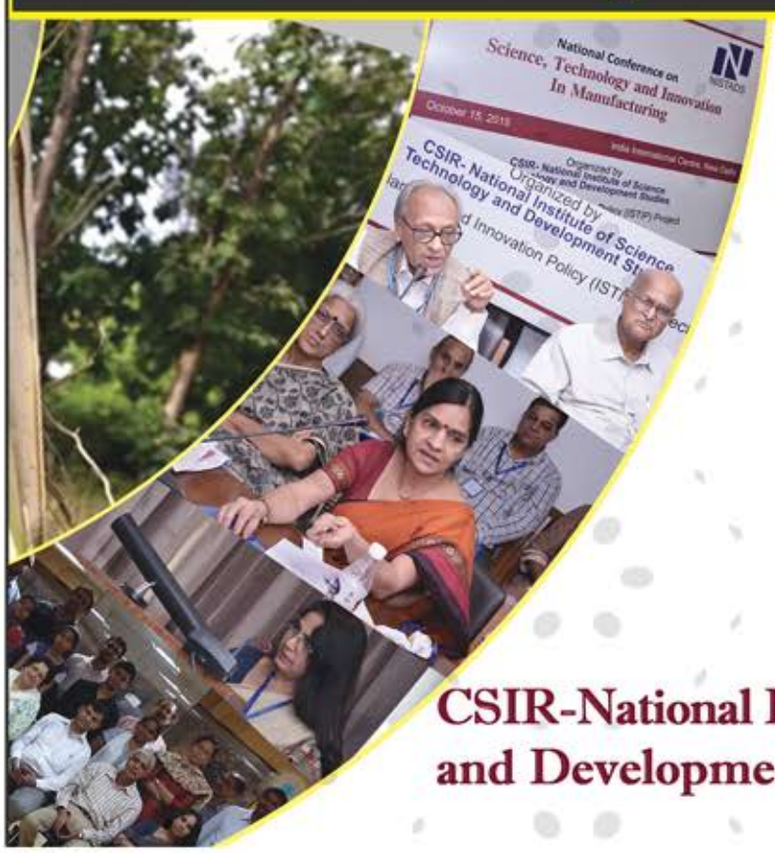
CSIR-NISTADS
Annual Report 2015-16



CSIR-National Institute of Science, Technology and Development Studies, New Delhi

Front Cover Page Pictures (top to bottom):

1.) **Dr. P. Goswami,** Director CSIR-NISTADS; 2.) **Dr. N.S. Siddharthan** (L), Member Secretary and Hon. Director, Forum for Global Knowledge Sharing and Hon. Professor of Economics, Madras School of Economics; **Dr. R.R. Hirwani** (C), Director, CSIR Unit for Research and Development of Information Products; and **Prof. Ashoka Chandra** (R), Principal Advisor, International Management Institute are on the dais in the National Conference on 'Science, Technology and Innovation (STI) in Manufacturing', held on 15 October 2015, at India International Centre, New Delhi; 3.) Few Participants of the Conference; 4.) Rapporteurs of the Conference; 5.) **Dr. Ashok Jain** (L), Former Director, NISTADS and **Dr. Rangan Dutta** (R) retired IAS; 6.) **Dr. N Mrinalini** (L), Chief Scientist, NISTADS and **Dr. G.D. Sandhya** (R), Chief Scientist, NISTADS (R) are seen during the discussion in the conference; 7) **Dr. Tabassum Jamal**, Chief Scientist, NISTADS and coordinator of the Conference; 8.) Student of AcSIR and Scientists from NISTADS.

Annual Report
2015-2016

CSIR-National Institute of Science, Technology and Development Studies

Pusa Gate, K.S. Krishnan Marg, New Delhi

Pusa Gate, K.S. Krishnan Marg, New Delhi 110012
Website: http://nistads.res.in
Email: director@nistads.res.in
Phone: +91 11 25846064, 25843227 Fax: +91 11 25846640

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From Director's Desk

I am happy to present this Annual Report of CSIR-National Institute of Science, Technology and Development Studies (CSIR-NISTADS) for the year 2015-16. CSIR-NISTADS has a unique and important position in the R&D space of the country as it undertakes research related to science, technology and innovation (STI) policies. It is also the only CSIR laboratory that provides a bridge between social, natural and engineering sciences both within the CSIR and also within the broad R&D system of the country. This report highlights some of its activities and achievements during 2015-16.

Perhaps the most significant event for CSIR-NISTADS in 2015-16 was its repositioning as mandated by DG, CSIR. A series of special meetings of the Research Council of CSIR-NISTADS were held to carefully examine all aspects from mission to vision to mandate for repositioning CSIR-NISTADS for meeting the needs and the aspirations of the people. The new Vision, Mission and Mandate of CSIR-NISTADS with focus on Applied Policy Research and Policy Advocacy with Proof of Concept are now available on the CSIR-NISTADS website.

During the period, CSIR-NISTADS continued with S&T policy research and 'India S&T' biennial-report series under plan project India S&T and Innovation Policy (ISTIP) was taken up. During the period, CSIR-NISTADS brought out two research reports and seven research bulletins under "ISTIP" project.

Among the sponsored projects, a notable one is the 'INSPIRE' Programme (Sponsored by Department of Science and Technology, Government of India). CSIR-NISTADS has been also a partner right from the inception of National Innovation System, designing key research questions and partnering various projects.

With renewed emphasis on outreach and technology translation, NISTADS has taken up a number of initiatives. A notable effort was the proposition of Virtual Attendance at Work and Schools (VAWS). A press conference on VAWS was organized as a part of our policy advocacy. The effort generated large and wide media coverage.

With clear message from the President of CSIR and the Director General of CSIR to focus on translational projects that facilitate transfer of benefits from R&D to the people, CSIR-NISTADS has formulated several projects to realize it. Notable among them is the creation of a proof-of-concept for non-disruptive, sustainable and

societally supportive bio-engineering solution for carbon sequestration over Delhi; the impact of these projects will be visible soon.

Translation of R&D also needs clear and continuous inputs from user agencies. CSIR-NISTADS has reached out and incorporated user requirements to its programmes. It has established close contacts with agencies like NITI Ayog and Indian Council of Medical Research (ICMR) to align its programmes with user inputs.

Recognizing synergetic collaborations with national and international agencies as a key factor in multi-disciplinary research, CSIR-NISTADS has started further energizing its collaborative programmes; already there is enthusiastic response from several prominent institutes.

The vibrant doctoral and students programme at CSIR-NISTADS continues, with 14 students pursuing doctoral degrees in areas like Quantitative Research Methodology; Science, Technology & Innovation Policy; Intellectual Property Rights.

The Institute remains committed to generate and disseminate knowledge related to scientific and technological innovation, creativity and their applications along with the policy implications. A number of Outreach Programmes have been planned and launched.

I would like to take this opportunity to express our heartfelt gratitude to the Chairman and the members of the Research Council for their valuable guidance and inputs that made us achieve the challenging task of Repositioning CSIR-NISTADS and launch a number of new activities and programmes. Thanks are also due to DG, CSIR and other divisions of CSIR HQ for valuable inputs and support. On this occasion, CSIR-NISTADS rededicates itself to realize the vision of CSIR. Finally, I extend my thanks to all the members of CSIR-NISTADS for their active participation in the Institute's activities.

Dr. Prashant Goswami

CSIR-NISTADS: Repositioning

CSIR-National Institute of Science, Technology and Development Studies, New Delhi is devoted to a study of various aspects of interaction among science, society and state, also exploring continuously the interface between Science, Technology and Society. NISTADS is one of the 38 institutes/laboratories of Council of Scientific and Industrial Research (CSIR).

Vision:

To be a globally leading institution in techno-socio-economic research to develop S&T policy, policy advocacy to aid socio-economic transformation at regional, national and global scales.

Mission:

Creation of a techno-socio-economic platform to enable Sustainable Development Goals through development and application of acceptable, relevant, and commercializable S&T products through Policy Advocacy. Acting as a Think Tank, with Translational Research, Inclusion of Proof of Concepts and Integration of Outreach.

Mandate:

1. Provide Policy Advocacy on Techno-socio-economic issues identified by CSIR and Government.
2. Act as a Think Tank for Technology Foresight and S&T Design, integrating socio-economics to create enabling and applicable S&T and its inclusive penetration and provide periodic inputs.
3. Identify S&T needs for national missions and create road maps for Sustainable Development Goals.

Research Areas:

- S&T Application, Assessment and Planning(STAAP)
- Future Applicable S&T(FAST)
- Socio-Economics of S&T(SEST)
- Group Dynamics and Social Engineering(GDSE)
- Frontier Innovation and Research in S&T(FIRST)
- Climate Change, Adaption, Mitigation, Sustainability(CAMS)

Perhaps the most significant event for NISTADS in 2015-16 was its repositioning as mandated by DG, CSIR. A series of special meetings of the Research Council of NISTADS were held to carefully examine all aspects from mission to vision to Mandate to repositioning NISTADS for meeting to the needs and the aspirations of the people. The new Vision, Mission and mandate of NISTADS with focus on Applied Policy Research and Policy Advocacy with Proof of Concept are now available on the NISTADS website.

DG, CSIR asked for a Special Meeting of NISTADS Research Council (RC) to examine all the aspects of NISTADS from vision and mission statements to repositioning the institute for renewed and greater relevance. DG, CSIR also emphasized the need for inclusive participation and inputs; a number of in-house brainstorming meetings were held to ensure inclusive inputs and convergence. A Special meeting of NISTADS Research Council (RC) was held on January 05, 2016. The RC after inclusive discussions suggested a Perspective Plan with a roadmap for

NISTADS, taking into account Strength, Weakness, Opportunities and Threats (SWOT) in the wake of new demands and developments. Accordingly, a Perspective Plan was presented to reposition and rededicate NISTADS for increased role and relevance in S&T planning through policy advocacy and acting as a Think Tank to the CSIR & Government.

Repositioning for National and International Relevance: Mandate

NISTADS will respond to Changing National Priorities with repositioning for:

a) National Relevance with clear Mandate and Alignment with National Missions
b) Translational Research as Outspring of R&D, with Periodic, Regular Translational Products
c) Newer Vistas of Cutting-edge, Visionary Scientific Enquiry for Future Space Research
d) Game Changing Future Space Research for India's leadership in S&T
e) Planning and Design of S&T Policies and Interventions for Sustainable Development Goals
f) Global leadership through Innovation and Knowledge Profile in S&T

RESEARCH PROJECTS

- MAJOR LAB PROJECTS
- SPONSORED PROJECTS
- IN-HOUSE PROJECTS

MAJOR LAB PROJECTS

INDIAN S&T AND INNOVATION POLICY (ISTIP)

Coordinators: Dr. Tabassum Jamal Dr. S. Bhattacharya; Dr. S. Pohit and Dr. Yogesh Suman
Duration: 2012-2017 (ongoing)

The Indian S&T and Innovation Policy (ISTIP) project provides evidence-based analysis of the nature and extent of research and innovation needed and capability of the country. It examines in-depth the demand and supply driven policies for S&T and its impact on industry and rural development. The studies draw attention to suitable S&T interventions in policy making for India to reach the forefront of technology frontier and translational models that can exploit knowledge capacities. The informed policy advocacy is based on creating and collating long-term data on various facets of science and technology capacity and capability in the country. S&T manpower of the country is mapped to show the gaps at different levels that have to be addressed including skills that need to be imparted. Science and technology matrices highlight scientific performance and impact of the development and deployment of emerging technologies. Creating opportunities for rural India through augmenting S&T skills and employment potential is an important component of this project. Other key issues addressed are on creating capacities for MSME and green technologies.

