Rural Dialogues

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1st RURAL DIALOGUE

A Voice of Transformation

UrbanUpdate

KNOWLEDGE LAB FOR LOCAL GOVERNANCE

ALL INDIA INSTITUTE OF LOCAL SELF-GOVERNMENT

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MESSAGE

S K Kakoty
Professor, IIT Guwahati

Prof. S K Kakoty is currently Professor in the Department of Mechanical Engineering & Dean (Infustructure, Planning & Management) of IIT Guwahati. His research is mostly focused on stability aspects of different types of hydrodynamic bearings. Effect of fluid inertia on the stability of oil bearings, stability of multi-lobe bearings, stability and dynamic characteristics of flexible rotor supported on hydrodynamic bearings, dynamic characterisation of flexible rotor supported on porous oil bearings, stability of textured slider and journal bearings, stability of gas foil bearings (GFBs) are some of the noteworthy studies in this area.

Besides this area, he is also involved in development of bio-gas plant for maximizing the production, bio-fuel for domestic use etc. Lately his major concern is Rural Technology and he is instrumental in developing numbers of low-cost, easy to maintain implements/ machinery for rural masses. Few noteworthy contributions are Eri Cocoon Opener, High Capacity Improvised Bicycle, Feed Block making Machine for Yak and Cattle, Mechanized Production of Muga Fabric, Bamboo Charcoal and Bamboo Vinegar production Technology, Pulp Pressing Machine for production of Sanitary Napkin, Betel nut cutting machine etc. Also he is the founder head of the Centre for Rural Technology at IIT Guwahati.

"If the rural India develops then the country develops" is the philosophy that brought Prof. Kakoty in the platform of Rural Dialogue. He played key role in the first rural dialogue. During the event he shared the experiences of Rural Technology Action Group (RuTAG). RuTAG is an excellent initiative to provide technologies for rural areas through participatory mode. His deep knowledge about the Rural Society of North East Region as well as Technology Development & Dissemination process makes him a vital part of the initiative.

Dr. Siddhartha Singha
Bioprocess Engineer, IIT Guwahati

Dr. Siddhartha Singha is a Bioprocess Engineer by training and working in the area of food and bio product processing for the last ten years. He is currently a faculty at Centre for Rural Technology at IIT Guwahati. Before moving to IITG he was teaching at National Institute of Food Technology Entrepreneurship and Management, a premier public university under Ministry of Food Processing Industries, GoI. After exposure of Industries like Pepsico Holdings and association with the government developmental programs he is active in bringing the culture of innovation in institutional human resource building and research especially in Agro Processing Sector.

In the First Rural Dialogue Dr. Singha's team looked after the logistics of the entire event. During the deliberations of the event he pointed out that the main barriers of agricultural sectors are such as the production processes not being scientific and lack of availability of labs for testing. Also suggested instead of just using cold storage units controlled atmosphere storage must be used in order to store multiple types of agricultural produces.

He spoke about the promise and challenges of food processing sector in India. To exploit the potential of Indian Agro wealth a proper policy approach is needed. He emphasized the importance of techno-commercial feasibility studies before planning for an agro/food processing business for survival for processing unit. Raw-materials for such industries have inherent challenges like right variety, seasonality, and low shelf life.

All India Institute of Local Self-Government (AIILSG)

AIILSG is a premier institute working towards strengthening and reinforcing urban local governance. For nearly nine decades it has contributed to the principles and practice of urban governance, education, research and capacity building. In all that AIILSG has done, it has taken care to work with a full range of stakeholders – grassroots organizations, NGOs, ULBs, state and national governments, international organizations, organizations of the UN, research organizations and universities. Among international agencies, it has been working closely with World Bank, UNICEF, UNDP, UN-HABITAT, USAID, UNESCO, DFID, GIZ, CITYNET and others in carrying out various developmental programmes for enhanced urban development and management.

MSSRF

MSSRF was envisioned and founded by Professor M S Swaminathan with proceeds from the First World Food Prize that he received in 1987. The Foundation aims to accelerate use of modern science and technology for agricultural and rural development to improve lives and livelihoods of communities. MSSRF follows a pro-poor, pro-women and pro-nature approach and applies appropriate science and technology options to address practical problems faced by rural populations in agriculture, food and nutrition. These efforts have been undertaken in a participatory manner and in partnership with other knowledge-based institutions, public and private sector organisations and local communities. From a small beginning, across the years, the Foundation has made its impact felt in various dimensions making a difference to the lives of over 600,000 farm families impacting livelihood of 100,000 farmers and fisher folk every day with influence that spreads across 18 countries.

NEERI

NEERI was established to conduct research and developmental studies in environment science and engineering. To render assistance to the industries of the region, local bodies in solving the problem of environmental pollution. To interact and collaborate with academic institutions on environment science and engineering for mutual benefit. NEERI continues to strive for providing innovative and effective solution for environmentally sustainable development and to help the government, industry and society especially the 800 million underprivileged in India.

