



# COMPENDIUM

of best practices

## WOMEN'S ROLE IN DISASTER RISK MANAGEMENT

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Compiled by India Universities and Institutions Network for Disaster Risk Reduction - National Institute of Disaster Management (IUINDRR - NIDM), Ministry of Home Affairs, Government of India



**COMPENDIUM OF BEST PRACTICES**  
**ON**  
**WOMEN'S ROLE IN DISASTER RISK MANAGEMENT**  
**(HON'BLE PRIME MINISTER'S TEN POINT AGENDA 3)**

Compiled by

**India Universities and Institutions Network for Disaster Risk Reduction  
(IUINDRR - NIDM)**



**National Institute of Disaster Management**  
*(Ministry of Home Affairs, Government of India)*

Plot No.15, Pocket 3, Block-B, Sector-29, Rohini, Delhi-110042  
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# **Compendium of Best Practices on Women's Role in Disaster Risk Management**

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स्मृति जूबिन इरानी  
Smriti Zubin Irani



मंत्री  
महिला एवं बाल विकास  
अल्पसंख्यक कार्य  
भारत सरकार  
Minister  
Women & Child Development  
Minority Affairs  
Government of India

### MESSAGE

In crisis, women often emerge as unsung heroes, their pivotal role in safeguarding communities deserve both recognition and encouragement. As we delve into the illuminating compendium, let's not just recognise but exalt the invaluable contributions of women in disaster risk management.

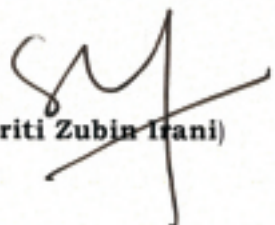
Moving beyond mere acknowledgement, we must chart actionable steps to empower women as pivotal agents of change in fortifying resilient communities. Tailored educational programs should equip women with the acumen for active participation in disaster preparedness, response and recovery, while leadership development ensures diversity in decision-making roles.

Crucially, involving women in the design of community-based early warning systems enriches their efficacy and inclusivity. Prioritising women's health and well-being during disasters is imperative for safeguarding both physical and mental resilience.

Economic empowerment helps create opportunities for women in disaster-affected regions, fostering financial independence through women-led businesses for enduring recovery.

Ensuring the active participation of women guarantees that their perspectives are earnestly considered. I commend the contributors of this compendium for their dedication to highlighting women's roles in disaster risk management.

May this document serve as a wellspring of inspiration and a guiding beacon for meaningful initiatives, empowering and elevating women in disaster management, encapsulating our shared commitment to a secure tomorrow.

  
(Smriti Zubin Irani)



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अमृत महोत्सव

नित्यानन्द राय  
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सत्यमेव जयते



भारत 2023 INDIA  
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HOME AFFAIRS  
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NORTH BLOCK, NEW DELHI - 110001

## संदेश

मुझे यह जानकर प्रसन्नता हो रही है कि हमारे माननीय प्रधानमंत्री जी ने भारत में आपदा को कम करने के लिए दस सूत्र दिए हैं। एजेंडा-3 आपदा जोखिम प्रबंधन में महिलाओं की अधिक भागीदारी और नेतृत्व को सुनिश्चित करता है।

जैसा कि हम सभी जानते हैं कि हर साल आपदाओं की संख्या बढ़ रही है। भारत जैसा विकासशील देश तभी आपदा-प्रतिरोधी बन सकता है जब शमन प्रक्रिया की योजना और तैयारी में पुरुषों और महिलाओं की समान भागीदारी सुनिश्चित की जाए। वे न केवल पीड़ित हैं बल्कि उनमें परिवर्तन की प्रेरक शक्ति भी है। उनके पास पूरा ज्ञान और कौशल है जो समाधान प्रदान करने और जोखिम प्रबंधन के लिए महत्वपूर्ण हैं। वे जमीनी स्तर पर आपदा के प्रभावों के बारे में सबसे अच्छी तरह जानते हैं।

महिलाओं का सहयोग सुनिश्चित होने पर ही सरकारी लक्ष्यों की प्राप्ति होगी। अध्ययन के व्यापक लाभों के लिए हमें एक अतिरिक्त मील भी आगे बढ़ना होगा। यदि हम आपदा के प्रति उनकी प्रतिरोधक क्षमता बढ़ाने में महिलाओं की भूमिका को मजबूत करने का प्रयास नहीं करते हैं तो विनाश का आकार और हानिकारक परिणाम बढ़ेंगे।

मुझे आशा है कि DRR के लिए हमारे माननीय प्रधानमंत्री का नया दृष्टिकोण आपदा-प्रतिरोधी राष्ट्र का निर्माण करेगा और आपदा जोखिम न्यूनीकरण नीति की लैंगिक संवेदनशीलता सुनिश्चित करने के लिए महिलाओं की भागीदारी के मुद्दों पर एक अभिनव दृष्टिकोण दिखाएगा। जेंडर घटक को अतिरिक्त भाग मानने की बजाय विकास प्रक्रिया का अभिन्न अंग मानना आवश्यक है।

मैं NIDM को माननीय प्रधानमंत्री जी के DRR के दस सूत्रीय एजेंडे के अंतर्गत संग्रह लाने के लिए बधाई देता हूँ।

मैं IUINDRR-NIDM द्वारा किए गए प्रयासों का समर्थन करने के लिए सभी को हार्दिक शुभकामनाएं देता हूँ।

(नित्यानन्द राय)

नई दिल्ली।  
24 मई, 2023



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**Rajendra Ratnoo**, IAS  
Executive Director



सत्यमेव जयते



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(गृह मंत्रालय, भारत सरकार)

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## MESSAGE

IUINDRR-NIDM is an initiative connected to Agenda six of the Hon'ble Prime Minister's Ten Point Agenda on Disaster Risk Reduction in India. It was launched on 25th February 2021, by the Hon'ble Minister of State for Home Affairs, Shri Nityanand Rai.

While the journey so far has been encouraging, the strength of the network lies in its structure which provides a platform for the higher education sector to incorporate the innovations, knowledge, and ideas towards the needs in the field of disaster risk reduction at various levels.

The efforts of the academia displayed at the state and district levels are praiseworthy and speak volumes about the leadership commitment and productive effort involved the objectives of this Network and Agenda six.

As a well-received initiative, it is only due to the consistent support of all the stakeholders involved in this network that we have been able to engage various universities and institutions on the national platform.

I am pleased to be a part of disseminating this compendium, consisting of innovative activities and best practices compiled by higher education institutions and universities at the regional, state, and district levels across the country.

I would like to extend my sincere appreciation and congratulate the IUINDRR- NIDM team for their initiative in mapping 27 such case studies from across the country and bringing them out as a compendium.

The publication of this compendium identifies academicians and their institutions which have contributed towards the women's role in disaster risk reduction. I hope this will turn out to be a great source of reference to improvise and build up on the strategies towards gender mainstreaming in the field of disaster risk reduction. I would like to thank the universities and institutes which have contributed to this compendium, and the women whose struggle will pave the way for transformational changes in the field of disaster risk reduction.

(Rajendra Ratnoo)

**Prof. Santosh Kumar**

Senior Advisor

NIDM



## FOREWORD

The Indian Universities and Institutions Network for Disaster Risk Reduction (IUINDRR-NIDM) is proud to present this unique booklet on Innovative Activities that has been executed by our country's higher education universities and institutions. It is heartening to witness this compendium where an attempt has been made to capture initiatives taken by higher education and their story of remarkable success in the field of disaster management.

My team has been working diligently to compile the best initiatives that universities and institutions have designed, implemented, and monitored in order to showcase their unwavering resolve to stand up for women's issues and gender mainstreaming.

Our information sources have been the Vice Chancellors and Head of the institutions and Universities that have displayed their strong commitment by providing us with constructive input in a timely manner.

I would like to take this opportunity to deeply thank the leadership team at the Ministry of Home Affairs, Government of India, for their guidance and advice. I would also like to appreciate the enterprising and tireless efforts of the IUINDRR-NIDM secretariat in highlighting the achievements of this pioneering compendium comprehensively. I am also extremely grateful to Former Executive Director, Shri Taj Hassan and present Executive Director, Shri Rajendra Ratnoo, IAS for their support in this endeavour to produce a document demonstrating the various attempts being made to empower women across the length and breadth of our country towards disaster resilience.

This compendium is a small step toward our Nation's resolution to make our country disaster resilient and strengthen gender equality by promoting the need to establish a safe, conducive, and promising environment for women. I earnestly hope the information provided in this booklet is meaningful, productive and inspiring. In the vision of the Hon'ble Prime Minister of India, I urge readers to join the movement towards empowering women and contribute to efforts to build a safer world.

(Santosh Kumar)

# PREFACE

In pursuance of the Hon'ble Prime Minister Ten Point's Agenda 6, a Network of Universities and institutions has emerged, which was outlined by him before the leaders of the Asian Countries during the Asian Ministerial Conference hosted by the Government of India in the year 2016 in New Delhi. The Agenda 6 of Hon'ble PM's 10 point Agenda stresses developing a network of universities and institutions to work on disaster issues in India. Hence, the National Institute of Disaster Management, Ministry of Home Affairs, and Govt. of India took an initiative of making an India Universities & Institutions Network for Disaster Risk Reduction (IUIINDRR-NIDM) for building partnerships with Universities and Institutions in the field of disaster risk reduction.

The Indian Universities and Institutions Network for Disaster Risk Reduction-National Institute of Disaster Management (NIDM), India, took the initiative to compile Good Practices of universities and institutions on Agenda 3, "Role of Women in Disaster Risk Management." The Agenda 3 of the Hon'ble Prime Minister focuses on the importance of women's involvement in risk reduction and reconstruction of society.

It is necessary to encourage greater involvement and leadership of women in disaster risk management to support the special needs of women affected by disasters. Women are generally seen as vulnerable to disasters; but women can play an important role in disaster risk reduction in the household, society, community and beyond. We need a large number of women volunteers, engineers, masons and building artisans to participate in post-disaster reconstruction and promote women's self-help groups which can assist in livelihood recovery. There is a need to include women in NDRF and SDRF, and to train elected women representatives at the local level under development.

Hence, in this direction, the present compendium targets to foster support and the role of academicians and researchers in disaster risk reduction.

As per the theme of the Compendium, an attempt has been made to explore how women can be mainstreamed to reduce the risk and impact of a disaster. Participatory methods, community feedback and complaints, expert knowledge, and relevant literature are identified as the most appropriate methods to recognise women's role in disaster risk management.

The articles selected to be included in the compendium further outline the existing barriers, responsible parties, relevant protocols, and ways of promoting the process in relation to mainstreaming women in their given environment.

Mainstreaming gender in terms of disaster risk management requires identifying gender-based vulnerabilities and capacities of people as the basic step. Then, the specific needs which arise from gender-based vulnerabilities and the capacities of people are required to be integrated into development to minimise the vulnerabilities. In this compendium, capacities are considered as people's knowledge of disaster risk management that they possess based on their past disaster experiences. Accordingly, incorporating the knowledge and needs to reduce the risk of a disaster for women by identifying the knowledge and needs, and integrating the other processes of the given environment



with the intention of risk reduction are referred to as mainstreaming them. Various case studies included in the compendium take us through a journey of various strategies that different educational institutions/universities across the country have applied so far to integrate the components of disaster risk reduction and emergency preparedness to mainstream the role of women in the realm of Disaster Management. The initiatives carried out by IUINDRR-NIDM towards the Role and Contribution of Higher Educational Institutions in Disaster Risk Reduction in India. The initiative's objective is to give recognition to good practices/initiatives on Agenda 3 of the Hon'ble PM, which can be replicated and scaled up by providing a platform for diverse stakeholders, including key Government departments.



**(Santosh Kumar)**



## ACKNOWLEDGEMENT

In pursuance of the Hon'ble Prime Minister's ten-point Agenda 6, the National Institute of Disaster Management (NIDM), Ministry of Home Affairs, Government of India, has established the India Universities and Institutions Network for Disaster Risk Reduction (IUINDRR-NIDM). The vision of this network is to build the nation and communities safe and resilient to disasters through education, research, technology and dissemination of information and knowledge.

This compendium is the endeavor of IUINDRR-NIDM to commend and encourage higher education institutions for their active involvement in India's disaster risk reduction efforts. Specifically, it highlights 27 exemplary practices focused on 'The Role of Women in Disaster Risk Management,' endorsing women's leadership in this arena (PM Agenda-3), initiated by various universities and institutions of India.

We extend our heartfelt gratitude to the organizations that participated and contributed to this compendium. Their engagement and support were pivotal in establishing this as a significant document in the domain of women's leadership in disaster risk reduction. The insights gathered will be beneficial for policymakers and practitioners dedicated to integrating the Hon'ble Prime Minister's third agenda into disaster risk reduction strategies. We also give our heartfelt thanks to each applicant and their Vice Chancellors/ Head & the institutes who enthusiastically supported this initiative.

Our special thanks to the former Executive Director, Shri Taj Hassan, IPS, National Institute of Disaster Management, whose invaluable support and guidance made this initiative possible.

Our initiative was supported by an esteemed panel of Jury members, without whom this effort wouldn't have materialised. We express our gratitude to Dr. Shobhita Rajagopal, Director, Institute of Development Studies, Jaipur; Prof. H. Venkateshwarlu, Vice Chancellor, Central University of Kerala; Dr. Talat Ahmad, Vice-Chancellor, University of Kashmir; Ms. Madhavi Ariyabandu, Director, Duryog Nivaran - South Asia Network for Disaster Mitigation, Sri Lanka; Dr. Prakash Chauhan, Director, Indian Institute of Remote Sensing, Dehradun; Prof. Prabha Shankar Shukla, Vice-Chancellor, North-Eastern Hill University, Shillong; Prof. Shamim Ahmad, University of Kashmir; Prof. Arijit Roy, IIRS, Dehradun, Uttarakhand, and Prof. S.B Prasad, NEHU, Shillong, Meghalaya. Their support

and guidance were instrumental in selecting the five best initiatives from the nominations received. Their expertise shaped this initiative significantly, and we are honored to have had them on board.

We acknowledge and congratulate Dr. Shalini Dhyani, CSIR-NEERI & HNB Garhwal University, Uttarakhand; Prof. Ratnesh Jha, Head, Dr. Rajendra Prasad Central Agriculture University, Pusa, Bihar; Ms. Naseem Shaikh, Associate Director, Swayam Shikshan Prayog; Dr. Ravindra S. Gavali, Professor & Head, National Institute of Rural Development and Panchayati Raj, Hyderabad; Dr. Kiran Jalem, University of Jharkhand, and Ms. Kiran Singh, FES, Ahmedabad, Gujarat, for their contributions toward Agenda 3. Their initiatives were recognized as the best five practices after a rigorous selection process by the jury panel.

We express immense gratitude to Ms. Sarojini Ganju Thakur (Retired Additional Chief Secretary, Government of Himachal Pradesh) and Dr. Ramanathan (Ram), the co-founder of Development Solutions, Delhi, for their invaluable contributions. Additionally, we appreciate Dr. Varsha Tanu, Associate Professor, Indian Institute of Health Management Research (IIHMR), Jaipur, for her assistance in refining each case story.

We extend our thanks to Shri Rajendra Ratnoo, IAS, Executive Director, NIDM, for his support and encouragement in completing this crucial document. Last but not least, our sincere thanks to Prof. Santosh Kumar, Senior Advisor and Head, IUINDRR-NIDM, whose expert guidance and mentorship were instrumental in successfully accomplishing this task.



**(Preeti Soni)**

Senior Program Consultant  
IUINDRR-NIDM

# CONTENTS

Message

Foreword

Preface

Acknowledgement

Introduction

1

## CATEGORY I- PROMOTING LEADERSHIP

- 1. Women-led Climate Resilient Farming Model (WCRF)** 7  
*Ms. Naseem Shaikh, Associate Director - Programs, Swayam Shikshan Prayog, Pune, India*
- 2. Empowering women to face the challenges of landslides and disaster in Central Himalaya through fodder bank approach** 12  
*Dr. Shalini Dhyani, CSIR-National Environmental Engineering Research Institute (CSIR-NEERI), Nagpur, Maharashtra, India; Dr. Rakesh Kumar Maikhuri, HNB Garhwal University Srinagar Garhwal, Uttarakhand, India; Dr. Deepak Dhyani, Society for Conserving Planet and Life (COPAL), Dehradun Uttarakhand, India.*
- 3. Integrated Approach for Empowerment of Rural Women through Income Generation and Drudgery Reduction** 16  
*Dr. Ratnesh Kumar Jha, Professor (Agronomy), Project Director, Centre for Advance Studies on Climate Change (CASCC); Dr. Shankar Jha, Assistant Professor; Dr. S.P. Singh, Assistant Professor; Dr. S.S. Prasad, Assistant Professor & Ms. Rupashree Senapati, Research Associate, Dr. Rajendra Prasad Central Agricultural University, Pusa, Bihar.*
- 4. Mushroom Cultivation: An Adaptation Strategy for Climate Resilience and Empowerment of Rural Women in Bihar, India** 19  
*Dr. Ravindra S Gavali, Professor & Head, CNRM CC&DM, National Institute of Rural Development and Panchayati Raj (NIRDPR) and Dr. Kiran Jalem, Assistant Professor, Department of Geoinformatics, Central University of Jharkhand, Ranchi*
- 5. Benefits of Custom Hiring Centres (CHCs): An Experience of Small Landholding Women Farmers from Bihar, India** 23  
*Dr. K. Krishna Reddy, Associate Professor, CNRM CC&DM, National Institute of Rural Development and Panchayati Raj (NIRDPR), Hyderabad and Dr. Kiran Jalem, Assistant Professor, Department of Geoinformatics, Central University of Jharkhand, Ranchi.*
- 6. Women Fighters** 27  
*Ms. Disha Gupta, Independent Researcher & Ms. Kiran Singh, Senior Programme Manager, Foundation for Ecological Security, Gujarat, India.*
- 7. Environmental Concerns and Civic Engagement of Women College Students in Mumbai** 30  
*Dr. Lidwin Dias, Principal, College of Social Work (Autonomous), Nirmala Niketan, Mumbai, India.*
- 8. Nurturing Women's Leadership for Disaster Resilient Society** 35  
*Prof. Yashpal Sundriyal, Department of Geology, HNB Garhwal University, Srinagar, Uttarakhand, India*

# CONTENTS

## CATEGORY II- EMPOWERING WOMEN

- 9. Involvement of Community in Disaster Management- Central University of Tamil Nadu 41**  
*Prof. Sigamani Panneer, Head of the Department of Social Work & Coordinator of Centre for Happiness & Centre for Disaster Management and Prof. Sulochana Shekhar, Dean, School of Earth Sciences, Head of the Department of Geography & Centre for Disaster Management, Central University of Tamil Nadu, Thiruvavur.*
- 10. Nazareth Community Tool Box-NCTB 44**  
*Dr. Mary Angeline Santhosam, Principal, Nazareth College of Arts & Science, Chennai, Tamil Nadu, India.*
- 11. Disaster and Beyond: Towards Operationalizing Social and Environmental Justice 48**  
*Dr. Jacquleen Joseph, (Corresponding Faculty), Professor, Dean; Prof. Ramesh Jare, Dean, Tuljapur & Mr. Mahesh Kamble, Assistant Professor, JTSDS, Tata Institute of Social Sciences, Mumbai, in the roll-out of the project is hereby acknowledged, along with that of the funding partner, True North Pvt. Ltd*
- 12. Infusing Gender Consciousness, Intersectionality & Social Inclusion Perspectives in Disaster Pedagogies: A Systematic Review towards Developing Intersectional Disaster Management (DM) Curriculum 53**  
*Dr. Jacquleen Joseph, (Corresponding Faculty), Professor, Dean & Ms. Lavanya Arvind, MPhil, Assistant Professor, Jamsetji Tata School of Disaster Studies, Tata Institute of Social Sciences, Mumbai, India.*
- 13. 'Vidushee Gargi' -Center for Women Development- Gujarat Technological University 59**  
*Dr. Komal R. Borisagar, Associate Professor, Graduate School of Engineering and Technology, Chair Person, Vidhushi Gargi - Center for Women Development Cell, Ms. Janki Joshi, AIC-GISC Foundation, ATAL Incubation Center, Ahmedabad and start up advisor.*
- 14. Socio- Economic Upliftment of Women through Welfare Activities and Technology Training 62**  
*Dr. Varinder Singh Kanwar, CEO-NABET, Quality Council of India, New Delhi, (Former Vice Chancellor, Chitkara University, Himachal Pradesh) & Dr. Ashok Kumar, Associate Professor, Chitkara University, Himachal Pradesh, India.*
- 15. Empowering women for Enabling Everyone 66**  
*Dr. K.S. Vignesh, Assistant Professor, Centre for Disaster Management and Dr. E. Poovammal, Professor, SRM School of Computing, SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamil Nadu, India.*
- 16. Empowering Women in Disaster Risk Management - Bundelkhand Region 69**  
*Shri Manish Kumar Shukla, Assistant Professor, Dept. of Disaster Management, Swami Vivekanand University, Sagar, Madhya Pradesh, India.*
- 17. Empowering Women to play a leadership role in Disaster Risk Reduction 72**  
*Ms. Kavita Agrawal, Chairperson, Women's Study Centre, Head, Department of Computer Science & Engineering, Integral University, Lucknow, India.*

# CONTENTS

- 18. Fire Safety Training Programme for Women** 76  
*Dr. R. Madhumala, Professor & Dr. T. B. Meenalochani, Assistant Professor, Department of Periodontology; Dr. K. Priya Deepa Lakshmi, Assistant professor, Department of Public Health Dentistry, Vinayaka Mission's Sankarachariyar Dental College, Salem, Tamil Nadu.*
- 19. Empowering rural marginal women farmers through financial linkages for livelihood activities at Kishangarh Bas Block, Alwar District, Rajasthan** 79  
*Shri Pradeep Singh Pundhir, Executive Director, Society for Public Education Cultural Training and Rural Action (SPECTRA) Organization, Alwar, Rajasthan, India*
- 20. Migrant women turn breadwinners** 83  
*Ms. Kiran Singh, Senior Programme Manager, Foundation for Ecological Security, Gujarat, India.*
- 21. Promoting Leadership to the Woman Torchbearer of Manipur** 89  
*Er. Kosygin Leishangthem, Assistant Professor, Department of Civil Engineering, Manipur Technical University, Takyelpat, Imphal, Manipur, India.*
- CATEGORY III - POST-DISASTER AND RECONSTRUCTION**
- 22. Helping women recover their livelihood after Flood-related disaster** 95  
*Dr. K. Ajitha, Senior Professor and Director, Women's Studies Centre & Dr. Chinchu C., Post-Doctoral Fellow, Women's Studies Centre, Cochin University of Science and Technology (CUSAT), Kochi, Kerala, India.*
- CATEGORY IV - LIVELIHOOD AND RECOVERY**
- 23. Women Empowerment in Science, Technology and Innovation (STI) interventions for Disaster Risk Management (DRM)** 101  
*Dr. Sukhdeep Kaur, Scientific Officer, DST- Center for Policy Research, Panjab University, Chandigarh, India.*
- CATEGORY V- INITIATIVES TOWARDS SPECIAL NEEDS**
- 24. Initiatives for Disaster Management among Tribal Population** 107  
*Dr. Jilly John, Assistant Professor, Central University of Kerala, Kerala, India*
- 25. Rainfall forecast using Numerical Weather Prediction Model for Operational Flood Early Warning System (FLEWS) in Brahmaputra and Barak Valleys in Assam- A Case Study** 111  
*Dr. Rekha Bharali Gogoi, Scientist, North Eastern Space Applications Centre, Dept. of Space, Meghalaya, India*
- 26. Mahila Sabha paving the way for improved local governance** 116  
*Ms. Nivedita Menon, Independent Consultant & Ms. Kiran Singh, Senior Programme Manager, Foundation for Ecological Security, Gujarat, India.*
- 27. Initiatives towards Special Needs of Women/ First Aid Training** 119  
*Capt. Anand Subramanian, Principal, HIMT College (Pre-Sea Campus),(Affiliated to Indian Maritime University, Chennai), Kalpakkam, Tamil Nadu, India*

# INTRODUCTION

## BACKGROUND

India is among the most disaster-prone countries, with most areas exposed to recurrent natural hazards such as cyclones, earthquakes, landslides, floods and droughts. Climate change, environmental degradation and man-made hazards have further compounded the frequency and intensity of disasters along with increasing the vulnerability of key assets, including considerable human and animal lives.

