

International Symposium on Regenerative Ecosystems

Synthesis Report

November 29-30, 2022



Xavier Institute of Management
XIM University, Bhubaneswar

© 2022

International Symposium on Regenerative Ecosystems

Seminar Coordinator & Editor: Amar KJR Nayak

Rapporteurs: Swati Singh
Yasminara Begum
Shaun Joseph

Collaborators



NATIONAL BANK FOR
AGRICULTURE AND RURAL
DEVELOPMENT



**Centre for
Sustainable Ecological Systems
Xavier Institute of Management
XIM University, Bhubaneswar**



**AIESS Society
Bhubaneswar**



Indian farmers are going **hi-tech**

Digital Money Modern Farming Digital Marketing

www.nabard.org /nabardonline /nabardonline /nabardonline

Taking Rural India >> Forward

The financial assistance received from Research and Development Fund of National Bank for Agriculture and Rural Development (NABARD) towards publication of journal/printing of proceeding of the International Symposium on Regenerative Ecosystems is gratefully acknowledged.

We also acknowledge the valuable contributions of Co-Partners – XIM University, Bhubaneswar, CIC-TAB & VAMNICOM, & AIESS Society, Bhubaneswar towards making this International Symposium successful.

Disclaimer

NABARD does not assume any responsibility for the contents published by Xavier Institute of Management, XIM University, Bhubaneswar. NABARD does not hold any responsibility for the facts and figures contained in the report. The vies are of the authors alone and should not be purported to be those of NABARD.

Chairperson:

Dr. Antony R. Uvari, SJ, Vice Chancellor, XIM University, India

Organising Committee

Dr. Amar KJR Nayak, Chairperson-CSES, Xavier Institute of Management, XIM University

Dr. Biswa Swarup Misra, Dean, Xavier Institute of Management, XIM University

Fr. S. Antony Raj, S.J., Registrar, XIM University

Fr. V. Arokiya Das, S.J., CFO & Deputy Registrar, XIM University

Expert Committee:

Dr. K.J. Satyasai, Chief General Manager, DEAR-NABARD, Mumbai, India

Dr. Bijayananda Kar, Professor of Philosophy, Utkal University (Ret.), India

Dr. Anup K. Dash, Professor of Sociology, Utkal University (Ret.), India

Dr. S. Ignacimuthu, S.J., Director, Xavier Research Foundation, St. Xavier College, Palayamkottai, India

Dr. Gyorgy Szell, Prof. Emeritus, University of Osnabrueck, Institute of Social Sciences, Germany

Dr. Betty Reardon, Professor, Teachers College, Columbia University, USA

Dr. John D Little, Professor, Australian Catholic University (Ret.), Australia

Dr. Hans Guenter Brauch, Ad. Prof. (PD), Free University of Berlin (Ret.), Germany

Dr. Tina M. Facca-Miess, Asso. Prof., Boler College of Business, John Carroll University, USA

Dr. Tatiana Grandón, Asst. Prof., Faculty of Economics, Humboldt University, Germany

Dr. Adefemi Olokesusi, Professor, Nigerian Institute of Social & Economic Research (Ret.), Nigeria

Dr. S Patra, Professor, Water & Land Management Institute, Cuttack, India

Dr. B G Mukhopadhyay, Chief General Manager, NABARD (Ret.), India.

Dr. Ram Kumar Kakani, Director, Indian Institute of Management, Raipur, India

Dr. S Peppin, Dean, School of Governance & Public Affairs, XIM University, India

Dr. Kajri Mishra, Dean, School of Human Settlements, XIM University, India

Dr. D. V. Ramana, Professor, Xavier Institute of Management, XIM University, India

Dr. Shridhar Dash, Professor, Xavier Institute of Management, XIM University, India

Dr. Amar Patnaik, Member of Parliament, Rajya Sabha (Upper House), India

Dr. Sashmi Nayak, Ambedkar Chair Professor, NISWASS, Utkal University, India

Dr. Niraj Kumar, Dean, School of Rural Management, XIM University, India

Dr. Sutapa Pati, Dean, School of Sustainability, XIM University, India

Dr. N. C. Sarangi, Dean School of Law, XIM University, India

Dr. V. Vijay Kumar, Dean, School of Communications, XIM University, India

Dr. Sarat Kumar Jena, Editor, Vilakshan-Xavier Institute of Management Journal

Dr. Mousumi Padhi, Editor, Journal of Case Research, XIM University

PROGRAMME SCHEDULE

29 November 2022
IC 2, XIM University (New Campus)

Title of the Paper/Talk

8:00 AM – 09:00 AM	<ul style="list-style-type: none"> • Registration 	
Inauguration	<ul style="list-style-type: none"> • Lighting of the Lamp 	
09:00 AM – 09:30 AM	<ul style="list-style-type: none"> • Welcome by the Dean-Academics, Prof. B. S. Misra • Introduction to the Symposium, Prof. Amar KJR Nayak 	<ul style="list-style-type: none"> • Analytical Framework for Regenerative Ecosystems Design
	<ul style="list-style-type: none"> • Address by the Vice Chancellor, Dr. Fr. Antony R Uvari, S. J. • Vote of Thanks by Registrar, Fr. S. Antony Raj, S. J. 	
Plenary Session 1: Relational Science of Regenerativeness	<ul style="list-style-type: none"> • Prof. S. Ignacimuthu, S. J., Director of Xavier Research Foundation at St Xavier's College, Palayamkottai • Prof. Bijayananda Kar, Former Professor of Philosophy, Utkal University (Ret.), Odisha 	<ul style="list-style-type: none"> • Flowering Plants Diversity in The Southern End of The Western Ghats • A Note on Regenerative Ecosystems
09:30 AM – 11:00 AM	<ul style="list-style-type: none"> • Dr. John Little, Professor, Australian Catholic University (Ret.), Australia (Online) • Dr. Pavel Cenk, Director, Schumacher College, UK • Prof. George S, S.J., Director, XLRI, Jamshedpur (Session Chair) 	<ul style="list-style-type: none"> • The Ecology - and Science - of Spirit • Ecologies of Motion: Building Regenerative Community Networks • Relationships for Regenerative Ecosystems
11:00 AM– 11:30 AM	Tea Break	
Plenary Session 2: Institutional & Governance for Regenerative in Ecosystems	<ul style="list-style-type: none"> • Dr. Ajit Kumar Pattnaik, IFS, (Ret.), Former PCCF, Odisha, Vice President, Wetlands International South Asia • Dr. Arabind Kumar Padhee, IAS, Secretary, DA&FE, GoO • Shri Charanjit Singh, IAS, Additional Secretary, MoRD, GoI • Shri Raj Kumar Sharma, IAS, Director General, Training Coordination, Gopabandhu Academy of Administration, Government of Odisha, Bhubaneswar • Prof. Ram Kumar Kakani, Director, IIM, Raipur (Session Chair) 	<ul style="list-style-type: none"> • Regenerative Rural Ecosystems • Regenerative Agriculture • Rural Ecosystems • Institution and Governance for Regenerative Ecosystems • Possible Ways of Decentralized Governance for Regenerative Ecosystems
11:30 AM – 01:00 PM		

01:00 PM – 02:00 PM	<ul style="list-style-type: none"> Lunch Break 	
Plenary Session 3: Socio-cultural aspects of Regenerativeness	<ul style="list-style-type: none"> Dr. Betty Reardon, Founder, International Institute on Peace Education, New York, USA (Online) Dr. Gyorgy Szell, Professor Emeritus, University of Osnabrueck, Institute of Social Sciences, Germany (Online) 	<ul style="list-style-type: none"> Teaching Toward Regenerative Ecosystem: An Essential of Contemporary Peace Education Competition, Globalization and International Co-operation Consequences for an Ecological Management
	<ul style="list-style-type: none"> Dr. Tina M. Facca-Miess, Associate Professor, Boler College of Business, John Carroll University, USA (Presenter & Session Co-Chair) Dr. Anup K. Dash, Professor of Sociology, Utkal University (Ret.), India (Session Chair) 	<ul style="list-style-type: none"> The Integrative Justice Model as a Normative Framework for Regenerative Educational Ecosystems Regenerative Ecosystems...
02:00 PM – 03:30 PM		
03:30 PM – 04:00 PM	<ul style="list-style-type: none"> Tea Break 	
Technical Sessions 1	Chairperson	
04:00 PM – 06:00 PM	<ul style="list-style-type: none"> Prof. Ajit Kumar, Xavier Institute of Management, XIM University Bhubaneswar, India 	
	Paper Presenter	
	<ul style="list-style-type: none"> Prof. Shraddha Kumar & Prof. Kajri Misra, XIM University Bhubaneswar, India 	<ul style="list-style-type: none"> Governance Ecosystem for Urban Green Infrastructure: Are we missing the forest for the trees?
	<ul style="list-style-type: none"> Dr. Abiodun Ayooluwa Areola, Department of Geography, University of Ibadan, Ibadan, Nigeria & Prof. Adefemi Olokesusi, Lighthouse.com, Ontario, Canada (Online) 	<ul style="list-style-type: none"> Review of the Governance of Urban-Ecological Organizations in the Context of Nigeria's Rapid Urbanization
	<ul style="list-style-type: none"> Mr. Himanshu Sekhar Nayak, Dr. Amar KJR Nayak, Ms. Pallavi Das, XIM University Bhubaneswar, India 	<ul style="list-style-type: none"> Relationship between Flexibility of Technology, growth strategy and Sustainable performance of firms: A Study in the Context of Indian Iron and Steel Industry
	<ul style="list-style-type: none"> Prof. Nagma Ansari Sahi and Prof. Anannya Deb Roy, NIFT, Kolkata 	<ul style="list-style-type: none"> Crafting <i>interdependence</i> in meaningful work and relationship building: Experiencing economic practice in community led business at Mohenjo-Daro
<ul style="list-style-type: none"> Dr. Anannya Deb Roy & Dr. Goutam Saha, Associate Professor, NIFT, Kolkata Shri Biswamohan Mohanty, Founder, ORRISSA, India 	<ul style="list-style-type: none"> Entrepreneurship and Wellbeing: Narratives of a Woman Craft Entrepreneur Impact Pathway for Local Seed Systems adapting to "People-Led Development" process in dryland areas 	