SIDBI

Small Industries Development Bank of India (SIDBI) set up on 2nd April 1990 under an Act of Indian Parliament, acts as the Principal Financial Institution for Promotion, Financing and Development of the Micro, Small and Medium Enterprise (MSME) sector as well as for co-ordination of functions of institutions engaged in similar activities. The MSME sector, the focused business domain for SIDBI, has been an important pillar of the Indian Economy, contributing up to 33% in the country's Gross Value Added (GVA) as per FY 2014-15, with 51 million enterprises providing employment to over 117 million Indians. Over the years, SIDBI has been working towards the sustainable development of MSME sector, pioneering efforts that have manifested in creation of economic wealth, its distribution for an egalitarian society while preserving the ecological wealth of the country. These include the innovative Credit Plus model, where credit is supplemented with advisory and mentoring facilities to MSMEs. Some of SIDBI's other revolutionary initiatives include the MFI-led Microfinance movement in India that has nurtured and strengthened more than 100

MFIs and facilitated creation of SFBs, introducing a culture of energy efficient and sustainable finance for the MSME sector, introducing Venture Capital, Risk Capital, Reverse Factoring and other innovative facilities that have been later adopted by various public and private players in the country. To emerge as a single window for meeting the financial and developmental needs of the MSME sector to make it strong, vibrant and globally competitive, to position SIDBI Brand as the preferred and customer - friendly institution and for enhancement of share - holder wealth and highest corporate values through modern technology platform

TISS

The Tata Institute of Social Sciences (TISS) was established in 1936 as the Sir Dorabji Tata Graduate School of Social Work. In 1944, it was renamed as the Tata Institute of Social Sciences. The year 1964 was an important landmark in the history of the Institute, when it was declared Deemed to be a University under Section 3 of the University Grants Commission Act (UGC), 1956. Since its inception, the Vision of the TISS has been to be an institution of excellence in higher education that continually responds to changing social realities through the development and application of knowledge, towards creating a people-centred, ecologically sustainable and just society that promotes and protects dignity, equality, social justice and human rights for all.

Machphy

We are a blend of innovation, excellence and experience personified. Our startup is promoted by the best technocrats with committed and hardworking individuals. Our team includes dedicated professionals with years of specialization in solar energy and electronics. We have experts in fields ranging from ideation to automation, household to commercial and rural-urban requirements. We are committed to supply the customised quality products and render quality services. Our team is part of the patent which was applied from IIT Bhubaneswar. The patent was applied for optimization of DC&AC output which in turn provides high efficient solar power with low cost devices. We are unique yet ardent start-up who dream to create history in the world of machine physics, thus MachPhy.

Tata Trusts

Tata Trusts are amongst India's oldest, non-sectarian philanthropic organisations. The Trusts own two-third of the stock holding of Tata Sons, the apex company of the Tata group of companies. The wealth that accrues from this asset supports an assortment of causes, institutions and individuals in a wide variety of areas. In this manner, the profits that the Tata companies earn go back many times over to the communities they operate in. These funds have been deployed towards a whole range of community development programmes across the country, for over a 100 years now. Since its inception, Tata Trusts have played a pioneering role in transforming traditional ideas of charity and introducing the concept of philanthropy to make a real difference to communities.Through grant-making, direct implementation and co-partnership strategies, the Trusts support and drive innovation in the areas of healthcare and nutrition; water and sanitation; energy; education; rural livelihoods; natural resource management; urban poverty alleviation; enhancing civil society and governance; media, arts, crafts and culture; and diversified employment. The Trusts engage with competent individuals and government bodies, international agencies and like-minded private sector organisations to nurture a self-sustaining eco-system that collectively works across all these areas.

Infosys

Established in 1981, Infosys is a NYSE listed global consulting and IT services company with more than 209,000 employees. From a capital of US$250, we have grown to become a US$11.12 billion (LTM Q1 FY19 revenues) company with a market capitalization of approximately US$ 42.4 billion. In our journey of over 35 years, we have catalyzed some of the major changes that have led to India's emergence as the global destination for software services talent. We pioneered the Global Delivery Model and became the first IT Company from India to be listed on NASDAQ. Our employee stock options program created some of India's first salaried millionaires.

Kashyup Infrastructure

Kashyap Infraprojects Pvt. Ltd., headquartered at Surat started its operation in Sep 2011 as an integrated solar energy solution provider in the Indian Solar domain. KASHYAP specializes in Solar EPC (Turnkey and BoS) for Utility Scale Solar Power Plants, Solar farms and Rooftops. KASHYAP has executed 100+ MW of Utility Scale Ground mounted projects as well as Roof Top projects for leading MNCs and India's Top 20 companies across the country. Today KASHYAP has emerged as a leading turnkey solution provider. KASHYAP has designed well proven, cost effective and efficient business models on their unique solutions for Indian Solar industry. Right from technical consultancy to EPC of Rooftop to Megawatt scale projects, KASHYAP gives its customer a unique advantages over their competitors.

Care Luit

Care Luit is in the business of enriching and shaping lives. The work we do is aimed at providing a holistic approach to solving some of our society's biggest challenges through efforts for livelihood improvement, by bridging the socio-economic gap via education and training. We make sure our partners are empowered by creating opportunities for individuals and communities. Care Luit was registered as a Trust on 28th of September 2007 with Shri Kishor Jayanta Madhab as Managing Trustee and Shri Kishori Mohan Das social worker and retired class one Assam Government employee as settlor.

Response Renewables

Responce Renewable Energy Ltd, is a part of Responce Group founded by Mr. Pradeep Kumar Daga promoter of Responce Securities Pvt Ltd, a part of Responce Group and also a member of National Stock Exchange, India (NSE), Bombay Stock Exchange (BSE) and Multi Commodity Exchange (MCX), India. To set a benchmark by being the 'Best In Its Class' in the field of Renewable Energy and to create value for their customers and investors, a future for their employees, while giving back graciously to society a piece of their success. To Transform the company into a engine of growth in renewable energy much needed by nation.