Output in the form of Research Reports and Policy Bulletins:

Research reports on:

(Lead Authors: P. Banerjee, Sanjib Pohit, P.K. Biswas, Naresh Kumar P. Kukreja, A. Choudhury and Sudhakar Singh)

1. Performance of Indian Food Products Industry: A Study of Structure, Innovation and Growth, 2000 – 2010
2. Mapping of Migration aspects of Manpower Resources for India and Comparative Countries

Policy bulletins on:

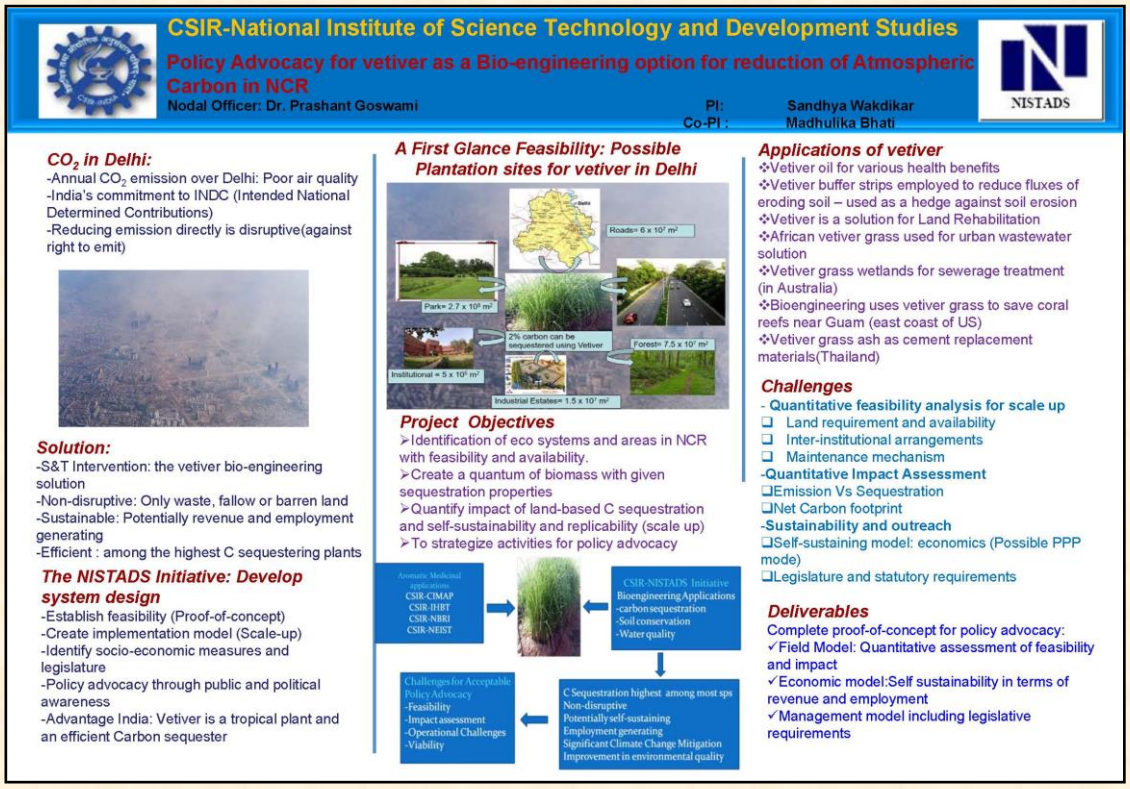
(Lead Authors: S. Bhattacharya, Mohammad Rais, Vipan Kumar, Yogesh Suman, Rajeswari S. Raina, Kasturi Mandal, Priti, Sumbul Naqvi, Sunita Kumari, Shilpa; Preeti, U. Gupta and Jyoti Kushwaha)

1. Energy scenario in India and Challenges: India's Energy Profile: Status and Challenges.
2. Water R&D in India: Trends and Interventions.
3. Knowledge flow from Government R&D Institutions to Private Sector Industry and its role in Value Addition.
4. Nanotechnology Research, Innovation and Commercialisation in India: Contemporary Status.
5. Food for thought: Policy Options for India’s Food Processing Industry.
6. Policy Issues in Fruits and Vegetables Post Harvest Management in India.
7. Effective S&T Interventions: HRD, Industry (MSME), Innovation and Rural Skill and Employment.

REDUCTION OF ATMOSPHERIC CO_2 OVER DELHI THROUGH NON-DISRUPTIVE AND SUSTAINABLE CARBON SEQUESTRATION: SYSTEM DESIGN AND PROOF OF CONCEPT

Team: Dr. P Goswami (Nodal officer); Sandhya Wakdikar (PI) and Dr. Madhulika Bhati (Co-PI)
Date of Start: March 2016
Status: Ongoing

The annual CO_2 emission over Delhi is one of the main causes of poor air quality. Reducing emission directly is disruptive which is against the right to emit. An effective, non-disruptive and sustainable option for land-based carbon sequestration can be done by plantations like vetiver, lemongrass, palmarosa, etc. of which vetiver is proven to be the best carbon sequester. Under the project, optimal growth conditions under representative urban (Delhi) soil conditions will be used under open environment. As the system proposes non-invasive and livelihood supporting, it will have significant societal impact. The entire process can become self-sustaining and revenue generating through a public-private partnership. The vetiver plantation will aid enhancement of the green cover and eco quality. NISTADS initiative would be to develop system design, establish feasibility (proof-of-concept), create implementation model (scale-up) and identify socio-economic measures and legislature. A feasibility study will be done for policy advocacy.



Poster 'Mission Carbon'

SPONSORED PROJECTS

A SCIENTOMETRIC APPROACH TO STUDY ARSENIC, FLUORIDE, NITRATE AND OTHER HEAVY METALS IN DRINKING WATER DURING THE 1995-2015 PERIOD: AN OUTLOOK TO TREATMENT ALTERNATIVES FOR REMOVAL OF CONTAMINATION

Team: Dr. Madhulika Bhati (PI)
Sponsor: Department of Science and Technology, Govt. of India
Date of Start: 23 March 2016
Status: Ongoing

Water is not as abundant and as readily available as it appears. Various reports published by World Health Organization put forward alarming facts about water availability. 17-19 million people in the world lack access to clean water. 3.4 million People die every year from water scarcity, sanitation and hygiene related problems out of which 99% of deaths occur in developing countries. In South Africa alone, 5.7 million people lack potable drinking water which adds to the hardship of their lives. In India, 1.2 billion people live with a very minimal per capita consumption of 1820 cubic meter which was 5177 cubic meter in 1951. Besides this, Indian municipal water infrastructure has been under criticism for a very long time. Every heavy rainfall or a natural catastrophe like Tsunami (2004) exposes the weak links in age-old water channelling systems. Water treatment technologies have to evolve one step ahead of the demands. Waste water quality has been degraded due to rapid industrialization in the past 4-5 decades. This project was started with the objectives; Identification of the global research related to Arsenic, Fluoride, Nitrate and other Heavy Metals in the drinking water field from 1995 to 2015 and to improve the understanding of the research trends and study in water that has received most attention according to the research trends during the studied period which can serve the bottom of pyramid society. It will also highlight an overview of the research on Arsenic, Fluoride, Nitrate and other Heavy Metals in drinking water in the form of annual publications, document types, languages, countries, institutions, authors, categories, journals and research emphases and tendencies. It will also provide an understanding of knowledge structure both quantitatively and qualitatively through integrating keyword analysis and social network analysis of scientific papers.

DATABASE MANAGEMENT AND SUPPORT FACILITY DEVELOPMENT FOR 'INSPIRE' PROGRAMME

Team: Vipan Kumar (PI:2012-16),
Dr. Naresh Kumar (PI:2009-12),
Dr. Yogesh Suman (Co-PI: 2009-12)

Sponsor: Department of Science and Technology, Govt. of India
Duration: 7 years, starting from 30th March 2009 to 30 April 2016

Innovation in Science Pursuit for Inspired Research (INSPIRE), - comprises three major components viz., Scheme for Early Attraction of Talent for Science (SEATS), Scholarship for Higher Education (SHE), and Assured Opportunities for Research Carriers (AORC). INSPIRE, right from its inception in 2008 has been undertaken by

CSIR-NISTADS. At NISTADS, the INSPIRE team screens and evaluates the applications of students from about 30 education boards all over India. CSIR-NISTADS has helped to generate more than 25000 high quality human resource in natural scienes through INSPIRE Project.

MODELLING STUDIES ON GREEN-HOUSE GAS EMISSION

Jointly with University of Delhi, Institute of Economic Growth
Team: Dr. Sanjib Pohit
Sponsor: Ministry of Environment and Forest, New Delhi
Duration: Jun. 2014 – ongoing

This is one of the three commissioned studies by Ministry of Environment & Forests for obtaining inputs for submission of India's stand in respect of INDC. The overall objective of the study is to develop GHG emission scenarios for the decadal timelines: from current (2010) till 2020, 2030, 2040 and 2050. In this context, the study provides scenarios for future GHG emissions to the Indian economy from a macroeconomic model perspective and the policy options that are available to move to a low carbon growth path from a multi-sector approach perspective. It also constructs detailed sectoral scenarios for GHG emissions, and in particular also looks at a sector that is understudied currently in India, namely the waste sector. It assesses the implications of these scenarios in terms of various macroeconomic welfare indicators for the economy, with supportive statistical sub-models for capturing the trade-offs and overlaps across key indicators such as GDP growth, energy access and poverty alleviation.

SCALING-UP THE RURAL ENTERPRISE

Under the Indo-UK collaborative Research Initiative on "Bridging the Urban and Rural Divide (BURD)"

Team: Dr. D. Raghunandan (Project leader, Centre for Technology and Development (CTD, New Delhi) and Dr. Rajeswari S. Raina
Sponsor(s): Engineering and Physical Sciences Research Council -EPSRC (UK) and Department of Science and Technology - DST (India)
Duration: Sept. 2012 - June 2016
Institutions involved in this project are IIT-Mumbai, CSIR-NISTADS, Imperial College, London, University of Nottingham, and Swansea University

The project seeks to evolve new models and methodologies for scaling-up need-based user-centred and networked Rural Enterprises in Uttarakhand. The 'Communities of Practice' addressed in this project are community-level collectors and processors of Wild Apricot in the four Districts of Uttarakhand State. Three-tier networked enterprise bringing together functionally-distributed production at different levels such as village level, cluster-of-villages or cluster-node level and hub-level will be established. This would involve innovative engineering solutions for these processing functions, such as to deliver high-quality products with high productivity, and ICT-based tools for quality control, coordination of production flows and marketing so as to promote local-level empowerment and compensate for the lack of technical and managerial skills in rural areas. Put together, these would help achieve the project objective of scaling up and developing/demonstrating new Models for next-generation rural enterprises in India.

20 YEARS OF INDIA-JAPAN COOPERATIVE SCIENCE PROGRAMME

Team: Dr. Sujit Bhattacharya (PI), Dr. Praveen Sharma, Shilpa and Preeti Garg
Sponsor: Department of Science and Technology
Duration: 15 Mar. 2015 – ongoing

The study provides an assessment of the Indo-Japan Cooperative Science Programme (JSPS) in enhancing the collaborative research between India and Japan. The study has made an analytical investigation of instruments/programs that have been articulated and implemented by JSPS for enhancing collaborative research in new cutting edge areas. Along with analysis of projects supported through this programme, the study also examined other domains that have contributed to research and institutional capacity. In this context, motivation of young researchers through their involvement in the project and support to them for exchange visits, access to peers and sophisticated instruments has been examined. Analysis of feedback from PIs involved in this programme has helped us to draw attention to issues that are not apparent from statistics. Based on the quantitative and qualitative analysis of the programme, the project makes policy suggestions that can further strengthen this programme and contribute towards enhancing research and innovation partnership between the two countries. Draft report has been submitted to Department of Science and Technology (DST).

IN-HOUSE PROJECTS

MENTAL HEALTH CARE AND AYURVEDA

Team: Anuradha Singh
Duration: Apr. 2013 - Aug. 2016

The project critically explores the prevalent paradigm of mental health care in India. It proposes to look into the preventive and curative aspects of mental health according to *Ayurveda* and ascertain how the best practices can be mainstreamed in the national health programs and policy. Mental illness has a large impact on individuals, their families and society as a whole. There has been an escalation in the number of people with mental disorders worldwide. The situation is grimmer in developing countries, which have poor resources to respond to the present challenge. *Ayurveda* has theoretical and therapeutic edge over the conventional medicine when it comes to matters of mind and body. The need of the hour is to use the large knowledge base and resource base of the traditional medical systems of India to fill the gaps in providing critical care to the ones who need it most.

FOOD PROCESSING INDUSTRY IN INDIA: S&T CAPABILITY AND POLICY ISSUES

Team: Dr. Mohd. Rais
Date of Start: April 2013
Status: ongoing

In the above project following major component is being reported:

Fruits and Vegetables Processing Industry in India:

India has immense unrealized potential in fruits and vegetables post-harvest sector; being the second largest producer of fruits and vegetables, yet lacking in crucial fronts like global trade share and per capita consumption. To realize the hidden potential of the sector, Government is acting through various programs, schemes, regulations and other legal initiatives. To revive the paltry share in global trade, i.e., around 1%, F&V produce need to comply with global safety and hygiene standards. The state of infrastructure in the sector also leaves a lot to be desired. The capacity of cold chain is insignificant compared to the quantity of produce and additionally, it is highly skewed in favour of one crop, i.e., potato. Other important areas with scope of improvement being promotion of indigenous technologies, price management and abolition of intermediaries, information dissipation to the grass root level, skill development by training programs and formal courses. There is a need for simplification of policies and issues such as plugging of loopholes in the land acquisition law. Priority treatment of hi-tech floriculture as an industry needs to be given. Availability and importing of quality inputs across the counter should be ensured. The high cost of finance, and sudden increase in duties which have been hampering the growth of the industry, need to be reviewed. Further, immediate emphasis should be on the creation of post-harvest infrastructural facilities, like, collection centres, grading centres, washing facilities, packing, refrigerated vans, pre-cooling units, cold storages, intermediate cold storages, processing units, etc. A complete cold chain facility needs to be created.