Since, the frequency and magnitude of occurrence of natural hazards increased unprecedentedly within this century, policymakers, researchers and practitioners have endorsed innovative disaster risk reduction measures for enhancing resilience. In achieving this, disaster risk governance promotes innovative and accountable approaches enhancing their effectiveness.

We cannot control natural disasters but can survive them by adopting certain strategies. We can also try to stop the disaster from leaving a devastating impact. These natural disasters destroy many lives and properties. It is a serious disruption of the functioning of a community or society, which involves widespread human, material, economic or environmental impacts that exceed the ability of the affected community or society to cope using its own resources. People's participation is widely acknowledged as a necessary component of effective, efficient, and inclusive disaster-risk reduction. Realising the significance of community-based local solutions for disaster risk reduction, the role of women has been strongly recognised and advocated to mainstream their capacities to take stands at the time of decision-making.

A reality that is often overlooked in programme development and policy making is that women and children are the most vulnerable and at-risk from the impact of natural disasters and conflicts. Key factors contributing to women's vulnerability include lack of education, limited access to resources, economic conditions, and cultural issues. Several studies have reported that women are more vulnerable because they have less access to education and information. Engaging and empowering women are beneficial means of strengthening resilience to disaster risks. Just as gender roles and relations shape vulnerability to disaster, conversely, they also shape people's capacity to prepare, withstand, and recover.

Multi-stakeholder engagement is a fundamental element of disaster risk governance. Many international strategies and frameworks have identified women as one of the key

stakeholders in any disaster management efforts due to many reasons. Women play a significant role in disaster response and recovery stages, specifically at the household level.

The National Disaster Management Authority (NDMA) is India's apex disaster management authority. NDMA is headed by the Prime Minister as the ex-officio chairman. The Hon'ble Prime Minister, Shri Narendra Modi, enunciated a Ten-Point Agenda in his inaugural speech at the Asian Ministerial Conference on Disaster Risk Reduction in 2016, held in New Delhi, which has also been incorporated in the National Disaster Management Plan (NDMP).

The role of women in disaster risk management has been included in the Prime Minister's Ten Point agenda as 'Agenda 3 - Women's leadership and greater involvement should be central to disaster risk management. It is necessary to encourage greater involvement and leadership of women in disaster risk management. Women are disproportionately affected by disasters. They also have unique strengths and insights. India must train a large number of women volunteers to support the special needs of women affected by disasters. There is also a need for women engineers, masons and building artisans to participate in post-disaster reconstruction and promote women's self-help groups which can assist in livelihood recovery.

The role of women at the time of disaster is very important because they know their immediate environment, local resources and geographical locations very well. It is important for countries like India, with a diverse geographical region and exposure to disaster risks, to take adequate measures for mitigation. The effort to ensure proper safety, livelihood, food security and optimum nutrition during disasters has been carried out over the years. There are a plethora of existing solutions and forgotten traditional practices which can potentially address complex problems at the grass roots in an innovative and cost-effective manner. Rather than reinventing the wheel, solutions, such as, the initiatives taken for women and by women should be referred to apply, adopt and scale up to reap quick benefits during emergencies like the pandemic period. Women are often drivers of strong networks, managers, organisers and caretakers in the community and play a crucial role in disaster risk reduction. But women are still portrayed as victims and the most vulnerable section of any community who need to be protected the most from the disaster impact, failing to recognise the capacities of women as playing the most crucial role in reducing the risk of a disaster at the community level.

In this publication, an attempt has been made to gather various examples to explore and emphasise the role of women in disaster risk management and risk governance efforts and to uncover the barriers that limit their role in disaster risk management. Hence, an effort has been made to collect and compile substantial level of innovative management techniques adopted by women leaders and champions from various fields. Accordingly, it reveals that the role of women in disaster risk reduction is a vital practice for an effective disaster risk governance and resilience. Further, various socio-cultural factors,



individual characteristics, legal and institutional factors and socio-economic factors as the barriers that limit their roles in disaster risk reduction and disaster risk management efforts.

Looking at the central role given to women in terms of disaster management, the same theme has been selected for preparing a compendium on Agenda 3 of Hon'ble Prime Minister of India's 10-point Agenda on DRR "Role of Women in Disaster Risk Management". It aims to highlight the ability and capacity of women in disaster risk reduction and present examples through various best practices on how to mainstream their roles by suggesting certain empowering practices in communities. This has been compiled and coordinated by the National Institute of Disaster Management, Ministry of Home Affairs, Govt. of India.

Participatory methods, community feedback and complaints, expert knowledge, and relevant literature are identified as the most appropriate methods to recognise women's role in disaster risk management. The case studies selected for this compendium further outline the existing barriers, responsible parties, relevant protocols and ways of promoting the process in relation to mainstreaming women in their given environment.

In order to promote their leadership and role as change agents in building community resilience in various disasters, an effort has been made to collect and present a number of such success stories through various Universities and Institution's networks on disaster risk reduction.

Women's roles have been recognised by enlisting their important roles under the following categories: -

1. Promoting the leadership role of women in terms of Improving Emergency Preparedness and Response through technology.
2. Women's Empowerment and their inclusion that is, leaving no one behind. Solutions that target the most marginalised, Community Engagement: (Active participation of the community; community leadership)
3. Post Disaster Reconstruction by making strategies leading to strengthening the resilience and adaptive capacity of families in the community.
4. Livelihood and recovery improved availability, access, stability and utilisation of resources to help the women overcome the devastating effect of disaster.
5. Initiatives towards any Special Needs - Thematic Relevance, Governance in which any innovative solution was applied by women and for women.

### **Methodology**

We have involved only initiatives that are taken by universities and institutions, and the main objective of the compendium is to highlight the contribution of the higher education sector towards Agenda 3.

Solutions at the conceptual stage were not considered eligible. The entries were invited from within India. The initiative further emphasised that the solutions and good

practices must be compliant with the core humanitarian principles of humanity, impartiality, independence, and neutrality and should adhere to widely accepted codes of conduct, commitments and core standards. It also aimed at documenting effective practices, particularly the traditional and indigenous community practices and tried to reach out to practitioners, organisations and individuals who are working for the revival of such practices to share their experiences through this initiative.

### **Evaluation Methodology**

Evaluation of the applications was done by an esteemed panel of juries which included very distinguished panel members with significant contribution in their fields, in the field of DRR and social scientists. The distinguished panel members drew experience working in different sectors including government, academia, NGO and UN agencies.

### **Evaluation criteria**

The applications were reviewed on the following evaluation parameters: -

1. Thematic Relevance - Practices underlining the central role of women in disasters mitigation and response.
2. Innovation- offers a new solution to a vexing problem, fills a major gap, and improves on an existing solution centered towards women acceptable in a socio-cultural context.
3. Practicality -Result-oriented intervention, simplicity, Cost effective and acceptable.
4. Inclusion -Targeting most vulnerable & marginalised/ excluded group; adaptable and accommodative focused towards mainstreaming the women's role.
5. Impact and scalability - Demonstrated Results (output to impact); evidence/ indicators. Solves a complex problem, solution leading to sustainability and presents a replicable model.

### **Evaluation Phase**

1. Pre-screening:- Pre-screening of all the received applications was done by the project team based on the thematic relevance, review of the evidence presented by these case stories and review of validation links provided by the applicants who included project photographs, reports, published articles, data sources etc.
2. Evaluation by Juries:- Jury members were requested to evaluate the case studies on the agreed evaluation parameters. Each expert presented their initiative in front of the pre-screening committee as well as in front of the jury panel, and on the basis of that, jury members did the scoring.

# Category - I



**Promoting Leadership**

## WOMEN-LED CLIMATE RESILIENT FARMING MODEL (WCRF)

Ms. Naseem Shaikh



*Swayam Shikshan Prayog (SSP) has been awarded the United Nations Development Program's Equator Prize 2017 for devising an ecologically sustainable agriculture model to combat the adverse impacts of drought. Women-led Climate Resilient Farming (WCRF) model is de-risking small and marginal women farmers in drought-prone Marathwada. WCRF attempts to reposition women as farmers, leaders and change agents who adopt food-secure practices on their farms. The WCRF model focuses on four key dimensions: Market Linkage, Federating Women Farmers, Technology Integration and Water efficient micro irrigation models. It improves productivity, increases income, enhances the family's health and nutrition, and builds resilience. The unique cascading approach in ground deployment of the model makes it scalable, replicable and efficient. By adopting this model, women farmers are silently fighting climate change, building enterprises and boosting local economies.*

### Target Population

Women lie at the core of SSP's strategy. Grassroots women farmers with marginal or small family landholdings of up to 2 hectares of land are the target group for implementing this model. SSP now has a strong network of 3, 00,000 women leaders from the underserved communities across Maharashtra, Kerala, and Bihar. This provides SSPs with practical experience in regional requirements. Food and income security benefits women's entire household. Further, when women become leaders and change-makers, they impact the larger village ecosystem by affecting the community and collectivizing women farmers.

The initiative is implemented in over 750 villages across Osmanabad (300), Latur (250), Solapur (100), and Nanded (100) districts and is currently in the process of scaling up to Jalna, Ahmednagar and Aurangabad districts in Maharashtra and also to Bihar and Kerala states in India.

The Women-led Climate Resilient Farming (WCRF) model aims to deliver social, economic, and ecological resilience to the small and marginal farming community (ies) in drought-prone Marathwada who are vulnerable to acute climate shocks. Empowering women as change-makers in agriculture promotes resilient livelihoods for farming households and ensures that farming becomes an economically viable venture.

The main objectives of the WCRF model are:

- **Women empowerment:** Improving access to land for women and advocating for their cultivation rights; increasing the recognition of women as farmers in the community and to the Government; improving the decision-making authority of women in families and communities.
- **Income security:** Increasing financial independence by facilitating marketing for their farm produce; improving the participation of grassroots women in the entire value chain from farming to food processing, supply, distribution and consumers. Women smallholder farmers increase their income and their family's food security and nutrition.
- **Environment protection:** By switching to organic farming and utilising soil management and water conservation techniques, the WCRF promotes natural resource management.

### **Problem**

SSP chose to focus its initiatives on building women as change-makers in water-scarce drought-prone regions across seven States. SSP works with landless and marginalized farmer households and, among these with women, who face the most challenging social and economic inequalities. To earn and sustain livelihoods, women face enormous problems in access to resources, skills, and finance and market opportunities.

With a high reliance on chemical inputs and alarming drift towards cash crops, small and marginal farmers have become food poor and vulnerable to climate shocks. Marathwada's crippling water shortage coupled with extremely low coverage of irrigation possesses more risks than rewards for the farmers growing cash crops. Farmers have faced acute economic, social and ecological challenges due to the failure of their crops. Unable to identify any solutions to their misery, some farmers have even resorted to committing suicide.

More than three-fourth of the rural women in India are engaged in agriculture but have limited land access. They are hardly allowed to make any decisions around crop and farm input selection. Instead, they are treated as farm labourers on their own land. A resilient farming model will go a long way in helping the farmers of Marathwada to

improve their agriculture practices. When women are empowered to decide what to grow, what inputs to use, when and where to sell - key shifts happen in agriculture and livelihood.

### **Solution**

The Women-led Climate Resilient Farming (WCRF) model promotes integrated farming techniques by increasing livestock and farm-allied businesses and increasing consumption and marketing of nutritious farm-grown food crops. SSP has designed this model as an empowerment pathway for women to transform them from labourers to leaders in agriculture in four agriculture cycles. SSP clubs the selected farmers into 20-membered informal groups (Agriculture groups) at the village level. It disseminates training to these groups, includes a participatory approach to learning and later graduates them into producer groups during the final season.

The WCRF model encourages women to gain cultivation rights from their families on a small piece of land to grow food crops. On the acquired piece of land, which usually starts with half or one acre, women practice water-efficient, chemical-less cultivation of vegetables, millets, cereals and pulses through mixed cropping, diversifying to 6-8 crops per season and by increasing crop cycles. Traditionally, women have been the livestock managers in the household - from preparing cattle feed and milking them to drying their dung for cooking.

SSP's model leverages this acquired wisdom of women in training them to prepare low-cost bio-fertilizers. Women lead the complete decision-making around what to cultivate, what to sell, what to keep and eat, and where to sell, thus gaining control over income and savings. Some of the core components of this model include soil management; water harvesting and conservation technologies; mixed cropping; fruit tree plantation; vermicomposting; treating seeds with natural pesticides and insecticides developed from farm waste; livestock rearing; fodder cultivation; adopting modern, scientifically proven sowing, harvesting and post-harvesting techniques; agriculture extension service linkages; and market support. The interactive linkages among different farming subsystems form the core strength of the WCRF model. 'Demonstration farms' by women who have been able to adopt all the components of the model are used for demonstration when practical sessions are conducted to strengthen the implementation approach further.

Women farmers grow through learning sessions and become eligible for shouldering responsibilities as Krishi Samvad Sahayaks (KSS) for SSP, which in turn takes the baton forward. These KSSs take centre stage when it comes to on-ground deployment of initial campaigns, awareness, training, and selection of women farmers. The KSS also acts as a facilitator between small and marginal women farmers and local government officials by offering information and training. SSP recognises skilled women from the community, trains them, and develops them to coach women farmer adopters in resilient farming techniques.

Regular orientation and training meetings are then organised with women's groups, empowering women collectively. Women are provided training in organic vegetable cultivation, vermicomposting, water harvesting, soil protection, leadership development, financial management and entrepreneurship. Peer learning is promoted so women can support each other and guide newer farmers in adopting the model and its various components. Village-level community facilitators and cluster or block-level trainers are the regular touch points for farmers for learning, on-farm demonstrations and troubleshooting.

### Results

The Community Resilience Fund (CRF), promoted by SSP, is a women-led and managed mechanism used to provide micro-funding to rural women farmers who can use it for various innovative agriculture and Agri allied business purposes. CRF helps farmers access loans for purchasing animal fodder, hydroponics, etc.

More mature farmer groups are enabled to sustain their operations by linking to ATMA (Agriculture Technology and Management Agency) so that they can access Government schemes extended to registered farmer groups. With the help of these schemes, the farmer groups expand their farm-based enterprises and improve market linkages, which help them continue their operations. Selected groups also graduate to Farmer Producer Organisations (FPOs), to support the collective marketing of products, building rural value chains and successful businesses like dairy, goat rearing, and vegetable selling.

Swayam Shikshan Prayog as a facilitator engages with a wide range of stakeholders such as resource organisations, Agri-science institutions, government departments, knowledge partners, and policymakers towards training, technical support, market linkages, financial services and other key resources. They have partnered with several companies through their CSR initiatives to evolve and scale up the WCRF model.

SSP has also strategically developed partnerships with Agriculture departments, ATMA, and Krishi Vigyan Kendra's (KVKs) to access relevant schemes, training and knowledge for the adopter farmers. SSP has been awarded the United Nations Development Program's Equator Prize 2017 for devising an ecologically sustainable agriculture model to combat the adverse impacts of drought. SSP was the only Indian organisation to win the award, selected from 806 organisations in 12 countries.

In the last seven years, SSP has trained over 65,000 women farmers on the WCRF model, and 30,000 farmers have adopted the model across 750 villages across Osmanabad, Latur, Solapur and Nanded districts and are currently in the process of scaling up to Jalna, Ahmednagar and Aurangabad districts in Maharashtra and also to Bihar and Kerala states in India.

In this process, the program has transformed 8,800 Acres of farmland by growing food crops using exclusive bio-inputs. SSP has delivered and demonstrated impacts through the WCRF Model under four key results areas - Food Security, Water Security, Livelihood Security, and Women Empowerment.

The model has leveraged the innate wisdom of women in local food crops to secure food and nutrition for the family. Today, the WCRF adopters experience a 10 to 15% increase in the productivity of food crops and grow 15 different food crops on an average. Through the model, SSP has promoted and trained adopter farmers in growing local, less water-intensive crops and using naturally available bio inputs to help retain the soil's moisture content.

Additionally, linking farmers to Government schemes of micro-irrigation and water harvesting models has been a core aspect of the model, due to which 35 to 45% of the adopter farmers have drip or sprinkler irrigation or a farm pond. The model has secured livelihoods by reducing the cost of cultivation, enabling savings on market-bought food, and diversifying livelihoods. Today, 83% of the farmer adopters have started at least one additional farm-based business. To empower women, the model has enabled access to land titles to 13% of the adopters and mentored 25% of the adopters to become Agri-entrepreneurs.

### **Scalability**

The WCRF model has been developed in a way that can be replicated, deepened and scaled up with prospective partners. The social capital of community-based resources and the network of farmer groups created by SSP through this model can be leveraged by the Government and Donor organizations to further expand this program to other areas with similar local contexts.



## EMPOWERING WOMEN TO FACE THE CHALLENGES OF LANDSLIDES AND DISASTER IN CENTRAL HIMALAYA THROUGH FODDER BANK APPROACH

*Dr. Shalini Dhyani; Mr. Rakesh Maikhuri & Mr. Deepak Dhyani*



*Fodder shortage is a critical issue across the Indian Himalayan Region that enhances women's drudgery and also leads to unsustainable harvesting of biomass. A fodder bank model was developed in the Maikhanda village cluster of Upper Kedarnath valley to empower women to find solutions to fodder shortage. It also helped reduce soil erosion and enhance slope stability during heavy rains. Local communities helped restore community land as a fodder bank and contributed some agricultural land for plant nursery development to help set up a facility for planting material. Meeting with locals on fodder plantation, species selection pits digging, fencing, and land preparation right from planning helped in strategizing the entire approach; Mahila Mangal Dal of the villages actively participated in this capacity building and training workshop. Seedlings of fodder trees and seeds of fast-growing grasses were also distributed free of cost during these programmes. Sustainable harvesting of fodder from trees and shrubs was also demonstrated. Women also demonstrated the importance of FYM (Farm Yard Manure) on fodder trees and grasses.*

## Target Population

Local inhabitants of the village cluster are traditional Garhwali people. Village Maikhanda is a village with more than 80% population belonging to different Scheduled castes; all the families below the poverty level class (BPL) with insufficient income opportunities. Maikhanda village cluster in Upper Kedarnath Valley of District Rudraprayag in Uttarakhand is the area where the project was implemented. Fodder Bank Model was developed on a village wasteland of 10 ha on a hillock using fast-growing and high biomass yielding nutritious fodder species and was also introduced to cropland bund as Agri-silvi mode.

## Problem

Maikhanda village cluster in Upper Kedarnath Valley of District Rudraprayag in Uttarakhand was the area where the project was implemented. Agriculture and animal husbandry are the principal occupations and livelihood sources for over 70% of the population of the Western Himalayas. Local inhabitants largely depend upon forest-based fodder resources. Despite abundant resources with immense potential for producing quality and quantity fodder, the shortage of fodder issue remains unsolved. With the introduction of stall-feeding, the demand for fodder has increased dramatically with subsequently increased workload on women. Demand for fodder is uniform throughout the year, though the unavailability of green forage during winter has always been a serious issue.

The initiative had the following objectives:

1. Restoring wastelands, community lands and terraces by developing Fodder Bank in Upper Kedar valley was to reduce deforestation and women's drudgery.
2. Plantation of suitable fodder species to enhance around the year fodder availability that helps reduce erosion and landslides due to deforestation.

## Solution

Sustaining Himalayan ecosystems has been considered an important core area in the National Action Plan for Climate Change (NAPCC 2008) as Himalayan ecosystems are vital not only for communities dwelling in these states but also for all those that are located downstream. Local communities helped to restore community land as a fodder bank (FB) and also contributed some agricultural land for plant nursery development to help set up facilities for planting material. Meeting with locals on fodder plantation, species selection pits digging, fencing and land preparation right from planning helped in strategizing the entire approach.

Native species were carefully chosen by locals based on their needs, their traditional knowledge about species, better nutrition, etc. Though there are more than 150 fodder yielding plants still, a total of about 48 prominent and locally preferred fodder-yielding were listed as having high crude protein percentage and organic matter digestibility.

Indigenous grass species included Ringal Bamboo (*Arundinaria* spp.), native tree were *Alnus nepalensis*, *Quercus glauca*, *Quercus leucotricophora*, *Ficus nemoralis*, *Ficus auriculata*, *Debregeasiasalicifolia*, *Ficus subincisa*, etc. Introduced tree species were *Celtis australis*, *Morus Alba*, *Bauhinia variegata* and grasses included Napier grass *Pennisetum purpureum*, Joint star, Makuni, Cox food, etc. All varieties were introduced based on the altitude, suitable climate conditions, and discussions with experts and locals to maximise benefits. Women of the area were trained in growing high biomass-yielding fodder species in their cropland bunds and kitchen gardens. Twice a year during pre-monsoon and post monsoon 2009 onwards every year till 2015 plantation was carried out. A nursery site was developed having an area of 250 m<sup>2</sup> where a poly house and net-house were constructed for seed germination trials and mass propagation. Since 2010 most of the planted material was raised and mass propagated in the local nursery. Initiatives are also taken to focus on mass propagation of lesser known and multipurpose tree species viz. *Debregeasiasalicifolia*, *Ficus nemoralis*, *Ficus auriculata*, which are very much preferred as fodder available from Agro forests and degraded areas on road sides. Free of cost seedlings and seeds of fast-growing fodder trees and grasses were distributed during the capacity building and training programmes twice a year from 2009-2015.

### Results

During the first phase of this programme the first batch of 65 women did not visit forests for 6-8 days of each month to harvest fodder. The number of women beneficiaries increased every six months who introduced this fast-growing high biomass-yielding species in their own cropland bunds and kitchen gardens. People showed their interest preferably in Napier, *Debregeasiasalicifolia*, *Ficus auriculata*, and *Morus Alba* shoots during our group discussions and personal interviews and informed that most of these species are nutritious, fast-growing, and high biomass yielding.

