

Proceedings of National Webinar

# **Formulation of Policy for Resettlement of Displaced People Affected by Coastal and River Erosion**

(29th January 2021)



**National Disaster Management Authority**  
NDMA Bhawan, A-1 Safdarjung Enclave,  
New Delhi - 110029



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(29th January 2021)

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New Delhi – 110029



# Programme Schedule

	Program	Speakers
10:00 – 10:15	<b>Inaugural Session</b>	
10:00 – 10:05	Welcome	NDMA
10:05 –10:15	Inaugural Address	Sh. Sanjeeva Kumar, IAS Member Secretary, NDMA
10:15 – 11:00	<b>Technical Session I: Science and technology for coastal and river erosion</b>	
10:15 – 10:30	Issues and challenges of Coastal Erosion	Dr. M.V. Ramana Murthy, Scientist G & Director National Centre for Coastal Research
10:30- 10:45	River Erosion- Issues and Challenges	Dr Ajay Sinha, Director- Morphology and Climate Change, Central Water Commission
10:45- 11:00	Climate change, Displacement and Management of River and Coastal erosion- Policy Implications	Sh. Jigmet Tapka, Joint Secretary, Ministry of Environment, Forest and Climate Change
11:00- 11:35	<b>Technical Session II Addressing policy Challenges</b>	
11:00-11:15	Introduction to 'Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013' and 'National Resettlement and Rehabilitation Policy' with specific reference to disaster Management	Sh. Hukum Singh Meena Additional Secretary, Department of Land Resources, Ministry of Rural Development
11:15-11:25	Existing Act and relevance to new policy	Dr. Pavan K Singh, Joint Advisor, NDMA
11:25-11:35	Need for Policy for Resettlement of erosion affected people	Sh. Sanjeev Kumar Jindal, Joint Secretary (DM), Ministry of Home Affairs
11:35 – 12:05	<b>Resettlement issues due to River Erosion and best practices – Presentation by States</b>	
11:35-11:45	Assam	Sh. M.S. Manivannan, CEO, ASDMA
11:45-11:55	Bihar	Sh. M. Ramchandrudu, Additional Secretary, DM Department
11:55-12:05	Discussion	
12:05-12:45	<b>Resettlement issues due to Coastal Erosion and best practices – Presentation by States</b>	
12:05- 12:15	Odisha	Sh. Kamal Lochan Mishra, Chief General Manager, OSDMA
12:15- 12:25	West Bengal	Sh. Amal Kant Roy, Senior Consultant- DRR
12:25-12:35	Kerala	Dr. Sekhar Lukose Kuriakose Member Secretary, KSDMA
12:35- 12:45	Discussion	
12:45-13:15	<b>Discussion and Way Forward</b>	
12:45-13:00	Discussion on the Note circulated by NDMA	Sh. K.S. Vatsa, Member, NDMA (Moderator)
13:00-13:10	Formation of Working Group	Sh. K.S. Vatsa, Member, NDMA
13:10-13:15	Vote of Thanks	Dr. S.K. Jena, JA(RR)

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# Background

India being a maritime state has a long coastal line of more than 7,500 km. The coast is densely populated by being the epicenter of economic growth and support of wide range of livelihoods ranging from fishery to manufacturing. A report prepared by the National Centre for Coastal Research (NCCR), an institution of the Ministry of Earth Sciences, highlights the issue of coastal erosion over 26 years. The marked changes between 1990 and 2016 suggest landmass formation (accretion) is equivalent to the rate of erosion. Hence, in certain states, land loss due to coastal erosion is causing loss of livelihood, displacing communities and increasing migration.

