सत्यमेव जयते

Integration of Disaster Risk Reduction in Rural Governance



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Resilient India - Disaster Free India

National Institute of Disaster Management
Ministry of Home Affairs, Government of India

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PREFACE

India's rural areas are at the forefront of the growing challenges posed by climate change and disasters. The increasing frequency and intensity of extreme weather events, coupled with slow-onset climatic changes, have significant implications for rural livelihoods, agriculture, natural resources and essential public services.

Panchayati Raj Institutions, as institutions of local self-government closest to rural communities, have a vital role in this endeavour. They are the true First Responders. Their proximity to communities and understanding of local vulnerabilities place them in a unique position to identify risks, plan appropriate interventions, mobilise communities and coordinate local action. Strengthening the capacities of Panchayats is, therefore, essential for translating the national vision of disaster-resilient and sustainable development into meaningful action at the grassroots.

The Ministry of Panchayati Raj has been working towards empowering Panchayats to play a more proactive role in building resilient communities by strengthening local capacities and fostering convergence across sectors and programmes.

In this context, the training module on 'Integration of Disaster Risk Reduction into Rural India' is a timely and valuable resource. It provides a structured framework for enhancing the knowledge and capacities of stakeholders engaged in rural development and local governance. The module brings together concepts, approaches and practical insights relating to disaster risk reduction, climate change adaptation, community-based disaster risk management and village-level disaster management planning. I appreciate the efforts of all those involved in the preparation of this module and hope that it will encourage greater awareness, informed planning and collective action at the grassroots.

Building disaster-resilient villages requires the active participation of communities and strong, capable and responsive Panchayats. I am confident that this training module will serve as a useful guide for elected representatives, Panchayat functionaries and other stakeholders in integrating disaster risk reduction into local planning and governance. I hope it will contribute to strengthening the resilience of rural communities and advancing the vision of safe, sustainable and self-reliant villages across the country.

Vivek Bharadwaj

Vivek Bharadwaj

Secretary, Ministry of Panchayati Raj

Resilient India - Disaster free India

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FOREWORD

In the wake of an evolving global landscape, where the synergy between development and sustainability is becoming critical, the role of integrated approaches in fostering resilient communities is essential. The Sustainable Development Goals (SDGs), with their comprehensive agenda for people, planet, and prosperity, lay down a visionary pathway for us all. They challenge us to rethink our development paradigms, ensuring that our steps towards eradicating poverty do not harm the Earth.

With its vast rural region, where two-thirds of our population has a connection with the rural economy, India stands at a crucial juncture. The 2011 Census data underscores this, highlighting not only the demographic distribution but also the substantial contribution of the rural economy to our national income. Despite the rapid urbanisation, the future of India resides in its rural heartlands.

The Ministry of Rural Development (MoRD) has been at the forefront of transforming India's rural landscape through its dedicated efforts and programs. It is committed to rural India's economic and social upliftment, aiming for an inclusive development model encompassing livelihood, social security, and infrastructure development.

However, as we move forward, the negative impact of disasters and climate change threatens to wipe out all the progress we have made till now. The negative effects of climate and extreme weather events disrupt climate-sensitive sectors like agriculture, fisheries, and forestry. Our vulnerability to these changes requires a robust response and adaptability that integrates Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) into the very heart of rural development policies and programs.

This revised training module, developed by the National Institute of Disaster Management (NIDM), is a testament to our commitment to this cause. It is designed to equip stakeholders across various levels with the knowledge and tools to interlink DRR and CCA into rural development initiatives. By fostering an understanding of interconnected risks and solutions, it aims to cultivate a shared view that resonates with communities, enhancing resilience and ensuring sustainable development.

As we embark on this journey together, let this module serve as a beacon, guiding our efforts to secure a resilient and sustainable future for rural India. It is a call to action for all of us to contribute to a development narrative that is inclusive, sustainable and resilient.

Together, let us stride forward, from risk to resilience, for the sustainable development of rural India and, by extension, the nation at large.

(Madhup Vyas)

CONTENTS

INTRODUCTION	(9-18)
SUB MODULE 1: Development, Disaster and Climate Change: In the Context of Rural Development	**(19-22)**
Session 1.1: Basic Concepts of Disaster Management	(23-28)
Session 1.2: Disaster Management Cycle: Stages and Inter-relations	(28-29)
Session 1.3: Development, Disasters and Climate Change	(30-32)
Session 1.4: Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) in the context of Rural Development	(33-37)
SUB MODULE 2: Disaster Management and Rural Development	**(38-40)**
Session 2.1: Institutional Framework for Disaster Management in India	(41-42)
Session 2.2: Overview of Rural Development Sector	(42-43)
Session 2.3: Rural Development: Disaster Management Issues and Challenges	(44-50)
SUB MODULE 3: Panchayati Raj Institutions and Village Level Disaster Management Planning	**(51)**
Session 3.1: Role of PRI in Rural Development Sector	(52-56)
Session 3.2: Village Disaster Management Plan (VDMP): Need and Framework	(56-58)
Session 3.3: Village Disaster Management Committees (VDMCs) and Disaster Management Teams (DMTs)	(59-68)
Session 3.4: Integration of DRR into Gram Panchayat Development Plan (GPDP)	(68-71)
SUB MODULE 4: Field Visit	**(72)**
Learning Objectives	
SUB MODULE 5: Risk to Resilience Building for Sustainable Development	**(73-75)**
Session 5.1: Disaster Risk, Climate Change and Rural Development: Resilience Building Integration	(75-78)
Session 5.2: DRR and CCA in Rural Development Schemes	(78-91)

HANDOUTS

Handout 1:	Basic Terms of Disaster Risk Reduction; UNISDR (2009)	92
Handout 2:	Hyogo Framework for Action (2005-2015)	99
Handout 3:	Sendai Framework for Action (2015-2030)	102
Handout 4:	Sustainable Development Goals (SDGs)	104
Handout 5:	Potential Impact of Climate Change on the Sustainable Development Goals	105
Handout 6:	DRR and CCA: Differences and Signs of Coverage	107
Handout 7:	Adaptive Resilience Framework	109
Handout 8:	First- Aid Tips	110
Handout 9:	Indigenous warnings and remedies for basic health concerns	112
Handout 10:	Examples of (likely to very likely) impacts from projected changes in extreme climatic events	113
Handout 11:	Legislative and Policy Framework for Disaster Management in India: An Overview	114
Handout 12:	National Flagship Programs of the Ministry of Rural Development, Government of India	115
Handout 13:	Baseline Indicators for Disaster Resilience	117
Handout 14:	Progress Checklist for Climate Change Adaptation Mainstreaming	118
Handout 15:	Possible Entry Points for Mainstreaming into National Development Planning	119

INTRODUCTION

Rural development in India is a critical element in the Nation's socio-economic fabric, especially given that over two-thirds of its population resides in rural areas. This module not only focuses on rural development but also emphasises the integration of Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) into these development policies and programs.

Agricultural productivity, as a primary aspect of rural livelihood, faces direct impacts from climate change and natural disasters. Modern farming techniques, improved irrigation, and credit access, when combined with DRR and CCA strategies, can significantly enhance resilience against climate-induced uncertainties and natural calamities. Such integration is crucial for sustainable agricultural development and, in turn, for India's overall economic growth.

Poverty alleviation, a cornerstone of rural development, intersects significantly with DRR and CCA. By incorporating risk reduction and climate adaptation measures in resource allocation, education, and employment initiatives, like MGNREGA, rural communities become more resilient to climate-induced hazards and disasters, leading to a more sustainable reduction in poverty.

Improving healthcare and education in rural areas goes hand in hand with preparing these communities for climate-related health risks and ensuring educational continuity in the face of natural disasters. Building resilient healthcare and educational infrastructure is essential for the long-term sustainability of rural development efforts.

Women's empowerment in rural areas is also intrinsically linked to DRR and CCA. Empowering women through self-help groups and other initiatives not only boosts their economic participation but also ensures that they are key actors in community-based disaster risk management and climate change adaptation processes.

Infrastructure development, including roads, electricity, and internet connectivity, becomes more effective when it is resilient to climate and disaster risks. Integrating DRR and CCA in the development of rural infrastructure ensures that these facilities can withstand the challenges posed by climate change and natural disasters, thereby securing long-term developmental gains.

The environmental sustainability of rural development projects is increasingly vital in the face of climate change. Projects that incorporate sustainable practices and

focus on environmental conservation directly contribute to building climate-resilient communities and ecosystems.

Lastly, cultural preservation and social equity in rural development must consider the impacts of climate change and disasters. By ensuring that DRR and CCA are integral to these efforts, the benefits of development can reach the most vulnerable and marginalised sections of society, reducing their vulnerability to climate and disaster risks.

India is the seventh-largest country and most populous democracy in the world. In India, even after 56 years of independence 64% work force is engaged in agriculture, which contributes to about 24% of GDP. India's wealth per adult has grown at an average of 11 per cent between 2000 and 2019. However, India's growth in the last decades has not translated to comprehensive rural development. Thus indicating the critical need for integrating disaster risk reduction and climate change adaptation into rural development policies and programmes.

India has unique topographical features plains of central India, rain forests of the north east, icy cold Himalayan region and dry arid desert in west, among others. The cultural, linguistic and religious diversity of India is as much diverse as its geography. Thus with varied topography come varied hazard and disaster. Out of the 29 states and 7 union territories, 22 are disaster- prone. India is vulnerable to wind storms spawned in the Bay of Bengal and the Arabian Sea, earthquakes caused by active crustal movement in the Himalayan mountains, floods brought by monsoons, and droughts in the country's arid and semi-arid areas. Almost 57% of the land is vulnerable to earthquake (high seismic zones III–V), 68% to drought, 8% to cyclones and 12% to floods. India has also become much more vulnerable to tsunamis since the 2004 Indian Ocean tsunami.

Rural development is one of the key sectors and besides sector specific policies, plans and programs it is closely linked with agriculture, irrigation, rural livelihoods and rural infrastructure. Climate change threatens various sectors, most notably agriculture, rural development, and water access. Climate change is a major challenge for agriculture, food security and rural livelihoods for billions of people (Dev Mahendra, 2011). Reliance on subsistence agriculture means the impact of stresses and shocks (such as droughts or floods) are felt keenly by rural poor people, who depend directly on food system outcomes for their survival (Mark davies, *et al*., 2008). Rising temperatures, erratic rainfall patterns, and increased frequency of extreme weather events detrimentally affect agricultural yields. These changes are putting additional

stress on rural communities that are already economically vulnerable. It is evident from several studies that effects of climate change on livelihood security and welfare of the rural population are alarming, leading to disappearance of flora and fauna and other natural habitat that constitute their livelihoods. However, rural community negated the risks and uncertainties by adopting local wisdom or traditional indigenous knowledge with considerable experiences of coping and risk management strategies in agriculture. For developing countries like India, the aim of achieving 9% or double digit GDP growth, will not take place without achieving 4% growth in agriculture on a sustainable basis. Kim Chang (2010) in his study states that it is necessary to understand that the countermeasures of the agricultural sector against climate change are to minimize the risks of climate change and utilise it as an opportunity. For this, proper education and training programs for agriculture workers, public officials and the personnel from the related agencies should be developed and put into practice so that they can properly cope with climate change.

Government of India (GoI) has taken several steps to address climate change and reduce the vulnerability of rural populations to adverse impacts of climate change through implementation of National Missions and preparation of State Action Plans on Climate Change (SAPCC). GoI has adopted the strategy of mainstreaming DRR through developmental planning inclusive of multi-sectoral approaches, integration of prestigious national flagship programmes that aims to create social infrastructure and strengthen risk reduction in key sectors such as education, agriculture, natural resources, drinking water, sanitation and health. To bring the poor within the ambit of development addressing the challenges of climate change issues, provisions are provided under the Centrally Sponsored Schemes (CSS) for stakeholder participation during the stages of design, appraisal, implementation and review (such as social audit) of the projects.

Currently, the understanding of these issues is limited to some sections of the management whereas the need of the hour is to promote this understanding across the board through orientation training and capacity building programmes. Appropriate training and capacity building of staff (at Gram Panchayat both elected representatives and panchayat officials), especially at the operational level, is important not only for programme implementation but also for DRR and CCA mainstreaming. Local governance is pivotal in managing climate risks, acting as the first line of defense and response. Local governing bodies are uniquely positioned to tailor climate resilience strategies to specific regional needs through community engagement and localised

policy implementation. Their intimate understanding of local vulnerabilities enables them to deploy timely and effective interventions.

MoRD has initiated another important programme known as Gram Panchayat Development Plan (GPDP). Gram Panchayats have been mandated for the preparation of Gram Panchayat Development Plan (GPDP) for economic development and social justice utilising the resources available to them. The GPDP planning process has to be comprehensive and based on participatory process which involves the full convergence with Schemes of all related Central Ministries / Line Departments related to 29 subjects enlisted in the Eleventh Schedule of the Constitution. Panchayats have a significant role to play in the effective and efficient implementation of flagship schemes on subjects of National Importance for transformation of rural India. The component of Disaster Management may also be included while preparing the GPDP. The integration of disaster risk reduction and climate change adaptation into rural development policies aligns closely with several Sustainable Development Goals (SDGs). Specifically, it resonates with Goal 2 (Zero Hunger), Goal 6 (Clean Water and Sanitation), and Goal 13 (Climate Action).

The Panchayati Raj Institution (PRI), the representative body of the people, is the most appropriate institution from village to the district level in view of its proximity, universal coverage and enlisting people's participation on an institutionalised basis. The PRIs can act as catalysts to social mobilisation process and tap the traditional wisdom of the local communities to complement the modern practices in disaster mitigation efforts. The PRI members can play a vital role of leadership as local governance in Disaster management at all stages, right from the preparatory stage to the handling of the long-term development activities for risk reduction. Panchayats must adhere to the humanitarian imperatives during relief, rehabilitation and reconstruction activities in order to protect the rights and dignity of each and every victim of a disaster (Debabrata Mondal, Sarthak Chowdhury and Debabrata Basu, 2018. Role of Panchayats in Disaster: A New Vista for Disaster Management .Int. J. Curr. Microbiol. App.Sci. Special Issue – 7: 133 – 138).

It is in this context, that this Module is designed to cater specifically to the rural development sector in India. It has been revised and developed on the base Training of Trainers' Module developed under the National Cyclone Risk Mitigation Project (NCRMP) by Government of India. The base module was run for about three years by NIDM in collaboration with National Institute of Rural Development and Panchayati Raj, (Ministry of Rural Development, Government of India), Hyderabad and significant inputs from the trainings conducted have been duly incorporated in this Module.

DURATION

The duration of the training programme can be customised for duration of 3-5 days depending upon inclusion of a field visit or just class room based sessions only. This module can also be combined with Training Skills and utilised as a Training of Trainers' (ToT) module as well. The modular structure allows freedom and flexibility to its users in terms of making their independent choices for running both the base and training of trainer modules either as one compact training event or as separate training events as required. For this, initial three days can be content based and two days can have orientation on training skills required to run this course.

GUIDANCE NOTE FOR TRAINERS AND FACILITATORS

Who can facilitate this Training

The facilitator will ideally have practical experience and a good conceptual understanding of DRR and CCA including knowledge of mainstreaming issues and challenges into rural development sector. One way to do this is to have two facilitators working together, one with domain experience of disaster management and the other of Rural Development issues. Facilitators need to be confident trainers, with a working knowledge of monitoring and evaluation practices. They need to be flexible, willing themselves to learn, and passion for promoting learning.

Who Shall Use this Module and Group Size

This training module is developed for local level functionaries like Disaster Management Practitioners, Revenue Officials, Trainers in Disaster Management, State Institutes of Rural Development Faculties, Civil Defense Volunteers, Elected Representatives from Gram Panchayat, Community Based Organisation (CBO) and Non-governmental Organisation (NGO) members. After completing the programme, these participants will be expected to train grass root level workers such as Disaster Management Workers, ICDS workers, Anganwadi members, ASHA workers, Auxiliary health workers, Panchayat Development Officers (PDO), Block Development Officers (BDO) and Patwaris, Local NGO's working in the respective area etc. Since this is field and group exercise-based training programme, the ideal number of participations per programme should not be more than 30. It is also encouraged to have a good number of women participations in the programme. As it is hard to achieve these numbers for a variety of reasons, it is important to initiate the process of seeking nominations fairly in advance.

About the Training Module

This training Module is developed as a tool to train its users for mainstreaming disaster risk reduction (DRR) and climate change adaptation (CCA) elements into policy making, planning and programming processes within the rural development sector in India. The entire module is learner centered where the involvement of the participants will play a major role.

The Module is divided into 4 Sub-modules and each Sub-module is divided into different learning units and each learning unit into a number of sessions. Each session begins with a statement of its purpose, process, the skills needed by the facilitator, and materials required. All the modules, learning units and sessions therein are built on the basis of the principles of adult learning and the sessions aim to utilise experiential learning methods.. While the focus of training approach and methodology is on experiential methods, the manual uses a combination of traditional learning methods, such as presentations and discussions, along with more participatory and experiential learning approaches, e.g. case studies, group work, and reflections on personal experience. A list of hand outs, sources, references and further readings is also provided in the Module.

The Module has been designed in a particular order, yet, it is flexible in usage and allows the trainers to revise it as per the clientele group and specific contexts. The modules and sessions can be used in the order presented, on their own, or in combination with other individual sessions and modules. The material can be adapted by the facilitator and contextualised. Other case studies and relevant references can be added or substituted. The way the sessions are delivered will largely depend upon the expertise the facilitators bring in the sessions. Rough estimated timings for sessions are offered, but these should be adapted to fit the time available and the level of participants.

Venue

This is a field based programme and so, the venue is the field itself. The training programme can be conducted at either of the following places:

- Community Hall/Field Panchayat Office
- Block Development/ Revenue Office Premises
- State Institute of Rural Development premises
- Any other suitable Training Hall

Language of Instruction

The medium of instruction most suited will be use of the local language. However, external Resource Persons who are called for specific sessions may use Hindi as an alternative or English wherever suited.

Structure of the Module

The module has been divided into four sub modules. The detailed work plan is as follows:

Opening the course

As opening session is going to set the tone of the programme, it has to be planned and conducted prudently. The opening session serves as the cornerstone of the entire training program. Setting the right tone is crucial for participant engagement and learning. Run an opening session of not more than one hour on the first day of the course. This session is the opportunity to share the purpose and objectives of the training course, lay out the agenda, and set ground rules. It is also an opportunity for the participants to introduce themselves and their experience, explain their motivation for joining the training, and state their expectations from the course.

An ice-breaker exercise is highly recommended to facilitate participants get to know each other, and to put them at ease, comfort and motivate participants to interact freely. Following days can have scope for half-an-hour recapitulation sessions before beginning the day formally.

Rapport Building

Building rapport and trust with the participants is essential in adult learning. The whole idea to make a session interesting and receptive will largely depend upon how comfortable the participants feel in presence of their Trainer. For this, a relationship of trust, friendship and rapport is the key to facilitation of appropriate participation.

Knowing Each Other

This exercise aims to foster a collaborative learning environment by encouraging participants to share their personal and professional backgrounds. After a brief introduction about yourself, ask the participants to assemble in the middle of the training hall. Once the participants are fully with you, ask them to start walking inside the training hall in any direction they wish. After about 60 seconds, ask them to increase the pace of their walk. After another 60 seconds, ask the participants to walk as fast as they can without hurting anyone or bumping into each other. This milling around loosens people up both physically and mentally. End by telling people to group into pairs of twos' by either identifying the person having a date of birth closest to theirs or assign two people with the same number and ask them to assemble. The facilitator should actively monitor this process to ensure its smooth execution. Partners in each pair are then asked to know the following about each other:

- Name and current profile
- Educational background
- Work Experience
- Expectations from the training.
- Any Hobby etc.

After about 5-7 minutes, ask each pair to introduce to the class their partner/ buddy and their expectations from the training to the entire group. This entire exercise can be completed in 30 minutes, if facilitated properly.

Feedback from participants

Feedback mechanisms are essential for the ongoing improvement of the module and are integral to achieving the training objectives Feedback is the way to learn about the training sessions as well the Resource Persons and their efficacy from the participants' perspective. This can be conducted as an end of module feedback from the participants. Concurrent feedback can also be observed and tapped as it is for learning about participants' reactions, responses and percent reviewed. Based on the feedback, facilitators can assess the strengths, weakness and gaps of the sessions and refine the module accordingly. This process can be done at the end of each day by spending about 15 minutes on feedback or on the final day of the course, a dedicated slot can be marked for feedback.

Suggested methods for concurrent and end-of-module feedback are as follows:

1. One method for capturing feedback in real time is to create a space within the training hall and call it 'Parking Lot'. This is a method to ensure that all the

comments and suggestions of the participants are posted for everyone's' review that they are free to express their opinions and feedback on different sessions on the module and stick it on the 'parking lot' as and when convenient during breaks without disturbing a running session.

Training facilitators should get the posted comments and feedback typed out on a daily basis for review, reflection and sharing with the participants for them to address the same within the ongoing training course.

2. Another method will be to administer an end-of-the-module feedback form to be filled up by the participant at the end of each module after all the sessions have been conducted.

   This will be a relatively more structured feedback and will seek to draw the feedback of the participants in the form of their responses to specific questionnaire developed by the training organising team.

Use of training module to Multi-Level Implementation:

3. The comprehensive nature of this training module allows for its versatile application across various administrative levels in India. Recognising the distinct roles and responsibilities at the national, state, and local levels, this module can be effectively adapted to meet the specific needs and challenges faced at each level. This multi-level approach ensures that the principles of DRR and CCA are embedded cohesively throughout the fabric of rural development policy-making and implementation, from the overarching strategies devised by national policymakers at NIRDs to the state-specific adaptations by SIRDs and State Rural Development Departments, down to the grassroots execution by District Rural Development Agencies and Extension Training Centres (ETCs). This integrated approach is pivotal in ensuring that rural development in India is resilient, sustainable, and inclusive, addressing the unique requirements of each administrative level.

National Level - NIRD (National Institutes of Rural Development):

This module, when tailored for organising trainings in collaboration with the National Institutes of Rural Development (NIRD), will focus on equipping national policymakers with comprehensive knowledge and strategies for integrating Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) into the overarching framework of rural development policies. It is crucial for these decision-makers to understand the intricacies of DRR and CCA, considering the vast and diverse geographical expanse

of India. This training will enable them to formulate and implement policies that are not only sustainable but also resilient to the adverse effects of climate change and natural disasters. They will learn to develop frameworks that can be adapted to state and local contexts, ensuring a cohesive national strategy for rural development that is resilient, sustainable, and inclusive.

