



CiSTUP *News Letter*

Center for Infrastructure, Sustainable Transportation and
Urban Planning, Indian Institute of Science, Bangalore, INDIA

Volume 1, Issue 2

February 2010

A Vehicle for Analytical Thinking to Improve the Unique Urban Issues

MESSAGE BY CHIEF SECRETARY, GOK
AND CO- PRESIDENT,
EC, CiSTUP

SHRI S V RANGANATH, IAS



S V Ranganath

I am very glad to note the growth of the Centre with its Research and Development activities, discussions with various departments of GOK concerned on the issues/problems of Bangalore and the state of Karnataka. The centre is approaching the problems and solutions on the issues with the expertise and shares the experiences of the concerned departments. I convey my best wishes on the 2nd year of CiSTUP and their teamwork. Further, the Centre has conducted various Training programmes/Workshops in specialized areas with the participation of senior-level officers of various departments from Government of Karnataka.

MESSAGE BY DIVISIONAL CHAIRMAN, EARTH &
ENVIRONMENTAL SCIENCES,
CHAIRMAN (RAAC),

PROF B N RAGHUNANDAN



B N Raghunandan

I am very glad to note that CiSTUP has come out with the second issue of its "newsletter". This Centre was launched with the support of the Government of Karnataka who has encouraged having Research and Development activities in Urban Planning, Sustainable Transport and Infrastructure. This is a unique opportunity for our faculty to make scientific intervention to resolve problems associated with rapid urbanization. The Centre has taken up research activities with various faculty of the institute on more than twenty different topics relevant to the theme areas of CiSTUP in a time bound format. The various activities of the Centre for the last one year highlighted in the "newsletter" and I note that many senior officers from different organizations including many experts from abroad have visited and participated in the centre's activities. My hearty congratulations on these achievements within a short span of less than a year by the centre. My best wishes to the TEAM at CiSTUP.

MESSAGE BY CHAIRMAN, PROF T G SITHARAM



T G Sitharam

It is my privilege as chairman of CiSTUP to share some of the events which have taken place during the first year of operation of the centre. It is my foremost duty to convey our thanks to the Government of Karnataka for the encouragement shown to the Centre in the activities such as Basic and Applied Research and Development, Academic Activities, Training Programmes/Workshop and Consultancy Projects in the areas of Infrastructure, Sustainable Transportation and Urban Planning.

I would like to highlight certain key issues on the above activities such as Research and Development, Academic Activities and Workshops/Training Programmes – details of which are given in this newsletter. CiSTUP first foundation day annual lecture was organized on 15th December 2009 and CiSTUP "Foundation Day" was celebrated on 4th January 2010. The centre is setting up a library of its own in procuring the books in the research areas of CiSTUP. MoUD Proposal was reviewed by MoUD officials and decision is pending. Replies are awaited for the project proposals submitted to MHRD, Government of India/DST (FIST). CiSTUP also interacted with BMTC and KSRTC Engineers/officers to identify research areas for mutual collaboration.