ROLE OF TECHNOLOGY LICENSING FOR BIOTECHNOLOGY INNOVATION IN INDIA

Team: Sandhya Wakdikar
Date of Start: April 2013
Status: Ongoing

The literature review draws the attention on the importance of licensing for dissemination of technology and innovation. India has relied mostly on the technology from the R&D institutions. With the changing scenario, the mergers; the acquisition of second or third generation of technologies, the joint ventures for technology etc. have also been observed. The present study aims at analyzing the trends of technology licensing, R&D collaborations, FDI, joint ventures, and mergers and acquisitions, etc. High-technology firms (i.e. biotechnology) are innovation-intensive. Biotechnology in the last 3-4 decades has been one of the focus areas and the government of India recognizes BT as the sunrise sector of India. BT has been considered as an essential tool for socioeconomic development and the funding by the government has also been on the rise. The study also aims at exploring the relevance of technology licensing in fast-growing biotechnology sector for making India competitive and a known face in the global BT scenario.

CSIR NETWORK PROJECT

CSIR KNOWLEDGE GATEWAY & OPEN SOURCE PRIVATE CLOUD INFRASTRUCTURE (KNOWGATE)

Nodal officer at NISTADS: Dr. Yogesh Suman
CSIR Networking project coordinated by CSIR- NISCAIR
Duration: February 2013 - ongoing

CSIR Knowledge Gateway & Open Source Private Cloud Infrastructure (KNOWGATE) is 12th Five Year Plan (FYP) Network Project under Information Sciences cluster. The project would be implemented in a network mode by CSIR-NISCAIR as nodal laboratory with 38 CSIR laboratories as participating laboratories including CSIR-M Complex & CSIR-HQ. The project will be implemented in a phased manner by dividing 39 CSIR KRCs (Knowledge Resource Centers) into four groups.

The objective of the project is to enhance the capacity and capability of CSIR computing power through CSIR private cloud infrastructure and Open Source Software Technology Solution Cell (OSSTSC), and to provide CSIR KRCs an Integrated Library Management Solution using open source Software besides sharing information resources among CSIR laboratories by creating CSIR Distributed Library: catalogue sharing, inter-library loans, & referral service for document supply service. Based on the speedy implementation of project activities CSIR-NISTADS has been designated as Group-I participating laboratory under this project. So far, all the collections in CSIR-NISTADS library has been computerized and made searchable through the internet, apart from this, the book acquisition and issue in the library have also been computerized.

ACADEMY OF SCIENTIFIC AND INNOVATIVE RESEARCH (AcSIR)

Coordinator: Dr. Yogesh Suman

CSIR-NISTADS as a part of Academy of Scientific and Innovative Research (AcSIR) has introduced Ph.D. programme on Science, Technology and Innovation Studies (STIS). The purpose of this STIS course is to create a critical mass of scholars and practitioners with analytical competencies to lead and transform India's science, technology and innovation trajectories in economically productive, socially progressive and environmentally sustainable ways. In its academic and policy endeavours, CSIR-NISTADS operates at the interface between science and society. At present, there are 14 Ph.D. Students at the institute pursuing their degree through AcSIR. Course being offered at AcSIR-NISTADS. Ph.D. course includes as:

Courses offered

1. Quantitative Research Methodology
2. Introduction to Qualitative Research
3. Indian Economy & Policy
4. Innovation Systems & Development
5. Science and Technology Systems – India and the World
6. Science, Technology & Innovation Policy
7. Trade & Technology
8. Enterprise Development through Value
9. Chains Analysis
10. Intellectual Property Rights in the Context of Research, Innovation & Development
11. Resource Planning & Policy
12. Principle of Economics
13. Science, Technology & Innovation Strategy
14. An Introduction to Probability and Statistics
15. Introduction to history of science

(Sitting row L to R): Sh. Swapan Mukherjee, Sh. Ashwini Mishra and Ms. Arpita Sengupta are executives of AcSIR; and next Dr. Yogesh Suman, Dr. Mohd. Rais, Dr. Tabassum Jamal, Dr. Rajeswari S. Raina are faculty from NISTADS.
(Standing row R to L): Dr. Naresh Kumar, Dr. S. Pohit, Dr. Kasturi Mandal, Dr. Y. Madhavi, behind her Dr. Sujit Bhattacharya are faculty from NISTADS and rest are the students.

INITIATIVES

- **CSIR Science, Technology and Development Studies (STADS) Network**
- **Intellectual Property and Business Development (IPBD)**
- **Mission Delhi - Smart City**

INITIATIVES

CSIR SCIENCE, TECHNOLOGY AND DEVELOPMENT STUDIES (STADS) NETWORK

Coordinator: Dr. N. Mrinalini

One of the critical gaps in the current S&T planning in the country is the synthesis and integration of various technologies being developed in different laboratories and their mapping to critical user requirements and national missions. However, proper S&T assessments and mapping require in-depth knowledge of relevant technologies integrated with socio-economics. While NISTADS has expertise in socio-economic aspects, a major gap is adequate knowledge of diverse technologies available and being developed at CSIR and by other agencies in the country, and elsewhere in the world. A network of CSIR-NISTADS and STADS group of CSIR laboratories can provide an effective platform to enhance applicability of the CSIR technologies with the inclusion of appropriate socio-economic analysis

It is therefore proposed to establish a Science, Technology and Development Studies (STADS) Group in each of the CSIR Laboratories. The primary activity of each STADS Group will be to provide information from the laboratory on various technologies in different states of deployment, development and planning. The basic approach will be to collate, compile and structure the information on diverse CSIR technologies from the laboratories to map them through quantitative and objective method to critical areas like water, energy, health, societal and strategic applications

The major output from the STADS Network will be a structured and integrated policy document on CSIR technologies for various national missions in terms of S&T already deployed (Green), S&T being developed (Yellow) and Future-Space Technology in the area (Blue) along with critical gap areas in the country (Red); the document may be brought out on an annual basis. The major outcome will be an integrated mapping of CSIR technologies for policy inputs to user agencies, policy planning for pro-active S&T design and strategy for leadership. A sector-wise approach with a Roadmap will be followed to develop outputs in prioritized sectors.

INTELLECTUAL PROPERTY AND BUSINESS DEVELOPMENT (IPBD)

Objectives

- To convert/develop, NISTADS know-how into applicable and IP products and services for clients
- To package IP products with costing and pricing for commercialization
- To create a consultancy platform for socio- economic translation of Science, Technology and Innovation studies/activities in to offer products and services to clients based on CSIR-NISTADS's strength in interdisciplinary STS (Science, Technology and Society) studies.
- S&T Application Assessment and Planning
- Future demands of S&T Applications /products
- Socioeconomic of S&T
- Frontier Innovation and Research in S&T
- Lifecycle analysis
- Scalability analysis
- Market exploration through an initial assessment of products.

Deliverables

Proposed Consultancy/Assessment Products

1. Cost-benefit analysis (CBA)
2. S&T and innovation planning and implementation support (STI)
3. S&T strategies /market research (STSMR)
4. R&D Profile (RDP)
5. Resource mapping solutions (RMS)
6. S&T and Innovation Capacities (STIC)
7. Green solutions for society (GSS)

Training Programmes

1. S&T in Development
2. S&T & Innovation Policy
3. S&T and Entrepreneurship

MISSION DELHI - SMART CITY

Coordinator: Dr. Tabassum Jamal

In cities like Delhi, urban population growth and rapid urbanization are leading to multiple problems: scarcity of resources, air pollution, human health concerns, traffic congestions, etc. The key challenges in these urban mega clusters are to develop an integrative framework to create a sustainable and liveable city, 'SMART CITY'. In principle, ICT-enabled technologies can support smart city objectives. However, the viability of various approaches has to be integrated with socio- economic analysis to create the needed connect between proposed approaches and people at large. CSIR – NISTADS argues for non-disruptive and sustainable options to integrate the government's approach to develop smart cities. It is proposed to undertake a detailed evidence based study to create a policy plan for successful implementation of a 'smart city' objective taking Delhi as a case study.

Objectives

- To create a matrix for 'Smart Delhi' based on current and projected demands and practices.
- Develop a robust database for various parameters of a smart city.
- Create a policy plan for a successful implementation of a smart city.

Under this initiative, to begin with, CSIR-NISTADS has taken an initiative by developing a policy paper titled "Improved Air Quality through Non-Disruptive Work Scheduling (CSIR-NISTADS) Policy Paper: PP/01/2015 **www.nistads.res.in**). This policy paper focuses on mitigation of air pollution in Delhi and NCR region by providing a solution which is non-disruptive, sustainable and implementable called as Virtual Attendance at Work and School (VAWS). This proposal can be implemented non-disruptively through IT-enabled work/school scheduling especially in large metros where there is good infrastructure and access. VAWS proposes a 2+1+2 working week in which the third day (Wednesday) will be a day of Virtual Attendance at Work and School (VAWS), with two regular working days before and after. A mechanism of internal monitoring has also been worked out. The major source of air pollution in a metropolis like Delhi is vehicular traffic. While the atmospheric circulation and precipitation act as natural and regular sinks, through advection and deposition, they have limits due to various dynamical and seasonal effects. Quite expectedly, the pollution peaks as the week progresses due to accumulation. Thus, a break or reduction in traffic, even for a day, would enable the natural circulation to clear the air. In addition to reducing air pollution, VAWS will have several other attending benefits like energy saving at work/school, reduction of travel-related stress, higher efficiency and improved quality life. A Press meet in the above context was also organized on December 23, 2015, at CSIR-NISTADS, New Delhi. This event received wide coverage and was telecasted by various leading news channels. A press note was released by CSIR-NISTADS during this event, which drew attention from media at large. (Press release and media coverage available on *www.nistads.res.in*).

- **PUBLICATIONS**
- **LECTURES/CONFERENCE PRESENTATIONS**
- **FOREIGN VISITS**
- **CONFERENCES**
- **LECTURES ORGANISED**
- **CSIR-NISTADS IN NEWS**

PUBLICATIONS

JOURNAL PAPERS

1. **A.M. Ayanshola, B.F Sule, and K. Mandal** (2015) 'Evaluation of Supply Variability of Household Water use in Ilorin Metropolis, North Central Nigeria', *Science, Technology and Arts Research Journal,* 4(2): 252-258. *(Link: http://dx.doi.org/10.4314/star.v4i2.35).*
2. **Bharvi Dutt and Khaiser Nikam** (2016) 'Scientometric Analysis of Global Solar Cell Research', *Annals of Library and Information Studies,* 63, March: 31-41.
3. **Bhati, Madhulika; Pushkar Bansal and Saurabh Kumar Ram** (2015) 'Nanotechnology Application in Water Sector: An Opportunity and Risk Analysis', *Journal of Nanotechnology and Applications (JNA),* 5(1): 1-12, June.
4. **Haritma Chopra, Yogesh Suman and Vaishali Singh,** (2015) 'Societal Perceptions of Nanotechnology- an Empirical Study', *Indian Journal of Scientific Research,* 6(1): 139-142.
5. **Jaideep Ghosh and Avinash Kshitij** (2015) 'Examining the Emergence of Large-scale Structures in Collaboration Networks: Methods in Sociological Analysis', *Sociological Methods & Research,* first published on September 21, 2015. *(links:10.1177/0049124115606153 and (http://smr.sagepub.com/content/early/2015/09/18/0049124115606153.abstract)*
6. **Jaideep Ghosh and Avinash Kshitij** (2016) 'Higher Education in Basic Science and Socio-economic Characteristics of Students Life in India: An Exploratory Study', *Social Indicators Research,* 125(1):311-337.
7. **K.C. Gouda and P. Goswami** (2016) 'Organization of Vertical Shear of Wind and Daily Variability of Monsoon Rainfall', *Meteorology and Atmospheric Physics,* 128(5): 565-577. Published online, 8 Feb. 2016, Springer, ISSN 0177-7971. *(link:http://rd.springer.com/search?query=gouda&facet-content-type=Article&facet-journal-id=703&sortOrder=newestFirst)*
8. **Kashmiri Lal** (2015) 'Growth of Service Sector in the Indian National Economy', *Merit Res. J. Account. Audit, Econ. Finance,* 3(2):22-31. ISSN: 2408-7068, *(link:www.meritresearchjournals.org).*
9. **M. Rais, J. Kushwaha and A. Rohan** (2016) 'Fruits and Vegetables Processing in India: Science, Technology & Skill Development Policy Issues', *Productivity,* 57(1): 78-92.
10. **Madhulika Bhati, Surabh Ram Kumar and Pushkar Bansal** (2015) 'Nanotechnology Application in Water Sector: An Opportunity and Risk Analysis', *Journal of Nanotechnology and Applications,* 5(1): 1-12.
11. **Naresh Kumar** (2016) 'Changing Contours of Indian Economy: Comparative Assessment of Inter-sectoral Growth', *JBIMS Spectrum (A Journal of Jamnalal Bajaj Institute of Management Studies),* IV(1):2020-21, ISSN: 2302-7272.

