Higher Education and Society
The ‘Unnat Maharashtra Abhiyan’ Experiment
Motivation and Implementation

Milind Sohoni
IIT Bombay

4th April 2024
Outline

- Part A: Development - what brings it about
- Part B: Unnat Maharashtra Abhiyan
  - An innovation in higher education to bring development into the curriculum
- Part C: Aaple Prashna Aaple Vidnyan (APAV) Case Study Programme
  - Case study as a tool for comprehension and agency
- Part D: The Politics of Enlightenment
Part A: Development as broader societal question
Before I begin…
India 3rd most polluted country in world, IQAir finds; 42 cities in top 50 are Indian

In the report's list of the top 50 most polluted cities in the world, 42 cities were in India. Bhubaneswar was the most polluted metropolitan area of 2023, followed by Guwahati and then Delhi.

Indian courts clogged with land disputes because laws keep conflicting each other

Impartial and efficient management of land is necessary not just for India’s economic development, but also for its political and social stability.

CAG report tabled in Parliament: ‘Punctuality declining, trains taking more time’

The report pointed out that when compared to other countries, the Indian Railways has the most lenient benchmark of measuring punctuality.

India falls to 53rd rank in EIU's Democracy Index, dubbed as flawed democracy
Today’s questions

• Where are good jobs to come from?
• How will basic amenities improve?
• Who will save our MSMEs?
• What ails our education system?
Broad Developmental Questions

- Why did Chiplun flood again? Were the reservoir gates really open?
- Why do we need tankers in summer almost every alternate year?
- 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?

**Questions:**
Unexpected events and also regular course. Most related to the performance of the state, and some the market.
Popular perceptions about poor development outcomes

- 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 Indian State - Post-Independence

- Private Sector
- State
  - Practices
- People
- Politicians
The Indian State - Post-Independence

Private Sector

State
  Practices

Offers Limited Understanding

People

Politicians

Offers Limited Understanding
The more nuanced - UPSC model
Recently - *Ramrajya* - The Noble King State

**Private Sector**

**State**

**Practices**

**People**

**Politicians - Subedar**

**Bureaucrats**

**Honest and decisive leadership.**
The Noble King State

Why is that not going to work? Why is Knowledge and Science important? And who is going to deliver it?

Honest and decisive leadership.
Broad Questions - The Indian Knowledge state will fail

Why are their pot holes on our roads? 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.
Broad Questions - The Indian Knowledge State will fail

Why are their pot holes on our roads? 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. 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.

So, there is indeed a shortage of knowledge! And who is going to change how we gather it?
The Indian Knowledge State - Post-Independence

- Private Sector
- People
- Politicians
- State
- Practices
- Scientific Agencies
  - MPCB, GSDA
- Laws, Rules and Regulations
- Bureaucrats
The Indian Knowledge State - Post-Independence

- Private Sector
- State
  - Practices
- Scientific Agencies
  - MPCB, GSDA
- GoI
- People
- Politicians
- Laws, Rules and Regulations
- Bureaucrats
- University
  - Professors
  - Professions
How GoI planned to influence

- CGWB, CPCB, ISI, RRI, ICAR
- Planning Commission PMO, PSA-PM
- DST, UGC, AICTE
- IIT, IIM, SPA AIIMS, JNU

Laws, Rules and Regulations

- Scientific Agencies MPCB, GSDA
- University Professors Curriculum
- Bureaucrats

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.
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

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

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

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.
Poor incentives and measurement.

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

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

<table>
<thead>
<tr>
<th>Topic (phrase)</th>
<th>All years preceding 2003</th>
<th>2003–09 (TEQIP I)</th>
<th>2010 onwards (TEQIP II)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neural network</td>
<td>692</td>
<td>1818</td>
<td>2467</td>
</tr>
<tr>
<td>Fuzzy logic</td>
<td>110</td>
<td>327</td>
<td>759</td>
</tr>
<tr>
<td>Wavelets</td>
<td>96</td>
<td>905</td>
<td>1846</td>
</tr>
<tr>
<td>Genetic algorithms</td>
<td>262</td>
<td>989</td>
<td>1373</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Topic (phrase)</th>
<th>All years preceding 2003</th>
<th>2003–09 (TEQIP I)</th>
<th>2010 onwards (TEQIP II)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water supply</td>
<td>84</td>
<td>74</td>
<td>87</td>
</tr>
<tr>
<td>Sanitation</td>
<td>30</td>
<td>51</td>
<td>63</td>
</tr>
<tr>
<td>Groundwater models</td>
<td>11</td>
<td>29</td>
<td>70</td>
</tr>
<tr>
<td>Public transport</td>
<td>5</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>Power grid</td>
<td>12</td>
<td>56</td>
<td>288</td>
</tr>
</tbody>
</table>
Poor incentives and measurement.