Prof T G Sitharam
Chairman, CiSTUP

ON GOING RESEARCH PROJECTS

PROJECT TITLE	NAME OF THE PRINCIPAL INVESTIGATOR
Integrating Hawkers and Vendors in Pedestrian Policy and Facility Design Guidelines for Bangalore City and A Multi-Objective Transit Trip Itinerary Planning System Using GIS for Bangalore City	Dr Ashish Verma Dept of Civil Engineering
Use of Plastic Wastes in Sub grade Road Construction	Prof G L Sivakumar Babu
Development of an Eco-Friendly Electric Car and Development of a Novel Electric Van for Mail Delivery and Pick-up	Prof Anindya Deb Dept of Centre for Product Design and Manufacturing
Retrofit Parallel Hybrid Drive	Prof K Gopakumar, Dept of Center for Electronic Design and Technology
Damage assessment of Reinforced Concrete Bridge beams using Acoustic emission method	Dr R Vidya Sagar Dept of Civil Engineering
Condition Assessment of Existing Road Pavement Using Field and Laboratory Experiments	Dr P Anbazhagan Dept of Civil Engineering
Damage Assessment, Repair and Retrofit of Reinforced Concrete Girders and Columns Using Fiber Reinforced Polymer Composite and Cementitious	Prof Ananth Ramaswamy Dept of Civil Engineering
Quantification of Damage for Residual Life Assessment of Reinforced Concrete Structures	Prof J M Chandra Kishen Dept of Civil Engineering
Urban Water Supply Management	Prof M S Mohan kumar Dept of Civil Engineering
Construction waste – potential resource for building products: A case study of Bangalore city	Prof B V Venkatarama Reddy Dept of Civil Engineering
Sustainable use of Sewage-Fed Urban	Dr H N Chanakya Center for Sustainable Technologies
Domestic Water Pricing For Demand and Management	Dr Parthasarathy Ramachandran Dept of Management Studies
Development of Dedicated Spectrophotometric Reagent Kits and Cookbook for Pollution Monitoring of Bangalore Lakes and Water bodies	Dr J R Mudakavi Dept of Chemical Engineering
Probabilistic and Deterministic Seismic Hazard Assessment of Karnataka State and Microzonation of Tier II Cities for Urban Planning	Prof T G Sitharam Dept of Civil Engineering
Assessment of Seismic Performance of Reinforced Masonry Building Models through Shock Table and Shaking Table Tests	Dr K S Nanjunda Rao Dept of Civil Engineering
Studies on Performance and Emission Characteristics of different Straight Vegetable Oils (SVO) as fuels in a Diesel Engine for Urban Transportation	Dr R T Naik Dept of Mechanical Engineering
Transition Metal Oxide Coated Windows as Natural Air-Conditioners	Prof K B R Varma Dept of Materials Research Center
Structural Health Monitoring of Underpass made from precast RCC boxes	Prof S Asokan Dept of Instrumentation

REGIONAL DISSEMINATION MEETING AND LIST OF LECTURES

REGIONAL DISSEMINATION MEETING ON TRAFFIC CALMING STRATEGIES TO IMPROVE PEDESTRIAN SAFETY IN INDIA

(An Indo-Swedish collaborative project) jointly with C&STUP
Held on October 06, 2009
Golden Jubilee Hall, Department of Civil Engineering
IISc, Bangalore



Gaurav Gupta



A view of meeting



S Z Pasha

Main objective is to share the findings of the study with wider audience and to receive their feedback on the project recommendations. Therefore, meeting was organized in Bangalore on October 6th, 2009. Bureaucrats, Technocrats and Policy makers along with CSO representatives associated with road safety issues participated in the meeting and provided their feedbacks with a word of appreciation for conducting project and sharing of findings from pedestrian perspective.

Equal safety and share on road for pedestrian and bicycle was realized and accepted by wider audience along with applicability of "traffic calming model" across the country, emerged as inexpensive accident reducing tool.

DISCUSSION MEETING OPEN SOURCE GIS IN INDIA: PRESENT SCENARIO ON 16th NOV 2009



Release of Book on this occasion

ONE WEEK WORKSHOP ON COMPUTER AIDED TRANSPORTATION PLANNING AND TRAFFIC ENGINEERING (ON 7th - 11th DEC 2009)



Inaugural lecture by Mr Praveen Sood

Prominent Speakers: Prof T Arasan, Dr Ashish Verma, Prof S L Dhingra, Dr V Kovvali, Mr Praveen Sood, Prof A Ramaswamy, Prof T V Ramachandra, Dr S Velumurugan, Prof C E G Justo, Prof Shalabh Bhatnagar, Prof T V Ramanayya, Mr N Sheshadri and Mrs S Rathi

THREE DAY WORKSHOP ON RECENT TRENDS IN SUSTAINABLE TRANSPORTATION PLANNING (ON 12th - 14th DEC 2009)



Prof B N Raghunandan giving away certificates to the participants

Prominent Speakers: Dr Ashish Verma, Prof S L Dhingra, Dr Gerard Hegron, Prof Partha Chakraborty, Dr Shankar Linge Gowda, Prof T V Ramachandra, Dr Rajat Rastogi, Dr Velumurugan and Mrs S Rathi

CAPE COD MOBILITY MANAGEMENT PROJECT ON 16th JAN 2010



Prof Uma Shama delivering her lecture

IMPACT OF STREET TREE CANOPIES ON POLLUTION AND MICROCLIMATE IN BANGALORE

ON 16th FEB 2010 by Dr Harini Nagendra, ATREE.

