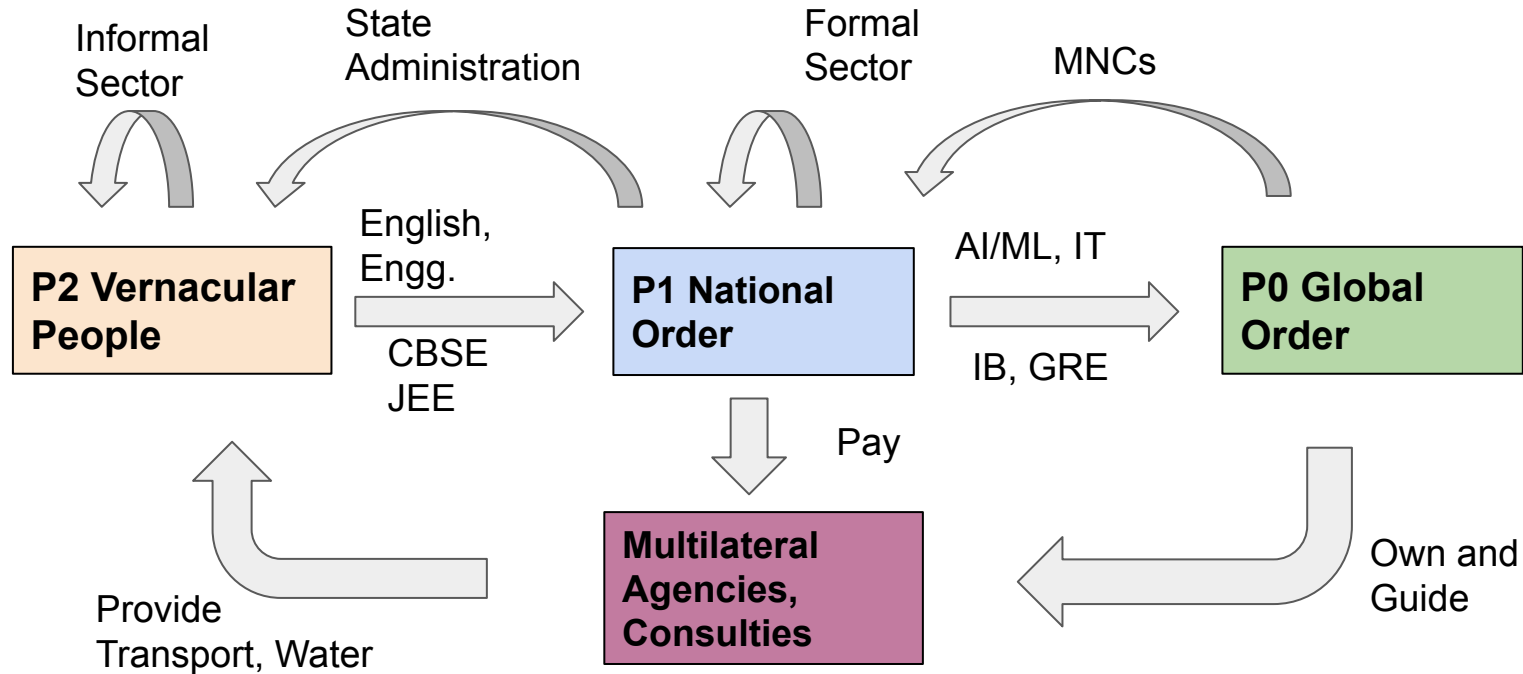**Main Output: Entry into GoM, Precedence, Blue Prints, Tool Kits**
Partial recognition that development sector is not "social work" but professional work
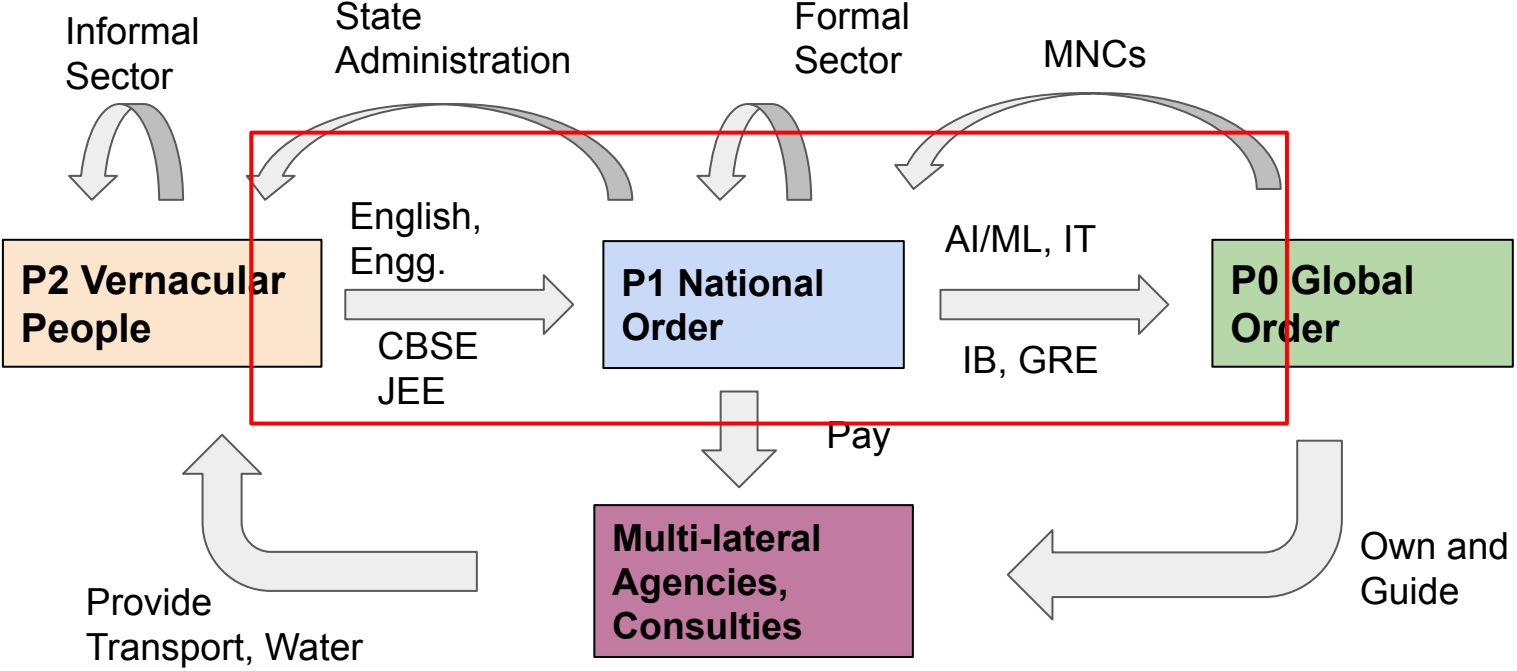**Need to get closer to college students**

Structure of Indian Society - again

Informal Sector

State Administration

Formal Sector

MNCs

P2 Vernacular People

English, Engg.