Technical Sessions 2

04:00 PM – 06:00 PM

Chairperson

- Prof. S. C. Patra, Principal Course Coordinator, Water & Land Management Institute, Cuttack, India

Paper Presenter

- | | |
|---|---|
| <ul style="list-style-type: none"> • Ms. Bhawana Pal, XIM University Bhubaneswar, India | <ul style="list-style-type: none"> • Contribution of tribal women in social entrepreneurship – A case study on Impact of WADI intervention of NABARD at Korba, India |
| <ul style="list-style-type: none"> • Ms. Imnayangla Jamir, and Dr. M. Hilaria Soundari, Gandhigram Rural Institute, Tamil Nadu | <ul style="list-style-type: none"> • Towards Sustainable Livelihood: A study on Tribal Women Street Vendors in Dimapur, Nagaland |
| <ul style="list-style-type: none"> • Mr. Léopold Nangorgo Yéo, CEO-Founder-C I N E D | <ul style="list-style-type: none"> • Circular Economy: Employment Opportunities for the Ivorian Population |
| <ul style="list-style-type: none"> • Prof. Neeti Banga, NIFT Delhi, and Dr. Anannya Deb Roy, NIFT, Kolkata | <ul style="list-style-type: none"> • Handcrafting Social Bonds -Embroidering the Unspoken Narratives of Phulkari into a <i>Well-being</i> saga |
| <ul style="list-style-type: none"> • Ms. Ganga P Sreenivasan and Dr. M. Hilaria Soundari, Gandhigram Rural Institute, Tamil Nadu | <ul style="list-style-type: none"> • Water Hyacinth and Wellbeing of Rural Women in Kerala: A Study on Reciprocal interactions of Gender- Nature |
| <ul style="list-style-type: none"> • Ms. Pratima Nayak, Research Assistant, XIM University Bhubaneswar, India | <ul style="list-style-type: none"> • Regenerative Ecosystem, the way forward to saving our civilization |

07:30 PM – 09:00 PM

Welcome Dinner

30 November 2022

IC 2, XIM University (New Campus)

Title of the Paper

Plenary Session 4: Industrial Ecosystems

09:30 AM – 11:00 AM

- | | |
|--|--|
| <ul style="list-style-type: none"> • Mr. K S Venkatgiri, Head, Green Business Centers, CII, Hyderabad | <ul style="list-style-type: none"> • Green Initiatives of CII – Sohrabji Godrej Green Business Centre |
| <ul style="list-style-type: none"> • Dr. Jayesh Ranjan, IAS, Principal Secretary to Government, Industry and Commerce Department, Telangana | <ul style="list-style-type: none"> • Regenerative Industrial Ecosystems |

	<ul style="list-style-type: none"> • Dr. Sukriya Nayak, Professor, CMC, Vellore • Prof. S. C. Patra, Principal Course Coordinator, Water & Land Management Institute, Cuttack, India (Session Chair) 	<ul style="list-style-type: none"> • Holistic approach to Medical Treatment • Rules & Regulations in managing industrial ecosystems
11:00 AM – 11:30 AM	Tea Break	
Plenary Session 5: Regenerative Urban Ecosystems	<ul style="list-style-type: none"> • Prof. Kajri Mishra, XIM University Bhubaneswar, India • Mr. Rangaswamy Elango, Founder, Panchayat Academy, Chennai 	<ul style="list-style-type: none"> • Regenerative Urban Ecosystems • Governance for Regenerative Community Systems
11:30 AM – 01:00 PM	<ul style="list-style-type: none"> • Dr. Tatiana Grandón, Assistant Professor, Faculty of Economics, Humboldt University, Germany (Online) • Prof. D. V. Ramana, Professor, Xavier Institute of Management, XIM University Bhubaneswar • Mr. Theo Vaes, Founder, ArmenTekort, Belgium (Online) • Mr. Naresh Giangrande, Cofounder of Transition Network, UK 	<ul style="list-style-type: none"> • Energy-Agriculture Communities with Solar Hybrid Mini-grids: A Case Study in Nigeria • Regenerative Urban Ecosystems • Regenerative Ecosystems • Making the Case for a Regenerative Technosphere
01:00 PM – 02:00 PM	Lunch Break	
Plenary Session 6 & Closure Regenerative Rural Ecosystems	<ul style="list-style-type: none"> • Dr. Chandra Shekhar Kumar, IAS, Additional Secretary to Government of India, Ministry of Panchayati Raj, New Delhi (Online) • Smt. Vidhya Das and Shri Achyut Das, Agramee, Odisha 	<ul style="list-style-type: none"> • Governance for Regenerative Community Systems • In Harmony with all Creatures Great & Small: In the Footsteps of the Great Masanobu San
02:00 PM – 03:30 PM	<ul style="list-style-type: none"> • Dr. Hema Yadav, Director, VAMICOM, Pune • Shri P.V.S. Suryakumar, DMD, NABARD, Mumbai • Dr. R K Nayak, Former Secretary to Government of India, Ex-MP, Rajya Sabha (Session Chair) • Summary and Vote of Thanks, Dr. Amar KJR Nayak, Coordinator of ISRE, 2022 	<ul style="list-style-type: none"> • Rural Ecosystems • Rural Ecosystems
03:30 PM – 04:00 PM	<ul style="list-style-type: none"> • Tea/Coffee 	

Introduction

Despite great advancements and best of enormous human efforts, there have been growing uncertainties, vulnerabilities, inequalities, and most surprisingly different ecosystems seems to be degenerative. Given the growing instability across different ecosystems, we revisit the question: Have we missed something in the existing theoretical frameworks, policy perspectives, and practices? This symposium has been based on ‘All Interacting Evolving Systems Science’ (AIESS), an eclectic, multi-disciplinary, and a holistic analytical framework that attempts to provide the design basis to diagnose the degenerative and the potential regenerative of ecosystems. The deliberation of the symposium was anchored around the key concepts of interconnections, interdependence, interactions, and intent; the interplay of which either leads to degenerative ecosystems or regenerative ecosystems. The symposium also deliberated on the ethical paradigm of ‘other centeredness’ that could facilitate regenerative-ness in different ecosystems; viz., Industrial Ecosystem, Urban Ecosystem, Rural Ecosystem, Indigenous Ecosystem, and Natural Ecosystem.

Ecosystems

An ecosystem is a basic unit of our planet earth where all features of the earth including human beings are interacting. A micro-watershed, the basic unit of ecology, forms the technical base of an ecosystem. This base is layered with all other biophysical factors of nature. Human habitation on this base forms the next layer of an ecosystem. However, for optimization of size for economic viability, especially under diverse production systems, and for easier identification of physical boundaries by the people, a *Gram Panchayat* (GP) or *Ward* is taken as the basic socio-political ecological unit in the context of India. Depending on whether it is in a hilly, plain, or coastal region, this basic unit usually consists of 2–4 micro watershed areas in the Indian context.

Countries across the world are structured on similar primary boundaries of their respective local ecosystems, such as *Gewong* in Bhutan, *Parishad Council* in Bangladesh, *GN* in Sri Lanka, and *Union Council* in Pakistan. Countries of Africa have a similar political and administrative governance structure. For instance, Tanzania has *ward* at the lowest level with *district* and *municipality* at the next upper levels. The United Kingdom does not have such structures but has the traditional, informal institutional structure of a *parish* at the lowest level of community organizations. Advanced industrial economies usually have *Ward* at the lowest level and *District* at the higher level. Depending on the nature of human interactions, an ecosystem may be classified as *industrial ecosystem*, *urban ecosystem*, *rural ecosystem*, *indigenous ecosystem*, and *natural ecosystems*.

Multi-dimensionality of an Ecosystem

Ecological Systems are multi-dimensional, consisting of the social, economic, political and ecological dimensions. The social dimensions include (1) Relationships. The economic dimensions include (2) primary production (agriculture), (3) secondary production (manufacturing), (4) tertiary production (services), and (5) Organizations. The political dimensions include (6) Institutions, and (7) Governance. The ecological dimension includes the overarching dimension of (8) Ecology. The specific topics under different dimensions and themes of the deliberations in this international symposium included the following as in Table 1.

