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SYMBIOSIS
INTERNATIONAL (DEEMED UNIVERSITY)



NABARD

National Conference on

Transforming Rural India 2030: Strategies for Sustainable Development Goals

Organised by

**SYMBIOSIS SCHOOL OF ECONOMICS
and
SYMBIOSIS INSTITUTE
FOR INTERNATIONAL BUSINESS**

Date: 18th January, 2019

Venue: SIIB Auditorium, Hinjewadi, Pune

----- In collaboration with -----

**National Bank for
Agriculture and Rural Development, Mumbai**



National Bank for Agriculture and Rural Development



Our Mission: Promotion of sustainable and equitable agriculture and rural prosperity through effective credit support, related services, institution development and other innovative initiatives.

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- Supervisory functions in respect of Cooperative Banks and Regional Rural Banks.



॥ सर्वज्ञं सर्वभूषणं ॥

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INTERNATIONAL (DEEMED UNIVERSITY)

**SYMBIOSIS SCHOOL OF ECONOMICS
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**A NATIONAL CONFERENCE
on
TRANSFORMING RURAL INDIA 2030:
STRATEGIES FOR SUSTAINABLE DEVELOPMENT GOALS**

18th January 2019

**In Collaboration with and Financial Support From
National Bank For Agriculture And Rural Development, Mumbai**



NABARD

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PREFACE

India has the highest rural population in the world, accounting for over 850 million (65 %) of India's total population. While the share of agriculture to the Gross Value Added (GVA) is 15.87% at current prices (2018-19), which has been steadily declining over the years, despite the same, the sector continues to remain a primary source of employment to 59% of the total male and 75% of the total female working population. Further, globally India is the second largest producer accounting for 7.39% of total agricultural output - at \$ 375.61 billion, although way behind China at \$ 991 billion.

Given the vast dimensions of rural India, and guided by the global goals of leaving no one behind, we are indeed troubled by newspaper Headline statements which include an array of issues, such as: Distress in Rural India (Hindu,

18th June, 2019), Rural distress continues to hit consumer spending in the hinterland (Livemint, 26th July, 2019), How can the Budget fix slowdown, rural distress and demand deficit? (Economic Times, 2nd July, 2019), Government to double farmers' income by 2022 by focusing on 7 sources of income, says Economic Survey (4th, July, 2019 - Economic Times), 32 years after first farmer suicide in Maharashtra, 'nothing has changed' (19th March, 2019, Business Line) - are some of the headlines marked which further elaborate multiple other concerns: i) Weak/ excess monsoons causing water related stress ii) Climate change and ecological conditions of agriculture affecting the productive forces iii) Good harvest and falling prices iv) High cost of production and price issues (Minimum Support Price) v) Inadequate transport and storage facilities for fruits and vegetables vi) Increasing unemployment and drop in non-farm employment vii) Rural poverty and farmer's suicides - and many more.

With India presently experiencing both a cyclical and structural slow down phase which has precipitated over a period of time, it was indeed interesting to understand the multi-stakeholder's perspectives towards achieving the Sustainable Development Goals (SDGs) 2030. For it is imperative that rural India cannot be left out for the SDGs to be a global success. I am sure the conference organized, "Transforming Rural India 2030: Strategies for Sustainable Development Goals", has brought to light a number of strategies and proposed interventions through the well-researched expert opinions, deliberated through the various tracks which have addressed goals 1 and 10 on Poverty and Inequalities (Track 1), goal 8 - employment and livelihood, goal 6, 7 and 9 addressing issues on water, sanitation, energy and infrastructure (Track 2, 3 and 4) - which has provided the guidelines for the way forward in the present report, towards inclusive development goals in India, without leaving anyone behind.

ACKNOWLEDGEMENT

Symbiosis School of Economics (SSE) and Symbiosis Institute of International Business (SIIB) jointly collaborated with National Bank for Agriculture and Rural Development (NABARD) to organise a one-day National level conference titled, "Transforming Rural India 2030: Strategies for Sustainable Development Goals", on the 18th of January, 2019, at the SIIB, Hinjewadi Campus Pune.

The conference was conceptualised as an outcome of our various meetings and deliberations with Dr U.S. Saha, Chief General Manager, NABARD, over research projects on infrastructure index and sustainable development goals for rural India. This resulted in the need to organise a national conference to get the perspectives of multiple stakeholders which would enlighten the participants for the conference. The rich thoughts of the resource persons, have been highlighted in the present report which will become reference points for the future research projects on sustainable development of rural India being undertaken by SSE.

We take this opportunity to thank NABARD and Dr Saha, for providing us an opportunity to organise the conference with the financial support. We would also like to thank the various officials of NABARD - Mr. U. D. Shirsalkar, Chief General Manager, Regional Office - Maharashtra, Pune and Nirupam Mehrotra, Deputy General Manager, NABARD, Mumbai for their sharing their research work at the conference.

Dr R.S. Deshpande, has been a valuable mentor and guide to Symbiosis School of Economics, we place on record our deep gratitude for Chairing Track I - "Income, Inequalities and Poverty". Dr Purnamita Dasgupta, for Chairing the session on "Energy, Water and Sanitation" and Dr Rajendra Kulkarni, Retired Chief General Manager, NABARD Regional Office, Pune - for chairing the session on "Rural Livelihoods".

The success of the conference is an outcome of the deliberations and invaluable inputs provided by the 15 speakers and the 200 participants. We take this opportunity to thank each of the resource person for their treasured contributions. The discussions and conversations on the side-lines of the conference indeed provide an opportunity to further ideate.

We are indeed indebted to our Chancellor, Dr S.B. Mujumdar, Pro-Chancellor Dr Vidya Yeravdekar and Vice Chancellor Dr Rajani Gupte for their constant support and encouragement towards organising conferences which involve multi-stakeholders' collaborative engagements.

We would like to appreciate the active involvement of our faculty, staff and students who have contributed towards the successful organisation of the conference.

Prof Jyoti Chandiramani,

Director - Symbiosis School of Economics
and Dean Faculty of Symbiosis International
(Deemed University).

Dr Asmita Chitnis,

Director
Symbiosis Institute of International Business.

ABOUT SUSTAINABLE DEVELOPMENT GOALS (SDGs)

The Sustainable Development Goals (SDG-2030) prescribed by the United Nations Development Programme (UNDP) came into effect on January 2016. The 17 global goals are built on the basis of the success of Millennium Development Goals. The United Nations Conference on Sustainable Development which took place in Rio de Janeiro, Brazil on 20-22 June 2012 resulted in the establishment of a high-level political forum for sustainable development. The SDGs have elaborated guidelines with targets and indicators for all countries to adopt in accordance with their developmental issues and environmental challenges. The 17 goals, include new areas such as climate change, economic inequality, innovation, sustainable consumption, peace, and justice, among other priorities, are a universal call for action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. The implementation of SDGs need every country to judiciously prioritize, and adapt the goals and targets in accordance with local challenges, capacities, and resources available. The SDGs are covering a broad range of interconnected issues, from economic growth to social issues to global public goods. The SDGs will have very significant resource implications worldwide (UNCTAD, 2014). The post-2015 UN Sustainable Development Agenda framework provides an opportunity to renew and integrate efforts in order to meet, to a significant degree, national and global aspirations in a defined time frame. There is a need for a strong commitment to achieving sustainable development targets in order to reduce poverty, social inequalities and the development of living conditions at local and global levels.

BACKGROUND: INDIAN SCENARIO

In India, achieving the SDGs to end hunger and extreme poverty by 2030 depends crucially on developing rural areas. Over 850 million people in the country live in rural areas, with livelihoods dependent on agriculture-based activities like crop husbandry, animal husbandry, fisheries, forestry etc. Furthermore, around 80 per cent of India's poverty concentrates in its rural areas. Poverty eradication and ensuring food and livelihood security will, therefore, not be possible unless agricultural productivity and rural incomes increase, which further depends on development of rural infrastructure especially irrigation, agricultural logistics and social infrastructure (i.e. health and education). With this background, a one-day National Conference on 'Transforming Rural India 2030: Strategies for Sustainable Development Goals' is organized by the Symbiosis School of Economics (SSE) and Symbiosis Institute of International Business (SIIB) of Symbiosis International (Deemed University) in collaboration with the National Bank of Agriculture and Rural Development, Mumbai and also with its financial support on 18th January 2019. The prime objective of this conference is to identify key challenges in achieving the Sustainable Development Goals (SDGs) in rural India and to provide solutions to attain the targets of SDGs within stipulated time. In order to accomplish the above objective, policy makers, practitioners, academicians, researchers, students and farmers are invited to exchange and share their experiences and research results on aspects related to sustainable rural development.

