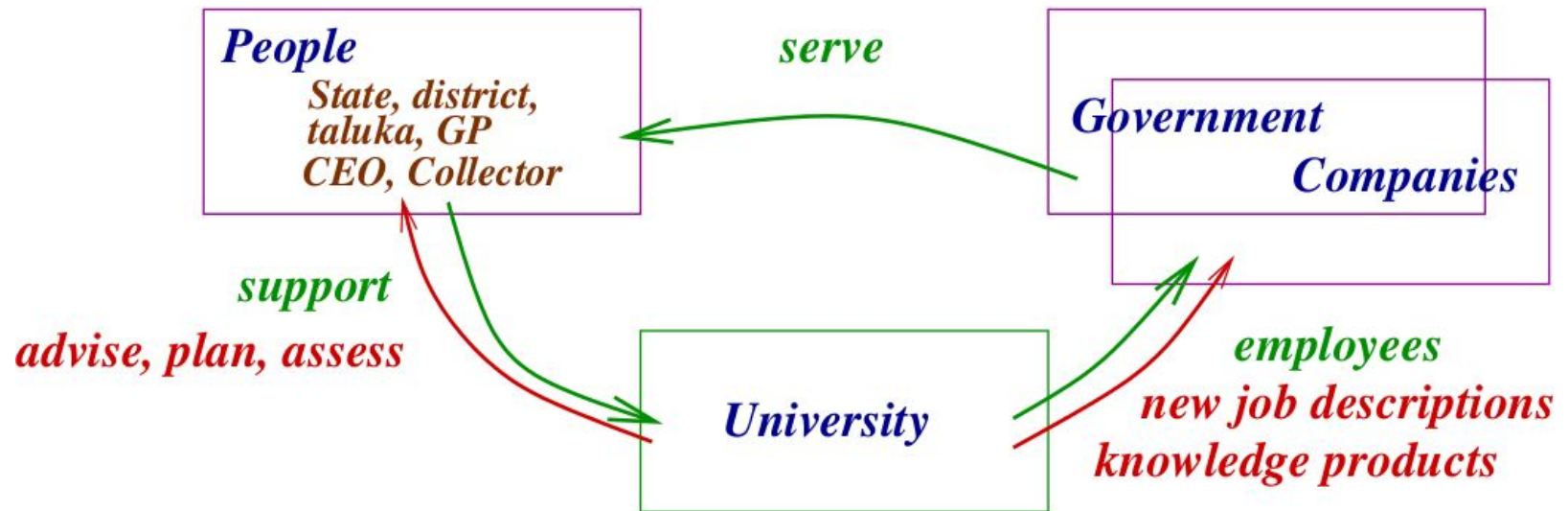


Maharashtra's Implementation of the UBA
Unnat Maharashtra Abhiyan
(UMA)

**Building Maharashtra's knowledge
network for regional development**

Milind Sohoni, CTARA, IIT Bombay

UMA Vision



- **Correct location** - where the problems really are
- **Regional support and feedback**- analysis, studies, solutions
- **Matches training and research role** - gives students live problems - teaches them how to comprehend and solve real-life problems
- **Sabka Saath Sabka Vikas** - scientific temper

UMA and UBA

UMA harmonises the Unnat Bharat Abhiyan (UBA) framework of MHRD at the state level.

- UMA: program under Higher and Technical Education, Government of Maharashtra.
- Administered by an Advisory Committee, under the leadership of a nominee of IIT Bombay.
- UMA extends core principles of
 - alignment of academic programs with the development agenda and
 - enables colleges to work with regional agencies.

UMA and UBA

UMA harmonises the Unnat Bharat Abhiyan (UBA) framework of MHRD at the state level.

- UMA provides concrete academic mechanisms and support for colleges to work on live problems and to obtain funding for the same.
- Much of the development agenda- agriculture, water, informal sector, electricity, amenities, etc. is covered in the state list.
- Colleges are under the ambit of state DTEs and the data and resources required for development projects are with state agencies.