Table 1: Major Dimensions & Key Design Factors of the Symposium

Dimensions	Relationships	Institutions	Primary Production	Secondary Production	Tertiary Sector	Organizations	Governance	Ecology
Design Factors	<ul style="list-style-type: none"> ○ Sense of Interdependence ○ Notion of Wellbeing ○ Mental Construct ○ Morals & Values ○ Faith & Belief 	<ul style="list-style-type: none"> ○ Norms & Conventions ○ Rules & Regulation ○ Principles of Justice ○ Interaction Intensity ○ External Institutional Loading 	<ul style="list-style-type: none"> ○ Water ○ Soil ○ Seed-Plant-Animal genes ○ Farm Diversity ○ Farm Forestry 	<ul style="list-style-type: none"> ○ Raw material ○ Coordination System ○ Product Technology ○ Diversity of Human Actors ○ Physical Infrastructure 	<ul style="list-style-type: none"> ○ Machinery & Raw Material ○ Coordination System ○ Process Technology ○ Diversity of Cultures ○ Local Networks 	<ul style="list-style-type: none"> ○ Size ○ Scope of Activities ○ Ownership ○ Diversity of Human Actors ○ Management Hierarchy 	<ul style="list-style-type: none"> ○ Frequency of Interactions ○ Decision-Making Method ○ Problem Solving Approach ○ Resource Dependency ○ Governance Architecture 	<ul style="list-style-type: none"> ○ Natural Resources ○ Human Systems ○ Climate Changes ○ Diversity of Species ○ State of Ecosystems

Plenary Sessions, Technical Session & Participants

Participants of this symposium included senior scholars, academics, practitioners, & policy makers to deliberate on the science of Regenerative-ness & causes of degeneration that human race - societies are facing today in different ecosystems: industrial, urban, rural, indigenous, and natural ecosystems. The participants of this symposium included from India, UK, Nepal, USA, Germany, Belgium, Canada, Africa, South America, Japan, & Australia. In addition to a total of six Plenary Sessions, there were two Technical Paper presentations over a two-day period. The Plenary sessions include (1) Science of Regenerative-ness, (2) Institutions & Governance for Regenerative Ecosystems, (3) Socio-cultural aspects of Regenerative ness, (4) Regenerative Industrial Clusters, (5) Regenerative Urban Clusters, and (6) Regenerative Rural Clusters.

Most importantly the focus of our multidisciplinary research, analysis, policy formulation, and action-interventions was at the level of GP or Ward or Commune, or GN, etc., the basic unit of governance of any country across the world and the optimal ecosystem for study and for collective action. Given the dynamic nature of change and increasing complexities, this basic unit of ecosystem could be the optimal unit for both holistic analysis and the synthesis to reverse the degenerative process and systems in different ecosystems across geographies.

Inaugural Session



Antony R Uvari

Fr. Antony Uvari welcomed all the dignitaries, keynote speakers, session chairs, paper presenters, faculty members, staff and students of the University to the Symposium. He appreciated the systematic investigation of the subject of Regenerative Ecosystems undertaken by the Symposium Coordinator and expressed the commitment of XIM University to undertake research, collaboration, and dissemination of the findings by the research on the subject with all concerned. He appreciated the efforts of the faculty members in taking forward this field of research. He also expressed his gratitude to the symposium participants who had travelled from across India and across the world to be able to present their research findings and enrich the field of study in Regenerative Ecosystem. He expressed his good wishes for the success of this endeavour.



Biswa Swarup Misra

At the outset, Prof. Misra welcomed all the participants from 12 countries to this international symposium on Regenerative Ecosystems. While he narrated the background to this area of research in the business school, Xavier Institute of Management, Bhubaneswar, he also highlighted the social & policy impact of the school's research. He highlighted that business schools operate at the inter section of different ecosystems be it agriculture and industry, rural and urban, large corporates and SMEs and more importantly for profit and not for profit. Moreover, the interaction of the different ecosystems has a geographical connotation. Thus, inter-relationships between the various ecosystems relevant for a particular geography must be taken into account if we want to design enduring solutions to contemporary problems.

He expressed that the objective of this International Symposium is laudable as to strives to bring together the existing sustainability frameworks and overall systems science paradigm to facilitate regenerative systems in five specific ecosystems, viz., (a) Natural (b) Indigenous (c) Rural (d) Urban and (e) Industrial. Given the complexities of different ecosystems, he felt that the ecological approach to sustainability is work in progress. This symposium is important to because the deliberations here will help us to gain new perspectives on inter-connectedness between different ecosystems



Amar KJR Nayak

As the Symposium Coordinator, Prof. Nayak briefly introduced the basic concepts and theoretical framework of diagnosing and resolving the issues of ecosystems. In the context of different lenses of performances: efficiency, effectiveness, and sustainability; he explained the concept of regenerative ness as the highest form of performance of any sub-system and an ecosystem. He also clarified the meaning and defined the boundaries of an ecosystem in the context

The designation and affiliation of all Speakers and Participants are mentioned in the Programme Schedule that is given in Page 2-5 of this Synthesis Report.

of this symposium.

He went on to briefly present the theoretical AIESS framework of the symposium. ‘All Interacting Evolving Systems Science’ (AIESS), an eclectic, multi-disciplinary, and a holistic analytical framework has been the window to diagnose the degenerative-ness of ecosystems and the future facilitation for potential regenerative of ecosystems. He further elaborated the relationship of the eight different themes as key dimensions of any Ecosystems and relevant design factors under each dimension as the potential topics of research that the symposium aimed to deliberate upon.



S. Antony Raj

Fr. Antony Raj concluded the Inaugural Session through his pleasing vote of thanks to all involved in organizing and taking forward this international symposium. While he and his team was the key pillar in enabling the physical meeting of this large gathering after the long Covid period, he appreciated the contributions of the Organizing Team, Expert Committee members of the symposium, keynote speakers, session chairs of different sessions, paper presenters, invited guests, delegates from around 12 countries who were participating in this symposium. He also appreciated the contributions of the university faculty, support staff, and doctoral student volunteers who had come together to facilitate and enable vibrant and productive deliberations at the symposium. He also shared his good wishes to all the participants of the symposium.

Plenary Session 1: Relational science of Regenerativeness

Session Chair



George S.

Speakers



S. Ignacimuthu

The speaker gave an example of the floral biodiversity in the southern tips of Western Ghats: Western Ghats and Himalayas as a regenerative system. The study area is 2000 sq. kms at the tail end region of the Western Ghats that included 360 field days. The focus area was the diversity of the flowering plants. Gamopetalale has 566 species under 112 genera in 25 families as regenerative departments. Most of the areas are covered by the forest department of GOI. Rare species of flowers were found thriving because there was no interference from external forces that became the reason for why they flourished. Many endemic plants were also identified without much destruction. This study is the epitome of confluence of flora of Tamil Nadu and Sri Lanka. It's an example of how the natural environment became regenerative by not interfering with their environment in a negative way. Nature takes care of itself was his overall summary of the findings.



Bijayananda Kar

The speaker reflected on how the Population explosion in India was leading to huge problems and putting existence under threat. The author said that India has a patriarchal society where women are undermined. The ecosystem is not limited to one categorization of people but distributed and developed in different areas that are not included in the mainstream like religious segments in the context of India. Survey made by scholars reflected that the dharmik platform was so vigorous that other aspects were neglected. The speaker highlighted the nature of society that was not regenerative yet as it had undermined women for the longest time across the globe. For example, voting rights for women were not admissible in many parts of the world. An example of the dharmik sector emerged that has some empirical concerns. Living in trans empirical form, the dharmik phobia has been quite prominent. In the ecosystem of stability people feel that the dharmik platform is still correct. Women's ill treatment is still

significant in various institutions and is degenerating our ecosystem. The speaker also emphasized that knowledge must be based on reasoning and logic. As compared to the West, in India historically, we have had a platform where knowledge is based on logic and reasoning of practical science. Empirical science should be beyond emotions.



Pavel Cenkl

The speaker emphasized on building regenerative community networks. The speaker spoke about how a different System of higher education that had commercial farms, therapeutic courses, and agricultural courses was changing the way students were learning. Engaging students in hybrid formats to construct a complex weave to actually learn where they can learn for years and years from 18 months to doctoral degrees. The ecological crisis that this education system is trying to solve exists as a distinct approach separate from other initiatives which is not what higher education should be aiming at.

The focus was on how to balance the idea of human organizations, to have a global reach through building community networks. The speaker reflected that relationality is the only way we can build resilient regenerative organizations. Experiential learning is the way to go forward. Rather than being centred at one place, distributed learning is important which focuses on relations and connections which is the centre of the network. The speaker talked about the importance of building a ground up grassroots curriculum bringing together all the partners.

Ecological quarters and biodiversity quarters exist between protected areas of the landscape. The most successful biodiversity quarter is the one that connects with the ecological system as a whole and other communities. It becomes an inter-species collaboration that helps build regenerative and resilient environments. It's not about building nodes but about building relations and engagement along landscapes through Schumacher College and food-conscious initiatives. A distributed learning system is an ideal framework through which regenerative processes can be thought of as centralized or decentralized networks which can cease to exist if the central node or the central relationship is taken out of the network. The challenge is to develop multinational networks which are complex, but these models are highly successful in establishing connectivity. It's a truly transdisciplinary approach. Movement, emotion and regenerative processes are all connected through movement of ideas, concepts, learning, species and culture enabled through a decentralized and multidisciplinary learning approach.