VISION AND MISSION OF THE CONFERENCE

- To assess the status of select SDGs related to economic growth, poverty and inequality, health and sanitation, education, gender inequality and availability and usage of affordable clean energy for India through the discussions and dissemination of information with the interaction with policy practitioners, academicians, scholars and other stakeholders for inclusive rural development.
- To understand the actual demand and need at the local level and at the national level for inclusive growth and development to achieve SDGs focusing on rural transformation within the specified timeframe 2030.
- To enable the National Bank for Agriculture and Rural Development (NABARD) to plan in progressing towards the achievement of better rural infrastructure and inclusive development by assessing the status of selected Sustainable Development Goals (SDGs) in the rural areas of Maharashtra.
- To enable the Symbiosis School of Economics to understand the current scenario related to SDGs for a research and development project on "Sustainable Development Goals for Rural Maharashtra: Achievements and Constraints".
- This inputs and recommendations for local and national development in relation to the international standards of "Transforming world: the 2030 Agenda for SDG" suggested by the distinguished speakers will help the participants to promote research and development work based on SDGs.

The major emphasis of this Conference is on the following dimensions of the sustainable rural development.

INCOME INEQUALITY AND POVERTY

India still faces two great burdens - poverty and hunger. About 27.5% of the population is multidimensional poor in the country. Similarly, 39% of children are stunted, 29% of children are underweight, and 53% women between 15 - 49 years are anaemic in India. Both poverty and hunger in the country are upshot of inequality. Though the Gini coefficient of income inequality for the country fell from 36.8% in 2010 to 33.6% in 2015, United Nation's estimate shows that if India stops inequality from rising further, it could end extreme poverty for 90 million people by 2019 and if it goes further and reduces inequality by 36%, it could virtually eliminate extreme poverty. It is, therefore, pertinent to discuss that how income could grow in India, particularly in the rural sector, by 2030, so as targets of SDGs 1, 2 and 10 could be achieved within the specified time period.

ENERGY, WATER AND SANITATION

India has emerged as the fastest growing economy in the world and is expected to be one of the top three economic powers of the world over the next 8-10 years. Nonetheless, more than 75 million people in the country lack access to safe water and over 50% rural households defecate in the open. Likewise, 237 million Indians have no access to energy. Keeping these figures in view, importance of energy, water and sanitation could not be understated. Promisingly, the Government of India has acknowledged these challenges and initiated several flagship programmes to reduce these figures significantly. Some of these programmes include Swachh Bharat Abhiyan, National Rural Drinking Water Programme, and National Solar Mission. With this backdrop, we aim to stress upon key challenges that India faces in achieving the targets of goals 6 and 7 of the SDGs with special focus on the rural sector. Further, contribution of these programmes in realizing targets of goals 6 and 7 are examined.

SUSTAINABLE RURAL LIVELIHOODS

The SDGs are an interconnected system of targets crucial to the well-being of the people. Hence, adoption of an integrated system approach is essential in achieving targets of SDGs in holistic manner. Sustainable livelihood approach emerges here as a good strategy. It is comprehensive since a livelihood includes income (both cash and kind), as well as the social institutions, gender relations, property rights required to support, and to sustain a given standard of living, and access to, and benefits derived from, social and public services provided by the state such as education, health services, roads, water supplies, and so on. In this session, an attempt is made to discuss the role of the sustainable rural livelihoods (SRL) approach in achieving different targets set under SDGs. It is also appropriate to discuss different challenges in adoption of the SRL approach and its limitations.

RURAL INFRASTRUCTURE

Infrastructure development plays an important role in implementing and achieving all SDGs. However, SDG 9 explicitly talks about Infrastructure and calls for increased investment in sustainable infrastructure. India, particularly its rural sector, is weak in both physical and social infrastructure. For example, around 25% of the rural households are still not connected with the electricity, 61% of rural roads is only surfaced, the doctor-to-patient ratio, which is about 0.57 per 1000 people, is even lower than the Asian developing economy average (1.2). Against this background, this session aims to highlight key challenges that India has been facing in infrastructure development and to identify the major strategies to deal these issues. Also, concerns related to infrastructure finance will be discussed, as it is critical for sustainable infrastructure development.

SCHEDULE OF THE CONFERENCE

9. 00 AM	Registration	
9.30 AM - 11.00 AM	Track 1: Income, Inequality, & Poverty	
	Chairperson: Dr R S Deshpande, Former Director & ICSSR National Fellow, Institute for Social and Economic Change, Bangalore.	
	Speakers <ol style="list-style-type: none"> 1. Dr R S Deshpande, Former Director & ICSSR National Fellow, Institute for Social and Economic Change, Bangalore. 2. Dr G K Choudhury, International Center for Agricultural Research in the Dry Areas (ICARDA), New Delhi 3. Dr Praveen Jha, Professor of Economics, Centre for Economic Studies and Planning, School of Social Sciences, Jawaharlal Nehru University, New Delhi. 4. Mr Nirupam Mehrotra, Deputy General Manager, NABARD, Mumbai 	
11.00 AM - 11.30 AM	Tea break	
11.30 AM - 1.00 PM	Inaugural Track: Overview of SDG Targets Related to Rural Economy <ol style="list-style-type: none"> 1. Mr U D Shirsalkar, Chief General Manager, Regional Office - Maharashtra, National Bank for Agriculture and Rural Development, Pune 2. Dr U S Saha, Chief General Manager, National Bank for Agriculture and Rural Development, Mumbai. 3. Dr Jyoti Chandiramani, Director, Symbiosis School of Economics, Pune 4. Dr Asmita Chitnis, Director, Symbiosis Institute of International Business, Pune 	
1.00 PM - 2.00 PM	Lunch break	
	Track 2: Sustainable Rural Livelihoods Chairperson: Dr Rajendra Kulkarni, Retired Chief General Manager, NABARD Regional Office, Pune.	Track 3: Energy, Water, & Sanitation Chairperson: Dr Purnamita Dasgupta, Head, Environmental and Resource Economics Unit, Institute of Economic Growth, New Delhi.
	Speakers <ol style="list-style-type: none"> 1. Dr Rajendra Kulkarni, Retired Chief General Manager, NABARD Regional Office, Pune. 2. Dr Tara S. Nair, Professor of Economics, Gujarat Institute of Development Research, Ahmedabad. 3. Dr Joshua Nallathamby Daniel, Chief Scientist, BAIF Development Research Institute, Pune. 4. Dr Govinda Kelkar, Senior Advisor, Landesa Rural Development Institute, New Delhi. 	Speakers <ol style="list-style-type: none"> 1. Dr Purnamita Dasgupta, Chair in Environmental Economics and Head, Environmental and Resource Economics Unit, Institute of Economic Growth, New Delhi. 2. Dr Arun Kansal, Department of Regional Water Studies, TERI School of Advanced Studies, New Delhi. 3. Dr Prakash Rao, Symbiosis Institute of International Business, Pune 4. Dr Hippu Salk Kristle Nathan, Associate Professor, Institute of Rural Management Anand.

3.30 PM - 4.00 PM	Tea Break
4.00 PM - 5.30 PM	<p>Panel Discussion: Role of Infrastructure Development in Implementation and Achievement of SDGs</p> <p>Chairperson: Dr U S Saha, Chief General Manager, National Bank for Agriculture and Rural Development, Mumbai.</p> <p>Speakers</p> <ol style="list-style-type: none"> 1. Dr U S Saha, Chief General Manager, National Bank for Agriculture and Rural Development, Mumbai. 2. Dr C S C Sekhar, Professor, Agricultural Economic Research Unit, Institute of Economic Growth, Delhi. 3. Dr Jyoti Chandiramani, Director, Symbiosis School of Economics, Pune. 4. Mr Dhyaneswar Bodke, Abhinav Farmers' Club, Pune
5.30 PM - 5.45 PM	Concluding Remarks & Vote of Thanks
5.45 PM	High Tea

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TRACK 1: INCOME, INEQUALITY, AND POVERTY

Chairperson: Dr R.S. Deshpande, Former Director & ICSSR National Fellow, Institute for Social and Economic Change, Bangalore.