CBSE JEE

P1 National Order

AI/ML, IT

IB, GRE

P0 Global Order

Pay

Provide Transport, Water

Multilateral Agencies, Consulties

Own and Guide

Education in India

Informal Sector

State Administration

Formal Sector

MNCs

P2 Vernacular People

English, Engg.

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Multi-lateral Agencies, Consulties

Own and Guide

The education system of upward-compatibility. Aspirational dysfunction: Basic function to dissipate youth energy?

Education in India

Four outcomes

1. Injured with package
2. Injured without package
3. Ran away
4. Sat out

Informal Sector

State Administration

Formal Sector

MNCs

P2 Vernacular People

English, Engg.

CBSE JEE

P1 National Order

AI/ML, IT

IB, GRE

Pay

Guide

Multi-lateral Agencies, Consulties

Provide Transport, Water
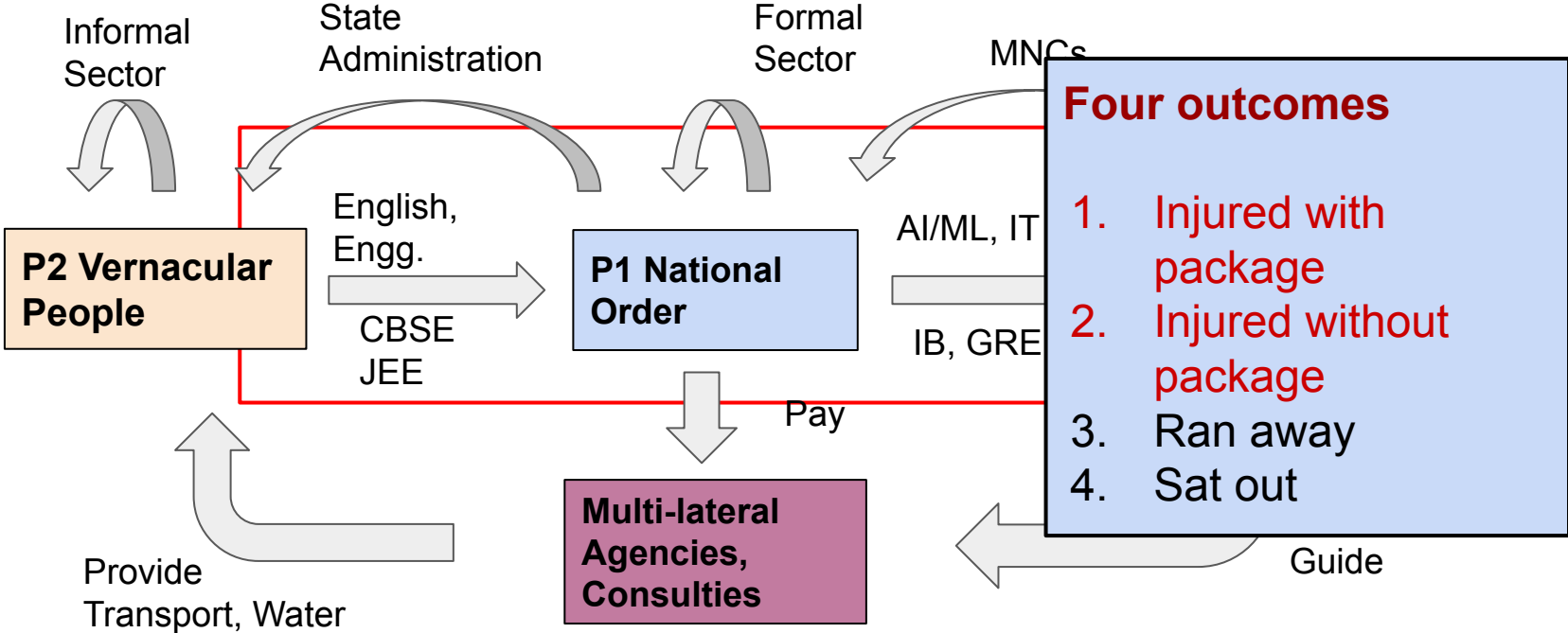
Create losers who accept they have lost! …Gramsci and hegemony…

UMA Attempted ….

Informal Sector

State Administration

Formal Sector

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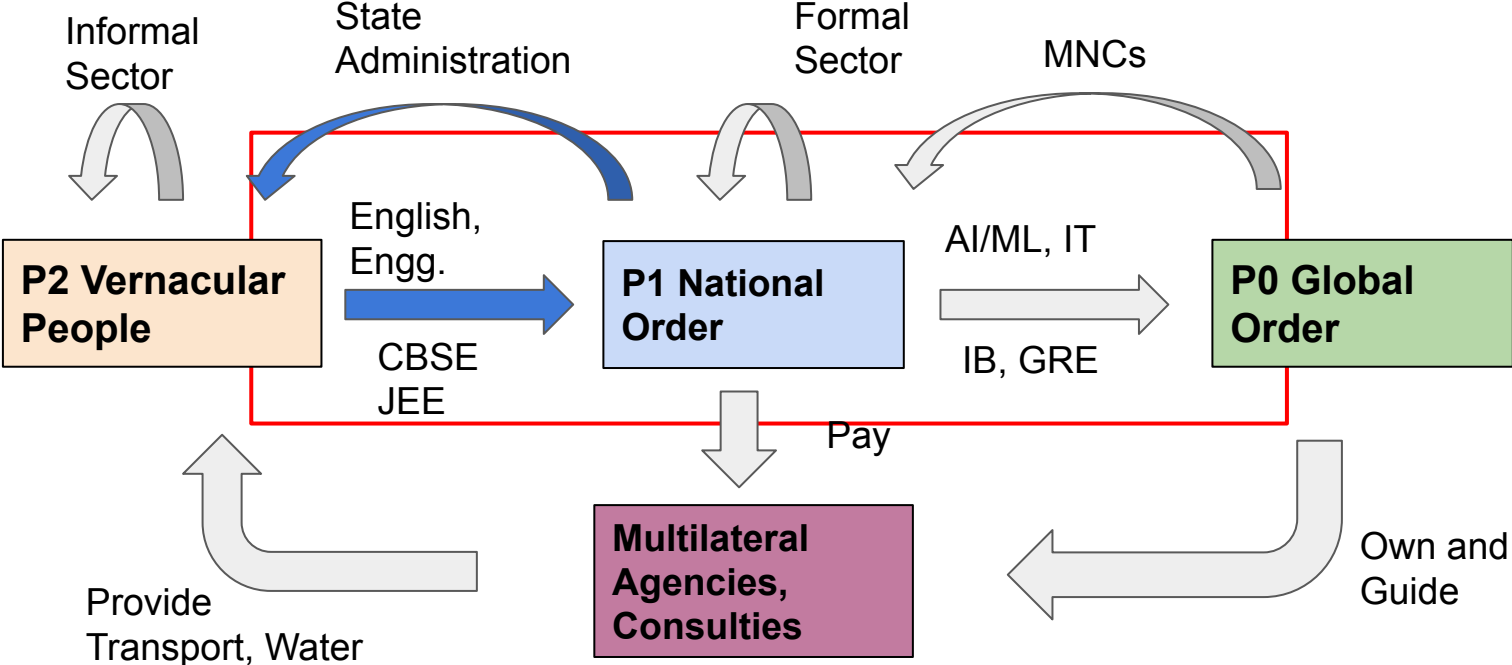
UMA 1: Telling P2 who hope to migrate to P1 to learn how the state administration serves P2. That did not catch the imagination of the students.