John Little

Ecology and science of spirit

In research we may be complex, trying to make sense of the data. At the centre of the AIESS Framework is the spirit and can be represented as the human person. The building of trust, the thing about intentionality in terms of spirit is that it makes us one.

The notion of creativity, a book called *Insight* of a Canadian Researcher provides a good perspective. The question of decision and design can influence policy makers to think of interconnectedness of things. We can put ourselves at the centre of the systems model and think, if

we are destructive or constructive and are we constructing our reality through knowledge or ignorance. The good and evil pass through the heart of each person as a line. Four levels of questioning that identified the four levels of consciousness in our decision making. We have an insight, and we experience spirits of spirits. When things come together puzzles are solved. Schumacher's notion of small is beautiful is an attempt to describe what matters. Our learning is collaborative spiritually which is out of time and space. Our work as researchers brings out our spirit of inquiry. Holistic model of the heart of mind where one penetrates through deeper levels of knowledge. Through our action and behaviour one can understand the intent that inspires action.

Photos of the Session



Plenary Session 2: Institutions & Governance for Regenerative Ecosystems

Session Chair



Ram Kumar Kakani

The speaker highlighted the role of Governance structure and the frequency of interaction, decision making, problem solving, resource dependency, governance architecture on ecosystems and their functioning. He emphasized that public governance hierarchies will take us to a solution. The space between public and private governance is a huge space occupied by coordinated governance, collaborative governance. The classical economies typically indicate the solving of issues through market forces. Asset specificity, uncertainty and frequency of transactions got extended when communities were studied. When an asset is a non-specific market it is good to go. When the asset is difficult to replace, look at unified governance, tripartite governance. The speaker talked about the three orders of governance: 1st level is solving problems, 2nd order of governance is governing primary institutions, 3rd order governance is the meta governance, values, and norms of institutions. Regenerative ecosystems are still looking into the 1st order of governance was felt by the session Chair. Governance is not only about creating structures but it's about the images we are trying to convey and the instruments we are trying to use. The key elements in governance are interplay and interface. Self help groups have governance mechanisms that are of help.

Speakers:



Charanjit Singh

The speaker spoke about the National Rural Livelihood Mission (NRLM) that mobilized 8 crore women into 80 lakhs Self Help Groups. He spoke of this Mission as a revolutionary measure where women are educated on saving money so that they can lend money and get interest on their lending. Some ultra-poor members don't have money to lend but the target is to reach them through various NGOs and grassroot level organizations. The objective is also to build a strong banking system.

Capacity building is an essential part of the Mission that helps build capabilities of the self-help groups, preparation of their loan documents and doing their need assessment. The micro credit financing is also done. Financial literacy is also very important which is taught to these help groups so that they can understand their present and future needs better. For financial literacy community resource people work with the community, stay with them and educate them. Certain community workers are trained as bank sakhis who can address the grievances of the community.

The Non-Performing Assets of the self-group is only 2.2% which shows that when people work together the true objective and community welfare can be achieved. The whole financial inclusion actions taken under the NRLM is an example of thinking about others and how a system can be regenerative. These women self-help groups by being educated and empowered; who in turn are educating millions of other women and families to be more financially educated so that they can

plan for a better future. Sensitization of banks (bank managers) are trained to interact with the community workers to bring more inclusion that makes this an important priority for every responsible person of the system. The result of the activities is that the SHG's have leveraged from the floating of huge funds that have been used productively. There has been a share in informal loans by 19 percent and an increase in savings of the rural community by 28 percent. The objective is to facilitate a whole social change which is not confined to economic gratification.



Ajit Kumar Pattnaik

The speaker talked about how regenerative thinking requires a systems approach. The current management regime and the governance system does not allow some villages to achieve sustainable development goals. The natural capitals and the cost of losing them is very high. The flow of ecosystems is disrupted and the weaker sections of the society are the most affected. The research in vulnerability and resilience of the village eco system have not been successful. The current level and loss of natural capital can be dealt with by systemic change. The crisis calls for a paradigm shift in the way we approach our relationship with nature and other entities in the world. The ecosystem concept can help in raising awareness to understand human value and perception of the community. The speaker highlighted that the foundation for decision making in the village climate, needs to be improved. Resources used and how it impacts are areas of decision making for the government in the village landscape. The core message is that nature brings huge advantages to humans physiologically and economically. Governance and awareness level can inform the CPR and where these are taken are of which CPRs are best managed. The awareness level of the village communities was very high when the quality of the CPR started depleting focusing on the provisioning services have led to loss of farms and diverse landscapes. The ecosystems are in continuum. Focusing on the entire landscape and providing solutions for the entire landscape is important than only focusing on the individual landscape. The speaker highlighted the necessary harmony required between nature and the human element. Five core approaches that the speaker spoke about that can lead to regenerative thinking are: resource use, cyclical use of resources, recognition of values and culture, multi stakeholder and improvement of community resilience. Regenerative system can be achieved when the ecosystem is healthy. Enhancement of perception of ecosystems that will lead to regeneration of systems.



Arabind Kumar Padhee

The speaker spoke on regenerative agriculture; classified it as an alternative way of farming with fewer machines. This approach is process focused. Organic and natural farming are pitched as regenerative agricultural practices. If we have healthy soil that is also regenerative agriculture. The soil health needs to be intact. The main elements for regenerative agriculture mentioned by the speaker are: diversity, co-creation of knowledge, circular economy, reliance, culture, land and natural resources. Institutional government mechanism is an input centered agricultural system. University has trained students and cadres on these lines but it does not appreciate regenerative agriculture.

Climate change can pose serious threats to regenerative agriculture. The mode of agriculture delivery was highlighted as a more important issue that needs to be addressed than technology adoption and usage. It needs to work with the community and not work with only an instruction

mode which is engaged in learning and relearning. Strategic research and extension plans are yet to be strengthened. One of the key challenges in regenerative agriculture is lack of suitable monitoring frameworks. Absence of monitoring systems and financial support a lot of programs falter. Innovation is needed in our governance in a far better way. One of the initiatives in this direction is taken by the United Nations which declared 2023 as the year of millets as these are climate resilient. Conserving of landraces by farmers has been an important initiative and action that has been based on knowledge from various partners. Landraces that has been done by farmers for centuries is better than what has been done. The ecology factor becomes very important. The knowledge that comes from communities becomes very important in conserving the landraces. Series of education can help educate everyone and bring everyone to the same potential and thereby strengthen the regenerative capacity of agricultural systems.

Photos of the Session



Plenary Session 3: Socio-Cultural aspects of Regenerativeness

Session Chair



Anup K. Dash

Session Co-Chair



Tina M. Facca-Miess

Speakers:



Gyorgy Szell – Competition, globalisation and international co-operation

He gave a brief introduction on the globalisation of markets and services over the decades and the accompanying environmental issues. He asserted that evaluating the pros and cons of goods play an essential role. He observed that ISO 14000 and Ecological Management System have a 90% overlap, and big companies are influencing their suppliers to conform to this standard. The UN report "Our Common Future" discusses the issue of ecological environment management, and a new strategy, the Zero Emission Research Initiative (ZERI), has been developed. Competition is essential in production, services, and quality, but it must be balanced with cooperation to access knowledge, research, and training. Competitiveness is vital to economic success. Ecological challenges are not restricted to one company, region or nation. Increasing integration has changed labour and industrial relationships, leading to Lean management and environmental/democratic challenges.

There are eight levels of analysis – Global, European, National, Regional, Companies, Department, Group, and Individual. There are Four fields of study – Economy, Social/psychological, Political, and Cultural. There are five sectors - Agri/mining, Industry/Transport, Pvt services, Public services, Education and science. The different Ecosystems are - Industrial ecosystem, Rural ecosystem, and Urban ecosystem. ISO 18091 can be used to evaluate admin action, offer proposals, and increase participation in good governance.

The current situation is marked by – heterogeneity, complexity, and diversity. There are divergent interests in all levels and fields. This training, productivity and participation are essential. The main social actors are – management, the workforce and the state. The work on labour relations is concentrated on the golden triad - America – Europe – northeast Asia. However, BRICS and Russia are so different. Dr. Szell explained 14 theses and 13 proposals that could help

sustainability of different ecosystems. With this context, a sustainable company should target according to the driving forces and be mindful of the obstacles. They should know how to tackle capitalism and understand the role of science.



Tina M. Facca-Miess

Applying the integrative justice model as a normative framework for regenerative educational eco sys.

She proposed the integrative justice model (IJM) as a normative and ethical framework to support all interacting evolving systems science. It helps diagnose and facilitate regenerative responses. It can also create a roadmap for business communication.

The local regenerative educational system boasts authentic engagement and value co-creation. The students gain experience, and community partners also benefit from the expertise, consulting and revenue generation. The students, as well as community partners, gain experience. Investment in future consumption, interest rep of stakeholders, and long-term profit management are crucial elements of sustainable business.