The state-wise analysis suggests that erosion exceeds more than 50 percent in two States, namely, West Bengal (63 percent) and Puducherry (57 percent), followed by Kerala (45 percent) and Tamil Nadu (41 percent). Odisha is the only coastal State, which has more than 50

percent of accretion, followed by Andhra Pradesh with 42 percent. The west coast of India (except Kerala) is in stable condition. Land loss analyses have shown that the West Bengal coast has lost about 99 sq. km of land during the last 26 years. Similarly, the seven major rivers and their tributaries criss-cross across India, bringing in food security and economic prosperity to the nation. These river systems are the core support for the agrarian economy and overall well-being. However, especially in the Himalayan Rivers, floods are equally significant in causing severe riverbank erosion. States like Assam and West Bengal are exposed to recurrent floods and riverbank erosion. The state of affairs of river erosion can be understood from the dire situation in Sunderbans in West Bengal and Majuli Island in Assam. Climate change and sea-level rise, combined with other morphological reasons, has led to a staggering land erosion of 170 sq. km

1. R.S. Kankara, M.V. Ramana Murthy & M. Rajeevan, 2018. National Assessment of Shorelines Changes Along Indian Coast. July 2018.

during 1973–2010 along the Sundarbans coastline. In Majuli, of 1,250 sq. km in the year 1890, only 515 sq. km remain due to recurrent floods and bank erosion of the Brahmaputra River. Though over time, various steps like bank embankment have been taken up for flood control, riverbank erosion still remains a serious problem.

### **Impact of the river and coastal erosion**

The impact of coastal and river erosion may be permanent and may have a long-term effect on development projects. Erosion has a long-term impact on the economy of the region and its people. First of all, agriculture-dependent communities would lose fertile land either because the land will submerge or will become infertile due to an increase in salinity. Secondly, other livelihoods like fishing, allied agriculture and water-related activities may also get affected. Hence, the overall livelihood will be affected, prompting distress migration. Coastal and river erosion will have a deep impact on riverine and coastal ecosystems. The erosion may result in habitat contraction, loss of functionality and biodiversity. Further, the urban centres around the coast or river may hinder the inland migration of marshes and mangroves. These settlements have developed over hundreds of years and exhibit unique culture, traditions, and indigenous knowledge. If relocated very far-off, they may lose their knowledge and traditions.

Keeping the above in mind, the XVth

Finance Commission has made the following recommendations for Coastal and River Erosion as follows:

a) Mitigation Measures to Prevent Coastal and River Erosion: To mitigate the risk of erosion, the Commission recommended an allocation of Rs. 300 crore from the proposed National Disaster Mitigation Fund (NDMF) in 2020–21. The States shall submit specific proposals for undertaking erosion mitigation works to the Ministry of Home Affairs.

b) Resettlement of Displaced People Affected by Coastal and River Erosion: Given the magnitude of the problem, the Commission recommended that both the Union and the State Governments develop a policy to deal with the extensive displacement of people caused by coastal and river erosion. To implement this policy, Rs. 200 crores is allocated for 2020–21 to address the issue of displacement at the State level. The State Governments shall submit specific proposals for assistance to resettle displaced people. Such assistance should be made available through the resources available from the recovery and reconstruction window of the National Disaster Relief Fund (NDRF). Such resettlement should ensure safer sites for the people being resettled.

To understand the scientific as well as implementation challenges, NDMA organised a webinar on 'Resettlement of the People Displaced by Coastal and River Erosion' on 29th January 2020 with various stakeholders. The following are the deliberations during the webinar.

# Inaugural Address



**Shri Sanjeeva Kumar,**  
**Member Secretary, NDMA**

The long stretch of coastline on either side of the Indian peninsula is subjected to varied coastal processes and anthropogenic pressures, which makes the coast vulnerable to erosion. Of the nearly 7,500 km long coastline, close to 5,700 km is prone to cyclones and tsunamis, hence prone to erosion due to storm surge, tidal surge, wind, anthropogenic activities and wave actions. There are 13 coastal States/ UTs (West Bengal, Odisha, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Maharashtra, Goa, Gujarat, Puducherry, Andaman & Nicobar Islands, Lakshadweep, Dadra Nagar & Haveli, and Daman & Diu are vulnerable to cyclones and therefore affected by coastal erosion. Similarly, more than 40 million hectares (12 percent of land) out of a geographical area of 3,290 lakh hectares is prone to floods. The rivers bring heavy sediment load from the catchments. These, coupled with an inadequate carrying capacity of the rivers are responsible for causing floods, drainage congestion and erosion

of river-banks. There are major rivers (Indus, Brahmaputra, Narmada, Tapi, Godavari, Krishna and Mahanadi) along with their numerous tributaries that make up the river system of India.