AWARDS RECEIVED BY ASSOCIATE FACULTY:

Prof Anurag Kumar, Professor, ECE, IISc.
"CDAC-ACCS Foundation Lecture Award 2009"
"Elected to the Fellowship of the Indian Academy of Science" (FASc)

Dr Anjula Gurtoo, MS, IISc
"IDRC – Social Science Research Award, 2009"

M. TECH PROGRAMME AND WORKSHOPS ON TRANSPORTATION

M. Tech Programme on Transportation:

A 2-year M. Tech Programme in “Transportation and infrastructure engineering” has been announced by the Institute and the course will commence from August 2010. The eligibility for this programme are any student having BE/B. Tech or Equivalent Degree in any discipline (Corresponding GATE paper) or M Sc or equivalent degree in any discipline with a background in Physics, Mathematics, Statistics, Geology (Corresponding GATE papers).

The main Areas of study are –Traffic & Transportation Engineering, Intelligent Transport Systems, Infrastructure Engineering, Integrated Land use Planning and Mobility, Urban Ecology, Energy & Environment, Urban Policy and Planning, and System Science.

Further information visit: <http://iisc.ernet.in/admissions>. Helpline: 080- 22932977

ONE WEEK WORKSHOP ON COMPUTER AIDED TRANSPORTATION PLANNING AND TRAFFIC ENGINEERING FROM 7th TO 11th DEC 2009, C/STUP, IISC BANGALORE

The enormous increase in urban population brought in its wake its own problems, especially with regard to its impact on the infrastructure facilities. This resulted in transport-borne problems (congestion, pollution, accidents etc) and finally led to deteriorated quality of life. Considering this a one-week workshop is organized that will build capacity of the middle level technical officers, as well as other participants, who are involved in such exercise; and to learn computer aided transportation planning and traffic engineering which helps to arrive at transport solutions which are effective and sustainable. The participants are field professionals from various organizations viz., BDA, BMTC, DULT, BBMP, Kerela STC; and research scholars and academicians from various engineering colleges across the country. The lectures cover topics such as; Traffic engineering, Traffic flow theory, Public transportation planning, Traffic studies, Traffic management, Traffic control devices, Traffic capacity and LOS, Traffic simulation, use of tools like TransCAD, VISSIM with case studies etc.

THREE DAY WORKSHOP ON RECENT TRENDS IN SUSTAINABLE TRANSPORTATION PLANNING FROM 12th TO 14th DEC 2009, C/STUP, IISC BANGALORE

A Three-day workshop is organized on similar grounds of one-week workshop. The objectives of the workshop are to build capacity of the senior level technical officers (especially from stakeholder organizations of C/STUP) and to understand recent trends of sustainable transportation planning and traffic engineering; and arrive at transport solutions which are effective and sustainable. The participants are field professionals from various organizations viz., BDA, BMTC, DULT, BBMP, Maharashtra PWD; and research scholars and academicians from various engineering colleges across the country. The lectures covered topics like; Urban transportation systems planning, Travel demand modeling and forecasting, Public transportation planning, Transport-environment interaction, Transport-land-use interaction, Travel behavior analysis, Driver behavior and road safety, Application of geoinformatics and optimization techniques in transportation planning, Traffic simulation.

ROAD SAFETY AUDIT: Recently, International Road Federation (India) and Australian Road Research Board conducted a certification course on Road Safety Audit from 8th to 12th Feb 2010, at CRRRI, New Delhi. The objective was to train relevant engineers as Road Safety Auditors. The auditing basically implies a formal examination of a future road or traffic project, or an existing road, in which an independent, qualified team looks at the project's crash potential and safety performance. The basic philosophy is to prevent road safety hazards rather than trying to cure them. The course was attended and successfully completed by Dr Ashish Verma, Associate Faculty (C/STUP).

NEWS FROM FACULTY: 1. Special issue on “challenges in Transportation Planning for Asian Cities” Journal of Urban Planning and Development, American society of civil Engineers (ASCE). Volume 136, Issue 1, March 2010. Guest Editor: Dr Ashish Verma, Associate Faculty, C/STUP

2. Dr Ashish Verma recently completed Certification course on “Road Safety Audit” organized by International Roads Federation (IRF) and Australian Road Research Board (ARRB)

CISTUP FOUNDATION DAY ANNUAL LECTURE

URBAN TRANSPORT IN INDIA: THE JOURNEY SO FAR AND THE WAY FORWARD

Dr M Ramachandran, IAS
Secretary (Urban Development)
Government of India
**Title of Talk: Urban Transport in India:
the journey so far and the way forward**
15th December 2009



Dr M Ramachandran delivering Foundation day lecture

ABOUT DR M RAMACHANDRAN: Dr M Ramachandran is a graduate in economics with a special interest in the area of project planning. He took over as the Secretary of the Urban Development Ministry on 1st November 2006. Major initiatives in urban development, urban reforms and urban infrastructure development have been taken in different parts of the country with a quantum jump in investments under the JnNURM during his tenure. Major policy initiatives have been taken up facilitating state and city governments to improve their urban development, urban management and governance practices.