CIRDAP

The Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP) is a regional, intergovernmental and autonomous organisation. It was established on 6 July 1979 at the initiative of the countries of the Asia-Pacific region and the Food and Agriculture Organization (FAO) of the United Nations with support from several other UN bodies and donors. The Centre came into being to meet the felt needs of the developing countries at that time as an institution for promoting integrated rural development in the region. From the original six members, CIRDAP has now grown up as a Centre of 15 member countries. The member-countries are

Afghanistan, Bangladesh (Host State), Fiji, India, Indonesia, Iran, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand and Vietnam. Operating through designated contact ministries and link institutions in member countries, CIRDAP promotes regional cooperation. It plays a supplementary and reinforcing role in supporting and furthering the effectiveness of integrated rural development programmes in Asia and the Pacific.

Cygnus Hospitals

In 2011, a group of highly skilled doctors observed that all major hospital chains had been focusing on metro cities, and the district headquarters and towns in India remained untouched by the revolution of superspeciality healthcare. The passion to bring accessible, finest quality healthcare, at minimum costs, led to the laying of the foundation of Cygnus hospitals. In this short span of three years, Cygnus Hospitals has developed into a 10 superspeciality hospital chain of medical excellence, with strength of more than 1000 beds, served by 1600 strong medically skilled workforce, providing international standard healthcare to over 1 million lives in smaller communities across north India. Healthcare, as any other industry, faces three core issues which Cygnus through its business model hopes to resolve.

Gaon Connection

Gaon Connection is India's biggest rural media platform, a two-way street that takes information to knowledge-starved rural communities and brings information about everything from problems to role models from media-dark areas to urban India. We create content customised for the rural citizens. We create innovative outreach mechanisms to directly reach rural citizens We work with brands and government to take their message to rural citizens Our Verticals Gaon Connection has several key verticals which includes digital, video content, print, audio content, India's biggest rural media survey team, and a massive ground presence of smartphone-armed cadres at the district, block and gram panchayat levels. Together, it is a combination unmatched in India's media landscape. Awards & Recognition Gaon Connection is currently working across Uttar Pradesh, Bihar and Jharkhand and soon expanding its content footprint to all Hindi speaking states. It has won some of India's highest journalism awards including, twice, the Ramnath Goenka Award, and five times, the UPFPA-backed Ladli Award for writing on gender

Rockman Industries

Rockman Industries was incorporated in the year 1960 as a bicycle component manufacturer. Today, the company is a leading Aluminum die casting components, machined & painted assemblies supplier to world's largest motorcycle manufacturer and renowned automobile OEMs. Having five plants located at, Haridwar, Ludhiana, Chennai & Bawal we have capacity of more than 65000 tonnes of aluminum processing annually. We have expertise in all the three casting processes (GDC, LPDC, and HPDC). Rockman is industry leader in 2 wheeler alloy wheels with installed capacity of 5.8 million wheels annually. Apart from 2 wheeler alloy wheels we are into manufacturing of cylinder head, cylinder block, crank case, crank case covers, oil pan, transmission housing, etc. Rockman is also manufacturing drive chains, cam chains, and starter chains for motor cycles; supplying to OEMs and also in after market. Rockman has recently diversified into Carbon Composites Technology through acquisition of a British-Indian enterprise, Moldex Composites, providing world-class and cost-effective advanced composites solutions. With this acquisition, now Rockman is ready to cater to the global shift towards carbon fibre in automobiles, besides an entry into motorsports and aerospace.

National Innovation Foundation

The National Innovation Foundation (NIF) – India, set up by the Department of Science and Technology (DST), is built on the philosophy akin to the behaviour of a honey bee. NIF has taken major initiatives to serve the knowledge-rich but economically poor people of the country. It is committed to making India innovative by documenting, adding value, protecting the intellectual property rights (IPR) of the contemporary unaided technological innovators as well as of outstanding traditional knowledge-holders and disseminating their innovations on commercial and non-commercial basis.

UNDP

UNDP works in almost 170 countries and territories, helping to achieve the eradication of poverty, and the reduction of inequalities and exclusion. We help countries to develop policies, leadership skills, partnering abilities, institutional capabilities and build resilience in order to sustain development results. UNDP has worked in India since 1951 in almost all areas of human development, from democratic governance to poverty eradication, to sustainable energy and environmental management. UNDP's programmes are aligned with national priorities and are reviewed and adjusted annually.

UNICEF

UNICEF is fully committed to working with the Government of India to ensure that each child born in this vast and complex country gets the best start in life, thrives and develops to his or her full potential. The organisation began its work in India in 1949 with three staff members and established an office in Delhi three years later. Currently, it advocates for the rights of India's children in 16 states. India is home to the largest number of children in the world with nearly 40 per cent of its estimated 1.2 billion population under the age of 18. The gross domestic product (GDP) in India has grown at a decent average over the last five years. However, the economic growth has not yielded commensurate results in the reduction of poverty and disparity. About 1 in 3 child lives in poverty and close to 53 per cent of adolescent girls and 30 per cent of adolescent boys are anemic. More than 6 million children aged 6-14 years drop out before they complete the full eight year elementary education cycle. While 1 in 4 women was married before the age of 18 and 10.1 million are engaged in child labour.