12. **S. Bhattacharya** (2015) 'Reaping the Fruits of Indo-EU S&T and Innovation Partnership', *World Trade Research and Information Report on Trade*, 2(2): 47-48.
13. **S. Dwivedi, S. Kumar and K. C. Garg** (2015) 'Scientometric Profile of Organic Chemistry Research in India during 2004–2013', *Current Science*, 109(5): 869-877.
14. **Sanjib Pohit and Barun Pal** (2015) 'Role of Productivity and Technical Change in India's Growth: An Input-Output Approach', *Science, Technology and Development*, 34(2): 66-73. ISSN 0254-6418 *(link: 10.3923/std.2015.66.73).*
15. **Suman Ray and Asim Ray** (2015) 'Medhya Rasayanas in Brain Function and Disease', *Medicinal Chemistry*, 5(12): 505-511.
16. **Suresh Kumar** (2016) 'Scientometric Study of Artificial Neural Networks Research in India', *International Journal of Information Dissemination and Technology*, 6(S1): 16-20.

EDITOR-IN-CHIEF

1. **Sujit Bhattacharya** (2015) Editor-in-Chief of *Journal of Scientometric Research*, published by SciBiolMed.

RESEARCH BULLETINS

1. **Vipan Kumar, Sumbul Naqvi, Sunita Kumari and Preeti** (2015) 'Energy scenario in India and Challenges: India's Energy Profile: Status and Challenges', ISTIP Policy Bulletin No.9, CSIR-NISTADS.
2. **K. Mandal and Priti** (2015) 'Water R&D in India: Trends and Interventions', ISTIP Policy Bulletin No.10, CSIR-NISTADS.
3. **Rajeswari S. Raina** (2015), 'Food for thought: Policy Options for India's Food Processing Industry', ISTIP Policy Bulletin No.11. CSIR-NISTADS: New Delhi.
4. **S. Bhattacharya, Shilpa, Preeti and U. Gupta** (2015) 'Nanotechnology Research, Innovation and Commercialisation in India: Contemporary Status', ISTIP Policy Bulletin No.12, CSIR-NISTADS.
5. **Yogesh Suman** (2015) 'Knowledge flow from Government R&D Institutions to Private Sector Industry and its role in Value Addition', ISTIP Policy Bulletin No.13, CSIR-NISTADS.
6. **CSIR-NISTADS** Policy Bulletin on (2016) 'Effective S&T Interventions: HRD, Industry (MSME), Innovation and Rural Skill and Employment', NISTADS/PD/ISTIP 14.
7. **Mohammad Rais and Jyoti Kushwaha** (2015) 'Policy Issues in Fruits and Vegetables Post Harvest Management in India', ISTIP Policy Bulletin No.15. CSIR-NISTADS: New Delhi.

RESEARCH REPORTS

1. **Naresh Kumar and Sudhakar Singh** (2016) 'Mapping of Migration aspects of Manpower Resources for India and Comparative Countries', A report under ISTIP Project, CSIR-NISTADS: New Delhi.

2. **P.K. Biswas, P. Banerjee, Sanjib Pohit, P. Kukreja and A. Choudhury** (2015) 'Performance of Indian Food Products Industry: A Study of Structure, Innovation and Growth, 2000 – 2010', A report under ISTIP Project, CSIR-NISTADS: New Delhi.

RESEARCH PAPERS IN EDITED BOOKS

1. **Rajeswari S. Raina** (2015) 'Agriculture and the Development Burden', in Knut A. Jacobsen (eds) *Routledge Handbook of Contemporary India*, Routledge: London and New York. Pp. 99-117.
2. **Rajeswari S. Raina** (2015) 'Institutional Rigidities and Impediments – Agricultural research and GM crops in India', in Phil Macnaghten and Susana Carro-Ripalda (eds) *Governing Agricultural Sustainability –Global Lessons from GM Crops*, Earthscan- Routledge: London, pp. 212-219.
3. **Rajeswari S. Raina** (2015) 'Knowing and Administering Food: How do we Explain Persistence?', in Reddy C. S. (ed) *Food Security and Food Production – Institutional Challenges in Governance Domain*, Cambridge Scholars Publishing: Newcastle upon Tyne. pp.11-43
4. **Rajeswari S. Raina** (2015) 'Technological and Institutional Change: India's Development Trajectory in an Innovation Systems Framework', in Shome, P. and Sharma, P. (eds) *Emerging Economies – Food and Energy Security, and Technology and Innovation*, Springer: New Delhi. Pp. 329-352.
5. **Rajeswari S. Raina.** (2016) 'Science for a new agricultural policy', in C. Ramasamy and K. R. Ashok (eds) *Vicissitudes of Agriculture in the Fast Growing Indian Economy*, Academic Foundation: New Delhi, pp. 32-41.
6. **S. Bhattacharya** (2016) 'Scientometrics and its Institutionalization: The Role of Andras Schubert', in *Festschrift series of the International Society for Scientometrics and Informetrics (ISSI)* in conjunction with and supported by Springer.
7. **Yulia Egorova, Rajeswari S. Raina and Kamminthang Mantuong** (2015) 'An Analysis of the GM Crop Debate in India', in Phil Macnaghten and Susana Carro-Ripalda (eds) *Governing Agricultural Sustainability –Global Lessons from GM Crops*, Earthscan-Routledge: London, pp. 105-135.

POLICY PAPER

- **Prashant Goswami, Tabassum Jamal and Madhulika Bhati** (2016) '*Improved Air Quality through Non-Disruptive Work Scheduling - A CSIR NISTADS Mission Delhi-2017 Initiative'*, CSIR-NISTADS Policy Paper: PP/01/2015.

PAPER IN PROCEEDINGS

- **S. Bhattacharya** (2016) 'Missing Gaps in Indian nano-technology Development: Exploring Effective

Policy Interventions for innovation and Commercialisation', in Proceedings of the International Seminar on Creation and Diffusion of Technology, organized by TATA Trusts at IIT, Bombay, pp. 205-217.

MISCELLANEOUS

1. **Anuradha Singh** (2015) 'Dais's Use of medicinal Substances in Antenatal, birth and Postnatal stages in four states (Jharkhand, Himachal Pradesh, Karnataka and Maharashtra) of India', at the Workshop on Childbirth and Community: The Unseen World of the Dai at the India International Centre (IIC), New Delhi, 3-4 November 2015.
2. **Anuradha Singh** (2016) Abstract on 'Ayurveda, the gut-brain connection and the preventive regimen for mental well-being', was submitted in Feb.2016 for the 23rd congress of the International Association for Cross-Cultural Psychology (IACCP) under the theme Honouring Traditions and Creating Future. 30 July3 - 3 August 2016 in Nagoya, Japan. The abstract has been accepted for presentation.
3. **Avinash Kshitij,** 'Interlocks and Company Performance: Evidence from Listed Firms in India', submitted to the Academy of Management 2016 Annual Meeting, August 5 - 9, in Anaheim, CA.
4. **Kashmiri Lal** (2015) 'Investigating ICT infrastructure to develop Information Society in India', Universal Access in the Information Society Journal, paper submission No.2015-851.
5. **Kasturi Mandal, Priti, Hardip Grewal** 'Looking back: India-Russia collaboration in Science and Technology', Journal of Sociology of Science, Russia (in press)
6. **Rajeswari S. Raina** (2015) 'Vitalstatistix and the SDGs', The Statesman, Tuesday, September 29th, 2015. *(www.epaper.thestatesman.com/c/6698442)*
7. **Rajeswari S. Raina,** invited to participate and speak in the panel: at the FAO Roundtable on Indian Agriculture and Rural Economy, on 'Water and Rain fed Farming: Knowledge and Policy Issues', organized by FAO, New Delhi, at India International Centre, New Delhi, 2 December 2015.
8. **S. Bhattacharya, and Shilpa.** (2016) 'Capturing the growth dynamics of science: a publication-based analysis', *Current Science (Forthcoming).* This paper has

subsequently published in the Issue dated 10 May of this journal.

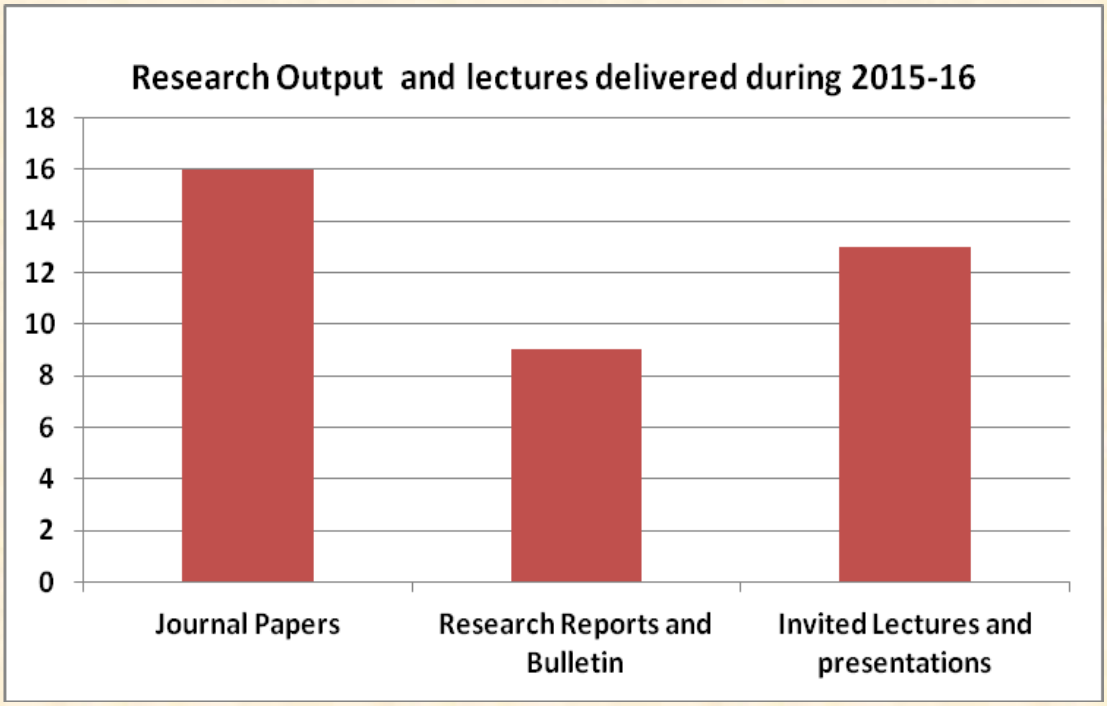
9. **S. Bhattacharya and S. Yadav (**forthcoming) University in the Research and Innovation Ecosystem--Case study of India In: Science, Technology and Innovation Policy: Foresight, Growth, Roadmaps, Sectoral impact: Assessment and Alliances (edited Mohsin Khan) Zaher Science Foundation: New Delhi. This work is now in print
10. **T. Jamal, K Mandal, A. Ayanshola**, book chapter on 'Building National Capability Through S&T and Innovation Policies – Opportunities and Challenges in Developing Countries (Case Studies)', in Science, Technology and Innovation Policy: Foresight, Growth, Roadmaps, Sectoral Impact Assessment and Alliances (in press)
11. **T. Jamal, Kasturi Mandal and MK Saini** (2015), 'Skilling in Agri-Sector-Mapping of Institutional Arrangements in the area of Education and Training in Agriculture' The IFFCO Foundation Bulletin.