UMA Mechanism

GR (13th January, 2016)

Objectives

- Reform teaching, curricula and research – **topical case studies**
 - Train future professionals for development objectives
 - Make institutions regional resources through **key GRs**
 - Provide mechanism for citizens to approach institutions
 - Create academic space for projects and studies in relevant areas
- Extends UBA!**

राज्यातील अभियांत्रिकी महाविद्यालये तसेच
तंत्रनिकेतने व अन्य शैक्षणिक व संशोधन
संस्थानांमधील विद्यार्थ्यांना राज्याच्या
विकासात सहभागी करून घेण्याची योजना...

महाराष्ट्र शासन

उच्च व तंत्र शिक्षण विभाग

शासन निर्णय क्रमांक : बैठक- ३६११/१६/१५/तांशि २

मंत्रालय विस्तार भवन, मुंबई ४०० ०३२.

दिनांक : १३ जानेवारी, २०१६

संदर्भ :- शासन निर्णय क्रमांक : बैठक- ३६११/१६/१५/तांशि २, दिनांक २८/४/२०१५

प्रस्तावना :-

राज्यातील विविध सामाजिक व विकासाशी संबंधित प्रश्नांची संशोधनाद्वारे उकल करून त्यावर अनुकूल उपाययोजना शोधणे आवश्यक आहे. त्या दृष्टीने विविध शासकीय यंत्रणा व शैक्षणिक संस्था यांच्या दरम्यान विशेषतः सामाजिक व आर्थिक स्तराच्या महत्त्वाच्या गंभीर समस्यांसंदर्भातील संशोधन वृद्धिंगत करण्यासाठी आणि विविध प्रकल्प निहाय निरनिराळ्या योजनांमध्ये अभियांत्रिकी तसेच अन्य व्यावसायिक अभ्यासक्रमांसाठी शिक्षण घेणाऱ्या विद्यार्थ्यांच्या सहभाग वाढविणे आवश्यक आहे.

२. देशातील ग्रामीण क्षेत्रातील विकास कामांमध्ये आय.आय.टी. सारख्या प्रगत शैक्षणिक संस्थांचा सहभाग वाढवून परियर्तन घडविण्यासाठी केंद्र शासनामार्फत उन्नत भारत अभियान देशातील निवडक, प्रगत शैक्षणिक संस्थांमार्फत राबविण्यात येत आहे. याच वृत्तीवर महाराष्ट्र राज्यात देखील अभियांत्रिकी महाविद्यालये, तंत्रनिकेतने आणि अन्य उच्च शिक्षण संस्थांमध्ये सुरु असलेले संशोधन हे अधिकाधिक राज्यातील विविध सामाजिक व विकासाशी निगडित ईर्नदिन जीवनातील समस्यांची (उदा. ग्रामीण योजनांतर्गत ग्राम स्वच्छता, शौचालये, सांडपाणी व्यवस्थापन, पेयजल, रस्ते विकास, रस्त्याचे मुल्यांकन करून मजबूतीकरण, जलसंधारण, ईंधन व उर्जा, आरोग्य, दुष्काळ आदी) उकल करून ते लोकाभिमुख करणे गरजेचे आहे. या संस्थांमधील संशोधन तसेच कुशल मनुष्यबळ वापरून सामाजिक क्षेत्रातील विकासाच्या समस्यांवर उचित तंत्रज्ञानाच्या वापराने तोडगा शोधणे गरजेचे आहे. सद्यस्थितीत अनेक शासकीय, निमशासकीय व खाजगी यंत्रणा व अनेक स्वयंसेवी संस्था विविध विकास योजनांवर ग्रामीण व शहरी भागातील समस्यांवर काम करीत आहेत. तथापि, यासंदर्भात जास्तीत जास्त शैक्षणिक संस्थांचा अशा प्रकल्पात सहभाग वाढविणे व एक संस्थात्मक संरचना निर्माण करणे गरजेचे आहे.