Fodder supply has been enhanced in the village and has reduced the fodder deficit by satisfying the fodder demand of locals. Capacity building and training workshops for women, farmers, school going students and weaker sections were carried out every year at the Fodder Bank site in Maikhanda village. Mahila Mangal Dal of the villages actively participated in this capacity building and training workshop. Seedlings of fodder trees, seeds of fast-growing grasses are also distributed free of cost during these programmes. Sustainable harvesting of fodder from trees and shrubs was also demonstrated. Women also demonstrated the importance of Farmyard manure (FYM) on fodder trees and grasses.

### Scalability

The FB is a proven and evidence-supported nature-based solution to allow rehabilitating wastelands and using its full potential to fulfill the fodder demands of locals during lean periods. To lessen the impacts of fodder extraction in villages, a self-regulated,

rotational approach of harvesting the same patch after 4-5 years based on the carrying capacity of forests was implemented as an alternative. This rotational approach is already regulating the resource extraction in a few Panchayati Vans or community forests of the area where local-level governance is very positive for sustainable harvesting practices. The fodder bank model approach was considered innovative by International Centre for Integrated Mountain Development (ICIMOD), Nepal in 2011; was considered a successful Nature Based Solution (NBS) by IUCN Commission on Ecosystems Management at IUCN World Parks Congress in Sydney in 2014, and was recognized as one of the potential approaches with high replication potential across Hindukush Himalayas to reduce deforestation and disaster risk by SAARC forestry Centre, Thimphu, Bhutan in 2014.

## INTEGRATED APPROACH FOR EMPOWERMENT OF RURAL WOMEN THROUGH INCOME GENERATION AND DRUDGERY REDUCTION

Dr. Ratnesh Kumar Jha; Dr. Shankar Jha; Dr. S.P. Singh; Dr. S.S. Prasad & Ms. Rupashree Senapati



*The intervention aims at the overall improvement in living standards and increasing the production in agriculture to enhance their farm women's income, safe disposal of rural waste, providing a solution to the overuse of chemical fertilizers through Vermicomposting at minimal price to the villagers, reducing the drudgery of rural women and soil health management to enhance the production of a suitable Rice-Wheat cropping system.*

### Target Population:

Though the direct target Population is the farm women of Sukhet village of Bihar, still the beneficiaries under the initiatives are the complete household, aiming towards holistic development through an inclusive approach. The Ujjwala scheme of the Central Government became a boon for the women of Sukhet village through which they could avail of gas cylinders. Cooking with gas at that time became a panacea for drudgery

management of time. Pradhan Mantri Ujjwala Yojana was launched in 2016 by the Hon'ble Prime Minister of India for the empowerment of women by distributing 50 million Liquefied Petroleum Gas (LPG) connections to women of below-poverty-line families to minimise the burning of animal dung and to protect them from health hazards.

But unfortunately, the remedy was not sustainable for the women in Sukhet, as the cylinders could not be refilled by the poor villagers once finished, due to financial constraints and patriarchy. Thus refilling of cylinders was less than 50% before 2019 here.

### **Problem**

Sukhet is a remote village in the Jhanjharpur Block of Madhubani District of Bihar State, India. This village is prone to floods almost every year during the months of July-September. Though the severity of the flood is less, it damages the cropping system here. As a result, the villagers are always very vulnerable, especially the farm women who face difficulties while balancing their dual role of house management along with farm activities. When most of the area of their home remains underwater, they still need to manage cooking through traditional chullahs at least once a day for one full meal for the whole family, which is tedious. In such flood-prone days, it is very difficult to gather/avail dry fuel wood or cow dung cakes. On normal days the women of Sukhet used to make uplays (cow-dung cakes) out of the cow-dung as a very general practice. In 2018, most of the women farmers were investing their time and energy in making uplas, cooking in chullahs and toiling in a rice field. The women spent time processing cow dung, making flat round-shaped uplas, drying them around the house and storing them after sunset. The women faced extreme drudgery due to tough arrangements for cooking through chullahs as it took a long time to start the fire and had to deal with smoke which caused respiratory irritation. In addition, cleaning smoke-blackened utensils was also extremely tedious. After finishing all these chores they could rarely get any time for training and knowledge orientation though most of the stakeholders stay near the Krishi Vigyan Kendra (KVK), Sukhet.

The most important concern is that the conventional use of burning uplas produces toxic pollutants in an indoor environment which impairs the pulmonary and respiratory health of the women involved in cooking and also the elderly persons and children staying at home. Therefore cow-dung use as a fuel should be restricted as much as possible.

### **Solution**

Under such conditions, the scientists of Dr. Rajendra Prasad Central Agricultural University (Dr. RPCAU), Pusa innovated a unique approach to address this issue along with enhancement of cleanliness in the village, in view of the ongoing demand for research in the reduction of cow dung for burning and promoting its application in multiple dimensions and thus curbing pollution (Gupta et al 2016). After consulting the scientists from different departments, the vermin compost Unit was established in

Sukhet under the supervision of KVK of Dr. RPCAU, Pusa which recycled the bio-wastes into organic manure and again supplied to local farmers at a minimal price for improving the soil health at farms in the village. The non-biodegradable wastes are safely destroyed. This also addressed the cooking fuel issue of villagers by supplying gas cylinders in place of biodegradable wastes. Thus, it promoted clean energy, rural sanitation, soil fertility management and most importantly empowering women by reducing the drudgery along with abandoning smoke for a healthy life and environment. At the same time, the rural women, as well as the youth, could get extra income and employment through household wastes, crop residues and cow dung. Therefore, the model became a one-stop solution for waste management, soil fertility management, cooking fuel management, cleanliness management and monetization of all biodegradable wastes cost-effectively.

The unit has been designed for 100 farm families. Infrastructure was created to collect household waste from the house itself and shredding of Argo waste daily was done along with the collection of cow dung. A household contributing cow dung of two cattle daily was given an LPG refill every two months.

### Results

After the incorporation of Sukhet Model, the standard of living has improved for the family of Munni Devi to a major extent. They are getting lots of spare time which was spent collecting fuel wood and fallen leaves, picking and processing cow dung and using the uplas for cooking fuel. Now they are free from the respiratory issues they used to face due to the smoke of chullahs.

1. Drudgery in collecting fuel wood, cow dung, making cakes, cooking, and cleaning utensils has been reduced to almost nil.
2. The farm women could manage time for household activities and communicate with KVKs.
3. They are also interested in small entrepreneurship activities for integrated nutrient management
  - A. Rural sanitation by collecting household waste from door to door.
  - B. Monetizing cow dung to pay for LPG refilling
  - C. Economic utilization of agro waste viz., crop waste, water hyacinth, etc.
  - D. Creating employment opportunities in the village itself.

### Scalability:

Sukhet model is an eco-friendly, pollution-free model, enhancing the cleanliness drive in villages, thus augmenting the 'Swachh Bharat Abhiyaan' and therefore worth replicating nationwide.

## MUSHROOM CULTIVATION: AN ADAPTATION STRATEGY FOR CLIMATE RESILIENCE AND EMPOWERMENT OF RURAL WOMEN IN BIHAR, INDIA

*Dr. Ravindra S Gavali and Dr. Kiran Jalem*



*The impacts of climate change are a major concern for agriculture-based livelihoods of rural women farmers of Bihar. The consistent periodic droughts and floods are threatening the livelihoods of millions of people. Due to these, rural women farmers are inclined towards alternative livelihood options like mushroom cultivation, beekeeping and commercial vegetable farming. The article answers how such transformations can support diversified, desirable and durable consumer choices and also how transformed food systems can guarantee nutrition and health while promoting a safe, stable and inclusive food environment that is not only equitable but also sustainable.*



## Target Population

The percentage of the population/workforce employed in agriculture is estimated to be 80% in Bihar, which is much higher than the national average (43.86% in 2018). Urbanization in the state is still very poor; nearly 90% of the population lives in rural areas. High concentrations of population, largely dependent on agriculture coupled with low yields per unit of land are the main reasons for the high poverty rate in the state.

The principal crops in the state are Paddy, Wheat, Maize, Potato, Sugarcane, Tobacco, Jute, and Pulses. Changing climatic conditions like erratic rainfall, depletion of water resources, and decline in the net sown area result in poor agricultural production. The impacts of climate change are a major concern of the agriculture-based livelihoods of the rural people of Bihar. The consistent periodic droughts and floods are threatening the livelihoods of millions of people. Due to these, farmers are inclined towards alternative livelihood options like mushroom cultivation, beekeeping and commercial vegetable farming.

## Problem

Changing climatic conditions like erratic rainfall, depletion of water resources, and decline in the net sown area result in poor agricultural production. The impacts of climate change are a major concern of the agriculture-based livelihoods of the rural people of Bihar. The consistent periodic droughts and floods are threatening the livelihoods of millions of people. Due to these, farmers are inclined towards alternative livelihood options. These districts of Bihar, with their rapidly growing populations, are experiencing a food transition even at the medium and small farmer levels. They too are diversifying rapidly in order to ensure maximum returns for their livelihood, but these transitions often ignore sustainable management practices.

## Solution

Keeping this in view, BRLPS\* has taken up the SLACC\*\* project to build resilience and minimize the impacts through climate change adaptation practices. Mushroom growing is one such alternative livelihood activity and an ideal strategy for climate change adaptation for rural households. Mushrooms can be grown indoors and contribute significantly to household income, besides being women-friendly.

\*BRLPS- Bihar Rural Livelihoods Promotion Society

\*\*SLACC- Sustainable Livelihoods & Adaption to Climate Change

Gaya, being an international tourist place, has more demand and market for mushrooms. Accordingly, the numbers of farmers involved in the blocks of Gaya are substantially more than that of Madhubani. However, there is growing interest among the farmers of Madhubani for mushrooms. SLACC is exploring opportunities for market linkages in and around Madhubani for the farmers, before promoting on a large scale.

## Results

Mrs. Sunita Devi and Mrs. Hemanti Devi from Barachatti block of Gaya district earned Rs. 30,000 from 300 bags of button mushrooms in one season in 2017. The input cost per bag was around Rs.11 (including transportation charges).

Mrs. Gudia Devi of Mahadev village of Gurua block earned Rs. 6750. She said “we had no idea about mushroom cultivation until the year 2016. SLACC provided training on cultivating mushrooms”. She also asserted that “If we can spend the similar amount of energy in mushroom cultivation which we are spending on agriculture, we can earn a good amount of money”.

Mrs. Geeta Devi of Angan VO in Rajnagar block of Madhubani district, produced 50 bags of oyster mushrooms. Though she earned a profit of about Rs.10, 000, she raised the critical issue of forwarding linkages. She said “If any arrangement is being made to sell it in the market around us, we would not face the challenge of selling it and many others would be motivated to grow mushrooms”.

Thus, income from mushrooms can supplement cash flow, providing either:

1. A safety net during critical times, preventing people and families from falling into greater poverty;
2. A gap-filling activity, which can help spread income and generally make poverty more bearable through improved nutrition and higher income;
3. A stepping-stone activity, to help make people less poor, or even permanently lift them out of poverty.

The role played by women in rural mushroom production is very significant. Mushroom cultivation processes, such as filling substrates in containers and harvesting, are ideally suited for women's participation. SLACC project has enhanced women's empowerment through mushroom production by allowing them to gain farming skills, financial independence and self-respect.

## Replicability and Sustainability

Mushroom cultivation can help reduce vulnerability to poverty and strengthen livelihoods through the generation of a fast-yielding and nutritious source of food and a reliable source of income. Since it does not require access to land and can be done indoors, mushroom cultivation is a viable and attractive activity for rural women farmers. Small-scale growing does not include any significant capital investment: mushroom substrate can be prepared from clean agricultural waste.

Indirectly, mushroom cultivation also provides opportunities for improving the sustainability of small farming systems through recycling of organic matter, which can be used as a growing substrate, and then returned to the land as fertilizer. Through the provision of income and improved nutrition, successful cultivation and trade in mushrooms can strengthen as a means to livelihood.

Cultivation of mushrooms enhanced the knowledge of the farmers and improved their skills. Some misbelief related to mushrooms like “Gobarchatta” has been removed from their mind and thinking it is the best source of income and also suits women. It is also enriching the nutrition levels of the local people. Nearly 40 % of the growers understood and expressed that consumption of mushrooms reduces the malnutrition of children and women as the protein content varies from 1.6 to 2.5%, further, mushrooms are rich in vitamins and mineral salts, which is necessary for balanced growth.

## BENEFITS OF CUSTOM HIRING CENTRES (CHCS): AN EXPERIENCE OF SMALL LANDHOLDING WOMEN FARMERS FROM BIHAR, INDIA

Dr. K. Krishna Reddy and Dr. Kiran Jalem



*Timely farming practices facilitated by the mechanized technique are of utmost importance for ensuring increased agricultural output under the crucial short favourable agricultural window in weather-risk agro ecological regions. But mechanical power is largely consumed by large land holdings and is still beyond the reach of small/marginal holdings. Thus, to bring farm machinery available within reach of small/marginal holdings, the innovative concept of collective ownership as Custom Hiring Centers (CHCs) was thought to be effective. Mechanized technique facilitation by CHCs to small/marginal farmers was seen not only reducing the drudgery but also augmenting agricultural production efficiency. The CHCs are promoted by DAY-NRLM under the farm livelihoods promotion strategy where the primary focus is on productivity enhancement and reducing the drudgery of women farmers.*

### Target Population

Madhubani district is flood-prone whereas Gaya is drought-prone. Effective utilization of windows for agricultural operations using the mechanized technique is very important. Khajauli and Rajnagar are the two flood-prone blocks of the Madhubani district with an average rainfall of 1273.2 mm and cropping intensity is 134.23 %. On the contrary, Barachatti and Gurua are drought-affected blocks of Gaya district with an average rainfall of 700 mm. In 2015-16, a group of farmers was exposed to the working mechanism of CHC and funding requirements through exposure visits through the Sustainable Livelihoods and Adaptation to Climate Change (SLACC) project. CHC is accessible to most of the farmers at the cluster level consisting of 20-30 village organizations (VO) with 25-30 Self-help Group (SHG) members in each VO. Under the SLACC project, 10 CHCs have been established in the State.

### Problem

Farming practices facilitated by mechanized techniques on time are of great importance for ensuring increased agricultural output under a crucial short favourable agricultural window in weather-risk agro ecological regions. For the present story, two districts from Bihar representing two different hydrological hazards have been chosen. Madhubani district is flood-prone whereas Gaya is drought-prone. Effective utilization of windows for agricultural operations using the mechanized technique is very important. But mechanical power is largely consumed by large land holdings and is still beyond the reach of small/marginal holdings which constitute around 80% of the total land holdings because of their small size and scattered nature of land holdings. This is because the small/marginal farmers, by their economic condition, are unable to own farm machinery on their own or through institutional credit.

### Solution

Highly diverse farm sizes and soil types have resulted in the need for customized farm machinery and equipment for different regions. Accordingly, a participatory decision led to the procurement of different machinery in different CHCs operated through SHGs under Mahila Kisan Shasaktikaran Pariyojana (MKSP). Since CHC's establishment in 2015, the farming community has expressed keen interest in utilizing farm machinery based on their understanding, which resulted in improved farm productivity and an increase in farm incomes. The use of mechanized techniques in agriculture reduces drudgery and increases efficiency and effectiveness. The CHCs have been successful in achieving the objectives of SLACC, which were outlined as follows:

1. Providing access to the farm machinery to the small and marginal farmers, who would not otherwise have access to these high-cost machineries
2. Provide a hiring platform for women small and marginal farmers, at a competitive rate

3. Expanding the adoption level of farm machinery and generating awareness about the benefits of different machines.

### Results

Discussions with the beneficiaries revealed the different levels of utilization of machinery; Most of the machines are in high use, which proves the acceptability of machines and adaptability towards using new farm technologies by the small and marginal women beneficiaries. The Mushroom Solar Dryer has been procured very recently and it is too early to comment on its level of utilization. However, certain challenges lead to medium or low utilization of some machinery. For example, a reaper cum-binder is preferred over only a reaper. This is due to the fact that there is a requirement of labour for binding after the use of reaper only, while the reaper cum binder does both the jobs, harvesting and binding at a time. For most of the other medium or low-utilized machines, the main cause was found to be a lack of awareness amongst farmers on the merits and operation of these machines.

One of the major advantages of establishing CHCs is that this machinery can be a source of earning for the VO, through rents received from local hires. Each VO has fixed a rental for each machine that can be hired by either member of SHG or non-members. The V.O. earns valuable revenues from the hiring process, which is kept for the operation and maintenance of these machines. In addition, the equipment is well utilized and such actions create enablers in the local environment, allowing other farmers to become self-reliant, more productive, and thus more climate resilient.

This innovative practice of CHCs has enhanced the decision-making skills of farmers against weather risks. Farmers have developed and strengthened the knowledge to act against immediate or expected flood, drought, heat wave effects of summer and pest outbreaks in warm humid climatic conditions during cropping seasons by deploying mechanized techniques available at CHCs, for almost all crop cultivation practices, from land preparation (ploughs, leveller), transplanting for sowing of paddy crop, line sowing and zero tillage, pest management (by power sprayer), harvesting (by reaper and reaper binder) and post-harvesting processing (by using thresher and chaff cutter). The knowledge development through increased participation of the members of the community in CHCs amply demonstrates the success of CHCs at the community level.

### Scalability

One of the major strategies of the SLACC project, which may be replicated and scaled in other project areas, is to converge with various departments and programmes to bring in a holistic impact. Convergence with other development programmes helps not only to supplement funds for holistic treatment but also complemented other development programmes. Information regarding other government schemes that provide financial assistance for various SLACC interventions has been integrated coherently into the project, more so in establishing CHCs at the Cluster Level Federation (CLF). The young

professionals, along with State representatives of SRLM played a vital role in providing this benefit to the community. There was clear planning, based on the local need, to support the community in securing financial access and having physical access to farm machinery. An effective convergence arrangement was established with various departments - Agricultural department, Horticultural Department, Public Health Engineering Department (PHED), for establishing CHCs in Bihar.

## WOMEN FIGHTERS

*Ms. Disha Gupta & Ms. Kiran Singh*



*Leaders such as Gogi Devi and the women of the community have been vocal against this mismanagement and continue to fight until they get their rightful employment. Chidiyara village, located in the Patodi Block, Barmer District of Rajasthan, tells the story of women coming together to fight a corrupt system and claim their rights and is a stellar example of how collective action can be instrumental in saving rural livelihoods. The Chidiyara community largely depends on animal husbandry, agriculture, MGNREGS and migratory wage labour for their livelihoods. The women of Chidiyara village showed immense courage and unity when they successfully fought off an attempt to employ a JCB to work on a pond in the village, which would have otherwise swallowed their source of wage labour.*



## Target Population

Landless women labourers or MGNREGS workers

## Problem

The Chidiyara community is largely dependent on animal husbandry, agriculture, MGNREGS and migratory wage labour for their livelihoods. The women of Chidiyara village (Patodi Block, Barmer District, Rajasthan) showed immense courage and unity when they successfully fought off an attempt to employ a JCB to work on a pond in the village, which would have otherwise swallowed their source of wage labour. The COVID-19 crisis that engulfed the world at the time led to a lockdown and mass reverse migration, and there was an increasing demand for work. When the women, led by Gogi Devi and Achki Devi, went to the Panchayat to seek work, they were sent away, citing the formation of a newly instituted Gram Panchayat of Khardi as the reason for work not being approved.



Even as the collective action taken by the women ensured that they were allotted work under MGNREGS, their fight for their rights was far from over. They faced many discrepancies at work; the site measurements were recorded incorrectly for payments. Those absent on site were marked present, as a result of which the total work recorded per worker was much lesser than what was undertaken. Hence, those working to their full capacity were being paid less than the daily wage rate.

## Solution

Two women Samitis in the village 'Mahila Kisan Sangathan' and the 'Jal Saheli Samooh,' had prepared a plan for the development of common land and water channels in order to direct water to the village pond and had submitted the same to the Khanoda Gram Panchayat. The women approached Unnati (Organisation for Development Education) for help, who checked online to find that the work on the pond was approved under the Khanoda Gram Panchayat with INR 5 lakhs sanctioned for the same, out of which INR 2,98,000 was allocated for wage payment. Meanwhile, a JCB had been deployed to start



the digging work at the pond. The women got together at the site and opposed the use of a JCB for the digging work instead of it being allocated to the villagers under MGNREGS. Their sources of income would be eliminated if the work were to be done by a machine. Seeing the strong opposition from the community, the JCB was removed from the site.

The women's group approached Unnati to file a complaint with the BDO about this matter. Unnati assisted them and wrote to the BDO and the District Collector, following which action was taken immediately. The Sarpanch and the GP Secretary were directed to allocate work to the registered people. They were, however, displeased with the women for having protested and allotted them pasture land development work three kilometres away from the village. Further, to divide the group, 50 of these women were given work at the village pond.

To make things worse, the women were not informed of the muster rolls that had been issued prior to work actually starting; they were marked absent for the first two days. Meanwhile, Unnati checked the site's work status online and informed Gogi Devi and Achki Devi to report on-site and commence work. While these women encouraged the rest of the workers to report to work at their respective sites, the erstwhile Sarpanch and the village head of Chidiyara reached the pond again with the JCB. As soon as the women found out about this, they walked three kilometres from their work site to the pond and surrounded the JCB. They did not let the Sarpanch or the village head proceed with the work, which was then forced to send the JCB back.

## Results

Thanks to leaders such as Gogi Devi, the women of the community have been vocal against this mismanagement and continue to fight until they get their rightful employment. When asked if her family raised any objections to her participating in the protests, Gogi Devi said, "Nobody asked me not to do it. My family themselves came along with me to the pond to protest against the JCB."



## Scalability

Every working person has a scope to raise their voice against corruption and make things better.

## ENVIRONMENTAL CONCERNS AND CIVIC ENGAGEMENT OF WOMEN COLLEGE STUDENTS IN MUMBAI

Dr. Lidwin Dias



Anubhav Youth Development Centre of College of Social Work, Nirmala Niketan Institute focuses on youth development and raising awareness on how to improve their environment

*\*SLACC- Sustainable Livelihoods & Adaptation to Climate Change*

*In the last couple of years, it has focused on the theme of 'Environmental Justice', and has offered space for young people to engage in civic issues affecting them.*

*A cadre-based methodology of youth development is followed to create a pool of dedicated volunteers who can serve the local communities and address environmental concerns in the right manner.*

### Target Population

Anubhav Youth Development Centre (AYDC) has been working with youth from various backgrounds, mostly from lower and middle-class families. Most of them reside in local communities. AYDC works with the college and community youth, both male and female from vulnerable pockets of suburban Mumbai like slums and chawls. There is a mixture of college going youth, school and college dropouts and working youth from the age group 16 to 35 years. Most of the participants are from the female gender.

AYDC initiative was implemented in Maharashtra State in the following cities and areas:

- Mumbai:- Bandra, Andheri, Jogeshwari, Ram Mandir, Goregaon, Malad, Kandivali,

Borivali, Dahisar, Colaba, Thane, Ghatkopar, Kurla, Jogeshwari-Vikhroli Link Road (JVLR).