LECTURES/CONFERENCE PRESENTATIONS

1. **Kasturi Mandal and Priti**, - Drinking 'Water in Urban India: A Study of Deficiency, Quality and Some Social Implications', in the 8th Biennial Conference of Indian Society for Ecological Economics, INSEE under the theme 'Urban Water from Source to Disposal', organized at IISC, Bengaluru, 4-6 January, 2016
2. **P. Goswami** delivered Keynote address on 'Regional climate change: Science and Challenges for Adaptation and Mitigation', at The International Conference on Climate Science organised by the Interdisciplinary Climate Research Centre (ICRC), Cotton College, held at Guwahati, 7 March, 2016. The theme of the two-day conference was Frontiers of Climate Research to Enhance Cooperation of Climate Information and Services for Sustainable Development Planning in North East India.
3. **R. Raina and K. Mandal**- 'Innovation Systems And Inequality: Dimensions of a Policy Problem in India', at the 3rd INDIALICS International Conference on Innovation and Sustainable Development, organized in CDS Thiruvananthapuram, 16-18 March, 2016.
4. **Rajeswari S. Raina** delivered an invited lecture on 'Solutions and Pathways for Healthy Soils', at the Food and Agriculture Organization (FAO-UN), a celebration of the International Year of Soils and World Soil Day 2015, organized at FAO-UN, New Delhi, 4 December, 2015.
5. **Rajeswari S. Raina** was an invited speaker in the panel discussion on 'Valuing Variability: Towards Climate Resilient and Sustainable Drylands Development', at the 9th International Conference on "Community Based Adaptation", organized by IIED, BRAC, and ACTS, in Nairobi, Kenya. 24-30 April, 2015.
6. **Rajeswari S. Raina**, 'Agricultural Innovation, Rice and Expertise in India', presented at the Second INDIALICS Conference on "Systems of Innovation for Inclusive Agriculture and Rural Development", organized by INDIALICS, Punjab University, Patiala, 28-29 July, 2015.
7. **Rajeswari S. Raina, A. Ravindra, M.V. Ramachandrudu, and S. Kiran** 'Reviving Knowledge: India's Rain-fed Farming, Variability and Diversity', IIED Briefing Paper, August 2015, IIED: London *(http://pubs.iied.org/17307IIED.html?k=india)*
8. **Rajeswari S. Raina**, 'Institutional Innovations and Opportunities for Inclusive Development in India's Food Processing Industry', at the CICALICS Workshop on "Inclusive Innovation and Sustainable Development in Emerging Economies", at the National Institute of Innovation Management, Zhejiang University, Hangzhou, China, 26-27 August, 2015.
9. **Rajeswari S. Raina**, invited for a lecture in the Plenary Session Southern Perspectives, on 'Agriculture, Innovation and the Development Burden', at the 3rd INDIALICS

International Conference on "Innovation and Sustainable Development", organized in CDS Thiruvananthapuram, 16-18 March, 2016.

10. **Rajeswari S. Raina**, invited for a paper (over Skype + readout by colleagues, on 15th September) on 'Agricultural Science and the Institutionalisation of Soft Power', in the session on Science, Technology and Environmental Governance, in the Conference on "New Forms of Soft Power," organized at the Indian Institute for Advanced Studies, Shimla, 14-16 September, 2015.
11. **S. Bhattacharya,** 'Missing Gaps in Indian Nanotechnology Development: Exploring Effective Policy Interventions for Innovation and Commercialisation', in International Seminar on Creation and Diffusion of Technology, organized by TATA Trusts at IIT, Bombay, 18 March, 2016.
12. **S. Bhattacharya,** 'Post-Normal' Science: A new challenge for bibliometric research', Workshop on Quantitative Studies of Growth, Diversification and Globalization of Science & Technology, Organised by Arts Faculty, University of Delhi, 8 January, 2016.
13. **Tabassum Jamal, Kasturi Mandal and Mahesh Kumar Saini**, 'Mapping of Institutional Arrangements in the area of Education and Training in Agriculture', presented in Skilling in Agri-Sector for Growth & Sustainability, at the 10th Annual Conference of "Knowledge Forum", held at National Institute of Advanced Studies (NIAS), Bengaluru, November, 2015.



OTHER INFORMATION

Dr. Sujit Bhattacharya's key achievements:

- Selected as resource person for developing Vision Document for Industry Mission in Nanotechnology for India
- Key Consultation provided to Union Public Service Commission (UPSC)
- 'Emerging Technologies in India: Development, debates and silences about nano-technology', published in *Science and Public Policy, 40(5), 2013,* a major journal in the field of Science Policy was the highest download paper of this journal.
- 'Research and Innovation for Drug Development in Neglected Diseases: Case Study of India', published in *African Journal of Science, Technology, Innovation and Development,* 3(3), 2011, paper selected as course material for Maastricht University (the Netherlands)
- Three issues of the 'Journal of Scientometric Research (published by Wolters-Kluwer Health) were published during this assessment year. As editor-in-chief of this journal, I had the task of coordinating each issue.

Dr. Bhattacharya, member of the following External Committee:

- Member of the committee for Dr. A.P.J. Abdul Kalam Summer Training Programme for the year 2016.
- Member of the committee for development of National Technology Portal (developed by NRDC)
- Governing member of Dr. Bhim Rao Ambedkar College (Delhi University),

Dr. Bhattacharya has been awarded as:

- Dr. Bhim Rao Ambedkar College citation as Distinguished Guest in their Silver Jubilee celebration.

Sandhya Wakdikar attended training programme on 'Work-Life Balance for Women Scientists and Officers' from 19-21 August, 2015, at CSIR-HRDC, Ghaziabad.

Dr. Sanjib Pohit reviewed paper for: South Asia Economic Journal; Energy Policy; ICRIER Working Paper; and Review of Development and Change.

Vipan Kumar and Dr. Madhulika Bhati participated in training Programme at NIAS Bangalore in Energy Security and Management, 10-15 August, 2015.

Kashimiri Lal and Dr. Suresh Kumar attended 'The Art of Public Speaking and Technical Writing', workshop from 19-20 November, 2015 at CSIR-Human Resource Development Centre, Ghaziabad.

FOREIGN VISITS

S.No.	Name & Designation	Country visited	Duration of visit
1.	**Dr. Rajeswari S. Raina** Principal Scientist	**Kenya** To make a presentation on "Valuing Variability- On rain fed agriculture, variability and climate change" at the CBA9 Conference, organized in Nairobi, Kenya. To participate in field visits - learn about decentralization, innovation and development in Kenya – field visit to Kitui County. Panel and field visits, organized and sponsored by the International Institute for Environment and Development (IIED), London.	23-30 April, 2015
	Dr. Rajeswari S. Raina Principal Scientist	**Hangzhou, China** To present a research paper at the CICALICS workshop. To deliver lectures at the CICALICS Academy – for Ph.D. students working on Innovation Systems and Development Organized and sponsored by National Institute of Innovation Management (NIIM), Zhejiang University, Hangzhou, China.	23-30 August, 2015
2.	**Dr. P. Goswami** Director, NISTADS	**Beijing, China** To participate in 1st China-India Science, Technology and Innovation (STI) Joint Research Workshop, held at Chinese Academy of Science and Technology for Development (CASTED),	25-29 January, 2016
3.	**Dr. Madhulika Bhati**, Scientist	**Beijing, China** To participate in 1st China-India Science, Technology and Innovation (STI) Joint Research Workshop, held at Chinese Academy of Science and Technology for Development (CASTED),	25-29 January, 2016

CONFERENCES ORGANISED

1. National Conference on 'Science, Technology and Innovation (STI) in Manufacturing', held on 15 October, 2015, at India International Centre, New Delhi.

A one day National conference was organized on Science, Technology, and Innovation in Manufacturing on 15 October, 2015 at India International Centre. The main aim of the conference was to discuss and highlight the issues regarding the role STI (science, technology, innovation) can play in manufacturing. It was also discussed upto what extent national research and innovation system have the wherewithal to address Make in India flagship initiative of Government of India, what are the major bottlenecks and the roadmap that needs to be defined. A need was felt to highlight the STI interventions that have made major changes in India's manufacturing capability leading to novel processes/products and suitable mechanisms have been created to adopt these innovations in the system. These were the questions that drove CSIR-NISTADS to organise the national conference on STI in manufacturing.

(On dais L to R): ***Dr. Rangan Dutta****, Former DG, CAPART & Secretary to Govt. of India;* ***Dr. N.S. Siddharthan****, Member Secretary and Hon. Director, Forum for Global Knowledge Sharing and Hon. Professor of Economics, Madras School of Economics;* ***Dr. R.R. Hirwani****, Director, CSIR Unit for Research and Development of Information Products;* ***Prof. Ashoka Chandra,*** *Principal Advisor, International Management Institute; and* ***Dr. S. Gangopadhyay****, Additional-charge Director, CSIR-NISTADS.*

The conference focused on the following key questions: What are the different viewpoints of 'Make in India'? How they enrich the present discourse on 'Make in India'? Does STI intervention provide new directions for the generation of employment and economic growth in the manufacturing sector? The Economic Survey 2014-15 was one of the reference points for discussion.

The conference was structured around three sessions encompassing following focal themes – "government viewpoint in manufacturing", "industrial viewpoint", "economic and social perspective", "IPR issues", "human resources", "rural development" and "international perspective".

The key messages that have emerged from the workshop:

- STI and innovation support system need to be developed for manufacturing,
- Existence of disconnection between STI and manufacturing in Indian economy need to addressed,
- Emphasis needs to be there for capacity building in different sectors/sub-sectors, technologies.

The Indian S&T and Innovation Policy (ISTIP) team Dr. Tabassum Jamal, Dr. Sujit Bhattacharya, Dr. Sanjib Pohit and Dr. Yogesh Suman coordinated the conference.

2. A Press Conference on 'Improved Air Quality through Non-disruptive Work Scheduling', was organised by the Institute on 23 December, 2015.

Dr. P. Goswami, Director NISTADS briefing during press conference

A question-answer sessions after the press conference with individual media persons.

Press Release:

Improved Air Quality through Non-disruptive Work Scheduling

(A CSIR NISTADS Mission Delhi-2017 Initiative)

The question that is haunting perhaps every citizen of NCR is life with odd-even numbering for traffic restriction. Does Delhi have a choice?

Yes, Delhi has a choice. CSIR-NISTADS has worked out a non-disruptive, sustainable mitigation solution, with a carefully thought-out implementation strategy. The major source of air pollution in a metropolis like Delhi is vehicular traffic. While the atmospheric circulation and precipitation act as natural and regular sinks, through advection and deposition, they have limits due to various dynamical and seasonal effects. Quite expectedly, the pollution peaks as the week progresses due to accumulation. Thus, a break or reduction in traffic, even for a day, would enable the natural circulation to clear the air. Such a break in traffic can be now affected non-disruptively through IT-enabled work/school scheduling especially in large metros where there is good infrastructure and access. We propose a 2 +1+2 working week in which the third day (Wednesday) will be a day of **Virtual Attendance at Work and School (VAWS),** with two regular working days before and after. A mechanism of internal monitoring will be in place. This would allow spike of the air pollution to subside during mid-week. In addition to reducing air pollution, VAWS will have several other attending benefits like energy saving at work/school, reduction of travel-related stress, higher efficiency and improved quality life. VAWS can easily be implemented and monitored through an organised system. A critical success factor is that VAWS should be implemented and synchronized for offices and schools. The solution is shown to be sustainable and non-disruptive without any adverse effects and can be easily replicated in other metros. We do not propose VAWS as an OFF day; rather an employee must be available at the station and must report for duty at the office in case of an emergency. To maintain transparency, accountability and objectivity, the record of work assigned and completed on the day of virtual attendance can be placed on institutional/school web portals.

With an effective IT infrastructure, like email, internet and mobile telephone, it is implementable for Delhi and the other metros as well. While solutions like alternative, Odd-Even Number (OEN), may provide a temporary solution, it may also have several adverse effects. While the concept of Work from Home (WFH) is not new, its design and formulation in several countries lacked certain essential features.

Here we propose a ***policy solution to mitigate air pollution in a Mega City through Non- Disruptive work scheduling,*** which can be implemented easily, without adverse effects, but with significant socio-economic benefits (Table-1). Preliminary estimates show the benefits to be significant.

Table-1: Comparative Analysis of two Mitigation Measures for Reduction of Air Pollution

S.No.	Parameter/Process	VAWS (Virtual Attendance at Work/school)	OEN (Odd-Even Number)
1	Implementation	Immediate and Total	Phased and disruptive
2	Effectiveness	Both cars and school buses	Only cars
3	Sustainability	Not affected by increase in vehicles	Becomes ineffective, vehicles keep increasing
4	Acceptability	Optional but welcome	May lead to discontent
5	Quality of life	Enhanced quality time	May create stress
6	Productivity	Increase	Decrease
7	Implementation Process	Non-disruptive	Disruptive
8	Cost Saving	Positive	Negative
9	Education Quality	Enhance through self-studies	May result in teacher/student absence
10	Monitoring and Enforcement	Not required	Difficult and burdensome
11	Associated Benefits	Decrease in related traffic like taxi, auto	Nil, may lead to malpractices
12	Energy	Effective saving at office/ school	No Saving
13	Working Hours	Effective increase	No Change
14	Economics	No extra burden	Extra Burden
15	Health	Less exposure time to Pollution	Same Exposure time

LECTURES ORGANISED AT NISTADS

1. **Dr. S. Sangwan, Sr. Principal Scientist, CSIR-NISTADS delivered a lecture on 'Decoding Innovation: Social and Cultural Dynamics of Technological Change', 28 April, 2015.**

2. **Dr. Sujit Bhattacharya, Sr. Principal Scientist, CSIR-NISTADS, delivered a lecture on 'Nanotechnology Research Innovation and Commercialisation: Some Salient Aspects', 19 May, 2015.**

3. **Dr. Vaishali Singh, Associate Professor, GGS Indraprastha University, Delhi, delivered a lecture on 'The Nano Revolution', 9 June, 2015.**

   Abstract: Nanotechnology is the understanding and control of matter at dimensions of roughly 1-100nm, where the properties of the matter do not remain same as those in bulk. These size-dependent properties may be chemical, thermal, mechanical, electrical, optical or magnetic amongst others. The emergence of unique properties in nano-domain has drawn immense scientific interest and curiosity worldwide. This talk will attempt to give an overview of the fascinating world of nanoscience & technology and also discuss some of the advanced nano-materials for present and future applications.