State Level - SIRDs & State Rural Development Departments:

At the state level, the module will be customised for State Institutes of Rural Development (SIRDs) and State Rural Development Departments across twenty nine states. This version of the training will delve deeper into the specific needs and challenges faced by individual states, considering their unique climatic conditions and disaster-prone areas. The aim is to build the capacity of state-level policymakers to design and implement DRR and CCA strategies that are tailored to their state's specific needs. This includes developing state-specific action plans, promoting sustainable agricultural practices, and ensuring the resilience of state infrastructure. The training will emphasise the importance of integrating local knowledge and practices into state policies, ensuring that DRR and CCA strategies are culturally sensitive and community-driven.

Local Level - District Rural Development Agencies & ETCs:

For the local level, targeting District Rural Development Agencies and Extension Training Centres (ETCs), the training module will be designed to address the grassroots realities of rural development, DRR, and CCA. This version will focus on empowering local administrators and community leaders in 89 ETCs to effectively integrate DRR and CCA into local development initiatives. The training will cover practical aspects of implementing sustainable rural development projects, community engagement in risk reduction, and adapting local agricultural practices to climate change. It will foster a bottom-up approach, encouraging local stakeholders to actively participate in the planning and execution of development projects. This level of training is crucial for ensuring that the policies and strategies developed at the national and state levels are effectively translated into tangible actions that benefit the rural communities most vulnerable to climate change and disasters.

SUBMODULE 1

DEVELOPMENT, DISASTER AND CLIMATE CHANGE: IN THE CONTEXT OF RURAL DEVELOPMENT

Learning Objectives

At the end of the session, participants should be able to:

- Explain the basic concepts of disaster management
- Engage in analysis of different stages of the disaster management cycle and their interrelations.
- Examine critical linkages across development, disasters and climate change sectors in the context of rural development.
- Recognise the importance of comprehensive rural development through DRR and CCA strategies.

Duration: 330 Minutes (excluding time for Lunch and Tea Breaks)

Equipments and Materials Needed:

Flip Charts, Markers, Pens, Sticky notes, Laptop, LCD/Projector, Chart papers, and Blackboard.

USEFUL HANDOUTS: 1, 2, 3, 4, 5 & 6

Method(s):

- Interactive lecture presentation
- Questions and Answers
- Problem Solving
- Group Activity
- Discussion & Use of Audio-Video Aids
- Case Studies

Session Plan

The trainer/facilitator should start the session with an informal interaction with the participants to first know their understanding of disaster management and various terms, development, disaster and climate change web. Invite them to share their views and make a note of the points made either on a flip chart or white board. This can be more like an expectation setting exercise. Then make a brief presentation explaining the basic concepts in disaster management and highlighting the critical linkages across development, disasters and climate change. This presentation should cover the evolution of the discourse and action on all the three inter-related domains of development, disasters and climate change globally over the years. Focus should be on mapping out the conceptual field and outlining various policy approaches, particularly with reference to the inter-connections across development, disasters and climate change. Follow it up with an open house discussion inviting comments and questions. Come up with facts, analysis and arguments to respond to the doubts and divergent opinions expressed during the discussion.

Wrapping up the discussion: Form 4-5 working groups of participants (depending upon the size of the batch) and ask them to examine the inter-related nature of disaster risk reduction (DRR) and climate change adaptation (CCA) in the light of their own work experience in their respective fields. They can carry this out as a group work. Ask the working groups to share their findings and analysis in a presentation in the plenary. Groups will have the freedom to use power point, flip charts, cards, or just speech for making this presentation. Give 5 minutes at the end for some questions and answers or scope for discussion on each presentation. Close the session with a presentation summing up the key learning from the session and highlighting the points from Sub Module 1.

Context

This learning unit aims at helping the participants understand the basic concepts, terminologies used in Disaster Management. It also helps examine the critical linkages across development, disasters and climate change in the specific context of rural development. Since, poverty reduction and sustainable development have been the two core concerns of rural development globally, as also in India over last few decades, these are also embodied in the Sustainable Development Goals (SDGs) therefore, this aspect will also be discussed in this session to emphasise the imperative need for integrating DRR and CCA into the Rural Development Sector.

By 2050, the world population will reach nearly 9.5 billion, which effectively means that we will have to produce 70% more food for over two billion additional mouths. Hence, the food and agriculture systems need to adapt fast to the changing climate and become more resilient, productive and sustainable, there are currently 842 million undernourished people; about 14% percent of the population living in developing countries suffers from chronic hunger. Most of them live in rural areas and depend on agriculture, fisheries, forests and livestock for their livelihoods. Agriculture is one of the sectors most affected by natural hazards and disasters, which enhance vulnerabilities of resource-poor farmers/fishers/herders in particular, and often threaten their livelihood security.

To reduce underlying vulnerabilities and the exposure to current and future losses and damage caused by natural hazards and disasters it is crucial to systematically mainstream DRR into the agricultural sector, in synergy with climate change adaptation and natural resources management.

The World Conference on Disaster Reduction was held from 18 to 22 January 2005 in Kobe, Hyogo, Japan, and adopted the present Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (here after referred to as the "Framework for Action"). The Sustainable Development Goal encompasses the agenda of people, planet and prosperity. The SDGs will form the overarching international political vision relating to sustainability during the lifetime of the new Future Earth initiative. The ultimate goal of the SDGs is to promote a new worldview and provide the beginnings of a plan to end poverty without imposing significant costs on Earth's life support systems.

Sustainable farming techniques are not just an option but a necessity in current times. These techniques can serve dual purposes: they are adaptive strategies against climate change and also act as mitigation measures against disaster risks. Based on an in depth review of different plans and interviews with stakeholders involved in the DRR-Agriculture planning processes, a number of criteria for the successful mainstreaming of DRR in agriculture and vice versa could be identified, including a better understanding of disaster risks in the agriculture sector, ownership, participation and coordination of the processes, an enabling environment, planning processes that are linked across sectors and levels, ensuring funding for DRR in the agriculture sector and building capacities for the successful implementation of the plans.

In 2009, the Government of India directed all State governments and Union Territories to prepare State Action Plans on Climate Change (SAPCC), consistent with the strategy outlined in the National Action Plan on Climate Change (NAPCC). Accordingly, all states have developed the SAPCC on Agriculture which has addressed the issues of DRR and CCA considering prevailing agro-climatic conditions in the respective state. Local governance plays a crucial role in managing climate risks and implementing disaster risk reduction strategies. Their close ties with the community make them key players in this integrated approach. The overarching sectoral development plans are most suitable instruments to promote, through corporate resource mobilisation, the uptake of both DRR and the underlying causes of vulnerability in an integrated way including issues related to land tenure, environmental services, access to key natural resources and markets, which are all necessary to effectively address the issues that hamper agricultural smallholders from enhancing their resilience.

This learning unit captures the basics of disaster management and also tries to analyse its linkages with development and the changing climate variations so as to enable us address the impact of these inter-linkages in Rural Development context. This will aim at a) to encourage the participants to examine the relative merits and demerits of different policy options in terms of their potential to offset disaster related vulnerabilities on the ground, in the light of their own work experience; b) to trigger them to think through and find solutions in terms of what kind of development measures could possibly pre-empt and mitigate disasters and disaster related risks. Changing and increasingly variable climate is among the major challenges to ensuring food and livelihood security of populations world over. Historical trends and a number of model based projections point to a noticeable increase in surface temperature in India. Keeping the need to make Indian agriculture more resilient to changing and increasingly variable climate, the Indian Council of Agricultural Research launched a megaproject “National Initiative on Climate Resilient Agriculture (NICRA) during February 2011. This initiative, being coordinated by CRIDA, Hyderabad, is a collaborative and participatory effort by a number of institutes addressing the specific sub-sectors within agriculture. In order to develop and target appropriate adaptation measures, it is important to identify regions that are more affected by climate change. This identification process involves assessment of vulnerability of different regions and brought out an atlas on vulnerability of Indian agriculture to Climate change.

Session1.1: Basic Concepts of Disaster Management

Duration: 150 minutes

Training Methodology: Power Point Presentation, Discussion & Audio-Video

Training Note: The trainer/ facilitator is encouraged to utilise initial few minutes of the session by asking the participants to brainstorm and discuss on what they know about disaster management and related terms. The Trainer can use few Audio-Video clippings to make the session interesting. To foster a deeper understanding, trainers are encouraged to include case studies, particularly focusing on India's unique disaster management challenges and successes. This will not only make the content relatable but also provide actionable insights.

Technical Notes

Disasters have always been a result of human interaction with nature, technology and other living entities. Sometimes unpredictable and sudden, sometimes slow and lingering, various types of disasters continually affect the way in which we live our daily lives. Human beings as innovative creatures have sought new ways in which to curb the devastating effects of disasters. However, for year's human conduct regarding disasters has been reactive in nature. Communities, sometimes aware of the risks that they face, would wait in anticipation of a disastrous event and then activate plans and procedures. Human social and economic development has further contributed to creating vulnerability and thus weakening the ability of humans to cope with disasters and their effects. Given the accelerating impacts of climate change, proactive disaster management strategies are not just desirable but essential. It's imperative to shift from a reactive to a proactive risk reduction approach, linking disaster risk reduction and climate adaptation strategies with India's Plans for comprehensive rural development.

Disaster Management is the process of reducing the risk of, and vulnerability to hazards. Traditionally Disaster Management meant the measures taken to bring quick and effective relief to disaster hit areas. However, contemporary studies of disaster management focus on preventing disasters by pre-planning effective measures for regions that are prone to disaster; both man- made as well as natural. Disaster management can thus be defined as the body of policy and administrative decisions and operational activities which pertain to the various stages of a disaster at all levels. With advancements in technology, disaster management is increasingly relying on data analytics, artificial intelligence, and real-time monitoring to predict, prepare for,

and respond to disasters. These technologies can significantly improve the efficiency and effectiveness of disaster management strategies.

To understand Disaster Management, it is necessary to understand the concepts of Vulnerability, Risk, Hazard and Disaster that are embedded in the process of Disaster Management. These have been discussed below:

Hazard is a natural or man-made phenomenon that may cause physical damage, economic loss and threaten human life and well-being or has the potential to cause damage to objects, buildings and the environment. Such phenomena may affect different places singularly or in combination at different times. The hazard has varying degrees of intensity and severity. A hazard is measured and defined by its nature (type of hazard), location and extent, scope and intensity (damage potential) and its probability of occurrence, duration and frequency (repetition cycles) (DM Act,2005). Local governance plays a crucial role in hazard identification and management. Effective local governance can ensure that disaster management plans are tailored to the specific needs and vulnerabilities of communities.

As per the High Power Committee report of 2001, it followed a highly process-oriented and participatory approach at the national, state and district levels involving all concerned governments, ministries, departments, scientific, technical, research & development organisations, social science institutions and covering more than a hundred non-governmental organisations. As the deliberations of the Committee intensified into a nation-wide consultation at all levels, the country continued to face several disasters including Orissa Super-cyclone of October, 1999, drought in various parts of the country and the worst ever earthquake in Gujarat in January, 2001. It is said that disasters offer a unique opportunity to learn, and the Committee indeed tried to learn lessons from various disasters which took place in the country and outside, and to incorporate their lessons in its thinking in terms of improving the proposed strategy to cope with disasters. The set-up that the committee is proposed would provide for such a process of continuous learning at all levels 33 potential hazards have been identified for Indian context which can be further classified based on their origin as follows:

- Hazard identification and analysis is essential to determine the events which are most likely to affect a community and to make decisions about who or what to protect as the basis of establishing measures for prevention, mitigation, and response. In the face of a particular hazard, it is important to determine how each hazard interacts with each and every dimension of vulnerability. Therefore,

a study of vulnerability is a study of what might happen to people or communities and while it is not certain that a crisis might occur; it definitely affects different populations in a different manner.

- Vulnerability is a term used to describe exposure to hazards and shocks and can be defined as the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of a hazard. It involves a combination of factors that determine the degree to which someone's life, livelihood, property and other assets are put at risk by a discrete and identifiable event (or series or cascade of such events) in nature and society. Communities or individuals can become more vulnerable if they are more likely to be badly affected by events outside their control. It has two components: exposure to hazards and difficulty (through lack of resources) to cope with, and recover from them. The dimensions of vulnerability include social, geographical, economic, environmental and political processes that influence how hazards affect people in varying ways and with different intensities. Some groups are more prone to damage, loss and suffering in the context of differing hazards and the key variables explaining variations of impact include class, occupation, caste, ethnicity, gender, disability and health status, age and immigration status and the nature and extent of social networks.

Hazard identification and analysis is essential to determine the events which are most likely to affect a community and to make decisions about who or what to protect as the basis of establishing measures for prevention, mitigation, and response.

In the face of a particular hazard, it is important to determine how each hazard interacts with each and every dimension of vulnerability. Therefore, a study of vulnerability is a study of what might happen to people or communities and while it is not certain that a crisis might occur; it definitely affects different populations in a different manner.

THINK TANK

Vulnerabilities get amplified if the exposure to hazards is high

Vulnerabilities at no given point is ZERO, they can only be minimised/ reduced. In order to reduce vulnerabilities, capacities need to be enhanced. Therefore, both the terms are inversely proportional. It's important to note that reducing vulnerabilities is an ongoing process that requires constant evaluation and updating of policies and plans. Vulnerability assessments should be integrated into development projects to ensure that they do not inadvertently increase vulnerability.

Development projects can lead to increased vulnerability in a multitude of ways. For this reason, development projects should be designed with a focus on resilience, incorporating disaster risk reduction and climate adaptation strategies from the outset. Conducting a thorough risk assessment before implementing any development initiative can serve as a critical step in reducing vulnerabilities. Juxtapose, Disasters can provide a specific window of opportunity for all areas of development, social, economic and environmental.

Capacities are also vulnerable and thus, need to be strengthened in order to be of use during emergencies. Strengthening capacities involves not only material resources but also building social capital, community awareness, and institutional frameworks. Technology can play a crucial role here, from early warning systems to post-disaster communication networks, making capacities less vulnerable and more efficient.

Think Tank

When cyclone struck few coastal districts of Odisha in 1999, almost 10,000 people lost their lives and property worth millions were destroyed. After learning through mistakes of 1999, new techniques and new technologies were incorporated in management of cyclones. Using these techniques, in 2014 and 2015, the loss because of equally deadly cyclones was reduced to minimal

Hazards may be unavoidable, disasters are preventable

This means, there are no such things as natural disasters, but there are natural hazards. A disaster is the result of a hazard's impact on society. So the effects of a disaster are determined by the extent of a community's vulnerability to the hazard (conversely, its ability, or capacity to cope with it). This vulnerability is not natural, but the result of an entire range of constantly changing physical, social, economic, cultural, political and even psychological factors that shape people's lives and create the environments in which they live

Session 1.2: Disaster Management Cycle: Stages and Inter-relations:

Duration: 75 minutes

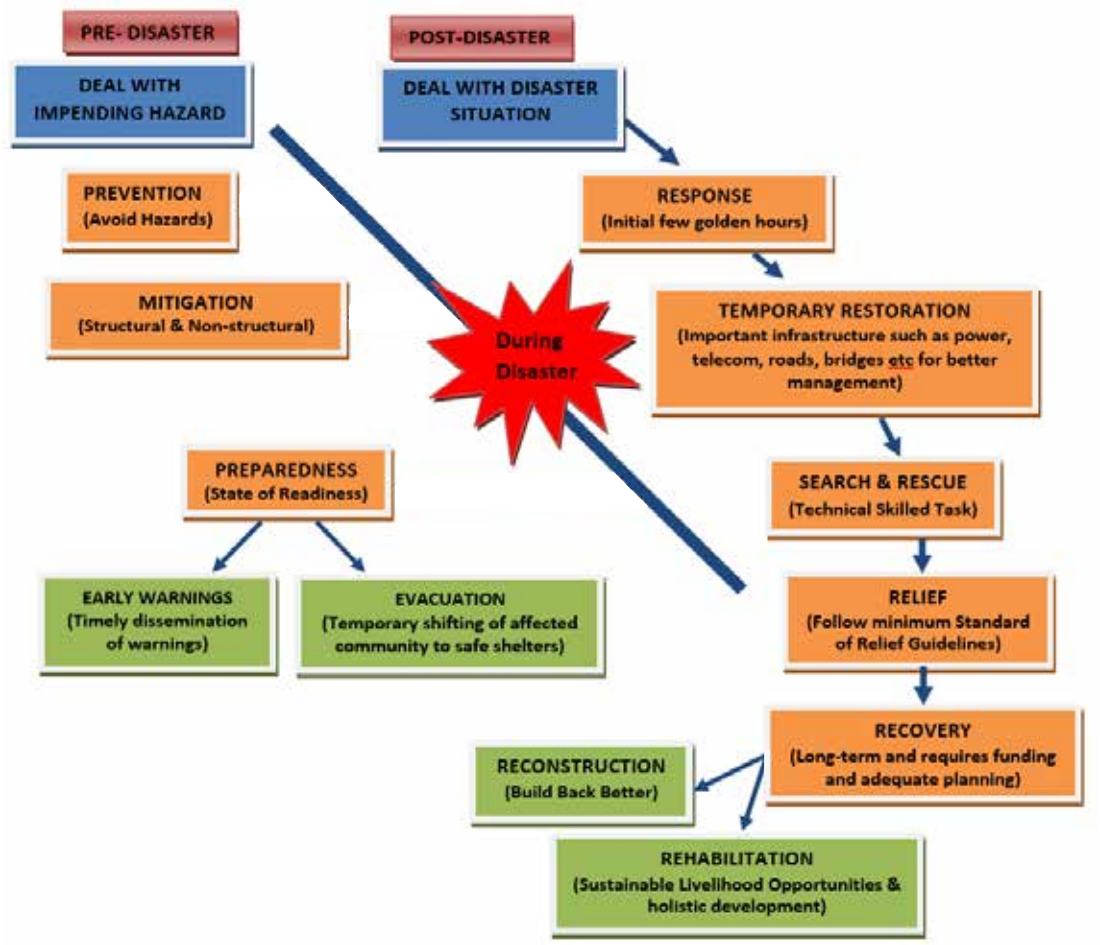
Training Methodology: Power Point Presentation, Discussion

Training Note: The trainer/ facilitator may like to show some video, encourage participants to share their field experiences or put up some concern/ observation related to the particular sub session or in general about rural sector before the start of the session so as to break the monotony. Trainer can also indulge the group into some ice-breaking activities as short breaks during the course.

Technical Notes

For the process of sustainable development to take off in continuation with reconstruction, it is important that the end objective is not limited to only getting people back upto the base line levels after any disaster, but, seek a holistic rehabilitation as well. It has been reported in Orissa, that in Adivasi villages, where development activities of improved shelter, land and water management and livelihoods were in progress at the time of the super cyclone, not only was the loss of property and life minimal, the loss in economic time was only to the tune of 5 to 10 days. People could bounce back to their normal routines very soon after the cyclone. While in adjacent villages, months after the cyclone, families were still unable to get back to regular work leading to longer term economic decline. This is a very strong argument in favour of "total rehabilitation" as opposed to only reconstruction. Reconstruction and rehabilitation need to be in a seamless continuum with restoration efforts. Thus, the Disaster Management Cycle should not only address immediate relief but also incorporate long-term strategies for holistic rehabilitation. These should be designed to improve the overall resilience and adaptive capacity of affected communities. Technology, such as Geographic Information Systems (GIS), can be instrumental in mapping out vulnerabilities and planning effective interventions.

DM CYCLE


PRE- DISASTER
DEAL WITH IMPENDING HAZARD
PREVENTION (Avoid Hazards)
MITIGATION (Structural & Non-structural)
PREPAREDNESS (State of Readiness)
EARLY WARNINGS (Timely dissemination of warnings)
EVACUATION (Temporary shifting of affected community to safe shelters)
During Disaster
POST-DISASTER
DEAL WITH DISASTER SITUATION
RESPONSE (Initial few golden hours)
TEMPORARY RESTORATION (Important infrastructure such as power, telecom, roads, bridges etc for better management)
SEARCH & RESCUE (Technical Skilled Task)
RELIEF (Follow minimum Standard of Relief Guidelines)
RECOVERY (Long-term and requires funding and adequate planning)
RECONSTRUCTION (Build Back Better)
REHABILITATION (Sustainable Livelihood Opportunities & holistic development)

Session 1.3: Development, Disasters and Climate Change

Duration: 60 minutes

Training Methodology: Power Point Presentation, Discussion

Training Note: The trainer/ facilitator may like to show some video, encourage participants to share their field experiences or put up some concern/ observation related to the particular sub session or in general about rural sector before the start of the session so as to break the monotony. Trainer can also indulge the group into some ice-breaking activities as short breaks during the course.

Technical Notes

Many of the developing countries in the Asia and Pacific region are situated in the world's hazard belts and are subject to floods, droughts, cyclones, earthquakes, windstorms, tidal waves and landslides, etc. The major disasters triggered by these natural hazards occur periodically in this region are largely due to climatic and seismic factors. Climate related disasters are by far the most frequent natural disasters causing immense loss of lives, impacting livelihood causing harm to infrastructure. Climate Change is impacting on hydro meteorological by altering their frequency or intensity and it's expected to be more intense in future. Climate Change will have long term impacts such as gradually increasing temperature, changing seasons and unpredictable rains and rising sea levels. Climate Change poses a threat to sustainable development, if not mitigate it has potential to undermine achievement of pour development goals.

Recent research has estimated the average annual damages from disasters triggered by climatological, hydrological and meteorological hazards in 2002 – 2011 at US $ 103 billion, US$ 24 billion and US$ 52 billion, respectively (Guha-Sapir et al. 2013). This research has also shown that 47.9 per cent of damages occurred in Asia, 38.6 per cent in the America, 9 per cent in Europe, 3.7 per cent in Oceania and less than 0.8 per cent in Africa. While total economic losses are highest in developed countries, fatality rates and economic losses in terms of GDP are higher in developing countries.