- Villages from Beed, Latur and Sangamner districts.

### **Problem**

Anubhav Youth Development Centre focused on Water Secure, Garbage Free & Green Locality through women's college students' engagement.

**Water:** Though Sustainable development goal 6 focuses on the access of clean water and sanitation to all, Mumbai and other parts of Maharashtra are facing a water emergency of unprecedented proportions. The rivers' currents have ebbed, water in dams and reservoirs has depleted and over-exploitation of groundwater has raised concerns over the long-term availability of water. Thousands of villages depend solely on State supplied tankers. While long-term measures may yield some results in the coming time, the question remains unaddressed: Is it Sufficient? The only ray of hope is if more and more people come forward and join this movement to donate water. Looking at the situation Anubhav Youth Development Centre (AYDC) took the initiative of spreading awareness among youth on the 'Save Water, Share Water' concept and motivated them to join in the movement to donate water.

**Green:** UN Sustainable Development Goal 15 focuses on Life on Land, Reforestation and conservation are essential to building a better, more sustainable future where poverty is reduced, food and water are available, biodiversity is safeguarded, and sustainable livelihoods are possible. In the year 2017, AYDC organized a competition on tree plantation in which they were asked to plant a tree and take care of it for 2 months and then show us the process of caring and nurturing the plant. This helped the students to understand the importance of tree plantation. In the said process youth took active participation and they learnt a lot.

**Garbage Free:** Looking to the Sustainable Development Goal 12, (responsible consumption and production) includes targets focused on environmentally sound management of all waste through prevention, reduction, recycling, reuse (targets 12.4 and 12.5) and reduction of food waste, AYDC initiated the signature campaign on spreading the awareness on 'Responsible Garbage Disposal' among the citizens of Mumbai Suburban as Mumbai produces 9500+ metric tons of mixed waste a day, whereas there is no space for new landfills to dump the waste.

As per WHO, Mumbai is the 5<sup>th</sup> most polluted Megacity in the World. The BMC spends 1400 crores on the transport of waste every year. The massively increasing un-segregated waste has been a major health, economic and environmental concern for BMC over the years. The segregation of waste from the dumping grounds into wet, dry, and rejected waste for further recycling and reuse process was found to be difficult, costly and time consuming. The only possible solution is to segregate the waste from its source itself. So BMC decided to take action against housing societies that do not segregate the waste

from the present year. The AYDC youth engaged with the BMC to make the civil action participatory and people centred.

### **Solution**

Looking at the goals and objectives, AYDC took the initiative of spreading awareness in youth on the 'Save Water, Share Water' concept. Just passing the message verbally will not serve the purpose and hence AYDC carried out a water collection drive in Goregaon West in the year 2016. In this youths (Female & Male) went door to door collecting water from Goregaon (West) localities and approximately 10,000 families were visited and 15000 litres of drinking water collected in a day. The same water was transported to Beed District (Mankhurvadi) and distributed to people in the villages with their own hands. This initiative was appreciated and covered by many newspapers and also by Radio Channel 93.5 Red FM. This spread the message of the importance of Save Water, Share Water and motivated thousands of people to donate drinking water. This resulted in the collection of 1, 20,000 litres of water from all over Mumbai. This water was again transported and distributed in the villages of Latur and Beed Districts. These successful drives helped AYDC to reach-out to more than 1, 00,000 families in Mumbai and 10,000 families in Marathwada. The Marathwada people also got the message that Mumbaikars are concerned about them. Further AYDC continuously spread awareness on Save Water, Share Water through street plays and by repairing leakage taps of Santosh Nagar, Goregaon Community. AYDC also tried to get the participation of college students by organizing the tree plantation competition, in which they had been asked to plant a tree and take care of it for 2 months and then show us the process of the caring and nurturing of the plant.

Looking to Sustainable Development Goal 12, (responsible consumption and production) which includes targets focused on environmentally sound management of all waste through prevention, reduction, recycling and reuse (targets 12.4 and 12.5) and reduction of food waste, AYDC initiated the signature campaign on spreading the awareness on 'Responsible Garbage Disposal' among the citizens of Mumbai Suburban as Mumbai produces 9500+ metric tons of mixed waste a day, whereas there is no space for new landfills to dump the waste. (As per WHO, Mumbai is the 5th most polluted Megacity in the world. The BMC spends 1,400 crores on the transport of waste every year. The massively increasing un-segregated waste has been a major health, economic and environmental concern for BMC over the years.) The segregation of waste from the dumping grounds into wet, dry, and rejected waste for further re-use and re-cycling process found to be difficult, costly and time-consuming. The only possible solution is to segregate the waste from its source itself. So, BMC decided to take action against housing societies that do not segregate the waste from this January. Considering this situation, AYDC initiated a Signature campaign involving the students of 10 different colleges from Mumbai suburbs, to spread awareness of the importance of waste segregation and management. In this venture, AYDC tied up with 10 Colleges. These

College students conducted 89 street plays and door-to-door campaigns whereas they have collected 15,477 signatures from the communities declaring that they got awareness about waste segregation and promised to do so.

The success of the Signature Campaign is a collective effort and an attempt to make youth take civic responsibility and therefore be accountable to society. The AYDC has successfully engaged 61 youths from A, B, C, P-South, P-North and R-South Wards of Mumbai. Youth helped the BMC spread awareness on Covid-19, food distribution, and distribution of sanitary napkins, surveys, etc. This initiation helped youth to have a sense of responsibility towards society.

In the area of DRR, AYDC did a campaign titled 'Engaging Youth in Disaster Prevention and Mitigation' in Santosh Nagar community of Goregaon, Mumbai. They have been able to reach out to over 1000 community residents by establishing rapport in the beginning, mobilization of different sections of society (especially youth and elderly), sanitization of the area along with rapid pre- and post-assessment and to assess their knowledge and awareness of the pandemic has been the major strategies of the project.

## Result

**Water intervention:** On 24<sup>th</sup> April 2016, along with the 60 students of 6 colleges and 25 to 30 youths from communities, visited approximately 10,000 families. Total of 15,000 litres of drinking water was collected and transported to Beed District (Mankhurvadi). On 14<sup>th</sup> and 15<sup>th</sup> May 2016, the huge drive was conducted in 8 areas of Mumbai in which almost 500 community people (Women and Men) which included youth mandals, NGOs and societies took the initiative. Total of 1, 20,000 litres of drinking water was collected. This water was transported and distributed in the villages of Latur and Beed Districts. These successful drives helped AYDC to reach-out to more than 1, 00,000 families in Mumbai and 10,000 families in Marathwada. Further with the help of 'JAL' App initiated by the College of Social Work, Nirmala Niketan, a total of 1, 14,000 litres of water have been supplied to Beed, Latur, Sangamner and Vaijapur Districts.

**Garbage issue:** AYDC tied up with 10 Colleges. The College students conducted 89 street plays and door to door campaigns whereas they collected a total of 15,477 signatures from the communities declaring that they got awareness about waste segregation and promised to do so. The signatures collected were from Prem Nagar and Shivaji Nagar-Goregaon, Charkop- Kandivali, Thakur Village- Kandivali, Khar danda - Khar and Bandh-Santacruz.

The signature campaign was an incredible effort of youth. We all as a team believe that the promise that the people made on segregating waste at source will bring change in the society and also it will be a great support and help for the BMC.

### **Scalability**

To make the model sustainable, alumni of this program become the voluntary facilitators of new batches by sharing their learnings, ideas and expertise with new youths. This model of AYDC can be implemented by different colleges with their students. Nodal agencies like the Women Development Cell can look to scale up this model with the convergence of existing youth clubs/facilitators.

## NURTURING WOMEN'S LEADERSHIP FOR DISASTER RESILIENT SOCIETY

*Prof. Yashpal Sundriyal*



*In the event of a disaster, the management and DRR sector has often been dominated by men. To counter this and to promote skilled self-reliant women researchers, seven women were supported from different parts of India to further create awareness about environmental factors by interacting with local women of different communities. These women conducted their research in various parts of Uttarakhand and interacted with local women to spread scientific and technological awareness. The exposure of the local women to these processes enhanced their confidence and interest and also resulted in stronger representation at the grassroots level*



## Target Population

Women in Villages/ Towns of Uttarakhand, India

## Problem

To create skilled/self-reliant women researchers, the laboratory (Prof. Y.P. Sundriyal's group) has supported seven women (Dr. Neeraj Ramola, Dr. Pinky Bisht, Dr. Neha Chauhan, Dr. Poonam Chahal, Dr. Sharvi Aggarwal, Dr. Sameeksha Kaushik, and Dr. Dipti Sharma).

These women students/researchers were from different parts of India: Uttarakhand, Haryana, and Uttar Pradesh. These were asked to conduct scientific research work in various remote areas of Uttarakhand and interact with local women to spread scientific/technological awareness. This approach was considered because of the relatively poor representation of women in disaster-prone areas. The initiative must have boosted women's confidence in villages/towns because more applications were received from women candidates for B.Sc/M.Sc/PhD courses/positions.

The objective of the initiative:

The main objective of the initiative is to create skilled/ self-reliant researchers who can spread rationality (scientific and technological awareness) among different sectors, especially the rural sector and build a strong representation of women in the scientific field at the root level.

## Solution

The women researchers were primarily involved in disaster-prone regions of Uttarakhand to understand the influence of changing climate on the landform and society. Even during the Uttarakhand flood, 2013, women researchers in our team took the initiative to map the affected region and verify the mapping by going to the affected areas. Some National/International papers have also been published following mapping and fieldwork.

## Results

This initiative has attracted more female students in the course (Geology) of HNB Garhwal University from different parts of Uttarakhand and even from remote areas of Ladakh and central/east India. Before the Covid-19 period, more than 100 students were invited annually for 1-2 weeks for skill/career counselling and scientific development through a government-funded "INSPIRE" program. The initiative of nurturing women's leadership in research played a big role in such an annual activity by fostering awareness, leadership, and representation in female students. Further, 3 of the women researchers are already leading in national/international Institutes/laboratories. These are as follows; Dr. Shipra Choudhory (Data Scientist, Canada), Dr. Pinky Bisht (Scientist, WIHG, India), and Dr. Poonam Chahal (Senior Researcher, Hebrew University, Israel).

### Scalability

According to the United Nations survey, women constitute merely 14% of the total 280,000 scientists in India. Recent data from the World Bank reveals that India's colleges and universities have 43% of female graduates in science, technology, engineering, and math (STEM). Such under-representation paves the way for rapid up-scaling and replicability of initiatives like those we are adopting in our Institute. Our initiative is to support and nurture women's leadership in the science domain that contributes to awareness and helps to spread the message on the importance of female education in the state.

## Category - II



**Empowering Women**

## INVOLVEMENT OF COMMUNITY IN DISASTER MANAGEMENT- CENTRAL UNIVERSITY OF TAMIL NADU

*Prof. Sigamani Panneer and Prof. Sulochana Shekhar*



*Village-level Disaster Management Committees and Women Committees were established through gender-inclusive community-led programmes that directly promoted gender equality and women's participation in disaster risk reduction enhancing disaster resilience among vulnerable communities. They also promoted capacity-building programmes for women to enable them to organize themselves and get involved in sustainable development. They motivated them for disaster risk reduction by utilizing women's skills and leadership and enhanced their resilience building. They capitalized on women's traditional knowledge and skills for income generation.*

## Target Population

Women, school children and adolescent girls who have been affected by the Gaja cyclone were targeted. The women lost their homes, cattle, and livelihood and the school children lost their homes, books, notebooks, stationery, etc. The emergency response team of CUTN extended to support women, school children and adolescent girls by distributing relief materials and conducting medical camps in the affected villages. Further, the department of Social Work, CUTN team worked from the very first day in relief operations to ensure safety, good health, proper hygiene and access to nutritious food during the time of crisis. They also assisted the affected population in the rehabilitation process.

## Problem

Severe cyclonic storm Gaja made landfall on 16th November 2018 in Nagapattinam and Thiruvavur districts in Tamil Nadu. It had sustained wind speeds of 100-110 km/h with gusts of up to 120 km/h. The storm brought a significant rainfall of about 140-170 mm. According to the reports, 45 people lost their lives, and 76,290 people were evacuated from low-lying areas and sheltered in 300 relief centres. 40 per cent of the vegetation and crops were severely affected by the cyclone.

## Solution

Women's skills and leadership for risk reduction and resilience building were utilised during the disaster. The programme focused on mobilizing women and building them as community leaders for Disaster Risk Reduction (DRR). Further, capacity-building programmes were conducted to address the root cause of the vulnerability within the affected population and improve their resilience on various topics such as team building, mental health, community involvement, first aid, and community-based disaster risk assessment.

To address the issues the flood-affected families were provided with temporary shelters, food, milk and other essential materials like sanitary napkins required for women. Each house in the affected districts was provided with a set of relief articles to tide over the emergency.

### **From Food-Based Relief Measures to Need-Based Relief Measures:**

The Central University of Tamil Nadu provided need-based relief to the affected population. It distributed household items including utensils, tarpaulins, mosquito coils, umbrellas, bed sheets, detergent soaps, milk powder, rice bags, etc. Central University of Tamil Nadu and the public health department along with local bodies launched massive cleaning and sanitation measures to prevent the spread of epidemic diseases. Through Mapping and Vulnerability Analysis, areas vulnerable to disasters were identified and mapped. An assessment framework was developed to assess the impact and response of Cyclone Gaja in Tamil Nadu. An interview schedule was prepared in

advance for different stakeholders namely government officials, civil society and local communities.

### **Results**

Women were the primary focus and were empowered to take the initiative to build their livelihoods for their communities. Women were empowered to be leaders through various training and carried out relief activities excellently. Based on the study, it was found that the role of women is vital to disaster risk reduction activities. The programmes have directly contributed to disaster risk reduction and vulnerabilities. The awareness programs helped women to understand their vulnerabilities within their community. Women's participation in disaster risk reduction was encouraged to enhance their resilience during the disaster. This initiative enhanced the capacity of women to get involved in sustainable development and disaster risk reduction activities. Women became active participants in local self-governance institutions, which were traditionally male-reserved. Women took the lead role in disseminating information on upcoming disasters. The women's group worked to improve their income substantially and to increase community resilience. Women's households had suffered a lot from the GAJA disaster and the programme under this initiative empowered them to assert their rights, access benefits and entitlements, and act for community resilience.

### **Scalability**

Village-level Disaster Management Committees and Women's Committees were established through a gender-inclusive community-led approach. Their programmes directly promoted gender equality and women's participation in disaster risk reduction enhancing disaster resilience among vulnerable communities. They also promoted capacity-building programmes for women to enable them to organize themselves and get involved in sustainable development. They motivated them for disaster risk reduction by utilizing women's skills and leadership and enhanced their resilience building. They capitalized on women's traditional knowledge and skills for income generation.

These kinds of women groups can be formed at any level and similar roles can be played by them through capacity-building programmes to address the root cause of the vulnerability within the affected population and improve their resilience on various topics such as team building, mental health, community involvement, first aid, community-based disaster risk assessment etc.

## NAZARETH COMMUNITY TOOL BOX - NCTB

*Dr. Mary Angeline Santhosam*



*Livelihood projects are being initiated to train women from the community and college students in the basics of tailoring and Aari work. Short-term tailoring classes free of cost / paid or sponsored are provided to all the women who register in batches. After completion of the training, the women from the community and students are encouraged to start their businesses in their respective homes, which helps to become financially stable. This project has trained 50 women from the community and college.*

### Target Population

The Nazareth Community Toolbox came into existence in 2017 and it is almost more than four years sustaining our work, empowering women as one of its verticals. The target groups that benefitted from this initiative are as follows:

1. Students of Nazareth College of Arts and Science
2. Adopted village of (Arikkambattu, Vellacheri, Kalpattu, Malandhur, Meyyur)

3. Community around Nazareth College- Kannadapalayam Women, Children, Youth and Elderly
4. Avadi City Municipal Corporation

### **Problem**

The main issues faced by Avadi are poverty, gender inequality, clean water and sanitation, decent work for the rural communities, pollution of lakes, waste management issues and frequent flooding of lakes into the community. A Vulnerability assessment done by the Council on Energy, Environment, and Water (CEEW) ranked Chennai in 7<sup>th</sup> place as one of the most vulnerable districts in India. A recent study report, released on the 26<sup>th</sup> October, 2021 called 'Mapping India's Climate Vulnerability' ranked states based on a Climate Vulnerability Index (CVI), and Tamil Nadu was ranked 12<sup>th</sup>. Over time, Chennai has become a hotspot for floods and cyclones and so is Avadi. Avadi is flanked by lakes - Parithipattu Lake, Kovilpathagai Lake, Nagaraja Lake, Ambattur Lake and Red Hills Reservoir. Rain brings much distress to the community because lakes breach and families are stranded. Recent rain in Nov 2021, Avadi, hit the top of the list registering 24 cm in a day. As climate and disaster risks increase, they affect the lives and livelihoods of millions of people, especially the marginalized who live below-poverty-line (BPL). Avadi has 19188 registered below poverty line families spread across 48 wards of the entire constituency. For various interrelated factors, women are more vulnerable to the impact of disasters and climate change. Women's resilience to climate change and disasters could be further enhanced through community-based interventions aimed at strengthening livelihoods and communities' adaptive capacity, considering social, economic, and environmental features as well as local development priorities. One of the verticals of the Community Toolbox is Women's Empowerment. The Community toolbox institutions provide a platform to empower women. Women have the experience and skills to contribute to disaster risk management due to their role as primary caregivers within the family and often with the wider community. They have strong local knowledge of natural resources, surroundings, and valuable links with others in the area. Women—with their extensive knowledge of communities, social roles of managing natural environmental resources, and caring responsibilities play a critical role in disaster risk management. Empowering women is the key to strengthening the disaster resilience of communities.

### **Solution**

NCTB is a group of social initiatives of Nazareth College that inculcate Social Responsibility among the students of Nazareth and other stakeholders; more so to increase continuous field exposure to students across various programs in the college. The students learn about community assessment, planning, intervention, evaluation, advocacy, and other aspects of community practice. All the students at Nazareth College of Arts & Science are enrolled as permanent volunteers in the community toolbox. Besides, NCTB encourages public volunteers from the community. The community



toolbox is targeted towards women, children, youth, disabled and elderly in the community. The NCTB works towards sustaining and enhancing the livelihood and living standards of the community towards nation development, particularly targeting women and their empowerment.

Women act as major change agents in any awareness Programme. The main objective of the Disaster Risk Management (DRM) Programme is a sustainable reduction in disaster risk. One of the critical indicators of disaster risk reduction is gender equity in disaster preparedness. Investing more, and in a targeted manner, in women can help increase resilience. Given women's social roles, they are challenged by and have a deeper understanding of rural and urban vulnerabilities.

- Awareness raising initiative on disaster risk and measures to strengthen resilience through infographics, text messaging, campaigns, and street theatre targeting the female schoolchildren in the adopted villages.
- Disaster resilience and Eco Social approach were the papers published in UGC Care list Journal and the International magazine- Social Dialogue
- Engaging the NSS & NCC women cadets in spreading awareness on Disaster preparedness and assisting Avadi city municipality in community cleaning (Waste Management) after lifting off the COVID lockdown in sanitizing the campus rooms and buildings.
- Provide Gender sensitization awareness training for women students through NERF India for Unnath Bharath Abhiyaan
- Post-COVID, the college management provided free transportation to students to commute to college to travel safely.
- Participation of women social workers during the COVID Pandemic in the Greater Chennai Corporation Slum Intervention Programme.
- Participation of women faculty and students in Mahatma Gandhi National Council of Rural Education on Psychological Counselling -COVID BEAT CAMPAIGN

## Results

NCTB is a group of social initiatives of Nazareth College that inculcate Social Responsibility among the students of Nazareth and other stakeholders; more so to increase continuous field exposure to students across various programs in the college.

### **NCTB-1-Nazareth Emergency Relief and Rehab Foundation**

NERF India (CSR of Nazareth College): NERF (India) has worked with many families, children and elders during the disaster. The Chennai flood in 2015 was the start and it continued during the Vardha Cyclone in 2016. The volunteers plunged into action as a relief and the faculties and students of M.S.W worked on the rehabilitation of the livelihoods of many ([www.nerfindia.org](http://www.nerfindia.org)). NERF recorded its highest success with the rehab intervention program for more than 5000 families who were affected by Covid-19 in 2020.

**NCTB-2-Idhu Namma Avadi**

The INA has also initiated a women empowerment project where we trained more than 75 women in tailoring who needed support to sustain their lives. The INA recently trademarked Ultra-Thin Sanitary Napkins “Kanmani” where women are empowered to manufacture clean, hygienic affordable sanitary napkins for girl students and women in and around Avadi. Again, INA has employed about 10 single women in the unit that manufactures the pads. INA offered about 45 volunteers to work for the Avadi Municipal Corporation for 3 months to support the local body in fighting against Covid-19.

**NCTB-3 - SDG@AVADI**

This is a new initiative of the college which works on the commitment of the United Nations Academic Impact and towards the principles of human rights, educational opportunity for all, sustainability, capacity building of higher education systems, and global citizenship. An initiative to encourage women, students, and leaders to lead as disaster risk management teams was initiated in furtherance of India's commitment to Sustainable Development Goal and the role of women in disaster risk reduction.

**Scalability**

Community Toolbox addresses Gender equity as one of its verticals. Gender Equity is never a complete process; it constantly evolves depending on situations and the nature of problems encountered. An empowered woman can bring about a big change in her home and society at large. Therefore, the goal of the mission is to see transformed families through this initiative.

## DISASTER AND BEYOND: TOWARDS OPERATIONALIZING SOCIAL AND ENVIRONMENTAL JUSTICE

Dr. Jacquleen Joseph; Prof. Ramesh Jare & Mr. Mahesh Kamble



The intervention comprehensively addresses the issue of drought in an agrarian context. The project identified five sectoral interventions that are synergistic in enhancing community resilience to droughts. The unique aspect of the project is to demonstrate the possibility of integrated interventions grounded in values of social and environmental justice that target the most vulnerable and marginal sections differentially impacted by recurrent droughts. The framework conceptualizes the central phenomenon of well-being and distress as socially constructed and identifies the five sectoral interventions that address both the objective and subjective dimensions of well-being in the drought-prone area of Marathwada.

### Target Population

As gender and caste are the key attributes structuring Indian society, women with a range of intersecting marginal identities, from communities facing recurrent droughts, comprise a large majority of the stakeholders that the project partnered with. The multiple axes of age, marital status, land ownership, religion, ability, region, health and mental health status, social and economic stratification, among others, enabled the identification of the most marginalized sections with intersecting marginal identities from among the vulnerable groups of adolescent girls, youth, women farmers, landless women engaged in daily wage labour, single women, separated/widowed women, elderly women, women with disability etc. The project villages included the Nagral,

Bendkhal and Mardi villages in Lohara Taluk, Osmanabad District, and Marathwada Region. The cluster of these three villages emerged from a systematic drought vulnerability assessment based on secondary data of all villages in the Marathwada region, Maharashtra; research and practical considerations were further used to shortlist one cluster from among the most vulnerable clusters of three villages each.