Speakers

1. DR. G. K. CHOUDHURY

International Centre for Agricultural Research in the Dry Areas (ICARDA), New Delhi.

- Dr. G.K. Choudhury discussed the mission and vision of International Centre for Agricultural Research in Dry Areas (ICARDA). He spoke about ICARDA, an international organization undertaking research-for-development. Since its establishment in 1977, ICARDA has implemented research-for-development programs in 50 countries across the world's dry areas - from Morocco in North Africa to Bangladesh in South Asia. The centre, envisions thriving and resilient livelihoods in the dry areas of the developing world with adequate incomes, secure access to food, markets, and nutrition, and the capacity to manage natural resources in equitable, sustainable, and innovative ways.
- A number of initiatives of the centre are aligned with Sustainable Development Goals (SDG) 1: which speaks of ending poverty in all its forms. Some of the interventions are connecting crop-yield gaps and introducing innovative production pattern, improving livestock productivity with making strong value chains resulting in improved incomes.
- Further, in order to reduce poverty and enhance food, water, and nutritional security and environmental health in the face of global challenges, including climate change, ICARDA concentrates on moisture deficiency for the dry regions.
- The organisation employs strategies of zero budgeting and natural farming as well as capacity development of farmers for income enhancement and crop improvement.
- ICARDA also has gene banks which develop superior germplasm that can resist heat, drought and cold and give way to water efficiency. Their data on genetic resources and breeding is made available as international goods through open access initiatives.
- Given the challenges of non-tropical dry areas such as rising temperatures, critical water scarcity, diminishing natural resources, and an insecure food and nutritional future under often unstable social conditions, there is a strong need for immediate intervention by the state with such initiative to achieve SDGs with 2030.





Dr. R. S. Deshpande, Dr. Pravin Jha, Mr. Nirupam Mehrotra and Dr. G. K. Choudhury

2. MR. NIRUPAM MEHROTRA

Deputy General Manager, NABARD, Mumbai

Mr. Mehrotra introduced the new All-India Rural Financial Survey undertaken by NABARD. It not only analysed income levels and consumption survey but also included livelihood and financial parameters to understand the gravity of the situation.

- He presented the data and analysis from this survey. The sample size of the survey was 40,000 households distributed into 6 centres as per RBI classifications. Survey was conducted in 2017 and the reference period was 2015. The survey provides the estimates of income, consumption expenditure, indebtedness, other financial investment aspects such as saving, investment, pension etc., financial literacy, banking experience of households.
- The Household is classified into the agricultural and non-agricultural household. Parameters used for analysing the profile of agriculture household included percentage of agricultural household in a rural household, female-headed household, average age of the head of the household, average household size, education level of household beyond primary level, and persons trained in primary activity.
- Monthly household income sources of agriculture household from cultivation, accounts for 35%, livestock rearing 8%, other enterprises 6%, wage labour 34%, government/private services for 26% and other sources for 1%.
- All-India figures of the surpluses after deducting expenditure from income, resulted in Rs 1,779 surplus per month for an agriculture household.
- Borrowing pattern of agriculture, households were analysed on the basis of incidence of indebtedness, average amount of debt per indebted household, borrowing during the year. The percentage share of



the above-mentioned instances is 72% out of which incidence of indebtedness was 52.5%, debt O/S per indebted household was Rs 1.05 L and borrowing during the year was Rs 1.07 L.

- Income and expenditure across different land size classification revealed that: people having less than 0.01 hectare of land, earned an average monthly income amounting to Rs 8,136 while expenditure stood at Rs. 612. It was observed that the annual monthly income increased with land size, except for the household with land size less than 0.01 hectare. The source of income of this household from livestock is double and share from cultivation is low. Therefore, the promotion of livestock can be an intervention to increase the income of this household.
- Lastly, the granular data of average monthly income of agriculture household across states in India was presented and Punjab was the leading state with monthly income of Rs. 23,133. Detailed analysis of the data through the Gini coefficient which measures income inequality evidently showed the high coefficient of variation due to unequal distribution of land among masses. To address this inequality, policy interventions are necessary. Through analysis of the granular data, the State Governments, in this case, the Punjab Government should aim for data-driven policymaking.
- He concluded his talk by highlighting that access to credit could be linked to incomes, irrigation, the role of technology like Internet of Things (IoT), and increase support programmes. These were some of the speaker leading thoughts which he felt should be addressed by the data-driven approach of policy and planning.

3. DR. PRAVEEN JHA

Professor of Economics, Centre for Economic Studies and Planning, School of Social Sciences, Jawaharlal Nehru University, New Delhi.

- Prof. Praveen Jha expressed that contemporary challenges of inequalities, income, poverty, and employment need to be studied not only at the India-level but also on the global level. To understand the evidence-based policy pointers, there is a need for conceptual clarification hence he focused on scope, nature and importance of the concepts.
- As he proceeded, he raised the vital question of nature of persistent inequality, absolute or relative. He quoted Prof Amartya Sen who had raised similar question of inequality in which space should be targeted. Inequality has become a topic of grave concern across the global economic system for the last two decades. The world is presently facing exuberating rates of inequalities because equality in one sphere has dramatic consequences on another sphere. For example, if Multi-National Corporations are given full freedom to pursue their interest it will create a turmoil. So the question remains which particular type and aspect of inequality we should be addressing.
- He explained the conclusions derived from his study about the income gap between high salaried and low salaried person in an organization. He gave the example of high-income ratio in Wal-Mart which has increased to 1:1400 in roughly 40 years. Scandinavian countries ratio now touching 1:20. This is just one dimension of inequality i.e. functional distribution and thus there are many others.
- While addressing SDG goals, it is predominantly necessary to understand the reason behind these



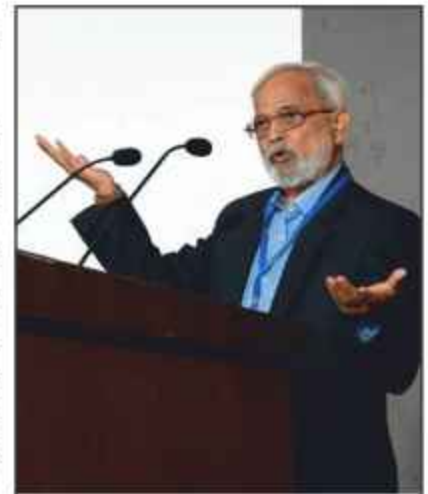
persistent inequalities. The Kuznets's inverted U-shape curve graph, puts forward the hypothesis that an economy initially develops and the market forces lead to increased inequalities which later decreases. This hypothesis has been disproved over the years and does not hold universal relevance at present. Also, the Kuznets's curve is based on 5% empirical evidence and 95% speculations. Thus it is important to recognise, that natural removal of inequalities is a myth and this requires precise interventions.

- Poverty is a multi-dimensional and complex concept, and therefore the measurement of poverty has evolved from caloric and money metric measures to multi-dimensional deprivation indices. The scholars of Poverty in India demonstrate the reduction of poverty, but there also exists the view which shows that poverty has not declined except for the short period of the 1970s to mid-1980s, thereafter, poverty has been rising. The caloric measure of poverty has been largely criticized.
- SDG 8 of Decent Work and Economic Growth, requires a timely intervention before the rising unemployment situation creates a chaos. He has analysed the rate of growth of employment generation in 27-28 sectors from 1980-81 to 2015-16. The analysis showed that the rate of growth of employment, has not only declined but became negative for all sectors. While it was 2.42 in 1980-81 it became -0.08 in 2015-16. India should focus on creation of jobs rather than the growth as a layman connects more with the consequences and outcome of growth. The question raised should be what is there for the common man in the 5-7% economic growth of a nation. Similarly, the focus on agrarian issues, basics to complex should be confronted and addressed to reduce inequality and poverty and help the layman to ripe the fruits of economic growth.