NIRDPR

The National Institute of Rural Development and Panchayati Raj (NIRD&PR), an autonomous organisation under the Union Ministry of Rural Development, is a premier national centre of excellence in rural development and Panchayati Raj. Recognized internationally as one of the UN-ESCAP Centres of Excellence, it builds capacities of rural development functionaries, elected representatives of PRIs,

bankers, NGOs and other stakeholders through inter-related activities of training, research and consultancy. The Institute is located in the historic city of Hyderabad in Telangana state. The NIRD&PR celebrated its Golden Jubilee Year of establishment in 2008. In addition to the main campus at Hyderabad, this Institute has North-Eastern Regional Centre at Guwahati, Assam to meet the NE-regional needs.

CEE

Centre for Environment Education (CEE) was established in August 1984 as a Centre of Excellence supported by the Ministry of Environment and Forests, Government of India. CEE, a national institution with its headquarters in Ahmedabad, has a mandate to promote environmental awareness nationwide. CEE is committed to ensuring that due recognition is given to the role of EE in the promotion of sustainable development. CEE develops innovative programmes and educational material, and builds capacity in the field of education and communication for sustainable development. It undertakes demonstration projects in education, communication and development that endorse attitudes, strategies and technologies that are environmentally sustainable.

CBM

CBM (formerly Christian Blind Mission) is an international Christian development organization, committed to improving the quality of life of people with disabilities in the poorest communities of the world.[1] It is considered one of the world's oldest and largest organizations working in this field. CBM targets the people affected by disability by supporting local partner organizations to run programs in the fields of healthcare, rehabilitation (community-based rehabilitation – CBR), education and livelihood opportunities. CBM reached more than 38.9 million people in 2015.[7] It supports more than 650 partner-projects in 63 countries and works with various partner organizations, including disabled people's organizations, mission agencies, local churches, self-help groups and relief agencies. It has (as of 2017) 11 member associations in Europe, North America and Oceania, comprising Germany, Switzerland, Italy, Australia,[8] New Zealand, the United Kingdom,[9] Ireland, Kenya, South Africa, the United States[10] and Canada.

Baker Tilly

As the world is converging into a single global entity, technology is blurring the lines between geographies, services and solutions. In this era of a flat, borderless world, Baker Tilly DHC is committed to going beyond service into value addition in the truest sense of the word. To understand not just what our customers want, but what their businesses needs; to meet not just immediate requirements, but provide long-term solutions; to being not just reactive to client needs but being proactive to solve their future challenges. Because at Baker Tilly DHC, we believe there's a thin line between 'delivering a service' and 'delivering value'.

Summary

Innovior and AIILSG in association with the Center for Rural Technology (CRT) at IIT Guwahati organized a two-day event called 1st Rural Dialogue on 7th July. This was a unique platform to bring together representatives from rural communities, to understand their needs and their aspirations. Leading policy makers, technocrats, village level entrepreneurs, financial institutions, district administration, village panchayats and renowned experts joined the event to discuss and exchange experiences and good practices on issues related to innovation in rural areas and provide awareness on various potential solutions. Former Principal Scientific Advisor to Government of India Dr. R. Chidambaram inaugurated the event and chaired a session on Innovation to Enhance Prosperity and Well-being of Rural Communities. Key officials from Indian Institute of Entrepreneurship, UNICEF, NEERI, MS Swamainathan Research Foundation etc. deliberated on customization and delivery models of various technologies for resource crunched areas. The event also showcased cutting-edge technologies, latest innovations, useful and replicable ideas and actions on various aspects of rural development through six more technical sessions, exhibition and closed group interactions.

The ideas discussed in two days spanned from techno-managerial interventions for rural healthcare to making self-sufficient primary schools for improvement of rural education. Particularly in agri-food sector, need for developing appropriate agricultural implements, technologies for commercialization of traditional food products and self-life improvement of food produces pertaining to North Eastern region received particular attention. To find solutions for all these problems, CRT, Innovior and AIILSG will be involved directly or indirectly in near future. Expectation of the event is initiation of series of synergistic activities between different governmental and non-governmental organizations to create an ecology of rural entrepreneurs. Such an ecology will finally catalyse positive changes in the lives of rural communities of Assam and entire NER.

Background

Rural development is key to the economic, social and environmental viability of nations. Unfortunately, even after seventy years of independence rural India is still struggling with poverty, less access to basic need, minimum public facilities and capital, low productivity of human resources, food security. To deal these challenges a host of multi-sectorial activities are required, including the improvement of agriculture, promotion of rural industries, creation of requisite infrastructure and social overheads, as well as establishment of appropriate decentralized structures in order to allow mass participation. Also globalization, and issues of environmental pollution and climate change complicates the spectrum of rural development even wide. A paradigm shift in approach is required to reduce the challenges and magnify the opportunities prevailing in the rural areas.

To contribute towards the concept of rural development in view, Innovior formally launched the Rural Dialogues on 5th May, 2018 at India Habitat Center, New Delhi. The event was an overwhelming success with the participation of national, international delegates, researchers, speakers and partners. A series of dialogues was planned to exchange experiences and good practices on issues related to innovation in rural areas and provide awareness on various potential solutions. The eight North Eastern (NE) States of India is a landlocked landmass sharing a long international border with Bhutan, China, Myanmar and Bangladesh and weakly linked with the mainland of the country. Apart from the difficult geography, also these States were re-organized mainly on linguistic basis and due to political exigencies emanating from so much of diversity in ethnicity, culture and levels of underdevelopment. That is why in the perspective of rural development in India this NE region is a unique space. Hence the first Rural Dialogue was initiated at Guwahati targeting the entire NER.