### **Problem**

India is a country with over 50% of the population relying on agriculture as their primary livelihood. However, the monsoon in India lasts for four months with most of the rainfall lost as runoff. Farmers hence rely on groundwater during lean months to cover the water deficit, leading to overexploitation and depletion of groundwater resources. The groundwater depletion, coupled with changes in rainfall patterns, cropping patterns and increased exploitation of ground water over the years has led to recurrent droughts in India. The historical drought-prone Marathwada region burgeoned with erratic rainfall, increases in dry spells during monsoon and heavy rainfall during harvest season and has faced recurrent crop failures, out-migration and farmers' suicide as extreme consequences. The climatic issues have been compounded by poor governance and increasing socio-structural inequalities in the context of recurrent droughts. It is within this context that the project took form focusing on the most marginalized communities hit by recurrent droughts in Marathwada. Though the social construction of droughts is well recognized, historically drought interventions have been technocratic in their approach primarily targeting the hydro-ecological systems of groundwater and watersheds. The influence of social structure, especially gender and caste, has been sidelined in the drought risk reduction and management discourse. Thus, 50 years of initiatives to address drought in India, has further deprived the vulnerable and marginalized sections of the society. The project explores and demonstrates the alternate approaches required to bring about transformative change among the most marginalized individuals and groups.

### **Solution**

Integrated sectorial interventions in the area of water security, agriculture, livelihood, governance and psychosocial well-being were rolled out targeting the most marginalized individuals and groups in the context of recurrent droughts. An alternate problem, process and people (PPP) centred approach combined with Reflective Practise, Knowledge Co-creation, and Partnership and Ownership of the most marginalized sections was used to jointly envision and implement the sectorial interventions that were conceptualized as the means to achieve the end goal of engagement and ownership for long term drought risk reduction and management interventions. This included a range of activities like a participatory multi-sectorial baseline survey, a hydrological survey, an ethnographic exploration of livelihood and agricultural practices, the establishment of field offices and field visits. The entry-level activities such as demonstration of alternate agricultural practices (organic cultivation,

seed treatment, soil testing and soil health cards, mulching etc), sensitization, orientation and capacity-building programmes on varied topics for different groups ranging from local governance representatives, farmers, women SHG members, adolescent girls, school children, single/separated/widowed women, youth, etc, pilot demonstration of soil, water and vegetation conservations interventions, distribution of saplings, initiating plantation drives, formation of landless and marginal farmers groups for alternate livelihood interventions, distribution of loans for purchasing goats, medicine kits, fodder cutting machine, seeds for fodder cultivation, insurance for goats, forming linkages with government schemes and programmes for sustaining the group initiatives, the opening of joint bank accounts, and certificate training programme in rural development targeting women and youth, were implemented.

The dialogic practice with marginal groups for each of the above activities is envisaged as the means to facilitate grassroots engagement, ownership, and leadership for long-term drought risk reduction and management interventions, especially among the most marginalized sections. Women were actively engaged with each of the above activities and a glimpse of activities specifically targeting women stakeholder's engagement are as follows:

- Facilitation, Mobilization, Sensitization, Orientation and Capacity Building of women SHGS from three villages for micro ventures, allied agricultural livelihoods, addressing gender-based violence, education, water security, drought mitigation, government schemes and programmes etc
- Facilitating the social participation and engagement of women especially in local governance by attending Gram Sabha and representing their specific concerns.
- Goat rearing was identified as an alternate livelihood option by marginal and landless farmers largely comprised of women. After multiple facilitative meetings of the *most* vulnerable and marginal households, four goat-rearing welfare groups were formed with 19 members each. The programme model of providing loans anchored by farmers' groups was designed to ensure the *future* sustainability of livelihoods and initiatives.
- The Certificate Program in Rural Development catered majorly to women and youth to ensure that their capacities were built in areas such as agriculture, water security, livelihood and village local governance and leadership
- 60 households were identified to be highly distressed and the context-specific factors contributing to the distress of women were specifically addressed through the various activities planned as part of the project. Thus, both objective and subjective dimensions of well-being were comprehensively addressed to reduce distress.

## Results

The participatory identification and targeting of the most vulnerable and marginal sections of the community, through a consensual process, for short-term drought risk

reduction and management interventions is the immediate result. The facilitation of grassroots engagement, ownership and leadership from among the most marginalized sections for long-term drought risk reduction and management is the envisioned long-term impact of the practice. Presently the implementation of short-term interventions among the most marginalized sections has been completed.

The alternate problem, process and people-centred approach combined with reflective practice and knowledge co-creation is envisaged to ensure the actualization of partnership and ownership, of the most marginalized sections, for long-term drought risk reduction and management. The final phase of follow-up, handholding, monitoring and evaluation to be executed in the next year (ending December 2022) is being presently planned and rolled out. Though the targets achieved are very humble such as the pilot demonstration of soil, water and vegetation conservation in 36 hectares of marginal and small farmland, the convergence of interventions around the 60 households identified to be highly distressed combined with a household vulnerability, hydrological survey and plot wise NDVI assessments, engagement of 76 most vulnerable and marginalized households in the alternate livelihood programme of rearing goats, the selection of 10 farm plots for the demonstration of alternate agricultural practices, among others, they are very significant when we consider the challenges of overcoming parochial communitarian practices that had historically denied access to services among these group.

The project draws from the capability approach and comparative realization-based approaches to operationalize the everyday pursuit of social justice in the context of droughts. Thus, the project implemented technical interventions such as soil, water and vegetation conservation, groundwater management, and alternate agricultural and livelihood interventions among others, as a means to addressing capabilities and social structural constraints. Capabilities such as “Life”, “Bodily Health”, “Affiliation”, “Senses, Imagination and thought” (thinking critically about something like water availability), “Practical Reasoning” (planning about one's own life), “Control over one's Environment” (ability to participate in the local water resource problem and village development planning) among others, were targeted as they are critical in enhancing coping and adaptation to increasing variation and uncertainties, especially among the most marginalized sections.

The project has successfully implemented short-term drought risk reduction and management interventions, laying the ground for ownership and grassroots leadership of the most marginalized sections for sustainable long-term interventions.

### **Scalability**

A range of knowledge products is proposed to capture the mixed method approach utilized in the project that combines a systematic understanding of complex socio-ecological systems with that of the everyday lived and felt experiences of the marginalized sections and project implementers. These knowledge products would

guide policy, research and praxis at a larger scale to bring to focus the social dimensions of drought interventions and facilitate the replication by establishing the possibility and potentiality of these alternate interventions. The forging of partnership, ownership and grassroots leadership among the most marginalized sections lays the ground for sustainable long-term interventions even within the project villages.

# INFUSING GENDER CONSCIOUSNESS, INTERSECTIONALITY & SOCIAL INCLUSION PERSPECTIVES IN DISASTER PEDAGOGIES: A SYSTEMATIC REVIEW TOWARDS DEVELOPING INTERSECTIONAL DISASTER MANAGEMENT (DM) CURRICULUM

Dr. Jacquleen Joseph & Ms. Lavanya Arvind



By exhaustive regional and expert consultations, participatory deliberations, as well as a systematic gender audit & review of the existing DM curriculums, the intervention has identified the best practices that should structure an intersectional DM curriculum, aiming towards infusing gender, social inclusion and intersectional perspectives in disaster pedagogies in India. The guidelines would be the stepping stone in influencing current and future DM curriculums, towards making a difference in professional practice that is intersectional, gender transformative and socially inclusive.

## Target Population

The project aimed at infusing gender, social inclusion and intersectional perspectives in disaster management pedagogies in India. By means of exhaustive regional and expert consultations, participatory deliberations, as well as a systematic gender audit & review



of the existing Disaster Management curriculum, the best practices were identified that should structure an intersectional DM curriculum. The emerging insights have been captured as a guideline to integrate gender and social inclusion perspectives into the disaster management curriculum. The guidelines would be the stepping stone in influencing current and future DM curriculums, towards making a difference in professional practice that is intersectional, gender transformative and socially inclusive.

This exercise will thus build capacities of early career researchers, faculty members, students, trainers and various research and project personnel of the institutions in India offering DM curriculum to become more gender-conscious, intersectional, and socially inclusive. The consultation, audit, reviews and national-level workshops also facilitated partnerships and networking opportunities with -interventionists in the region, to initiate joint action for gender and social inclusion in disaster praxis and education.

### **Problem**

Inter-sectionality, gender and social inclusion are not definitive categories of analysis in the current approaches of disaster management professionals who are engaging with risk reduction, mitigation, and relief activities as well as policies around DRR. Disaster interventions cannot be gender-neutral or gender-blind. Therefore, underlying knowledge and knowledge production must become gender-aware and cognizant of gender differentials that contribute to disaster mortality and loss. In India, Disaster Management is an emerging and evolving discipline. Post the legislative enactment of the Disaster Management Act of 2005, disaster interventions, practices, policies and knowledge gained through the challenges of disaster response were consolidated as disaster education. The borders and boundaries of the discipline are porous, and disaster management academics and practitioners contribute to the discipline by infusing trans-disciplinary perspectives that percolate from the field and inform academia. In turn, academia creates a brand of disaster management professionals who serve both the praxis-side of the sector as well as produce researchers who enable knowledge production that informs public policy and/or contribute to enhancing the capacities of social groups. As the field progresses, newer perspectives to cater to a range of field realities must be integrated into the discipline. The gender-sensitive and socially inclusive response that progresses towards a gender-mainstreamed and socially inclusive policy or programme is necessary. To this effect, theory and praxis must be aligned with the same values. Social and environmental justice outcomes must take into account different factors that contribute to a social vulnerability that translates into disaster vulnerability. Therefore, DM curricula that infuse a strong gender consciousness and social inclusivity into knowledge machinery and knowledge production processes are the need of the hour. The primary aim of the intervention is to produce a robust guideline to integrate gender consciousness and social inclusion into the disaster management curriculum, towards influencing future praxis, research and policy.

## Solution

As a premier institution in imparting disaster education in India, JTSDS, TISS Mumbai is directly aligned to create socially inclusive, gender transformative, and intersectional disaster risk reduction approaches for practitioners. The following goals were addressed through different activities organized:

1. To infuse gender and social consciousness in disaster management pedagogies, research, praxis and policy.
2. To develop a detailed guideline to integrate gender and social consciousness into the disaster management curriculum.
3. To conduct an audit and a systematic review of the existing DM curriculum to strengthen gender and social inclusion perspectives in disaster education.
4. To facilitate regional and national level workshops to highlight the importance and need for gender and social inclusion in disaster risk reduction and resilience-building efforts.
5. To enable the dissemination of lived and felt experiences of a wide range of marginal identities in disaster contexts.

The specific activities undertaken were: a scoping review of literature, two regional workshops, expert curriculum consultation, curriculum consultation with institutions offering DM courses, consultation on social exclusion, critical theory perspectives and post-colonial philosophy, national dissemination workshop and preparation of guidelines.

Preparation of the guidelines was done based on thorough consultations with marginalized communities, as well as feminist academicians and social inclusion experts. This gives the set of guidelines credibility and provides a more grounded picture of disaster management at the grassroots, informed by the lived and felt experiences of the ones at the margins. The review and audit of the DM curriculum helped gauge the possibility and potentiality of creating a model curriculum that is gender transformative, socially inclusive, and intersectional.

## Results

The project is in its final phase of dissemination of results to a larger audience through a national workshop. The approach was qualitative to facilitate the exploration of best practices and innovative pedagogies that would help structure current and future DM curricula to be intersectional, gender-conscious and socially inclusive. The sample consisted of 31 individuals who represented marginalized communities, different organizations that had strong organizational affiliations in the gender and disasters space, feminist academicians, as well as those representing institutions offering DM or related programmes. This helped reach out to grassroots-level interventions, activism, and advocacy, as well as interactions with institutions spread across India. Each of these organizations in turn works with a wide range of stakeholders whose experiences were

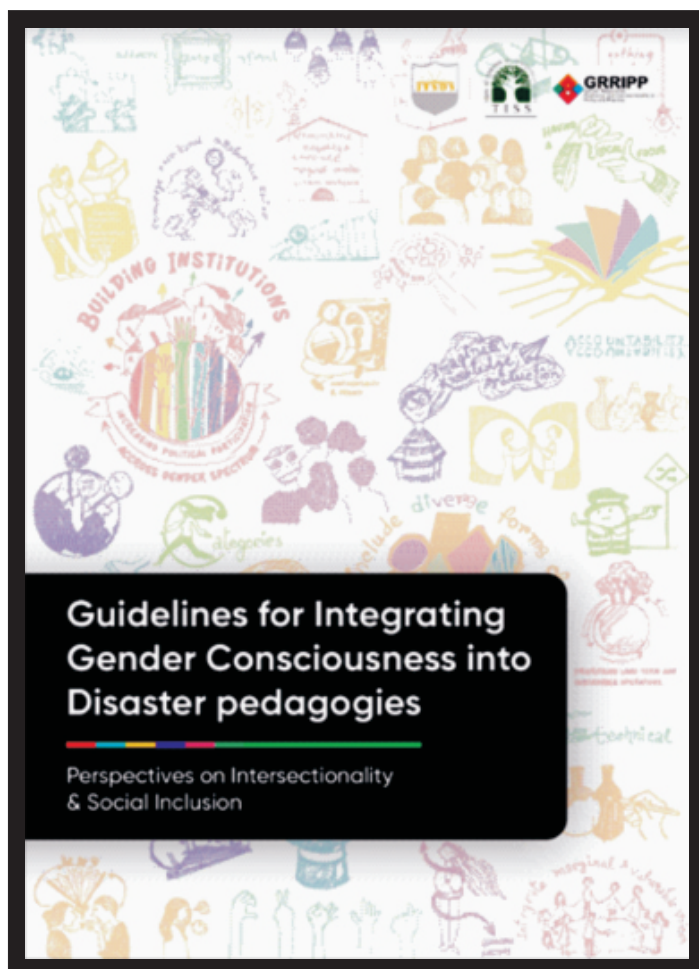
presented and documented at the regional consultation. Similarly, the institution-level engagement helped reach out to major departments, both government and non-government, offering courses on disaster management. The implication of this is a direct impact on several hundreds of students who pursue disaster management as a professional field and those likely to pursue this field in the future. Despite the humble sample size of the project, the outreach and impact of the project are substantially large. In addition to the same, similar exercises were expected to be undertaken by other institutions. This study has also opened up the possibility of several follow-up studies stemming from the project.

### **Scalability**

The initiative provides all higher education institutes in India that offer Disaster Management either as a full-fledged two-year course or as a single module the scope and guidance to conduct their gender and social inclusion audits. The set of guidelines produced will help professionals, teachers, and students working in the area of disaster management to be able to integrate these perspectives into their curriculum. This makes the initiative extremely easy to replicate and/or scale up. The guidelines can also be used to inform policymaking in the field of disaster risk reduction.

## ANNEXURE

### *Guidelines for Integrating Gender Consciousness into Disaster Pedagogies: Perspectives on Intersectionality & Social Inclusion*



The guidelines presented here are rooted in intersectional grassroots voices that face multiple burdens of discrimination on account of gender, caste, class, religion, disability and an array of identity-based inequities arising out of historical social disadvantages. These are informed by a deep gender consciousness that has taken into account the lived and felt experiences of disasters from people across the gender spectrum and range of marginalities. These guidelines, the proposers believe, will enable all higher education institutions offering Disaster Management, Climate Change & Sustainability related programmes to systematically integrate gender consciousness within social science and natural science curriculum.

The guidelines present an overview of Disaster Management Education in

the country and document the paradigm shifts in the disciplines from event-centric, reactive interventions to more proactive, conscious, humanitarian interventions that are rooted in the ethos of preparedness, prevention, and mitigation while privileging communities' coping capacities and increasing their resilience.

The guidelines document the gaps and needs in the current Disaster Management curriculum and outline the consultative and deliberative processes through which these gaps and needs in pedagogies, course content and delivery were identified.

As a next step, the guidelines present the philosophical paradigm in which it is embedded. Feminist standpoints, intersectionality and social inclusion as the guiding philosophies and underlying knowledge underpinnings have helped in developing these guidelines. Disaster Management professionals are always told to 'leave no one behind' and to ensure 'last mile coverage.' Our findings reveal that the last mile is not merely a geographic category but is to be reimagined as a socio-political category. How do exclusions take place even within geographies where disaster interventions are marked as? 'responded' How can political will and bureaucratic response enable the 'true?' last mile coverage that leaves 'no one behind?'

The guidelines present a vision for gender-transformative Disaster Management Education and also provide exemplar sample session-wise lecture plans, expected learning outcomes, evaluation procedures and an up-to-date list of reading materials.

## ‘VIDUSHEE GARGI’-CENTRE FOR WOMEN DEVELOPMENT-GUJARAT TECHNOLOGICAL UNIVERSITY

*Dr. Komal R. Borisagar & Ms. Janki Joshi*



*The Women Development Cell (WDC) at Gujarat Technology University (GTU) is constituted to extend a congenial environment to contribute to the inclusive growth of all, particularly women across industries. Various entrepreneurial trainings are provided by WDC to support women entrepreneurs in starting their ventures by supporting them from ideation to converting the idea to a financially viable enterprise under the visionary leadership & guidance of Prof. (Dr.) Komal Borisagar, Chairman WDC Cell - GTU. The WDC regularly organized various events and workshops to motivate women to become independent as they are suppressed continually by the opposing forces of religion and society.*

### Target Population

The Women Development Cell (WDC) at Gujarat Technology University (GTU) has been constituted to create a congenial environment for the inclusive growth of all, particularly women in and around the ambit of industry and academia. The WDC regularly organized various events and workshops to motivate women to become independent and self-reliant. This included all female students, principals / HODs & Women Development Cell's coordinators (Faculty members) of all GTU affiliated institutes and GTU female staff members and any other female who wants to do something new/innovative. With the help of WDC, we at GTU try to cater to all women across Gujarat who want to develop their skills & talent and are willing to come out from the drawn lines.

### Problem

Our culture denies a woman her existence. Therefore, to support the women who want to do something and want to prove themselves, the GTU women development cell is taking various initiatives which will encourage them to trust themselves and enhance their willingness to come out from the rigid environment and to work toward fulfilling their dreams and idea and become self-sustained individuals. Here at GTU, we are providing various entrepreneurial trainings, also supporting women entrepreneurs to start their own ventures by supporting them starting from ideation to converting the idea to commercialization and also supporting them availing financial support as well. This will reduce dependency and also enhance their position in their family.

### Solution

The empowerment of women and the improvement of their political, social and economic status are highly important for the achievement of sustainable development, so the women's development cell at GTU frequently organizes seminars, and workshops on various topics covering women's rights, skill development workshop in the area of work-life balance and entrepreneurship and leadership development skills.

The Cell aims at the following goals:

- To offer and cultivate a dignified, congenial working environment for women employees (including teaching and non-teaching) and students, where they can realize their potential to the fullest.
- To make women aware of their social and legal rights and thus empower them to stand up against any discrimination.
- To develop personality and inculcate leadership qualities in women leading to a fulfilling life.
- To organize activities and programmes to achieve the said objectives. The cell aims to provide a secure environment and empower women through knowledge sharing, training and aptitude-building exercises and programmes.

The cell tries to inculcate new skills and talent with the help of various initiatives which help the associated women to enhance their awareness about their rights which enables

them to claim them. Many women participate in leadership and entrepreneurship workshops and come up with new ideas; many of their ideas get funded with the help of GTU. Women become independent and can deal with the financial crisis and reduce their financial dependency and risk.

## Results

Gujarat Technological University and all the affiliated colleges have their own Women Development Cells across Gujarat. WDC is dynamically working toward the university's vision of women's empowerment. Until the numerous present programmes, seminars and workshops have been organized and many more are in the offing. Thousands of women have already taken the benefits through various programmes. Many women have been motivated to start their ventures and work towards establishing their own businesses.

Till date 275+ women have been motivated through various workshops, seminars and training to start their own ventures and more than 45 women have chosen to be entrepreneurs and started their own businesses.

Two success stories are shared below: - The founder of Make n Break, Ms. Manasi Gupta has been associated with us and with the help of GTU she obtained funding of INR 20, 00,000/- to start her own venture of making educational and learning STEM toys. Further to this, said start-up has generated revenue of INR 22, 00,000/- in previous financial year.

To quote another Mrs. Hetal Chauhan is co-founder of Shpero Health LLP developing products from the multifarious xerophytes that focus more on "Waste to Value " and "Sustainable Development " named HEMOPIN. The Hemopin Capsule is formulated from the fruits of Opuntia Vulgaris. Opuntia fruits are traditionally recognised for alleviating Vata Kaphadosa and treating diseases due to vitiated Rakta (Anemia), Cyst, Pain, Inflammation and cough as per Traditional Knowledge Digital Library (TKDL) have received funding of INR 15, 00,000. Both the said start-ups have developed their product and placed them in the market and they are generating good revenue as in 2017 they started their venture and generated revenue of INR. 40,000 and today the company is generating approximate revenue of INR 16, 00 000/- in the year 2021-22.

## Scalability

- More focused and dedicated efforts toward women empowerment by women development cells at the university level as well as institutional level.
- Sector specific as well as sector-agnostic incubation centers with a dedicated team to encourage entrepreneurship and leadership activities.
- Committed IPR cell and team to support entrepreneurs to protect their ideas/ innovation.
- Mentoring support, financial assistance, and technical and Lab assistance available to an innovator in one place.



## SOCIO-ECONOMIC UPLIFTMENT OF WOMEN THROUGH WELFARE ACTIVITIES AND TECHNOLOGY TRAINING

*Prof. (Dr.) Varinder Singh Kanwar & Dr. Ashok Kumar*



*To enhance the family income various enabling training programmes were conducted for women, such as Waste paper recycling, to make file covers, sheets, notepads, paper bags and paper lamps; Vermicomposting, in which organic wastes are used to make organic fertilizers; Hydroponic farming, in which plants are grown with nutrient solutions. It was realised that these technologies, if taught to the women of the villages, will enable them to set up their small-scale units and sell their products. To achieve this objective, support was provided from training to commercialization of the output. The intervention is to strengthen the infrastructural needs, awareness generation and uplift the standards of women through training & capacity-building programmes for sustainable practices.*

### Target Population

The state of Himachal Pradesh occupies an important place in the country having a high concentration of female's ratio in the total population as compared to national statistics. As per the 2011 census, there are 974 females available for every 1000 males in the state, whereas at the national level it is 948 females for every 1000 males. The

women of the state face difficulties in aspects regarding their livelihood and sources of income. The overall socio-economic status of women is still low which can be attributed to many factors such as low female literacy rate as compared to males, less exposure to government-funded schemes and limited source of income, etc.

### Problem

The socioeconomic status of women residing in the villages is not good. The majority of women are either matric pass or have lower qualifications and due to low educational attainment, they spend their lives with a minimal source of income and work as labourer, farmers, or in private jobs. Moreover, there is low awareness about government schemes like PM Ujjwala Yojana, etc. Women are not able to avail the benefit of the facilities provided to them. Most households depend on cows and buffaloes for their source of income but some are still following their traditional ways of raising sheep, goats, hens, etc. to make ends meet. The major occupation of the villagers in Himachal is farming and families dependent on farming have less cultivable land resulting in low income.