4. DR. R. S. DESHPANDE

Former Director and ICSSR National Fellow, Institute for Social and Economic Change, Bangalore.

- Dr. R. S. Deshpande emphasized on stylized issues of poverty and inequality in India. According to the speaker, the NSSO survey are carried out on the basis of household lists of Census of India and the poorest of the poor, destitute who are living on the streets are not listed on household listing resulting into exclusion of these people from the list. India needs to focus on the measurement of poverty in a more comprehensive manner. For example, Prof V B Rao suggested the decomposition of Gini coefficient and consumption survey, and this debate was extremely active between Prof Dandekar and Prof Mahalanobis.
- He then commented on the location of poverty, wherein as per his study, the correlation between agrarian distress and poverty, agrarian distress has a strange spread and it is dense and intense where there is grief or distress against states or governments i.e. specially in the Naxalites regions. It shows a dire need of giving attention to distress region from inequality and poverty point of view. He was a member of the Situation Assessment Survey- working group 2002, in which the question was asked to farmers if they would like to leave agriculture. And surprisingly, 40% of the farmers were ready to leave agriculture because of various reasons. To analyse the reasons groups under CM of states was formed who submitted reports to the Ministry of Agriculture, GoI but unfortunately no further action was taken.



- Further, he talked about the inequality of income in rural India. The trend of agricultural income from the 1980s to 2010 has been a little flat, not increasing very fast. Index of agricultural income hovering around 100-120 and CPI for the agricultural labourer is showing an upward rising trend. Clearly showing that number of farmers becoming poor is rising due to mismatch between increase in expenditure and income further leading to inequality. When studied the gap between rural and urban inequalities, obviously they were high. It was found that intra rural income inequality was not increasing contrary to the urban income because there was not much rise in the rural income.
- In order to measure inequality, returns to investment was used as a variable, where returns to investment have been increasing post-1990 in both rural and urban areas. An increasing trend was found more in urban compared to rural India, portraying high inequality. The demonstration effect among urban and rural has been widening due to commercialization and consumerism in urban areas which has impacted the expenditure of the rural people and pushing further towards inequality.
- He ended his talk by stating that inequality will always dodge the Indian economy due to our cultural heritage. Covering all aspects and qualities of poverty for its eradication is imperative and therefore the various interventions of poverty alleviation programmes are indispensable in order to attain the SDG goal one - towards zero poverty.

INAUGURAL TRACK: OVERVIEW OF SDG TARGETS RELATED TO RURAL ECONOMY



Mr U D Shirsalkar, Dr Jyoti Chandiramani, Dr Asmita Chitnis and Dr U S Saha lighted the lamp and inaugurated the Conference.

Speakers

1. DR. ASMITA CHITNIS

Director, Symbiosis Institute of International Business, Pune

- The track began with Dr Asmita Chitnis, Director, SIIB, Pune, addressing the audience about the importance of youth in contributing to the achievement of SDG targets (2030) and the key role that students play as citizens towards achieving these goals.
- She discussed how 193 nations in 2015 have signed up and adopted the 17 SDGs (2016-2030) that accounts for almost fifteen years and are working towards achieving these targets and how India needs to act immediately to be at par with the progress of these nations.
- She emphasized the role of citizens of India who need to work together towards the achievement of the goals, and that the government alone cannot be held responsible but also the citizens of India are equally accountable for the successful implementation of the SDG targets.



The release of '**Rural Infrastructure Development Index in Maharashtra**' (RIDI)
Project Report by Symbiosis School of Economics, Pune by Dr Ranjan Dash.



Dr. Asmita Chitnis, Dr. U. S. Saha, Dr. Rajendra Kulkarni, Mr. U. D. Shirsalkar, Dr. Jyoti Chandiramani

- Dr. Ranjan Dash, faculty at the Symbiosis School of Economics and the Principal Investigator of the RIDI Project, spelt out the objectives of the report, the key challenges and the report card for each district. The research project addressed the SDG 9 on infrastructure by creating an index which included the physical, social and institutional dimensions of rural infrastructure. The responsibility of constructing the rural infrastructure index was awarded by NABARD to SSE in Dec 2017, the work was commenced in Jan 2018 and was completed in a span of ten months.
- Dr. Dash discussed the objective of the research, which was to compute a comprehensive RIDI for 33 rural districts of Maharashtra, and to observe if there was any skewness of the distribution with respect to the 28 parameters considered and finally to present the same to the state government, with recommendations to improve infrastructure in rural areas of Maharashtra.



2. MR. U. D. SHIRSALKAR

Chief General Manager, Regional Office - Maharashtra, National Bank for Agriculture and Rural Development, Pune.

- Mr. U. D. Shirsalkar discussed how banks need to develop infrastructure in priority sectors so that credit absorption increases. He discussed the issue of how there are large scale imbalances in Maharashtra in terms of credit flows as mostly credit is absorbed in areas where the infrastructure is well developed. He lay emphasis on NABARD's involvement in infrastructure development when it is the role of the government that should be highlighting the same.
- He described NABARD's functioning at great length. He further stated that the priority sector lending was started in 1955-56, however, it's target was not achieved until 1995-96. Thus, it was suggested that the shortfall in the priority sector lending would cover under the gambit of NABARD leading to the setting up of Rural Infrastructure Development Fund (RIDF) which emphasized the role of irrigation, warehousing facilities, Anganwadi centres (apart from credit), among others, in overall developmental assistance for rural areas.
- He further stated that the initial focus of NABARD was the completion of incomplete irrigation projects and over the years, variety and quantum of projects covered under RIDF have increased many-fold. He emphasized on the role of NABARD in contributing to sustainable infrastructure development (20,000 projects were sanctioned by NABARD for Maharashtra disbursing a total of INR15,000cr in 2017-18).
- Looking at numbers, he mentioned that NABARD has been funding the construction of 17,000 km of rural roads which is currently helping 46,000 villages; financial contribution towards irrigational development facilities have led to 5.7 lakh hectare arable land being created for farmers; contribution towards the development of 5,000 Anganwadi centres helping 15,000 villages. Lastly, the Long-Term Irrigation Fund was started to complete the incomplete irrigation projects wherein in Maharashtra, 24 incomplete irrigation projects were completed and post this 5.7 lakh hectare of the land will be irrigated and arable.



3. DR. U. S. SAHA

Chief General Manager, National Bank for Agriculture and Rural Development, Mumbai.

- He discussed the role of NABARD in achieving the various SDG targets. He highlighted the fact that Maharashtra is the richest state of India but that richness is lacking in terms of inadequate conditions in rural areas. He discussed the challenge of uneven distribution of resources across the state causing regional imbalances which need to be addressed.
- He proposed how NABARD is working towards overcoming this challenge. The focus of his presentation was to discuss the present conditions of the SDG in India and the world, end poverty goal-food, zero hunger goal-nutrition, quality education, and clean water and sanitation.
- He discussed the role of NABARD in food production and livelihood focusing on women-centric



livelihood programs. He further discussed the inadequate infrastructure as a key challenge in attaining SDG targets and providing solutions for the same. The solutions suggested by him include the development of local initiatives of global awareness, resource sharing and collaboration and cooperation of stakeholders.

4. DR. JYOTI CHANDIRAMANI

Director, Symbiosis School of Economics, Pune.

Dr Jyoti Chandiramani expressed gratitude to the Management Team of Symbiosis International University, SIIB, and SSE faculty. She congratulated the team of faculty from SSE who worked hard on the Rural Infrastructure Development Index in Maharashtra' (RIDI) for Maharashtra State. Special thanks were conveyed to the NABARD officials, who had laid their faith in SSE to complete the research project successfully. She also thanked the key speakers and the resource persons who participated in the conference and were a part of the release of the research report. She placed on record her deep appreciation of the students and all present at the conference.