What is to be done?

Simplify…Localize
Talk to P2 colleges,
communities and students.

Education in India
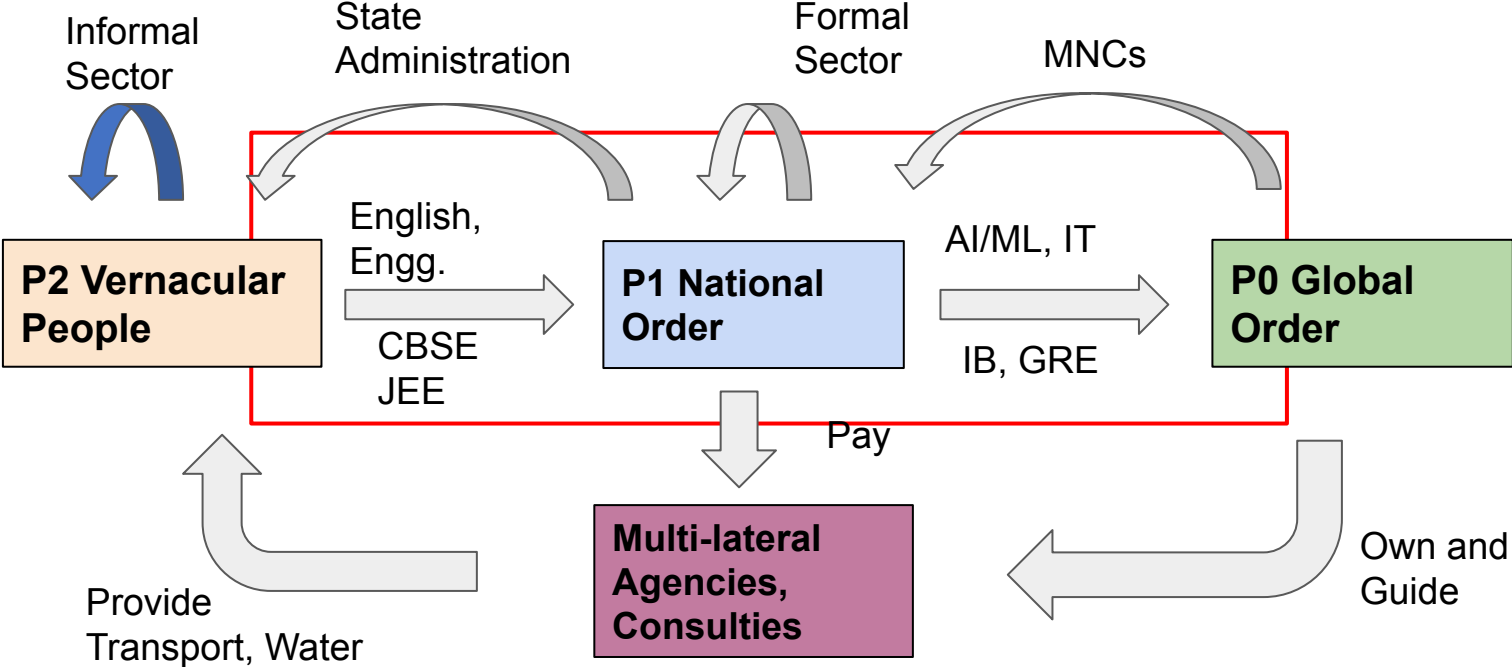
UMA 2: P2 to P2. Pick simpler tasks. Move to taluka-level degree college students.

आपले प्रश्न - आपले विज्ञान

आय.आय.टी. मुंबई व महाराष्ट्र शासनाचा नवीन उपक्रम

उद्दिष्ट

- गाव/शहर/छोटे उद्योग यांच्या प्रश्नांचा अभ्यास व त्यांचे अहवाल
- आपले गाव आणि आपले प्रश्न या बद्दल लागणारी गावकी आणि माहिती ची निर्मिती

युवा पिढीचा समाजाबद्दलचा अनुभव वाढवणे आणि कौशल्य निर्माण करणे

कार्यपद्धती - केस स्टडी - प्रादेशिक अभ्यास

- लोकांना पडणारे प्रश्न - उद्योजक, लोकप्रतिनिधी, गाव, वाडी, स्वतःचे कुटुंब
- काही प्रश्नांची निवड व अभ्यासाचे स्वरूप व पद्धत ठरवणे
- अभ्यास - field work and interdisciplinary skills
- अहवाल तयार करणे - अहवालाचे मूल्यमापन व प्रकाशन व संबंधित पाठपुरावा

मुख्य बाब: मुंबई विद्यापीठाच्या नवीन अभ्यासक्रमात बसणारे

Talking directly with rural college students about:

- Employment and number of graduates data
- …and what awaits them in the city
- Skills they should or do expect as a graduate
- How to get those skills
- Immediate vicinity as source of engagement