३. उपरोक्त सर्व बाबींचा विचार करून विविध विभागांतर्गत चालविल्या जाणाऱ्या उपक्रमांमध्ये ठोस कार्यक्रम सुचविण्याकरिता मा. मुख्यमंत्री यांनी दिलेल्या निर्देशानुसार संदर्भांमधील शासन निर्णयान्वये कार्य गटाची स्थापन करण्यात आली होती. सदरच्या कार्यगटाने खालील प्रमुख उद्दिष्ट साध्य करण्यासाठी शिफारशी केल्या आहेत.

१. पारंपरिक संशोधना व्यतिरिक्त उच्च शिक्षण संस्थांमध्ये, त्यांच्या परिसरातील विकास कामांच्या अडचणी / समस्या/ दर्जा/मुल्य/ शाश्वतता इ. साठी उचित तंत्रज्ञानाचा सुयोग्य वापर करून प्रभावी उपाय योजना सुचविणे व अशा प्रकारची संशोधनाची परंपरा सुरु करून ती जोपासणे व यासाठी एक सहम यंत्रणा शैक्षणिक संस्थांमध्ये निर्माण करणे.

UMA Project Areas

Concrete Examples in GR

शासन निर्णय क्रमांक घोरण ३०११/४५/१६/राशि २

- *Core resource areas (Water, electricity)*
- *SME and informal enterprises- technology and skill up-gradation, techno-economic and managerial expertise*
- *City and district administration- improving planning, transport, infrastructure, logistics, optimization*

		domestic and informal sector use	(depending on industry)
	Feasibility study, assessment and design	Network components and design for reliability and QoS	EE, Mechanical
Urban Electricity and Water	Logistics and planning	GIS, Electricity Network analysis; Socio-economic and technical analysis, tariff and competition	EE, Mechanical, Civil (depending on sector)
	Feasibility study and analysis	Grey water/Sewage Treatment and reuse of water	All suitable departments
	Logistics and planning	Energy management plan for ULBs	Civil, EE, CSE
	Feasibility study, assessment and design	Assessment of outcomes of Maharashtra Sujal-Nirmal Abhiyan	Civil, CSE
Public Transport	Economic Analysis	Road networks and their utilization	Civil, CSE
	QoS assessment	Taluka level public transport assessment	Civil, CSE
	Feasibility study and analysis	Cost effective rural road quality improvement and measurement techniques	All suitable departments
Resources	Logistics and planning	Groundwater utilization and regulation for a specific situation	Civil, Mechanical, Chemical
	Feasibility assessment and design	Assessment and design of watershed programs such as JYS or WMP	Civil, Env. Sci. and Engg.
Irrigation	Feasibility assessment and design	Assessment of regional and sub-taluka minor irrigation systems	Civil, Env. Sci. and Engg., Agriculture
	Planning and analysis	Taluka level irrigation plan preparation or analysis	All suitable departments
	Feasibility assessment and design	Water use efficiency of irrigation systems	All suitable departments
	Feasibility assessment and design	Assessment and improvement of distribution systems	All suitable departments

UMA Mechanisms and Activities

- **Academic Frameworks.** UMA facilitates
 - the inclusion of basic developmental areas in departmental curricula through elective courses (such as **Development Engineering**), case-studies and BE/ME projects on development topics
 - interdisciplinary theses and projects across all departments and the recognition of case-studies, analyses, designs, assessments, evaluations and policy studies as valid B.Tech./M.Tech. project outputs.
- **Selection of UMA institutions.** From the UBA pool of institutions, periodically, through a rigorous screening process, institutions are selected to be empaneled into UMA. UMA institutions are strengthened in various ways through workshops.
- *Guidance is given to institutions not selected in the specific areas in which they need improvement.*

UMA Mechanisms and Activities

- **Three-tier Structure.**

- Advisory Committee, chairman and officials from concerned departments.
- a Project Coordination Unit (PCU) was established at DTE.
- Technology and Development Cell (T&DC) at participating institute