SSE Team - Dr. Jyoti Chandiramani, Dr. Ranjan Dash, Dr. Shrabani Mukherjee, Dr. Bidyut Ghosh, Dr. Varun Miglani



TRACK 2: SUSTAINABLE RURAL LIVELIHOODS

Chairperson: Dr. Rajendra Kulkarni, Retired Chief General Manager, NABARD Regional Office, Pune.

Speakers

1. DR. RAJENDRA KULKARNI

Ex-Chief General Manager, NABARD Regional Office, Pune.



- Dr Rajendra Kulkarni he began his talk by stating that the Government only has 11 years to achieve these goals, therefore, emphasis should be given to identify the key challenges for rural transformation. The objectives of SDGs are interlinked thus linkages between them should be found and crystalized into various actions that need to be taken. He further highlighted that India is expected to reshape the national development plans and set priorities in place towards achieving the SDGs.
- He therefore stated that there is a need to prioritize rural transformation, as 2/3rd of the population lives in rural areas, and contribute to 70% of the workforce, and 46% to national income. Since rural livelihood is a multi-layered and broad concept, he therefore threw light on rural transformation, macro concerns like inequalities, changing contour of rural India, role & limitations of government, structural changes in the rural economy, challenges in securing livelihood in agriculture.
- Inequality was the first concern and stated that as per IMF study 2015, an increase in the income share of poor and middle classes by 1% raises growth by 0.38% in a country over 5 years' period. While, an increase in the income share of rich by 1%, reduces the growth by 0.08%. He, therefore suggested that India need a more direct strategy to tackle inequality.
- He then went on to highlight the prevailing dualism in agriculture and in order to address the same, the principles of leaving no one behind should be followed. Also, the capacity building framework, should be in tune with the changing aspirations of rural youth. Most importantly, unless non-farm sector grows at a fast pace, livelihood in agriculture cannot be increased. He also spoke of the absence of adequate skill sets with the rural population, making it difficult for the people to be required or absorbed in the manufacturing sector and not increasing income is the prime cause of distress.
- Agricultural productivity differs due to the diversity of agro-climatic zones in India and to improve the situation technology can be the key driver. He then went on to add that the challenges faced by small farmers requires the attention towards remote area location, small land size, low levels of output which are invariably economically unviable to transport, and to add to the list is the case of weak institutions, absence of service support and unreliable infrastructure. In order to access the market, the entire effort for livelihood needs to understand each of these issues carefully.
- Along with the Government, Corporates also play an important role in transforming agriculture by developing technologies. The multiple stakeholders have been undertaking many experiments are which are indeed helpful when operated on the ground. Inevitably, these simple techniques of

management practices can improve the income and reduce the costs significantly becoming quick learning lessons for the farmers.

- Lastly, the role of Government in transforming the rural livelihoods cannot be challenged. The basic challenge in each department is timely allocation of budgeted funds which if supported by collective effort of the administrative mechanism and instruments will help achieve the SDGs. Therefore, the Government should take the lead in formulating a comprehensive policy and create a different component or window for rural infrastructure for agriculture which can also include insurance in farmer's operations, crop assessment, automated weather stations, drones, and other such timely interventions.

2. DR. GOVINDA KELKAR

Senior Advisor, Landesa Rural Development Institute, New Delhi.

- Dr Govinda Kelkar reviewed women and land, wage, livelihoods in rural India and analysis of policy practices with respect to SDGs in national context during the session. She began with the difference between two concepts, gender, and sex; where gender is a social concept and sex is physical.
- She has observed the difference between Millennium Development Goals (MDGs) and SDGs as the latter considered developing nations government as well as civil society organizations such as NGOs, movements, youth, women, etc. to work on the goals for 15 years i.e. from 2015 to 2030.
- The Preamble of SDGs says that no one will be left behind and we recognize the dignity based on human rights. To achieve gender equality and empowerment of all the girls and women is the goal. Real discriminations start when the girl child is born in countries like India and China who have a history of killing the girl child in the foetus stage or soon after the birth in the name of son preference. Hence, including girls in the goal is a progressive step.
- As a feminist researcher, she referred to two concepts by Prof Amartya Sen which developed the thought of economic development. The first development concept, has to be just and recognizing the unpaid care labour work equally, as professional work is the second.
- Women and women's work is not considered in the usual analysis but SDGs should be appreciated for the concrete step of including the role of women in goal one, three and five. For example, Goal one: End of poverty talks about women's control over ownership of land and other properties. Unless this target is achieved SDG one cannot be achieved. But conscious and simultaneous reforms are needed with SDGs. Any policy assessment in India is based on households as a whole head and while voting individual choice and preferences are considered. The policies also target employment creation of men and women but not asset distribution.
- If expansion of freedom is the development, then Indian women lack the freedom substantially. They have to face discrimination of two types vertical (laws, policies, communities, leadership) and horizontal (among men and women), dependency on the head of the household, lack of rights in



decision system, gender-based violence, asset-lessens of women.

- Condition of women in India as per NITI Aayog SDGs index 2019 is worsening. 13% of women are operational holders i.e. they do not own the land as per Census 2011. After the 2005 inheritance right, only 2% of women inherited land. The number of the girl child (0-6 years) per 1000 men is drastically decreasing from 927 in 2001 to 919 in 2011. To improve this situation, Government of India has set 10 goals, some of them are; to increase the sex ration to 954 per 1000 men, to increase the wage parity, to increase the seats of women in general elections, to increase the ratio of female labour force participation, to increase the number of girls from 15-49 years using modern family planning techniques.
- Recent success of China shows that by providing their independent rights women, peasants were mobilized. Land and asset rights are used to keep women powerless, determine their autonomy, self-determination, personal security, equality. Land gives power and parity to women. As per the SEWA study report, women managed fields, show higher productivity. Rural women hold the aspiration to own the land, policy, and practice need to consider women as farmers delinking it with ownership and land distribution. A conscious effort should be taken to change gender-norms, affecting both formal and informal institutions. Social norms which affect policies and mind have been changed but we need to change them faster.

3. DR. TARA S. NAIR

Professor of Economics, Gujarat Institute of Development Research, Ahmedabad.

- Dr. Tara Nair began with an explanation of the concept of sustainable which throws light on the needs of the present generation without compromising the ability of the future generations to meet their legitimate aspirations for a better life. Further, given a chronological understanding of the evolution of the term sustainable development, from the reports of the Bruntland Commission, to the change in the definition of livelihoods from the basic needs approach to becoming a complex combination of acquiring capabilities, non-tangible resources, the debate has moved to a new phase in current times.
- The challenge of actionable plans from SDGs for rural India should be dealt with concrete strategies and endeavours. Growth of the economy should get translated into the progress of individuals in terms of outcomes such as food security. In order to uplift people from poverty, they need to have access to the resources which can only be achieved through property rights and upholding of claims. It is not simple as it sounds as there are multiple challenges hovering around it. Some of them are trade-offs between livelihoods and climate changes, industrial growth affecting informal work arrangements, regulations leading to more vulnerability of the poor.
- Long-awaited quality reforms have been a need of the hour in India. These reforms should be related to the following objectives, which include: ensuring adequate access to resources, appropriate policies, institutional reforms leading to property rights through initiatives like land reforms, reforming legal



structure to fasten claiming ability of individuals and improve efficiency of judicial system.

- Political will and actions are the base for every socio-economic reform. Government has been working to overcome the challenges and reform the system through a finance-based approach by financial inclusion through bank accounts, crop insurance, and direct benefit transfers under different union and state government schemes. With support from the Government, participation from various stakeholder will play a crucial role in achieving SDGs.

4. DR. JOSHUA NALLATHAMBY DANIEL

Chief Scientist, BAIF Development Research Institute, Pune.