Similar programs are underway as global business culture and entrepreneurship programmes, like in Mahatma Gandhi Jyotibha Phule Rohilkhand University in India. Using IJM as a survey instrument, a relational approach can measure transformation by identifying the predictors rather than focusing on the traditional vulnerable section.

Jesuit Worldwide Learning (JWL) did a Stakeholder survey for Strategic planning and impact measurement. It enables deeper investigations by studying the impact on alums, current students, community members, faculty, and administrators. It focuses on their ability to transform the quality of life. Feedback collected gives concise evidence on the drivers of value co-creation in an organisation and individual. Multivariate regression models can thus be applied to implicate the result further.

IJM can be used to diagnose uncertainties and propose regenerative responses based on ecological systems. By identifying and enhancing significant predictors, the social innovation research collaboration regenerative educational ecosystem – NGO – Univ – Social innovation research centre are better understood.



Anup K. Dash

Regenerative ecosystem: getting its economic right

Neoclassical economics (NCE) and SSE (Social and solidarity economics) are different, yet the bigger picture remains the same. The neoclassical economy dominates the focus of our energy on the bigger picture. It thinks of alternatives as this model forces us to because of its foundation on different ontology and epistemology. The essential difference between neoclassical eco and SSE is that, unlike atomistic ontology, SSE tries to promote another individual. NCE paints man as rational, while SSE paints it as a relational and whole man that includes emotional, normative, and logical.

NCE focuses on instrumental rationality, and SSE on substantive rationality. Measuring transformation involves comparing competitive logic vs cooperative logic, autonomous agents vs situated agents bounded by rationality, and how men economise vs whether men economise. Some essential books one can read on the subject include”

1. Orthodox economics: Wealth of nations (Adam Smith), the origin of species (Charles Darwin)
2. SSE: Theory of moral sentiments (Adam Smith), The descent of man (Charles Darwin)



Betty Reardon

Peace Studies

When it comes to interpretation, the definition can be a barrier to reflecting on the problem since the context differs. Regenerative can be interpreted as that to mean sustaining and encouraging the renewal of life. Ecology is the process in which life unfolds—interconnectedness and interrelatedness – an image linked to peace education. When we say ecology, we are making a statement regarding humans – we are a part of a living system – as understood by our ancestors – we need to relearn it.

The challenge to peace studies is mainly the pedagogy and interactive system. The less focussed awareness of ecology – a living planet that we are part of. Another challenge is the epistemological view of colonialism.

Integrating regenerative ecology with peace studies has its benefits. All education is conducted for social purposes. Significant change is required in the purpose. For example, they are understanding political sys, Integrative of politics and citizenry, and the shift to holistic change of our worldview and changing the thinking of the planet as a cornucopia of resources. Open access to resources will abolish the control power of political systems. There should be more studies impacting climate policy and setting goals among all the agencies to have all citizens understand that all planet is one living system. Humans are part of the system which is in crisis.

The learning objectives are skills and the ability to deal with the consequences as a citizen against wrong information. What is the citizen to do in the face of a continued effort to move the obstacle and change the dependency on resources? What learnings will add to the understanding of their goals? The behaviours and practices to challenge information provided by an educational system. The practical endeavours will include learners encouraging others – WOKENESS among the young generations and giving power to Truth and Intuitively understanding what is at stake.

Photos of the Session



Plenary Session 4: Industrial Ecosystems

Session Chair



S. C. Patra

The industry, although seen as an ecosystem that is ‘polluting’ has seen significant improvement toward building a more sustainable and regenerative society through acts of recyclability and other associated actions. The chair then opened the floor for discussions on the domain:

Speakers



K. S Venkatgiri

Footprint network – 15 years back, CII wanted to build its green footprint capacities and competitiveness of the business center in the industry. The organization had a vision of building a green industry and started off by building a green business center in 2004, which has now become a net zero energy building and has grown to build 8900 green projects.

They have worked in the areas of building green buildings, 92% of the green building footprint in the country, generated 33.8 recurring annual savings, and produced certified green products (thereby creating demand for green products) while contributing to energy efficiency, and climate mitigation. They have scaled by collaborating with cleantech start-ups in the same sector who are catering to the supply side of green products and services.

The buildings, as stated by the speaker, could be of any type – commercials such as new/existing buildings, campuses, resorts; residential (homes, societies), transit (metro stations, railway stations), built environment, education, health and wellbeing (hospitals), and industrial arenas. CII has now been able to demonstrate the possibility of building a net zero building and now has a vision of becoming one of the foremost countries to become net zero by 2050.

Many organizations in the world have been in the scene of building green buildings, but a holistic rating framework of the same was lacking. CII then built a framework (Green Co) to assess the performance on the green front and monitor the green initiatives in the manufacturing and service sector. Over 850 companies were adopting the designed ‘Green Co’ rating framework that assesses the savings and the CO2 reductions made.

The speaker concluded by proposing an accelerator program for cleantech enterprises that hold the potential to contribute to an environment-friendly and regenerative ecosystem. They have been able to quantify the process and the impact, which they believe has played a crucial role in helping them get closer to their objectives and the defined vision.



Himanshu Shekhar Nayak

The speaker explored the relationship between the flexibility of Technology, growth and Sustainable performance of firms. He gave a background to the sector, shedding light upon the production quantum of steel, sources of energy and other resources required, and various emission levels in making steel production a possibility. The speaker credited the growth of the industry of steel to the dominant use of the Blast Furnace- Basic Oxygen furnace (BoF) route. The speaker hence explained the relationship that could lead to the sustainability of the concerned firm's performance. The flexibility dimensions of the steel industry were elaborated upon, followed by a system boundary concept/ model that exposed the nitty-gritties of steel production. The speaker, for his study, however, proposed a conceptual model comprising of various variables under the dimensions of growth, flexible tech and sustainable performance. A regression carried out by the author showed that tech flexibility had a strong positive relationship with lowered CO2 emissions.



Sukriya Nayak

Dr. Sukriya Nayak explained various elements of the body – cells, tissues, organs, limbs and transplants that could represent as the best example of Regenerativeness. Dr. Sukriya further shared with the audience, the story of a 20-year-old boy who met with a fatal hit-run road accident for which complications of bedsores and severe infections arose. CMC Vellore was able to treat through two operations, a high dosage of antibiotics, wound care, diet, physiotherapy, blood transfusions, and psychological counselling with continued help from the Swasthya Sathi Scheme of West Bengal. The primary issues identified were poor road safety measures, other chaotic scenarios in hospitals etc. There was a lack of a holistic approach identified by the author in various other hospitals and health centres in nearby regions, which made CMC a preferred choice as it adopted a more holistic approach. The scope of actions, as suggested by the author, revolves around school/college education relating to civic and road safety, training of citizens, trained paramedics/ambulances and designated trauma centres with trained personnel and equipment, which could allow for the being of the ecosystem to enjoy health and wellness. CMC looks at the patient as a whole based on certain principles - viewing the patient as a person and not a disease, fixing the cause and not just alleviation of symptoms leading to holistic care for the best possible outcome.



S.C. Patra

The speaker described a regenerative industrial ecosystem as one that is highly ecologically efficient with zero waste, treatment of wastewater, regeneration of water flow etc. The industry that is involved in extracting raw materials, and waste infusion to its surrounding defines the scope of interactions among the entities with the possibility of synergies between the two. Prof Patra highlighted various rules relating to recycling activities of industries, constitutional acts such as the Forest conservation act of 1980 and the water prevention & control act, environment protection act of 1986, among many that have been addressing various issues of rising through over-exploitation of resources. The speaker then focused on the waste management hierarchy approach as the means to minimize and dispose of the generated waste. The sustainable development framework was also discussed, which

highlights opportunities for Regenerativeness in mining industries. The regenerative ecosystem approach, therefore, was proposed as a pathway through proper planning of mine closure and its effective implementation. The regenerative approach encouraging a residual recovery in the case of the Nanjangud Industrial area was elaborated upon by the speaker, which showed positive results. Various examples and initiatives in Eastern Odisha by IDCO were given that promote a holistic regenerative approach. The speaker highlighted the use of existing laws in competitive demand for water, degradation neutrality, environmental protection/enrichment and overall ecosystem management that could be done so through replication/up-scaling of successful case studies.

Photos of the Session



Plenary Session 5: Urban Ecosystems

Session Chair



Kajri Misra

Regenerating Urban Ecosystems: Opportunities and Challenges

For bringing in sustainability and multiplicative changes, cities are being looked at as the battleground. The speaker opined that an eco-systemic (diversity, adaptation, interdependence, evolution) view is not enough for the problems of cities, called the system of systems, for which a different approach is a need of the hour, which could be done by understanding how the cities work – *ekistics*. The speaker elaborated on the trans-disciplinarity nature of ekistics and the levels of complexities it comprises. Dealing with cities would therefore require the design of different principles – nature, optimization, minimization, etc. The transition approaches, therefore, seek a synergy of systemic approaches that are differentiated by levels, and are multi-scalar with integrated governance of policy and planning with the effective use of design thinking approaches. The existing structures and processes are not amenable, wherein problems of governance ecosystem revolve around being its hierarchical nature, apparent depiction of being diverse, sectoral view, non-collaborative and non-eco-systemic view. Integrated policy planning also remains lacking, raising questions on the existing separate sectoral policy, and un-attempted blue-green plans. What remains missing is the knowledge ecosystem, with little exploration having been done in the urban, non-linear integrated approaches and of sustainability transition players with the absence of any inclusion of different knowledge communities.

