Admissions 2012
M.Tech./Ph.D. in Technology and Development

Milind Sohoni
Centre for Technology Alternatives for Rural Areas
IIT-Bombay

`www.ctara.iitb.ac.in`

Agenda

- Introduction to CTARA
- Core CTARA values and the T&D program
- Development situations and the future
- Today's program

Centre for Technology Alternatives for Rural Areas

- An academic center of IIT-Bombay, started in 1985
- Development as an intellectual pursuit-challenges, solutions.

Recent focus:

Academic Initiatives

- 2007: M.Tech./Ph.D. program in Technology and Development.
- 2010: TDSL- with other departments and UGs.

- Energy –household, domestic and rural
- Agriculture/Livelihoods –post-harvest, foods
- Water sector –drinking water, policy.
- Environmental planning –development plans, urban and rural appraisal
- and others...

Core Faculty

- A. W. Date-Appropriate Technology, Rural systems
- U. N.Gaitonde-Mechanical Engineering, Energy and Thermal system
- Anand Rao-Energy and Environment, Climate Change
- N. C. Narayanan-Water and Governance, Development Theory
- N. Shah-Food, Agriculture and Agro-Industry
- Milind Sohoni-Water, Rural systems

Teaching Faculty:

- Prof. Adinarayana (CSRE)
- Prof. Om Damani (CSE)

Adjunct Faculty:

- S. Wagle-Policy and Governance
- Bakul Rao -Environment Analysis and Assessment
- P. Modak -Environment and Natural Resource Mgt.
- S. Agnihotri -Governance and Govt. Programs

The T&D core values

- Concrete beneficiary/stake-holder-the bottom 80%, households, hamlets, gram-panchayats, villages, towns and cities
- Basic areas-soil, water, energy, livelihoods, public health
  - end-user defined or demand-driven
- **Towards change**- as close to implementation as possible
  - deliver solutions -technology, policy
  - deliver knowledge -consultancy, capacity-building, debate.
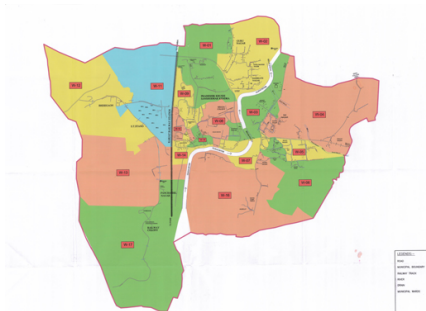
Objectives of the M.Tech. program

To produce the developmentalist/development practioner

- Analyse "development" situations and design solutions
- Work with implementation agencies and see them to completion
- Rising demand for such professionals

Karjat City-a small taluka town in Maharashtra

- Request from Municipal Council to analyse City Development Plan.

- Ongoing work-water, sewerage, solid waste, municipal budget and so on.

- Skills: GIS, simulations, social and governance analysis

water system.

- 3 zones OK but higher capital costs, 1 zone poorly designed.
- Pump efficencies lower (51% , 60%) than standard (70%).
- financial stress-unmetered connection, commercial and residential
- competition with private bore-wells

Or energy for cooking at Boriwali

or for that matter, a savings and micro-lending analysis for Boriwali.

Or saving drudgery for women

The current M.Tech. in T&D

Coursework

- **Perspective**-philosophical nuts and bolts
  Development Theory, Appropriate Technology, Policy
  and Governance
- **Sectors**-the knowledge base
  Water, Soil and Agriculture, Energy, Environment
- **Skills**-to bring rigour to field work
  Social Sci. Res. Meth, System Dynamics, Project
  Mgt. and Analysis
- **Field work**- 10 week structured rural stay, field visits.
- **Two-Stage Project**-Ideally
  - ▸ Ist Stage-Situation and alternatives-Appreciation
  - ▸ IInd Stage-Technology or Policy-Generation

Our students (and our faculty) in the field

Our locations-*Naldhe*

At our 10-week field stay

Selected M.Tech. Projects

- Study and design of *bailya* for drudgery reduction
- Studying, evaluating and implementing a pilot biogas plant
- Design enhancement and dissemination of improved cooking chulha in a village

- Computer aided learning and the Sarvashiksha Abhiyan
- Analysis of groundwater regulation in various states of India
- Analysis of protected farming vs. open farming

- Simulation of hybrid energy systems for village applications using HOMER
- Jal-Swarajya in Thane district-An evaluation

What after M.Tech?

What do we train you for-

- An initial stint with an NGO/CSO in a particular sector
- Or a company in the development sector
- An independent consultancy, business
- A Ph.D. in development subjects and teaching
- Advisor-ship, expert consultant to collectors, ministers, banks and agencies-PMRDF, Developmemt coordinator, LAMP, Gandhi
- Leadership role in flagship NGOs, government, regulatory bodies, or independent Centers
- Corporate roles-new companies and new areas

OK-but what about starting with big companies?

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OK-but what about starting with big companies?

- Is there a big company delivering water to the bottom 80%?
- *Veolia*, a french water company with turn-over of $ 50 billion, started as a company to serve Lyon.

The Program

- 9:30am-11:00am Two-part Test
- roughly 2:30pm-short-list for Interviews
  - ▸ Put up at EE-Seminar Hall (near EE annexe)
- Today 3:00pm onwards, and tomorrow-Interviews in CTARA-office in EE-Annexe 2nd floor
- 4 copies of your SOP

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- roughly 15 TA positions-GATE scores
- upto 5 admissions in SF/PS category-with experience, no stipend, no hostel
- 2 positions in 3-year RA-like TA
  - Photovoltaic systems-NCPRE
  - GIS and Watershed systems
- Interview compulsory

Volunteers
M.Tech and Ph.D. students available here and at CTARA office.

Thanks