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

Disconnect between curricula and research with core development issues.

Failure of elite duty to create job descriptions.
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

<table>
<thead>
<tr>
<th>Time</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early</td>
<td>7%</td>
</tr>
<tr>
<td>0-10 min.</td>
<td>45%</td>
</tr>
<tr>
<td>10-20</td>
<td>23%</td>
</tr>
<tr>
<td>More than 20 min.</td>
<td>19%</td>
</tr>
</tbody>
</table>

Category | Normalized EPKM Range | Trip Profitability
---------|----------------------|---------------------|
A        | >Rs 43               | 15 %                |
B        | Rs 22-43             | 40 %                |
C        | <Rs. 22              | 45 %                |
MSRTC - Analysing a school at Dolkhamb

- Dolkhamb is level 1 hub (11 trips per day)
- There is a road connecting Chondhe kh., Gandulwad, Talwade to Dolkhamb but it has no bus service
- There are 4 services between Shahapur - Chondha
So how are students coming to school?

<table>
<thead>
<tr>
<th>Village Name</th>
<th>Distance (Village Centroid to School) (in km)</th>
<th>Travel Mode Choice</th>
<th>Distance from bus/road network to road</th>
<th>Village centroid to bus/road network</th>
<th>Bus/road network</th>
<th>Distance from bus/road network to school</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jambulwad</td>
<td>0.408</td>
<td>Walk</td>
<td>0.103</td>
<td>0.103</td>
<td>7.203</td>
<td>Walk</td>
</tr>
<tr>
<td>Ranvihir</td>
<td>2.482</td>
<td>Walk</td>
<td>0.103</td>
<td>0.103</td>
<td>2.085</td>
<td>Walk</td>
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<tr>
<td>Bhinar</td>
<td>1.057</td>
<td>Walk</td>
<td>0.103</td>
<td>0.103</td>
<td>3.732</td>
<td>Walk</td>
</tr>
<tr>
<td>Kharade</td>
<td>0.603</td>
<td>Walk</td>
<td>0.103</td>
<td>0.103</td>
<td>2.218</td>
<td>Walk</td>
</tr>
<tr>
<td>Talwade</td>
<td>0.836</td>
<td>Walk</td>
<td>0.103</td>
<td>0.103</td>
<td>4.745</td>
<td>Walk</td>
</tr>
<tr>
<td>Malad</td>
<td>1.887</td>
<td>Walk</td>
<td>0.103</td>
<td>0.103</td>
<td>6.981</td>
<td>Walk</td>
</tr>
<tr>
<td>Dehene</td>
<td>2.287</td>
<td>Walk</td>
<td>0.103</td>
<td>0.103</td>
<td>11.569</td>
<td>Walk</td>
</tr>
<tr>
<td>Hinglad</td>
<td>1.042</td>
<td>Walk</td>
<td>0.103</td>
<td>0.103</td>
<td>7.219</td>
<td>Walk</td>
</tr>
<tr>
<td>Panchghar</td>
<td>0.410</td>
<td>Walk</td>
<td>0.103</td>
<td>0.103</td>
<td>10.207</td>
<td>Walk</td>
</tr>
<tr>
<td>Chondhe Bk.</td>
<td>1.250</td>
<td>Walk</td>
<td>0.103</td>
<td>0.103</td>
<td>13.303</td>
<td>Walk</td>
</tr>
<tr>
<td>Chondhe Kh.</td>
<td>3.799</td>
<td>Walk</td>
<td>0.103</td>
<td>0.103</td>
<td>13.303</td>
<td>Walk</td>
</tr>
</tbody>
</table>

Remark: Road is there but no bus
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 current workflows.
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?