- **Government Resolutions for Project Topics, Funds and Data.**

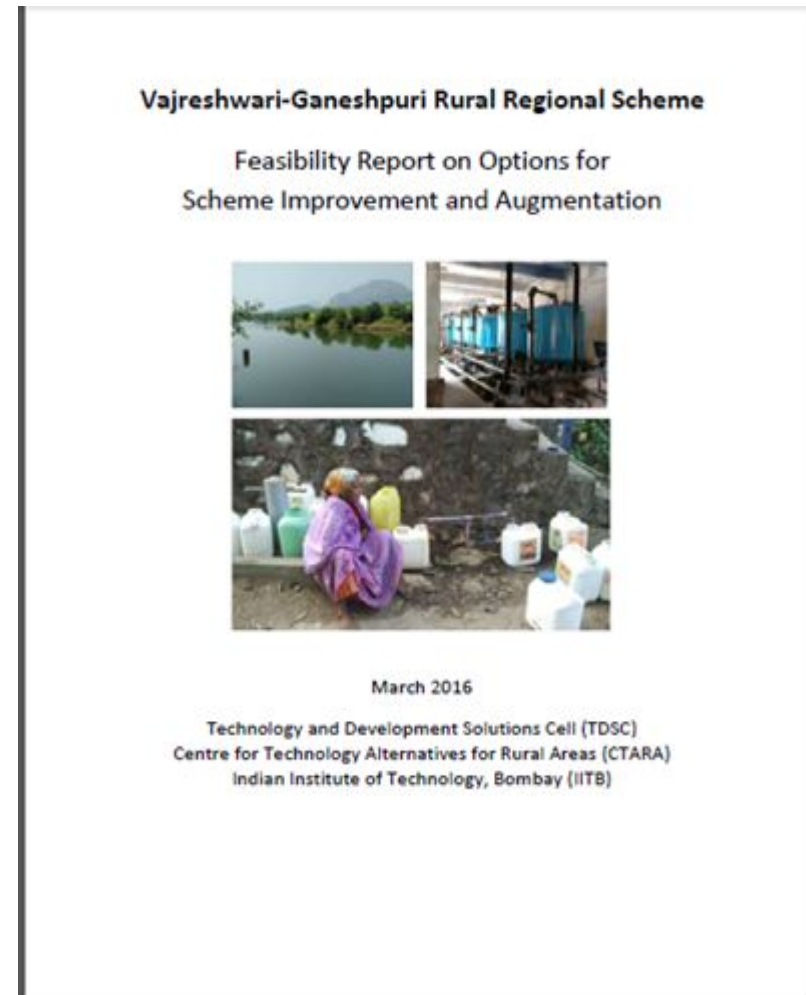
- clearly identify a list of development areas and case-studies
- earmark funds at the district level
- provide access to data and project files as may be relevant.

- **Workshops and Training Programs.**

- government programs and schemes in key development sectors.
- Ensures that the studies undertaken by these institutions are rigorous. Allow it to undertake regional evaluation and analysis of development programs.

Why the Case-Study Approach?

- Aligns with the Jadhav Committee Recommendations and Maharashtra Public Universities Act 2016.
- Provides the student with avenues for developing socially useful capabilities and skills of designing and undertaking a project.
- Enables the university to develop linkages with regional agencies and to host various dialogues on topics of regional interest.