Objectives of the event

Creating awareness on innovation and opportunities in livelihood transformation
Share knowledge between innovators, farmers, industry and policy makers
Identify relevant policies, initiatives and programmes that can support rural areas to benefit from technological change
Promote innovative technologies for clean water, waste management, energy, education, agriculture, healthcare and handloom for social and economic empowerment of last mile communities

Day 1, 6th July 2018

The Initiation

The inaugural session started with the auspicious lamp lighting activity by Prof. R. Chidambaram, Prof. Gautam Biswas, Ms. Anuradha Das, Prof. Shashindra Kakoty, Mr. Pashim Tewari, and Dr. Tushar Rane. Ms. Anuradha Das & Mr. Rajiv Kumar gave their opening remarks to emphasize the background of the networking event and the transformation it is expecting. "If the rural India develops then the country develops" the statement Prof. Kakoty made in the session to reflect the vision behind the Rural Dialogue. Continuing the same philosophy Prof. Gautam Biswas spoke about possibility of science and technology interventions in sectors starting from health and sanitation to natural resource utilization can develop rural areas without converting them into some unplanned urban spots. Mr. Pashim Tewari extended the idea that any rural development should recognize the strength of the rural areas. Instead of bringing in innovations from somewhere else one should provide opportunity, resource and knowledge as per requirement to create innovation from a rural population. Dr. Tushar Rane further emphasized the importance sharing of knowledge to people for positive transformation of their lives with experiences of UNICEF in Assam and elsewhere. To set the pace of the event Prof. R. Chidambaram delivered an informative lecture on Rural Technology Development and Delivery: The Issues. The lecture highlighted need of collective effort in Development and Delivery of technologies in Rural sector. Traditionally pattern of "Technology Development" is weak in both academic and industrial spaces. Technology Development Through Enhanced Academia – Industry Interaction Interfaces (e.g. CAR, CMAT & CAREL of PSA's Office for Automotive, Machine tools & Electronics Hardware) for 'pre-competitive applied research' and 'directed basic research' is important in Technology Development. Technology Delivery mechanisms (e.g. Rural Technology Action Group RuTAG of PSA's Office) can be Through Knowledge Transfer, Knowledge Brokering, Scaling of Innovations, Concept transfer followed by Re-Innovation.

Exhibition

As they say "seeing is believing" nothing can match physical presence of the equipment to inform and inspire an end-user. To show case already available technologies applicable in villages, a rural exhibition was arranged. The arena was inaugurated by Prof. R. Chidambaram. It has collection of technologies starting from handicrafts to agro-implements, refrigerated storage for vaccines to solar power generators. Some of them were frugal technologies waiting for commercialization and some were already in commercialized one. Organizations like Response Renewables, Kashyap Infrastructure, MachPhy Solutions Private Limited, National Innovation Foundation, RuTAG NE, Bethany Society, NEERI, and CRT, IITG presented the appropriate technologies which not only created business opportunities but also motivated rural entrepreneurs to realize the importance of technology in rural enterprises.

Glimpses

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TECHNICAL SESSIONS

Theme 1

Innovation to Enhance Prosperity and Well-being of Rural Communities

Focus Industries

Agro, food, tourism, forestry, extractive industries, manufacturing and public goods

Chairperson

Dr. R. Chidambaram,
Former Principal Scientific Adviser to the Government of India

The first talk of the session was delivered by Dr. Abhijit Sharma. The talk was about Rural Entrepreneurship through dissemination of innovative technology and skill development especially Indian Institute of Entrepreneurships experience around it. Challenges of the MSMEs can be certainly tackled through innovation and appropriate skilling.

Dr. Nitin Mourya spoke about innovation scouting and channelizing through social or commercial channels. NIFs efforts in converging ideas, resources, and know-hows to develop rural sectors appeared in his lecture. Also he talked about mechanism of absorbing risk of innovators coming into commercial existence through collateral free credit products.

Mr. Sunil Jose the founder of Hydrobloom a hydroponics practicing venture, highlighted the importance of technology for production of food to fodder which can work as a sustainable production system in rural areas.

Mr. Atul Mishra as an innovator and CEO of Solmitra Power & Steel Pvt. Ltd. Talked about goals of the company to minister the ubiquitous electricity issues in rural areas. High quality, affordable and aesthetic products in the solar energy space by deploying appropriate electronic components can change the rural scenario.

Theme 2

Creating Jobs and Economic Opportunity Through Innovation

Promoting Entrepreneurship

Examples of Successful Rural Firms and Channelizing Businesses to Rural Areas

Chairperson

Mr. Pashim Tewari,
Technical Director
AIILSG

Ankita – Matratva Dairy Farm: Her speech described how they work for the mass development and promotion of Desi Cow Breeds and create awareness about their products in an eco-friendly way by following integrated model of farming.

Pradeep – MachPhy Solutions: Discussed about the importance of cost effective cooling and refrigeration systems. He also described on how they worked on finding solutions by focussing on affordability, quality and scalability of their products. Different types of products using renewable energy sources developed by them were also described in his speech.

