Centre for Technology Alternatives for Rural Areas (CTARA)

Presentation To Institute Faculty Meeting 23rd April 2014
The CTARA Journey

1979-1985
Appropriate Technology Unit

1985
CTARA formed at BOG Mtg. on 23 March, 1985

1992
First CTARA Researcher Joined (Prof. Narendra Shah)

2003
KVIC Interface – Study of Rahata Block

1985-
First Head - CTARA
1985-91

1979-
Prototypes

2009
First M.Tech batch graduates

2008
Ph.D Programme / Dam built at Gudwanwadi

2007
M.Tech Programme in Tech. Development

2005
The Gudwanwadi drinking water project

2010
Silver Jubilee event April 29-30, 2010

2011
Start of TDSL

2012
Life Time Achievement Award Prof. A. W. Date

2014
MoRD / HAL Fellowships

Prof. B. Nag
Director-IITB 1984
Initiated formation of CTARA

First Head – CTARA
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The CTARA Journey
**CTARA Status**

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<tr>
<th>Faculty</th>
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<tbody>
<tr>
<td>Core</td>
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<tr>
<td>Assoc. (FT)</td>
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<tr>
<td>Adjunct</td>
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<table>
<thead>
<tr>
<th>Students / Staff</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>M.Tech</td>
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<tr>
<td>Ph.D.</td>
<td>22</td>
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<tr>
<td>Staff</td>
<td>4</td>
</tr>
<tr>
<td>Project Staff</td>
<td>7</td>
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Budget 15 lakhs (2013-14)  
Space 2000 ft²
### CTARA Courses

#### Semester 1
- Development Theory & Policy: Indian Context
- Soil, Land Use, GIS and Agriculture
- Water Resources
- Appropriate Technology
- Ecology and Environment
- Communication and Presentation Skills
- Seminar

#### Semester 2
- Social Science Res Methods & Systems Dynamics
- Public Policy and Governance in Tech. & Dev.
- Energy Sources and their utilization
- CTARA Elective I
- CTARA Elective II
- Institute Elective

#### Semester 3
- Project Management and Project Analysis
- CTARA Elective III
- M.Tech Project
- Field study
- M.Tech Project

### CTARA Electives
- Technology in Practice
- Development in Practice
- Rural Environmental Services Planning & Design
- Development Protocols
- Biofuels: Technology & Policy Perspective
- Agro-based Industries: Design and Case Studies
- Rural Electrification and the Power Sector in India
- Rural Enterprises
CTARA Research

Water
Energy
Food and Agriculture
Industry Planning and Development

[Diagram of research areas and connections]

[Diagram of electronic device components]
CTARA Technologies

Innovation – reduced burden

Improved Herbal oil extraction process

Sold by local blacksmiths

Twisted tape swirlers
CTARA Field impact

10 week field stay
Field visit in each course
MoU- Parbhani, Shahapur, Thane, Manchar
KVIC, SME
Engg Colleges- Karjat,Islampur

Diversion Irrigation scheme in Patan, Pune

Assessing drinking water access
Chikurde, Maharashtra

Optimizing Hydram performance,
Himachal Pradesh
CTARA Policy Impact

- Water policy reforms in India and governance
- Ganga River Basin Environment Management Plan
- Decentralised technological and institutional solutions for urban water and sanitation services
- Scope of Bamboo Integration in Housing
- Localization of Solar Energy Through Local Assembly Sale and Usage of 1 Million Solar Study Lamps
- Panchayat planning for Solar Integration in Kerala
- Climate Change Policy Process in India
- Scope for scaling up Systems for Rice Intensification
CTARA Outreach

CTARA introduction over a videoconference with 142 engineering colleges across India

Faculty gave an overview of CTARA, talking about its philosophy, the academic program, reach of CTARA alumni, research, collaborations, entrepreneurial activities etc. CTARA students talk about their experiences at CTARA, field exposure, projects, plans after graduation, motivation for joining CTARA.

CTARA Admissions poster sent to colleges
Technology & Development Supervised Learning (TDSL)

- **New initiative for UGs at CTARA:**
  - LAunched in July 2011

- **The objective:**
  - To enable (UG) students to participate in projects which have a **direct interaction with society**
  - To expose them to **LIVE problems which need interdisciplinary research** within the development agenda

- **Mandate:**
  - The bottom 80%; core issues; delivery
# TDSL Structure

## TD 390 Study (6 credits)
- Introduction to field work, multi-stakeholder projects and study
- Identification and formulation of problem
- Bring formal analysis to the problem
- A feedback loop and a report

## TD 490 Analysis (6 credits)
- Knowledge generation for a specific situation
- Inter-disciplinary inputs, Stakeholder interactions
- Formulating the key steps and execution
- Drawing conclusions and report/presentation

## TD 491 Design (12 credits)
- Knowledge application with a creative component
- Clear objective, stakeholder participation and deliverable
Sample projects

- Drinking water security assessment
- Design of piped-water supply schemes
- Oral histories of peoples issues
- Chulla dissemination and cooking practices
- Water sources status mapping
- Soil and agricultural practices
- Low-cost pulse recorder
- Economic analysis of weekly markets
- Failure analysis of water schemes
- Village-level environmental planning

- Brick making practices and interventions
- Understanding public health systems
- NREGA analysis
- Design of piped-water supply schemes
- Analysis of sewage mgmt. techniques
- Techno-economic analysis of poultry farms
- Survey and analysis of bio-gas plants
- Documenting pottery making techniques
- Oral histories of peoples issues
- Chulla dissemination and cooking practices
- Water sources status mapping
- Soil and agricultural practices
- Low-cost pulse recorder
- Economic analysis of weekly markets
- Failure analysis of water schemes
- Village-level environmental planning
## Appeal for Participation

<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
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<tbody>
<tr>
<td>1</td>
<td>Collaborative research</td>
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<tr>
<td>2</td>
<td>Outreach</td>
</tr>
<tr>
<td>3</td>
<td>Seminar series</td>
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<tr>
<td>4</td>
<td>Teaching</td>
</tr>
<tr>
<td>5</td>
<td>Student guidance (M.Tech./Ph.D.)</td>
</tr>
<tr>
<td>6</td>
<td>TDSL projects</td>
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<tr>
<td>7</td>
<td>Field visits to rural areas</td>
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<tr>
<td>8</td>
<td>Field visits to developmental projects</td>
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<tr>
<td>9</td>
<td>Other (please feel free to suggest)</td>
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CTARA Action Plan

- Internal Outreach (Invitation, IFM)
- External Outreach - Poster, letters, Video interaction
- Enhance publications, open domain reports - CTARA Report Series
- CTARA 2020
- New course - Technology and Design Laboratory
- Enhance course offerings - Minor, DD, Enhance M.Tech (MORD, HAL Fellowships)
- Strengthen existing areas - Water, Energy, Food and Agriculture
- Catalyse new areas - Healthcare, Industry, Infrastructure
- Continuing Education Programmes, TEQIP
End-Note

The future of India lies in its villages
M.K. Gandhi

Thank You
Anand B. Rao (a.b.rao@iitb.ac.in)
Rangan Banerjee (head.ctara@iitb.ac.in)

Meeting with Interested faculty
Wednesday, April 30, 2014
Time: 12 noon
Venue: CTARA Seminar Room (EE Annex, 2nd floor)