Dnyandeep College, Khed
'आपले प्रश्न, आपले विज्ञान मार्गदर्शन'
Date & time: 02.08.2022 12:20 pm
Address: MCP9+699, Dist. Khed, Maharashtra 415709
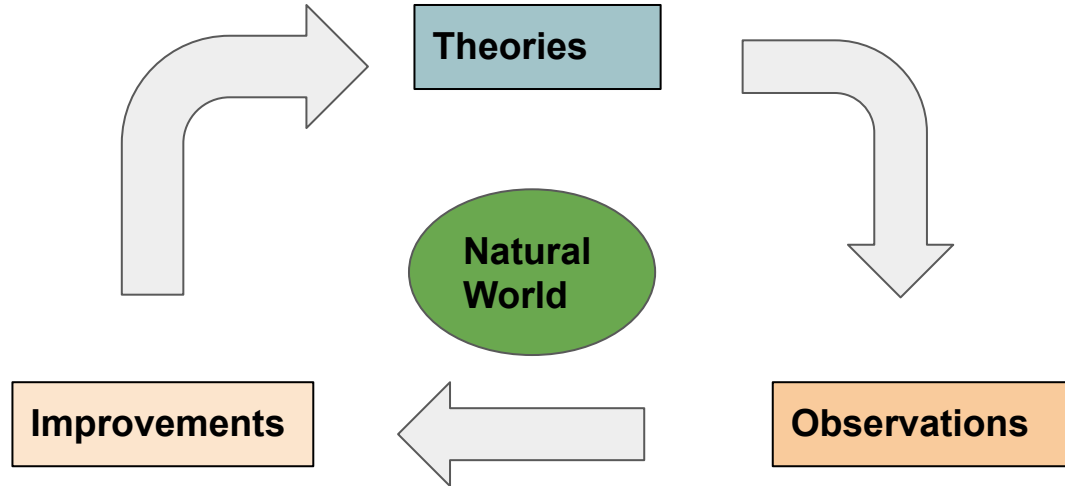17.68528°N 73.4184°E (±17m)
Altitude: 112m

Village-level case-studies

- Balance sheets of local MSME
- Agricultural production
- ST timings and alignment
- Drinking water sources and maps
- Anganwadi report

Link villages with their college via the student and assisted by the BDO.

राजापूर तालुक्याचे होणार सखोल संशोधन

उन्नत महाराष्ट्र अभियानात निवड; माहिती जमवणार

– राजेंद्र बाईत, राजापूर

अशी असणार विषयनिहाय प्रश्नावली

१) शेती :
- गावातील शेतकऱ्यांना शेती आर्थिकदृष्ट्या परवडत नाही.
- बाजारातून घेतलेली बियाणे निकृष्ट दर्जाची असतात.
- जमिनीचा कस कमी होतो आहे.
- शेतीवर वन्यप्राण्यांचा उपद्रव वाढला आहे.

२) पाणी :
- पिण्याच्या पाण्याचा प्रश्न आहे.
- गुरांसाठी पाण्याची सोय नाही.
- पाण्याचे स्रोत प्रदूषित आहेत.
- गावातील नदी, नाले, ओढे, गाळाने भरलेले आहेत.
- पावसाळ्यात गावात मोठा पूर येतो.

३) वाहतूक :
- गावात एसटी सेवा पुरेशी आणि सुरळीत नाही.
- गावात तातडीच्या कामासाठी रिक्षा-खासगी वाहन पटकन उपलब्ध होत नाही.
- गावात चांगले गुळगुळीत रस्ते नाहीत.
- गावात वाहन दुरुस्तीसाठी गॅरेज नाही.
- गावात जवळपास पेट्रोलपंप नाही.

४) शिक्षण :
- विद्यार्थीसंख्येअभावी गावातील शाळा बंद पडत आहेत.
- दहावीनंतर मुलांना शिक्षणासाठी बाहेरगावी जावे लागते.
- गावातील शाळांमध्ये पुरेशा पायाभूत सुविधा नाहीत.
- शाळेसाठी लांब चालत जावे लागते वा प्रवास करावा लागतो.

५) आरोग्य :
- गावात प्रथमोपचाराची सोय उपलब्ध नाही.
- गावात जवळपास औषधे मिळत नाहीत.
- गावात चांगले डॉक्टर उपलब्ध नाहीत.
- गावातील लोकांमध्ये विशिष्ट आजारांचे प्रमाण वाढते आहे.

६) गावातील लघुउद्योग :
- पिठाची चक्की
- गणेशमूर्ती बनवणे
- पशुपालन-दुग्धव्यवसाय
- किराणा मालाचे-अन्य वस्तूंचे दुकान
- तेलघाणा
- मासेमारी-खेकडे पालन-कोळंबी प्रकल्प
- बांबूच्या वस्तू-लाकडी फर्निचर बनवणे

७) स्वच्छता :
- गावात कचरा दिवसेंदिवस वाढतो आहे.
- प्लास्टिक संकलन-पुनर्चक्रीकरणाची सोय नाही.
- गावात पुरेशी शौचालये उपलब्ध नाहीत.
- गावात डासांचे प्रमाण वाढले आहे.

८) रोजगार :
- गावात सुशिक्षित बेरोजगार मोठ्या प्रमाणात आहेत.
- गावात छोट्या उद्योगांसाठी कामाला माणसे नाहीत.
- गावातील महिला बचतगटांची अवस्था.
- तरुणांना रोजगारासाठी शहरात जावे लागते.

९) सार्वजनिक व्यवस्था :
- पायाभूत सुविधा.
- गावातील लोकांना बेळेवर हक्काचे रेशन मिळत नाही.
- ग्रा.पं.च्या उत्पन्नापेक्षा खर्च जास्त होतो.
- गावात वीजपुरवठा सुरळीत नाही.
- गावात मोबाईल फोनला रेंज येत नाही.
- बँकेच्या व्यवहारासाठी लोकांना दूर जावे लागते.
- गावातील धार्मिकस्थळांच्या विकासासाठी निधी उपलब्ध नाही.
- गावातील स्मशानभूमीची अवस्था चांगली नाही.

१०) पर्यावरण :
- गावातील जंगल कमी होत आहे.
- वानरे, रानडुक्कर, बिबट्या आदींचा वाढता उपद्रव.
- गावातील जैवविविधतेची नोंद होणे आवश्यक.
- गावातील पारंपरिक शेतीपद्धतीचा अभ्यास आवश्यक.
- हवामान बदलाचा शेती बागायतीवर परिणाम.
- इंधनासाठी दुरवरून लाकूडफाटा आणावा लागतो.

Focault - But is this Science?