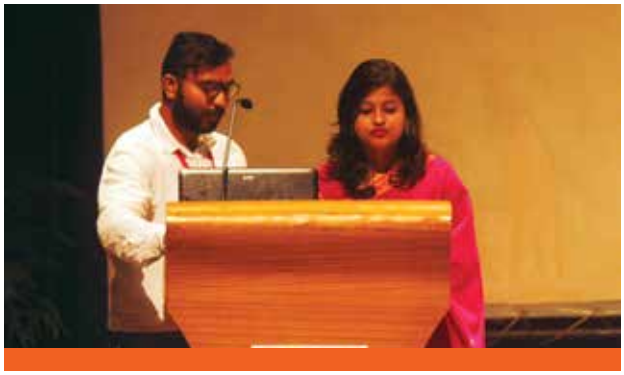
Dr. Suchin Bajaj – Cygnus Hospitals: He discussed on his stories, struggles and hope for social entrepreneurs against different odds that come on the way. He gave a brief insight on the background of the healthcare situation in India and how it is struggling in this sector. His reason for setting up hospitals in small towns was to bring healthcare sector to the people who are in need of such facilities and save lives by providing proper treatment in time.

Sabyasachi Mukhopadhyay – Low Cost AI Based Early Stage Disease Detection & Impact on BOP (Bottom of Pyramid) Level: A talk on low cost affordable healthcare. How technologies such as computer vision, machine learning, deep learning algorithms can be utilized for disease identification. He has also demonstrated a smartphone based early stage cancer detection device which they are developing with an intent to replace painful and cost effective biopsy, cheaper, accurate, portable and faster than the existing process of detection.

Nitin Akhade – Livelihood Opportunities Through RE-Technologies: He described about their organization 'clean energy access network', an Industry network for decentralized renewable energy. They focus on providing small solutions that can benefit rural consumers and earn livelihood through them. The Chairperson summed up the session with a positive note on the requirements and possibilities of having role models to transform the rural community. He also clarified that this session was about jobs and how to create them in rural markets through innovation. Existence of conflict between technology versus job creation was also cited in order to highlight the importance of constant skilling and re-skilling of the people in order to get back into the job market. He also gave an example of DST group working on electrical vehicle system as a model to provide jobs as well as go towards high technology sustainable environment base system.

Video Screening

A short video was screened to present Rural Technology Action Group (RuTAG) and Center for Rural Technology (CRT), IIT Guwahati and their activities. RuTAG was conceptualized by PSA to assist in assessing and upgrading the technology needs and the current methodology status of different rural occupation groups, i.e. farmers, rural artisans and the landless, to enable them to add value to their products & services. On the other hand, CRT's role is to promote multidisciplinary activities; providing science and technology solutions, capacity building, providing consultancies etc. for the rural sector especially in the North Eastern India.



CRT's Initiatives towards Rural Development: Appropriate technology development to dissemination

The session consisted of presentations of the Appropriate Technologies under development at Centre of Rural Technology, IIT Guwahati.

Briquette making using waste biomass and analysis of its properties

Agricultural waste such as grass, dry leaves; straw, rice husk etc. are readily available biomass in rural areas. Briquetting is an easy and cost-effective technology to make good use of this biomass for producing briquette fuel. The project was determined to optimize thermal efficiency and increase calorific value of the briquettes. 'Waste to gold' and 'clean cooking' is the major driving force driving this project. (Mr. Raghavendra Chauhan)

Characterization of bell metal on the basis of study of its processing by artisans of Assam

The project aimed at characterizing methods of production of bell metal articles (mostly utensils) from various regions of Assam. There is a need for product diversification in order to compete with the contemporary markets to earn both profit and recognition for artisans. (Ms. Srimonti Dutta)

Potential Bio-resources from North-East India as an alternative to customized sanitary napkin

Traditional ways of producing and using sanitary napkins is not only expensive, society is not aware about disposing them either. This project looks at local fibre producing material like Areca nut which is available in abundance to replace absorbent material in production of sanitary napkins. This new material is cheaper and performs better. Also, Areca nut husk can be useful for producing paper, bags etc. (Mr. Sumit Kumar Das)

Synthesis and characterization of magnetic nanoparticles:

Drinking water that contains fluoride seems harmless but causes fluorosis. This project aims to develop a portable water filter for removal of fluoride using nanoparticles coated with activated charcoal. Also an experiment with green tea polyphenol coating showed antibacterial properties enabling integration of both materials to develop a better solution. (Mr. Manoj Sharma)

Assessment of Groundwater quality and performance monitoring of an indigenous household groundwater filter unit of North Guwahati (Assam)

Studied the current indigenous water filter systems and analysed possible simple modifications for the same. Comparative studies to understand effective and ineffective methods were made. (Mr. Ankit Soni)

Rural information and communication Technology

Identification of difficulties in understanding computerised interfaces and overcoming same by making simple user-friendly interfaces that can be read by illiterates. One of the important features of the project is to bring maximum information from various sources in one interface. (Mr. Suranjeet Basumatary)

Day 2, 7th July 2018

Laboratory visit

To demonstrate possibility of technology in Rural Development two laboratory visits were organized on day 2 of the event.

Tissue culture is a technology that helps in developing improved, resilient, and controlled varieties of crops/ plants and therefore supports sustainability of agriculture. The tissue culture laboratory at IITG is working towards the similar goals by involving large scale propagation of plants of medicinal and commercial value using in vitro techniques.