Speakers



Naresh Giangrande

Mr. Naresh pushed the audience to look at the shift and the transition that the world was a part of with regard to information flow, technological development and their respective interconnections with the people living around them. Mr. Naresh talked about the self-organization system called ‘technosphere’ that enables the optimization of extraction of materials, processes and production of output as required. The system, which is immutable, and highly resilient, is uncontrollable but lives with a conscience. The speaker further talked about the possibilities of bringing change in the technosphere that could interact with ecological systems in harmony in a regenerative manner. The speaker raises the question of how the interaction between the two would look like. Further delving into transitions, the speaker drew the attention to understanding how the economies are now transitioning and have transitioned. The speaker promises a possibility of change by acknowledging a system inside of us and urges us to live a life that is devoid of the ‘colonialist mindset’. The practice of living without expectations, and the ability to sit with the troubles could facilitate a more effective transition. Honesty with self and love was crowned as the agency that can bolster the transition that the ecosystem needs so that the desired change is achieved.



Tatiana Grandon

Energy-Agriculture Communities with Solar Hybrid Mini-grids

Dr. Tatiana gave a detailed background to the overall rural-urban economic state of Sub-Saharan regions. The development of electrification strategies in rural areas and the food market have been banked by the speaker as means to improve the state of SSA regions which was explained in detail. The characteristics and functions of mini-grids relating to renewable energy generation etc., were further explained. Instalment and use of mini-grids could play a core role in the electrification of SSA and has the potential to respond to people's needs. The issues, however, arise in exploring the potential of it ending up becoming a tool of market expansion in a highly capitalist economy as we live in, wherein the use of mini-grids in rural areas for the private players has been deemed commercially unviable. The speaker further explores possibilities of helping rural goods reach the urban market, therefore, opening an entrepreneurship opportunity in the mini-grid sector. The speaker proposes energy communities to be formed that can own and operate a mini-grid (with apt assistance), predominantly RE-based, distributed generation and storage that serve the community's needs. The design, implementation and tech dimensions of the model of 'energy-agricultural communities' was also explained by Dr. Tatiana in her presentation.



Elango Rangaswamy

Prosperity generation and poverty reduction through Network Growth Economy

The speaker highlighted the potential, beauty and power of decentralized governance in villages. The social evils of poverty, dowry, and poverty could be dealt with, with the very power of decentralized governance, which was the focus of the speaker. Mr. Elango described villages as a sustainable economic zone that could then allow for the transfer of power from the capitalist structures to the rural residents. This was explained by the network growth economy model designed by the speaker. The process was designed for 300 industries adopting around 50 technologies that are boosting livelihood opportunities for the villages. Village technology keeping the poor at the center, catalysing democracy could disseminate welfare and be further strengthened by decentralized governance. The network economy hence concentrates on prosperity creation rather than poverty eradication. Mr. Elango explained that the Panchayat Academy aims at strengthening and building villages that can survive and thrive sustainably.



D.V. Ramana

Community Entrepreneurial Ecosystems

The speaker emphasized the need to address the persisting problems and insecurities in the urban ecosystems. Prof Ramana talked about the past action research carried out in building micro businesses (street vending) in the city of Bhubaneswar and shifted the focus to the future where the creation of entrepreneurial ecosystems could mean an effective solution to the predicted rising problems. The speaker delved into the possibilities of intervention at a ward level wherein a proposed street-vending entrepreneurial

venture could result in a total savings of 120 million. The speaker further established the link between the villages and the urban regions wherein the rural residents are migrating at a rapid scale to the cities, therefore, presenting the core significance the study holds. Action plans at the municipality level and a heavy focus on the ward with a need for deliberations and conversation in research at the ward level could lay the foundations for the solutions needed for the problems of the future.

Photos of the Session



Plenary Session 6: Regenerative Rural Ecosystems

Session Chair



Amar KJR Nayak

Speakers



Chandra Shekhar Kumar

Governance for Regenerative Community Systems

India being the signatory of SGD goals, regenerativeness is at the heart of India's initiatives through livelihood and energy policies in the urban and rural ecosystem. MoPR is also aligning its goal to achieve SGD goals in a sustainable, participatory manner. The sustainable model that reforms institutions holds the key. This symposium helps in gathering knowledge regarding devising policy from grass root opinions. An interactive community with overlapping goals is the answer to resilience. The flagship programme lacks synergy of various departments as well as with the community. Systematic research and deliberations with various stakeholders could provide the key levers and processes to resolve this sticky problem of localizing SDGs in India. This symposium on Regenerative Ecosystems could greatly contribute towards the design and implementation of policies for sustainability.



P.V.S. Suryakumar

Rural Ecosystems

At the outset, Shri Suryakumar highlighted the role of NABARD and its history in the development of agriculture and rural India. Presenting the main objective and key role of NABARD, he highlighted the role of NABARD on refinancing national banks and working with CSO, ULB, PR etc. toward the development of rural ecosystems in India.

Drawing from his experience, he pointed that when the goals are unidirectional, they cause pollution, depletion of natural resources, loss of traditional knowledge, and massive collateral damage to food nutrition. Whenever we talk about the regenerative, circular economy– more or less infatuation – we do not discuss how it will be developed in various sectors. He wished that deeper research on sustainability of rural ecosystems and deliberations in such conferences of researchers, practitioners and policy makers should resolve these sticky problems.

In addition to its core refinancing role, NABARD has been promoting collectivisation through the Farmer Producer Organisations thereby increasing the bargaining strength of small and marginal farmers and capacity building of farmers through hand-holding.

NABARD has promoted over 37% of total FPOs in India through various initiatives, including sustainable agriculture practices. For, e.g. Watershed and WADI – the creation of livelihood through holistic development, Projects related to climate change have created new pathways of development that maximise the future availability, innovation in agricultural practices, and JIVA that ensures the long-term sustainability of microorganisms in the soil system.

On the issues and challenges for research of NABARD and rural ecosystems, he pointed to the following: low spending on agriculture research, education and extension, agriculture start-ups, integrating sustainability with development, strengthening institutions for rural prosperity, issues with post-harvest management, and production and productivity challenges.

Based on the experiences of NABARD, he highlighted that the key to the success and sustainability of the projects include: People Participation with proper appraisal, monitoring, and learning through evaluation. The primary concerns are ensuring distributive justice of such outcomes, long-term sustainable projects, poor productivity in wadi project areas, and providing sustainable methods – minimising damage to the ecology.



Vidhya Das

In Harmony with All Creatures Great & Small

In the footsteps of the Great Masanobu San. AGRAGRAMEE believes Man is a part of the eco system, and we've separated it from the whole planet. More so in an urban area. But tribal people have been a part of the ecosystem actively till now. The efforts of Agragrammee included - Organic farming, Family farms, Traditional seed varieties, and Ecological agriculture. The objective is to improve food production, preserve nutritional values, and preserve soil nutrition.

The findings concluded that farmers often need to persist with organic methods. Even with organic agriculture, soil degrades very fast. Organic agriculture is, in the long run, costlier for the farmer if you factor in extra labour. Pest management is a hassle with organic agriculture. Agragrammee is trying successful organic farming. Methods and alternatives were searched. Masanobu san method, which includes Zero tillage eco-farming, produces vegetables, traditional millets and pulses. This method uses integrated perennial and seasonal crops improved watering system.

Basic knowledge system from tribal people, like seasonal changes and what seeds to plant has helped improve the soil's nutrition. The methods used are mulching, and zero tillage for finger millet. Weed is controlled by mulching before seeding. They countered the cost through ploughing – chaarikaas. Labour cost is less, and Land use with zero tillage is much better. The crops grown include rice, millets – pearl, sorghum, finger millet, bananas, cucumber, and turmeric. There is an interactive knowledge sharing with tribal farmers

The basic of Agragrammee includes Minimum soil tilling, No flow irrigation, Animal dung integrated into mulching, Living mulch with grass and leaves, No cattle grazing, and Avoiding monocrops. The advantages include 'No pests' as they are eliminated, No fallow periods required, Labour requirement is reduced, and water requirement is also reduced.



Prakash Prasad Pokharel

The majority of Co-operatives in Nepal are financial cooperatives and significantly contribute to the national economy. The sustainability of the cooperative rests on three bottom-line approaches – Sustainability, image building of neighbours, and partnered with Excellence service.

There are indicators for various programmes. For, e.g. The Adhaarshilla programme boasts of collaboration with local constitutional bodies. 80% of co-operatives are under it, thus improving capacity building and networking. How is it regenerative, then? By supporting the ultra-poor financially, redirecting profits in the community – like CSR and sustaining the rural-urban ecosystem. Empirical research needs to be undertaken.