To find a solution to these problems in the state, the intervention was planned with the following objectives to address the causative factors:

- To set up a well established Science and Technology Centre for imparting a capacity-building training programme.
- To impart training on Vermicomposting, Hydroponic Farming, and Waste Paper Recycling.
- To improve the per capita income of women.
- To create awareness of women's rights.
- To empower women through education and strengthen them with social values and ethical spheres of life.
- To promote a culture of respect and equality for women.
- To inculcate an entrepreneurial attitude among young girls so that they will be "Job creators" rather than Job seekers.

### Solution

Once the target population became hands-on with the skills provided through demonstration mode and training programmes, the next step was technology transfer in the selected villages for Livelihoods Enhancements and Self-Reliance.

The following technologies have been transferred in the selected villages;

- (a) *Installation of Waste Paper Recycling Plant:* Keeping in view the geographical area and requirements of the village, a waste paper recycling plant was installed in Thandu village. The aim was to make optimum utilization of the waste paper generated either from households, schools, and offices into new paper products that are not only environmentally friendly but also a source of income. The plant has a capacity of about 200 papers per day that can be further converted into files, lamps, envelopes, notepads and gift packs for sale. The village is located in a remote location; hence the local women can produce the paper in the plant established and

further engage themselves to make various items from the paper generated. In this paper recycling unit 30 women were involved and were able to earn approximately Rs. 3000 per month extra by working for just 3-4 hours daily.

- (b) *Installation of Hydroponic Farming Unit:* Keeping in view the location and viability of the village Makhanumajra, a Hydroponic Farm was set up where plants are grown without soil, by using mineral nutrient solutions as a water solvent. The village is located near an industrial town and residential area where there can be a demand for organic vegetables. Hence, the sale of vegetables/ fruits produced in the unit became a source of income for the target population (20-30 ladies were involved in this unit) with lesser investment for space as compared to the traditional farming methods. The ladies were able to grow plants like tomatoes, broccoli, etc. which have high market value than the routine crops.
- (c) *Samasya Samadhan Kendra:* To further identify the real problems, seek greater understanding, explore innovative solutions and propose and implement ways forward while joining hands with other potential women, a Samasya Samadhan Kendra was set up in each village. These Kendras are well equipped with all facilities like computers, printers, internet and banners displaying information regarding important websites related to health, agriculture, national / state schemes, online billing, etc. It helped many women as well as villagers in updating their Aadhar card, ration card, online banking, online billing, online grievance and other schemes launched by the state/central government. On average 3-4 queries were being handled in both these adopted villages about the tasks mentioned above.

### Training Sessions

- On Hydroponic Farming Technique: Once the hydroponic farm was established, a training session was conducted again for the women of Makhanumajra village to train and make them aware of Hydroponic Farming.
- On Vermicomposting & Organic Pits: Women were apprised about the vermin composting and organic pesticides generated from organic wastes such as vegetables and fruits etc. that can be utilized to make organic fertilizers and in the plantation of new trees. They were also instructed how the water collected from the vermicomposting can be used as a pesticide. Various plants are grown with nutrient solutions through hydroponic farming. These technologies will eventually help them to set up their small-scale units and they can sell their products.
- On Waste Paper Recycling: A training session was also organized for women of Thandu village to train and make them aware of the working and benefits of the waste paper recycling plant. Further, they were sensitized about the different means of paper recycling for saving trees & environment that does not require cutting forests as the wood pulp is not required for making it. On the other hand, there is a huge demand for recycled stationery in offices, schools/colleges/universities. In this situation, such types of units are not only profitable but also save our environment to a large extent.

- Hands-on with Information and Communications Technology: Training sessions were organized at Makhanumajra and Thandu village from time to time, to train the women about general computer literacy, access to online websites, their relevance along with practical applications such as to view/submission of electricity, water and landline bill, updation of Aadhar / ration card and information issued by government, etc.

### Results

- The local women can produce the paper in the waste paper recycling plant established and further engage themselves to make various items from the paper generated.
- Through hydroponic farming units women can produce unseasonal vegetables also which has generated another source of income with lesser investment in aspects of space and labour in comparison to traditional farming.
- Through 'Samasya Samadhan Kendra' many women helped women in updating their Aadhar card, ration card, online banking, online billing, online grievance and other schemes launched by the state/central government.
- Women were apprised about the vermin composting and organic pesticides generated from organic wastes such as vegetables and fruits etc. that can be utilized to make organic fertilizers and in the plantation of new trees as well as the water collected from the vermicomposting being used as a pesticide.

### Scalability

The initiative can be implemented in various regions to uplift the socioeconomic status of women as well as other deprived sections of society. It can be scaled up to the demand of the market and the facilities available in the region. Even training for the initiative is not so hard to learn and implement. It was found in our initiatives that the population with a low literacy rate was easily able to understand the working and successful implementation of the technology.

## EMPOWERING WOMEN FOR ENABLING EVERYONE

Dr. K.S. Vignesh and Dr. E. Poovammal



**SRM**  
SRM INSTITUTE OF SCIENCE AND TECHNOLOGY  
Kattankulathur, Tamil Nadu

**UNNAT BHARAT ABHIYAN**

**ENTREPRENEURSHIP DEVELOPMENT TRAINING ON  
DAIRY CATTLE FARMING AND DIGITAL MARKETING  
FOR RURAL COMMUNITIES**

Organised Under the Aegis of  
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING, SRMIST**

In association with  
**STATE INSTITUTE OF RURAL DEVELOPMENT & PANCHAYAT RAJ (SIRD & PR)**

**Date: 24<sup>th</sup> - 26<sup>th</sup> November 2021**      **Venue: Nattarasanpattu Village**

*SRM Institute of Science and Technology in association with the State Institute of Rural Development & Panchayat Raj analysed the impact of the lockdown due to Covid-19 among the women in all eight adopted villages. The entrepreneurship training program initiative helped both women and men to enhance their family income considerably. The initiative helped the economic, environmental and social stability of the adopted villages by educating and empowering women on cattle dairy farming and digital marketing. The goal of this initiative was to build the capacity of women and to make them resilient during the pandemic period.*

### Target Population

Rural women of mixed age group from Nattarasanpattu and nearby villages were adopted by SRM IST Nattarasanpattu Village, Chengalpattu District, Tamil Nadu where the initiative happened. Yet women from other 6 villages also participated. SRM Institute of Science & Technology and Unnath Bharat Abhiyaan in association with the State Institute of Rural Development & Panchayat Raj conducted a three-day entrepreneurship training program to empower rural women towards economic independence by educating them on recent digital trends to sustain their existing job in an eco-friendly atmosphere. This training will assist the villagers to take their village to the next level thereby making it a smart village.

### Problem

SRM IST always has a constant check on its adopted villages. This check threw light on the dire need to enhance the livelihood of the villagers during the pandemic. A background study was made on what their actual potential is and how it can be developed without hindering their existing environment. During the pandemic when the entire world went online, the rural people were suffering on economic grounds as they were unable to find ways to earn a living or sell their products. The Pandemic also made many families turn to single parents, where many women were shouldered with the sole responsibility to take care of their families. "If you give a man a fish, you feed him for a day. If you teach a man to fish, you feed him for a lifetime." The proverb's origin is uncertain, but it is undoubtedly a great quote to be followed by the organizations like SRM which adopted a few villages. Rather than giving them free food and shelter, measures through entrepreneurship training program were taken to widen and hone their cattle rearing skills and selling skills to survive in any situation. This training program exposed them to new cattle farming ideas and digital marketing techniques which made them self-sustainable as it gave them employment and economic freedom.

### Solution

Background study started in June 2021 and a software application to help the villagers sell the products was initiated by the students and faculty of ECE. In November 2021 the need of the villagers was addressed through the three days training program where they were briefed on cattle farming and were trained to use the digital marketing app 'Rural Kraft'.

A three-day training workshop on 'Entrepreneurship Development Training on Dairy Cattle Farming and Digital Marketing for Rural Communities' was jointly conducted by the Department of Electronics and Communication Engineering SRM Institute of Science & Technology and Unnath Bharat Abhiyaan in association with the State Institute of Rural Development & Panchayat Raj (SIRD & PR) from 24<sup>th</sup> to 26<sup>th</sup> November 2021 at Nattarasanpattu village.

The goal of this initiative is to help rural women to support their livelihood during the time of the pandemic as they were unable to go out for work due to the lockdown. This initiative was done to reduce the risk of hunger and poverty. This pandemic is an unknown and unforeseen disaster that has put many lives at risk. This was a difficult phase in every individual's life. To help a village, survive this pandemic, our institution targeted the women force in our adopted village of ours.

Insights on 'Dairy Supply Chain Management', funding assistance provided for cattle and dairy management, different dairy cattle breeds available and cattle breeding management and the importance of value-added dairy products and how they can improve economic sustainability, trained the people on cattle farming techniques, the process of conversion of animal waste to manure and the various techniques and benefits of using natural fertilizers and pesticides, the importance of finding a good marketing strategy to sell the quality products produced by the villagers, 'what is digital marketing?', 'How to use digital marketing?', and the various digital marketing techniques and their benefits were discussed during the three-day training workshop. They were also trained on the 'Rural Kart' mobile application, an entrepreneurship interface between the producers and the customers to sell their quality products.

### **Results**

Through this training, the village people can know how dairy supply chain management operates and plan their resources accordingly to produce high-quality dairy products and at the same time more profitable. Apart from dairy cattle breeding management, training was provided on the preparation of value-added dairy products and manure from cattle wastes. Finally, they were trained in using digital marketing techniques to get more profits.

Around 100 people from among the adopted villages participated in this training program. Participants were also exposed to various government schemes and the alpha version of the mobile app was implemented. Certificate was provided through this training, with which the village people can avail the schemes and facilities provided by the government.

### **Scalability**

The advanced cattle farming methods can see a huge fortune among the villagers whereby their products can be sold in other states too. The by-products of dairy farming and the eco-friendly and sustainable process of conversion of animal waste to manure can bring employment opportunities for a new set of people in the nearby villages. Cattle farming can lead to organic farming methods. This can, in turn, give them a different form of livelihood as they can create their brand. The digital marketing app with which they will reach the wider mass can be delivered in regional languages too and the same app can be extended anywhere in the world. This village can become a role model and they can adopt other villages and train them to highlight cost-effective ways of organic farming.

# EMPOWERING WOMEN IN DISASTER RISK MANAGEMENT - BUNDELKHAND REGION

*Shri Manish Kumar Shukla*



*Bundelkhand region faces drought along with flood every year as well as illiteracy, backwardness and child marriages; It was not easy to connect women with basic education, but the situation has changed due to various schemes run by the education department, and now women are aware of disaster management and are joining as volunteers. To make the participation of women in disaster risk management more effective and impactful, Training in CPR, First AID, and other subjects was also included to increase women's interest in disaster risk management. Department of Disaster Management, Swami Vivekanand University, Sagar conducted a continuous awareness generation campaign on disaster management and disaster risk management on a large scale. First of all, training was given to the students of the school and college, which after encouraging results were extended to residents also.*

## Target Population

Local Residents & Families of the Bundelkhand region, especially children, school girls & women, are the target population. The participation of women in disaster risk management in India has been much lower than men and the situation and statistics of



the Bundelkhand region are appalling. The Bundelkhand region is facing drought disasters, and some areas flood disasters every year. This is in addition to problems such as illiteracy, backwardness and child marriage. It was not easy to connect women with basic education in the past. However, the situation has changed due to the benefits of various schemes run by the government for education.

To make the participation of women in disaster risk management more effective and impactful, we have added Training in CPR, First aid and other subjects to increase the interest of women in disaster risk management. Now women are aware of disasters by joining as volunteers, giving the message of being strong women and helping in nation-building through disaster risk management.

### **Problem**

The specific problem attempted to solve on priority is to increase the participation of women in disaster risk management in the Bundelkhand Region. The nature and scale of the problem are that in the Bundelkhand region, which is known for its illiteracy and backwardness, regional concepts and culture and situation of local castes hinder connecting women with a practical education as well disaster risk management. People who are affected by disasters are families of the Bundelkhand region, especially women. However, when you talk about disasters at the highest level, the ones who are talking and making the decisions tend to be men. The return on such an investment would be huge. Ensuring equal access to information and skills strengthens women's capacities and the capacity of the community to meet challenges that emerge from disasters to be more resilient in the face of recurring hazards and to help ensure that hazards do not turn into disasters. Creating the space needed for including women in decision-making one not only builds on women's capacities to respond during disasters but also gives an opportunity (for communities and States alike) to utilize women's potential as sources of mitigating and managing disasters. Women's equal participation and leadership in public life, including disaster risk reduction, is both an important goal in itself and essential for achieving a broad range of development goals and reducing disaster risk.

### **Solution**

DRR is a part of sustainable development, so it must involve every part of society, government, non-governmental organizations, and the professional and private sectors. It, therefore, requires a people-centred and multi-sector approach, building resilience to multiple, cascading, and interacting hazards and creating a culture of prevention and resilience.

The Department of Disaster Management at Swami Vivekanand University, Sagar has conducted a continuous awareness campaign on the topics of disaster, disaster management, and disaster risk management on a large scale.

It has also been conducting training on Fire Safety, LPG Safety, and Home Electrical

Safety. Mock Drills like Earthquake, Rescue techniques, Evacuation Techniques, CPR, First aid, and more.

The above training was successfully conducted at many schools, colleges, and offices, Police Training Center, Sagar, Jawahar Lal Nehru Police Academy, Sagar, Mahar Regiment, Sagar, and Indian Oil Depot, Home guards, scouts-guide, NSS, NCC and residents were included in the training programme, in which topics with gender dimensions such as bridging services to increase women's leadership and gender equality in DRR, resilience coordination mechanisms, networks, and partnerships; and targeted action to increase women's access to gender-responsive early warning systems, services and finance, resilient infrastructure, livelihoods, and marketing were widely covered.

### Results

Prevention, preparedness, and recovery policy frameworks, systems, processes, and tools are gender responsive and implemented as a result of conducting local women's and girls' leadership training. Topics such as leadership, advocacy, and participation of women's organizations; capacity development of DRR, gender, and resilience stakeholders; increased access to knowledge, guidance and expertise on gender-responsive disaster resilience; a community of practice, strategic networks, and gender-responsive coordination mechanisms and partnerships were taught in Bundelkhand region. Thus, the locals also learnt about disaster, disaster management and disaster risk management, Fire Safety, LPG Safety, Home Electrical Safety, etc. Mock Drills like Earthquake, Rescue techniques; Evacuation Techniques, CPR, First aid, etc were also practiced.

### Scalability

Disasters can result in substantial setbacks in economic development and social well-being. The ultimate objective of an integrated DRM strategy is to keep the economic and social impacts of a disaster to a minimum by reducing communities' vulnerability and building their coping capacity. The DRM planning process must therefore be grounded in an understanding of the hazards, degrees of exposure and vulnerabilities existing in a given area and especially in those areas that are subject to the greatest risks and should ensure the active participation of women in DRM.

Therefore, the incorporation of DRM into the planning process is crucial in ensuring the resilience of development policies. DRM is a multi-sectoral activity and, as such, must be part of the coordination within the national planning process of the various parties involved. It rests on five pillars: (i) risk identification; (ii) risk reduction; (iii) preparedness; (iv) financial protection; and (v) resilient recovery. These pillars are closely interrelated and need to be set within a conducive institutional, political, regulatory and financial environment that permits the allocation of the necessary resources.

## EMPOWERING WOMEN TO PLAY A LEADERSHIP ROLE IN DISASTER RISK REDUCTION

Ms. Kavita Agrawal



*The effort was made to sensitise women at three levels: - the first level was women in the workforce of Integral University, the second level was the girls studying on the campus, and the third target group was women, both literate and illiterate, belonging to the nearby five villages adopted by the University. Integral University, Lucknow, has been working towards creating equal opportunities for women in normal situations and during disasters by recognizing the problems of women. The University sensitized women towards their roles and rights and instilled leadership qualities to be able to be heard by society at large. These programmes offered to the women employees, the girl students, and the women in villages adopted by the University have seen a change in their situation over the years.*

## Target Population

The target group was women at three levels. The first level was women in the workforce of Integral University, the second level was the girls studying on the campus, and the third target group was women, both literate and illiterate background, belonging to the nearby five villages adopted by the University. The adopted villages are Paikramau, Bhakhamau, Sadamau, Behta and Adharkheda. They came under the Bakshi Ka Talab Tehsil and were selected as part of the University's social commitments to empowering nearby communities.

## Problem

Integral University, Lucknow, has been working towards creating equal opportunities for women in normal situations and during disasters. It recognized the problems of women due to their lack of education and courage to take up leadership positions, their being overburdened with household chores, and being a part of a culture that praised women's subservience. Women play key roles in their homes, as well as in offices but most of the time their contribution goes unnoticed as they neither act as leaders nor decision-makers as is the case also during times of natural calamities.

The goals of this initiative are -

- To sensitize women towards their roles in society, making them aware of their rights, and towards leadership qualities.
- To empower them through training so that they become part of the decision-making process; which would eventually help them and their family members in times of crisis, especially during disasters.

## Solution

For the past several years, Integral University has been observing, recognizing and working towards empowering women to take the lead in Disaster Risk Reduction. This has been taken up on three levels: two levels within the premises of the University that had a far-reaching impact on society, and the third level was for the women of nearby adopted villages.

The activities undertaken by the University to achieve the goals of the initiative were conducted by the Women's Study Centre in collaboration with various departments from 2017 to date. These activities are conducted in a planned manner. For the activities to be focused on adopted villages, NSS program officers take the students to these villages after interacting with the gram Pradhan (Village Head) to conduct the activities. The activities are focused on women empowerment & leadership, and disaster risk reduction.

Women Empowerment & Leadership and Disaster Risk Reduction

- International Women's Day and Women's Equality Day is celebrated annually, taking

various themes with a focus on women empowerment. In these celebrations, everyone is encouraged to participate. Activities range from panel discussions to poster making so that everyone finds something interesting and subsequently learns from it.

- Women's study centre offers a course on "Gender Studies (LN303)". This course is offered as an open elective and certificate course for students across various departments. It focuses on awareness and empowerment. It is very well received by both male and female students.
- Various seminars and webinars are conducted where participants get an opportunity to hear and interact with the women who are leaders in their fields. These opportunities motivate them and give them a platform to voice their fears and opinions. These interactions guide them and give them a role model to look up to.
- It is compulsory for every undergraduate student to study a course named "ES202 Disaster Management", which is part of their curriculum and covers DRR.
- Human resource development cell of the University collaborates with various departments and agencies and conducts short-term courses, Professional Development Programmes, and other activities for disaster risk reduction. In these activities, women are encouraged to participate both as a participant and as resource persons.
- To further the cause Integral University has now become a member of India Universities and Institutions Network for Disaster Risk Reduction (IUIINDRR-NIDM) of the National Institute of Disaster Management, Ministry of Home Affairs, Government of India.



## Results

Women's empowerment and preparedness to participate in Disaster Risk Reduction have increased tremendously. Women are more confident and ready for it. In the University, women hold positions of responsibility and are equally participating in their role as academic leaders. During the a Covid-19 first wave and second wave, the medical college of Integral University was allotted Covid-19 treatment centre. It saw equal participation of women at all levels, at the level of the decision-makers, and the implementation level. In the team of doctors, nurses, and other technical staff, there was no discrimination based on gender. There were women taking care of the HDU, ICU, Isolation ward, and Triage area. Women with their nurturing instincts did not stop with just providing medical care, and they also took care of the mental health of the patients

by keeping them engaged in simple activities like singing, etc. We saw women in the forefront, taking decisions with equal ease and authority as their male counterparts.

It was realised that if the initiative has to be meaningful, it needs the continuous participation of the stakeholders. To ensure that, it was tried to implement the activities in a location and time that made it convenient for the stakeholders to attend.

The key risk factors during the implementation of the initiatives were:

- Time management for women of the adopted villages for their availability for our programmes. Scheduling and rescheduling the visits to such areas because of the above reasons.
- The negative attitude of the male members of the families, especially at the village level.
- Low level of confidence in women towards becoming leaders.
- The strong fear of women missing out on their familial responsibilities, mainly towards their children.

### **Scalability**

This initiative of Integral University is applied at three levels, in which the first two levels are for the women who are working in the university or studying in it and the third level is about the women in the adopted villages. With every new academic session, there is a fresh inflow of the girl students with increasing numbers. This can be replicated in other educational institutions. As the practice has started of adopting five villages, there are plans in place to scale up the activity by increasing the number of villages and increasing the reach by using technological advancements and connecting through mobile phones.

## FIRE SAFETY TRAINING PROGRAMME FOR WOMEN

*Dr. R. Madhumala; Dr. T. B. Meenalochani & Dr. K. Priya Deepa Lakshmi*



*Women Empowerment Committee of Vinayaka Mission's Sankarachariyar Dental College conducted an awareness program titled 'Fire Safety Training Program', followed by live demonstration and training for the Non-teaching staff of the college. A total of 49 non-teaching women staff attended the program and benefitted. All the participants were guided to respond in situations of fire disasters. Individual guidance and training enhanced their capacity. Non-teaching women staff of the college was trained because they are in charge of buildings, and play a major role in understanding which fire safety measures are needed to comply with local building and fire safety codes. Moreover, knowledge of fire safety management is most needed for every woman as they handle all this in their daily life.*

### Target Population

Fire safety management of buildings mainly by hospital staff and institutional non-teaching staff plays a major role in combating fire and saving lives. Hence it is most important to train and impart knowledge to all staff in a working place about fire safety

measures and fire safety codes. They must be aware of their role in preventing fires and provide the means of proper guidance for occupants to safely evacuate a building in response to such an incident. The program on fire safety management helps to achieve the above goal. Knowledge of fire safety management is most necessary for every individual, especially women, as they handle it in everyday activities.

### **Problem**

Fire accidents are mostly well prevented and could be controlled at the initial stages. Regular checking of fire safety measures, periodic maintenance, investigations made from previous accidents and efficient monitoring processes are some of the most important precautions to be taken. The best approach to fire safety is to prevent fires in the first place. Fire in a building or a workplace or a commercial complex can lead to the loss of precious lives and damage to property and materials. This could be avoided by designing fire-safe structures in line with mandatory safety regulations and relevant standards and by maintaining fire safety practices regularly, carrying out a fire risk assessment and keeping it up to date.

Based on the findings of the assessment, employers need to ensure that adequate and appropriate fire safety measures are in place to minimize the risk of injury or loss of life in the event of a fire. Awareness is to be imparted and regular fire fighting evacuation training should also be given to the occupants. Some precautions are:

- Keep sources of ignition and flammable substances at safe distance & designated places
- Avoid accidental fires, for example - make sure heaters and candles cannot be knocked over.
- Ensure good housekeeping at all times, for example - be aware of paper bundles, and avoid the build-up of rubbish that could burn.
- Consider how to detect fires and how to warn people quickly in the event of fire, for example - by installing smoke alarms and fire alarms or warning bells. Install appropriate fire-fighting equipment for putting out fires quickly.
- Keep fire exits and escape routes marked and unobstructed at all times.
- Ensure your workers receive appropriate training on procedures they need to follow, including fire drills.
- Review and update fire risk assessment regularly.

