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:

- 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...

Academic Initiatives

- 2010: TDSL – with other departments and UGs.
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 practitioner
  - 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 efficiencies 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
  - IIInd 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, Development 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