- Dr J N Daniel provided insights about rural population, food grain production, income which directly affect the rural livelihoods. For example, rural population comprises of more than 60% of the total population, with two-thirds of the rural households depending on land-based livelihoods. Food grain production in the country should be increased to meet the rising demands and he laid emphasis that future projections need to focus on both the quantity and quality of food production.
- Incomes from land-based activities have remained lower than other sectors of the economy and its growth rate is also lower than other activities.
- Some of the current facts were highlighted with respect to the current status of agriculture and crops in India. Land under cultivation is more than 50% and because of the mounting pressure of rising demand, land under forest areas has also been cultivated in India. The number of crops grown on land in a year is only 1.36 (i.e., with a cropping intensity of 136%) and this can be improved and increased. The productivity of many crops is lower than the average yields in other countries (wheat: 3.2 t/ha vs > 8.0 t/ha; rice: 3.5 t/ha vs 10 t/ha). Dependence on few crops and lack of adequate market linkages has therefore resulted in low farm incomes.
- Sustaining gains: high input agricultural models have been unsustainable; record yields of crops have not been replicated, water is the major constraint; quantity used is 2-3 times more than global averages, land degradation (about 44% of the land is affected in some way - erosion, salt, and chemical affected, waterlogging), post-harvest handling losses amount to about 5% for grains and more than 10% for fruits are the major hurdles which need to be tackled.
- As the challenges have been analysed, there is a need to study the opportunities and measures to be undertaken. Adoption of intensive crop management practices can help increase yields. Crop diversification will reduce crop failure and also the risk of glut in the market. Tree-based farming on less productive land can produce fodder and fuelwood in addition to food and also spoke about livestock-based livelihood for landless and marginal farmers. He spoke of how livelihood initiatives should go beyond raising incomes above the poverty line.
- Organic, healthy and nutrient food markets should be tapped to increase the income from agriculture. Land-based livelihoods will continue to play a significant role in the rural transformation of the country and help achieve several targets under Sustainable Development Goals.



TRACK 3: ENERGY, WATER & SANITATION

Chairperson: Dr. Purnamita Dasgupta, Chair in Environmental Economics and Head, Environmental and Resource Economics Unit, Institute of Economic Growth, New Delhi.

Speakers

1. DR. ARUN KANSAL

Department of Regional Water Studies, TERI School of Advanced Studies, New Delhi.

- Dr Arun Kansal discussed the problems in water sectors and highlighted recommendations for the same. He categorised the four main problems under the broad subject matter as: Water in Gender, Equity, Sanitation and Energy resources.
- Water security is one of the challenging aspects Indian face on a daily basis. The development theories regarding water security has two main two branches: Equity and Inclusion. He laid stress that closing the gender gap is one of the most effective tools for delivering this development objective.
- With respect to the subject matter - "Water in Gender", he discussed around the tragedy of the hours' woman spends to collect the water for their households and the consequences of this across many dimensions such as: woman's education, health, skin and development, personal time and responsibilities. As practitioners, he highlighted the need to adjust the symptoms as well as close the bridges between the genders.
- The relationship between water and gender mirrors a very complex mosaic of gender inequalities in various realms such as inter-alia, the ownership and control over assets, relative economic independence, the relative hierarchy of position, decision making processes, household division of labour, access to services, education, wages and multiple societal and spiritual norms, ritual and practices that are related to gender.
- It is the superficial approach to gender equality, which is one of the reason of defining such inequities through the narrow lens of gender choices. The issue is one of the recognizing respective abilities and capacities informing individual based on such capacities, providing opportunities for growth and enhancing dignities for those effectives.
- The speaker has followed a four questions methodology to the topic: a) Who is excluded b) How c) Why d) What. For example, inequality in which domain is concerning, why are gender issues so alarming, are there any historical reasons or political economic constraints. The essential and analytical basis of what needs to be done for inclusion and gender equality.
- Data on water is poor in nature and is shrouded by secrecy. It states that 95% Indians have access to safe water which everyone knows isn't the real case.
- There is a distinct difference between the quantity of water that is supplied to urban areas which receive 100ml/day and rural areas, which receive 40 ml/day. Total sanitation program and the water supply itself faces a biased relationship, leading to an unjust society.



2. DR. PRAKASH RAO

Deputy Director, Symbiosis Institute of International Business, Pune

- Dr Prakash Rao spoke about Climate Change and the Water-Energy Nexus. He stated "Without water, the world can't survive and without energy, the world can't process". There is a water-energy nexus where water can be linked to agriculture and energy is linked to climate change. Climate change results in the increasing temperature, the variability of precipitation is one of the worst defining issues for them, it will shape investment, technology and human development around the world in the future.
- While talking about the water-energy nexus, he highlighted the first issue being with respect to freshwater. Freshwater is a very limited resource and the maximum amount of water found on Earth isn't consumable. The second issue is the availability of groundwater and its usage equitably among the population of the Earth. The third issue, if focused in India is the river basins. These catchments can feed agricultural demand across the country if hydropower is in action. There is going to be a rise in demand for both energy and freshwater by the end of 2030.
- Water is being largely used by agriculture and industry and 3-4% is being used for domestic consumption. Energy is very efficient in agriculture, and India is a major consumer of pumped irrigation and groundwater is mainly pumped out by using energy. Statistics say that 25 billion tons of carbon emissions originate from pumped irrigation. A lot of industries use water to produce paper, pulp, fertilizers or else these industries would cease to exist.
- Increase in climate change leads to water shortage, so there is a potential conflict between them. The only way to solve is to adopt integrated systems.
- Energy demand is fundamental to economic growth across the world. With respect to the Indian scenario, northwest India and Deccan Peninsula are the most water pressed regions and most of the industries are sourcing water from these water pressed regions. A study has been carried out on the two climate-sensitive areas: Uttarakhand and Uttar Pradesh. Most of the Ganga basin is the most water sensitive areas and they are hugely affected due to excessive groundwater extraction.
- With respect to the power sector, the demand of the energy is met with hydropower which again highlights the nexus between water and energy where water is being consequently used to generate power to industries and for varied purposes.
- According to the Prayas, an energy group who has conducted an interesting study regarding water energy in agriculture. It concludes that subsidy to agriculture is overestimated and subsidy to electricity improves agricultural growth.
- The speaker highlighted the need to prioritise getting institutional support to create environmental benefits and link the same with select national missions. Strategies should be highly focused on water-energy management, use of GIS and using a decentralised micro grid system.



3. DR. HIPPU SALK KRISTLE NATHAN

Associate Professor, Institute of Rural Management Anand.

- Dr Hippy S. K. Nathan acknowledged the urban-rural lag by studying the different development indicators like electricity connections and electricity consumption using NSSO data. According to his study, with respect to electricity consumption, the gap is three times more than the electricity connections between urban and rural.
- The speaker discussed the energy-development correlation by comparing HDI (Human Development Index) and Per-Capita power consumption. Sen's Approach: Resources-Capacity-Actions-Utility was also discussed where he emphasized that energy will come as capacity and both rural and urban areas need an equal amount of electricity supply.
- There was also a discussion on energy poverty and how the definition of village electrification is faulty and therefore in his opinion, India may hit 100% electrification by the year 2051.
- For the development, mainstreaming rural is important and the behaviour of the consumer is the key. He discussed four arguments for solar promotion in rural areas: Space, Climate, Subsidy, and Remoteness.



4. DR. PURNAMITA DASGUPTA

Chair in Environmental Economics and Head, Environmental and Resource Economics Unit, Institute of Economic Growth, New Delhi.

- Dr Purnamita Dasgupta had undertaken a study and conducted a survey to evaluate adaptation options in agriculture in the regions of Bihar. The result of the survey showed that women had to suffer a lot due to the floods that occur almost every year. Additionally, the women had to defecate in open and therefore, they suffer from water borne diseases after the floods. By understanding the gravity of the situation, the campaign was later changed to total sanitation programme.
- The study also observed that only women suffer every year due to societal issues, privacy, income, gender issues and these issues too are the reason why women undergo major health problems. She highlighted how woman and health related issues are covered across all the 17 SDGs. Therefore, it is imperative to achieve these goals, which will help India resolve these problems and grow as an equal, just society.



PANEL DISCUSSION: ROLE OF INFRASTRUCTURE DEVELOPMENT IN IMPLEMENTATION AND ACHIEVEMENT OF SDGS



Dr U S Saha, Dr Jyoti Chandiramani, Dr C S C Sekhar and Mr Dhyaneswar Bodke



Chairperson: Dr U. S. Saha, Chief General Manager, National Bank for Agriculture and Rural Development, Mumbai.