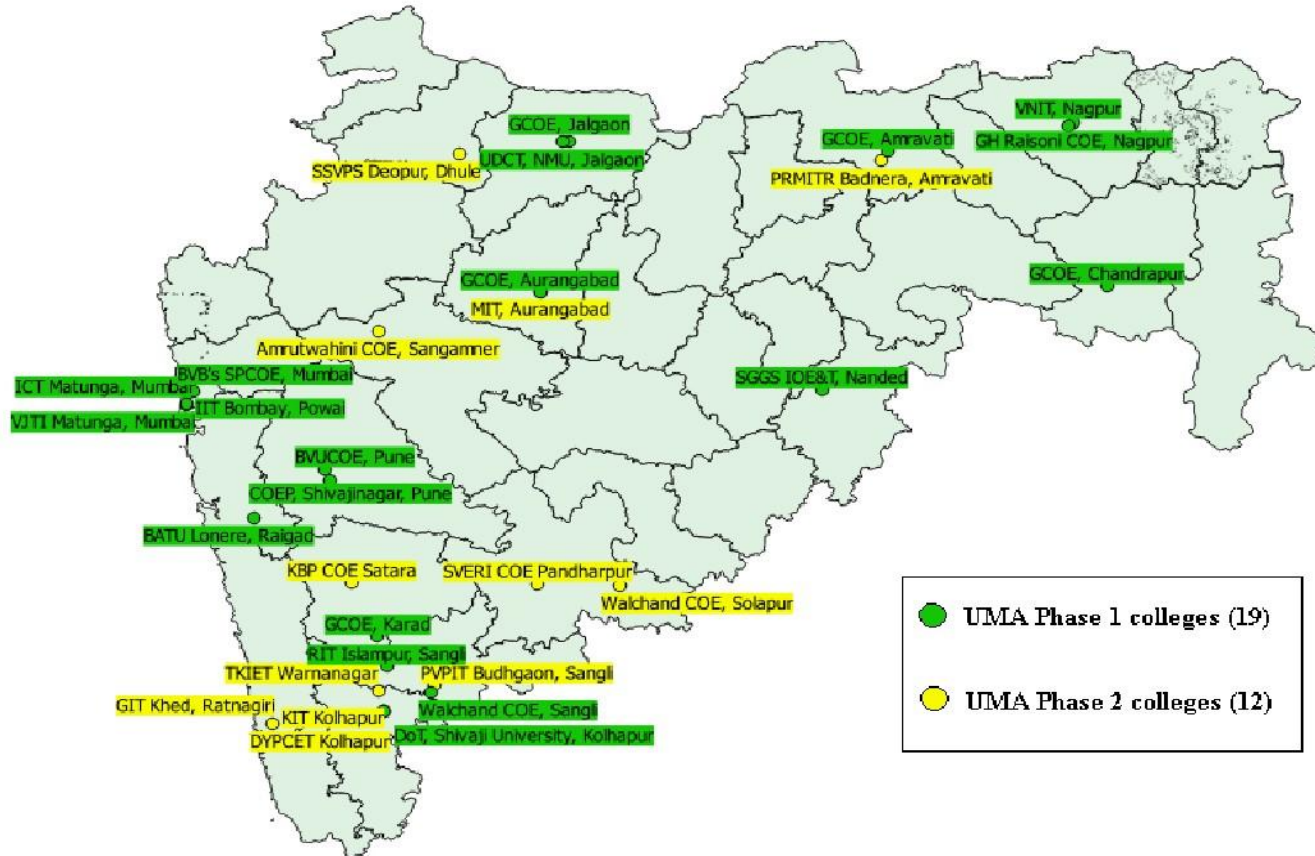


Organization of UMA

Now and the next 2 years

- Interdisciplinary **Technology and Development Cell** at each UMA college
- UMA Program Cell at IIT-B
 - Head, CTARA (or nominee) as Chairman of UMA Advisory Committee
 - 2 Project Managers
- Project Coordination Unit at DTE
 - Nodal Liaison Officer on deputation
- Establish and strengthen T&DC's at UMA colleges
- IIT Bombay faculty as mentors to UMA institutions
- Liaison office in each university and BATU

Current UMA Institutions



Empanelment Target for next 2 years:

- 1-2 engineering colleges/Govt. Polytechnics in each district
 - 3-4 Science/Arts college in each district

UMA Colleges and their work



Plastic road (KBP Satara) Cleaning of Krishna River (BVP Pune) Irrigation at Sinnar (CTARA, IIT-B)



Solar Dryers (SSVPS Dhule)



Pencil Inspection & Sorting

Camlin Pencil Sorter (PVPIT Budhgaon)

UMA Workshops

- Thematic sector - **water, energy, water conservation** - related to development
- **Field problem and community orientation**
- Concrete case-study, liaison with GoM agency
- Analysis and reporting
- **Support for 3-4 months from CTARA**