The loop of Science - Falsifiable and Replicable - is the construction of theories which match observations. Cultural skills of postulation and argumentation. And aesthetics - what is an improvement?
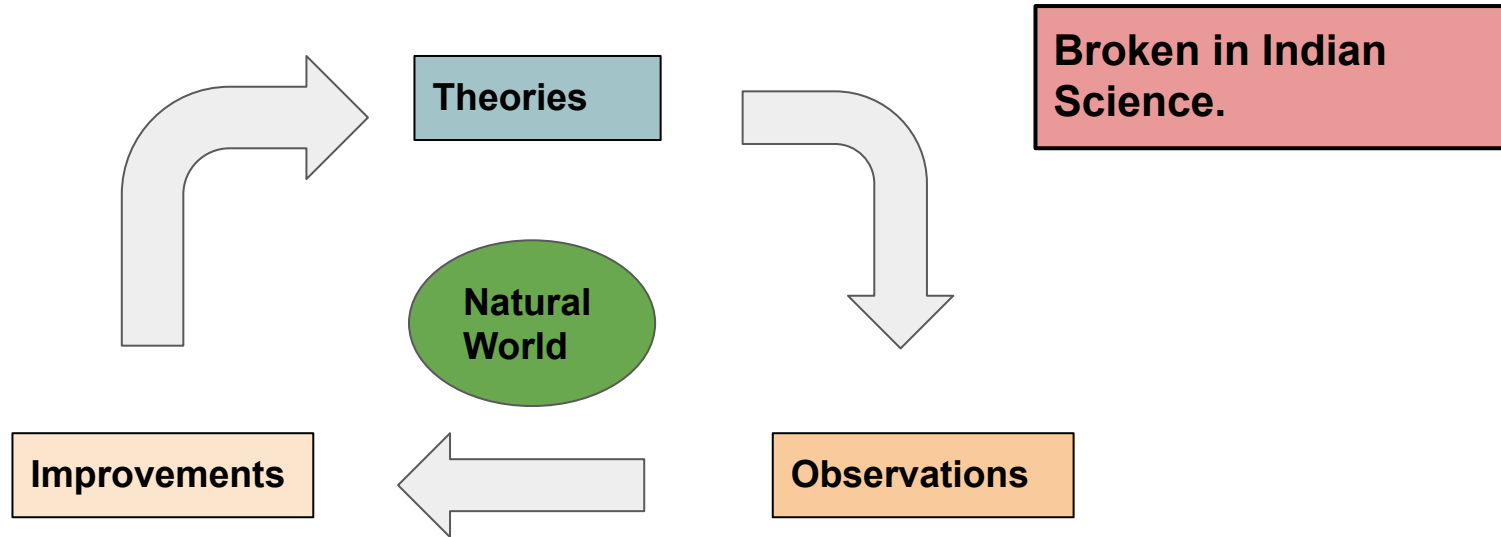
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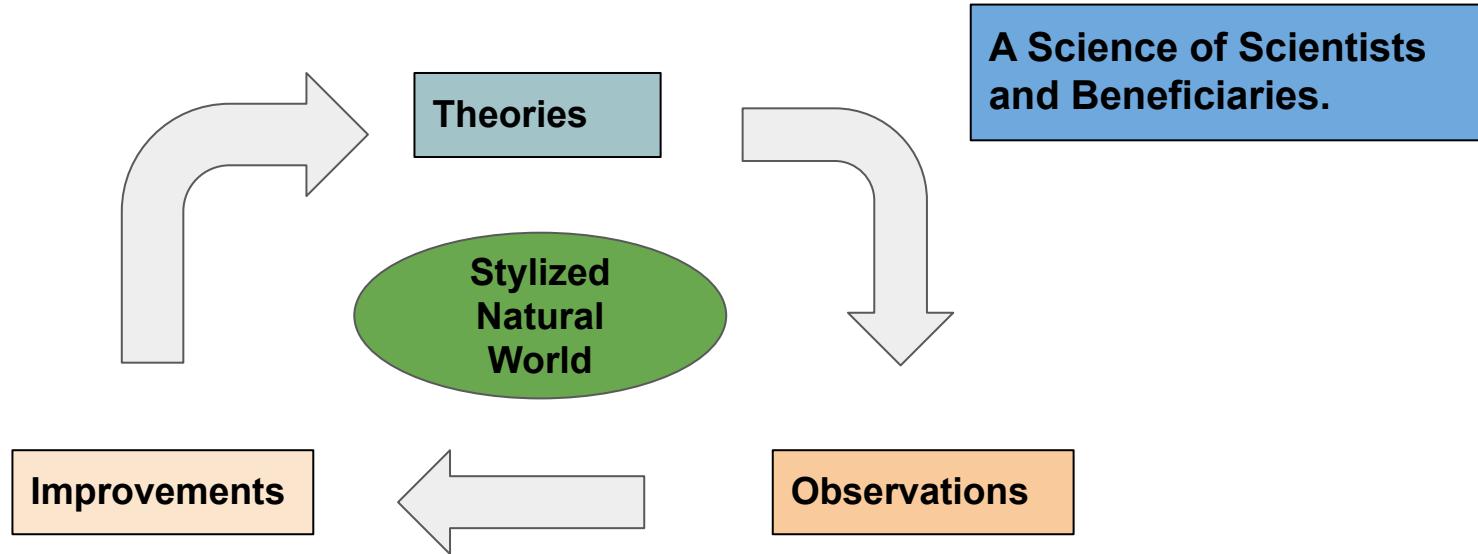
But does mainstream Science any longer have the expected attributes?