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

Private Sector
State
Practices

People

University Professors Curricula
Prepare Employees
Join, Support

Private Sector
State

Study, Analyse
Provide new job definitions, new processes

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

Connecting Academics with the Development Sector

The Great Alignment

Governance and Job Description
Research and Curricula
Development Outcomes

GR (13th January, 2016)
UMA Working Strategy

- Training & Workshop: Enable colleges to undertake professional projects related to Development sector
- Thematic Workshops - Water, energy, water conservation, MSME, Public Transport
- Documentation of regional problems using case study as pedagogy.
- Liaison with GoM agency
- Engagement with civil society

GR as important tool for engagement with different agencies and stakeholders
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Code</th>
<th>Event Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>13th Jan. 2016</td>
<td>HTE</td>
<td>Main UMA GR, Listing of Colleges and Topics: enabling student projects and faculty research, 17 TEQIP Colleges</td>
</tr>
<tr>
<td>7th Apr. 2016</td>
<td>Planning</td>
<td>UMA Institute: Source of funds, up to 25% of District Innovative fund.</td>
</tr>
<tr>
<td>15th June 2016</td>
<td>HTE</td>
<td>UBA-UMA GR Topics, Guidelines, District Coordinating Institutes</td>
</tr>
<tr>
<td>5th July 2017</td>
<td>HTE</td>
<td>Empanelment of 12 private colleges under UMA in addition to the original list</td>
</tr>
<tr>
<td>25th Sept. 2018</td>
<td>Planning</td>
<td>UMA colleges are empaneled as TPA, Appointment of DPO as District Nodal Officer and M&amp;E fund (0.5% of the Annual Plan) can be accessed by UMA. (Reference - GR. 26th Sept. 2017)</td>
</tr>
<tr>
<td>6th Mar. 2019</td>
<td>WCD</td>
<td>Empanelment of UMA colleges for TPI of Jalyukta Shivar</td>
</tr>
<tr>
<td>14th Jul. 2020</td>
<td>WSSD</td>
<td>Empanelment of selected UMA colleges for TPI of WSSD.</td>
</tr>
<tr>
<td>12th Apr. 2021</td>
<td>WRD</td>
<td>Procedures to take R&amp;D work of WRD, Listing of sample work.</td>
</tr>
</tbody>
</table>
WRD and MSEDCL

WRD GR and its operationalization
- 10-12 topics important to WRD and person-month based fee structure
- 18 colleges, 36 faculty members 54 students
Field Work
Jalyukta Shivar, Rural Water Supply and Electricity: UMA Colleges and Talukas
Drinking Water M&E

- Key GR on third party inspections
- Districts of Palghar, Thane
- Over 100 Gram Panchayats
- MCGM, PMC, Parbhani
- Over 40 Colleges
- Textbook and Case Studies in many areas
- Jaltantra - unique GIS based design tool - used by engineers across India
Overall Outcomes

Considerable GoM Buy-In - Rs. 5-10 crores of work
Strengthening of several job definitions, several SoPs and GRs and job creation

But harder Buy-In by Engg. Colleges
- Is this Science? Is this not the work of NSS? Will my time be counted? What about my promotion?
- Student disinterest and incentives
What more can be done?

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

Understand student agency and motivations
Part C: Aapple Prashna Aapple Vidnyan
Ratnagiri Pilot

APAV Strategy: Two Track approach -
Supply side and Demand side
Track I

Talk directly with rural college students about:

- Employment and number of graduates data
  …and what awaits them in the city
- Skills they should have or are useful as a graduate
- How to get those skills
- Immediate vicinity as source of engagement
Talking directly with rural college students about:

- Employment and number of graduates data
- ...and what awaits them in the city
- S
- H
- In

<table>
<thead>
<tr>
<th>व्योग्त</th>
<th>संपूर्ण भारतात</th>
<th>महाराष्ट्र</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>एकूण संख्या (लाख)</td>
<td>बेरोजगार संख्या (लाख)</td>
</tr>
<tr>
<td>सर्व व्योग्त</td>
<td>473.6</td>
<td>281</td>
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<tr>
<td>वय 20-25</td>
<td>672</td>
<td>944</td>
</tr>
<tr>
<td>पदवीधार</td>
<td>915</td>
<td>52</td>
</tr>
</tbody>
</table>
How to view Work

कामे आहेत का? - भरपूर!!

● शेती, बागायती, दूध, शेती मालाचे दुकान, टेम्पो
● उद्योग - बेकरी, सुतार, मिस्त्री

मग ती आपल्याला का करायची नाहीत?
व्यावसायिकरण

१० हजार रुपयांचा सोफा १० वर्ष टिकतो

२० हजार रुपयांचा सोफा ३० वर्ष टिकतो.