Ensures that students and faculty can do independent case studies

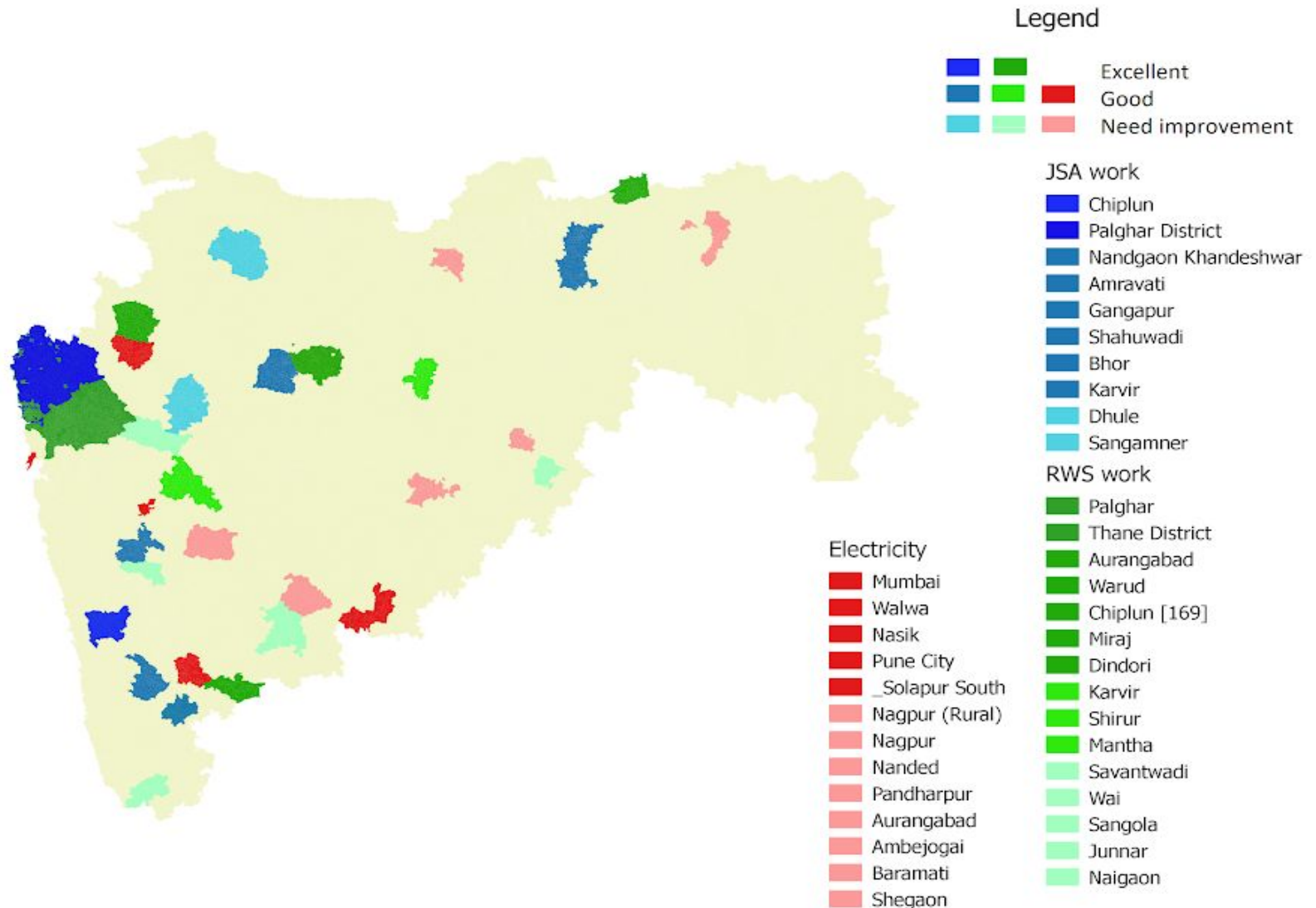
UMA Workshops

Sector (Agencies)	Description of Workshop	Venue and Date	Details of Participants	Locations
Electricity (MSEDCL, CTARA)	Examination of Electricity Consumption in Agriculture	IIT Bombay, Mumbai, 26th August 2016	15 engineering colleges	Shegaon, Buldhana Walwa, Sangli Pandharpur, Solapur Baramati, Pune Ambajogai, Beed Aurangabad Mumbai, Nashik Pune, Solapur Nagpur, Nanded
Drinking Water (TEQIP)	Evaluation and Design of Rural Water Supply Schemes	Government College of Engineering, Aurangabad, 22nd-23rd September 2016	97 students and 56 faculty members from 8 engineering colleges and 2 polytechnics, field engineers	—