We seem to be trapped in a Stylized Science which is ineffective, which is neither replicable nor falsifiable. A world of cutting-edge science - of quantum computing, and carbon sequestration - delivered by world class universities and companies.
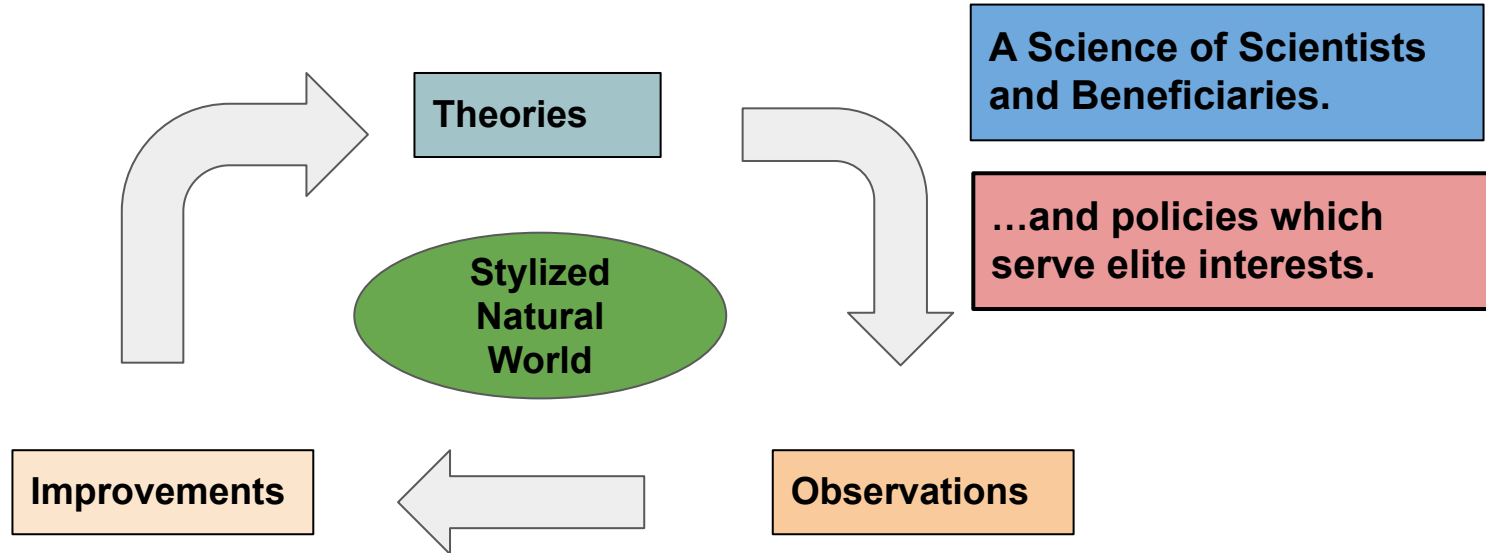
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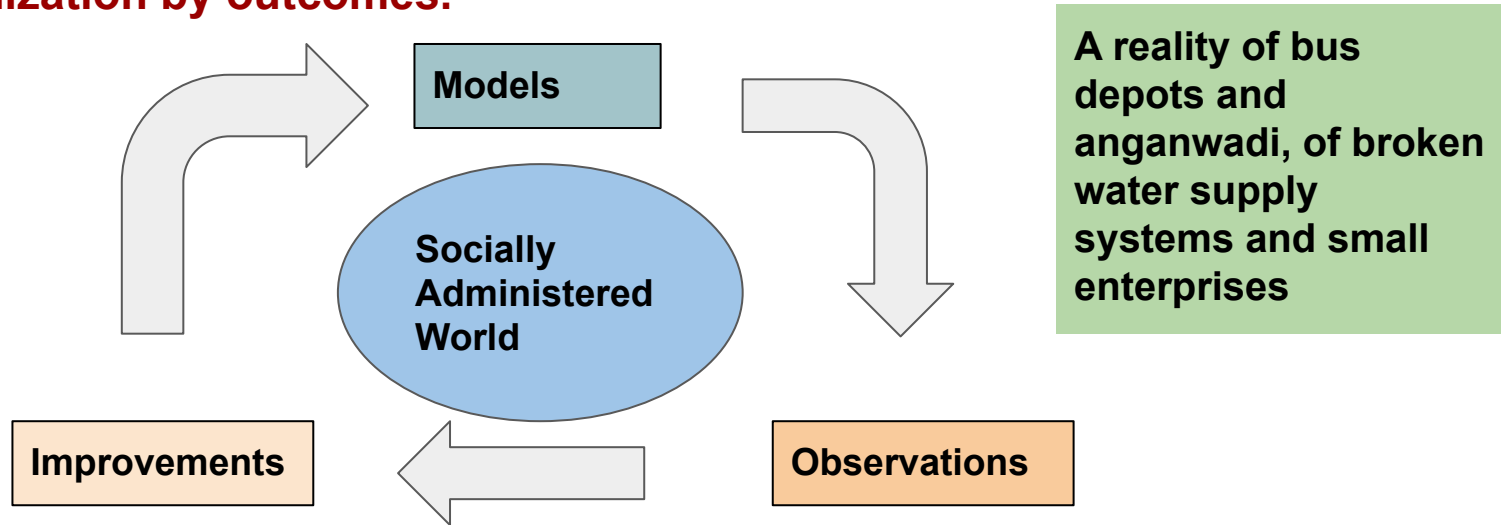
Theories

Stylized Natural World

A Science of Scientists and Beneficiaries.

...and policies which serve elite interests.

Improvements

Observations

The delivery problem in development needs a more effective and participatory Science

Emergence of "Vernacular" Science of the people, of ordinary citizens - of painstaking measurements and analysis of their own plights - their own means of legitimization by outcomes.

Models

Socially Administered World

A reality of bus depots and anganwadi, of broken water supply systems and small enterprises

Improvements

Observations

Final Message

- **Massive decentralization of Science and the University to the taluka level.**
- **To move to a knowledge system which is accountable to the people, which supports the Right to Analysis, and which is replicable and participatory.**
- **And we need a matching Bureaucracy!**

Politicians can do little to deliver development - They can do a lot more by holding our Scientists, Bureaucrats and Professors accountable.
Time of great essence : Unemployment in youth is raging at 25%-40%.