Urban transport in our country, till few years back was almost like an orphaned child with no clear directions or guidelines. National Urban Transport Policy (NUTP) 2006 provides for an overall framework for guiding not only the State level action plans but also several key agencies at the Central Government level having an important role in urban transport matters.

In brief, the policy lays down a complete road map of various action strategies in the field of urban transport. Bus Rapid Transit System (BRTS) projects for 422.35 km have been sanctioned for 9 Mission cities at a total cost of Rs.4770.86 crore.

Buses constitute the most important mode of public transport across all cities. However, the city bus service in India was generally in a horrible state of affairs with most of the cities not having any organized city bus service.

Ministry of Urban Development (MoUD) wants to address institutional and operational aspects for ensuring long term sustainability of the benchmarking activity. Accordingly all JnNURM mission cities are advised to undertake the process of service level benchmarking. In addition, the initiative will facilitate development of Performance Improvement Plans using information generated by the benchmarking exercise.

A number of initiatives have been taken by the Ministry of Urban Development in the field of urban transport in the last 3-4 years. However, a lot is still to be done. The investment requirement for urban transport is estimated as Rs.1, 32,590 crore in the 11th Five Year Plan and about Rs.4, 35,380 crore over the next 20 years.

To conclude, agenda for action for our cities and towns, and we have to address the needs of 5161 of them, would broadly include

- Developing a proper appreciation of the mobility needs of different sections of a society in a city and moving in the direction of a balanced affordable, efficient city transport system
- Developing a reliable urban transport data base for the country
- Making promotion of good public transport a way of life for our cities-conscious and deliberate participation of people in moving away from personalized modes of transport
- In built arrangements to bring in integration of land use and transport planning of cities
- Workable PPP policies and arrangements so that with private participation, much better city transport systems are provided in cities



Urban Transport-Metro Rail Projects

City	Route	App. Cost (Rs. Crores)
Delhi	Delhi	12,240
Bangalore	Bangalore	10,200
Chennai	Chennai	10,400
Hyderabad	Hyderabad	12,400
Coimbatore	Coimbatore	1,200

Rs. 90,000 Cr. for about 100 km, but actual cost varies based on terrain.

The Way Forward

Mode	Cost (Rs. Crores)
Urban Transport	1,32,590
Inter-city Transport	1,32,590
Rural Transport	1,32,590
Water Transport	1,32,590
Air Transport	1,32,590
Other Modes	1,32,590
Total	5,16,100



Dr M Ramachandran at CISTUP and Faculty Hall, IISc

BANGALORE'S FIRST UN-CONFERENCE ON SUSTAINABLE TRANSPORTATION SOLUTIONS ON NOVEMBER 21st 2009 IN ASSOCIATION WITH PRAJA

Bangalore has witnessed explosive growth in the last few years. With this, we have also seen the city's infrastructure struggling to cope with the demands of a growing economy and population. Rising levels of congestion, rapid motorization, ecological degradation, urban sprawl and social inequity are key challenges to our present transportation system.

A sustainable transport model for Bangalore would mean decongestion of streets, enhanced pedestrian and public transport infrastructure, integrated urban and transport design, reduced pollution and inclusive planning. At Mobilitycity, a diverse group of citizens and experts were engaged in open dialogue, shared ideas, and propose forward-looking strategies and solutions for accessible, equitable, efficient and environmentally sustainable transportation in Bengaluru.



Chairman, Prof T G Sitharam giving the welcome address

PANEL DEBATE

Panel debate was on "Draft Transport Policy of Karnataka

- Government". The policy is first of its kind in the country, which is been brought out by the state Government.

A framework for sustainable mobility involves several aspects like: land-use planning, integrated public transport systems that include non-motorized forms of transport, design and usage patterns of city's resources and amenities, and funding for mobility systems – the balance between welfare and profit systems. A panel of senior local administrators, young politicians, experts as well as eminent citizens will bring their diversity in opinions and real world experiences to this session to discuss the various aspects of a good Transport Policy for Bengaluru. Intelligent and lively audience participated in this debate.