One of the major environmental problems faced by India is solid waste management due to absence of appropriate strategies, methods for mobilization of financial resources and the necessary infrastructure for organized waste management (WM). Hence, a visit to WM lab was arranged to seek some of the solutions. For example, Biological treatment of organic wastes was demonstrated i.e., food waste, sludge, aquatic and terrestrial weeds utilization through composting, vermicomposting and anaerobic digestion.

TECHNICAL SESSIONS

Theme 3

Rural Entrepreneurship Through Technology Innovation & Skill Development

Role of Skilling

Rural Communities on Innovative Technologies for their economic growth & Improving Quality of Life

Chairperson

Ms. Anuradha Das
CEO
Rural Dialogue

Dr. Nitin Labhsetwar- CSIR 800- Affordable and accessible innovations for inclusive development.

Topics covered- MAGT (micro assistant green technology), Rapid composting, Mass scale spirulina protein production, Rural energy.

Dr. Sriparna Bhuyan Baruah- The clusters of North East India. Topics covered: - Rural Entrepreneurship, MSME (micro, small and medium enterprises), market linkage, social mobilization.

Mr. Prasanta Kr Nath- APCOM educational and cultural development society. Topics covered: - Rural Development, education

Prof. Ram Gopal Uppaluri- Importance of waste management and treatment as well as processing in rural development. Topics covered: - Waste management, Effluent treatment, Incineration, Recycling.

Mr. Santosh Behera- Innovation in technology creates participation of community in rural dialog. Topics covered: - Communication Skills, community participation, community interaction.

Mr. Thachinamurthy Krishnan- Building Community Enterprises, M.S Swami Nathan Research Foundation. Topics covered: - Research and development in agriculture, Bio technology, Bio diversity, Food security, Eco-technology, Coastal systems, IEC, Ecological hotspots, Sustainability, Building community institutions.

The Chairperson conveyed this session was based on "Rural Entrepreneurship" and how technology as well as skills can help it. Lot of people in the rural areas are unaware of the technologies which are available and they can use. This session was about trying to understand how those technologies are helpful for rural entrepreneurship and how to fulfil the gap between technology and rural population.

TECHNICAL SESSIONS

Theme 4

Key drivers for Rural Transformation with focus on Livelihood Challenges

Opportunities and Policy Changes

A Dialogue with Entrepreneurs/ Innovators

Chairperson

Prof. L. Rangan
Professor
BSBE & CRT

This session mainly dealt with the sharing of ideas in order to increase the quality of life of the people living in the Rural areas. The session was moderated by Prof. Latha Rangan of BSBE Department IITG and Mr. Rajiv Kumar, Mission Director, Innovior. The main key drivers being Agriculture, Health care, Energy, Telecommunication etc. , the involvement of intellects in any of these sectors are important. The participants shared experienced case study and challenges faced and if the want a shift or transformation either related to policy development ot technology improvement.

This open session was started by Prof. S.K. Kakoty, Head of Centre of Rural Technology, IITG, who shared experiences of RuTAG.

- A team member of the Meghalaya Basin Development Authority briefly shared the problems of market linkages and the products of rural areas being up to the standards of the market. For Dr. Siddhartha Singha quoted that the main barriers of agricultural sectors are such as the production processes not being scientific and lack of availability of labs for testing.
- Mr. Kumar Ratan from CBM, Bangalore, spoke about how sustainability is a major aspect in bringing up any new idea. He recommended that involvement of Sarpanchs of Panchayat Raj and other important local government officials are important and need of policy making along with campaigns are necessary.
- Mr. Partha Konwar and Tilak Das representing from Drishtriya talked about the big problem faced in delivery of product because of the women sector not being able to give their full time in the work. Also the suggested that this problem should not be taken as a economic problem but rather a social problem.
- Miss Maikam Kurwa farom Meghalaya Basin Development Authority shared that how water pollution is a big challenge in the Jaintia Villages. Although they have tried normalizing pH level of water, this process is costly and finance is a big problem.
- Mr Bhibuti Lahkar from Manas shared problems associated with water percolation and cold storage units, and policy making. Mr. Rajiv Kumar suggested how GIS technology must be used on all water resources and for policy making they can log on to www.mygov.in so as to suggest any solutions to policy related issues. Also Dr. Siddhartha Singha suggested instead of just using cold storage units controlled atmosphere storage must be used in order to store multiple types of agricultural produces.
- In conclusion Mr. Rajiv Kumar suggested how value addition to agricultural products can lead to increase in value in market and provide better economy to rural society.

In the end of the session Prof. Latha Rangan rightly quoted that how rural transformation is not just a myth but a reality. There were challenges discussed as well as suggestions made how to move from replication to an innovation. In order to have connectivity, resource mobilization and the upliftment of the rural sectors we need to have three A's i.e Awareness, Accessibility and Affordability.

Theme 5

Rural Areas as Places of Opportunity

Role of Skilling

Additive and distributive manufacturing, Quality of Life transformations, Supportive innovation- from ideas to scale up. How policies can support rural innovation and implantation; examples from practice

Chairperson

Dr. Rakhi Chaturvedi
Professor, BioScience and BioEngineering
IIT Guwahati

Chairperson introduced the topic of discussion to be "Policy Decisions and Scale up of Innovations". We have the innovators and product in the place but it's important to take it to the user and most importantly the product has to be marketed. In this process there is a need of some well-defined policies. It may be financial policy or scale up policy.