दर्जा सांभाळणे, विविध गरजा समजून घेणे, कामा मध्ये नावीन्य आणणे
### How to analyse value - नोकन्या कशा तयार होतात?

**बस कंडक्टर: 8 तासाची इलेक्ट्रिक, २५ दिवस, एक दिवसात ३०० कि. मी. प्रवास**

<table>
<thead>
<tr>
<th>सरासरी प्रवासी</th>
<th>१०</th>
<th>२०</th>
</tr>
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<tbody>
<tr>
<td>प्रति कि.मी. भाडे</td>
<td>१.५</td>
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<tr>
<td>एकूण जमा</td>
<td>३०० X १० X १.५</td>
<td>रु.४५००</td>
</tr>
<tr>
<td>बसचे एव्हरेज</td>
<td>रु.२० / कि.मी.</td>
<td></td>
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<tr>
<td>इंधन खर्च</td>
<td>३०० X २०</td>
<td>रु.६०००</td>
</tr>
</tbody>
</table>

**प्रश्न: प्रवासी कसे वाढवायचे? इलेक्ट्रिक बस चे तंत्रज्ञान केवळ येणार? तो पर्यंत इंधन कसे वाचवायचे? हो, आणि एसटी फायद्यातच चालली पाहिजे का? यात Geography, Economics, Sociology आणि Engineering येते!**
आपले प्रश्न - आपले विज्ञान

उद्दिष्ट

- गाव/शहर/छोटे उद्योग यांच्या प्रश्नांचा अभ्यास व त्यांचे अहवाल
- आपले गाव आणि आपले प्रश्न या बदलत लागणारी गावकी आणि माहिती ची निर्मिती
- युवा पिठीचा 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: NEP 2020 च्या मार्गदर्शक तत्वात बसणारे
Why the Regional Case-Study Approach?

- Creates space in curricula and research for regional and local problems
- Develops student professional capabilities and opportunities
- Enables the university to develop linkages with regional agencies and to host various dialogues on topics of regional interest
- Improves development outcomes and scientific temper in society
Why the Regional Case-Study Approach?

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Furthers **Comprehension and Agency**
## Participating Colleges

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>S. H. Kelkar College - Devgad</td>
</tr>
<tr>
<td>2</td>
<td>S. P Hegshetye College, Ratnagiri</td>
</tr>
<tr>
<td>3</td>
<td>Gogate Jogalekar College - Ratnagiri</td>
</tr>
<tr>
<td>4</td>
<td>Ratnagiri Subcampus, University of Mumbai</td>
</tr>
<tr>
<td>5</td>
<td>Guhagar Education Society's, Khare-Dhere College</td>
</tr>
<tr>
<td>6</td>
<td>Navnirman College, Sangmeshwar</td>
</tr>
<tr>
<td>7</td>
<td>ASP College, Devaruk</td>
</tr>
<tr>
<td>8</td>
<td>Dr. Babasaheb Ambedkar College, Mahad</td>
</tr>
<tr>
<td>9</td>
<td>DBJ College - Chiplun</td>
</tr>
<tr>
<td>10</td>
<td>Kankavli College - Kankavli</td>
</tr>
<tr>
<td>11</td>
<td>Halabe college Dodamarg</td>
</tr>
<tr>
<td>12</td>
<td>Dnyandeep College - Khed</td>
</tr>
</tbody>
</table>
Timeline and Sample list of case studies

1. July 2022 Orientation Workshops
2. July-August Student meets (15)
3. 5th August Sarpanch-Gram Sevak meeting
4. 17th Sept. Methodology Workshop
5. Nov-Dec. Selection Case studies
6. Jan-Feb 2023 Evaluation of case study reports
7. 17th March 2023 Presentation Workshop
8. Preparation of compendium for selected case studies.

Case Study on Solid Waste Management in Urban and Rural Settlements in Chipuln.