The Chair of the Session, Prof, Amar Nayak concluded by reiterating the core concepts of unfolding changes. That while there is interconnected – interdependent – interactions; but this interaction creates uncertainty as well. In such a context what can researchers, practitioners and policy makers do to achieve regenerativeness? There is only one degree of freedom – that is intent – either self-centred or others-centred. Other-centred intent is probably the only degree of freedom for regenerativeness. Development projects and the nature of design that allow/facilitate interactions will increase social capital. Researchers need to codify the settings through knowledge sharing and empirical evidence and develop the concepts of Regenerativeness. He concluded by saying that such research can help practice and policy making towards facilitating a sustainable and regenerative rural ecosystems and ecosystems in general.

Photos of the Session



Technical Session 1

Session Chair



Ajit Kumar

Paper Presenters:

Paper Title: Governance Ecosystem for Urban Green Infrastructure: Are we missing the forest for the trees?



Shraddha Kumar



Kajri Misra

Paper Abstract:

Indian cities have a rich hierarchy and typology of public spaces with, typically, mixed land use, multi-layered economic activities and cultural and social vibrancy – often, developing organically in the built fabric through community and group use. Their ecological features and therefore “green” effects, however, appear to be less consistent. While sparse attention has been paid to public open spaces in the Indian literature, discussions typically have focused on encroachments, ownership, use and management from the perspective of a user. The question of the institutional ecosystem and governance arrangements has hardly been addressed, and the socio-cultural, health and environmental consequences are therefore elided.

This paper examines the governance ecosystem for urban public spaces, using the cases of two such spaces in Bhubaneswar, Odisha. Bhubaneswar was originally a planned city, with deliberate consideration of the location, size and use of open spaces. With five decades of physical growth and proliferation of urban governance structures, the existing institutional ecosystem around open spaces has been complicated. This is fairly typical, reflecting to a large extent the situation in other cities of similar size and status in the country. Development authorities, municipal bodies, state

departments and para-statal bodies dealing with water supply, sewerage, solid waste management, roads and transportation are variously implicated, as are other entities such as archaeological agencies, and market/vending associations. Exploration of the objectives, degrees of ownership and/or control, extent and scope of responsibility of the various organizations, and their inter-relationships reveals disconcerting overlaps, dis-junctures and territorial issues. How this configuration shapes the social, economic and environmental aspects in each of the cases is discussed. It emerges that the existing governance ecosystem leads to notably sub-optimal results, and substantially undercuts the potentially valuable social and environmental outcomes of public spaces.

Paper Title: Review of the Governance of Urban-Ecological Organizations in the Context of Nigeria's Rapid Urbanization

Abiodun Ayooluwa Areola



Adefemi Olokesusi

Paper Abstract:

Urban-Ecological Organizations (UEOs) exist to foster and develop knowledge and implementation of urban ecology by strengthening contacts, providing information, minimizing environmental risks, and enriching the dialogue between researchers and practitioners. They also represent the interests of the government and address ecological issues posed by increasing urbanization. This becomes pertinent because the rising rates of urbanization have created new challenges in the 21st Century. Therefore, there is a need for concerted efforts to squarely meet the challenges and maximize the opportunities afforded by urbanization. It is critical that such efforts adopt a holistic view for achieving sustainable urban development particularly within the context of climate change.

This review investigated the challenges and prospects of environmental governance and the role of urban environmental organizations (UEOs) as an instrument for managing Nigeria's environment in a sustainable manner. The review addressed: (1) the need for UEOs (2) Environmental Laws and UEOs: the Nigeria Situation versus the rest of the world; (3) Environmental governance in Nigeria; (4) Current Urban Conditions; and lastly (5) the way forward to Urban Ecological Sustainability. The expected outcome will unravel governance challenges at the federal, state, and local levels in tackling environmental challenges issues in the country. The review shows that Nigeria's environmental governance frameworks are ineffective in dealing with the magnitude of the country's environmental challenges. Hence, the institutional and legislative frameworks for

environmental governance must be comprehensive and effective. Also, it is crucial that the three tiers of government should show strong political will while the UEOs in both public and private sectors should collaborate to drive the transformation towards sustainable urban development.

Paper Title: Relationship between Flexibility of Technology, growth strategy and Sustainable performance of firms: A Study in the Context of Indian Iron and Steel Industry



Himanshu Sekhar Nayak



Amar KJR Nayak



Pallavi Das

Paper Abstract:

In this paper we have examined the relationship of one of the attributes of process technology i.e. flexibility of technology (FT) with long term performance of the firms in the context of Indian Iron and Steel Industry (IISI). From the literature review, we have inferred that flexibility of Technology is one of the factors that supports growth of firms. Multiple Regression Model is employed to explore the impact of FT on long term performance of sample firms. We have collected data of two sample IISI for the period from 2012 to 2021 from their annual report. We find that flexibility of Technology positively affects the environmental and economic performance of the firms, where as there is no evidence of positive relationship between FT and the social performance of the firms. We observe that a higher technological flexibility enhances the long term economic and environmental performance thus enhances overall sustainability of the IISS.

Paper Title: Crafting *interdependence* in meaningful work and relationship building: Experiencing economic practice in community led business at Mohenjo-Daro



Nagma Sahi Ansari



Anannya Deb Roy

Paper Abstract:

This paper is *dedicated* to Mohenjo-Daro, a small community driven entrepreneurial organization by women that forays interdependent structures of relationships and leadership opportunities for rounded well-being of individuals and community. This business advocates looking beyond the matrix of profitability in an organization and redirects us to look at the idea of multi-faceted growth in terms of upward social mobility and creating social value in product and *in people*.

Mohenjo-Daro engages with women coming from difficult economic and social backgrounds and provides them a platform to propel both learning and earning. The community stresses on the need to invest in the human capital for skill-sharing and at the same time acts as a haven for emotional bonding. Women working at this community led business add meaning to the tangible production line and the interdependence of each community members with one another adds meaning to the lived lives of these very women. The fluidity in the structure of the organization allows for individual agency which leads to a celebration of production as well as leisure. Work and relationships weave itself naturally through the very fabric of the organization.

We have taken the idea of work, economy and life form the theoretical constructs of Adam Smith, John Ruskin, Rabindranath Tagore and Mahatma Gandhi. Practicing narrative inquiry, we delve into understanding how this woman led community is creating a coextensive economic model that alters the idea of traditional understandings of economic activities and social existence. Interdependence emerges as a key focus area to re-imagine the elements and principles (dynamics) revolving around individual, work, nature, and organization. We provide interpretation on relationships between community members, interdependence of thought and action and their emanating social affections from the stories of three participants as our findings. We clarify our position and worldview contextualizing our interpretation and thought-value.

Paper Title: Entrepreneurship and Wellbeing: Narratives of a Woman Craft Entrepreneur



Anannya Deb Roy



Goutam Saha

Paper Abstract:

Issues of environmental degradation, income inequality, and jobless economic growth are pressing issues across the world. India is no exception. Big corporations, with their tremendous economic prowess, are creating wealth at a faster rate leading to more income inequality. Pandemic made the macro environment more volatile and uncertain. Against this backdrop, can a small scale business, prosper economically, and develop well-being for its artisans, employees, partners, and investors, creating jobs and livelihoods, creating environment-friendly products and services through effective relationship building with all the stakeholders. We identified a women entrepreneur for our study. Criteria for selecting the organization are a) craft-based organization with environment-friendly products that naturally provide livelihood/employment to a good number of people with b) a minimum 10 Crore turnover with ten years of business operation. The organization started its journey as NGO. Now it is a private limited company with considerable shares are with artisans.

We have analysed the relationship between the organization and its stakeholders and tried to find how it ensures wellbeing of the artisans, its employees, the customers, the suppliers and the investors. We made narrative enquiry of the entrepreneur's life and her entrepreneurial journey. We also used in-depth interviews to understand the relationship between the organization and its stakeholders and the state of well-being of the stakeholders of the organization. We have found with its limited resource, the organization generated a considerable extent of well-being for artisans, employees, and customers. It also maintained a good relationship with its suppliers and investors. We also identified a few areas for improvement for the organization for the better wellbeing of its stakeholders.

Paper Title: Impact Pathway for Local Seed Systems adapting to "People-Led Development" process in dryland areas of Odisha, India (experience in Malkangiri block)



Biswamohan Mohanty

Paper Abstract:

Local Seeds are the identity of the Adivasi community and brings in time tested wisdom associated with it. Traditional farming systems have invented local seeds through natural but diverse interactions of species and innovations by the common farmers over thousands of years of their interaction with the environment. Modern systems are cost intensive and only for profit, whereas the local farming system is more focused towards enriching and sustaining the local biodiversity

Enabling communities to decide what they want to grow has been a challenge in the market economy that creates an inferiority complex among those who are not active consumers in the market place. Bringing dignity to the traditional local food and agricultural systems. Seeds are life sources and it feeds the civilisation as well as sustains our Bio-diversity. The traditional wisdom is based on the local seeds and their resilience to enrich the local environment. The small holder family farmers carry a rich knowledge to enrich the local agroecology associated with the local seeds. ORRISSA-NGO as the change agent tried to bring in dignity to the traditional knowledge systems. The group had a great learning to understand the importance of the local traditional seeds and the local farm wisdom associated with it. The resilient characters of the local seeds demonstrated a strong base to help families increase their food diversity and meeting their food needs in the odds of climate change effects.