Inter-linkage between Disasters, Development and Climate Change

Climate is fundamentally linked to every aspect of human life. Agriculture and rural based livelihoods have been one of the first sectors to feel the changes in climate, as climate influences the availability and condition of livelihood resources such as soil, water, farm-to-market roads, to mention only a few concern over the adverse

impacts of climate on livelihoods is not new. Disaster risk reduction efforts in the past have, by and large, focused on mitigating the impacts of extreme climate events, such as floods and droughts on livelihoods. Over the past few years, this concern has intensified and has gained renewed emphasis in the context of climate change.

Climate change and disaster risk are fundamental threats to sustainable development and the eradication of poverty. The negative impacts threaten to roll back decades of development gains. Building resilient and sustainable societies means addressing both climate and disaster risks, and integrating these risks, as well as potential opportunities, into development planning and budgeting. This also calls for bridging the gap between policy and action. Effective coordination between various stakeholders, including government agencies, NGOs, and the community itself, is essential. Linking disaster risk reduction and climate adaptation strategies to Plans could provide a comprehensive framework for rural development.

Climate change is a great concern for humanity because it is expected to reconfigure the risks that most societies face, in a way that would have potentially negative consequences on the prospects of development, especially for the poor. While climate is not the only factor that undermines the sustainability of livelihoods and development, it is one of the key realities of our time and demands our most urgent attention. There is a pressing need not only to deal with current climate risks but also to adapt to the changes taking place, the magnitude of which is yet unknown. Therefore, as disaster management professionals and implementers, it is now urged to integrate disaster risk reduction and climate change adaptation measures into the livelihood programmes.

Climate change is also likely to threaten India's food security, increase water stress, and increase occurrences of diseases. Lack of availability and access to technological and financial resources coupled with a high dependence on climate sensitive sectors-agriculture, horticulture, fisheries, forestry-have made India highly vulnerable to climate change. A large and growing population with high population density and a low-lying coastline, and an economy closely tied to its natural resource base, further aggravates the vulnerability. Rural development is one of the key sectors and besides sector specific policies, plans and programs it is closely linked with agriculture, irrigation, rural livelihoods and rural infrastructure. Integration of disaster risk and climate change resilience into sectoral and sub-sectoral plans and strategies would have large scale implications on the development outcomes and their sustainability over time. Various important sectors including drinking water, sanitation, housing, electrification, transport, employment/ livelihoods are equally important for

improvement of quality of life of rural masses. It's imperative that rural development policies consider the increasing frequency and severity of climate-related disasters. Sustainable farming techniques, such as agroforestry and rainwater harvesting, can be integrated into rural development programs to improve resilience against climate variability.

Disasters and Development: Issues and Challenges

Some of the common challenges in linking disasters and development can be summarised as follows:

- Conceptual and Perceptual issues, misguided perceptions that disasters are simply an 'act of god' and cannot be stopped have been common for long, but the human hand in making of disasters is now being increasingly recognised. The concept that a disaster is not simply a result of a natural hazard but a complex process involving various other natural, social and economic processes needs to be implicit so that the link between disasters and development can be better understood.
- Incentives are stacked against DRR. It is a long-term, low-visibility process, with no guarantee of tangible rewards in the short term, either for politicians in affected countries or for donors.
- Lack of Local Governance: Effective disaster management and climate adaptation require strong local governance structures. Decentralised decision-making empowers communities to take actions that are most relevant to their specific vulnerabilities and capacities.
- Disaster risk reduction falls into the gap between donor's humanitarian and development wings.
- Assumptions such as poverty-focused developed will automatically reduce disaster risk.
- Inadequate exposure to and information on disaster issues.
- Technological Gaps: There is a pressing need for technology-driven solutions like early warning systems, data analytics for risk assessment, and digital platforms for knowledge sharing. These technologies can significantly aid in disaster risk reduction and climate change adaptation.

Session1.4: Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) in the context of Rural Development

Duration: 45 minutes

Training Methodology: Power Point Presentation, Discussion

Training Note: The trainer/ facilitator may like to show some video, encourage participants to share their field experiences or put up some concern/ observation related to the particular sub session or in general about rural sector before the start of the session so as to break the monotony. Trainer can also indulge the group into some playful ice-breaking activities as short breaks during the course.

Agriculture is important in India for the obvious reason of its centrality, given that it accounts for a large share in GDP (gross domestic product) (16%), and an even larger share in employment (49%). Agriculture continues to be vulnerable to the vagaries of weather, and the looming threat of climate change has the potential to expose to vulnerability. Perhaps it is even more important because, as the experience of the last few years illustrates, it has the potential to hold back Indian development: poor agricultural performance can lead to high inflation, rural distress, and political restiveness. Guiteras (2009) finds that crop yields will decline by 4.5-9% in the short-run (2010-2039) and by a whopping 25% in the long-run (2070-2099) in the absence of adaptation by farmers. Further, Burgess et al. (2014) find that a one standard deviation increase in high temperature days in a year decreases agricultural yields and real wages by 12.6 % and 9.8%, respectively, and increases annual mortality among rural populations by 7.3 % in India. By contrast, in urban areas, they find virtually no evidence of an effect on incomes and a substantially smaller increase in the mortality rate.

The 2018 Food and Agriculture Organisation (FAO) report on the impact of disasters and crises on agriculture and food security showed that the agriculture sector alone absorbed 23 percent of all damage and loss caused by medium-to large-scale disasters triggered by natural hazards in developing and low- and mid-income countries between 2006 and 2016. When only climate- related disasters (floods, drought, and tropical storms) are considered, the share of damage and loss for agriculture increased to 26 percent. Drought affects the agriculture sector disproportionately: 83 percent of all damage and loss caused by drought was absorbed by agriculture. The crop and livestock sub-sectors are most affected by this slow-onset hazard (FAO 2018c).

The same study highlighted that "disasters impact agriculture beyond the short-term; the sector often endures long-lasting and multi-prolonged consequences such as loss of harvest and livestock, outbreaks of disease and destruction of rural infrastructure and irrigation systems" (FAO 2018c) reversing development gains. The sector continuously faces the challenge to anticipate and reduce the negative impacts that hazards may cause, such as loss of life, damage to property and environment, the destruction of agricultural livelihoods, disruption of services, reduced production and consumption, as well as negative effects on employment, incomes and prices, which often hamper access to markets, trade and food supply.

The agriculture sector is among the most important economic sectors, as it provides roughly half of the total employment in less economically developed countries and significantly contributes to the national gross domestic product (GDP), constituting up to 30 percent in developing countries (FAO, 2018a). Worldwide, the livelihoods of 2.5 billion people depend on agriculture. Small- scale farmers manage over 80 percent of the world's estimated 500 million farms and provide over 80 percent of the food consumed in a large part of the developing world (IFAD and UN Environment 2013). These small-scale farmers, herders, fishers and forest-dependent communities are particularly at risk from disasters and are disproportionally affected when a hazard hits (FAO 2017b).

At the same time, they are custodians of the environment; the way they manage their natural resources can avoid the development of disasters. Risk-sensitive agriculture is part of the solution, as it offers cost-effective measures to reduce disaster risk, while promoting sustainable resources management, greater biodiversity and socio-economic development, thereby fostering long-term resilience building. Given the importance of women & youth in agriculture and rural development, targeted capacity-building programs focusing on DRR and CCA should be designed for women& youth farmers. These programs can leverage digital platforms to disseminate knowledge on climate-resilient agricultural practices. Agriculture can also help to maintain the volume and genetic diversity of food supply, "*which results in both benefits and risk reductions against nutritional deficiencies, ecosystem degradation, and climate change*" (Fanzo 2017). Along these lines, it is evident that the agriculture sector plays a critical role in reducing disaster risks and in adapting to climate change for enhancing resilient and sustainable development.

It is therefore of paramount importance to continue enhancing capacities for DRR in the agriculture sector, across local, sub-national, national and regional levels, and with the active participation of smallholder farmers.

To encapsulate, the intersection of DRR and CCA within the realm of rural development is not just a necessity but a mandate for sustainable growth. Mainstreaming these aspects into rural development policies will require a multi-stakeholder approach, involving policy-makers, agricultural scientists, local communities, and international organisations.

Emerging Issues in Rural Development

1. **The paradox:** The majority of the poor still live in rural areas, and yet donor support for agricultural and other rural development has slumped.
2. **A diminishing urban-rural divide:** Rural and urban livelihoods are inter-dependent, and there is rarely a sharp geographical divide between rural and peri-urban. Rural development strategies must take account of the urban links and context.
3. **Diversified livelihoods:** There are few full-time farmers now, as households pursue multi- functional and multi-spatial livelihoods: support to the non-farm rural economy and to migration is as important as agricultural support.
4. **Small-holder farming in less-favored areas faces new challenges:** More households consist of part time farmers, work smaller plots and are headed by the elderly, young and women, so face severe credit and input constraints; access to subsidies and extension services has diminished; market changes increase the need for specialist techniques, quality control, information-intensive technologies and marketing involving high transaction costs – factors which provide larger farms with economies of scale. Targeted assistance is needed where small- scale farming can be competitive; otherwise small farmers need good exits from farming.
5. **Reverse state compression:** A strong state is needed to underpin the market and enable private sector development. Public interventions are needed to increase access to new opportunities (agricultural or nonfarm) specifically by the poor, and to establish the institutional framework for effective market development.
6. **Technological targeting:** Production increases based on the seed-fertiliser model of the Green Revolution have slowed. New technologies are likely to be more crop and region specific, and information-intensive. Technical change is biased against the poor. Policies to target technologies need to be location specific. Public intervention is particularly required in developing technologies and information channels appropriate to poor farmers.

7. **Climate-Resilient Infrastructure**: Adaptation to climate change calls for the development of resilient rural infrastructure. This includes storm-resistant housing and flood-resistant agricultural systems. Public-private partnerships can play a key role in this regard.

8. **Rethinking institutional capacity and governance:** Many recommended measures for rural development cannot be effective without significant capacity building and institutional support. In some areas, decentralisation should be promoted to reinforce positive trends for increased accountability. But in some areas, states are dysfunctional (eg conflict zones), or crippled (high HIV incidence), and second-best solutions would be more effective than attempts at business as usual.

9. **Growing divergence between low and high potential areas:** Less favored (low potential) areas have very different needs to (high potential) areas where modernisation is already underway. They generally still need agriculture-based development, are least likely to gain from globalisation opportunities, and will generate lower returns because of their inherent disadvantages (remoteness, poor soils etc). Therefore, policy must adapt to specific context.

10. **Rural risks and vulnerability:** The rural poor face new risks due to increasing natural disasters and rapid economic change. External support for risk-mitigation and coping strategies is generally insufficient. Public and private roles in supporting insurance and risk-coping need to be strengthened, which in turn depends on the fiscal burden being addressed.

11. **Digital Divide**: The lack of access to digital technologies in rural areas hampers the dissemination of critical information related to DRR and CCA. Bridging this digital divide is crucial for effective implementation of resilience-building measures.

12. **Preventing and managing conflict:** Conflict has a debilitating impact on rural livelihoods, and increasing levels of conflict threaten the achievement of poverty reduction targets. Donors will need to escape from the conceptual and programmatic constraints of a linear approach to relief and development.

13. **Aid modalities:** As a topic, rural development fits well with ideas about the Comprehensive Development Framework and with Poverty Reduction Strategy Papers. However, it does not sit so well with Sector Wide Approaches, which are hard to implement in the agricultural sector. There will be real problems in reaching the rural poor in poorly performing countries.

14. **Policy Coherence:** For DRR and CCA to be effective in the context of rural development, there needs to be policy coherence at the national, regional, and local levels. This would involve harmonising different policies and programs related to agriculture, land use, and social protection, among others.

Case Study: Odisha Super Cyclone Recovery and Reconstruction

Location: Odisha, India
Event Overview: In 1999, Odisha was hit by a devastating super cyclone, which led to a paradigm shift in the state's approach to disaster management. The catastrophic event triggered a comprehensive restructuring of disaster management strategies, focusing on long-term resilience rather than just immediate disaster response.
Key Initiatives:

1. **Establishment of OSDMA:** The creation of the Odisha State Disaster Management Authority (OSDMA) marked a significant step in institutionalising disaster management.
2. **Improved Early Warning Systems:** Investments were made in developing accurate and timely early warning systems to alert communities about impending cyclones.
3. **Construction of Multi-Purpose Cyclone Shelters:** These shelters serve dual purposes—protecting communities during cyclones and functioning as community centers during non-disaster times.
4. **Integration of DRR in Development Plans:** The state's development agenda started incorporating disaster risk reduction measures, ensuring that resilience building was a core component of all developmental initiatives.

Impact and Significance:

- **Enhanced Disaster Preparedness:** The state's capacity to anticipate, prepare for, and respond to cyclones significantly improved.
- **Resilience Building:** Emphasis on long-term resilience has led to more robust and sustainable community structures.
- **Socio-Economic Integration:** Resilience became a part of the socio-economic framework, contributing to the overall sustainable development of rural areas.
- **Model for Other States:** Odisha's transformation post the super cyclone has served as a model for other states in India, demonstrating the effectiveness of integrating resilience into development.

Lessons Learned: The response to the 1999 super cyclone in Odisha exemplifies the importance of a proactive and integrated approach to disaster management. It highlights the need for strong institutional frameworks, community involvement, and the integration of disaster risk reduction into broader development policies. This case underscores the transition from a reactive to a proactive model in disaster management, emphasising resilience and sustainable development.

SUBMODULE 2

DISASTER MANAGEMENT AND RURAL DEVELOPMENT

Learning Objectives

At the end of the session, participants should be able to:

- Understand the Genesis and Evolution of Disaster Management in India
- Understand the constitutional mandate and salient provisions of DM Act 2005
- Understand the current scenario of Rural Sector in India
- Examine the shift in focus from risk resilience within disaster management approaches for the RuralSector

Equipments and Materials Needed:

Flip Charts, Markers, Pens, Sticky notes, Laptop, LCD/Projector, Chart papers, and Blackboard.

USEFUL HANDOUTS: 3, 4, 8, 10 & 12

Duration: 330 Minutes (10.00 a.m- 17.00 p.m: excluding time for Lunch and Tea Breaks)

Method(s):

- Interactive lecture presentation Questions and Answers
- Group Work Problem Solving
- Discussion & Use of Audio-Video Aids

Session Plan

The trainer/ facilitator can start the session with a recapitulation of the previous days learning's. This can be done in various creative ways such as posing questions (can be quiz format/ general), asking participants to present it in their own ways, showing various pictures, videosand then reiterating the contents etc. There can be an informal interaction about the contents of sub module 2 to know their understanding about the Rural Development sector and related concerns. Invite them to share their views

and make a note of the points either on a flip chart or white board. Then make a brief presentation explaining the evolution of disaster management and its genesis and also explaining the institutional set-up established in our country on disaster management.

Gradually, move towards the rural sector and its current status and the issues and challenges the sector phases with respect to disaster management and its integration. Trainer can highlight the importance of proactively integrating disaster risk reduction and climate change adaptation measures into rural development projects, rather than merely reacting to disasters after they occur.. Follow it up with an open house discussion inviting comments and questions.

Wrapping up the discussion: Form 4-5 working groups of participants (depending upon the size of the batch) and group work based on the sub sessions may be given for better brainstorming. Ask the working groups to share their findings and analysis in a presentation format. This also encourages a two-way learning and makes the sessions more interesting and interactive. Give 5 minutes at the end for some questions and answers or scope for discussion on each presentation. Close the session with a presentation summing up the key learning from the session and highlighting the points from Sub Module 2.

Context

It is convincingly believed that India is one of the most disasters prone countries in the world, and therefore, management of disasters have been quite a complex and comprehensive activity. Though the roots of present day disaster management in India may be traced back to colonial period, the nature and scale of managing disasters in current times is an outcome of the global and domestic push over the last two decades. Further, greater involvement of civil society organisations in management of disasters along with the rise of certain issues and challenges during the course of disaster management (such as law and order, corruption, discrimination in disaster relief etc.) are also prominent aspects that merit critical analysis by way of studying disaster management in India. In contemporary times, effective management of disasters has become a global movement given the massive loss of lives and property entailed by the catastrophic events. As a result, almost all the countries in general, and most disaster prone countries, like India in particular, have evolved a comprehensive framework of disaster management consisting of legal framework, policy perspective, and implementation machinery along with ancillary support systems. The aim is to move from a culture of reaction to a culture of prevention, where disaster resilience becomes an integral part of rural development planning and execution.

Agriculture and allied sectors have been considered as the mainstay of Indian agriculture where approximately 54.6% population is engaged (Annual Report, MoAFW, 2017-18) to support their livelihoods. India's population has grown and is amplifying at an alarming rate from 541 million in 1971 to 1210 million in 2011 (Census, 2011). To support its large and growing population, India made a significant progress in agricultural production, doubling its food grain production capacity from 108 million tons in 1970's to 264 million tons in 2013-14 and has achieved a status of self-sufficiency to surplus agricultural produce. The accolade for such a tremendous growth undoubtedly can be attributed to "Green Revolution" that made India develop from a country of food grain importer to food grain exporter. India has also made a huge progress and overcome worse situations of famines by managing its drought. As per an estimate, it has been projected that population of India will reach 1.7 billion by 2050 and would require 450 million tons (GoI Report, 2006) of food grains annually to support its people.

As per statistical handbook of Ministry of Panchayat Raj (MoPR), India comprises of 662986 census villages and 7933 towns. Almost 68.2 percent from amongst this 1210 million people are living in the rural areas. While urban areas significantly contribute to GDP, agriculture and the rural sector remain the backbone of the Indian economy and society. Hence, the need for disaster-resilient rural development is not just economic but also a social imperative.. It is the largest employment providing sector in the country and growth of the secondary and tertiary sectors is directly and many times indirectly dependent on it. Thus rural development is one of the most important sectors of the Indian economy in many ways. Given the centrality of the rural sector, it is essential to embed disaster resilience and climate adaptation into rural development policies. This involves not only policy integration but also community participation to foster local resilience.

Climate change is also likely to threaten India's food security, increase water stress, and increase occurrences of diseases. Lack of availability and access to technological and financial resources coupled with a high dependence on climate sensitive sectors-agriculture, fisheries, forestry-have made India highly vulnerable to vagaries of extreme weather events. The intimate links between rural development and sectors like agriculture, irrigation, and rural livelihoods underscore the urgency of integrating disaster management and climate adaptation into the broader framework of rural development.

Session 2.1: Institutional Framework for Disaster Management in India

Duration: 150 minutes

Training Methodology: Power Point Presentation, Discussion, Problem Solving

Training Note: Trainer/ facilitator may initiate a dialogue on the difference between the terms droughts and famines and how India has witnessed many decades of famines and emphasising the need for drought management and how Indian history has ample evidence of Famines and the subsequent need for considering Droughts as a disaster which was looked after by Ministry of Agriculture and thereby keeping all this discussion at the center, move towards the evolution of the subject of disaster management.

Technical Notes

The institutional and policy mechanisms for carrying out response, relief, reconstruction and rehabilitation after disasters in India had been well-established since Independence. The increasing frequency and ferocity, the rising extent along with the mounting human and economic toll due to disasters necessitated a reappraisal of institutional and policy frameworks and development of new frameworks for holistic disaster management of disasters. A specific legal framework was considered as a prerequisite for a robust disaster management in the country. Such a framework can lay down the guiding principles and supporting structures for better management of disasters.

The traditional perception relating to the management and prevention of natural disasters has been limited to the idea of "calamity relief," which was seen essentially as a non-plan item of expenditure. However, the impact of major disasters cannot be mitigated by the provision of immediate relief alone, which is the primary focus of calamity relief efforts. Disasters can have devastating effects on the economy; they cause huge human and economic losses, and can significantly set back development efforts of a region or a State. With the kind of economic losses and developmental setbacks that the country has been suffering year after year, the development process needs to be sensitive towards disaster prevention and mitigation aspects. There is thus a need to look at disasters from a development perspective as well.

In India, the move towards a legal framework was made with the setting up of the High Power Committee (HPC) on disaster management in 1999. The committee drafted a federal law on the subject of DM. Eventually; the subject of DM has been within the legislative jurisdiction of the States. In view of this, a holistic **National**

Disaster Management Framework was developed in 2004, which highlights the interdependence of economy, environment, and development. This framework also links the issues of poverty alleviation, capacity building, community empowerment and other structural and non-structural issues of prevention and preparedness, response and recovery for effective disaster risk mitigation and management. A comprehensive legal and institutional framework for disaster management has been set up through the **Disaster Management Act** passed by the Indian Parliament in 2005 which presently constitutes the core legal framework of disaster management in the country and the **National Policy on Disaster Management** that was approved in 2009.

GROUP WORK (30 minutes):

Trainer can divide the batch into 4-5 groups and distribute copies of the DM Act 2005 and ask them to deliberate and discuss amongst their respective groups about the strengths and gaps in the Act and each group can be asked to make presentations of the same.

After group presentations on the DM Act 2005, the facilitator can highlight some of the recent amendments or proposed changes to the Act, discussing how these could address the gaps identified by the groups.

Session 2.2: Overview of Rural Development Sector

Duration: 60 minutes

Training Methodology: Power Point Presentation, Discussion

Training Note: Trainer may like to show any video related to the rural development or related sector and have a short brainstorming session with the participants to get fresh insights into the linkages between disaster management and rural development and acknowledge the need to build in disaster management approaches as a part of the larger rural development agenda in the country.

The trainer may initiate a discussion on the role of local governance and community participation in disaster risk reduction and how these elements are crucial for effective rural development.