<table>
<thead>
<tr>
<th>Case Study</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>शिरगांव येथील कातकरी समाजातील केल्या जाणाला-या बांधण मासेमारीची उपयुक्तता व या मासेमारी पद्धतीला असणाऱे ढोके अभ्यासणे</td>
<td></td>
</tr>
<tr>
<td>तारामुंबरी येथील कांदळवनातील पद्धतीला तुलनात्मक अभ्यास</td>
<td></td>
</tr>
<tr>
<td>देवगड येथील मच्छीमारी पद्धतीचा उपयुक्तता व या मासेमारी पद्धतीला मार्गदर्शी अभ्यास</td>
<td></td>
</tr>
<tr>
<td>देवरुख शहरातील सामाजिक-आर्थिक स्थितीचा समाजशास्त्रिय अभ्यास</td>
<td></td>
</tr>
<tr>
<td>Seawater Intrusion in Coastal Aquifer of Guhagar, Ratnagiri District, and its impact on irrigation quality of water</td>
<td></td>
</tr>
<tr>
<td>कणकवली तालुक्यातील हुंबरट गावामधील आरोग्यविषयक समस्यांचा अभ्यास</td>
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<tr>
<td>आशिये ग्रामपंचायतीच्या घनकंघचा व्यवस्थापन प्रक्रियेचा अभ्यास</td>
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<tr>
<td>रत्नागिरी शहरातील ऑंटो रिक्सा सेवा</td>
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</tbody>
</table>
### 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.
Village-level case-studies
- Balance sheets of local MSME
- Agricultural production and alignment
- Drinking water sources and maps
- Anganwadi report

Two sectors - Village Level Drinking water and Roads - were selected to be studied in 6 villages.

Link villages with their college via the student and assisted by the BDO.
Track II B: GIO and Engagement with Ratnagiri CEO

Fig. Major water sources of Bhoo village
Participation of College Students in APAV and RWS

Training Workshop On

"Assessment of Water Supply Status of Villages"

Under
Unnat Maharashtra Abhiyan (UMA)

Sponsored by
Geospatial Information Science and Engineering Hub
IIT Bombay

Organised by
UMA Cell, CTARA, IIT Bombay and
Gharda Institute of Technology, Lavel

24th and 25th April 2023
Index Maps for Lanja!
The Village Map has other uses too.
Status of APAV now and challenges

Adoption by colleges
- Colleges are taking this up now. Slow but steady.
- About 700 students this semester
- 1000 students from KBCNMU will be conducting case studies for a full month (1st May to 31st May 2024) as part of their internship
- About 3000 students confirmed for the next semester

Newspaper articles
- A couple of articles published in Marathi daily (Loksatta)

Youtube: APAV Case Study Course
(https://youtube.com/playlist?list=PL-9TVQSY4dMxdXezIQ1N-B7LxkISFHtbd&feature=shared)

Challenges?
- Active participation of faculty members and students → What we will get?
- Everyone wants (likes) a silver bullet and this is not one.
Formal Outcomes

- Professional linkages with ZP Ratnagiri
- Standard knowledge products and acceptance of GIO
- Openings for internship for students in Dhule administration
- Adoption by several colleges (including those in Pune) and MSFDA
- Support from MKCL: Prof. Ram Takwale Fellowship and Prizes for APAV case studies
Part D
The Politics of Enlightenment
A Research Project
### ASER report on capabilities of youth aged 14-18 years 2017 and 2023

<table>
<thead>
<tr>
<th>Attributes</th>
<th>2017</th>
<th>2023</th>
<th>Change</th>
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<tbody>
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<td><strong>Foundational Skills</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading fluently in own language</td>
<td>25%</td>
<td>25%</td>
<td>-</td>
</tr>
<tr>
<td>Division (3 digit by 1 digit)</td>
<td>43%</td>
<td>43%</td>
<td>-</td>
</tr>
<tr>
<td>English reading</td>
<td>53 - 60%</td>
<td>57%</td>
<td>-</td>
</tr>
<tr>
<td>English reading with meaning</td>
<td>79%</td>
<td>74%</td>
<td>↓</td>
</tr>
<tr>
<td><strong>Applying basic literacy and numeracy skills to everyday tasks</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measuring length (not placed on 0)</td>
<td>40%</td>
<td>39%</td>
<td>↓</td>
</tr>
<tr>
<td>Calculating time</td>
<td>55%</td>
<td>50%</td>
<td>↓</td>
</tr>
<tr>
<td>Applying the unitary method</td>
<td>50%</td>
<td>50%</td>
<td>-</td>
</tr>
<tr>
<td>Both, read and understand instructions</td>
<td>58%</td>
<td>67%</td>
<td>↑</td>
</tr>
<tr>
<td>Attributes</td>
<td>2017</td>
<td>2023</td>
<td>Change</td>
</tr>
<tr>
<td>---------------------------------------------------------</td>
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<tr>
<td>Both, read and understand instructions</td>
<td>58%</td>
<td>67%</td>
<td>↑</td>
</tr>
</tbody>
</table>

This is true at all levels and for decades! Limits national GDP, individual productivity and wages, and alters the meaning of citizenship!