4. **Ms. Evelien de Hoop, Eindhoven Technical University, Netherlands delivered a lecture on 'Pongamia Pinnata in Hassan Bio-Fuel Park: A Qualitative Study from the Perspective of Trees', 26 October, 2015.**

   Abstract: One of India's most famous projects on biodiesel research and production is the Hassan Bio-Fuel park, run by the University of Agricultural Sciences, Bangalore, Karnataka. Based on over 6 months of qualitative semi-ethnographic fieldwork, this study focusses on the day-to-day practices taking place in fields of farmers participating in this project. These practices are documented from the perspective of various Pongamia pinnata trees, using actor-network theory as a thinking tool to understand those practices and using the ecosystem services approach to present a holistic overview of the sustainability of the project. The paper concludes that the interaction of water shortages, various other land use opportunities, farmers' needs, the characteristics of the oilseeds and labour division among farmers result in practices that are far from the aims set out by Hassan Bio-Fuel Park. This raises important question marks with regard to the role this project plays as "successful example" in the wider Karnataka and national biofuel policy arena.

CSIR-NISTADS IN NEWS

04/01/2016 www.business-standard.com/article/printer-friendly-version?article_id=115122300559_1

Business Standard

Virtual attendance at work and school plan proposed

Press Trust of India | New Delhi December 23, 2015 Last Updated at 16:02 IST

Amidst concerns over alarming pollution levels in the city, a Virtual Attendance at Work and School (VAWS) plan has been proposed by a laboratory of the Ministry of Science and Technology in which employees, especially from IT sector, and students can work from home.

Under the VAWS plan, the National Institute of Science, Technology and Development Studies (NISTAD), a laboratory of Council for Scientific and Industrial Research, has proposed that one day in a week should be virtual attendance in school and work.

"Our proposal is that 2+1+2 working week in which the third day (Wednesday) will be a day of Virtual Attendance at Work and School (VAWS), with two regular working days before and after.

"This would allow spike in air pollution to subside during mid-week. In addition to reducing air pollution, VAWS will have several other socio-economic benefits like energy saving at work/ school, reduction of travel related stress and health hazard, higher efficiency and improved quality life. VAWS is a viable alternative " NISTAD's Director P Goswami said.

Speaking about the Odd Even Formula, Goswami said, restrictions have not worked in the past.

"I am not suggesting anything against Odd Even Formula, but I am only saying that restrictions have not worked in the past and the plan is more like a restriction and implementation is a problem.

"On the other hand VAWS can be done with a government directive," Goswami said, citing examples of Bogota and Mexico city where people have circumvented an Odd Even like plan and bought two cars, adding to the pollution.

When asked whether suggestions regarding this were sent to the Delhi Chief Minister, Goswami said, "Yes, we have sent a copy to the Delhi Chief Minister, PMO and other concerned ministries."

He, however, did not specify on when the suggestion was sent.

Delhi government is working out a detailed plan to implement the Odd Even Formula, which will come into force from January 1 to 15 on a pilot basis.

THE HINDU

CITIES » DELHI

Published: December 24, 2015 10:53 IST | Updated: December 24, 2015 11:56 IST NEW DELHI, December 24, 2015

CSIR's proposal to combat Delhi's pollution

- Jacob Koshy

Green Court tells govt. to hold a meeting immediately. Photo: Sushil Kumar Verma

The research lab claims their idea will be more effective that Delhi's proposed odd-even licence-plate policing.

A mid-week work-from-home, rather than licence-plate policing, may be the solution to Delhi's pollution crisis, suggests the policy arm of the Council for Scientific and Industrial Research, India's largest chain of publicly-funded research labs.

The Delhi government's plan to impose restrictions on private car usage, to check air pollution, may be harder to implement and less effective than implementing a mid-week reprieve wherein, instead of commuting to work and school, employees and students could work and study from home for a day, according to the CSIR-National Institute of Science, Technology and Development Studies (NISTADS).

Their rationale is that because, vehicular pollution in Delhi tends to accumulate through the week, a mid-week halt — such as on a Wednesday — would halt the build up and somewhat ameliorate the air. Additionally, the restrictions would apply not only to cars but on school buses too and contribute — the institute says — to decreased stress, be easier to implement and lead to additional energy savings in schools and offices.

NISTADS said that the proposal resulted from in-house research but was led by a broader directive from the Ministry of Science and Technology to apply scientific know-how to broader socio-economic problems in India. "This idea that we've proposed is the first of related ideas that we're working on," said Dr. Sujit Bhattacharya, a senior professor at the institute.

The proposal comes, even as the Delhi government, from the New Year, gears to roughly halve the cars on Delhi roads by allowing odd-numbered licence plates to ply on odd-numbered days and even-numbered plates on others.

"We propose a 2+1+2 working week in which the third day (Wednesday) will be a day of Virtual Attendance at Work and School (VAWS), with two regular working days before and after. A mechanism of internal monitoring will be in place. This would allow spike of the air pollution to subside during mid week. In addition to reducing air pollution, VAWS will have several other attending benefits like energy saving at work/school, reduction of travel related stress, higher efficiency and improved quality life. VAWS can easily be implemented and monitored through an organised system," said a NISTADS statement explaining the plan.

Printed from
THE TIMES OF INDIA

Virtual attendance at work and school plan proposed

PTI | Dec 23, 2015, 04.07 PM IST

An official said the move is a step forward in achieving the new government's agenda of digitalisation of the development process in a big way.

NEW DELHI: Amidst concerns over alarming pollution levels in the city, a Virtual Attendance at Work and School (VAWS) plan has been proposed by a laboratory of the ministry of science and technology in which employees, especially from IT sector, and students can work from home.

Under the VAWS plan, the National Institute of Science, Technology and Development Studies (NISTAD), a laboratory of Council for Scientific and Industrial Research, has proposed that one day in a week should be virtual attendance in school and work.

"Our proposal is that 2+1+2 working week in which the third day (Wednesday) will be a day of Virtual Attendance at Work and School (VAWS), with two regular working days before and after.

"This would allow spike in air pollution to subside during mid-week. In addition to reducing air pollution, VAWS will have several other socio-economic benefits like energy saving at work/ school, reduction of travel related stress and health hazard, higher efficiency and improved quality life.

VAWS is a viable alternative " NISTAD's Director P Goswami said.

Speaking about the Odd Even Formula, Goswami said, restrictions have not worked in the past.

"I am not suggesting anything against Odd Even Formula, but I am only saying that restrictions have not worked in the past and the plan is more like a restriction and implementation is a problem.

"On the other hand VAWS can be done with a government directive," Goswami said, citing examples of Bogota and Mexico city where people have circumvented an Odd Even like plan and bought two cars, adding to the pollution.

When asked whether suggestions regarding this were sent to the Delhi Chief Minister, Goswami said, "Yes, we have sent a copy to the Delhi Chief Minister, PMO and other concerned ministries."

He, however, did not specify on when the suggestion was sent.

Delhi government is working out a detailed plan to implement the Odd Even Formula, which will come into force from January 1 to 15 on a pilot basis.

04/01/2016 CSIR suggests alternative plan to curb pollution in Delhi

DECCAN HERALD

Monday 04 January 2016
News updated at 3:11 PM IST

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CSIR suggests alternative plan to curb pollution in Delhi

Kalyan Ray New Delhi, Dec 24, 2015, DHNS

A Central government research institute on Wednesday has come out with an idea of having a work and schooling-from-home strategy to reduce vehicular traffic on Delhi roads and asked Chief Minister Arvind Kejriwal to try it on a trial basis.

Kejriwal government is set to roll out the 15-day trial of odd-even number car rules from January 1, 2016 in an attempt to reduce the pollution level in Delhi.

The alternative proposal from the National Institute of Science, Technology and Development Studies (NISTADS), Delhi — one of the laboratories under the Council of Scientific and Industrial Research — is to have 2+1+2 working week in which the third day of a week (Wednesday) will be a day of virtual attendance at work and school. The scientists claim it will be a "policy solution" to mitigate air pollution and will be more productive for the workers and students.

"A break or reduction in traffic, even for a day, will enable the natural circulation to clear the air. This will allow spike of the air pollution to subside during mid week," said P Goswami, director of NISTADS.

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Photo Gallery

Knowledge and IT Infrastructure and Management

- **PROJECT MONITORING AND EVALUATION (PME)**
- **LIBRARY & INFORMATION RESOURCES**
- **INFORMTION TECHNOLGY INFRASTRUCTURE**
- **RESEARCH COUNCIL**
- **MANAGEMENT COUNCIL**
- **RIGHT TO INFORMATION (RTI) UNIT**
- **BUDGET**
- हिंदी की गतिविधियां
- **STAFF LIST**

PROJECT MONITORING AND EVALUATION (PME)

NISTADS has a PME Division comprising of the following members:

- Shri Vipan Kumar, Head PME and Principal Scientist
- Dr. Madhulika Bhati, Scientist
- Anil Kr. Sharma, Sr. Tech. Officer (3)
- Shri J.S. Narula, Sr. Technician (2)
- Ms. Tara Verma, Sr. Technician (2)

The main activities of PME Division include:

- Monitoring and Evaluation of Grant-in-aid projects
- Monitoring and Evaluation of CSIR projects i.e. MLP, OLP
- Organizing Training programs of Students from BITS, IIT and other reputed institutions
- Arranging training programs for faculty.
- To act as Nodal point between the Institute and CSIR Head Quarter for the timely delivery of the queries related to projects, Parliament questions and any other issues pertaining to R&D activity of CSIR-NISTADS
- Preparation and timely maintenance of databases for all intramural and extramural research projects.
- Dissemination of information on all relevant National & International Research Program Requests including fellowships and maintenance of NISTADS' required registration with such agencies as mandatory, and liaison with grant-giving agencies.
- Guiding fresh scientific personnel in the preparation and submission of project proposals.
- Preparation of RC Agenda, convening RC meetings and keeping the record and database of all the RC activities. Participation in institute's annual plan and budget preparations, as well as annual reporting, are mandatory activities of the Division.

Major Initiatives in 2015-16

- CSIR-NISTADS SWOT Analysis
- Special RCs held on 05 January, 2016 and 26 February, 2016
- Preparation of CSIR-NISTDS brochure

LIBRARY & INFORMATION RESOURCES

During this period, Library added 4 Books to its collection on various aspects of STS. After the additions, the Number of Books is 26403. Computerization of the book circulation and cataloguing was completed using KOHA software. CSIR-NISTDS library also organises demonstrations for Ph.D. students and other scholars to enhance their skills towards the statistical packages like SPSS and data bases like EBSCO. Library continued to support the STS research activity of the Institute according to the needs of the researches and students.

INFORMATION TECHNOLOGY INFRASTRUCTURE

CSIR-NISTADS has self-designed and hosted official NISTADS website which is running on Linux Server, an open source software (OSS) and is on Joomla platform. NISTADS has its own DNS Linux based Server hosted in the institute. CSIR-NISTADS hosts email for all staff members which is provided by NIC with nistads.res.in domain name.

NISTADS has Chassis based Core and Edge switches for network infrastructure; the network backbone is on optical fibre. The Chassis switch supports 1GB Connectivity. NISTADS has a dedicated optical fibre network throughout its campus with wifi/LAN internet connectivity through secured login. A 30 KVA Three Phase online UPS provides uninterrupted power supply to IT equipment round the clock.

NISTADS has One Gbps leased line from National Knowledge Network (NKN). The NKN is a state-of-the-art multi-gigabit pan-India network for providing a unified high-speed network backbone for all knowledge related institutions in the country.

Institute also has a Cyberoam Unified Threat Management (UTM) appliance, 150 desktops, 40 laptops as well as a few workstations having secured internet access. The systems and servers are protected with latest client-based antivirus that prevents attacks by unauthorized entities.

NISTADS has recently created a world class conferencing facility with state of the art latest equipment.

This institute has dedicated Intel Xeon 6 core processor based Servers. These Servers are used for a variety of services like Website, DNS Servers, Antivirus Servers and applications. These servers run on Windows and Linux operating system to meet the requirements of our organization. NISTADS also has a 20TB SAN for seamless data archiving and back up.

NISTADS uses various application software such as CMIE, Systat, SPSS, Stata, Sigma plot, etc. to meet the requirements of our research and analysis.