Technical Notes

This famous observation made by the Father of the Nation many years ago, still holds true. According to him “Villagers comprise the core of Indian society and also represent

the real India. And it is for these villagers that we need to make sure we build a system that delivers basic social infrastructure in an effective manner. In order to ensure that the fruits of India's progress are shared by all sections of the society, the government has identified several elements of social and economic infrastructure, critical to the quality of life in rural areas. Well, before we discuss in detail about the services and facilities being planned and provided by the government, it's important to know what constitutes the rural sector in India. *"India lives in its villages"* –

India is predominantly a rural country with two third of its population residing in rural areas. As per the 2011 Census, 68.8 per cent of country's population and 72.4 per cent of workforce resided in rural areas. Rural economy constitutes 46 per cent of national income. Despite the steady rise in urbanisation, more than half of India's population is projected to be rural by 2050. Thus growth and development of rural economy and population must be recognised as the key to overall growth and inclusive development of our nation. Undoubtedly, traditionally, agriculture is the prime sector of rural economy and rural employment. The transition in composition of output and occupation from agriculture to more productive non-farm sectors is considered as an important source of economic growth and transformation in rural and total economy off late. However, steady transition to urbanisation over the years is leading to the decline in the rural share in population, workforce and GDP of the country. Between 2001 and 2011, India's urban population increased by 31.8 per cent as compared to 12.18 per cent increase in the rural population. Over fifty per cent of the increase in urban population during this period was attributed to the rural-urban migration and re-classification of rural settlements into urban settlements. Population projections indicate that India will continue to be predominantly rural till the year 2050 after which urban population is estimated to overtake rural population. It is often felt that unplanned rural to urban migration, particularly in search of better economic opportunities, has been putting severe pressure on urban amenities and forcing a large number of low wage migrants from rural areas to live in unhygienic and deprived conditions. Given this context, disaster management becomes integral to rural development, as natural calamities like floods, droughts, and cyclones disproportionately affect rural areas and livelihoods. Effective disaster management strategies can bolster rural economies by safeguarding agricultural outputs, ensuring continuity of rural employment, and preventing distress migration to urban areas. The improvement in economic conditions of rural households is also essential for reducing the disparity in per capita rural and urban income which has remained persistently high. This requires significantly higher growth in rural economy as compared to urban India. Rural development initiatives should be designed with built-in disaster risk

reduction measures, such as resilient agricultural practices and flood-resistant rural housing, to make them sustainable in the long term.

Session 2.3: Rural Development: Disaster Management Issues and Challenges:

Duration: 120 minutes

Training Methodology: Presentation, Discussion, Audio-Video, Problem Solving

Training Note: The trainer/ facilitator may like to show some video, encourage participants to share their field experiences or put up some concern/ observation related to this particular sub session or in general about rural sector before the start of the session so as to break the monotony. Trainer can also indulge the group into some playful ice-breaking activities as short breaks during the course. Trainers can incorporate elements of gamification to make complex topics more engaging. For example, a game that simulates disaster response decisions can help illustrate the consequences of various actions.

Technical Notes

Challenges of Indian Agriculture/ Livelihood

Agriculture and allied sectors play a pivotal role in India's economy. With the engagement of more than 50% of population (Census, 2011) in this sector, it contributes to 17% of the country's Gross Value Added (Annual Report, MOAFW, 2016-17). But the sector is under continuous threat of risks, which are exacerbated by a variety of factors, ranging from frequent natural disasters, climate variability and changes, uncertainties in yields and prices, weak rural infrastructure, changing market dynamics, and lack of appropriate financial services including policy interventions for risk mitigation instruments such as credit and insurance. These factors have multiplier impact on the farmer's livelihood and incomes and also undermine the ability of the agriculture sector and its potential to become a part of the solution to the problem of endemic poverty of the farmers and the agricultural labour (Niti Aayog Report, 2012). Increasing population and related socio-economic problems including poverty and hunger, poor water use efficiency, water scarcity, extreme weather events like incessant rainfall and subsequent flooding, as well as delay in monsoons triggering droughts and unequal access to the water are common concerns of the agriculture sector.

The current Indian Government has set a target of doubling farmers' income by the year 2022, and the zeal to raise 5 trillion dollar economy and ease of living by

2024. However, these targets can only be attained with an all-inclusive approach and therefore, will require concerted efforts to improve this scenario of Indian agriculture and also to protect the sector from detrimental impacts of natural hazards and subsequent disasters through proper mitigation and management.

Indian agriculture, like India's landscape is vulnerable to multiple disasters of natural and anthropogenic nature, and also aggravated by the impact of changing weather patterns. This calls for the need to understand India's agriculture challenge concurrently in many dimensions.

The role of women in rural development and disaster management is often overlooked. Women's unique vulnerabilities and capabilities must be taken into account for effective disaster risk reduction and management.

When emergencies happen to rural communities, especially disasters that are severe or prolonged in nature, the demands and pressures on local response agencies and healthcare facilities can quickly consume most of the in-hand available resources leaving huge challenges mostly for the rural marginal and poor to cope in time. Therefore, rural communities can deal more effectively with large-scale emergencies by planning and preparing before the occurrence of disasters. The implementation of disaster risk reduction measures, such as early warning systems and community-based disaster management plans, are particularly challenging in rural areas due to lack of awareness, education, and sometimes resistance to change.

Rural residents, communities, local governments, and others involved in emergency preparedness and response face challenges that can include:

- Resource limitations, such as equipment and supplies, training, skills, and infrastructure dearth
- Better access to health care facilities
- Remoteness and geographical isolation
- Low population density
- Telecommunication and warning dissemination concerns

Challenges	Description
Food insecurity	Chronically undernourished population
	Increasing population, limited land
	Rampant urbanisation
	Unsustainable life style, food wastage
	Declining agricultural land
	Desertification
	Fodder concerns for domestic animals
Water insecurity	Growing water stress
	Declining per capita water availability
	Agriculture becoming water intensive
	Overexploitation of groundwater
	Droughts and floods
	Upstream-downstream dependence on water
Energy insecurity	Food production becoming energy intensive
	Energy required in transportation
	Energy required in storage
Social insecurity	Forced migration
	Small and marginal farmers
	Education and awareness
	Gender
Climate variability	Changing weather pattern, erratic rainfall, extreme heat or cold waves
	Glacial melt
	Uncertainty in water availability

Discussion Points: After presenting the challenges, the trainer can facilitate a discussion on potential solutions and best practices that have been effective in different parts of the country or the world. This should include both government policies and community-led initiatives.

Hazard and Disaster specific challenges

Every year farmlands and other related sectors are being challenged by natural hazards like excessive rainfall, droughts, hailstorms, heavy winds, pest attacks, etc. Frequency

and severity of these hazards make such farmlands vulnerable to disasters of severe nature which are on a rise and continuously increasing. India still has large dependency on agrarian economy and relies mostly a on rain-fed farming practice which amplifies the vulnerability of this sector since farming heavily depends directly on the climate, weather, water and land. The lack of early warning systems and real-time monitoring mechanisms further exacerbates the vulnerability of the agrarian community to various hazards. The agriculture disaster related challenges are highlighted as follows:

Disaster	Challenges
Drought	Decline in cultivated area thereby decreasing the production, fall in employment, fall in purchasing power, Scarcity of drinking water, food- grains and fodder, Rise in inflation rate, intake of food and widespread malnutrition, health and spread of diseases caused by malnutrition, hunger and starvation, migration of people from drought affected areas in search of livelihood and better work opportunities etc.
Flood	Massive losses like crop loss specially standing crops and yield reduction, damage to soil, damage to machineries, damage to stored inputs, damage to roads, etc.
Cyclones	Direct damage by high wind speed, torrential rains and extensive flooding. High tide may also affect the agriculture by bringing in saline water and sand mass making the fields unsuitable farming. Indirect impacts may include infection and crop diseases. Agricultural marketing and trade get severely affected due to lean seasons of animal, fish and crop production.
Hailstorms	Hailstorm and powerful winds can physically damage crops across large areas. The falling hailstorms and strong winds bend and break plants and strip them of leaves and bark. A small piece of hail can even destroy vegetables such as cabbage, lettuce, tomatoes etc.
Heat waves/ cold waves	May affect the crop production both in quality and quantity and such crop loss is usually encountered due to flower drop and high mortality in new plantations.
Pest attack	Some species feed on endosperm causing loss of weight and quality of food grain while other species feed on the germs.
Earthquake	Damage to infrastructure like dams, farm resources, buildings, warehouse, transport facilities etc.

Priority 1 of the SFDRR on understanding disaster risks calls for any effort on DRR planning and implementation to be built around a comprehensive context, sector- and hazard- specific disaster risk analysis that takes into consideration "*all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment*." This type of comprehensive risk analysis allows decision-makers to understand the negative impacts of disasters on societies and economies and identify opportunities that could derive from implementing prevention measures (Bahadur et al. 2014).

However, risk awareness and an understanding of the immediate damages a disaster may cause have often not been a sufficient incentive to take up DRR planning proactively. Country experience shows that only when the negative impacts of disasters on long-term development are fully understood or felt, DRR planning in the agriculture sector is really taken up. Therefore, in addition to a sound understanding of disaster risk, additional awareness creation on the nexus between disaster risk, poverty reduction and sustainable development is a continuing precondition for the successful mainstreaming of DRR into the agriculture sector and vice versa.

Ministry of Rural Development, Government of India has one of largest sector budgets involving massive amount of investment in the rural development sector in the country. Traditionally the primary focus of the rural development ministry has been on reducing the incidence of poverty in the country. Poverty reduction within rural development is sought to be achieved through enhancing access of poor people to housing, employment, income and sustainable livelihoods opportunities. As disasters impact the poor most adversely, disaster management approaches need to be integrated into the programme design and implementation strategies of these rural development schemes and projects. For instance, housing for the poor has to take into account the specific hazard proneness of the below poverty line (BPL) households while considering the location and design of the house to be built under Indira Aawas Yojana (IAY). Similarly, disaster risk profile of the poor households including their identified vulnerabilities and capacities has to be drawn in order to feed into the planning and implementation of other programmes such as National Rural Livelihoods Mission (NRLM) and Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). A review of the guidelines of all the development programmes of the Ministry of Rural Development needs to be undertaken in order to run the reality check of their sensitivity to disaster management issues, particularly with reference to the design features and implementation strategies of these programmes.

MGNREGA success Story/ Climate resilient case study: Agriculture/Rural Development

Trainer Note: Trainer/ facilitator may like to quote more such similar examples wherein rural Development schemes must integrate components of disaster management (pre and post both)**.**

Incorporate real-life success stories where MGNREGA or similar schemes have successfully integrated disaster risk reduction measures. Discuss what worked, what didn't, and what could be replicated or scaled.

GROUP WORK (45 minutes):

Form 4-5 working groups of participants and ask them to identify the key policy issues and challenges related to disaster management in the specific context of rural development in India. This activity may include a short Hazard, Vulnerability, Risk and Capacity assessment for this sector as well. Participants will be briefed to have an in-depth discussion within their respective groups to discuss few policy issues and challenges regarding disaster management in general and disaster management during different phases of the disaster management cycle in particular.

Encourage each group to identify potential policy interventions and innovations that could mitigate the challenges discussed. They should consider both technological solutions and community-based approaches.

Group presentation and discussion

All the working groups will then be asked to make their presentations which can be followed up by a question and answer session. Conclude by summarising the key takeaways and policy recommendations from the group discussions. Encourage participants to consider how these findings can be integrated into their own work and future planning.

Case Study: Kerala's Community-Based Approaches in Flood Recovery (2018)

Location: Kerala, India

Event Overview: In 2018, Kerala faced unprecedented floods, causing widespread devastation. This natural disaster brought to light the crucial role of community participation in effective disaster management and recovery processes.

Key Initiatives:

1. **Community-Based Resource Mobilisation:** Local communities played a pivotal role in gathering resources for immediate relief and long-term recovery.
2. **Local-Level Planning for Rehabilitation:** Grassroots planning initiatives were undertaken to rehabilitate affected communities, with a focus on sustainable rebuilding.
3. **Capacity-Building Programs:** Programs were initiated to enhance the resilience of local communities, equipping them with skills and knowledge for future disaster preparedness.

Impact and Significance:

- **Effective Recovery Efforts:** The collaboration between local communities, NGOs, and government bodies led to efficient and rapid recovery operations.
- **Empowerment at the Grassroots Level:** The initiatives empowered local communities, fostering a sense of ownership and responsibility towards disaster management.
- **Integration into Local Governance:** The disaster response in Kerala demonstrated the effectiveness of integrating DRR and CCA within local governance structures.
- **Alignment with Sustainable Development Goals:** The efforts were in line with sustainable rural development goals, emphasising resilience and long-term sustainability.

Lessons Learned: The 2018 Kerala floods underscored the importance of community involvement in disaster recovery and management. This case study illustrates how local communities, when adequately supported and empowered, can play a significant role in managing disasters and building resilience. It also highlights the need for integrating disaster risk reduction and climate change adaptation into local governance frameworks to achieve sustainable development objectives.

SUBMODULE 3

PANCHAYAT RAJ INSTITUTIONS AND VILLAGE LEVEL DISASTER MANAGEMENT PLANNING

Learning Objectives

At the end of the session, participants should be able to:

- Understand the role of PRI in disaster management
- Describe the components of the VDMP
- Devise a framework of Village Disaster Management Plan(VDMP)
- Highlight the Standard Operating Procedure for VDM Committees and Disaster Management Teams (DMTs)
- Understand the scope and limitations of PRI in disaster management
- Understand the need to integrate DRR into Gram Panchayat Development Plans(GPDP)

Duration: 330 Minutes (10.00 a.m-17.00 p.m: excluding time for Lunch and Tea Breaks)

Equipments and Materials Needed:

Flip Charts, Markers, Pens, Sticky notes, Laptop, LCD/Projector, Chart papers, and Blackboard.

USEFUL HANDOUT: 8, 9, 12 & 16

Method(s):

- Interactive lecture presentation
- Questions and Answers
- Group Work
- Problem Solving
- Discussion & Use of Audio-Video Aids

Session Plan

The trainer/ facilitator can start the session with a recapitulation of the previous days learning's. This can be done in various creative ways such as posing questions (can be quiz format/ general), asking participants to present it in their own ways, showing various pictures, videos and then reiterating the contents etc. There can be an informal interaction about the contents of sub module 3 to know their understanding about the need for village level planning and preparedness. Invite them to share their views and make a note of the points either on a flip chart or white board and gradually, move towards the first learning unit.

Wrapping up the discussion: Depending upon the size of the training batch, form 4-5 working groups of participants and give them table-top exercises based on the sub sessions for better comprehension. Ask the working groups to share their findings and analysis in a presentation format. This also encourages a two-way learning and makes the sessions more interesting and interactive. Give 5 minutes at the end for some questions and answers or scope for discussion on each presentation. Close the session with a presentation summing up the key learning from the session and highlighting the points from Sub Module 3. As part of the wrap-up, facilitate a SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) to evaluate the existing role and future potential of PRIs in disaster management.

Context

Session 3.1: Role of PRI in Rural Development Sector

Duration: 60 minutes

Training Methodology: Power Point Presentation, Discussion & Audio-Video

Training Note: The trainer/ facilitator is encouraged to utilise initial few minutes of the session by asking the participants to discuss the pre-independence Panchayat system established in India and its current institutional set-up, powers and responsibilities. The Trainer can use few Audio-Video clippings to make the session interesting. Consider incorporating testimonials or interviews from PRI members who have effectively managed disasters. This adds a realistic touch to the training.

Technical Notes

Natural Hazards cannot be prevented, but their impact on the lives and the socio-economic aspects of the people can be reduced to a considerable extent. In the past, people have countered the effects of the disasters with their own efforts and have

overcome the trauma of the calamity. While the Government has the role to help its people in distress, the people themselves have greater responsibility to withstand together to face such eventualities and help the Government to help themselves in this process, rather fully depending on it. No state-level administration will be able to meet the requirements of communities, unless communities come forward to solve their own problems. The Panchayati Raj Institution (PRI), the representative body of the people, is the most appropriate institution from village to the district level in view of its proximity, universal coverage and enlisting people's participation on an institutionalised basis. Their close involvement will go a long way in getting people prepared for countering natural disasters as well as involve them in all possible preventive and protective activities so that the impact of the disasters is mitigated and the people are able to save their lives and property. The PRIs can act as catalysts to social mobilisation process and tap the traditional wisdom of the local communities to complement the modern practices in disaster mitigation efforts. Besides this PRIs will also provide a base for integration of various concerns of the community with that of the Non-Governmental Organisations (NGOs) and Community Based Organisations (CBOs) which are engaged in various developmental activities at the grassroots level. The Panchayati Raj Institution (PRI) members can play a role of leadership in Disaster management at all stages, right from the preparatory stage up to the handling of the long term development activities for risk reduction. Panchayats must adhere to the humanitarian imperatives during relief, rehabilitation and reconstruction activities in order to protect the rights and dignity of each and every victim of a disaster. Relief, they should remember, must be treated as a right rather than as charity.

Need for involving the PRI Bodies : In general, if the local bodies like Panchayats are not consulted for preparedness-planning, relief and rehabilitation work, it leads to absence of transparency and accountability in the mitigation efforts. The whole approach towards rehabilitation work may end up being 'top down' in nature. As the relief and restoration efforts involve investment of hundreds and thousands of crores of rupees, there should be satisfaction of having utilised them properly and efficiently. Activities like distributing immediate relief in the form of money, food grains, medical care, clothes, tents, vessels drinking water and other necessities, activities of restoration, rehabilitation and reconstruction efforts of damaged villages and towns can be implemented better with the involvement of local bodies. There is a view that local bodies like Panchayats should be encouraged and empowered to manage the local affairs with the available local resources. The elected leaders and officials of Panchayats should be trained to develop capabilities to handle

crisis situation in preparedness, warning, rescue, relief, medical assistance, damage assessment, counseling, water and sanitation and rehabilitation operations. It is felt that in biggest disasters the role assigned to Panchayats was meager in handling the problems of various types at the grassroots level. PRIs can also serve as a platform for public education on disaster preparedness, coordinating with schools and community centers to disseminate information and training.

And thus, people's voices and choices can be more appropriately reflected in development programs and the commitment of the implementing functionaries like leaders, officials and NGOs can be reinforced further. They can further be engaged to promote participation of grass root communities in various pre and post disaster management activities such as:

- Act as catalysts to social mobilisation process;
- Tap the traditional wisdom of the local communities to complement the modern practices in disaster mitigation efforts;
- Provide a base for integration of various concerns of the community with that of the Non- Governmental Organisations (NGOs) and Community Based Organisations (CBOs), which are engaged in various developmental activities at the grass roots level;
- Sensitise local communities, and through them develop coping mechanisms in disaster preparedness and mitigation measures;
- Discuss and evolve strategies to manage crisis situations effectively;
- Ensure transparency and accountability in the mitigation efforts;
- Streamline activities like distributing immediate relief in the form of money, food grains, and medical care, clothes, tents, vessels for drinking water and other necessities;
- Coordinate activities of restoration, rehabilitation and reconstruction;
- Act as leaders to the community;
- Gather, analyse and disseminate information;
- Articulate community needs and expectations;
- Converge with local, state, national and international organisations involved in disaster management;

- Form disaster management taskforces;
- Arrange for emergency relief;
- Encourage damage appraisal, vulnerability assessment and risk reduction strategies;
- Organise awareness campaigns and promote community education on disaster preparedness;
- Activate disaster management plans;
- Provide for safe disposal of carcasses;

A few more issues need to be considered: PRIs need to be trained to evolve a community-based disaster preparedness and management plan. PRIs need to involve/elicit the support or cooperation of other existing formal/informal local organisations in the management of disaster relief and rehabilitation activities. Based on the mapping of local institutions, the PRI need to develop a strategy to orient them on disaster preparedness. In social mobilisation process, effort should be made to synergise how the local institutions which are found to be better suited as catalysts, be effectively involved to tap the traditional wisdom of the local communities, to complement the modern practices in the disaster mitigation efforts. Given the hierarchical nature of bureaucracy (a component of the delivery system), making the officials exclusively responsible for disaster management may not promote participatory approaches. Therefore, a synergic approach involving elected representatives along with civil society initiatives like NGOs and CBOs, would provide a broad-based framework for disaster reduction and mitigation. How this process can meaningfully be operationalised should be a core issue. Develop community-based monitoring system to ensure effective operationalisation of disaster mitigation strategies at local level. Work out partnership mode of participation between PRIs and line departments and other local organisations so that the productivity of the institutional capital (i.e., resources) be maximised and the Disaster Management can be more effective. There is a greater need for evolving Management Information System (MIS) to address various components of disaster management (especially planning, preparedness, relief, etc) with the involvement of PRIs. How the networking of local institutions including PRIs and Line Departments should be developed so that MIS can be evolved and utilised with the total participation of the stakeholders. Develop an inclusive approach as far as gender and vulnerability are concerned so that the delivery system

is sensitive to the needs of all groups, by involving them in the disaster management and preparedness process.

Keeping in view of the importance of the subject of Disaster Management and the role of various agencies and local bodies, it is felt necessary to delineate the role of different organisations for suggesting improvements in the existing coordination mechanism. This would also facilitate convergence of their efforts for effective implementation of rehabilitation and restoration measures to re-build the economy in the aftermath of a large-scale devastation caused by disasters.

Session 3.2: Village Disaster Management Plan: Need and Framework

Duration: 60 minutes

Training Methodology: Power Point Presentation, Discussion, Audio-Video, Case Studies, Group Activity

Training Note: The trainer can plan what they want to achieve by preparing the same. Facilitator may like to show some video, encourage participants to share their views on disaster management plans and brainstorm to discuss on what they understand about village disaster management

Technical Notes

The Need for VDMP

The purpose of village level DM plan will be helpful for ensuring speedy approach for rescue, rehabilitation in the affected area. The plan will guide the community at the time of disaster preparedness and at the time of relief operation, provides courage to the community to face the eventuality more effectively. Village Disaster Management Plan (VDMP) is a document prepared by the village community themselves based on their own hazard, vulnerability, risk, resource and capacity analysis, containing village profile supported by maps, emergency response and disaster risk reduction plans, listing out activities and pin pointing responsibility of the Village Disaster Management Committee (VDMC), Task Force Members and the community at normal times, before, during and after a disaster in order to save lives, livelihood and property and integrating it into the long term sustainable village developmental plan. All the activities in the emergency response plan are so well planned, practiced, rehearsed and synchronised that they take place simultaneously in minimising loss of time and order. Development of a village disaster management plan is a process through which every unit in the village is made aware of the various facets of disaster preparedness and response and their capacity is enhanced to meet the exigency framework:

Therefore, by advance planning, rural communities may be able to save their assets and income for use during emergencies and thus, a VDMP can prove to be beneficial as:

- It outlines the process by which the village should manage any disaster.
- It can be used to tap human and material resources in the aftermath of a disaster
- It lists down the contact details of important administrative officials ensuring quick communication with them.
- It describes the roles and responsibilities of the concerned officials and teams in the wake of a disaster.
- It can play a vital role in helping to avoid mistakes or recognise hidden opportunities.
- It helps in establishing a localised early warning system which is often the first line of defense against natural disasters.
- It provides a framework for community-based monitoring and evaluation of disaster preparedness and response activities.

Nobody can predict and prevent the occurrence of hazards, however, it is possible to minimise the impact of a disaster and reduce the loss of life and property if adequate preparations are made at the household and village level.