### **Solution**

Women Empowerment Committee of Vinayaka Mission's Sankarachariyar Dental College conducted an awareness program titled 'Fire Safety Training Program' on 12.02.2022 by Physical Education trainer, Mr. S. Rajendran, MBA, B.P.Ed followed by live demonstration and training to the Non-teaching staff of the college.



The program aimed to clarify the present situation to inform better implementation strategies on disaster risk reduction and management in a higher educational institution setting focused on fire disasters in the locality. Part 4 of the National building code of India covers the requirement for fire prevention, life safety to fire, and fire protection of buildings. The code specifies occupancy-wise classifications and protection features that are necessary to minimize the danger to life and property from fire.

### **Results**

A total of 49 non-teaching women staff attended the program and benefitted. All the participants were guided to respond in situations of fire disasters. Individual guidance and training enhanced their capacity building.

### **Scalability**

Fire safety management of buildings mainly by hospital staff and institutional non-teaching staff plays a major role in combating fire and saving lives. It is most important for them to understand which fire safety measures are needed to comply with local building and fire safety codes. They must be aware of their role in preventing fires and provide proper guidance for occupants to safely evacuate a building in response to such an incident. The program on fire safety management helps to achieve the above goal. An awareness generation exercise of this kind can be done in any institute or organization to create a disaster-free environment.

## EMPOWERING RURAL MARGINAL WOMEN FARMERS THROUGH FINANCIAL LINKAGES FOR LIVELIHOOD ACTIVITIES AT KISHANGARH BAS BLOCK, ALWAR DISTRICT, RAJASTHAN

*Shri Pradeep Singh Pundhir*



*The intervention shows how the practice of bank linkages and credit usage helps the farmers and community people to be involved in livelihood activities for income generation and poverty reduction. The project beneficiaries were mobilized into SHGs; training programs were given on various themes. These included leadership, group management, improved agriculture practices, livestock practices, sakhi (cadre) identification, and financial linkages with bank and credit usage, improving the lifestyle, continuing their children's education, and access to the public distribution system, 96% of convergence with Govt schemes. With the help of bank linkages, the women were empowered to do Agri farming, goatry, good agri and livestock farming practices and be involved in marketing activities under Panchayat Raj Institutions. The practice was conducted for one Gram Panchayat. Now it is being implemented as the integrated practices of livelihood development in five-gram Panchayats Hazipur, Kasba Dehra, Jilota, Jhirindiya and Sainthli. Also, it is being targeted to scale up to 5000 HH.*

## Target Population

Single women, widows, deprived women, divorcees, landless women, and farmers who do not have technical skills or proper knowledge of goat rearing, poultry, or Agri-farming; farmers who face less productivity and consequently less income.

## Problem

Alwar is a semi-arid district, and agriculture in the district is largely dependent on rainfall, but the distribution of rainfall is uneven, which sometimes results in a drought situation and adversely affects agricultural production. Besides agriculture farming, livestock and poultry have proved to be critically important for livelihoods in many distressing conditions, especially in the case of drought.

Gender indicators revealed by National Family Health Survey-5 show that the percentage of married women who had experienced spousal physical or sexual violence is at 25% in Rajasthan, which was higher than any other state in India except Bihar. This survey also shows the status of women empowerment in the state; only 17% of women have worked in the last 12 months and were paid in cash. In Rajasthan, only 26% of women have land ownership, either of a house or land. Women in the Alwar district are often subjected to gender discrimination and violence predominantly by the males in the families. Due to such social evils and traditional orthodox practices, women are often becoming victims. They lack employment opportunities, land ownership and participation in household decision-making. Lack of nutritional supplements and medical facilities makes them vulnerable and prone to health-related risks. Despite the gender inequality prevailing in the family, women are engaged in agriculture and livestock activities during unfavourable climatic conditions to support their families to strengthen them financially. Although women are engaged in farm and livestock activities, the majority of the women are engaged as farm workers where the wages are very low.

Financial linkages for empowering rural women farmers for livelihood activities aim towards poverty reduction, women's empowerment, and rural development in the Kishangarh Bas block of the Alwar district of Rajasthan. A livelihood comprises the capabilities, assets, and activities required for a means of living. It is deemed sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities, assets, and activities both now and in the future while not undermining the natural resource base. A livelihood approach makes the connection between people and the overall enabling environment that influences the outcomes of livelihood strategies. It brings attention to the inherent potential of people in terms of their skills, social networks, access to physical and financial resources, and ability to influence core institutions. Addressing economic, social, and political identity simultaneously helped women's empowerment. Therefore, for holistic empowerment of the woman to happen - social, economic, and political aspects impacting a woman's life

must converge effectively, and this very convergence must be constructively carried out.

### **Solution**

Diversification of the Livelihood of the people, especially women of Ratakhurd, was one of the key objectives. Efforts were made to improve agricultural production, enhance livestock rearing capacities of the target population, initiate goat and poultry farming practices, link households with government MGNREGA employment guarantee programs and connect people with other livelihood generation programs.

SPECTRA initiated the formation of two Farmer Producer Companies (FPC) in 2017- SPECTRA Adarsh Udpadak Mahila Producer Company Ltd. and Alwar Mahila Sangam Producer Company Ltd. Currently, the FPCs deal in spice making, buck marketing, solar equipment, Himalayan products and agree on inputs.

### **Results**

The project beneficiaries were mobilized into SHGs. Training programs were conducted on various themes - leadership, group management, improved agriculture and livestock practices, Sakhi (cadre) identification, financial linkages with bank and credit usage and purchase of household assets. It also included subjects such as improving lifestyle, continuing their children's education, access to the public distribution system, convergence with Govt schemes, and obtaining job cards for the unemployed. With the help of bank linkages, the women were empowered to do Agri farming, goatry, good Agri and livestock farming practices, and involved in marketing activities, at Panchayat Raj Institutions. As a result of this, women were impacted and there were 1400 entrepreneurs for goatry and 100 entrepreneurs for Livelihoods which included enterprises such as Grocery shops, Flour mills, cosmetics, confectionery shops, motorcycle garages, motor parts shops, and Ladies' tailors. Integrated best practices were cultivated and helped the women to come out of poverty and live a dignified life.

In order to protect people from the shackles of middlemen, SPECTRA started a convergence program to link men and women farmers with Kisan Credit Cards so that they can access input costs for agriculture at a very low rate of interest.

Earlier farmers used to borrow money from middlemen to meet the input costs and the latter were forced to sell their produce to the lender at a price decided by the lender lower than the market price. SPECTRA promoted the usage of KCC cards and also ensured that farmers pay the amount on time. Kisan Credit Card (KCC) ownership is now 100%. KCC usage has increased to 788 HHs using them as against 3 Milk collection centers that were developed. 1295 Beneficiaries in dairy development were involved and had a yield of 6555 litres of milk /year.

- It can be observed that funds are initially used for loan repayment and the purchase of utility items.

- Once these basic requirements are taken care of, it is heartening to note that the spending was for livelihood activities.
- Again, towards the end, the focus is on the purchase of utility items, which can be assumed to be high-value items (smartphones, ACs, motorcycles). 231 HHs were involved in labour work under MGNREGA.

### Scalability

The practice was conducted for one gram panchayat. Now we are implementing the integrated practices of livelihood development in five-gram panchayats Hazipur, Kasba Dehra, Jilota, Jhirindiya and Sainthli. Also, we are targeting 5000 HH in the scale-up. The practice of bank linkages and credit usage helps the farmers and women's community to involve in livelihood activities for income generation and poverty reduction.

## MIGRANT WOMEN TURN BREADWINNERS

*Ms. Kiran Singh*



*This initiative is about women from Swadari B that took charge of becoming the breadwinners of their household post-lockdown while their husbands took care of cattle and the children. The women have since built a stone fence around the common land, carried out soil and moisture conservation activities and desilted their cattle pond to increase its capacity all this with their face masks on. It is worth mentioning that none of their husbands signed up for the MGNREGS work; they spent their days rearing the cattle and taking care of their children instead. As daily jobs crashed in the face of the COVID-19 lockdown, the families decided to return to their village for support and sustenance. When the village institution learnt of their plight, it approached Sita Bai, an MGNREGS Mate from the village, for a solution. Sita brought to their attention the work on village Commons that could be done under the MGNREGS, following all COVID-19 precautions, ahead of the monsoons in return for daily wages. In no time, women from each of these 23 families, along with many others, enrolled themselves.*

## Target Population

Migrant women from the Rajasthan village stepped up to become the breadwinners for their families while their partners waited to join the 'city jobs'.

## Problem

This story is about Kanchan Devi of Swadari B village of Devgarh block of Rajsamand District. In April, her husband lost his city job due to the pandemic-induced lockdown and forced her family to move back to her village in Rajasthan, where she took up MGNREGS work to make ends meet. The 30-year-old could be seen in the Commons of Swadari B Revenue Village, Devgarh Block; Rajsamand District, digging pits and trenches in the morning to earn Rs. 216 - 220 a day.



Other than Kanchan, 22 other migrant women from the village also stepped up to become the bread-winners for their families while their partners waited to join the 'city jobs' again. Around the third week of April 2020, this group of 23 women, along with other women from the village, took up MGNREGS work on the 75 hectares of common land in their village. Before this, they lived in the cities of Delhi, Surat, or Ahmedabad, where their husbands were employed at garment mills, ice cream factories, and construction sites. As daily jobs crashed in the face of the COVID-19 lockdown, the families decided to return to their village for support and sustenance. Some walked while some hitch-hiked their way to Swadari B.

## Solution

When the village institution learnt of their plight, it approached Sita Bai, an MGNREGS Mate from the village, for a solution. Sita brought to their attention the work on village Commons that could be done under MGNREGS, following all COVID-19 precautions, ahead of the monsoons in return for daily wages. In no time, women from each of these 23 families, along with many others, enrolled themselves.

*“When we learned of the migrant women wanting work, we helped them get job cards so that they could avail work under MGNREGS. Each woman was able to earn approx. INR 20,000 during the Covid-19 times, and that money proved critical in sustaining their families,” says Sita Devi.*

The women have since built a stone fence around the common land, carried out soil and moisture conservation activities and desilted their cattle pond to increase its capacity all this with their face masks on.

It is worth mentioning that none of their husbands signed up for the MGNREGS work; they spent their days rearing the cattle and taking care of their children instead. In fact, all of the 135 MGNREGS workers in Swadari B, including this group of 23 migrants, were women in the age-group of 25 to 60. A similar trend was seen at the state level. According to FES's Devgarh Block Team Coordinator Narayan Singh Chundawat, 65% to 70% of the current MGNREGS workers in Rajasthan are women.

According to Narayan, men don't take up MGNREGS work due to various socio-cultural reasons. However, these women have subverted the gender stereotypes while toiling under the sun to make a living, inspiring more of their peers to come out and work.

### Results

While wages from MGNREGS helped them sustain during the pandemic times, the work that the women undertook like building common water harvesting structures, and regenerating the grazing lands has helped them much more. Earlier, they had to take their cattle 5 km away for drinking water. Now the renovated pond gives them water in their village only. The regenerated pastures provide ample fodder so that they can keep a large number of cattle. The cattle give them milk which helps support their children's nutrition, while also adding to their income. The soil and moisture conservation works also ensure that there is water available during all seasons in their wells. The women plan to continue this work together to build more resources in their village so that no one has to migrate in future.



### Scalability

The scope to scale up is everywhere to draw such inspiration to make a difference, like the women of Swadari village of Devgarh block.



# Women Empowerment



## PROMOTING LEADERSHIP TO THE WOMAN TORCHBEARER OF MANIPUR

*Er. Kosygin Leishangthem*



*In Manipur, after the 1904 and 1939 Women's War/ Agitation against colonial rule women in the age group of 50-70 years came together in forming the Meira Paibis group, but in post-independence, all age groups of women were involved in the Meira Paibis (Women torch bearers) organization. The Meira Paibi used the torch as a weapon to fight against the social injustice of various forms in Manipur. It is also a kind of social movement. It is a sort of traditional institution or an informal group in each locality, which emerged on the scene to fight against the social ills of alcoholism, drug addiction, crime against women & children or sexual violence in the Manipur valley. If any offenders are found, they will get beaten by a mob of women and publicly humiliated. The practice of mob justice allegedly by the local club and Meira Paibi has become another kind of violence in society. There is no protocol and most of the time their action turns into a Mob and takes the law in hand. The Target of this practice is to educate the Meira Paibis on various aspects to propose various corrective measures if needed.*

### Target population

The Meira Paibis (also popularly known as Women torch bearers) are the target population that will directly or indirectly cover all the women population of Imphal Valley. First, the Project was targeted at the Thangmeiband constituency in Imphal West

District, Manipur with a Population Density of 994 people per km<sup>2</sup> where the maximum number of Meira Paibis Groups are there.

The Target of this practice is to educate the Meira Paibis on various aspects to propose various corrective measures while handling any social discrepancy by these women.

### Problem

Meira Paibis are well-organized social institutions or informal group in each locality, which emerged on the scene to fight against the social ills of alcoholism, drug addiction and sexual violence in the Manipur valley. The truth about the Meira Paibis is that most of the Meira Paibis are from economically weak families so not well educated. Most of the time the Meira Paibis create a mob, believing that they are punishing the victim for doing something wrong (not necessarily illegal) and they take the law into their own hands to punish the purported accused without following any rules of law.

### Solution

*“Education is the most powerful weapon which you can use to change the world.”*

*-Nelson Mandela.*

This social movement of Mob lynching can be solved by giving proper legal and Human rights awareness to the Meira Paibis. With the Basic Idea of DRR and First Aid, they can be very helpful during any disaster or post-disaster recovery. We aim to make a system that will help the Meira Paibis to understand the case legally and systematically handle the social issues, not with mob justice or mob lynching.

### Results

Meira Paibis are well organised social institutions or informal group in each locality, which emerged on the scene to fight against the social ills of alcoholism, drug addiction and sexual violence in the Manipur valley. Most of the time the Meira Paibis create a mob, believing that they are punishing the victim for doing something wrong (not necessarily illegal) and they take the law into their own hands to punish the purported accused without following any rules of law. The practice of mob justice allegedly by the local club and Meira Paibi has become another kind of violence in society.

After disseminating our aim was to inform through educational expert talks & group discussion with the Meira Paibis. Now, the Meira Paibis are calmer and more responsive while handling any case. They have the emergency number of the Police, ambulance and fire service framed on the office/shed walls. Even if under some circumstances if they have to demonstrate also, they don't disturb the public. Also, each Meira Paibi group has First Aid kits in their office/Groups.

*“The education of women is the best way to save the environment.—E.O. Wilson”*

### Scalability

The same model can be applied to all valley districts of Manipur and also to some parts of India. In some parts of India, because such practice can be carried out only in the places where women have high living standards and socio-economically independence in the society which is beyond women's empowerment, Livelihood and Recovery, and Initiatives towards special needs. The most important thing about this good practice is that all training, group discussion and counselling are carried out and done at night only from 8pm to 10:30 pm when they are free from their daily professional duties, work and domestic household duties. This practice is the best because we are making a system that will help the Meira Paibis to understand the case legally and systematically handle the social issues not with mob justice or mob lynching.

## Category - III



**Post Disaster  
and  
Reconstruction**

## HELPING WOMEN RECOVER THEIR LIVELIHOOD AFTER FLOOD-RELATED DISASTER

Dr. K. Ajitha & Dr. Chinchu C.



*The Women's Studies Centre organized hand-holding programmes to help women affected by the 2018 and 2019 Kerala floods to build resilience among women of the flood-affected areas of the state, to instil hope and resilience in the survivors of the flood, and to provide them with some temporary relief in the times of economic uncertainty faced by them after the floods.*

### Target Population

Women and children belonging to the underprivileged sections of the geographical areas surrounding the University were the primary beneficiaries, though others in different villages in the Ernakulam district of Kerala also benefitted. The Women's Studies Centre organized hand-holding programmes to help women affected by the 2018 and 2019 Kerala floods.

## Problem

The Kerala floods of 2018 and 2019 were unprecedented in their scale and destruction caused in the history of over a century. Women, especially those from the underprivileged sections of society were the most affected by these events. The livelihoods and employment of thousands of women and their families were shattered by this disaster. The academic activities of students from these families were also badly affected. The post-disaster interventions were designed to provide relief to the survivors of the floods in the areas of livelihoods and academics, helping them to build resilience and hope to rebuild their lives.

## Solution

The Women's Studies Centre organized hand-holding programmes to help women affected by the 2018 and 2019 Kerala floods. Programmes included a book giveaway event, exhibition-cum-sales event of handmade cloth bags and other products manufactured by women from the flood-affected villages. The products included food items, footwear, ornaments, utensils, spices, chocolates, Ayurvedic products, cloth bags, etc. along with Kerala state maps made of the spoiled handloom fabric from Chendamangalam weaving village. Donation of notebooks, scientific calculators, and school bags, etc. was also conducted. Academic programmes including a panel discussion titled 'Pralayakalathe Pennanubavangal' (Women's experiences during the floods) were also conducted. These programmes were conceived and organized as part of the Women's Studies Centre's outreach programmes aimed at building resilience among women of the state.

The primary objective of the programmes was to instil hope and resilience in the survivors of the flood and to provide them with some temporary relief in times of economic uncertainty faced by them after the floods. The Cochin University Women's Welfare Organization (CUWVO) and the School of Management Studies of CUSAT, along with the students, teachers and administrative staff of the University cooperated as partners in these endeavours.

## Results

The Women's Studies Centre organized hand-holding programmes to help women affected by the 2018 and 2019 Kerala floods. Programmes included a book giveaway event, exhibition-cum-sales event, donation of notebooks, scientific calculators, and school bags, etc. and panel discussions.

The exhibition-cum-sales programmes resulted in good sales for the products displayed. The expo organized on the 13<sup>th</sup> of December, 2018 in collaboration with the students of the School of Management Studies resulted in sales of over INR 1, 00,000. Books worth INR 25,000 were also collected and distributed with the support of an NGO.



### **Scalability**

Such programmes in collaboration with NGOs and CSOs can be scaled up as part of scientific social responsibility, and academic evaluation and documentation of such programmes can be undertaken as knowledge production initiatives. Human resources and expertise available within universities can thus be translated into sustainable social action. Similar best practices by universities and other academic institutions need to be felicitated and recognized for promoting better synergy between academia and the larger society toward sustainable development.

## Category - IV



**Livelihood and Recovery**

## WOMEN EMPOWERMENT IN SCIENCE, TECHNOLOGY AND INNOVATION (STI) INTERVENTIONS FOR DISASTER RISK MANAGEMENT (DRM)

Dr. Sukhdeep Kaur



*A group of women in the village of Nandgarh took the initiative to educate other women of the village about the water crisis in their native language as well as did the groundwork to tackle these issues. Women in the age group of 25-35 who have a basic education in science took the initiative to teach women of various ages of the group in villages about water potability and decreasing groundwater levels. This study is to demonstrate how women in rural areas are likely to be disaster risk managers through Science, Technology and Innovation (STI) interventions. The inherent strength and capability to work on building resilience for their family and their community and capacity building in STI for rural women could prove to be a backbone in DRM for the rural sector. Despite improvements, water availability and cleanliness is still the biggest challenge in rural areas. In the present research Women's empowerment for Science, Technology and Innovation (STI) interventions in Disaster Risk Management (DRM) i.e. in water scarcity as well as in water cleanliness for daily households, is explored. The case study brings a transit effect on the livelihood of a rural woman by standing for her right to have a portable and accessible water source.*

## Target Population

The role of rural women in disaster risk management (DRM) needs to be explored. However, the inherent strength and capability to work on building resilience for their family, and their community, capacity building in Science, Technology and Innovation (STI) for rural women could prove to be a backbone in DRM for the rural sector. The present case study will bring out the impact on the livelihood of a rural woman by standing for her right to have potable and accessible water sources.

## Problem

Nandgarh is a village located near Banuar town in Rajpura Tehsil in Patiala District of Punjab. The nearest town Banuar receives an annual rainfall 188 mm. Groundwater level lies as low as 800 ft. in depth in this area. With the increase of pesticide use in irrigation, the availability of potable water for daily household is decreasing. Their situation of water shortage and potable water availability is grim in the village Nandgarh.

Pesticide use, declining water levels, and less rainfall are the prominent faces of water-related disasters in rural India. Daily household accessibility to clean water has got a setback over some time. Punjab, one of the agricultural states of India is distinctive in water-related disasters that have all the characteristics mentioned above. The pesticide has a contribution of 0.74 kg per hectare towards water-related disasters along with rainfall deficit and climate change effects. Thereby, water shortage and potable water availability, growing pollution of water in villages of Punjab have become major challenges. Women in villages are the ones who by large are getting affected by these challenges. Science, Technology and Innovation (STI) interventions however can help to address the above-mentioned challenges in Punjab by curbing groundwater withdrawal. In the present context, Punjab rural women's participation in curbing water shortage and the progressive improvement of potable water availability is presented; rural women have started finding out ways to uplift their standard of living.

The objective was to present how rural women have taken measures in the domain of STI to overcome water scarcity and potable-related issues in their daily household and bring about the current salience indicators of STI during the survey for the DRM.

## Solution

Outreach activities were conducted in terms of interviews with the women of Village Nandgarh to study how they have taken up the water crisis issues and found solutions to these issues.

A case study was conducted in the village-Nandgarh where women have contributed towards the upliftment of their daily household life by working on water crisis issues. A group of women in the village Nandgarh took the initiative to educate other women of the village about the water crisis in their native language as well as did the groundwork to tackle these issues.

Women in the age group of 25-35 who have a basic education in science took the initiative to teach women of various ages of the group in villages about water potability and decreasing groundwater levels. They educated the other women on how they can share the burden of the male community in tackling the water crisis and potable water issues in their village, especially for daily household use by the adoption of various innovative ideas and technologies.

The women of Nandgarh not only did knowledge development about these issues but also like the male community were involved in physical development. Women of village Nandgarh with the help of the male community created the water tanks in their houses. Two types of water tanks were created, one for animal use and one for household use. The water source for these tanks was arranged by the implementation of rainwater harvesting systems to collect and store rainwater for drinking or recharging underground water levels. In addition, ground wells were built to extract groundwater. To make water potable women collected their savings to bring low-cost solutions for water potability into practice i.e. savings were used to buy chlorine tablets that can be exposed to sunlight, to improve water quality.

### **Result**

Women's role in Science, Technology and Innovation (STI) interventions is progressive. With STI in Disaster risk management (DRM) as the prominent Pillars, Women's role in DRM must be explored in terms of Science, Technology and Innovation (STI) interventions. Women are active and resourceful disaster responders but most often are regarded as helpless victims. With the increase in gender-based disaster vulnerability awareness, women's participation in DRM has taken place. However, the engagement of rural women in DRM is not conspicuous.

### **Scalability**

The case study presented in this context could be taken up in nearby other villages of this area. Capacity building in rural women for Disaster Risk Management can be adapted to a bigger scale covering a larger rural women's community. Right to clean water and accessibility issues would get a major push in the rural sectors of Punjab.