RESEARCH COUNCIL

With effect from 1 August 2013

CHAIRMAN
Prof. Ashoka Chandra
Principal Advisor,
International Management Institute, India
B-10, Qutab Institutional Area,
Tara Crescent, New Delhi-110 016

MEMBERS
Prof. C.A. Murthy
Machine Intelligence Unit
Indian Statistical Institute
203 B.T. Road, Kolkata-700108

Prof Anand Patwardhan
SJM School of Management
Indian Institute of Technology Mumbai
Powai, Mumbai-400076

Prof. Manoj Panda
Director
Institute of Economic Growth
University of Delhi Enclave,
North Campus, Delhi-110007

Dr. Rangan Dutta
Former DG, CAPART & Secretary to Govt of India, C-106 Sector 40
Noida-201303

Shri Manab Majumdar
Assistant Secretary General
Federation of Indian Chambers of Commerce and Industry
Federation House
Tansen Marg, New Delhi-110001

Prof. Pranav Desai
Professor of Economics
Centre for Studies in Science Policy
School of Social Sciences-1
Jawaharlal Nehru University, New Delhi.

Prof. Rahul Varman
Dept of Industrial & Mgmt. Engineering
Indian Institute of Technology
Kanpur-208 016

AGENCY REPRESENTATIVE
Dr. S.S. Kohli
Scientist F, SERC Division
Department of Science & Technology
Technology Bhawan, New Delhi-110016

Dr. Kamini Mishra
Scientist F,
Department of Science & Technology
Technology Bhawan, New Delhi-110016

DG NOMINEE
Dr. R.R. Hirwani
Head, CSIR- Unit for Research and Development of Information Products
Jopasana, 85/1 Paud Road
Pune-411038

SISTER LABORATORY
Dr. S. Gangopadhyay
Director
CSIR-Central Road Research Institute,
Delhi-Mathura Road, New Delhi-110020

CLUSTER DIRECTOR
Prof. P. Seshu
Head, CSIR-Fourth Paradigm Institute
NAL Belur Campus, Bengaluru-560037

DIRECTOR
Dr. P. Goswami
National Institute of Science, Technology and Development Studies
Dr. K.S. Krishnan Marg
New Delhi 110012

PERMANENT INVITEE
Head or his Nominee
Planning & Performance Division
Council of Scientific & Industrial Research
Anusandhan Bhawan, 2 Rafi Marg
New Delhi 110001

CONVENER
Shri Vipan Kumar
Head, PME, CSIR-NISTADS

MANAGEMENT COUNCIL

From 1 January, 2014 to 31 December, 2015

CHAIRMAN
Director
CSIR-NISTADS

MEMBERS
Dr. Sujit Bhattacharya
Sr. Principal Scientist, CSIR-NISTADS

Dr. S. Rajeswari Raina
Principal Scientist, CSIR-NISTADS

Dr. Kasturi Mandal
Scientist, CSIR-NISTADS

Dr. Suman Patel
Scientist, CSIR-NISTADS

Head, PME
CSIR-NISTADS

Sh. Rammi Kapoor
Principal Tech. Officer, CSIR-NISTADS

Finance & Accounts Officer
CSIR-NISTADS

MEMBER-SECRETARY
Controller of Admn./Admn. Officer
CSIR-NISTADS

From 1 January, 2016 to 31 December, 2017

CHAIRMAN
Director
CSIR-NISTADS

MEMBERS
Dr. G.D. Sandhya
Chief Scientist

Dr. Naresh Kumar
Principal Scientist

Dr. Kasturi Mandal
Scientist

Dr. Suman Ray
Scientist

Shri Vipan Kumar
Principal Scientist & Head, PME

Shri Anil Kumar Sharma
Senior Technical Officer

Director
CSIR-NISCAIR, New Delhi

Dr. R.R. Hirwani,
Head, URDIP, Pune

Finance & Accounts Officer
CSIR-NISTADS

MEMBER-SECRETARY
Controller of Admn./Admn. Officer
CSIR-NISTADS

RIGHT TO INFORMATION (RTI) UNIT

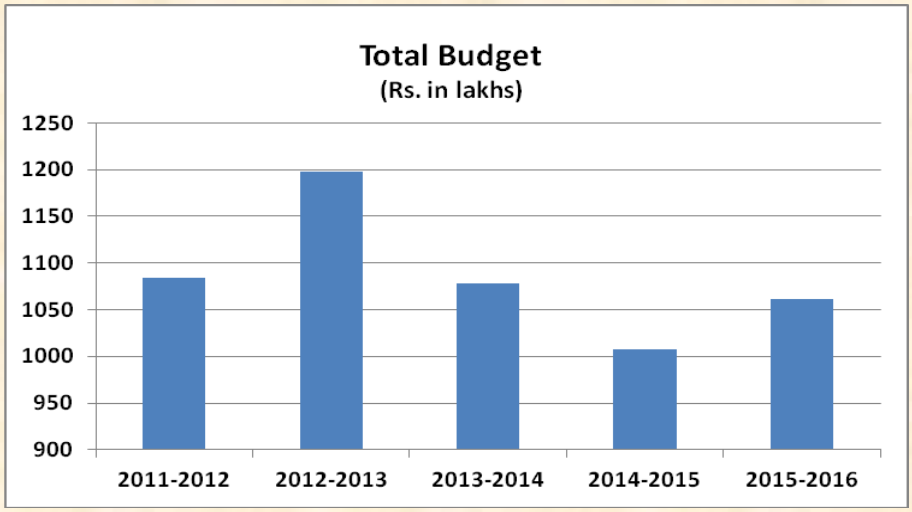
Appellate Authority:
Dr. Mohammad Rais
Senior Principal Scientist
Ph. (Off): 2584 3052

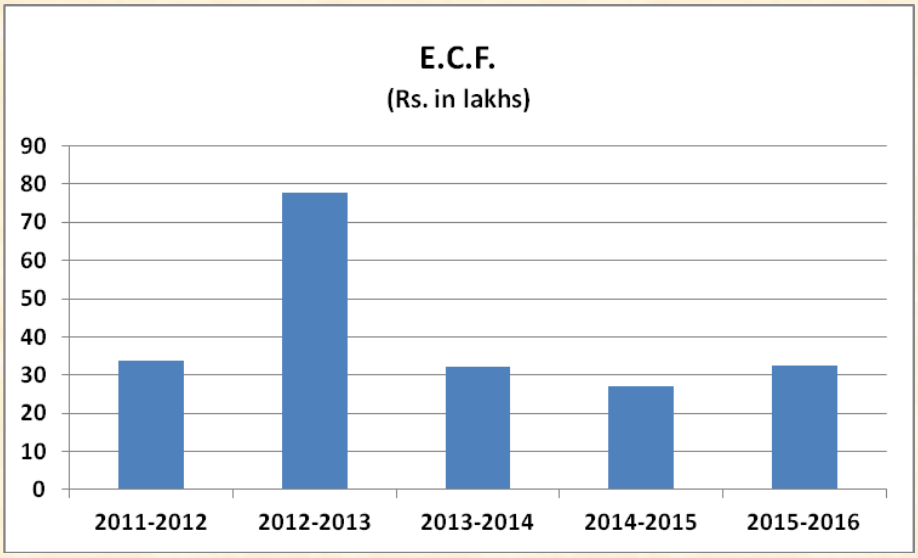
Public Information Officer
Mr. Rammi Kapoor
Principal Technical Officer
Ph. (Off): 2584 3044

Assistant Public Information Officer
Mr. Brij Bihari
Section Officer, Ph: 011-25843072

BUDGET FOR LAST FIVE YEARS

Year	Total Budget (Rs. in lakhs)	E.C.F. (Rs. in lakhs)
2011-2012	**1084.599**	**33.832**
2012-2013	**1198.14**	**77.83**
2013-2014	**1078.15**	**32.1**
2014-2015	**1007.93**	**27.08**
2015-2016	**1061.85**	**32.61**





हिंदी की गतिविधियां

सीएसआईआर- राष्ट्रीय विज्ञान, प्रौद्योगिकी और विकास अध्ययन संस्थान, नई दिल्ली में 01 अप्रैल, 2015 से 31 मार्च, 2016 तक की अवधि में किए गए हिंदी संबंधी कार्यों जैसे सभी अनुभागों द्वारा द्विभाषी (हिंदी-अंग्रेजी) रूप में जारी किए गए अनेक कार्यालय ज्ञापन, परिपत्र, प्रेस विज्ञप्ति तथा अन्य कार्यालयों को भेजे गए हिंदी पत्रों एवं फाइलों में हिंदी में लिखी गई टिप्पणियों और उपस्थित पंजिकाओं में हिंदी में हस्ताक्षर आदि के अतिरिक्त, राजभाषा कार्यान्वयन से संबंधित अन्य गतिविधियां निम्न प्रकार हैं :-

1. राजभाषा कार्यान्वनय समिति की त्रैमासिक बैठकों का आयोजनः
   i) दिनांक10/04/2015;
   ii) दिनांक10/07/2015;
   iii) दिनांक14/10/2015; और
   iv) दिनांक22/01/2016।

2. हिंदी प्रगति मॉनीटरिंग समिति की मासिक बैठकों का आयोजनः i) दि. 3/8/2015; ii) दि. 2/9/2015; iii) दि. 1/10/2015; iv) दि. 2/11/2015; v) दि. 1/12/2015; vi) दि. 8/1/2016; vii) दि. 5/2/2016; और viii) दि. 2/3/2016।

3. वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद, मुख्या., नई दिल्ली और उत्तरी क्षेत्रीय कार्यान्वयन कार्यालय-1 (दिल्ली), राजभाषा विभाग, नई दिल्ली को तिमाही हिंदी प्रगति रिपोर्ट भेजी गईं: i) 30 जून, 2015; ii) 30 सितंबर, 2015; iii) 31 दिसंबर, 2015 और iv) 31 मार्च, 2016।

4. वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद, मुख्या., नई दिल्ली की तीन सदस्यीय समिति ने दिनांक 29/04/2015 (बुधवार) को सीएसआईआर- निस्टैड्स के प्रशासन, वित्त एवं लेखा, भंडार एवं क्रय अनुभागों में किए जा रहे राजभाषा संबंधी कार्यों का भौतिक निरीक्षण किया।

5. हिंदी कार्यशाला का आयोजनः
   - दिनांक 08-05-2015 को निस्टैड्स की वैज्ञानिक डा. (श्रीमती) मधुलिका भाटी ने 'जल शुद्धिकरण में नैनोप्रौद्योगिकी की उपयोगिता' विषय पर हिंदी में व्याख्यान दिया तथा डा. (सुश्री) अनिता बाली, वरि. तकनीशियन, ने 'निस्टैड्स पुस्तकालय में उपलब्ध विभिन्न डेटाबेस' पर हिंदी में चर्चा की।
   - दिनांक 07-07-2015 को निस्टैड्स के वरि. तकनीकी अधिकारी श्री अरविंद कुमार भारद्वाज ने 'कंप्यूटर पर हिंदी (यूनिकोड) का प्रयोग-प्रशिक्षण' पर हिंदी में विस्तारपूर्वक चर्चा की।

- दिनांक 29-12-2015 को डा. बिचार दास, पूर्व निदेशक, केंद्रीय अनुवाद ब्यूरो, राजभाषा विभाग, नई दिल्ली द्वारा 'राजभाषा नीति और कार्यान्वयन' विषय पर हिंदी में विस्तृत चर्चा की; और
- दिनांक 31-03-2016 को निस्टैड्स की डा. मधुलिका भाटी, वैज्ञानिक, ने 'जल शुद्धिकरण तकनीकों में सीएसआईआर का योगदान' विषय पर हिंदी में विस्तारपूर्वक चर्चा की।

6. माननीय संसदीय राजभाषा समिति की दूसरी उप समिति ने दिनांक 5-6-2015 को सीएसआईआर- निस्टैड्स, नई दिल्ली की राजभाषा प्रगति का निरीक्षण किया।

8. सीएसआईआर की लेखापरीक्षा प्रकोष्ठ (ऑडिट सैल) को दिनांक 02-11-2015 को निस्टैड्स की राजभाषा प्रयोग संबंधी रिपोर्ट सौंपी गई। निस्टैड्स वार्षिक प्रतिवेदनः 2013-15 का द्विभाषी (हिंदी-अंग्रेजी) प्रकाशन कराया गया।

9. सीएसआईआर- निस्टैड्स, नई दिल्ली में 1-14 सितंबर, 2015 की अवधि में 'हिंदी पखवाड़ा' मनाया गया था। इसके अंतर्गत संस्थान के अधिकारियों व कर्मचारियों के लिए अनेक हिंदी प्रतियोगिताओं का आयोजन किया गया। निस्टैड्स में आयोजित किए गए 'हिंदी पखवाड़ा उद्घाटन समारोह', दिनांक 1-9-2015 को हिंदी के प्रसिद्ध कवि श्री चिराग जैन और 'हिंदी पखवाड़ा समापन समारोह', दिनांक14-9-2015 के अवसर पर मुख्य अतिथि के रूप में हिंदी के प्रसिद्ध हास्य कवि श्री वेद प्रकाश वेद को आमंत्रित किया गया था।