The loss of habitat and livelihoods due to river and coastal erosion has socio-economic and environmental impacts. At present, the major interventions have been structural like the construction of spurs, embankments and walls to prevent erosion. However, given rapid climate change, the issue of erosion may be exacerbated with the melting of glaciers. Similarly, the increase in frequency and intensity of storms in the coastal area may increase coastal erosion. Both sea level rise and thermal extension of water may shift the high tide lines. The coping capacity of the communities to these changes is limited for which most people are migrating to other parts of the country. Therefore, emphasis on recovery and resettlement of the coastal and riverside communities has to be prioritised.





The States affected by river erosion are in the northwest region, central region, Deccan region and Brahmaputra region with the highest river erosion happening in Ganga and Brahmaputra river basins. Similarly, the worst affected States by sea erosion are West Bengal, Puducherry, Odisha, Kerala, Gujarat, Karnataka, Maharashtra, Goa, Tamil Nadu, Andhra Pradesh and Daman & Diu.

To address these issues, the XVth Finance Commission has made specific recommendations regarding mitigation measures to prevent coastal and river erosion and resettlement of displaced people affected by coastal and river erosion. Based on these recommendations, the Ministry of Home Affairs has suggested that NDMA should prepare a policy document on the resettlement of the people displaced by coastal and river erosion.

Presently, under extant NDRF/SDRF norms, assistance of Rs. 37,500/-per hectare is forwarded to only those small and

marginal farmers whose ownership of the land is legitimate as per the revenue records for loss of a substantial portion of land caused by landslide, avalanche, change of river course. No assistance/provision is made for people displaced by the coastal and river erosion.

The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (also known as Land Acquisition Act, 2013) is an Act of the Indian Parliament that regulates the land acquisition and lays down the procedure and rules for granting compensation, rehabilitation and resettlement to the affected persons in India. The Act has provisions to provide fair compensation to those whose land is taken away and brings transparency to the process of acquisition of land to set up factories or buildings, infrastructural projects and assures rehabilitation of those affected. However, this Act has been designed for land acquisition especially for development projects and

does not address land loss or displacement due to coastal and river erosion.

At present, there is no such existing policy/act that deals with the resettlement of displaced people affected by coastal and river erosion. Hence, NDMA has organised a webinar with two technical sessions on science and technology, and addressing policy challenges for coastal and river erosion & experiences sharing sessions with States affected by these activities. The webinar is being attended by relevant ministries/department i.e. Ministry of Environment, Forest and Climate Change, Central Water Commission, Department of Land Resources, Ministry of Rural Development, Ministry of Home Affairs, States affected by the coastal and river erosion and scientists to understand the future needs and challenges in handling

displacement due to erosion.

For preparing the policy, NDMA follows a nine-step process involving all relevant stakeholders through a series of interactive, reciprocal, and supplementary actions. The policy must highlight the measures and strategies for assessment, preparedness and mitigation of displacement due to river and coastal erosion through coordinated efforts with multiple agencies and reconstruct to build disaster-resilient infrastructure. For the above, a working group will be formulated consisting of scientific experts, a representative from central ministries, States, and civil society. I hope the deliberations of this webinar will provide inputs to make a robust policy addressing various issues on displacement caused by coastal and river erosion.