## Category - V



**Initiatives Towards  
Special Needs**

## INITIATIVES FOR DISASTER MANAGEMENT AMONG TRIBAL POPULATION

Dr. Jilly John



*Tribes are vulnerable populations, living with the fear of natural calamities such as landslides; flash floods always scare them as they stay in hilly regions. Tribes who are staying in isolated geographical locations are not able to avail disaster management services easily. The rural camp of Master of Social Work students at the Central University of Kerala in a tribal community addressed this issue through community participation programmes. The entire community, including women, participated in the programmes. They reported it as a memorable event in their lives.*

### Target Population

Kallappally is a small tribal village in Kasaragod District of Kerala, India. Malekudiya and Pallan tribal community of Kammadi, Kallappally consists of around 50 families with a population of less than 200. The elderly, adults, women and children of this community were active participants of the programmes organized during the camp days. The entire community women actively participated in street play on Disaster Management, Door to

Door Campaign and house visits. These 200 community members are the target group whose awareness was raised by the interventions of Disaster Management.

### **Problem**

According to a natural hazard proneness assessment by the National Centre for Earth Science Studies, 1,848 square km (4.71 per cent geographic area) in Kerala, the steep slopes of the Western Ghats are highly prone to the occurrence of landslides. According to the study conducted by KIRTADS, most of the tribes live in the forests and mountains of the Western Ghats in Kerala. Their communication with the outside world and their educational qualifications are limited, so their awareness of disaster management facilities is comparatively less. Among the Malekudiya tribe the responsibility for taking care of the family is on women. However, most of the time, women are unaware of disaster management methods, as their interaction and communication outside their community is limited. Disaster in a hilly region cannot be prevented but if we prepare the community in advance, the impact of the disaster can be managed and risk can be reduced. As the tribe community depends upon the forest, they cannot be moved to another safer place. The interventions among the tribe community will be effective only if they trust the intervening authority. Through this intervention, we were able to reach the community at their heart and ability to create awareness about the causes and consequences of the different forms of disasters, their management and risk reduction strategies. As the female students established a good rapport with the tribal women population, they were able to communicate with them without any hesitation.

### **Solution**

Kammadi is a geographically isolated area without many transportation facilities. As it is a hilly area converted to a rubber plantation the area is prone to land sliding. The tribe community of fewer than 200 members are living with a lack of awareness of Disaster management or Disaster risk reduction strategies. The Central University of Kerala Social Work department organized the residential, rural camp under the coordination of Dr. Jilly John, Assistant Professor, Dept. of Social Work, on the various issues affected the tribal life and organized programmes to make them aware of the causes of different types of natural disasters and the risk reduction methods and management mechanism through activities such as street play, House visit, FGDs, Door to Door Campaign etc.

**Street Play on Disaster Management:** Students were instructed to use street play as a tool to create awareness among the community members about disaster management. The play was of great relevance to the community, which faces threats of landslides and floods during the monsoon. Trainees showcased a great performance which was appreciated by the crowd. The major objective of street play was to create awareness among the community members about the precautions and the things that need to be taken care of when natural calamities like heavy rain or land sliding occur or a similar kind of crisis arises. The street play was performed on 13 October, the third day of the



camp at 6 pm. It took place at the campsite near Multi-Grade Learning Centre. The play was performed by 6 students namely Ashique, Savin, Ardra, Anjali, Izzath and Praveen and the children of the community also volunteered to take part in the street play in small roles at the end of the play. The theme of the play was 'Causes and consequences of land sliding and precautionary measures' as the area was prone to landslides during monsoon. The play mainly focused on creating awareness among the community members on how to manage such a crisis and the measures that needed to be taken at that time. The message at the end of the play was to adopt methods to protect nature such as planting trees and protecting the environment as a solution to manmade disasters. At the end of the play, the trees that need to be planted were arranged by the community.

Door to Door campaign: -The camp members conducted a Door to Door campaign under the instruction of the camp coordinator. Trainees were divided into 7 groups and visited the colonies of tribal communities to inform and make the people aware of different issues such as disaster management, introducing the schemes and policies by the government for the holistic development and empowerment of the tribal communities etc. The social work students conducted house visits and Focus Group Discussions (FGDs) among the community to collect and disseminate information on disaster management. As more than half of the students were girls (28 girls and 19 boys) under the sole leadership of a lady faculty coordinator, the team was able to address the needs of women in the tribal community.

The intervention aimed to create awareness among the tribal community on various issues related to disaster, disaster risk reduction, and disaster management and enable them to analyze their realities. The goal of the initiative was to create awareness among the tribal community who are staying in disaster risk environment about the causes, management and risk reduction strategies of disaster and enable them to handle the situation properly.

## Results

In the first stage, the camp team visited the area. In the second stage based on the pilot report on the requirements of the tribal community, the faculty coordinator conducted the need assessments and made preparations for conducting the activities in Kammadi, the tribal community. In the third stage, the activities were implemented among the tribe community. The street play was easy to understand by everyone in the community because it related to their problems as their area is landslide-prone. Moreover, the participation of the community members in the street play added to its effectiveness and everlasting memory to all. The crowd enthusiastically watched the street play. The community members were living in fear and that fear was seen reflected on their faces during the entire play. With the support of the community members, street play was enacted and served its purpose. The community members heartily applauded the performance. The participants were able to convey the message completely. The Door-

to-Door campaign, focus group discussions and house visits were successful events because the community members accepted the intervening team and they were ready to provide all the information which we asked without any reluctance. In the final stage, the initiatives of the university were dedicated to the Malekudiya tribe community by the faculty coordinator of the rural camp Dr. Jilly John, and entire camp members (47 students). The volunteers from the community were also selected for continuing the activities and to do a necessary follow-up in the future. The 200 tribal community members were the sample among the interventions implemented.

### **Scalability**

This practice can be scaled up and replicated to a larger population scientifically. It can be replicated in any state or village in our country as there are higher educational institutions, and Institutions for social work are not rare. In Kerala, there are more than 50 social work institutions who are conducting rural camps every year which can cover the entire Kerala Tribal population. As Rural Camp is a compulsory residential course under all Universities in Kerala Social Work Post Graduation Programme, it can be used to enhance awareness and train the entire community on Disaster Management and Disaster Risk reduction. Camps of the National Service Scheme are an alternative if the MSW institution is not there. Women's groups, senior citizens, adult Self-Help Groups, members of youth clubs, Balasabha, Local Self Government members, or any selected volunteer group can also be trained on Disaster Risk Reduction and Disaster Management with this strategy.

## RAINFALL FORECAST USING NUMERICAL WEATHER PREDICTION MODEL FOR OPERATIONAL FLOOD EARLY WARNING SYSTEM (FLEWS) IN BRAHMAPUTRA AND BARAK VALLEYS IN ASSAM- A CASE STUDY

*Dr. Rekha Bharali Gogoi*



The topic that is going to be discussed here is general and has nothing to do with women's role in disaster management; because the work discussed here can be done by both men and women.

There is always a question, what is the need for woman's strength in the field of DRR? But nobody asks about the need for man's strength in this field. There is no specific need as such because both men and women should be aware of the dos and don'ts during a disaster. After all, it's not the sole responsibility of a man to take care of the family and others during a time of disaster. It is a mutual understanding that helps in reducing the impact of catastrophic events like floods, earthquakes, cyclones, lightning, etc. It is everyone's role when it comes to saving lives.

This compendium looks at how women are empowered for disaster management and this case study proves how women are contributing after empowerment. Nowadays women are efficient enough to contribute in both the technical field as well as in social welfare for disaster management.

My organization North Eastern Space Applications Centre (NESAC) has always been giving equal opportunities to both man and woman in playing the leadership role. Here, I have written my own experience, but in NESAC we have many woman leaders in DRR team and to name a few Dr. Jonali Goswami, Dr. Kuntala Bhushan, Dr. Kasturi Chakraborty and many more and we are empowered by our organization to do disaster management related works.

Actually, a girl's empowerment starts from home itself. My birthplace is Diphu, Karbi Anglong, Assam. It is a very beautiful place but it is a remote place in the North Eastern region of India and it was not easy to get proper higher education like any other big city or town in our times. In addition, we are three sisters. That means three girl children, but our parents have shown no laxity in giving us proper education. I am B.Sc. in Mathematics from Diphu Govt. College, M.Sc. in Mathematics from Delhi University, M.Tech in Computational Seismology from Tezpur University and PhD. from Indian Institute of Space Science Technology, Kerala. The message is, with proper education/training and, very importantly, faith in us, we woman can do wonders.

After my joining NESAC in 2009, our then Direct Dr. P.P. Nageswara Rao and my senior colleague and coordinator of the Space Science Division of NESAC, Dr. S. S. Kundu have shown faith in me. They allowed me to take proper training and finally to take up the leadership responsibility in the field of weather modelling for flood early warning in Assam. It is to mention here that the weather forecast for a complex terrain like North East India is a very complicated task and I am happy that NESAC has chosen me for this task. Our current Director, Dr. S.P. Aggarwal too encourages us to come out of our comfort zone and do innovations using space technology. I have been awarded ISRO Young Scientist Award for my contribution towards this project because this project works to save the lives of people during floods whether male or female.

### **Target Population**

Every year Assam is devastated by floods due to extreme rainfall events. Conventional warning only using water level data from major rivers has been inadequate in minimizing flood damage. It does not give any information about the area where flooding would occur and makes it difficult for the administrative machinery to take a decision on which village or revenue circle should be warned or evacuated. The flood early warning system is the only possible way to give area-specific flood forecasts, which helps not only the decision makers but also the grass-root level people to save their life and property.

In 2009, the FLEWS project was implemented only in Lakhimpur district as a pilot study and was extended to other districts of eastern Assam namely Dhemaji and three districts

of western Assam namely Barpeta, Nalbari and Baksa in 2010. With some partial achievement, the project was further implemented in the Cachar, Karimganj and Hailakandi districts of Barak Valley in 2011. With increasing demand from the Govt of Assam, the project was operationalised and extended to Dhubri, Goalpara, Morigaon, Sonitpur, Sivsagar and Darrang during 2012. Currently, the project covers all the flood-prone districts of Assam.

### **Problem**

The severity of flooding as a chronic problem is well-known in the State of Assam. All the flood-prone districts of Assam are shared by the two major river valleys of the Brahmaputra and Barak. Every year this continuing combined phenomenon of flood with river bank erosion creates enormous havoc and miseries for the people of Assam living in the otherwise very fertile floodplain areas of these two river valleys. Flood early warning was initiated by NESAC in one district of eastern Assam way back in 2009 as a pilot exercise at the request of the ASDMA Government of Assam. With moderate initial success, the activity was gradually extended to an increased number of districts every year with a progressively increasing success rate. The activity was operationalised from the year 2012 till today. For accurate flood, early warning rainfall is one of the most critical parameters and the prediction of rainfall is one of the most challenging tasks due to its spatial and temporal variability and the intrinsic nonlinearity in the dynamics and physics. During the last decade, the only technique employed to predict the weather condition for the advanced forecast is the high-resolution Numerical Weather Prediction (NWP) model. Under the leadership of Dr. Gogoi, the Weather Research Forecast (WRF) model is being run at NESAC operationally at 9 km spatial resolution and three hourly time steps for 48 hours over NER of India. The timely and relatively accurate rainfall forecast using the WRF model has enabled NESAC to forecast floods successfully on several occasions.

The main objective of this study is to:

- (i) Implement and configure the WRF-ARW for weather forecasting over NER of India.
- (ii) To incorporate local data from different sources such as Automated Weather stations (AWS), Radiosonde, Satellite, Radar, etc. in the global initial conditions using data assimilation techniques for better model forecast
- (iii) Validation of model forecast with in-situ observations.

### **Solution**

A numerical weather prediction model is not a panacea. WRF is a model which is developed by the National Centre for Atmospheric Research (NCAR) in collaboration with different agencies like the National Oceanic and Atmospheric Administration (NOAA) (<https://www2.mmm.ucar.edu/wrf>). To get better result from the WRF model, it was required to configure the model for the northeastern region of India by doing a sensitivity study based on rainfall forcing parameterization schemes, land use land

cover data, terrain data etc. The model accuracy also depends on the initial condition which is used for running the model. The model's initial conditions have been improved by using sophisticated data assimilation techniques such as 3DVAR, 4DVAR and ensemble-based methods and using observations from in-situ measurements, radiances from satellites, etc. All these efforts are made only to increase the accuracy of rainfall forecasts which directly impact the flood early warning.

Flood Early Warning System (FLEWS) was initiated in the year 2009 on a pilot basis and became fully operational for Assam in 2012. At present, the project covers all flood-prone districts of Assam with actionable flood alerts at the revenue circle level. All these years since the beginning, an average year-to-year alert success score of 75% and an average alert-to-alert lead time of 24 to 36 hours have been maintained. In the successful implementation of the FLEWS project, numerical weather prediction plays a crucial role. Rainfall prediction is a challenging task mainly over hilly terrain and it takes lots of effort to configure any NWP model for a particular region.

However, it has been achieved at NESAC through the successful implementation of the WRF model under the leadership of Dr. Rekha B Gogoi. The sensitivity of the WRF model to different parameterization schemes, land use land cover data (LULC), and terrain data have been studied. The sensitivity study shows that updated land use land cover data from ISRO shows a better rainfall forecast over NER. Thus, the default LULC data available with the WRF model has been replaced with ISRO data in the WRF model. Observations from AWS stations, Radiosonde, satellite, radar, etc. are assimilated in the model for a better model forecast. Likewise, different changes are made so that the model performs well for the northeastern region of India. The output of WRF forecast is not only used for flood forecasting but also used for thunderstorm now casing, lightning forecast, and Forecasting inflow/discharge for Hydro Electric Project. She has been conferred with the ISRO Young Scientist Merit award in the year 2016 for her contribution to the field of weather forecasting and the FLEWS project was the winner of the prestigious e-North East award, 2013 under the category of E-governance & Citizen services delivery.

## Results

Dr. Rekha Bharali Gogoi has taken a keen initiative and lead role in the installation and running of Weather Research Forecast (WRF) model and provided the critical parameters in the operationalization of FLEWS in Assam in 2010. With WRF implementation lead time of Flood forecasting has improved significantly and the percentage of successful and useful flood early warnings has also increased from a modest 25% in 2009 to an encouraging 60% in 2010 and 75% in 2011 as per official feedback received from the Department of Revenue & Disaster Management, Government of Assam. Her programming skill and the collaborative effort of her team members automated the whole WRF running process in the high-power computing facility and WRF model outputs are now uploaded to the NESAC website on a daily basis

during monsoon season. An assessment by Assam State Disaster Management Authority shows a significant reduction in the loss of human life due to floods in the state. Her contribution to FLEWS is remarkable where FLEWS were the winner of the prestigious e-North East award, in 2013 under the category of E-governance & Citizen services delivery.

### **Scalability**

On the advice of Chairman, ISRO the present focus is on the extension of FLEWS services to other North Eastern states based on priority. The hydrological models have been built for the states of Arunachal (7 models), Nagaland (3 models), Tripura (5 models), Manipur (2 models), Mizoram (2 models), Meghalaya (8 models), and Sikkim (1 model).

## MAHILA SABHA PAVING THE WAY FOR IMPROVED LOCAL GOVERNANCE

*Ms. Nivedita Menon & Ms. Kiran Singh*



*Together with other women, Malati Mahanta is bringing about sweeping changes to Odisha's Tala Jagar village in the Keonjhar district. Through Mahila Sabhas, these women are enforcing their collective strength to assert their rights and address issues that affect them and the larger community.*

### Target Population

Over the years, large tracts of forests in tribal-dominated areas have been cleared to make way for mining activities. The unabated mining in this mineral-rich region has severely affected the lives of indigenous communities. Through Mahila Sabhas, which have provided them with a platform to make their voices heard, the women of Tala Jagar raised concerns about the mining trucks' movements through their village. Together with other women folk, Malati Mahanta is bringing about sweeping changes to Odisha's Tala Jagar village in the Keonjhar district. Through Mahila Sabhas, these women are enforcing their collective strength to assert their rights and address issues that affect them and the larger community.



## Problem

Every year the district witnesses devastating deforestation. Conventional tracking has been inadequate in minimizing the damage. It makes it difficult for the administrative machinery to take a decision to limit the extent and ascertain how many villages or revenue circles should be cleared or put into mining. Over the years, large tracts of forests in these tribal-dominated areas have been cleared to make way for mining activities. The unabated mining in this mineral-rich region has severely affected the lives of indigenous communities. Through Mahila Sabhas, which have provided them a platform to make their voices heard, the women of Tala Jagar raised concerns about the mining trucks' movements through their village; these trucks, which plied throughout the day transporting iron and manganese from the mines, caused severe safety concerns to the community. Apart from road blockage, pollution, and other health hazards, the truck movement made Tala Jagar's only road unsafe, even dangerous, and leading to increased accidents. With families reluctant to use the road, young children especially felt distressed as it was the only road to their school.



## Solution

With Malati Mahanta facilitating the Mahila Sabha discussions, the women decided to take matters into their own hands. They held demonstrations and protested outside the mining company's office in Banspal block's Suakati area. The protesting women demanded that the mining trucks be prevented from entering their village and use another route instead for their activities. Despite facing grave threats and attempts to foil their protests, the women persevered. Unrelenting, they petitioned the District Collector to address the injustice meted out to them.

## Results

With the Panchayat's support, they also registered a First Information Report (FIR) with

the police and raised their concerns with the local media, seeking appropriate support and recognition for their issue. The women's persistent efforts did not go in vain. The continued protests and growing concerns forced the mining company to identify a different route to continue their activities. In addition to diverting the trucks away from the village, the community obtained relevant permissions to renovate the existing road. Thus, the women's collective effort ensured the road was safe for the community.

*“Due to the movement of the mining trucks, we faced road connectivity issues from Dumuridihi to Rangadihi. After discussing this issue in the Mahila Sabha, the women collectively approached the district administration and also held demonstrations outside the mining company's office. Finally, our demand was granted- an alternate road has been allocated for the mining trucks.”*

-Malati Mahanta, Women Leader, Tala Jagar Village, Kumundi Gram Panchayat



### Scalability

Together with other women folk, Malati Mahanta is bringing about sweeping changes to Odisha's Tala Jagar village in the Keonjhar district. Through Mahila Sabhas, these women are enforcing their collective strength to assert their rights and address issues that affect them and the larger community.

## INITIATIVES TOWARDS SPECIAL NEEDS OF WOMEN/FIRST AID TRAINING

*Capt. Anand Subramanian*

*Our country being the largest democratic nation in the world still does not provide a healthy environment for women during disasters. Women play an important role at home and in the workplace but still find it very difficult to handle the situation during the period of disaster. Disaster has changed the lives of women where they have lost their loved ones and girls have lost both their*

*parents. Society can be uplifted by giving the right education and training to women during disaster relief management. In our institution women were trained to participate as leaders and use the emergency kit and provide first aid training during the disaster. They were trained to take care of themselves and to train others even if there is a human loss. They were told not to feel shy or bad to speak about their problems to another gender. Women faculty underwent training to identify the emergency kit and to participate actively in a team. Women were asked to speak out about the problems faced and the peer pressure handled during a disaster. They were trained in their mother tongue (Tamil) to be aware of the situation and emergency during a disaster. This program is expected to promote strength and leadership among women from rural areas. The training program was about not panicking or getting depressed by the situation but, actively participating as a disaster relief member of a team.*



### Target Population

Every woman in a team will be playing a vital role during the disaster irrespective of their education, caste, creed, language and religion. Our institution is surrounded by villages and the role of women is the prime factor in activating and coordinating relief management. Most of our non-teaching staff members are from in and around the village of Vengembakkam, near Kalpakkam. Our college staff members spoke to our non-teaching staff encouraging them to share their problems and usage of emergency kits. The training was imparted in such a way that they were divided into groups and each one of them was given the role of leader to handle the situation. To act quickly and support the team was the keen aim of a woman during disaster management. The training was done in their own mother tongue so that the courage and motivation are incorporated to lead a team.

### Problem

During the disaster, when they met with human loss and economic challenges, personal hygiene and handling the family situation was great challenge for women. The economic loss would bring down the entire family and she has to withstand and deal with it. Most of the housekeeping staff are from rural areas. They must know how to address their problems irrespective of gender during a disaster. They were asked to communicate their personal problems and their requirements to the college team. Non-teaching staff started to identify the problems being faced by the villagers and they took a leadership role to present the reality to us for their needs.

### Solution

The training program will create a reserve force to handle disaster relief and management by making women strong, safe and skilled enough to meet their personal as well as family requirements during the disaster. It makes women self-reliant & confident of themselves. During emergencies complex problems are always created. Hence, women being trained can handle the situation with courage and determination. A trained and strong team of women can assist local government and disaster relief agencies. The non-teaching faculties were able to identify the kit that is placed in every block inside the campus and also check if the kit had the required emergency items along with proper counselling during the disaster to handle the situation after a human loss. This will ensure that women do their best on a larger scale when the training methods reach their villages. They will then be promoted as a trainer to identify the needs during an emergency and to work in a team by taking care of personal hygiene and the requirements of the community during disaster risk management.

### Scalability

The program started with an introductory lecture, mainly on the importance of First Aid Kit training. At the end of the session, there were live demonstrations and training for

the non-teaching staff. 50 people attended the program and benefitted. This program can be scaled up to a larger population of women in rural areas from the villages in and around Vengembakkam. The program will bring strength to women and enable them to sort out others' problems as well as handle the situation during disaster management.

### **Result**

Training programs will provide a solution to the special needs of women. Women will feel independent and can manage a team through the training. It is considered to be a best practice as they share their experience with their team. It will empower women and increase their role in disaster relief and management. Training will shift the women from being a victim to being solution providers. The importance of training will have an impact during disasters. This will ensure that women play a constructive and productive role in disaster relief management.

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### **Cover design credit**

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## About the Institute

National Institute of Disaster Management (NIDM) was constituted under an Act of Parliament with a vision to play the role of a premier institute for capacity development in India and the region. The efforts in this direction that began with the formation of the National Centre for Disaster Management (NCDM) in 1995 gained impetus with its redesignation as the National Institute of Disaster Management (NIDM) for training and capacity development. Under the Disaster Management Act 2005, NIDM has been assigned nodal responsibilities for human resource development, capacity building, training, research, documentation and policy advocacy in the field of disaster management.

NIDM is proud to have a multi-disciplinary core team of professionals working in various aspects of disaster management. In its endeavour to facilitate training and capacity development, the Institute has state-of-the-art facilities like class rooms, seminar hall and video-conferencing facilities etc. The Institute has a well-stocked library exclusively on the theme of disaster management and mitigation. The Institute provides training in face-to-face, on-line and self-learning mode as well as satellite based training. In-house and off-campus face-to-face training to the officials of the state governments is provided free of charge including modest boarding and lodging facilities.

NIDM provides Capacity Building support to various National and State level agencies in the field of Disaster Management & Disaster Risk Reduction. The Institute's vision is to create a Disaster Resilient India by building the capacity at all levels for disaster prevention and preparedness.



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