नोटः कृपया अधिक जानकारी के लिए निस्टैड्स वेबसाइट *www.nistads.res.in* पर उपलब्ध हिंदी गतिविधियां देखें।

STAFF LIST

Director
Dr. P. Goswami (Joined on 23 Nov. 2015)
Dr. S. Gangopadhyay (Additional-charge Director till Nov. 2015)

Chief Scientist
Dr. (Ms.) N. Mrinalini
Mrs. Anuradha Singh
Dr. (Ms.) G.D. Sandhya
Dr. (Ms.) Tabassum Jamal

Senior Principal Scientist
Dr. Satpal Sangwan (retired in Feb. 2016)
Dr. Sanjib Pohit
Dr. Sujit Bhattacharya
Dr. Mohammad Rais
Dr. (Ms.) Y. Madhavi

Principal Scientist
Dr. Naresh Kumar
Dr. L. Pulamte
Dr.(Ms.)Neelam Kumar (retired in June 2015)
Dr. (Ms.) S. Rajeswari
Shri Vipan Kumar
Shri Yogesh Suman
Mrs. Sandhya Wakdikar

Scientist
Dr. (Ms.) Madhulika Bhati
Shri Avinash Prasad Kshitij
Dr. (Ms.) Kasturi Mandal
Dr. Suman Ray

Principal Tech. Officer, Group III(7)
Shri Rammi Kapoor

Sr. Technical Officer (3), Group III(6)
Shri Anil Kr. Sharma
Shri Bharvi Dutt (retired in May 2015)
Shri A.K. Bhardwaj
Shri Suresh Kumar
Shri Kashmiri Lal
Dr. (Ms.) Praveen Sharma

Sr. Technical Officer (2), Group III(5)
Shri S.K. Prasad (retired in Nov. 2015)
Ms. Renu Jethi
Ms. Mala Bahl

Technical Officer Group III(3)
Shri Avinash Verma (transferred on 31 July 2015)

Sr. Technician (2), Group II (4)
Dr. (Ms.) Anita Bali
Ms. Tara Verma
Shri N.K. Prashar
Shri J.S. Narula
Shri R.K. Nagarwal
Shri Bharat Lal

Lab. Assistant, Group I(4)
Shri Madan Kumar
Shri Dheeraj Pal
Shri Ram Suphal
Shri K.C. Joshi

Lab. Attendant, Group I(3)
Shri Shiv Singh Negi
Shri Sunder Lal
Shri Murli Dhar

C.O.A.
Shri Bal Krishna (transferred on 3 Dec. 2015)

Administrative Officer
Ms. Mercy Joseph

Finance & Accounts Officer
Shri Jai Prakash Indora

S&PO
Shri Laljasei Misao

Section Officer (Gen.)
Shri Dharam Singh (transferred on 31 Mar. 2016)
Shri Brij Bihari

Section Officer (F&A)
Shri Ankur Jain (joined on 1 Apr. 2015)

Hindi Officer
Shri Veer Pal Singh

Private Secretary
Shri Harpal Singh (joined on 1 Apr. 2015)
Shri Mohan Lal
Shri Ved Prakash

Assistant (Gen) Grade-I
Shri Anil Kumar
Ms. Rajinder Kaur
Shri Manish Kumar Mehta
Shri N.A. Khan
Shri Pretesh Kumar
Shri Mohd. Idrees
Shri Surinder Pal

Assistant (F&A) Grade-I
Shri Anisur Rehman

Assistant (S &P) Grade-I
Ms. Indira Jain
Shri Rakesh Kumar Mago

Assistant (F&A) Grade-II
Shri M.S. Rawat
Shri Narender Singh

Assistant Grade- II (S&P)
Shri Kanchan Singh Negi

Senior Stenographer
Shri Yogender Kumar (Hindi) (transferred on 18 Feb. 2016)
Shri Pukhraj (Hindi)
Shri Ashok Kumar
Ms. Sunita Arora
Ms. Inderjeet Kaur
Ms. Dolly Chaudhary

Driver
Shri Surinder Prasad

Record Keeper
Shri Harbans Singh

Daftry
Shri Rajnath

Peon
Shri M. Kamrul

Multi Tasking staff
Shri Mohit

STAFF NEWS

Dr. P. Goswami took charge as Director, CSIR-NISTADS on 23 November, 2015.

Following Senior Principal Scientists got assessment promotion as Chief Scientists with their date of assessment promotion.

1. **Dr. G.D. Sandhya**
2. **Dr. Tabassum Jamal**
3. **Ms. Anurdha Singh**

Following Sr. Stenographer empanelled for promotion to the post of Private Secretary.

1. **Sh. Mohan Lal**
2. **Sh. Yogender Kumar**
3. **Sh. Ved Prakash**

Following staff joined the Institute

1. **Shri Ankur Jain,** Section Officer (F&A)
2. **Shri Harpal Singh,** PS

Following staff retired:

1. **Dr. Satpal Sangwan,** Sr. Principal Scientist
2. **Dr.(Ms.) Neelam Kumar,** Principal Scientist
3. **Shri Bharvi Dutt,** Sr. Tech. Officer (3)
4. **Shri S.K. Prasad,** Sr. Tech. Officer (2)

Following staff were transferred to sister labs.

1. **Shri Avinash Verma,** Tech. Officer
2. **Shri Bal Krishna,** COA
3. **Shri Dharam Singh,** SO (G)

EVENTS

1. **National Conference on 'Science, Technology and Innovation (STI) in Manufacturing', held on 15 October 2015, at India International Centre, New Delhi.**

   The key messages that emerged from the workshop:

- STI and innovation support system need to be developed for manufacturing,
- Disconnection between STI and manufacturing in India need to be addressed,
- Emphasis needed on capacity building in different sectors/sub-sectors, technologies.

2. **A Press Conference on 'Improved Air Quality through Non-disruptive Work Scheduling', 23 December 2015.**

   Dr. P. Goswami, Director, CSIR-NISTADS suggested in this conference that "Yes, Delhi has a choice". The major source of air pollution in a metropolis like Delhi is vehicular traffic. A break or reduction in traffic, even for a day, would enable the natural circulation to clear the air. He said that we proposed a 2+1+2 working week in which the third day (Wednesday) will be a day of **Virtual Attendance at Work and School (VAWS),** with two regular working days before and after. He also said that we do not propose VAWS as an OFF day; rather an employee must be available in station and must report for duty at the office in case of an emergency. To maintain transparency, accountability and objectivity, the record of work assigned and completed on the day of virtual attendance can be placed on institutional/school web portals.

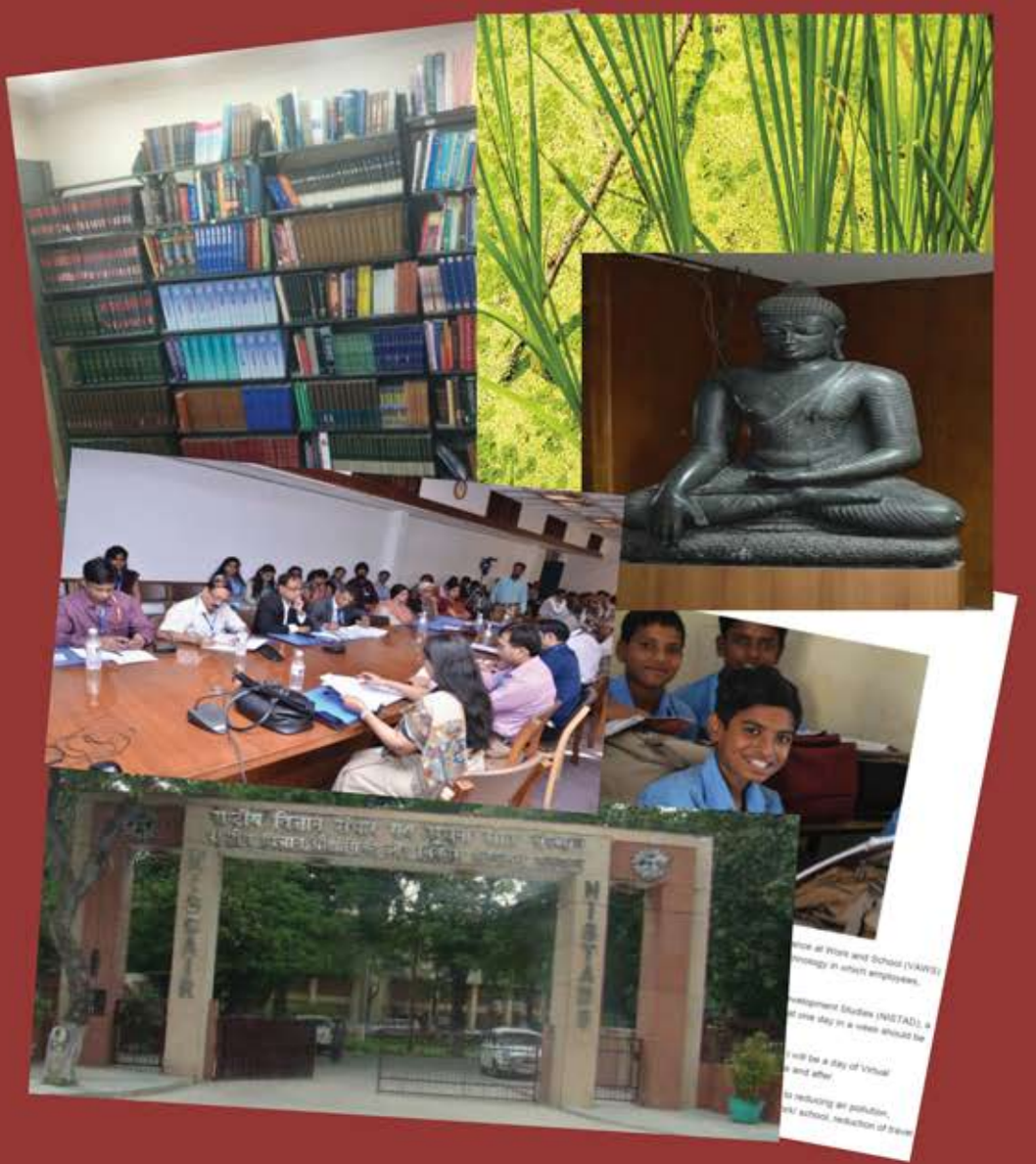
3. **33rd and 34th Special RC meetings: 05 January, 2016 and 26 February, 2016 respectively.**

4. **Some important lectures held at CSIR-NISTADS by:**
   - Dr. S. Sangwan, Scientist, CSIR-NISTADS on 'Decoding Innovation: Social and Cultural Dynamics of Technological Change', 28 April, 2015.
   - Dr. Sujit Bhattacharya, Scientist, CSIR-NISTADS on 'Nanotechnology Research Innovation and Commercialisation: Some Salient Aspects', 19 May, 2015.
   - Dr. Vaishali Singh, Associate Professor, GGS Indraprastha University, on 'The Nano Revolution', 9 June, 2015.
   - Ms. Evelien de Hoop, Eindhoven Technical University, Netherlands on 'Pongamia Pinnata in Hassan Bio-Fuel Park: A Qualitative Study from the Perspective of Trees', 26 October, 2015.

5. सीएसआईआर- निस्टैड्स, में 1-14 सितंबर, 2015 की अवधि में 'हिंदी पखवाड़ा' मनाया गया था, तथा पूरे वर्ष में अनेक गतिविधियां हिंदी में आयोजित की गईं जिनका उल्लेख वार्षिक प्रतिवेदन में किया गया है।

HIGHLIGHTS

- **Dr. P. Goswami** took charge as Director, CSIR-NISTADS on 23 November 2015
- **Special RC meetings to reposition NISTADS held on 05 January, 2016 and 26 February, 2016**
- **CSIR – NISTADS "Mission Delhi- Smart City" Initiative**
- Press Conference on '**Improved Air Quality through Non-disruptive Work Scheduling**', organised on 23 December 2015
- Major project initiated on **Reduction of Atmospheric CO2 over Delhi through Non-disruptive and Sustainable Carbon Sequestration: System Design and Proof of Concept**
- New project on **A Scientometric Approach to Study Arsenic, Fluoride, Nitrate and Other Heavy Metals in Drinking Water during the 1995-2015 period: An Outlook to Treatment Alternatives for Removal of Contamination**
- **CSIR Science, Technology and Development Studies (STADS) Network launched**
- **Intellectual Property and Business Development (IPBD) launched**
- Seven research bulletins and two reports brought out under **Indian S&T and Innovation Policy (ISTIP)** project



Contact

Director
CSIR-National Institute of Science, Technology and Development Studies,
Pusa Gate, Dr. K.S. Krishnan Marg, New Delhi 110012
Tel.: (+91-11)25843227, 25846064 Fax: (+91-11)25846640
E-mail: director@nistads.res.in, Website: http://nistads.res.in