Vikasvaad 2.0

वर्तमानवाद+भौतिक वास्तववाद ➡ लाभार्थीवाद + परंपरा-वाद + अस्मितावाद ++

विज्ञान   -   म्हणजे

विज्ञान   -   म्हणजेच   -   व्यवहार ज्ञान

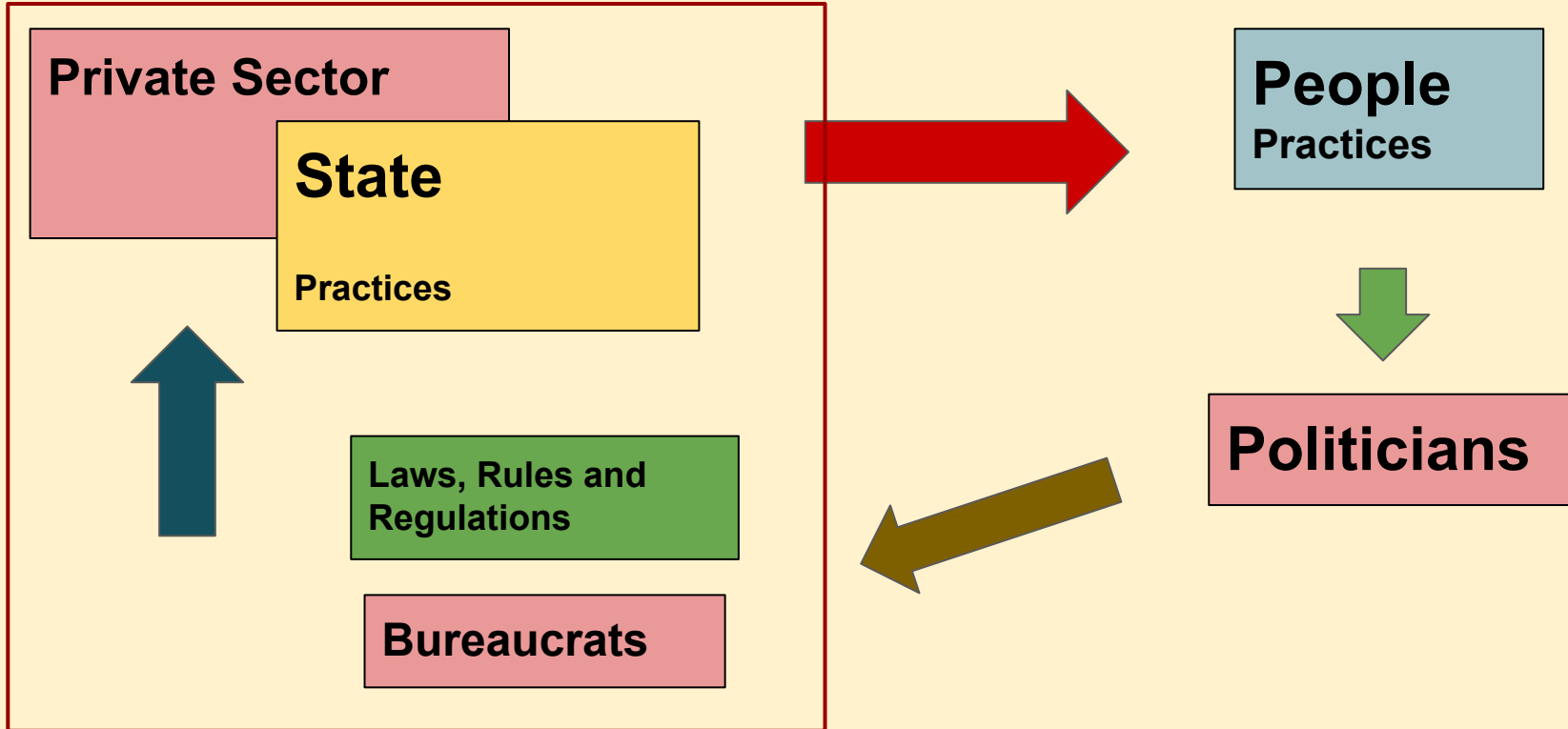वास्तवाची प्रामाणिक नोंद आणि विश्लेषण हेच खरे विज्ञान

Thank you.

The Historical and Sociological Excursions? 8 minutes.
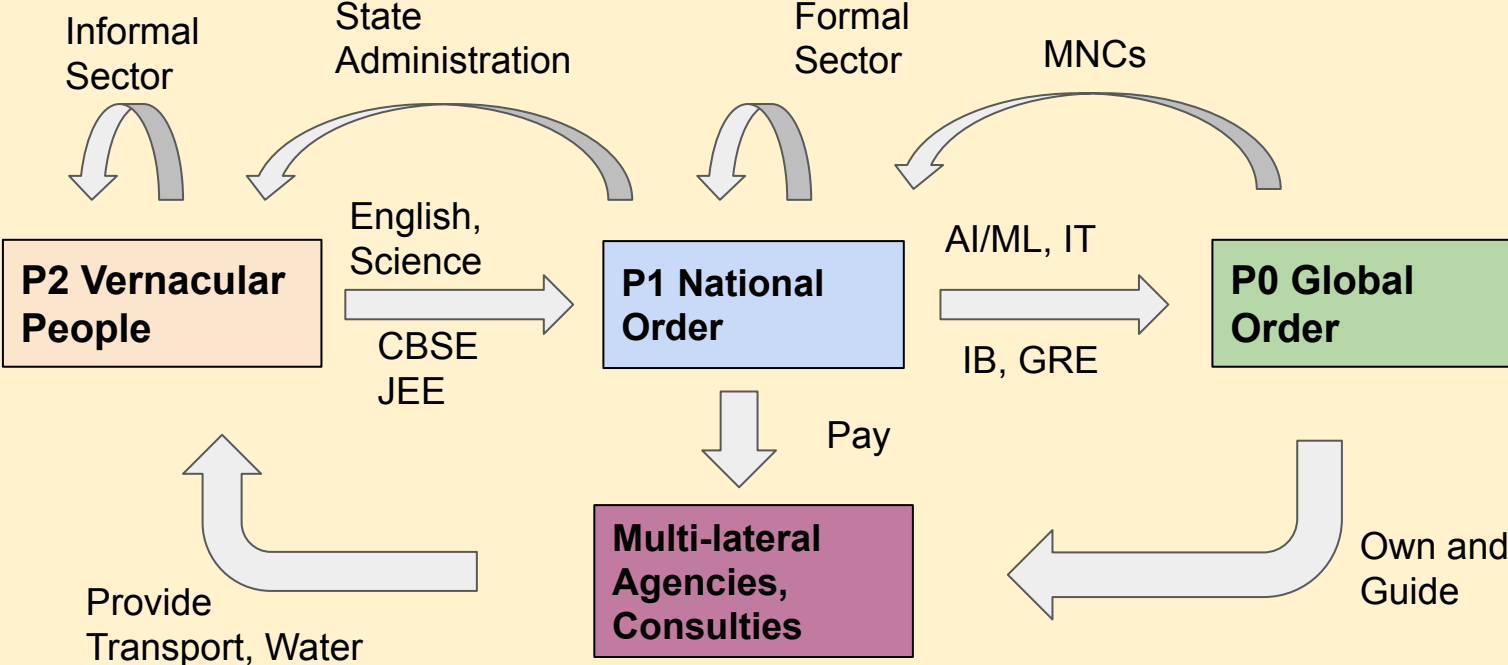
Excursion 1 - The Indian state

But many historical connections - Kautilyan, Chinese and Mughal

1. The historical role of the bureaucracy - the "best" from the common people.
   Indian version: Prestige without accountability. Nothing is measured. Departments have expenditure statements but no performance report.

Elite Agency: Classic Indian Belief in power concentration to be filled by the exceptionally gifted.

---

2. **Oriental Despotism** : "law of diminishing administrative returns" kept rulers from controlling all aspects of their subjects' lives, so that "**genuine elements of freedom remained.**" This freedom, however, amounted only to a "beggar's democracy." The "**rationality coefficient** of hydraulic society" means the society's ability to get things done, operating at three levels at which the government must be effective: managing the agrarian economy, ("managerial"); using corvee and taxes, ("consumptive"); and maintaining peace and order, ("judicial). **But did the ancien ever want free will?**

3. Mughal era: Huge knowledge imports, growth through the merchant economy and the swelling central coffers and pauperizing the local state - huge inequality.