The village disaster management plan is a document which details out the past hazard profile of the village and the present vulnerability status on the basis of which we can prepare our future. The plan is essentially a preparedness tool which can be used during an emergency by the administration as well as the community to have an insight into the location of available men and material local resources in the village. The VDMP must have the following features:

- Have a clearly stated objective or set of objectives
- Reflect a systematic sequence of activities in a logical and clear manner
- Assign specific tasks and responsibilities
- Offer a benchmark against which actual performance can be measured and reviewed
- Integrate its activities, tasks and responsibilities to enable the overall objective or series of objectives to be achieved

Framework for VDMP

The development of disaster management plan at the village level aims at building the capacity and resilience of the community to equip them with skills so that management of various hazards becomes a way of life for them. The framework of VDMP is built around the following four pillars.

- Development of Village Disaster Management Plan by the local community members ensures ownership and reflects local conditions. The plan has to be prepared through a participatory approach on the basis of facilitation provided by external resource persons.
- Disaster Management Committees and Teams have to be formed at the village level to facilitate the process of Community Based Disaster Risk Reduction and Management.
- Mock Drills check the response of the community in a simulated environment. They have to be conducted at regular intervals on the basis of plan prepared by the community. The mock drills will be a form of rehearsal in which the response of the community and the efficacy of the administration can be tested.
- Awareness has to be generated amongst the community through various mediums like televisions, radio and print media. These campaigns are carried out through rallies, street plays, competitions in schools, distribution of IEC materials, wall paintings on do's and don'ts for various hazards. Meetings with key persons of a village such as the village head, health worker, school teachers, elected representatives and members of the youth clubs and women also motivate the villagers to carry forward the preparation of these plans for a safer living.
- Risk Mapping: The VDMP should include a risk map outlining hazard-prone areas, safe zones, and critical infrastructure. This should be created in consultation with local experts and the community.
- Gender and Vulnerability Assessment: Ensure that the VDMP is sensitive to the needs of vulnerable groups such as children, the elderly, and women.
- Updating Mechanism: The VDMP should be a living document, updated at regular intervals to reflect changing vulnerabilities and capacities.
- Financial Planning: Outline potential sources of funding for implementing the VDMP, including government grants, community contributions, and external donors.

Session 3.3: Village Disaster Management Committees (VDMCs) and Disaster Management Teams (DMTs)

Duration: 120 minutes

Training Methodology: Power Point Presentation, Discussion, Problem Solving, Role-playing Simulations,Interactive Scenarios, Case Studies

Training Note: The trainer can initiate the session by asking the participants about how a disaster management committee is different from a disaster management team and the need for such committees and teams.

Technical Notes

Over the past two decades, there has been an increase in disaster occurrences costing human and economic losses. This is due to the ever-increasing vulnerabilities of people to natural disasters. The need is felt to reduce disaster risks by improving capabilities of people and ensuring preparedness, mitigation and response planning processes at various levels. The objective is to look at the entire cycle of disaster management in reducing risk and linking it to developmental planning process. In the past, disasters were viewed as isolated events, responded by the Governments and various agencies without considering the social and economic causes and long-term implications of these events. In short, disasters were considered as emergencies. The recent disasters and its socio-economic impact on the country at large, and in particular the communities have underscored the need to adopt a multi-dimensional approach involving diverse scientific, engineering, financial and social processes to reduce vulnerability in multi-hazard prone areas. In view of this, the Government of India has brought about a paradigm shift in its approach to disaster management. The change is from “relief and emergency response” to a balanced approach covering all phases of the Disaster Management Cycle.

This approach acknowledges disaster management as a part of the development process, and investments in mitigation are perceived to be much more cost effective than relief and rehabilitation expenditure. In this regard, Government of India has taken various initiatives in area of disaster preparedness, mitigation and response through networking of various institutions, institutional capacity building, and policy interventions at all levels. India, besides evolving effective post-disaster management operations, has also formulated and implemented pre-disaster mitigation programs and sectoral development programs to reduce the impact of disasters as well as reduce the socio-economic vulnerabilities. The reconstruction programs in the

aftermath of disasters such as cyclones and earthquakes are also aimed at building disaster resistant structures to withstand the impact of natural hazards in the future. Community participation and community ownership in disaster risk reduction is one of the key factors in reducing vulnerabilities of people and minimising the loss. The Government of India's focus on Community Based Disaster Preparedness (CBDP) approach promotes community involvement and strengthening of their capacities for vulnerability reduction through decentralised planning process. This document deals with the concept, component and some of the best practices.

Disaster Management Committees (DMCs)

As part of the VDMP preparation, there is a strong need for setting up DMCs at the village levels to carry out the following functions:

1. To take village level decisions
2. To coordinate the activities of the Disaster management Teams
3. To account for and to maintain the inventory of resources
4. To be able to ensure a continuous monitoring of preparedness

The aim of setting up of Village Disaster Management Committees (VDMC) is for better utilisation of local skills, resources, manpower and leadership in order to equip them with tools and strategies to managed disasters until better government disaster relief efforts can be set in. For example, during an earthquake, local people trained in basic relief efforts such as clearing rubble, early medical help, first-aid, search and rescue of those trapped can facilitate response before professional help arrives. Same is the case in times of any flood situation where in a prepared community can be mobilised and alerted for such events and so, they can take care of each other and use basic survival methods to improve chances of getting through the initial hours of flooding safely. Such planning can be very helpful, as India is a vast Nation with many remote and deserted pockets of populations which cannot be reached easily or quickly. Also, due to limited budgets it has not been economically feasible for government to set up disaster relief teams in each and every town.

A VDMC can therefore, help to save property and even lives and can provide firsthand account of problems and solutions before professionals arrive. They can facilitate and guide professional rescue workers to save trapped people, or survivors who need urgent medical support.

Suggested membership of the VDMC is as follows:

External Ex-offico Members	No. of Persons	Reasons for being member
BDO or his representative	1	To allow access to the govt. schemes and to act as a arbitrator if conflict arises arbitrator if conflict arises amongst the members that cannot be settled by consensus.
Government Engineer	1	To give a technical know how back up to DMT's and to periodically verify the condition of the shelter and other structures.
Member Panchayti Raj institution	1	To allow access to the DMC to the facilities available
Member from a facilitating inst.or NGO	1	To allow the community to communicate with the implementing agency and the required feedback.
Gram Mukhya or Village head	1	Already enjoy a degree of respect and are usually a part of all decision making processes
Mahilamandal and women's representative	1 or More	To specifically represent gender needs
Youth representatives like NYKS,NCC,NSS	1 or more	To present the needs and requirements of the youth
Self help group	1 or more	Groups are already organised and have a large contributory role to the village processes.
Other groups	1 or more	Representation of backward class, or scheduled caste or scheduled group or other ethnic groups.
School committee member	1 or more	To participate in any decision regarding the usage of shelter and to spread awareness through school. Besides, teachers and school committees are usually respected by the community.
Village members	2 or more	Chosen by the communities to represent the needs of the community members.
DMT member	1	Chosen by the DMT members

The roles and responsibility of the Disaster Management committee are as follows:

The President would preside over all meetings and be responsible for overall management. All the Task Force Members would be directly managed by him. The committee would be responsible for: Developing the Village Disaster Mitigation Plan Maintaining peace during operations and maintaining all accounts of the committee. Keeping contact with Block Administration and other related agencies and also in assisting the various team members in performing their responsibilities, trying to wipe out bottlenecks/ lacunas in the contingency plan. In addition, the roles and responsibilities of VDMC will include the following: Check the household preparedness before any disaster-situation and teach the villagers to reinforce the roof and wall wind and flood water. Strengthening of safe shelters should be attended to before monsoon season, latest by end of May. Keep some temporary shelter materials in the village for emergency purpose and identify the safe shelter for keeping the evacuees. Coordinate with the owner of the houses for use as safe shelter during the time of the disaster. DMT members should be trained and help the community in the time of emergency. DMT members should watch the situation and keep contact with the villagers for any eventuality. VDMC would have link with GP and Block for information and support in terms of relief and search and rescue. VDMC would ensure the effective functioning of the all DMTs in the villages and update the information in the VDMP and other information. VDMC would have linkages with local PHC for medicine and up gradation of their skill. Help the medical unit for their ongoing work in rural areas. They should ensure the availability of common medicine in the village. They should also ensure that villagers are familiar with the practice of disinfection of flood water and use of ORS. VDMC should ensure necessary preparations by respective DMTs. For example, they should ensure that the Water and sanitation Team establishes linkages with RWSS for bleaching powder, repair of tube wells and tanks. Keep some dry food, either collect from each house hold or purchase from the market. DMT should coordinate with block and gram Panchayat for relief materials. Pre-position of food stock should be ensured in the village by VDMC members along with relief DMT members. Keep all vulnerable groups confident to face the disaster and keep everyone ready for rescue, food, drink and safe shelters.

Disaster Management Teams

The villagers engaged in developing the plan can list from themselves motivated and responsible men, women and youth volunteers who can implement and supervise the activities of the disaster management plan for e.g. Members of the village youth clubs, women members of the village self help groups, literate youth of the village, school teachers, Auxiliary Nurse Midwife (ANM), ward members and so on. These individuals then form small action groups of 5 to 10 members each, depending on the convenience of the community. Each group can be given a particular responsibility and will have distinct activities to carry out before, during and after a disaster. The different DMT's can be as follows:

1. Warning Team
2. Evacuation and Response
3. First aid
4. Sanitation
5. Shelter management
6. Relief Management
7. Carcass disposal
8. Counseling
9. Damage Assessment
10. Reconstruction and Rehabilitation Team

These DMTs can be separate teams or activities can be combined depending upon the number of suitable volunteers available with the respective village. The DMT's have certain Standard Operating procedures in the three phases of disasters with their specific roles and responsibilities as mentioned in boxes.

Early Warning Team

Search, Rescue & Evacuation Team

Pre:

- Keep all lists ready. Specially the name of vulnerable people, fishermen, sick and ailing, children and women.
- Check and keep all equipment's/ materials required to evacuate and rescue villagers ready, such as cycle, bullock cart, rickshaw, boats etc. If any shortfall is found, it should immediately be arranged/replaced or repaired.
- For better transportation, bad roads or block roads should be repaired with the help of responsible Govt agencies.
- Dwellers of thatched / weak houses may be advised on how to retrofit their houses using locally available resources.
- Mound to be arranged to evacuate domestic animals with fodder. Farmers/people may be advised to set their domestic animals free.

During:

- Warn/prevent fisherman/farmers to venture outside during emergency.
- Help the evacuees to get in to their respective shelters with minimum belongings.
- Rush to the spot if any casualty informed, if require take the help of First Aid team.
- Arrange shifting of acute cases to the PHC.
- Advice evacuees to maintain peace and sanitation during staying in the shelters.
- Keep vigil not allow anyone to go out during fatal time.
- If possible, try to find out missing persons within the community.

Post:

- Try to arrange vehicle/ boat to shift acute cases to the nearest hospital.
- Clean roads/garbage in order to establish proper transportation/ movement Help the people to go back their homes

Shelter Management Team

Pre:	During:	Post:
• Check well in advance the identified shelters in the community. Emphasis should be given to see whether the doors, windows, electrification, latrine, water tank etc. are in order. • Arrange dry ration, water, medicines, candle, kerosene, utensils for at least one week, out of village contingency fund. • The team would make necessary arrangements to keep proper health and sanitation during their staying. • Temporary latrines to be made separately for men and women. • Special arrangement should be made for pregnant women and ailing patients.	• Ensure that people come to shelters with some food/ water/ candle/ match box and other day to day requirements at least for three days. • Register the name of the evacuees. If anyone found missing inform the Search and Rescue Team immediately. • Make special arrangements for pregnant women and ailing persons. • The team should strictly maintain health/ hygiene in the shelter. • Evacuees may be asked to use their own foodstuff first. Emphasis to be given to given on the use of safe drinking water. • Emphasis should be given to maintain peace in the shelters. People should be especially motivated and persuaded not to pay any heed to rumors. • The team may arrange activities (Bhajan/ Kirtan etc) to divert the attention of the panicked people.	• Provide all kind of support to the people so as to help them go back to their homes. • Arrange/ collect relief items from other sources to maintain buffer stock. • Maintain cleanliness inside and outside the shelter. • Make necessary arrangement to have community feast. • Make necessary arrangements to repair, if any, shelters immediately after the event is over. • Support other teams. • Submit expenditure report, if any, to VDMC.

Sanitation Team		
Pre: • Collect disinfectants from nearest PHC/ ANM. • Collect kerosene/petrol/ fire wood to destroy decomposed bodies in advance. • Ensure regular disinfections of tube wells by RWS & S Dept. • Take measures to protect water sources from polluting due to flood. • Arrange/ use lime to purify pond/ well etc. • Arrange temporary latrines near cyclone shelter with adequate disinfectants. • Keep the sewerage system clean.	**During:** • Ensure proper sanitation near shelters. • Arrange/ ensure evacuees take boiled/ purified water for drinking. • Inform/demonstrate how to use chlorine/ halogen tabs for drinking water. • Use disinfectants in the wells/tube wells. • Ensure that the water reserved by shelter management team is safe enough to use.	**Post:** • Use disinfectants to keep the community out of spreading epidemics. • Help Rescue Team to clean garbage. • Help the Carcass Disposal Team to destroy dead bodies of animals. • Use disinfectants in those areas for better hygiene. • In case of human dead bodies take the permission of the concerned/ authorized government department. • Document and should keep photographs of the deceased person for identification in the future. • Make the community aware regarding the use of disinfectants for drinking water and ensure that people follow it.

Relief Team		
Pre:	**During:**	**Post:**
• Arrange stock of dry food, water, baby food, medicine, fuel and other necessary items according to the population beforehand to face any kind of eventuality. • Support/ help Block functionaries to stock foodstuff in the specified places. • Arrange materials for providing temporary shelter, such as bamboo sticks, rope, polythene sheets, cutter, Shaw, straw etc. • Store fodder and medicines for the domestic animals. • Estimate and arrange dry food requirements for the specified shelters at least for the first three days.	• Store required amount of relief materials in the specified shelters. • Make individual family card for the evacuees to distribute dry food ration properly. • Distribute the food stuff and proper care should be taken to see that no individual is left out. • The team member should inform the leader about any shortfall or additional requirements.	• Arrange Govt/ Non-Govt relief and help them to make proper distribution. • Give proper beneficiary list to the external relief teams/ organizations. • Ensure that the Damage Assessment Team make proper report and submit it as quickly as possible to the different organizations to avail adequate benefit to the victims. • Arrange food and other assistance for the people who need more support from the community.

A little detailed discussion around mock drills and SoP for organising mock drills can also be initiated.

GROUP WORK (45 minutes)

Instead of a lecture method, the trainer can use a group activity for the VDMC and DMT formulation component of this unit. Trainer can Form 4-5 working groups of participants and ask them to identify the key personnel's according to them who would suit the best to be VDMC members at village levels. Further different DMTs can

be assigned to different groups and they can be asked to brainstorm and chalk out the SOPs for their respective DMT in both pre and post disaster phases. Groups can then be asked to make formal presentations and discuss the same.

Trainer Note: For more learning and understanding about the Village Level Disaster Management Plans and details about the SOPs of DMTs in pre and post disaster scenario the Trainer can refer to the VDMP Module developed by NIDM.

Session 3.4: Integration of DRR into Gram Panchayat Development Plans (GPDP)

Duration: 160 minutes

Training Methodology: Power Point Presentation, Discussion, Problem Solving

Training Note: The trainer/ facilitator may like to show some video, encourage participants to share their views about what constitutes in a Gram Panchyat plan and if they feel it important to integrate DRR activities with GPDPs considering by now they have a fair idea about the country's hazard and vulnerability profile.

Technical Notes

Gram Panchayats have been mandated for the preparation of Gram Panchayat Development Plan (GPDP) for economic development and social justice utilising the resources available with them. The GPDP planning process has to be comprehensive and based on participatory process which involves the full convergence with Schemes of all related Central Ministries / Line Departments related to 29 subjects enlisted in the Eleventh Schedule of the Constitution. Panchayats have a significant role to play in the effective and efficient implementation of flagship schemes on subjects of National importance for transformation of rural India. The People's Plan campaign initiated under "Sabki Yojana Sabka Vikas" has been an intensive and structured exercise for planning at Gram Sabha through convergence between Panchayati Raj Institutions (PRIs) and concerned Line Departments of the State. Juxtapose, these plans cannot be seen in isolation and must be integrated with adequate measures for disaster risk reduction for sustainable development of the rural sector and its economy.

The main objectives that drive GPDP are:

i. To schedule and manage Special Gram Sabha at Gram Panchayat Level.

ii. To help in Uploading Geo tagged photographs of the Gram Sabha meetings and Public Information Board.

iii. Provide feedback by the facilitator online about the special Gram Sabha.

Integration of Disaster Risk Reduction into GPDP

Gram Panchayats (GPs) are local level institutions which can play an important role in resolving the impacts of local hazard related concerns by investing in preparedness and mitigation in mobilising community members for this cause. GPs are accountable to villages and their proactive involvement can go a long way in addressing local solutions for preventive and protective measures against disasters and facilitate saving of lives and properties. GPs can act as catalyst to facilitate tapping of traditional wisdom and indigenous knowledge of local communities in sync with modern mitigation measures for disaster risk reduction. These efforts can compliment the integration of various developmental concerns at the grass root level. Alongside, it is being harped that communities especially rural and peri-urban must be encouraged and motivated to develop their own short- and long-term disaster management plans for which GPs can build the capacities. During the Gram Sabha meet for discussing the visioning exercise and situation analysis in GPDP, efforts must be made to synergise with hazard, risk and vulnerability assessments as well. Information and data on disaster management must also be collected. Moreover, emdedded community-based monitoring system is imperative in GPDP to ensure effective operationalisation of disaster mitigation and management strategies at local levels.

GROUP WORK (30-45 minutes)

Trainer can form 4-5 working groups of participants and can be encouraged to brush through all the chosen schemes by different groups and cull out their prominent features and activities/key components along with scope for their convergence with other Schemes and then, deliberate upon the various DRR interventions which can be integrated in each of the schemes. Groups can then be asked to make formal presentations and discuss the same. Other Schemes which can be discussed depending upon the schedule and time available, are as follows:

- RKVY (Rashtriya Krishi Vikas Yojana (RKVY)
- NFSM (National Food Security Mission)
- NMSA (National Mission for Sustainable Agriculture)
- KCC (Kissan Credit Card)
- PMFBY (Pradhan Mantri Fasal Bhima Yojana)
- PKVY (Paramparagat Krishi Vikas Yojna)
- NPOF (National Project on Organic Farming)
- MKSP (Mahilakisan Sashaktikaran Pariyojana)
- NHM (National Horticulture Mission)

- MIDH (Mission for Integrated Development of Horticulture)
- NLM (National Livestock Mission)

Few Flagship Schemes/ Programmes run by Ministry of Rural Development:

Name of the Programme	Key Components of the Scheme	Suggested DRR Interventions	Scope for Convergence
Prime Minister Awas Yojana (PMAY)			
Mahatma Gandhi National Employment Guarantee scheme			
Pradhan Mantri Gram Sadak Yojana			
National Rural Health Mission			

Trainer may like to add few more Schemes based on the profile of the participants

Reading References:

1. Role of Panchayats in Disaster: A New Vista for Disaster Management: Article (https://www.ijcmas.com/special/7/Debabrata%20Mondal,%20et%20al.pdf)
2. Training Module on Village Disaster Management Plan-NIDM (http://nidm.gov.in/PDF/modules/village.pdf)
3. Community Based Disaster Management: Empowering Communities to Cope with Disaster Risks; Bishnu Pandey and Kenji Okazaki- United Nations Centre for Regional Development, Japan https://pdfs.semanticscholar.org/b76c/55e5d2b32d900aa765e4aefe01540ba6cffa.pdf
4. Building PRI capacities for Disaster Preparedness and Management: Training Manual; GoI-UNDP Disaster Risk Management Programme 2002-2009 https://www.preventionweb.net/files/13483_Pri.pdf

Case Study: Gujarat's Drought Mitigation Strategies

Location: Gujarat, India

Event Overview: Gujarat, frequently affected by droughts, has adopted innovative strategies to address the challenges posed by recurrent water scarcity and climate variability.

Key Initiatives:

1. **Participatory Groundwater Management:** Involving communities in managing local water resources to optimise usage and replenish groundwater levels.
2. **Watershed Development Projects:** Implementing projects to enhance water conservation, improve soil quality, and reduce erosion, thus ensuring sustainable water availability.
3. **Promotion of Drought-Resistant Crops:** Encouraging the cultivation of crops that require less water and are more resilient to drought conditions.

Impact and Significance:

- **Enhanced Adaptive Capacities:** These measures have significantly improved the ability of rural communities to adapt to and cope with drought conditions.
- **Reduced Vulnerability to Climate Variability:** By focusing on sustainable water management and agriculture practices, Gujarat has reduced its vulnerability to the impacts of climate change.
- **Sustainable Agricultural Practices:** The initiatives promote agricultural practices that are both sustainable and suited to the local environmental conditions.
- **Resilient Rural Livelihoods:** The state's approach has ensured the continuity and resilience of rural livelihoods in drought-prone areas.

Lessons Learned: Gujarat's experience demonstrates the importance of integrating disaster risk reduction (DRR) and climate change adaptation (CCA) into rural development strategies, particularly in regions prone to specific climate-related risks like droughts. The state's focus on participatory approaches and sustainable practices offers a model for other regions facing similar challenges. The case underscores the need for a holistic approach in addressing the intertwined issues of water scarcity, agricultural sustainability, and climate resilience, highlighting how effective management of natural resources can lead to resilient communities and sustainable livelihoods.

SUBMODULE 4

FIELD VISIT

Learning Objectives

At the end of the session, participants should be able to:

- Understand and experience the practical part of the previous 3 sub sessions learning's'.

Duration: FULL DAY (10.00 a.m-17.00 p.m)

TRAINER NOTE: Field Visit

Field Trips are important to help bridge the gap between class room knowledge and hands-on experience. The purpose of any such trip is usually observation for education and non-experimental. It provides the participants an opportunity to have first-hand experiences along with a chance to interact with what they are learning by this way of unique social experience.

Identify a single village or more than one village in the neighborhood where the participants can be taken for a field visit to practically see and gather information related to hazards and vulnerabilities of the respective villages and also understand the status of the various rural development schemes implanted/ being implemented and how best DRR interventions can be strategised and incorporated.