UMA Workshops

Sector (Agencies)	Description of Workshop	Venue and Date	Details of Participants	Taluka Locations
Drinking Water (WSSD, Unicef, IRAP, CTARA)	Training Programme on Planning, Design, Monitoring and Evaluation of Rural Water Supply Schemes	RIT Sakhrle, 24th-26th September 2017 Amrutvahini Sangamner, 15th-16th January 2018	24 students and 24 faculty members from 15 UMA engineering colleges	Chiplun, Ratnagiri Warud, Amravati Aurangabad, Aurangabad Miraj, Sangli Dindori, Nashik, Shirpur, Dhule Karvir, Kolhapur, Mantha, Jalna Sangola, Solapur, Wai, Satara Sawantwadi, Sindhudurg Junnar, Pune, Naigaon, Nanded
Water Conservation (WCD, CTARA)	Assesment of Jal Yukta Shivar villages	PRMITR Amravati, 4th-5th February 2018	24 students and 24 faculty members from 14 UMA engineering colleges and 3 polytechnics	Chiplun, Ratnagiri Karvir, Kolhapur Nandgaon Khandeshwar, Amravati Amravati, Amravati Gangapur, Aurangabad Bhor, Pune Shahuwadi, Kolhapur Sangamner, Ahmednagar Dhule, Dhule

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



JSA and RWS Work Done by UMA Colleges





Hon. CM releasing the training compendium, the outcome of the CTARA-IRAP-UNICEF workshop

The training compendium may be used as a textbook or resource guide by engineering colleges across the country.

UMA: What Next

- Upcoming Training Programs
 - Rural electricity, Sanitation, Community Infrastructure
 - Orientation programme on how to run T&DC
- Curricula
 - Development engineering - Introductory course on applied social science, data and linkage with engineering
 - Appropriate electives in engineerings

Enabling GRs from departments is crucial

- Expansion
 - Include polytechnics and state universities under UMA.
 - Integrate KVKs, NGOs, MSME for dissemination of technologies and grass root level innovations.

Important Questions

- Does the UBA institution have a Choice Based Credit System?
- Does it possess the required infrastructural facilities (labs, IT infrastructure, etc).?
- Is it willing to provide for funding for data procurement, coordination, field travel, etc.?
- Does it support interdisciplinarity and field work in academic coursework?
- Is it willing to hold seminar series, guest lectures, etc. in development areas?
- Is it willing to collaborate with state government, district administration, community leaders, NGOs, SHGs, etc.?

If the answer to all of the above is yes, the institute is eligible to apply for UMA!

Empanelment of UMA Colleges

UMA Selection Committee was formed, Call for participation, Selection based on defined criteria, Selection team visited each college, *12 selected*.

Selection criteria:

- Past projects in the development sector (30)
- Academic flexibility and experience in interdisciplinarity, fieldwork and reporting (20)
- Current infrastructural facilities (10)
- Faculty expertise and consulting and guest lectures (30)
- Student profile (Rural/Urban) (10)

GR released, empowering newly empaneled colleges to participate in UMA activities and projects such as:

- Training workshops and programmes
- Assessments, analyses, monitoring and evaluation of government schemes
- Technical support to government programmes

What is the UMA Empanelment Process?

Stage 1: Application of Colleges and Preliminary Screening

1. Covering Letter of applicant college
2. Participation Sheet submitted by college
3. Scoring Sheet filled by UMA team

Stage 2: Onsite Review and Detailed Scrutiny

4. UMA Review Committee Visit and Preparation of Visit Report
5. Final Submission Report of college and Review Committee Recommendation

Stage 3:

6. Final Recommendations of UMA Advisory Committee

Thank You