Speakers

1. DR. JYOTI CHANDIRAMANI

Director, Symbiosis School of Economics, Pune.



- By quoting Joseph Stiglitz, 'Development is about the life of people and not just economies' Dr Jyoti Chandiramani commenced her presentation with an invaluable note for the students, participant and other practitioners in the conference. She highlighted three questions which require our dire attention and further study. These questions were related to rural liveability index, competitiveness of agriculture and role of infrastructure development in doubling farmers' income.
- She spoke about the 12 pillars of competitiveness which includes - institution, infrastructure, health, education, market efficiencies including labour and finance and the market size to name a few. Further she highlighted India's position vis-à-vis China, wherein India stands at number 58 versus China's 28 position and in terms of the Competitiveness Index, while the ranks are 63 for India versus 29 for China with respect to Infrastructure. Even though India is not such a laggard nation with respect to competitiveness and infrastructure in the globally ranking index, but when it comes to the GDP per capita India's rank is 139th in per capita GDP (nominal) with US \$2,134. She spoke of how there is not only a need to double farmer's income but also the per capita income. Also with respect to India's existing agriculture productivity is less than the average productivity of leading nations, and despite this fact, India is still the second largest agrarian economy in the world after China. She therefore highlighted the need to enhance agriculture productivity to make Indian agrarian sector increasingly competitive.
- The speaker further gave insights about the construction of the Rural Development Infrastructure Index for the State of Maharashtra. The study commenced in Jan 2018, taking into account the 33 districts of Maharashtra, and included a total of 28 parameters, categorized into 12 physicals, eight social and eight institutional parameters, each.
- The aim of the study was to identify the disparity and the regional imbalances with respect to the rural infrastructure development. The results of the index showed skewed availability of rural infrastructure across the districts with only 11 district of Maharashtra, performing above state averages. The study suggests a number of strategies for rural infrastructure development in terms of better irrigation facilities, setting up of a 100% benchmark target with respect to electricity supply for villages and households, accessible mobility, availability of logistics for agricultural produce, etc.
- The parameters with respect to the physical infrastructure of the districts of Maharashtra, should be carefully analysed as per the district report cards and this requires the state government's intervention with respect to planning and funding of physical infrastructure in the laggard districts. Since number of districts have to plan their infrastructure, to address the wide gaps - the nature of future infrastructure

should be sustainable, green and helping enhance resilience to manage climate change and disaster that are likely to occur in future.

- However, when it comes to the varied parameters for social and institutional infrastructure, it has been observed from number of studies that this can be supported by various CSR interventions and crowd funding initiatives. There are a number of 700 districts of Maharashtra where CSR initiatives in cases of sanitation, health and education can prove to be impactful. These have shown evidence of being big change makers in achieving the development agenda. Some of the other suggestions with respect to achieving SDGs are adoption of innovative irrigation techniques to conserve water, increase the manpower in schools by redeploying and opening new opportunities, focus on increasing capacity of electricity generation from solar and wind energy.
- With focus on developing physical infrastructure, following strategies for were suggested by the speaker: technical assistance and capacity development of all stakeholders, proper maintenance of the canal system, participatory management, changing land use pattern, cropping pattern, action to reduce soil degradation, speed implementation of DEENDAYAL UPADHYAYA GRAM JYOTI YOJANA, and Chief Minister Gram Sadak Yojana and Pradhan Mantri Gram Sadak Yojana. Additionally, major thrust should also be given to increase the number of wholesale markets, and incentives should be provided for private sector to open soil testing laboratories in rural areas.
- She concluded by noting that in order to achieve SDGs, multi stakeholder participation from individuals to students, NGOs and Government and various institutions such as NABARD is desired.

2. DR. C. S. C. SEKHAR

Professor, Agricultural Economic Research Unit, Institute of Economic Growth, Delhi.

- Dr C S C Sekhar reviewed the agriculture sector in India. As per his study, the share of agriculture in India's GDP fell from 40% in the 1960s to 11% in 2014-15. However, share in employment has only fallen from 73% to 55% during the corresponding period.
- Over the years, focal point of agriculture study has been the acceleration of Total Factor Productivity (TFP) Growth in India. As noted, agriculture TFP growth rate was as high as 2.4% during 2006-09 which is comparable to China. Despite such impressive performance, the productivity gap between agriculture and non-agriculture sectors continues to widen.
- The structural transformation of an economy depicted that, low level of development, shares of agriculture in GDP and employment is large (say about 50% and 85% respectively), but it should be noted that both factors decline as an economy or a country begin to develop. This pattern of development is observed with respect to all countries developed as well as currently developing and is not unique of India. It was seen that, annual per capita income of a country reaches between USD 1600 to USD 9000 through transformation from farm to non-farm sector.
- There is a large and the persistent gap between the share of agriculture in GDP and share of agriculture in labour force which is derived from the structural transformation of an economy.
- Talking about agriculture vis a vis non agriculture sector, the speaker stated that between 1993-94 and



2004-05 more rural jobs have been created in the non-farm sector compared to agriculture.

- The speaker discussed that casual wage employment pays more than those engaged in agriculture. The wage premium is about 45%. This further resulted in reduction of poverty in the non-farm sector.
- Infrastructure was divided into two sectors, physical and soft infrastructure. Infrastructure in non-farm sector includes both such as rural roads, electricity, water, and also basic literacy.
- The development of human capital is a basic indicator of sustainable economic growth, which is attained by providing education and healthcare. It also results in benefitting from economic opportunities.
- The speaker suggests that growth of agriculture is necessary as growth in agriculture is at least two times more effective in reducing poverty as compared to non-agriculture. Moreover, with respect to employment, agriculture ensures livelihood of unskilled workforce. This needs to be followed with improving non-farm sector in rural areas and enabling movement out of the rural areas. In the long-run basic capabilities of rural population need to be upgraded through education, to enable them to make the transition to better-paying jobs in the non-farm sector.

3. MR. DHYANESHWAR BODKE

Founder Member, Abhinav Farmers' Club, Pune

- Abhinav Farmers Club has been an initiative conceptualized by NABARD in April 2012. The club was started by Mr Dhyaneswar Bodke, who is the chief volunteer. The club grows plants organic vegetables in poly-houses.
- The group has been focusing on giving employment to the youth which also includes one female member from the family. There are presently 1.5 lakh girls working in farms, who have been given education in the agriculture sector. They follow various strategies to yield maximum benefit from the agriculture. The speaker highlighted the fact that this could be a case of cooperative farming as all the members collectively decides what is to be grown by each farmer in such a way that the crop is not repeated and yields maximum benefit to the club members. They also aim at developing and employing small scale machinery for help in farming. They had developed a power tiller machine which could do the work of 50 men by only consuming 3 litres of petrol.
- With the use of organic fertilizers, scientific techniques of cultivation and watering the crops in the poly houses, the fine quality of crops is maintained and the working women directly deliver the food to the customers in a timely manner. The system has progressed as the middleman have been removed which used to hamper the farmers' income. The middlemen used to exploit the farmers by charging them Rs.3-4/kg for a crop which costed the farmers Rs.7/kg to produce.
- 'Lokacart' mobile based application has been developed by IIT Bombay, for Abhinav Farmers Club which seeks to provide online orders and payment directly by the customers. The group plans according to the orders and provide fresh vegetables to the customers within the stipulated time frame.





- The graduated girls were given employment in the app and the management sector through which they are able to get their livelihood.
- The Club played a major role in women welfare, by involving Self-Help Groups(SHG) initially for packaging the organic food products as per standards required. Presently, the SHGs also work for the transportation of packed foods, and organic farming. Self-packaging, marketing, transportation and delivery made the farmers independent - could do away with middlemen and were able to earn higher profits.

4. DR. U. S. SAHA

Chief General Manager, National Bank for Agriculture and Rural Development, Mumbai.