Participants can be divided into different groups and either asked to collect information/data on the above in general across the village or may be asked to look at the village with specifically assigned schemes. Once they re-assemble in the class room, they can analyse all the learning's' with respect to resilience building of the particular study area they visited.

Participants must be adequately briefed before the start of the visit and may be provided inputs as and when need arises by the facilitator (s)/ trainer. The field visit must be planned in advance by the training course team in collaboration with the local Panchayat heads/ district administration and any relevant local NGO etc taking into account that the participants shall be able to get the desired facilitation for their field work and related information as part of their training.

SUBMODULE 5

RISK TO RESILIENCE BUILDING FOR SUSTAINABLE DEVELOPMENT

Learning Objectives

At the end of the session, participants should be able to:

- Examine the shift in focus and perspective from risk to resilience within disaster management approaches
- Explain strategies for mainstreaming disaster risk reduction into ongoing schemes
- Participants will also be introduced to the concept of 'climate-resilient development,' which ensures that development pathways are sustainable in the face of a changing climate.

Duration: 180 Minutes (10.00 a.m-1.00 p.m: excluding time for Lunch and Tea Break followed by Valedictory Session)

Equipments and Materials Needed:

Flip Charts, Markers, Pens, Sticky notes, Laptop, LCD/Projector, Chart papers, and Blackboard.

USEFUL HANDOUTS: 5, 6, 7, 10, 13, 14 & 15

Method(s):

- Interactive lecture presentation
- Questions and Answers
- Group Work
- Discussion

Session Plan

The trainer/ facilitator can start the session with a brief discussion regarding the previous days' field visit and the participants experience regarding the same. There can be an informal interaction about the contents of final sub module 5 to know about what the participants understand by policy implication and resilience building in the context of Rural Development.

Invite them to share their views and make a note of the points either on a flip chart or white board. Then make a brief presentation explaining the need for holistic resilience building and mainstreaming it with the SDGs. Gradually, move towards the different learning units of this sub-module.

Wrapping up the discussion: Form 4-5 working groups of participants (depending upon the size of the batch) and group work based on the sub sessions may be given for better brainstorming. Ask the working groups to share their findings and analysis in a presentation format including the learning's' from the field visit. This also encourages a two-way learning and makes the sessions more interesting and interactive. Give 5 minutes at the end for some questions and answers or scope for discussion on each presentation. Close the session with a presentation summing up the key learning from this session and highlighting the points from Sub Module.

Context

Developmental initiatives are foreseen within the context of specific sectors but both disaster risk reduction and climate change adaptation are not stand-alone sectors or programmes. Both DRR and CCA are cross-cutting and involve multiple sector integration and call for inter institutional processing. Hence, mainstreaming DRR and CCA essentially means integrating it into specific development sectors across a wide variety of institutions and stakeholders to ensure resilience building.

CCA and DRR efforts can therefore focus on building adaptive capacity, or on transforming that capacity into specific actions. An important part of CCA and DRR is the strengthening of social- ecological systems, and fostering them to be more resilient. Another is investing in innovations with the potential to transform systems along more sustainable pathways. While some of the threats from climate change may be relatively new, such as unprecedented climate conditions and extreme weather events which have detrimental impacts. Mainstreaming can also be a form of cross-sectoral policy integration. For example, there is a recognised need to take into account the potential long-term effects of climate change when making decisions concerning investments in long-lived infrastructure, or when providing development assistance that will shape future patterns of human settlement and livelihoods. Similarly, many aspects of CCA and DRR build on longstanding efforts, such as imbibing the 'build back better' mitigation concepts into developmental initiatives and thereby promote reducing the risk of impending disasters. Accordingly, it is clear that CCA and DRR have the potential to align closely with major development objectives. A specific focus will be on 'Co-benefits,' or strategies that simultaneously provide development benefits and climate resilience.

The expected benefits of mainstreaming climate change adaptation and disaster risk reduction into development activities include avoided policy conflicts; reduced risks and vulnerability; greater efficiency compared to managing CCA and DRR in silos, and; leveraging the much larger financial flows in sectors affected by climate risks than the amounts available for financing CCA and DRR separately. CCA and DRR policies need not develop specific and detailed response options, but rather facilitate their development and implementation as part of existing sectoral policies itself.

Session 5.1: Disaster Risk, Climate Change and Rural Development: Resilience Building

Duration: 60 minutes

Training Methodology: Power Point Presentation, Discussion

Training Note: The trainer/ facilitator may like to show some video, encourage participants to share their perspective about long term impacts of changing weather patterns and climate variability and how timely interventions in the development sector can minimise future risks associated with natural and human-induced hazards. Special attention will be given to gender-sensitive approaches in resilience building.

Technical Notes

Development opportunities face a growing threat from changing climate, particularly through the impact of more extreme events causing disasters. Organisation for Economic Co-operation and Development (OECD) estimates show that up to 50% of development assistance may be at risk because of climate change. Although, DRR and CCA measures have evolved in isolation, DRR can be seen as the first line of defense by dealing with climate variability's and therefore, become an essential part of adaptation. Conversely, for DRR to be successful, it needs to take account of the shifting risks associated with climate change and ensure that prevention and mitigation measures do not increase vulnerability to climate change in the medium to long-term.

Key Areas for Mainstreaming

Poverty Reduction

Agriculture and Rural livelihoods

Environmental Management

Land use Planning

Infrastructure

Case Study: Cyclone Impact Mitigation in Sunderbans Using MGNREGA and Finance Commission Funds

Source* Bikram Bahadur Das, Assistant Program Officer, P&RD, West Bengal

Location: Sunderbans, West Bengal, India

Overview: The Sunderbans region, encompassing parts of the South 24 Parganas and North 24 Parganas districts, faces frequent cyclones such as Aila, Bulbul, Fani, Amphan, and Yaas. These natural disasters cause severe challenges, including saline water flooding, destruction of homes and livelihoods, and increased soil salinity.

Key Initiatives:



1. **Riverbank Management through Mangrove Plantation:** Over a span of five years, a large-scale mangrove plantation was established along 500 km of river embankments using eco-friendly materials like jute bags, bamboo, and geo-jute.
2. **Catchment Management:** This strategy involved valley to ridge approaches, ridge and furrow methods, canal and creek restoration, and the development of farm ponds to reduce waterlogging and salinity.
3. **Livelihood Restoration through Natural Resource Management:** Initiatives such as homestead gardening, integrated farming systems, various agro-forestry

models, livestock rearing, and fishery were promoted to sustain livelihoods post-cyclone.



Source: Central Soil Salinity Research Institute, Canning Town

4. **Construction of Robust Embankments:** Utilising MGNREGA funds, both earthen and concrete embankments were constructed to provide long-term protection against future cyclones.

Impact and Significance:

- **Resilience Against Future Cyclones:** The region's defense mechanisms against cyclones were strengthened, reducing the impact on the community and environment.
- **Sustainable Livelihoods:** The focus on alternative livelihood strategies and natural resource management fortified the community's socio-economic framework.
- **Environmental Protection:** The mangrove plantations and catchment area management contributed significantly to the ecological balance and acted as natural barriers against cyclones.

INDIVIDUAL BENEFIT TO FARMERS BY EXCAVATING FRESH WATER PONDS UNDER MGNREGA



Lessons Learned:

This case study from the Sunderbans underscores the significance of integrating environmental conservation and sustainable livelihood practices in disaster risk reduction. It exemplifies the necessity of community involvement, resilient infrastructure, and natural resource management in mitigating the impacts of natural disasters. The initiatives demonstrate a model for other cyclone-prone regions, emphasising the importance of ecological balance in disaster management and sustainable development.

Session 5.2: Integrating DRR and CCA in Rural Development Schemes

Duration: 120 minutes

Training Methodology: Power Point Presentation, Discussion

Training Note: The trainer/ facilitator may initiate this session by recalling few previous learning units and linking it with the previous unit. This session can be culminated with a group work given to participants based on the inputs from field visit and brainstorming on integrating DRR and CCA measures into Rural Development Schemes and Programmes.

Technical Notes

In the last two decades globally, there has been an exponential increase in the frequency and intensity of disasters whose economic impact has proved to be devastating for many a developing country. These can be largely attributed to the failures of development policies and practices that distort the trajectories of sustainable development, affecting the poorest sections the most. Therefore, integrating disaster risk reduction and adaptation will help enable us to manage climate risks into an important concern of rehabilitation that will fulfill the ultimate goal of empowering the poor by securing their livelihoods. This is so emphasised because even the slightest shifts in climate averages can have damaging impacts on livelihoods, particularly in marginal areas. Further, being an agrarian Nation, most rural population in India is still dependent on the natural resource base (such as water, soil, forest, and ecosystem services), which is sensitive to both episodic and extreme climate events. Most vulnerable section of our communities' posses limited capacities to cope. Recurrent exposure to adverse climate conditions (for example, prolonged droughts or recurrent floods) or to extreme climate events, can further weaken their capacity to cope and diminish their livelihood resources. Therefore, all schemes and projects related to rural development must be carefully designed to enhance the capacity to adapt to long-term climate changes.

Ministry of Home Affairs (MHA), the nodal ministry for disaster management, is of the view that the Centrally Sponsored Schemes (CSS) or National Flagship Schemes are ideal vehicles for mainstreaming/integrating DRR and CCA principles and measures. Since the CSS programmes span sectors such as housing, health, rural development and urban infrastructure aimed at creating opportunities for the poor and marginalised sections to enter the socio-economic space, investing them with DRR and CCA elements has the potential to create resilience among the poor and disadvantaged sections, both in the sense of being able to withstand disaster risk and move towards sustainable development.

Bringing together the dimensions of disaster risk reduction and climate change adaptation into rural livelihood projects involvement can be conducted. As societies and risks are dynamic and ever changing, each step is not a one-time exercise and must be constantly performed and updated throughout the project implementation cycle and hence is a cyclic process.

Knowing something in advance enables us to prepare well. Assessing current and future climate risks in the project communities allows us to design livelihood programs that take these risks into consideration and prepare the communities and their livelihoods for the changes and risks that may occur. To assess climate risks, we need to understand historically what the community's "normal" climate pattern has been over time, and if there are deviations or departures from this regular pattern, which presents risks. Based on the observed changes, go further and try to anticipate how the risks will change because of changing climate. As project managers and planners, we will have to understand the climate patterns in the setting of the livelihood project, both in the context of regional and global climate change. This will help in ensuring that livelihood projects are planned and developed in a sustainable way, and are designed to adapt to some expected climate changes.

GROUP WORK (90 minutes)

Trainer can form 4-5 working groups of participants and ask them to brainstorm DRR & CCA interventions in them. Groups can then be asked to make formal presentations and discuss the same. Other Schemes which can be discussed depending upon the schedule and time available, the trainer can discuss them as well.

Trainer Note: Since this shall be the last day of the training programme, post lunch a formal/informal valedictory session can be organised and a road map ahead can be discussed before wrapping up the course.

Case Study: Tamil Nadu Coastal Zone Management Project

Location: Tamil Nadu, India

Project Overview: The Tamil Nadu Coastal Zone Management Project is a pioneering initiative that seamlessly integrates Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) into coastal development strategies. This project is a testament to the effectiveness of blending environmental conservation with community resilience against natural disasters.

Key Components:

1. **Resilient Infrastructure Development:** Building structures that can withstand the impacts of cyclones and sea-level rise.
2. **Sustainable Fishing Practices:** Encouraging fishing methods that are ecologically sustainable and economically viable.
3. **Mangrove Reforestation:** Enhancing mangrove cover along the coast to act as a natural barrier against storm surges and coastal erosion.
4. **Community Engagement:** Actively involving local communities in understanding and managing climate risks.
5. **Education and Awareness:** Conducting awareness programs to educate the community about climate change impacts and adaptive measures.

Impact and Significance:

- **Environmental Protection:** The project emphasises the restoration and conservation of coastal ecosystems, crucial in mitigating the effects of climate change.
- **Economic Stability:** By promoting sustainable livelihoods, it ensures the long-term economic well-being of the coastal communities.
- **Disaster Resilience:** Enhances the capacity of communities and ecosystems to withstand and recover from natural disasters like cyclones.
- **Holistic Development Approach:** Demonstrates the importance of integrating environmental and social dimensions in development planning.

Lessons Learned: The Tamil Nadu Coastal Zone Management Project exemplifies the benefits of a multi-sectorial approach in integrating DRR and CCA into development initiatives. It highlights the critical role of community participation and the need for sustainable practices in building resilience to climate change and natural disasters. The project serves as a model for similar coastal regions facing the dual challenges of disaster risk and climate change impacts.

One-Day Training Module for Policymakers: Integrating DRR & CCA in Rural Development

Page 1: Introduction and Overview

- **Module Objective**: Equip policymakers with essential knowledge and tools to integrate DRR and CCA into rural development policies effectively.
- **Scope and Relevance**: Brief on the significance of DRR and CCA in the context of rural India, emphasising the unique challenges and opportunities.
- **Agenda for the Day**: A concise schedule, including interactive sessions, case studies, and a panel discussion.

Page 2: Key Concepts and Frameworks

- **Understanding DRR and CCA**: Definitions, importance, and their interlinkages with rural development.
- **Policy Frameworks in India**: Overview of existing national policies and programs related to DRR, CCA, and rural development.
- **Best Practices and Global Examples**: Brief examples from India and other countries showcasing successful integration of DRR and CCA in rural development.

Page 3: Sector-Specific Strategies and Implementation

- **Agriculture and Natural Resources**: Strategies for integrating DRR and CCA in agriculture, water resource management, and biodiversity conservation.
- **Infrastructure and Social Services**: Guidelines for developing resilient infrastructure (transportation, energy, healthcare, and education).
- **Community Engagement and Empowerment**: Importance of involving local communities, with a focus on women and marginalised groups in DRR and CCA initiatives.

Page 4: Action Planning and Policy Formulation

- **Developing an Integrated Policy Approach**: Steps for policymakers to create integrated, sustainable, and resilient rural development policies.
- **Monitoring and Evaluation Framework**: Key indicators and mechanisms for assessing the effectiveness of DRR and CCA integration in rural development policies.

- **Way Forward**: Encouraging proactive and continuous engagement in DRR and CCA policy formulation.

Introduction and Overview

Module Objective: This training module aims to equip policymakers with essential knowledge and tools to effectively integrate Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) into rural development policies. The module is designed to enhance understanding of the complexities and interdependencies of DRR and CCA within the context of rural development, providing a foundation for informed decision-making and policy formulation.

Scope and Relevance: In India, rural areas are particularly vulnerable to the impacts of climate change and natural disasters. The integration of DRR and CCA into rural development policies is not just a necessity but a strategic approach to enhance the resilience of these communities. This module will cover the unique challenges faced by rural India, such as limited infrastructure, high dependence on agriculture, and socioeconomic vulnerabilities. It will also highlight the opportunities that effective integration of DRR and CCA can bring, such as sustainable development, improved livelihoods, and enhanced community resilience.

Agenda for the Day: The training session is structured to maximise learning and engagement through a blend of theoretical knowledge and practical application. It can tentatively be designed as following example:

- **09:00 - 09:30:** Registration and Welcome
- **09:30 - 10:00:** Introduction to the Training Module and Participants
- **10:00 - 11:00:** Overview of Disaster Risk Reduction and Climate Change Adaptation: Key Concepts and Their Importance in Rural Development
- **11:00 - 11:15:** Coffee Break
- **11:15 - 12:30:** Interactive Session: Exploring the Interlinkages between DRR, CCA, and Rural Development
- **12:30 - 13:30:** Lunch Break
- **13:30 - 14:30:** Case Study Analysis: Lessons Learned from India and Beyond
- **14:30 - 15:30:** Group Discussion: Challenges and Opportunities in Integrating DRR and CCA into Rural Development Policies

- **15:30 - 15:45:** Tea Break
- **15:45 - 16:45:** Panel Discussion with Experts: Strategies for Effective Policy Integration
- **16:45 - 17:00:** Conclusion: Recap of the Day and Closing Remarks

Note: Each session is designed to encourage active participation, with a focus on real-world applications and policy implications. The case studies and group discussions will particularly enable participants to relate the theoretical aspects with practical scenarios, facilitating a deeper understanding of the subject matter.

Key Concepts and Frameworks

Understanding DRR and CCA

Definitions and Importance:

- **Disaster Risk Reduction (DRR):** Refers to the systematic approach to identifying, assessing, and reducing the risks of disaster. It aims to reduce socio-economic vulnerabilities to disaster as well as dealing with the environmental and other hazards that trigger them.
- **Climate Change Adaptation (CCA):** Involves adjusting policies, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change.

Interlinkages with Rural Development:

- Both DRR and CCA are integral to sustainable rural development. Their integration helps in building resilient communities that can adapt to climate change, mitigate the impacts of disasters, and maintain the ecological balance.
- This integration is crucial for the agriculture sector, which is highly vulnerable to climate change and natural disasters, impacting food security, livelihoods, and economic stability in rural areas.

Policy Frameworks in India

Overview of Existing National Policies and Programs:

- **Disaster Management Act of 2005:** Establishes a comprehensive framework for disaster management in India. It provides for the establishment of the National Disaster Management Authority (NDMA), State Disaster Management Authorities, and District Disaster Management Authorities.

- **National Action Plan on Climate Change (NAPCC):** Outlines India's strategy to tackle climate change and promotes sustainable development. It includes missions in various sectors like agriculture, water, Himalayan ecosystems, and others.
- **National Disaster Management Plan (NDMP):** Aligns with the Sendai Framework for Disaster Risk Reduction and incorporates climate change adaptation strategies.

Relevance to Rural Development:

- These policies and frameworks emphasise the importance of integrating DRR and CCA into rural development planning. They provide guidelines for policymakers to develop strategies that are resilient to disasters and adaptive to climate change, particularly in rural contexts.

Best Practices and Global Examples

Example from India: The integration of DRR and CCA in the state of Odisha's disaster management strategy, particularly post the 1999 super cyclone, which significantly reduced the impacts of subsequent cyclones.

Case Study: Odisha, India - Integrating DRR and CCA Post the 1999 Super Cyclone

Background:

In 1999, Odisha was hit by a super cyclone that caused immense loss of life and property. This disaster highlighted the need for a robust disaster management strategy incorporating both DRR and CCA.

Strategy and Implementation:

- **Early Warning Systems**: Post-1999, Odisha invested heavily in early warning systems and improved weather forecasting. This allowed for timely evacuation plans and preparedness measures.
- **Community-Based Approach**: The state emphasised community involvement in disaster preparedness. Local volunteers were trained in first aid, rescue operations, and relief distribution.
- **Infrastructure Development**: Odisha focused on building cyclone shelters and strengthening coastal embankments. These structures were designed to withstand severe weather conditions.
- **Sustainable Agriculture Practices**: The state introduced climate-resilient agricultural practices to reduce the vulnerability of the agricultural sector to cyclones and flooding.

- **Policy Integration**: DRR and CCA were integrated into state development policies, ensuring that all development initiatives consider disaster and climate risks.

Outcomes:

- The subsequent cyclones, like Phailin (2013) and Fani (2019), saw remarkably lower casualty rates compared to 1999, showcasing the effectiveness of the integrated approach in DRR and CCA.
- Odisha has become a model state in India for disaster management, demonstrating how policy, community engagement, and technology can work together to mitigate the impacts of natural disasters.

Case Study: Bangladesh - Community-Based Approaches to Flood Management

Background:

Bangladesh is prone to severe flooding, exacerbated by climate change. To address this, the country adopted community-based strategies to enhance flood resilience.

Strategy and Implementation:

- **Community Participation**: Local communities were actively involved in flood management plans. This included identifying flood-prone areas and developing localised response strategies.
- **Knowledge Sharing**: There was a focus on sharing traditional knowledge and practices related to flood management, which were then integrated into broader strategies.
- **Infrastructure Development**: The construction of raised platforms for housing, community centers, and livestock shelters in flood-prone areas helped minimise flood damage.
- **Early Warning Systems**: Community-based early warning systems were established, utilising local networks to disseminate warnings quickly and effectively.
- **Livelihood Diversification**: Efforts were made to diversify livelihoods to reduce economic vulnerability to floods. This included training in alternative income-generating activities not dependent on flood-prone areas.

Outcomes:

- Enhanced community resilience against flooding, with reduced loss of life and livelihoods.

- Increased awareness and preparedness among local populations regarding flood risks.
- The approach has been recognised globally as a successful example of integrating local knowledge and participation in DRR and CCA initiatives.

These case studies from Odisha and Bangladesh illustrate the importance of an integrated approach to DRR and CCA, emphasising community involvement, policy integration, and sustainable practices. They provide valuable lessons for policymakers in framing effective strategies for rural development in the context of disaster risk and climate change.

Sector-Specific Strategies and Implementation

Agriculture and Natural Resources

Strategies for Integrating DRR and CCA:

- **Climate-Resilient Agriculture Practices:** Implementing agricultural practices that are resilient to climate variability, such as drought-resistant crops, rainwater harvesting, and efficient irrigation techniques.
- **Diversification of Crops and Income:** Encouraging the diversification of crops and income sources to reduce vulnerability to climate-related shocks.
- **Integrated Water Resource Management:** Developing policies for sustainable water use and conservation, including the creation of community-managed water bodies and effective watershed management.
- **Biodiversity Conservation:** Protecting and restoring ecosystems that support agriculture and livelihoods, such as wetlands, forests, and coastal areas, which also act as natural barriers against disasters.

Infrastructure and Social Services

Guidelines for Developing Resilient Infrastructure:

- **Design and Construction:** Ensuring that infrastructure, including roads, bridges, and buildings, is designed and constructed to withstand the impacts of natural disasters and climate change.
- **Renewable Energy Sources:** Promoting the use of renewable energy sources to reduce dependency on conventional power sources and to increase energy security in rural areas.

- **Healthcare and Education:** Strengthening healthcare and educational facilities to be disaster-resilient, ensuring continuity of essential services during and after disasters.
- **Technology Integration:** Utilising technology for early warning systems, disaster risk mapping, and to enhance the overall resilience of infrastructure.

Social Services:

- Enhancing social safety nets and insurance schemes for rural populations to mitigate the economic impacts of disasters and climate change.
- Developing capacity-building programs to educate communities about DRR and CCA.