Technical Session 2

Session Chair:



S. C. Patra

Paper Presenters:

Paper Title: Contribution of tribal women in social entrepreneurship – A case study on Impact of WADI intervention of NABARD at Korba, India



Bhawana Pal

Paper Abstract:

Purpose –Following experiential learning theory, this paper explores women’s life changing experiences to show involvement NABARD, primary production, sustainable agriculture and Farmers producer organization (FPO) in formulation of regenerative rural ecosystem.

Design/methodology/approach – To explore the life changing lived experiences of women beneficiaries by being part of the WADI intervention for last ten years, researcher used a qualitative interview design and Thematic analysis.

Findings –The transformation from being just a migrant labourer to being a social entrepreneur is the addition of novel learning. Furthermore, the analysis provides insights into the challenges experienced by women beneficiaries, strategies undertaken, and lessons learned through WADI development and FPO formation.

Research limitations –The study was conducted at Kartala-I & II WADI, Korba, India, which can be extended to other areas of the country.

Practical implications – Women beneficiaries are encouraged to contribute in regenerative economy as a part of society through their sustainable products and services for the greater good. The paper shows that if timely intervention is provided, women feel a sense of empowerment, contribute to family income, create jobs and even help in economic growth.

Originality – This study’s unique contribution and origin are to explore the role of institution and social entrepreneurship through WADI-related life changing experiences of women beneficiaries in India. Moreover, this study theoretically contributes to the importance of regenerative ecosystem.

Paper Title: Towards Sustainable Livelihood: A study on Tribal Women Street Vendors in Dimapur, Nagaland



Imnayangla Jamir



M. Hilaria Soundari

Paper Abstract:

Street vending is a global phenomenon and is the most visible aspect of the informal sector. It is the unorganized sector for self-employment. They occupy space on the pavements, public, private areas, or move from place to place carrying their goods. Supporting the development of interdependent actions can create a better entrepreneurial ecosystem for tribal women street vendors and improve their quality of life. The objectives of the study portrayed the problems faced and understanding the support system of tribal women street vendors for livelihood sustainability in Dimapur, Nagaland. The street vendors are vulnerable to income irregularities, and livelihood risks. In Nagaland, most street vendors are women from diverse tribes and socio-economic backgrounds, selling various products ranging from vegetables to meat, fast food, handicrafts, thrift clothing etc., to urban consumers. Through this street vending, women vendors sustain their families by providing food, shelter, healthcare and supporting their children for formal education. The study used a qualitative method using a case study and in-depth interview tools to collect data. Women are engaged in street vending across the state for livelihood means to support families. Despite the struggles and challenges, women are resilient in contributing enormously to the local economy.

Paper Title: Circular Economy: Employment Opportunities for the Ivorian Population



Léopold Nangorgo Yéo

Paper abstract:

Waste management in Côte d'Ivoire is a major daily concern in the Abidjan District and in cities in the interior of the country. These communities are characterized by the proliferation of wild dumps, solid waste of all kinds. Moreover, their contexts are doubly influenced by a process of

accelerated and poorly controlled urbanization on the one hand, and a difficult economic situation marked by a lack of financial resources on the other. In theory, however, the thinking seems quite simple, because the foundation of the consumer society finds its limits today in the face of environmental challenges, employment and the increase in the world population, which should increase by 43% between 2012 and 2100. Our withdrawals from natural resources already far exceed the earth's bio-capacity to provide non-renewable resources and absorb the ever-increasing production of waste. While circular principles have been applied for many generations in African customs, There are now greater opportunities to exploit the circular economy as a development strategy to improve livelihoods and reduce poverty. The implementation of nationally determined contributions under the Paris Climate Agreement presents a \$3 trillion market opportunity by 2030.

The circular economy is an economic system of exchange and production which, at all stages of the product life cycle (goods and services), aims to increase the efficiency of the use of resources and to reduce the impact on the environment. Its objective is to break with the linear logic that prevails: «extract, manufacture, consume, discard» and proposes to produce differently, integrating an ecological requirement at all levels, from design, through production, to recycling. The circular economy is therefore based on the principle of 3Rs (Reduce, Reuse, Recycle) translated into six (6) pillars (eco-design, industrial ecology, economy of functionality, lengthening the life of products and recycling, responsible consumption). The circular economy model has grown as a sustainable development paradigm in recent years. At the continental level, the African Union and the African Ministerial Conference on the Environment have recognized circularity as a priority area for their respective recovery programs launched in the wake of the Covid-19 pandemic.

These observations suggest that the linear model has reached its limits and has more consequences than advantages. This situation has generated a collective awareness and has made it possible to take steps to reduce the environmental impacts of waste. That's why we have a new model that is more efficient. It's the circular economy. Several African countries have also included the circular economy in their nationally determined contributions, and some are developing national action plans for the circular economy.

Paper Title: Handcrafting Social Bonds -Embroidering the Unspoken Narratives of Phulkari into a *Well-being* saga



Neeti Banga



Anannya Deb Roy

Paper Abstract:

What forms a society? It is the sum total of the proximal relationships between individuals; an amalgamation of the traditions and rituals, rooted in their culture. This brings us to the concept of **Social Interdependence and Wellbeing**. Amartya Sen's (1985) idea of well-being has been taken as the theoretical construct for this study. *Well-being* can be considered as the sum total of wellness of an individual perceived from various contexts-the most basic being physical and leading to more complex aspects like-emotional, economic, creative and social.

Social well-being is affected by all other individualistic elements and plays an important role in development of symbiotic and accommodating relationships between the members of society. Its cascading effect, snowballs into an overall positive upliftment of the wellbeing factor.

Many rural men and women in India, have been practicing handicrafts, traditional to their society and culture, a thread connecting them into fulfilling relationships. One such traditional, beautiful handcraft is an embroidery from Punjab, called '*Phulkari*'. The Punjabi term *Phulkari* is derived from two words: Phul and Akari, *Phul* means flower and *Akari* means shape. This embroidery was traditionally done on a slightly open weave cotton khaddar fabric, with very bright coloured cotton or silk threads, with motifs symbolizing various life elements.

The researcher had the opportunity to have first-hand interaction with artisans practicing this craft while conducting workshops with them. The curiosity to decipher the individualistic reasons for pursuing the beautiful hand embroidery of Punjab-*Phulkari*, and its larger impact, has led the researcher to pursue this research. This study is an effort to find this kinetic, yet shrouded, interdependence individual and society. It focuses on the power of an individual, a drop in the ocean, by delving into the life of artisans practicing Phulkari embroidery in Punjab, India.

Paper Title: Water Hyacinth and Wellbeing of Rural Women in Kerala: A Study on Reciprocal interactions of Gender- Nature

Ganga P Sreenivasan,



M. Hilaria Soundari,

**Paper Abstract:**

Water hyacinth fibre crafts, based on a weed widely growing in the water bodies on west coast of Kerala, southernmost district in India is providing a sustainable source of income to a large

number of families in the area. This innovative sector evolved when the rural women utilized water hyacinth which was adversely affecting their fishing community to make value added products. The objectives of the study were to provide the demographic profile of women workers in the water hyacinth fibre craft industry, to list out the value-added products made from the water hyacinth and to assess the level of wellbeing of women workers. The study was conducted in the fibre craft cluster located in Kodungallor in Thrissur district, in the state of Kerala. It was revealed that the craft is promoting well-being to rural women from every category— married, unmarried, widows and handicapped and ecological conservation as well.

Paper Title: Regenerative Ecosystem, the way forward to saving our civilization



Pratima Nayak,

Paper Abstract:

In order to reverse the damage and allow for life on the planet to continue – though with changes – we need to implement regenerative development, based on a holistic approach that integrates six layers: 1) Regeneration of functional landscapes, where we produce and conserve, maximizing ecosystem function; 2) Social strengthening by community organization and development, to cope with adaptation to climate change and reduce sumptuous consumption patterns; 3) A new paradigm for economic development where people matter more than markets and money, measured according to the wellbeing of humans and all life forms; 4) Conservation and valuation of living culture which is the necessary bond for community life, where local knowledge, values and traditions are shared within family, friends and the community as a whole, giving meaning to these terms; 5) Rethinking and redesigning current political structures so they reflect true participatory democracy without the influence of money and power and especially fostering long term vision and actions that seek increased livelihoods and happiness and not only gross income, and most importantly; 6) Fostering deep spiritual and value structures based on ethics, transparency and global well-being to allow humanity to live in peace with itself and Mother Earth.

A vibrant, fair and regenerative futuristic ecosystem is possible not when thousands of people do climate justice activism but, when millions of people do the best they can. What we are doing to the world is but a mirror reflection of what we are doing to ourselves and to one another. The futures for a regenerative ecosystem both natural and built are those that provide suitable habitation for human and non-human alike.

A transition to a regenerative ecosystem is a transition to a regenerative economy that serves our collective needs and enables restoration in bringing about prosperity for all. For an ecosystem to be prosperous & vibrant requires coming together with a shared goal through collaboration with genuine openness to change and then we can bring about restoration and a sustainable ecosystem.

“Instead of doing less damage to the environment, it is necessary to learn how one can participate with the environment by using the health of ecological systems as a basis for design. The shift from a fragmented to a whole system model is the significant cultural leap that consumer society needs to make through framing and understanding living systems, interrelationships in an integrated way” (Bill Reed, 2007).