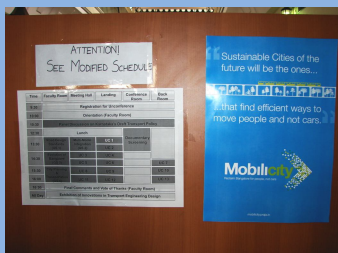
PANELISTS:

Mr Shankar Linge Gowda, IAS
Principal Secretary, Transport Department, GOK.
Mr S Vishwanath, Founder, Rainwater Club
Mr Gaurav Gupta, IAS, MD, KSRTC
Mr Praveen Sood, IPS, Addl CP Traffic, Bangalore
Mr Krishna Byregowda, MLA, Congress
Prof Ashwin Mahesh,
Transportation Expert and Professor, IIMB
Prof T G Sitharam, Chairman, C&STUP
Mr Bhaskar Rao, IPS, Transport Commissioner

SESSIONS:

- ROAD DESIGN STANDARDS
- MULTIMODAL TRANSPORTATION
- SIMULATION OF EVOLUTION OF BANGALORE
- URBAN PLANNING FOR SUSTAINABLE TRANSPORTATION

UN-CONFERENCE: We invited citizens to present or speak on goal-oriented, forward looking proposals or analysis on the subject of sustainable mobility for Bengaluru. Such sessions focused on areas of mobility, and have clear local context and applications.



Some photos of Mobilitycity event

VISIT OF VARIOUS DIGNITARIES TO C/STUP

SI No.	Name of the Visitor	Affiliation	Period Of Visit	Activities-Seminar, Discussion Meeting, etc
1	Prof Michael A P Taylor	ISST, Univ of South Australia.	30 th Apr 2009	Workshop on Sustainable Transportation
2	Dr Sekhar V C Somenahalli	Transport Research Center, Univ of South Australia	30 th Apr 2009	Workshop on Sustainable Transportation
3	Prof Jefferey Sellers	Prof. of Political Science, Univ of South California, USA	11 th May 2009	Brainstorming Session on Urban development and Environmental Sustainability
4	Mr Sun Sheng Han	Univ of Melbourne, Australia	11 th May 2009	Brainstorming Session on Urban development and Environmental Sustainability
5	Mr Jinguan Huang	Wuhan Univ, Republic of China	11 th May 2009	Brainstorming Session on Urban development and Environmental Sustainability
6	Xi Xi Lu	National Univ of Singapore	11 th May 2009	Brainstorming Session on Urban development and Environmental Sustainability
7	Dr Robin King	CSTEP	14 th May 2009	Brainstorming Session on Urban development and Environmental Sustainability
8	Dr Yellappa Reddy	Bangalore Environment Trust	25 th Sept 2009	Brainstorming Session on Urban Lakes
9	Prof Ase Svensson	Lund Univ, Sweden	6 th Oct 2009	Regional Dissemination meeting
10	Prof Christer Hyden	Lund Univ, Sweden	6 th Oct 2009	Regional Dissemination meeting(CUTS)
11	Prof Armin Rosencranz	Stanford Univ, USA	23 rd Oct 2009	Lecture on Environmental Law and Policy in India
12	Dr –ING Martin Scheer	Sonthofen, Germany	11 th Nov 2009	Seminar on Improving Water Supply and Waste Water Disposal Systems.
13	Dr S N Prasad	Chairman OSGEO	16 th Nov 2009	Open Source GIS in India-Discussion Meeting
14	Mr Ravi	Member OSGEO	16 th Nov 2009	Open Source GIS in India-Discussion Meeting
15	Dr Rajan	IIIT, Hyderabad	16 th Nov 2009	Open Source GIS in India-Discussion Meeting
16	Mr Shankar Linge Gowda	Principal Secretary, Transport Department,	21 st Nov 2009	Mobilicity- Bengaluru's first un-conference
17	Mr S Z Pasha	MD,BMTC	6 th Oct 2009	Regional Dissemination Meeting(CUTS)
18	Mr Gaurav Gupta	MD, KSRTC	21 st Nov 2009	Mobilicity- Bengaluru's first un-conference
19	Mr Praveen Sood	ACP Traffic, Bangalore	21 st Nov 2009	Mobilicity- Bengaluru's first un-conference
20	Mr Krishna Byre Gowda	MLA, Congress	21 st Nov 2009	Mobilicity- Bengaluru's first un-conference
21	Prof Ashwin Mahesh	Professor, IIM-B	21 st Nov 2009	Mobilicity- Bengaluru's first un-conference
22	Dr Edvard Jobson	Volvo Bus Corporation	27 th Nov 2009	Talk on latest Hybrid Technology for Buses
23	Dr T Arasan	IIT,Madras	7 th Dec 2009	One week workshop on Transportation
24	Dr S Velumurgan	CRRI	7 th Dec 2009	One week workshop on Transportation
25	Mr Subba Rao	GMR	10 th Dec 2009	One week workshop on Transportation
26	Dr V Kovalli	Mott McDonalds'	11 th Dec 2009	One week workshop on Transportation
27	Prof T V Ramanayya	IIM, Bangalore	12 th Dec 2009	Three Day workshop on Transportation
28	Dr Partha Chakrobarty	IIT, Kanpur	12 th Dec 2009	Three Day workshop on Transportation
29	Prof S L Dhingra	IIT, Bombay	13 th Dec 2009	Three Day workshop on Transportation
30	Mr Sivasailam	MD, BMRCL	4 th Jan 2010	C/STUP Annual Day
31	Dr S Rastogi	IIT, Roorkee	14 th Dec 2009	Three Day workshop on Transportation
32	Prof Uma Shama	Director Geographic's Lab, Bridgewater, MA	16 th Jan 2010	Cape Cod Mobility management Project.
33	Dr Harini Nagendra	Co-ordinator, Urban Ecology, ATREE	16 th Feb 2010	Impact of street tree canopies on pollution and microclimate in Bangalore