**Sitting on the panel (L to R):** Dr. V. Thiruppugazh, Additional Secretary, NDMA;  
Shri Rajendra Singh, Member, NDMA; Dr. K. S. Vatsa, Member, NDMA

**Standing on the dais:** Shri Anuj Tiwari, Sr. Consultant – PPM (Moderator)

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# Technical Session I

## Science and technology for coastal and river erosion

### Issues and Challenges of Coastal Erosion



**Prof. M. V. Ramana Murthy,  
Director, National Centre for Coastal  
Research (NCCR), Ministry of Earth  
Sciences**

Prof. M. V. Ramana Murthy, Director, National Centre for Coastal Research (NCCR), Ministry of Earth Sciences highlighted the work undertaken by NCCR on coastal erosion. He informed that among the UTs, Lakshadweep is more prone to coastal erosion, and in the mainland, West Bengal is the worst affected State followed by Kerala and other States. He presented important statistics pertaining to coastal areas and erosion related issues. He also discussed about the natural and man-made causes of river erosion like, storms, extreme waves, sea level rise, persistent low pressure due to climate change, development of ports, damming of rivers, dredging of tidal inlets. He also shared the status of erosion/accretion and stable areas in

different States/UTs, with West Bengal being the worst affected by erosion followed by Puducherry, Kerala, Tamil Nadu etc. In the Indian main land coast, 33 per cent area is affected by erosion, in which west coast erosion is 27 per cent and east coast erosion is 38 per cent NCCR has developed a web-based GIS Information System for entire coastal area, main land as well as islands. This can be used by Central and State governments. This will be useful in determining shoreline change system, coastal land, loss and land gain, coastal management, coastal vulnerability, impact of sea level rise, extreme events etc. He shared various options for coastal erosion management, eg. Retreat, Block, Elevate, Restore etc. He shared an example of rehabilitation of people residing on the banks of the Cooum and Adyar rivers in Tamil Nadu. He said that during rehabilitation, it is necessary to see the personal and social values, and livelihood aspects of those being relocated. He shared an example of rehabilitation of Tsunami affected areas in Tamil Nadu where due to livelihood problems, many houses are vacant even today and people prefer to live in their original locations. Working with community on rehabilitation can yield better results than pre-deciding the strategy and then taking it to community. He shared a management framework

with steps to be taken and with different options based on the level of development.

He gave his suggestions for the Rehabilitation Policy consisting of a longer process of rebuilding people's physical and economic livelihood, their assets, their cultural and social links and psychological acceptance of the changed situation. The suggestions for the Rehabilitation Policy, are as below:

- Many rehabilitation projects fail because space for only habitation is provided, but livelihood of people is not restored.
- Rehabilitation should be suggested if the cost of infrastructure to be protected is less than management scheme.
- In such cases, village should be shifted beyond hazard line and the space between village and sea should be used for livelihood activities like keeping boats, net mending, drying fish etc.

## River Erosion – Issues and Challenges



**Dr. Sinha, Director, Morphology and Climate Change, Central Water Commission (CWC)**

Dr. Ajay Sinha, Director, Morphology and Climate Change, CWC presented 'River Erosion' – Issues and Challenges'. He said that erosion and deposition are natural processes of the river. Dynamics of flow and sediment transport are the principal elements responsible for morphological changes. Understanding this nature of river will help in planning, designing and maintaining of flood protection/ river drainage work and water resource projects. He further informed that the morphological studies help in finding the vulnerable spots for bank erosion, deposition, river bed aggradation and river bed degradation. He shared the findings of the morphological studies of river Ganga and Brahmaputra. In the study on river Ganga, the main objective is to study the shifting of river course and also changes in its plan form 10 years from the base year 1970 till 2010 using remote sensing technology. With the help of a picture, he showed the shifting of river Ganga in Bhagalpur (Bihar) from 1970 to 2010. He also showed decadal shifting of Ganga near Patna (Bihar). In the Brahmaputra study, he shared a map showing erosion-deposition along the Brahmaputra river over the period 1973-74 to 1976-1980.

Dr. Ajay Sinha discussed about the preventive measures for river bank erosion, including structural and non-structural measures. Structural measures include reservoirs, diversion structures, channel improvement, construction of

spurs, groynes, porcupines, gabions, construction of bank revetment along with launching apron, vetivers, geosynthetics and non-structural

measures include flood plain zoning. Similarly, he also talked about structural and non-structural measures for coastal erosion.