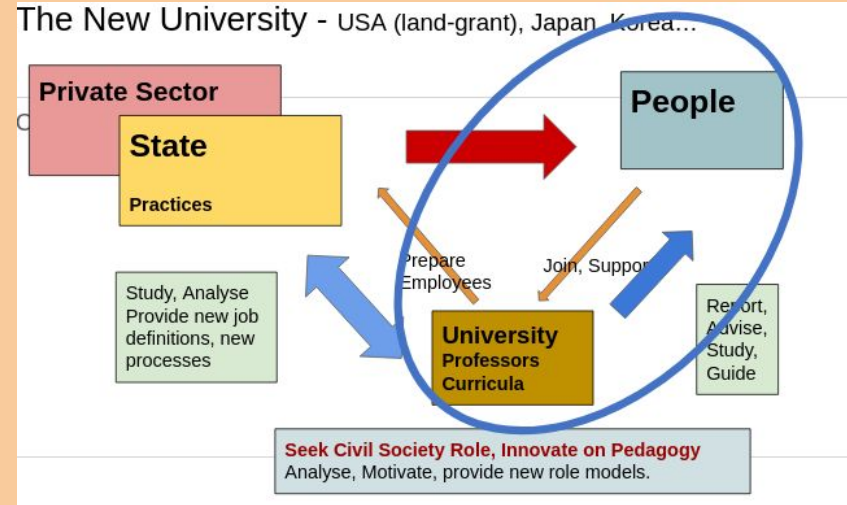# Excursion 2: Elementary Structure of Indian Society

Informal Sector

State Administration

Formal Sector

MNCs

P2 Vernacular People

English, Science

CBSE JEE

P1 National Order

AI/ML, IT

IB, GRE

P0 Global Order

Pay

Provide Transport, Water
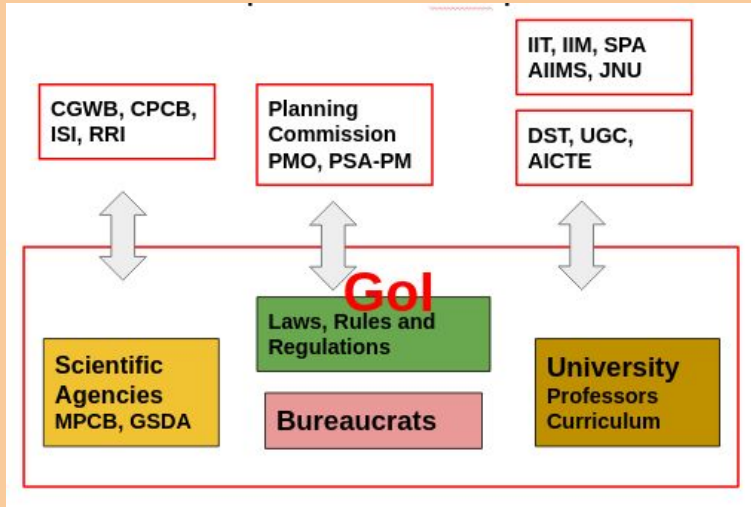
Multi-lateral Agencies, Consulties

Own and Guide

We the people …

1. The people P are really P1, a top 5-10% and P2 the remaining. P1 is largely urban, "national" and English-skilled and salaried. P1 runs a trades deficit. P2 runs a trade surplus.

2. P2: Labharthi. Largely, no civil society role or citizenship for P2. Not based on enlightenment or a better and more capable or discerning individual.

3. P2: Pre-modern associations of caste, religion. No special interests or pressure group - public-transport commuters association, or ration-card holders association. But pensioners in P1 is an important pressure group.

4. **Many of our questions are P1 articulations of P2's problems. Can P2 feel? Can it speak? Can it articulate? It is heard?**

5. P1 remains one of the most uncreative of the rich people in the world. Few authors, thinkers, philosophers, historians, sportspersons…public people.

So, when will the virtuous loop of the Science of Delivery start?

- **Massive decentralization of Science and the University to the taluka level.**
- **To move to a knowledge system which is accountable to the people, which supports the Right to Analysis, and which is replicable and participatory.**
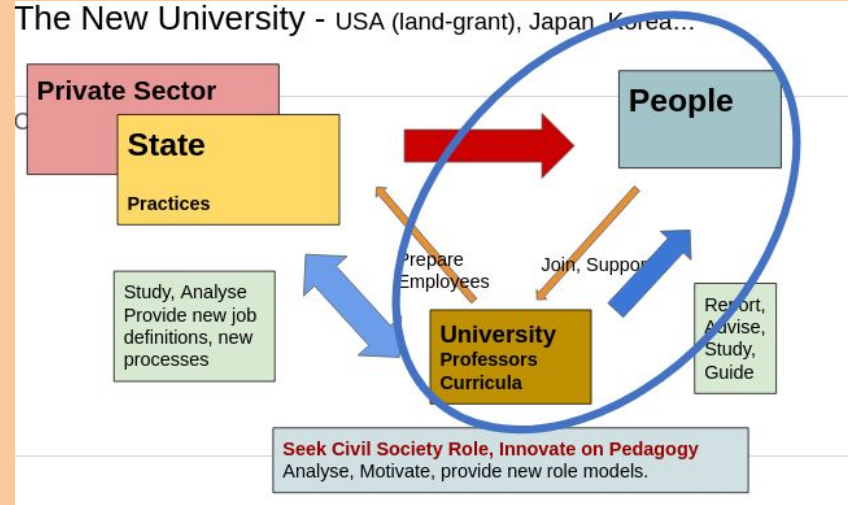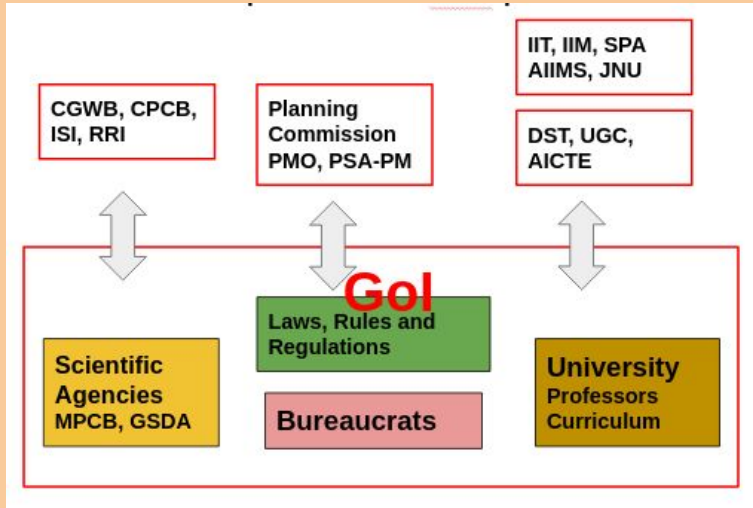- **And we need a matching Bureaucracy!**

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Vikasvaad 2.0

So, when will the virtuous loop of the Science of Delivery start?

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वर्तमानवाद+भौतिक वास्तववाद ➡ लाभार्थीवाद + परंपरा-वाद + अस्मितावाद++