FIRST FOUNDATION DAY OF CISTUP AND INTERACTION WITH KSRTC AND BMTC

FIRST FOUNDATION DAY CELEBRATIONS OF CISTUP 4th JANUARY 2010

INVITED LECTURES:

Dr Vijay Kovvali, Manager, Traffic and Transportation,
Mott MacDonald,
“Intelligent Transportation Systems” (ITS)

Dr Ashwin Mahesh, Faculty, IIMB,
“Managing Cities Technologically”

Dr Sudhira H S
“Planning Complex-Cities”

LECTURES

Dr K Shankar Rao: Trees of Urban Spaces.

Dr P P Iyer: Engineering Project Management with Case Studies.

Dr T V Ramachandra: Urbanisation of Bangalore.

WORKSHOP

Workshop on Cycle Jatha: Mr Abraham, Students Council.

IN HOUSE SYMPOSIUM

Dr Gururaja K V: Urban Ecology: Will we act before it's too late?

Ms Priyadarshini J Shetty: Bendakaluru to Bengaluru.

Mr Karthik B N: Route finder: Helping you to find your way.

Ms Sushma Srinivas: Projects under CISTUP- an overview.

Mr Sreenivasulu S: Things DONE...DOING...CAN BE DONE
@ CISTUP.

Ms Usha Kalpana R: Policy Papers of Bangalore.

Ms Shashikala V: Urban sprawl analysis of tier-two cities of Karnataka.

Mr Santosh MS and Mr Santhosh Kumar HV: Design and Development of CISTUP website.

CYCLE JATHA – BY STUDENTS AND OTHERS WHO CAN ENJOY THE BICYCLE RIDE

INTERACTION WITH THE KARNATAKA STATE ROAD TRANSPORT CORPORATION (KSRTC) & BANGALORE METROPOLITAN TRANSPORT CORPORATION (BMTC)

Prof T G Sitharam along with Prof K Gopakumar (Chairman CEDT), Prof Anindya Deb, (Chairman CPDM), Prof K B R Verma, and Dr Ashish Verma, visited KSRTC and had an interactive session with the MD of KSRTC, Mr Gaurav Gupta and other officials. The exchange of ideas has given a boost to the thrust areas which can result in some more research projects.

A similar meeting with Bangalore Metropolitan Transport Corporation took place on 8th February 2010 at the BMTC office. Apart from Prof Sitharam; Dr Anjula Gurtoo from Management Studies could attend this meeting. The discussions were very fruitful and most of the officials were very positive about having consultations with the Faculty of CISTUP and taking advantage of the varied research areas. A new initiative of having some programs on executive development for the officials of BMTC was suggested and already a few programs on these lines were prepared.



All students, staff, faculty and visitors going on bicycle ride



Staff, Students @ CISTUP

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