- Dr U S Saha emphasized the role of NABARD in Infrastructure Development. It was followed by the review of Infrastructure index, rural credit institutions, and lastly financial inclusion and development initiatives.
- Rural infrastructure index of 2014-15 marked all the states as per their rankings in which Punjab topped the rank with 0.4894 points to the contrary of Jharkhand who was the lowest ranking state with 0.0375 points. Punjab, Kerala, Tamil Nadu, Haryana, Karnataka, Telangana, and Andhra Pradesh were only the states who scored more than 0.3. Further, Gujarat, Maharashtra, West Bengal, Goa, Himachal Pradesh, and Rajasthan scored from the range of 0.2 to 0.3 points and rest of all states scored less than 0.2 points.
- Infrastructure loans which include Rural Infrastructure Development Fund, Long-term Irrigation Fund, and Warehouse Infrastructure Fund noticed an upward trend from 2013-14 to 2017-18 and the year-on-year growth rate was 19%. Under Rural Infrastructure Development Fund, 43% of funds have been allocated to agriculture and irrigation till 2018. Other than above-mentioned areas of loans, new special-purpose funds have also been initiated by NABARD which are Dairy-Processing and Infrastructure Development Fund, Micro Irrigation Fund, Long Term Irrigation Fund, Agriculture Marketing and Infrastructure Fund, Animal Husbandry Infrastructure Development Fund, Food Processing Fund, and Fisheries and Aquaculture Development Fund.
- He concluded his presentation by highlighting the financial inclusion measures which were undertaken by NABARD and are broadly categorized into acceptance infrastructure, incentivizing digital transactions and financial literacy. These categories include initiatives such as Micro ATMs, Connectivity Infrastructure (Solar-powered V-SAT), Central KYC records, BHIM Aadhar Pay, ESHAKTI-SHG digitalization, Rupay Kisan Credit Card, Centres for Financial literacy, Financial literacy in schools, and Mobile Demo vans to name a few.

KEY TAKEAWAYS

- In 2015, 193 nations signed up to adopt the 17 Sustainable Development Goals (SDGs) (2016-2030). Therefore, the next 12 years will require a nation as large as India to work towards achieving these goals, targets and indicators. Further, the success of SDGs / or global goals, will only translate if a nation as large as India acts in a focussed manner towards this objective. The objectives of SDGs are interlinked thus linkages between them should be found and crystalized into various actions that need to be taken.
- India's rural population is 66.5% for 2017 - 892 million whereas, China's Rural population is 41.5%, 576 million. There are 6,40,867 villages in India as per the 2011 Census. For this huge population, currently large scale reforms are needed and while considering the future generations vision for the reforms should be prepared. Therefore, the aspect of sustainability should be at the core of every field related to the rural development and transformation as it takes into account the role of future generations. Thus nature of physical and social infrastructure should be inclusive, quality growth, resilient, innovative, green and sustainable.
- Rural livelihood is a multi-layered and broad concept, India needs to focus on rural transformation, macro concerns like inequalities, changing contour of rural India, role & limitations of government, structural changes in the rural economy, challenges in securing livelihood in agriculture as 2/3rd of the population lives in rural areas, and contribute to 70% of the workforce, and 46% to national income.
- The caloric measure of poverty has been largely criticized, since poverty is a multi-dimensional and complex concept, and therefore the measurement of poverty has over the years evolved from caloric and money metric measures to multi-dimensional deprivation indices - which will require multi-dimensional interventions.
- As per IMF study 2015, an increase in the income share of poor and middle classes by 1% raises growth by 0.38% in a country over 5 years' period. While, an increase in the income share of rich by 1%, reduces the growth by 0.08%. Therefore, it is suggested that India need a more direct strategy to tackle inequality.
- The inequality of income in rural India can be observed from the growth of income from agriculture. The trend of agricultural income from the 1980s to 2010 has been a little flat, not increasing very fast. Index of agricultural income hovering around 100-120 and CPI for the agricultural labourer is showing an upward rising trend. Clearly showing that number of farmers becoming poor is rising due to mismatch between increase in expenditure and income further leading to inequality. When studied the gap between rural and urban inequalities, obviously they were high. It was found that intra rural income inequality was not increasing contrary to the urban income because there was not much rise in the rural income.
- A survey conducted of farmers in 2002 as per the Situation Assessment Survey - Working Group 2002, wherein they were posed with a question - if they would like to leave agriculture and the survey revealed that 40% of the farmers were ready to leave agriculture because of multiple reasons.
- Key initiatives need to be taken towards creating resilient livelihoods in the dry areas, with adequate incomes, secure proper food and nutrition, access to health, education, good infrastructure, access to

water and sanitation and the capacity to manage natural resources in an equitable, sustainable, and innovative manner.

- The need for interventions which are connecting crop-yield gaps and introducing innovative production pattern, improving livestock productivity with making strong value chains resulting in improved incomes is essential to achieve SDGs.
- The International Center for Agricultural Research in the Dry Areas (ICARDA) concentrates on moisture deficiency for the dry regions. It employs strategies of zero budgeting and natural farming as well as capacity development of farmers for income enhancement and crop improvement. These are bringing in innovations and new values within the agriculture sector.
- Agriculturist/ framers should be given access to credit which could be linked to their incomes, irrigation, the role of technology like IoT, and increase support programmes.
- Land-based livelihoods will continue to play a significant role in the rural transformation of the country and help achieve several targets under Sustainable Development Goals. Organic, healthy and nutrient food markets should be tapped to increase the income from agriculture.
- Agriculture ensures livelihood of unskilled surplus workforce. In the long-run basic capabilities of rural population need to be upgraded through proper skill based education, to enable them to make the transition to better-paying jobs in the non-farm sector as well.
- Case studies provide empirical evidence that rural livelihood would be sustainable if there are less intermediaries in the supply chain system in agribusiness. The factors determining the success of 'Abhinav Farmers Club' are mainly, cooperative farming, use of organic fertilizers, appropriate choice of crops depending on the weather condition, land fertility and market, proper use of technology, empowerment of local farmers and informal training for market oriented packaging and processing, financial benefit through Self-Help Groups (SHGs), and most importantly attraction creation for agri-businesses for young skilled population.
- In order to achieve SDGs through improving physical and social infrastructure, innovative irrigation techniques to conserve water should be adopted, manpower in schools should be increased by redeploying and opening new opportunities, and alternative renewable energy should be given priority to increase capacity of electricity generation and sustainable development.
- There is a need to ensure that credit and other interventions should be addressed by the data-driven approach of policy and planning.
- Natural removal of inequalities is a myth and this requires precise interventions.
- With respect to the contemporary challenges of inequalities, income, poverty, and employment, there is a need to study the same, not only at the all India-level but also on the global level, to help understand the evidence-based policy pointers.
- Kuznets's inverted U-shaped curve, hypothesis that inequality would follow an inverted "U" shape as it rises and then falls again with the increase of income per-capita has no longer universal relevance. Thus, it postulates that natural removal of inequalities is a myth and this requires precise interventions, if we want to address the issue of inequalities.
- India should focus on creation of jobs rather than the growth as the layman connects more with the consequences and outcome of growth. The question raised should be what is there for the common man in the 5-7% economic growth of a nation.
- With respect to returns to investment, which was used as a variable, to measure inequalities, it was

observed that returns to investment have been increasing post-1990 in both rural and urban areas. However, an increasing trend was found more in urban areas as compared to rural India, portraying higher inequalities.

- Water security is one of the challenging aspects Indian faces every day. The relationship between water and gender mirrors a very complex mosaic of gender inequalities in various realms such as inter-alia, the honour ship and control over assets, relative economic independence, the relative hierarchy of position, decision making processes, household division of labour, access to services, education, wages and multiple societal and spiritual norms, ritual and practices that are related to gender.
- There is a distinct difference between the quantity of water that is supplied to urban areas which receive 100ml/day and rural areas, which receive 40 ml/day. Despite government intervention through number of sanitation program, there is a huge gap between the target and outcome as the program face lot of constraints due to inadequate water supply.
- Access to proper sanitation is a major concern for rural women, specifically flood prone areas. Women suffer from the problem of maintaining proper sanitation not only due to social barrier, but also from inadequate infrastructure to cope up with natural calamities. As a consequence, it creates lot of other health issues which are severe in nature.
- Priorities should be getting institutional support to create environmental benefits: link up with some national missions. Strategies should be highly focused on water-energy management, use of GIS techniques and use of decentralised micro grid system.







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