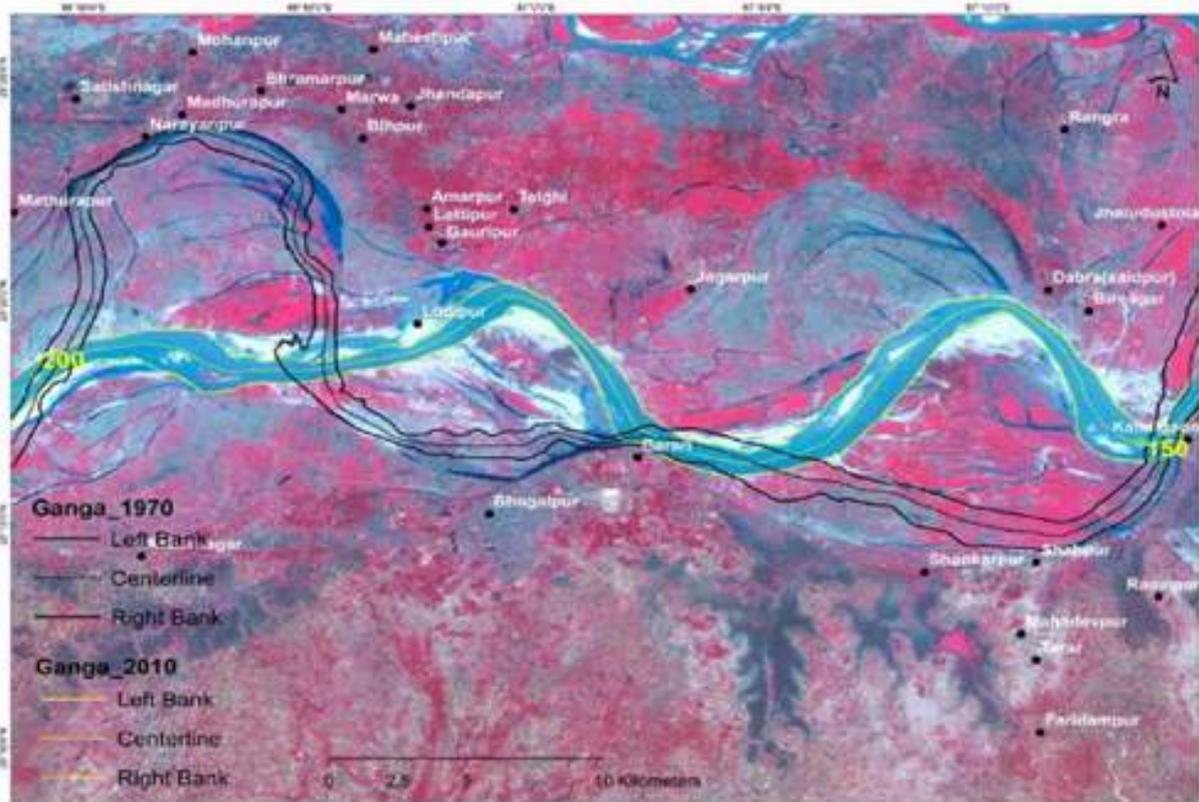


Figure 1 Shift in the course of River Ganga in Bihar between 1970-2010

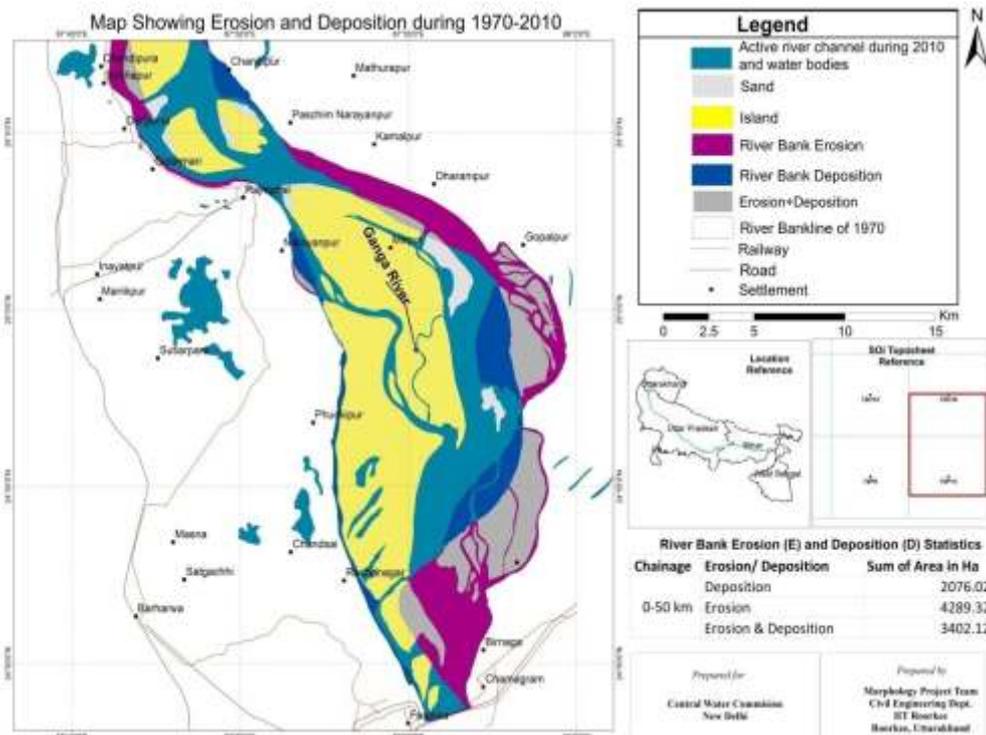


Figure 2 Map showing Erosion and Deposition in Bihar during 1970-2010

## **Climate change, Displacement and Management of River and Coastal erosion- Policy Implications**



**Sh. Jigmet Tapka,  
Joint Secretary, MoEFCC**

Sh. Jigmet Tapka, Joint Secretary, MoEFCC presented on Climate Change, Displacement and Management of River and Coastal Erosion – Policy Implications. He described the coastal typology of the country and informed that the Ministry completed a project – ICZMP – Integrated Coastal Zone Management Project, which started in 2010 and was completed in 2019. He mentioned that there are four coastal Ecologically Sensitive Areas (ESAs) – Ecosystems, Habitats, Geomorphological features & Others (Heritage & Archaeological Sites). He said that these ESAs are significant for bio-shield (e.g. mangroves, sand dune), livelihood (e.g. fishing, tourism etc.) and habitat (reef fish, turtle nesting, bird nesting, horseshoe crab, etc.). He discussed about the major impacts of climate change, such as rising sea level and increase in frequency and intensity of storms, change in patterns of

erosion and sedimentation, increased risk of flooding and change in the distribution and types of coastal habitats. He also talked about impacts on coral bleaching and coastal fisheries. In his presentation, he also discussed about Coastal Regulation Zone (2019) and prohibited, and permissible activities under it. He then discussed the Integrated Coastal Zone Management Plan (ICZM Plan) in detail.

### **Discussion:**

Dr. K. S. Vatsa, Member, NDMA said that erosion is a real problem, it affects lots of people, their livelihood and their habitat. This is a long-term issue which involves management of natural resources and at the same time it also requires a long-term policy to take care of habitats and livelihood of the people. He further said that the presentations made by the experts highlighted that climate change is contributing in the process of erosion. Urbanisation also makes the problem





acute. Cities are expanding and as a result people are getting more and more affected. In addition, huge investments in infrastructure are also threatened by these phenomena. He said that the central theme of the webinar is to get inputs on how to manage the process, develop projects, plans and interventions which are not only scientifically sound but also sustainable. Therefore, the focus is to develop a policy and guideline for managing the problems posed by both coastal and river erosion for the long-term.

Dr. Vatsa, Member, NDMA further enquired about measures or policies which governments across the world have taken up to address coastal and river erosion. Prof. M. V. Ramana Murthy said that regarding coastal erosion and flood plain resettlement, it depends upon the cost of infrastructure lying on the coast. If it is expensive, a suitable mix of structural or non-structural solutions is undertaken.