Mr. Prateek Shekhani- His talk insisted that there is a huge requirement to shift our focus to the development of Rural India as it is the true driver of growth of our economy. He talked about his own company 'RESPONSE Renewable Energy Limited' which works on developing solar assets in different parts of the country, installing solar equipment. He mentioned about the key challenges faced by rural entrepreneur and how to overcome it. He briefed on what it takes to build and scaling up of a product. He explained in in five major steps- Ideation, Imitation, Execution, Sustainability and Scaling up.

Some major projects by RESPONSE on Rural Areas include 11MW Solar Plant at Bihar, Solar Power Lighting System, Solar Power RO plant, Solar Power agricultural pump.

Dr. Sudip Mitra- His discussion mentioned about two important issue of Scaling up. Vertical and Horizontal Scaling. Vertical Scaling includes inclusion of institutions. Horizontal scaling up includes extend of geographical area up to which it can reach. Considering complexity of resource availability, resource utilization, resource management, we need a system which is resource efficient and where business can be done in a profitable way. He presented 5 important points for overall development of rural entrepreneurship which includes- Partnership, Financial Stability, Mnagement, Policy support and Local Capabilities.

Dr. Bhagat Lal, Biozatra- He discussed on being the catalyst to bridge the gap between agro and allied ecosystem. He gave a brief on his company BIOZATRA. They are trying to build a data driven effective and efficient management and intervention system with innovative sustainable design and delivering customized agricultural technology as per requirement. Related to policy he prosed on animal identification database policy.

Dr. Bibhuti Lahkar- He discussed on the scenario of adaption of technology in North East India and Quality of life transformation. He mentioned how his organization is helping people from Manas region of Assam to switch for environment friendly cook stoves and how to use it. They also helped people of that region to take up kitchen garden as livelihood option. He concluded his talk by proposing policies on livestock and Grazing policy.

Mr Hiren Bhasvar, Innovator and Director, Kashyap Infrastructure briefed about his company Kashyap Infrastructure which works mostly on renewable energy. Solar Site analyzing, Design, Construction, Monitoring and Financing. Solar Powered RO purification system, Solar power Aerator system for Prawn farming.

TECHNICAL SESSIONS

Theme 6

Supporting Businesses to Innovate

Opportunities and Policy Changes

A Dialogue with Entrepreneurs/ Innovators

Chairperson

Ms. Suja Warriar
Senior Member
CSR Infosys

Mr. Rajiv Kumar- "When the tax paying population increases from 4% to 10 % then only rural development can happen". His talk emphasised on increase in the income of rural population so that they can contribute in countries GDP significantly. Strengthening of rural market can expedite overall growth of the rural population.

Mr. K M Deka- He shared SIDBIs initiatives of creation of Industries particularly relevant from rural sector. Told about Agro-entrepreneurship and its promise.

Mr. Kanagraj Ganesan- "Low carbon approach to sustainable living" was the topic of the talk delivered by Mr. Ganesan. He discussed low energy and cost effective thermal control solutions for buildings and farm structures.

Dr. Siddhartha Singha- He spoke about importance of processing for exploiting true potential of agricultural production of India. However, a proper policy approach is needed to achieve that potential. Also a detailed techno-commercial feasibility study is essential before planning for an agro/food processing business for survival for processing unit. Raw-materials for such industries have inherent challenges like right variety, seasonality, and low shelf life.

Mr. Pranjal Baruah- General Secretary Mushroom Development Foundation, Guwahati presented a viable business model with a strong social perspective around mushroom production.

Mr. Gunajit Brahma- A IIM trained Rural Entrepreneur shared his entrepreneurial journey and the challenges he faced. How Jivikansh is actively aggregating farmers and creating a value chain of many agricultural products of NER like joha rice, bora rice etc.

The chairperson summed up the talks and the discussion with a very optimistic remarks that the session and the program would surely make an impact on the rural entrepreneurs and community workers.

Out-of-the Box

An ideation session to identify certain important specific points/areas to work in near future. Among all the ideas suggested by the delegates five were recognized via a scientific evaluation process. The ideas were; shift from sick care to health-care, shelf-life extension of traditional exotic rice grains, block chain technology, multifaceted school as a catalyst for rural development, and exploitation of traditional foods of Assam.

The Conclusion

The two-day program came to an end with a very enthusiastic note. Prof. Sashindra Kr. Kakoty, Prof. Ramgopal Uppaluri, Mr. Rajiv Kumar, and Ms. Anuradha Das officially conducted the session. They pointed out the take away from the event. Rural development is not just a top-down activity. For wholesome development, potential in rural areas has to be considered and targeted differentiated approaches are required to solve the problems of such areas. Rural Dialogue was a networking platform to discuss how innovation can help rural areas and identify the best possible models for the rural communities. Undoubtedly technology support is critical for realizing the vast potential of the Rural Farm and Non-farm Sectors. Innovior, AIILSG, CRT-IITG and other stake holders extended their willingness to work collectively for variety of activities to contribute towards transformation of rural India.

Expected outcome of the event

- Knowledge sharing among various stake holders
- Joint developmental activities
- Collaborative research and development projects
- Resource sharing including of human resource

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Rural Dialogues

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