Why are we kept stupid?

राष्ट्राला बुद्धू ठेवण्याची गरज काय?

How does this happen?

How to address this: APAV?

Why is this allowed to continue?
The Equilibrium in a Weberian Democracy and its scale

- Competence of the Elite Bureaucracy
- Expectations of the People
- Comprehension and Agency of the People

Political Economy - Probity of the leadership, Diversity, Inequality, Structure of the Economy

Compare Pune with Parbhani
The Indian State - using the *natural scale* - deterioration!

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Situation 0</th>
<th>1950-70</th>
<th>1990</th>
<th>2010 onwards</th>
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<tbody>
<tr>
<td>Expectations of the People from the state</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>Competence of Scientists and Bureaucrats</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Low</td>
<td>Low Unchanging!</td>
</tr>
<tr>
<td>Agency and Comprehension within the people</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>Governance Unit</td>
<td>State</td>
<td>Nation</td>
<td>Nation</td>
<td>Nation</td>
</tr>
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</table>
The Action of the Political Economy - Then - Methodological Nationalism

- Competence of the Elite Bureaucracy
- Expectations of the People
- Comprehension and Agency of the People
- Media
- LL Civil Society
- Agents of the Political Economy

Political Economy - Probity of the leadership, Diversity, Inequality, Structure of the Economy
The Action of the Political Economy - and Now

- Competence of the Elite Bureaucracy
- Expectations of the People
- Comprehension and Agency of the People
- Media
  - Agents of the Political Economy
  - Civil Society

Political Economy - Probity of the leadership, Diversity, Inequality, Structure of the Economy
The Action of the Political Economy

- Competence of the Elite Bureaucracy
- Expectations of the People
- Comprehension and Agency of the People

Political Economy - Probity of the leadership, Diversity, Inequality, Structure of the Economy

Agents of the Political Economy

Media Civil Society

राष्ट्रासाठी - एलिट व्यापारी वर्गाच्या स्थैर्यासाठी
मग याला पर्याय काय?
What can Civil Society do while retaining stability

The Political Economy - Probity of the leadership, Diversity, Inequality, Structure of the Economy
The Modern Weberian State

Private Sector

State

Practices

People

University

Professors

Curricula

Seek Civil Society Role, Innovate on Pedagogy
Analyse, Motivate, provide new role models.

Join, Support

Prepare Employees

Study, Analyse
Provide new job definitions, new processes

Report, Advise, Study, Guide
Otherwise - The Simple Noble King State - The future

Private Sector Trustees

State
Practices

People
Subjects

Politicians
Courtiers, Regional
Satraps

Bureaucrats
Optical Meritocracy

Honest and decisive leadership.
Enlightenment and its outcomes

Arendt’s Progression: Household -> Community -> People -> State -> Nation

- **Comprehension and Agency** - Development of notions of fraternity, equality, justice, community and collective action

Weber’s **Rational Bureaucracy** - causality, measurement and argument, statistics, assumes right to present one’s case and argue

- Increasing formalization and secularization of services - drinking water, public transport - reducing dependence on household and community

**Natural Scale of Democratic States** - Three + One determinants

- expectations of the people from the state,
- competence of bureaucracy, scientists and professors -
- level of comprehension and agency of the people
- Diversity - Geographical and Cultural
The Indian State

Two layers
- Political Power - The state and the center, Society - the vernacular and the national, Economy - the formal and the informal.

Thick imprint of the mughal state
- Financialization Monetization, land records, bureaucracy and the police
- Revenue and Law and Order state with profit sharing with elite merchant class
- Locally Lala-Baniya and regional/central merchant families

Post Independence Political Economy
- Nehru - Ambedkar and focus on national development through Science, justice through constitutionalism, both wanted centralization
- Gandhi - continuity with the past, trusteeship - mughal era and Lala-Baniya and Merchant families
- The IAS, IITs and central agencies - again, an adaptation

Trajectory: National Development - Regional Development - Liberal Methodological Nationalism - Conservative Nationalism
Science is
Science is this as well!
Science is

Systemic and Factual Documentation of Reality
And It’s Analysis
Thanks

Webpage: https://www.cse.iitb.ac.in/~sohoni/