Especially in USA and Australia, many of the houses are totally eroded by the coastal erosion, there they go for Retreat. He said that the Finance Commission has given its recommendations and certain amount of fund is also available for this purpose, However, at the same time we may look for long-term solutions. Now the focus is to bring all the stakeholders including, NGOs, local governments, state governments and central governments together to develop a long-term solution. While informing that lot of work has been done in coastal areas, Sh. Rajendra Singh, Member, NDMA enquired about the status of Flood Management Plans. He also suggested that CWC may take feedback of States like Bihar, U.P. etc., so that plans can be prepared accordingly. Responding to the Member, Dr. Sinha, CWC informed that out of 522, only 43 are currently operational, covering all flood prone States in India.

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# Technical Session II

## Addressing Policy Challenges

### **Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013 (RFCTLARR Act 2013) – A step towards Comprehensive Policy for Rehabilitation & Resettlement of Displaced People**



**Sh. Hukum Singh Meena, IAS,  
Additional Secretary, Department of  
Land Resources, Ministry of Rural  
Development**

Sh. Hukum Singh Meena introduced the 'Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act', 2013 (RFCTLARR Act, 2013 also known as Land Acquisition Act, 2013)', an Act of Indian Parliament that regulates land acquisition and lays down the procedure and rules for granting compensation, rehabilitation

and resettlement to the affected persons in India. The Act has provisions to provide fair compensation to those whose land is taken away, thereby bringing transparency to the process of acquisition of land to set up factories, buildings, infrastructural projects and assures rehabilitation of those affected. He emphasised the presentation will focus on the relevance of provisions regarding disaster management in the Act especially relevant to coastal areas.

The present Act is transparent, consultative and has a participatory approach in comparison to Land Acquisition Act, 1894, a nearly 120-year-old law enacted during British rule which did not have any provisions to address grievances and settlement. The approach to address the issues related to land was top-down. Therefore, this Act was replaced with RFCTLARR Act, 2013.

Under the urgency clause of RFCTLARR Act, 2013, three subjects are included, namely, projects vital to national security, defense of India and natural calamities. In the whole process, rehabilitation and resettlement is an integral part and must be completed within 18 months of displacement. In addition, the displacement of households is allowed only after providing compensation and completion of other formalities.

Under the 2013 Act, land can be acquired



only for projects that have a "public purpose", which has been defined in the Act. Each of these projects will require a Social Impact Assessment (SIA) to determine whether the potential benefits of the project outweigh the social costs. If the land being acquired is multi-cropped agricultural land, then the total area of such land acquired should be below a limit set by the State government. Further, any land acquired for Public-Private Projects (PPPs) and private companies will require the consent of 70% and 80% of the land owners respectively. If the government is acquiring land, rehabilitation and resettlement is compulsory. In case of Small and Medium Enterprise (SME) and other private companies, a ceiling on amount of land acquired is notified by the competent authority.

The Act also provides rehabilitation and resettlement not only for displaced people but also for people affected by the project or who lost their livelihoods like artisans, blacksmiths, agriculture labourers, etc. The Project Affected

Families (PAFs) who were not displaced need to be given at least a one-time settlement of Rs 5 lakh. The categories to qualify PAFs are as per following:

### **Project Affected Family (PAF) (Section 3)**

- Loser of land or other immovable property;
- Loser of land assigned by the government;
- Loser of primary source of livelihood dependent on land (labourer, tenant, rightful user, artisan);
- Loser of traditional forest rights;
- Loser of the primary source of livelihood dependent on forest or water bodies or urban land.

The Act clearly stipulates the pre-condition for the acquisition of the land, which is: (1) For a private entity or a PPP project, the State has to conduct a Social Impact Assessment (SIA) and an Environmental Impact Assessment (EIA) to identify the families who would be affected if the land was acquired. The Social Impact Assessment (SIA) has to be carried out in consultation with the representatives of the Panchayati Raj Institutions (PRI). The SIA needs to be consultative and the notification for the process should be made available in the local language to the local bodies, DM, SDM, Tehsildar, affected area and the website of the government. For the SIA to be cleared, there should be adequate representation of the Local Bodies and a public hearing needs to be conducted in the affected area after adequate publicity. The views of the PAF must be recorded and included in the Study

Report. The following must be covered in the SIA report including assessment of public purpose, estimation of families likely to be displaced due to the project, estimation of land, assets and infrastructure likely to be affected, whether the proposed land area is the bare minimum, availability of alternate feasible site and comparison of likely benefits vis-à-vis the costs. The study should clearly state whether the acquisition should be carried out or not. The study (including Social Impact Management Plan) needs to be completed within 6 months.