Community Engagement and Empowerment

Involving Local Communities:

- **Participatory Approaches:** Encouraging participatory approaches in DRR and CCA planning, ensuring that local knowledge and needs are incorporated into policy and practice.
- **Empowerment of Women and Marginalised Groups:** Recognising the vital role women and marginalised groups play in DRR and CCA, and ensuring their active participation and leadership in these initiatives.
- **Capacity Building and Training:** Providing regular training and capacity-building programs for local communities to enhance their understanding and skills in DRR and CCA.
- **Local Resource Utilisation:** Encouraging the use of local resources and traditional practices in DRR and CCA strategies, which are often more sustainable and culturally appropriate.

Key Takeaways:

- Effective integration of DRR and CCA in agriculture, infrastructure, and social services requires a holistic approach that encompasses technical, social, and environmental aspects.
- Community engagement and empowerment are fundamental for the successful implementation of DRR and CCA strategies, as local knowledge and participation significantly contribute to the resilience of rural communities.

Developing an Integrated Policy Approach

Steps for Policymakers:

1. **Assessment of Current Policies:** Review and assess existing policies related to rural development, DRR, and CCA. Identify gaps and areas for improvement.
2. **Stakeholder Engagement:** Involve a diverse range of stakeholders, including community leaders, NGOs, experts, and government agencies, to gather a wide range of perspectives and expertise.
3. **Risk Assessment and Management:** Conduct thorough risk assessments to understand the specific risks and vulnerabilities of rural areas to disasters and climate change.
4. **Integration of DRR and CCA:** Develop policies that integrate DRR and CCA into all aspects of rural development. This should include considerations for agriculture, infrastructure, health, and education.
5. **Sustainability and Resilience Focus:** Ensure that policies promote sustainability and resilience, addressing both immediate and long-term needs of rural communities.
6. **Implementation Strategy:** Develop a clear implementation strategy, including timelines, responsibilities, and resource allocation.
7. **Continuous Learning and Adaptation:** Policies should be dynamic, allowing for adaptation based on new research, emerging risks, and feedback from implementation.

Monitoring and Evaluation Framework

Key Indicators and Mechanisms:

- **Performance Indicators:** Establish clear, measurable indicators for DRR and CCA integration. This may include metrics related to disaster response times, recovery rates, climate adaptation measures, and community resilience.
- **Regular Reviews:** Implement regular review processes to assess the progress and effectiveness of policies. This should involve both quantitative and qualitative evaluations.

- **Feedback Mechanisms:** Create channels for feedback from communities and stakeholders, ensuring that policies are responsive to the needs and experiences of those affected.
- **Data Collection and Analysis:** Utilise data collection and analysis tools to monitor indicators and inform policy adjustments.
- **Learning and Sharing:** Facilitate learning and sharing of best practices, challenges, and experiences among policymakers and practitioners at local, national, and international levels.

Way Forward

Encouraging Proactive and Continuous Engagement:

- **Capacity Building:** Continuously build the capacity of policymakers and practitioners in DRR and CCA through training, workshops, and exposure visits.
- **Collaboration and Partnerships:** Foster collaboration and partnerships across sectors and disciplines to enhance policy coherence and effectiveness.
- **Innovation and Research:** Encourage innovation and research in DRR and CCA to develop new solutions and improve existing practices.
- **Community-Centric Approach:** Maintain a community-centric approach in policy formulation, ensuring that policies are grounded in the realities and needs of rural communities.
- **Policy Advocacy:** Advocate for DRR and CCA integration at all levels of government, emphasising its importance for sustainable rural development.

Conclusion: Developing integrated, sustainable, and resilient rural development policies requires a collaborative, informed, and proactive approach. Policymakers must engage with diverse stakeholders, continuously assess and adapt policies, and foster a culture of learning and innovation. By doing so, they can effectively integrate DRR and CCA into rural development, building stronger and more resilient rural communities.

Trainers' note: The trainer shall have the complete liberty to customise the content as per the participants' profile. Since, this shall be targeting the senior officials, panel discussion may also be explored as an option for running one sub-session.

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8) Abarquez, Imelda and Zubair Murshed (2004) Community-based Disaster Risk Management: Field Practitioners' Handbook. Bangkok: Asian Disaster Preparedness Center.

9) Building PRI Capacities for Disaster Preparedness and Management: Training Manual; GoI-UNDP Disaster Risk Management Programme 2002- 2009 https://www.preventionweb.net/fi les/13483_Pri.pdf

HANDOUTS

Handout 1: Basic Terms of Disaster Risk Reduction; UNISDR (2009)

Acceptable risk: The level of potential losses that a society or community considers acceptable given existing social, economic, political, cultural, technical and environmental conditions.

Adaptation: The adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

Anthropogenic Climate Change: Man-made climate change- climate change caused by human activities as opposed to natural processes. (BBC)

Biological hazard: Process or phenomenon of organic origin or conveyed by biological vectors, including exposure to pathogenic micro-organisms, toxins and bioactive substances that may cause loss of life, injury, illness or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Building code: A set of ordinances or regulations and associated standards intended to control aspects of the design, construction, materials, alteration and occupancy of structures that are necessary to ensure human safety and welfare, including resistance to collapse and damage.

Capacity: The combination of all the strengths, attributes and resources available within a community, society or organisation that can be used to achieve agreed goals.

Capacity Development: The process by which people, organisations and society systematically stimulate and develop their capacities over time to achieve social and economic goals, including through improvement of knowledge, skills, systems, and institutions.

Climate: The average of weather over at least a 30 year period. Note that the climate taken over different periods of time (30 years, 1,000 years) may be different. The old saying is climate is what we expect and weather is what we get. (NOAA/CPC)

Climatology

1. The description and scientific study of climate.
2. A quantitative description of climate showing the characteristic values of climate variables over a region.(CPC/NOAA)

Climate Anomaly: The deviation of a measurable unit, (e.g. temperature or precipitation) in a given region over a specified period from the long-term average, often the thirty year mean, for the same region. (NOAA/CPC)

Coping Capacity: The ability of people, organisations and systems, using available skills and resources, to face and manage adverse conditions, emergencies or disasters. (ISDR)

Climate change: (a) The Inter-governmental Panel on Climate Change (IPCC) defines climate change as: —a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcing or to persistent anthropogenic changes in the composition of the atmosphere or in land use‖. (b) The United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as —a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

Climate Extreme: A rare climatic situation, generally resulting from cumulative occurrence of weather extremes, causing extraordinary economic and social (loss of life or livelihood) damage. (IPCC, 2001 Third Assessment Report; Easter ling et al., 2000)

Critical facilities: The primary physical structures, technical facilities and systems which are socially, economically or operationally essential to the functioning of a society or community, both in routine circumstances and in the extreme circumstances of an emergency.

Climate Mean: The arithmetic average or the middle point between two extremes. (NOAA/CPC) also called climate normal.

Climate Modeling: An approximate numerical/mathematical representation of the Earth's climate system based on the physical, chemical and biological properties of its components, their interactions and feedback processes, and accounting for all or some of its known properties.

Contingency planning: A management process that analyses specific potential events or emerging situations that might threaten society or the environment and establishes arrangements in advance to enable timely, effective and appropriate responses to such events and situations.

Climate System: The system consisting of the atmosphere (gases), hydrosphere (water), lithosphere (solid rocky part of the Earth), and biosphere (living) that determine the Earth's climate. (NOAA CPC)

Climate Variability: Variations in the mean state and other statistics (such as standard deviations, the occurrence of extremes, etc.) of the climate on all temporal and spatial scales beyond that of individual weather events. The term is often used to denote deviations of climatic statistics over a given period of time (e.g. a month, season or year) from the long-term statistics relating to the corresponding calendar period. In this sense, climate variability is measured by those deviations, which are usually termed anomalies. Variability may be due to natural internal processes within the climate system (internal variability), or to variations in natural or anthropogenic external forcing (external variability). (WMO)

El Niño Southern Oscillation: ENSO referred to El Niño-Southern Oscillation, or the combined atmosphere/ocean system during an El Niño warm event. The ENSO cycle includes La Niña and El Niño phases as well as neutral phases, or ENSO cycle, of the coupled atmosphere/ ocean system though sometimes it is still used as originally defined. The Southern Oscillation is quantified by the Southern Oscillation Index (SOI). (NOAA/CPC)

Environmental impact assessment: Process by which the environmental consequences of a proposed project or programme are evaluated, undertaken as an integral part of planning and decision-making processes with a view to limiting or reducing the adverse impacts of the project or programme.

Exposure: People, property, systems, or other elements present in hazard zones that are thereby subject to potential losses.

Forecast: A weather forecast, or prediction, is an estimation based on special knowledge of the future state of the atmosphere with respect to temperature, precipitation, and wind. Weather forecasts are now routinely provided for up to 14 days in advance and outlooks for seasonal and longer timescales. (NOAA/CPC)

Forecast Skill: Quantification of the performance of a weather/climate prediction over and above the conditions expected based on climate statistics from the past records of allocation.

GCMs (General Circulation Models): These computer simulations reproduce the Earth's weather patterns and can be used to predict change in the weather and climate. (NOAA/CPC)

Geological hazard: Geological process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Greenhouse gases: Gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation of thermal infrared radiation emitted by the Earth's surface, the atmosphere itself, and by clouds.

Hazard: A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Hydro meteorological hazard: Process or phenomenon of atmospheric, hydrological or oceanographic nature that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Land-use planning: The process undertaken by public authorities to identify, evaluate and decide on different options for the use of land, including consideration of long term economic, social and environmental objectives and the implications for different communities and interest groups, and the subsequent formulation and promulgation of plans that describe the permitted or acceptable uses.

Livelihood: Comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base. (Scoones 2007)

Mitigation: The lessening or limitation of the adverse impacts of hazards and related disasters.

Monsoons: Seasonal winds. They are caused primarily by the greater annual variation in air temperature over large land surfaces compared to ocean surfaces though other factors like land- relief are important. (NOAA/CPC)

National platform for disaster risk reduction: A generic term for national mechanisms for coordination and policy guidance on disaster risk reduction that are multi-sectoral and interdisciplinary in nature, with public, private and civil society participation involving all concerned entities within a country.

(Natural) Hazard: Natural process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. (ISDR)

Non-structural measures: Any measure not involving physical construction that uses knowledge, practice or agreement to reduce risks and impacts, in particular through policies and laws, public awareness raising, training and education.

Preparedness: The knowledge and capacities developed by governments, professional response and recovery organisations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions.

Prevention: The outright avoidance of adverse impacts of hazards and related disasters.

Public awareness: The extent of common knowledge about disaster risks, the factors that lead to disasters and the actions that can be taken individually and collectively to reduce exposure and vulnerability to hazards.

Recovery: The restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors.

Residual risk: The risk that remains in unmanaged form, even when effective disaster risk reduction measures are in place, and for which emergency response and recovery capacities must be maintained.

Resilience: The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

Response: The provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduces health impacts, ensures public safety and meet the basic subsistence needs of the people affected.

Retrofitting: Reinforcement or upgrading of existing structures to become more resistant and resilient to the damaging effects of hazards.

Risk: The combination of the probability of an event and its negative consequences. (ISDR)

Risk assessment: A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods and the environment on which they depend.

Risk management: The systematic approach and practice of managing uncertainty to minimise potential harm and loss.

Risk transfer: The process of formally or informally shifting the financial consequences of particular risks from one party to another whereby a household, community, enterprise or state authority will obtain resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party.

Socio-natural hazard: The phenomenon of increased occurrence of certain geophysical and hydro meteorological hazard events, such as landslides, flooding, land subsidence and drought that arise from the interaction of natural hazards with overexploited or degraded land and environmental resources.

Spatial Resolution: Generally refers to the size, or aerial extent of the smallest spatial unit (grid box) that a climate/weather model uses to perform its mathematical calculation. It gives an idea of the scale of the weather phenomena that a particular model can be expected to detect.

Structural measures: Any physical construction to reduce or avoid possible impacts of hazards, or application of engineering techniques to achieve hazard-resistance and resilience in structures or systems;

Sustainable development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Technological hazard: A hazard originating from technological or industrial conditions, including accidents, dangerous procedures, infrastructure failures or specific human activities, that may cause loss of life, injury, illness or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Temporal Resolution: Is the size of the time segment (or step) that a climate/weather model uses to perform its mathematical calculation.

Weather: Weather is the specific condition of the atmosphere at a particular place and time. It is measured in terms of such things as wind, temperature, humidity, atmospheric pressure, cloudiness, and precipitation. In most places, weather can change from hour-to-hour, day-to-day, and season-to-season. (Weather Channel Interactive)

Vulnerability: The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.

Handout 2: **Hyogo Framework for Action (2005-2015)**

BUILDING THE RESILIENCE OF NATIONS AND COMMUNITIES TO DISASTERS

The HFA is a 10-year plan to make the world safer from natural hazards.

It was endorsed by the UN General Assembly in the RES/60/195 following the 2005 World Disaster Reduction Conference.

We blink: https://www.unisdr.org/files/8720_summaryHFP20052015.pdf

Priorities for Action: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation. Strong national and local commitment is required to save lives and livelihoods threatened by natural hazards. They must also allocate sufficient resources to support and maintain them. This includes: Creating effective, multi-sector national platforms to provide policy guidance and to coordinate activities; Integrating disaster risk reduction into development policies and planning, such as Poverty Reduction Strategies; and, Ensuring community participation, so that local needs are met. Make Disaster Risk Reduction a Priority Collaboration is Key Madagascar's National Platform for Disaster Reduction includes: Government departments, such as Education, Water, Transport and Communication, Agriculture and Livestock, Land, and the Office of the Prime Minister; NGOs; the media; the donor community; and the UN. It carries out disaster reduction training, and has enhanced disaster preparedness by constructing cyclone refuges.

Priorities to Identify, assess, and monitor disaster risks - and enhance early warning: Identify, assess, and monitor disaster risks - and enhance early warning. To reduce their vulnerability to natural hazards, countries and communities must know the risks that they face, and take actions based on that knowledge. Understanding risk requires investment in scientific, technical, and institutional capabilities to observe, record, research, analyse, forecast, model and map natural hazards. Tools need to be developed and disseminated: statistical information about disaster events, risk maps, disaster vulnerability and risk indicators are essential. Most importantly, countries need to use this knowledge to develop effective early warning systems, appropriately adapted to the unique circumstances of the people at risk. Early warning is widely accepted as a crucial component of disaster risk reduction. This early warning system has proven its effectiveness. During 2004, when Hurricane Charley hit, 70,000 houses

were severely damaged and four people were killed. When Hurricane Ivan struck the following month, over 2 million people were evacuated. No one was killed.

Priorities to use knowledge, innovation, and education to build a culture of safety and resilience at all levels: Use knowledge, innovation, and education to build a culture of safety and resilience at all levels. Disasters can be reduced substantially if people are well informed about measures they can take to reduce vulnerability - and if they are motivated to act. Key activities to increase awareness of disaster prevention include: Providing relevant information on disaster risks and means of protection, especially for citisens in high-risk areas; Strengthening networks and promoting dialogue and cooperation among disaster experts, technical and scientific specialists, planners and other stakeholders; Including disaster risk reduction subject matter in formal, non-formal, and informal education and training activities; Developing or strengthening community-based disaster risk management programmes; and, Working with the media in disaster risk reduction awareness activities. Local Knowledge is Critical for Disaster Reduction.

Priority to reduce the underlying risk factors: Reduce the underlying risk factors. Vulnerability to natural hazards is increased in many ways, for example: Locating communities in hazard-prone areas, such as flood plains; Destroying forests and wetlands, thereby harming the capacity of the environment to withstand hazards; Building public facilities and housing unable to withstand the impacts of hazards; and, not having social and financial safety mechanisms in place. Countries can build resilience to disasters by investing in simple, well-known measures to reduce risk and vulnerability. Disasters can be reduced by applying relevant building standards to protect critical infrastructure, such as schools, hospitals and homes. Vulnerable buildings can be retrofitted to a higher degree of safety. Protecting precious ecosystems, such as coral reefs and mangrove forests, allow them to act as natural storm barriers. Effective insurance and micro- finance initiatives can help to transfer risks and provide additional resources. Building Resilience Protects Communities Unsafe buildings and the lack or non-enforcement of building codes often cause more deaths than natural hazards themselves.

Priority to be prepared and ready to Act: Strengthen disaster preparedness for effective response at all levels. Being prepared, including conducting risk assessments, before investing in development at all levels of society will enable people to become more resilient to natural hazards. Preparedness involves many types of activities, including: The development and regular testing of contingency plans; the establishment of emergency funds to support preparedness, response and recovery activities; the development of coordinated regional approaches for effective disaster response; and, Continuous dialogue between response agencies, planners and policy-makers, and development organisations. Regular disaster preparedness exercises, including evacuation drills, also are key to ensuring rapid and effective disaster response. Effective preparedness plans and organisation also help to cope with the many small and medium-sized disasters that repeatedly occur in so many communities. Natural hazards cannot be prevented, but it is possible to reduce their impacts by reducing the vulnerability of people and their livelihoods.

Handout 3: **Sendai Framework for Action (2015-2030)**

MAKING THE DIFFERENCE FOR POVERTY, HEALTH AND RESILIENCE

The Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) is the first major agreement of the post-2015 development agenda, with seven targets and four priorities for action. It was Assembly following *the 2015 Third UN World Conference on Disaster Risk Reduction (WCDRR).*

We blink: ***https://www.unisdr.org/we/coordinate/sendai-framework***

The Sendai Framework is a 15-year, voluntary, non-binding agreement which recognises that the State has the primary role to reduce disaster risk but that responsibility should be shared with other stakeholders including local government, the private sector and other stakeholders. It aims for the following outcome:

The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.

The Sendai Framework is the successor instrument to the Hyogo Framework for Action (HFA)2005-2015: Building the Resilience of Nations and Communities to Disasters. It is the outcome of stakeholder consultations initiated in March 2012 and inter-governmental negotiations held from July 2014 to March 2015, which were supported by the UNISDR upon the request of the UN General Assembly. UNISDR has been tasked to support the implementation, follow-up and review of the Sendai Frame work.

The Seven Global Targets

(a) Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality rate in the decade 2020-2030 compared to the period 2005-2015.

(b) Substantially reduce the number of affected people globally by 2030, aiming to lower average global figure per 100,000 in the decade 2020 -2030 compared to the period 2005-2015.

(c) Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.

(d) Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.

(e) Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020.

(f) Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this Framework by 2030.

(g) Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030.

The Four Priorities for Action

Priority 1. Understanding disaster risk

Disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be used for risk assessment, prevention, mitigation, preparedness and response.

Priority 2. Strengthening disaster risk governance to manage disaster risk

Disaster risk governance at the national, regional and global levels is very important for prevention, mitigation, preparedness, response, recovery, and rehabilitation. It fosters collaboration and partnership.

Priority 3. Investing in disaster risk reduction for resilience

Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment.

Priority 4. Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction

The growth of disaster risk means there is a need to strengthen disaster preparedness for response, take action in anticipation of events, and ensure capacities are in place for effective response and recovery at all levels. The recovery, rehabilitation and reconstruction phase is a critical opportunity to build back better, including through integrating disaster risk reduction into development measures.

Handout 4: Sustainable Development Goals (SDGs)



Handout 5: Potential Impact of Climate Change on the Sustainable Development Goals

The impact of the climate agreement on global development by 2030 will be significant and, although it is unlikely to significantly impact global warming or the frequency and severity of weather-related disasters in the period up to 2030, it will play a major role thereafter. A high- ambition agreement that provides a clear policy framework for action on climate change, incentivises international cooperation, and mobilises additional resources for mitigation and adaptation activities is essential to give us the best chance of achieving the SDGs by 2030. Likewise, strong SDGs will help to lay the policy groundwork for achieving and implementing a more ambitious climate agreement impacts on development over the next 15 years, including economic impacts, under two scenarios for the 2015 climate change agreement: a high-ambition agreement and a low-ambition agreement, with associated policies and levels of investment in mitigation and adaptation. The high-ambition scenario used is based on the UNFCCC aim to limit global warming to a 2°C increase on pre-industrial temperatures. We have associated this higher ambition scenario with the nearest RCP, RCP 4.5, which would see average global temperature rise by 1.1 to 2.6°C by 2100, on a 1986–2005 baseline.

Achievement of the SDGs requires an ambitious climate agreement. - The decisions that were taken at UNFCCC COP20 in Lima and those that will be taken at COP21 in Paris will have a significant impact on global development by 2030, even before the resulting impacts on the climate are felt. - A high-ambition agreement that aims to limit global warming to 2°C by 2100 is essential to have the best chance of achieving the SDGs by 2030. - The climate agreement is unlikely to impact global warming or the frequency and severity of weather-related disasters in the period up to 2030; it will, however, play a significant role thereafter. - A high-ambition climate agreement can provide a clear policy framework and the legal basis for action on climate change, incentivise international cooperation, and mobilise additional finance and resources for mitigation and adaptation activities that support climate compatible development. Both the policy reforms and the additional finance play complementary roles in supporting such development. - This can potentially have a significant impact on the state of the economy and social well-being in the poorest and most climate vulnerable countries before 2030, improving the likelihood that they will achieve the SDGs. Likewise a low ambition agreement puts their Sustainable development

trajectories at risk.„ An ambitious climate agreement requires ambitious SDGs. - The decisions taken in finalising the SDG framework of goals, targets and indicators, and FFD commitments to 2030 will have a significant influence on climate change impacts to 2100. - Strong SDG targets and strong FFD commitments are essential to have the best chance of achieving a high-ambition climate agreement that limits global warming to 2°C by 2100. Ambitious SDGs will promote national policies that will underpin the delivery of de-carbonisation pathways to achieve a high-ambition climate agreement

Disaster management in India has evolved from a relief-based approach to a multidimensional, proactive institutionalised setup with multiple stakeholders (MoEF2012). Initially, activities to address natural hazards were kept within the purview of provincial and state agencies. During the 1990s, the Natural Disaster Management (NDM) division was created within the Ministry of Agriculture. However, following a series of disasters such as the Latur (1993), Malpa (1994), and Bhuj earthquakes (2001) and the Orissa super cyclone (1999), a systematic and comprehensive approach for disaster management was initiated, and the NDM was transferred in 2002 to the Ministry of Home Affairs. Further, a legal framework was created through the Disaster Management Act of 2005, which provided a mechanism for coordinated actions of response, preparedness, and mitigation at the national, state, and district levels. The National Disaster Response Force was also created for response and a National Institute of Disaster Management for capacity development.

Focused action on CCA came with the ratification of various international treaties and conventions, most notably the Vienna Convention in 1993, the Montreal Protocol in 1992, the UNFCCC in 1993, the Kyoto Protocol in 1997, and the Paris Climate Change Agreement in 2015. Further, several acts and policy measures have been implemented to regulate and mainstream environmental and climate-related issues. The Ministry of Environment, Forest and Climate Change (MoEFCC) is the nodal ministry for all climate change-related activities within the country. The Prime Minister's Council on Climate Change was created in 2008 to coordinate national actions for assessment of, adaptation to, and investigation of climate change. The National Action Plan on Climate Change (NAPCC) was launched in 2008 (MoEFCC2008) to address various core issues of sustainable energy, energy efficiency, habitat, water, the Himalayan ecosystem, green India, agriculture, and strategic knowledge

Handout 6: DRR and CCA: Differences and Signs of Coverage

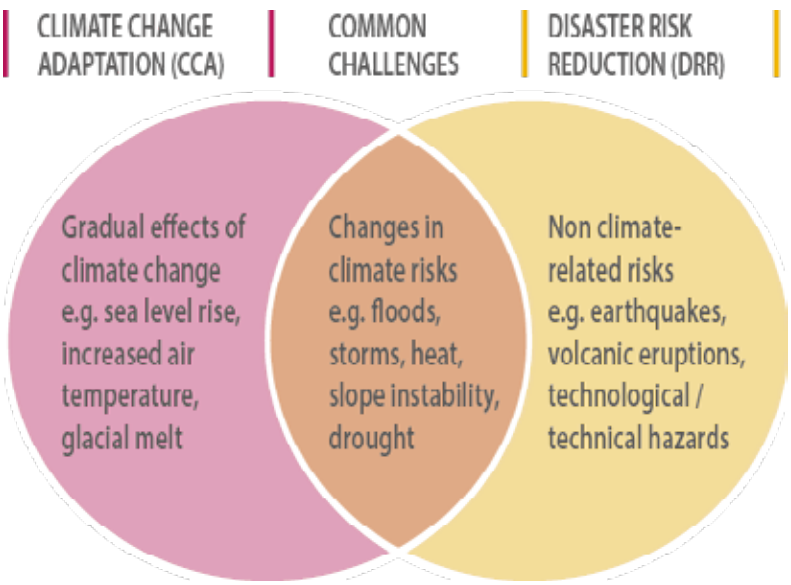
Historically, disasters have been perceived as devastating events that cause a break in the development of a country. In the last two decades, the combined insights gathered through national experiences, international dialogues and global initiatives have pointed to the fact that disasters "don't just happen"; on the contrary, they often result from the shortcomings of development itself which increases vulnerability to hazards. Further, increased exposure and vulnerability to disaster risks is largely a consequence of lopsided development policies and processes such as rapid and unplanned urban expansion into hazardous terrain, expedient environment policies leading to degradation and the sheer inadequacy of livelihood opportunities for the poor, brought together by a lack of political will exhibited in governance response at all levels."

However, it is the view of the Ministry of Home Affairs (MHA), the nodal ministry for disaster management, that in spite of the integration of some DRR measures in some sectoral programmes such as health and education, and despite the attempt of ministries/departments of the GoI to include aspects of risk reduction through the Environmental Impact Assessment, the schemes and programmes being implemented by them lack a clear statement on DRR and climate change adaptation (CCA) concerns which is required for a comprehensive thrust toward mainstreaming/ integration of DRR principles into development planning . Since skewed development processes themselves are the root of the problem, 'giving development more security from natural hazard' would be a more efficient and cost-effective way of reducing vulnerability to disaster risk and simultaneously addressing issues of poverty and inclusive growth. For instance, reducing livelihood vulnerability to natural hazards addresses the issues of disaster risk as well as poverty and inequity.

The GoI has adopted the strategy of mainstreaming DRR through the developmental planning route, either through its Five-Year Plans or one-year plans or through its prestigious national flagship programmes most of which aim to create social infrastructure to bring the poor within the ambit of development or address the grave issue of unplanned urbanisation in cities that are emerging as 'hotspots' for disaster risks.

The GoI has underscored the need for an integrated, multi-sectoral approach to DRR mainstreaming by strengthening risk reduction in key sectors such as education, agriculture, urban development, environment and health. The most disadvantaged groups, whose marginalisation is linked to their lack of access to social infrastructure, are also the most vulnerable to disasters. Flagship programmes that are animated by the objective of creating social infrastructure to enable such sections to be included in the growth process are thus ideal for mainstreaming DRR concerns and reducing vulnerability at various levels. As the GoI views it, DRR objectives are aligned to the vision, objectives and provisions of the CSS, which are aimed at reducing the socio-economic vulnerabilities of the poor sections of society. While specific DRR actions taken for flood mitigation or seismic safety, among others, may be of a techno-legal nature, they need to be perceived in a larger context of socio-economic, operational and managerial aspects such as:

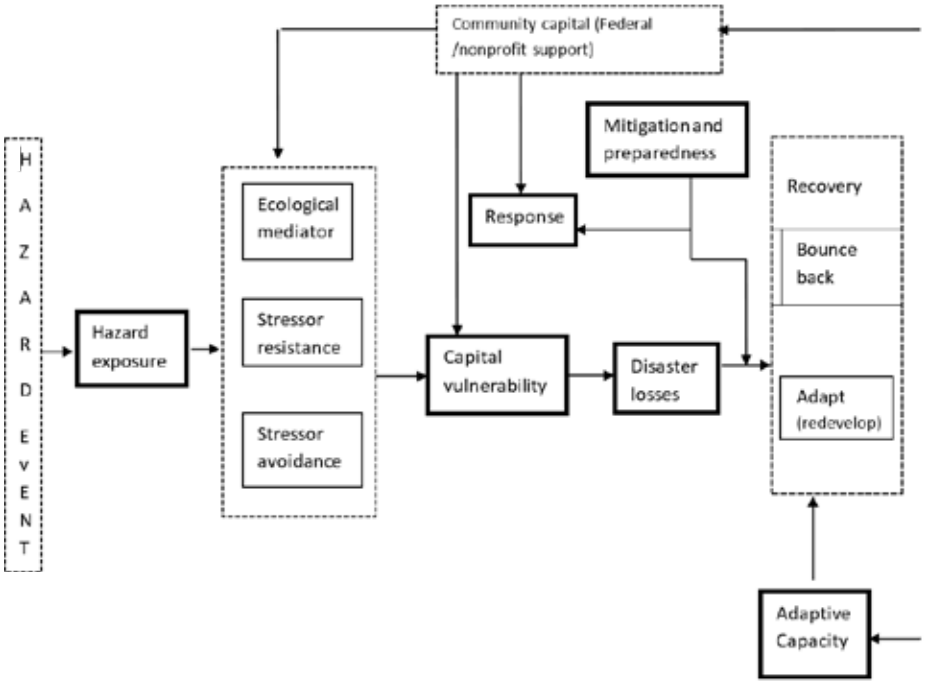
- Inclusion of the socially marginalised;
- Gender inequality
- Behavioural change;
- Institutional capacities;
- Community participation
- Learning and implementing lessons
- Governance



Handout 7: Adaptive Resilience Framework

Adaptation to Climate Change – Examples for Rural Areas Impact assessments, monitoring, early warning; Land use planning; Upgrading physical infrastructures; Adapting farming systems, for example: expanding or improving irrigation systems, diversifying production structures away from the emerging drought or moisture risks, breeding plants and animals with greater pest resistance and tolerance to new stress factors. Insurance and new risk transfer mechanisms; Adaptations in rangeland and wildlife management.

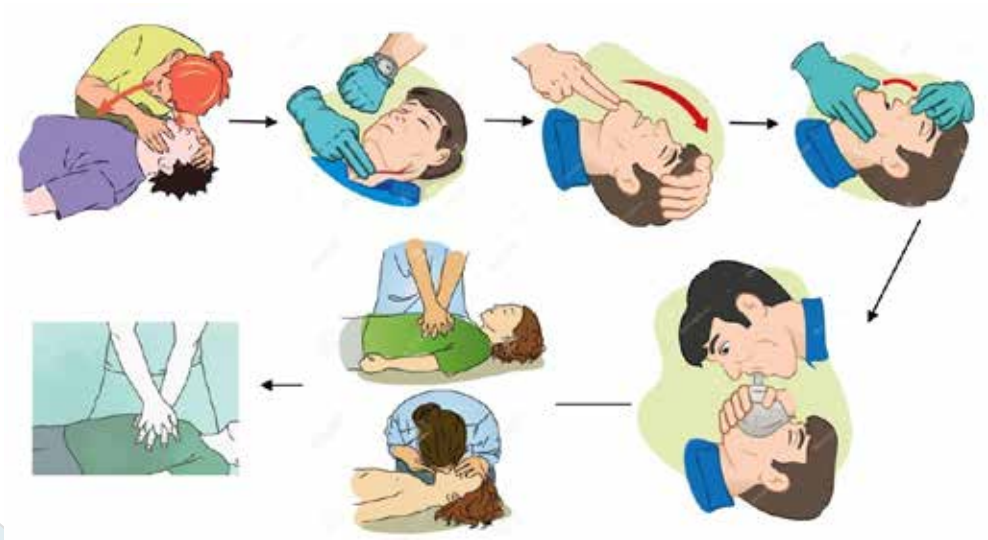
Being one of the sources of climate change, rural areas can and should also contribute to mitigation. Examples of mitigation in rural areas may include bio-fuel generation from agricultural biomass or solar energy replacing power using fossil energy, afforestation and reforestation for carbon sequestration. Mitigation should also include the livestock sector. According to a recent study,«the livestock sector is a major player, responsible for 18 percent of greenhouse gas emissions, measured in CO2 equivalents.



Handout 8: First- Aid Tips



Basic Cardio-Pulmonary Resuscitation (CPR) Technique



Basic Technique for Hand-wash



Provide Psychological First-Aid in All Disasters







Share and disseminate information with family and community use local medium and folk art to communicate



Handout 9: Indigenous warnings and remedies for basic health concerns

Forecasting cyclone

- Observing wind speed and size of waves in deep sea Strong wind from the east during Baisakh-Jaystha (summer)/ KartikaAgrahayan (late fall)
- Crabs climbing on houses Vata fish coming near the river ghat
- Dense clouds forming in the sky Heron flying in flocks
- Many dogs barking together and Crows crowing in the night

Treatment for injury bleeding

- Juice of garman leaf, applied locally
- Juice of arum, applied locally
- Juice of ganda leaf or Juice of durba grass, applied locally
- Juice of akanda or josory leaf, applied locally

PURIFYING WATER



If water supplies run low and main water is contaminated, you will have to purify water.

- If you can see particles floating in water, strain it through some paper towels then boil it, add purifying tablets, or disinfect it.
- Boil some water for 10 minutes to purify it, and then allow it to cool before drinking.
- Use chlorine-based tablets to purify water.
- To disinfect water, use regular household bleach containing 5.25 percent sodium hypochlorite only. A stronger percentage is dangerous.
- Add two drops of bleach to 1 pt. (500 ml) of water stir and leave it to stand for 30 minutes. The water should smell slightly of bleach. If it does not, repeat the process and leave the water to stand for 15 minutes more.



Handout 10: Examples of (likely to very likely) impacts from projected changes in extreme climatic events

Projected changes in extreme climate phenomena during the 21st Century	Representative examples of projected impacts
Simple extremes	
Higher maximum temperatures, more hot days and heat waves over nearly all land areas	• Increased incidence of death and serious illness in older people and urban poor • Increased heat stress in livestock and wildlife • Increased risk of damage to several crops
Higher (increasing) minimum temperatures: fewer cold days, frost days and cold waves over nearly all land areas	• Decreased cold-related human morbidity and mortality • Decreased risk of damage to several crops • Extended range and activity of some disease vectors
More intense precipitation events	• Increased flood, landslide, avalanche and mud-slide damage • Increased soil erosion • Increased flood run-off
Complex extremes	
Increased summer drying over mid-latitude continental interiors and associated risk of drought	• Decreased crop yields • Decreased water resource quantity and quality • Increased risk of forest fire
Increased tropical cyclone peak wind intensities, mean and peak precipitation Intensities	• Increased risk to human life, risk of infectious disease epidemics • Increased coastal erosion • Increased damage to coastal ecosystems and coral reefs
Intensified droughts and floods associated with El Niño events in many different regions	• Decreased agriculture and range-land productivity in drought-prone and flood prone regions
Increased Asian summer monsoon precipitation variability	• Increased flood and drought magnitude and damages in temperate and tropical Asia

Handout 11: Legislative and Policy Framework for Disaster Management in India: An Overview

Legal framework constitutes the foundational pivot around which different aspects of an activity are interwoven. It is probably for this reason that in constituting modern democratic political systems, it has been found essential to ordain that on the basis of a written Constitution. The issues and activities that could not find place in the scheme of a written Constitution, for obvious reasons, have been provided a sound legal basis by enacting a framework law on the subject. In India, one such issue has been the management of disasters. Despite being one of the most disaster prone countries in the world, the subject of disaster management could not find a place in the Constitution of India for reasons explained later in the paper. In fact, for a fairly long period of time, disasters, both natural and manmade, had been found to be managed in the classical colonial mode of trial and error resulting into untold miseries for the people and massive loss of lives and properties. The lurking dangers of climate change and its colossal impact on the occurrence of natural disasters prompted the international community to go for a recasting of the disaster management system in all parts of the world. In such an overhaul of the disaster management systems, central place was afforded to the provision of a sound legal framework. In the wake of these persuasions, Indian Parliament enacted the Disaster Management Act in 2005 to provide for the legal framework in which the structures, functionaries and activities related to management of disasters are organised and operationalised order to make the country disaster free. Interestingly, for obvious reasons, management of successive devastating disasters, till recently, has predominantly been based on discretionary trial and error approach of disaster managers in the absence of any specific constitutional stipulation or dedicated statutory enactment on the subject. In other words, owing to lack of categorical constitutional-legal stipulations, the issue of disaster management was conjecturally decided on the basis of its operational dynamics. Thus, for a long time, disaster management was supposed to fall within the exclusive legislative competence of the states with the central government having no or very limited say in the matter. Contradictory, policies and followed haphazard approaches on managing disasters despite commonality of causes and impacts of such disasters on the lives and assets of the people. Moreover, quite a large number of states thought it fit to continue with the relief-centric colonial policy without any innovation or improvisation in the policy of disaster management. In these circumstances, a subject of national importance with far reaching implications for the life and livelihood of the people, on the one hand, and sustainable economic development of the country, on the other, apparently fell to extreme apathy of the central government, and the states relegated the subject to utter insignificance presumably due to lack of any political mileage being drawn from it. The only avenue where states could not do without involvement of the central government has been financing of disaster management operations for which center has been providing both plan as well as non-plan grants to states from time to time. But on other aspects of management of disasters, role of the central government had been bare minimum despite the colossal magnitude of a disaster or the inability of a state government to manage such disasters efficiently and effectively.

Handout 12: National Flagship Programs of the Ministry of Rural Development, Government of India

The Ministry of Rural Development, inter alia, is implementing Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Deendayal Antyodaya Yojana – National Rural Livelihoods Mission (DAY-NRLM), Deen Dayal Upadhyay – Gramin Kaushalya Yojana (DDU- GKY), Pradhan Mantri Awaas Yojana – Gramin (PMAY-G), Pradhan Mantri Gram Sadak Yojana (PMGSY), Shyama Prasad Mukherjee National RuRBAN Mission and National Social Assistance Programme (NSAP) to bring about overall improvement in the quality of life of the people in rural areas, including in the states of Madhya Pradesh and Jammu and Kashmir, through employment generation, strengthening of livelihood opportunities, promoting self- employment, skilling of rural youths, provision of social assistance and other basic amenities. State/ UT- wise funds allocated under various rural development programmes.

Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)

This is a rural wage employment programme in India. It provides for a legal guarantee of at least 100 days of unskilled wage employment in a financial year to rural households whose adult members are willing to engage in unskilled manual work at a pre-determined minimum wage rate. The major works include:

- Soil and Water Conservation Related Works (Including Non Water Related Works.
- Ground Water Recharge Related Works
- Irrigation Related Works
- Drainage and other Related Works
- Land Related Works for Livelihood support

Indira Awas Yojana (IAY)

It is one of the major flagship programs of the Rural Development Ministry to construct Houses for BPL households in the villages. Under the scheme, financial assistance worth Rs.70,000/- in plain areas and Rs.75,000/- in difficult areas (high land area) is provided for Construction of houses. The houses are allotted in the name of the woman of the household or jointly between husband and wife. The construction of the houses is the sole responsibility of the beneficiary and engagement of contractors is strictly prohibited.

Prime Minister's Gram Sadak Yojana (PMGSY)

- The Pradhan Mantri Gram Sadak Yojana (PMGSY), was launched by the Govt. of India to provide connectivity to unconnected Habitations as part of a poverty reduction strategy. Govt. of India is endeavoring to set high and uniform technical and management standards and facilitating policy development and planning at State level in order to ensure sustainable management of the rural roads network.
- According to latest figures made available by the State Governments under a survey to identify Core Network as part of the PMGSY programme, about 1.67 lakh Unconnected Habitations are eligible for coverage under the programme. This involves construction of about 3.71 lakh km. of roads for New Connectivity and 3.68 lakh km. under upgradation.

Deen dayal Antyodaya Yojana – National Rural Livelihoods Mission (DAY-NRLM)

- Aajeevika - National Rural Livelihoods Mission (NRLM) was launched by the Ministry of Rural Development (MoRD), Government of India in June 2011.
- Aided in part through investment support by the World Bank, the Mission aims at creating efficient and effective institutional platforms of the rural poor, enabling them to increase household income through sustainable livelihood enhancements and improved access to financial services.
- NRLM set out with an agenda to cover 7 Crore rural poor households, across 600 districts, 6000 blocks, 2.5 lakh Gram Panchayats and 6 lakh villages in the country through self-managed Self Help Groups (SHGs) and federated institutions and support them for livelihoods collectives in a period of 8-10 years.
- In addition, the poor would be facilitated to achieve increased access to rights, entitlements and public services, diversified risk and better social indicators of empowerment. DAY-NRLM believes in harnessing the innate capabilities of the poor and complements them with capacities (information, knowledge, skills, tools, finance and collectivisation) to participate in the growing economy of the country.
- In November 2015, the program was renamed Deen dayal Antayodaya Yojana (DAY- NRLM).

Handout 13: Baseline Indicators for Disaster Resilience

1. **Increased community capacity to deal with hazards and emergencies in a manner that reduces the chances of possible damage and loss due to disasters:** Sub-indicators include increased awareness of people about the possible hazards and their mitigation measures; identification of vulnerable people and places; community resources such as land, water, and forest mapped and protected; organised community groups such as self-help groups (SHGs) playing an active role in disaster management activities at the community level; people have increased access to information and decision making opportunities.

2. **Disaster risk reduction addressed in mainstream development plans and programs at the local level:** Sub-indicators include disaster risk audit (DRA) of mainstream development programs carried out by community groups such as SHGs; required changes made in plans, programs and their implementation strategies; community initiatives for prevention of and preparedness for possible hazards/disasters integrated into on-going programs.

3. **Social/financial inclusion and security:** Active formal/informal social networks in place; people, particularly women, have access to credit and insurance, particularly health insurance; collective decisions taken in community wide meetings held at regular intervals; SHGs engaged in social enterprises including business activities with development goals; SHGs having substantial savings and effective bank linkages; community based local platforms for mutual help.

4. **Grassroots women empowered to function as community leaders and DRR activists:** Women and their groups involved in hazard/vulnerability/capacity/resource mapping leading to identification of risk and risk reduction measures; women and their groups having substantive engagement with local authorities and government on issues that concern them; women and their groups involved in setting the agenda and taking investment decisions; women and their groups engaged in handling development funds.

5. **Reduction in the number of unsafe places of residence and public utility within the community:** Sub-indicators include identification, repair and retrofitting of unsafe residences and other built up structures such as schools, health Centre's etc. or resettlement of people in safe areas as against their earlier residence in unsafe areas.

6. **Enhanced livelihoods and food security through diversified livelihood practices and protection of natural resource base such as land, water and forest:** Sub-indicators include diversification of livelihoods with an increased number of households having more than one source of income; increased number of households having a stable source of income throughout the year; community engagement with concerned local authorities and collective local action to conserve natural resources.

7. **Improved preparedness to deal with emergencies by preventing or/and containing damage and losses due to disasters:** Sub-indicators include disaster management task forces trained in search, rescue, relief, and resettlement on one hand and having community organisations and social networks to rebuild lives and livelihoods on the other.

Handout 14: Progress Checklist for Climate Change Adaptation Mainstreaming

Finding the Entry Points and Making the Case

- Entry points for adaptation mainstreaming agreed on and related roadmap taken into account in the work plan for the next stage of the effort
- Key ministries (e.g. environment, finance, planning, sectors) and other non-governmental actors (e.g. representatives of communities and the private sector) relevant to the agreed entry points are members of the steering committee or task force of the adaptation mainstreaming effort
- Adaptation mainstreaming champions liaising with in-country donor coordination mechanisms
- Increased awareness that poor people are likely to be the most affected by climate change, that national development goals and key sector strategies (e.g. agriculture, health, energy, tourism) can be affected by climate change and that national development and sectors can in turn affect the vulnerability of the country and the poor
- Activities to be implemented in collaboration with finance and planning or relevant sector ministries included in the work plan for the following stage of the effort

Mainstreaming Climate Change Adaptation into Policy Processes

- Adaptation-related indicators linked to policy documents of national development planning integrated in the national monitoring system
- Increased budget allocations and public expenditures for adaptation policy measures of non-environment ministries and sub-national bodies
- Adaptation mainstreaming established as standard practice in government and administrative processes, procedures and systems (e.g. budget call circulars, systematic inclusion of adaptation in public expenditure reviews, coordination mechanisms, systematic climate-proofing, monitoring)

Handout 15: Possible Entry Points for Mainstreaming into National Development Planning

Planning level	Entry Points
National government and cross-sector ministries	Poverty reduction strategy paper National development plan
Sector ministries	MDG-based national development strategy
Subnational authorities	National budget allocation process or review (e.g. medium- term expenditure framework, public expenditure review)
Sector ministries Sector	Sector strategies, plans and policies (e.g. agricultural sector plan) Preparation of sector budgets Public expenditure reviews
Subnational authorities	Decentralisation policies Preparation of subnational budgets

Notes



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