Both the publication of the SIA Report and Social Impact Management Plan (SIMP) must be carried in the local language of the area and assessed by an independent multidisciplinary Expert Group. Recommendations for a go-ahead or abandonment of the project will be decided within 2 months and will be shared with the local body.

The exemptions for conducting SIA include acquisition under urgency clause and irrigation projects where EIA is essential. For rehabilitation and resettlement of people affected by river and coastal erosion from a natural calamity under urgency clause, if the land needs to be acquired, a 30-day notice under Section 21 would suffice. For vacating house owners occupying the site, a 48-hour notice can be given under Sections 42 and 43 of the Act.

Also, with reference to a special provision to safeguard food security (Section 10), irrigated multi-cropped land shall not be

acquired with an underlying emphasis on securing food security. If acquired under an exception like, multi crop land within the barren land, financial provisions are to be made to develop barren land. In other cases, the acquisition of agricultural land should not exceed such limits of the net sown area as may be notified by the government. The multi-crop land exemption clause is not applicable on linear projects like railways and highways. If the SIA is approved, the Notification for Acquisition needs to be published in Official Gazette, 2 Daily Newspapers (1 in regional language), in the local language, on government website, in the affected areas, etc. The affected families can object to any stage of the project and the affected person can file an objection within 60 days to the Collector. A special meeting of the PRI/ Urban Local Body(ULB) will be conducted to inform its General Body. Also, no survey can be carried out in the absence of a land owner/ authorized person. Any grievance by the public is addressed under a three-tier system at different levels.



**Special Provisions for Weaker Sections are considered under the Act as given below:**

- Preferably land to be given in case of irrigation projects;
- One-time financial assistance of Rs. 50,000 per family;
- Families to be settled outside the district to get an additional 25% R&R benefit;
- Payment of one-third of the compensation at the very outset;
- Preference for relocation and resettlement in the same community block;
- Free land for community and social gatherings;
- In case of displacement, a Development Plan is to be prepared;
- Continuation of reservation and other Schedule V and Schedule VI area benefits from displaced area to resettlement area.

If the private acquisition of land is beyond certain limits as specified by the appropriate governments, then R&R benefits to be extended to the PAFs by the private entity under Section 46. The Act also requires the R&R plan to be built in within 6 months. Any grievances need to be referred to the Authority within six weeks of Collector's award and cases to be decided within six months.

Some of the other changes involve Exemption from Income Tax, Stamp Duty and Fees except under Section 46 (Section 96), no change of purpose

allowed (Section 99), no change of ownership without specific permission (Section 100), return of land if not used in 5 years (Section 101), Appreciated Value to be shared with original owners (Section 102) and option to lease (Section 104). The option to lease is preferred by many States like Bihar. A total of 13 Acts are superseded by this Act where R&R is involved.

He concluded that any new policy or provisions for R&R should take into consideration RF CTLARR Act 2013.

## **Existing Act & Relevance to New Policy**



**Dr. Pavan Kumar Singh,  
Joint Advisor (Ops), NDMA, GoI**

Dr. Pavan Kumar Singh pointed out that the purpose of the meeting was to take relevant sections from the existing Act, while formulating policy on R &R for displaced people due to coastal and river erosion. Keeping in mind the emerging issues of displacement due to coastal and river erosion, the XVth Finance Commission has recommended both the Union and the State Governments

develop a policy to deal with the issue. Such resettlement should ensure safer sites for the people being resettled. He pointed out that the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation, and Resettlement Act ensures a humane, participative, informed and transparent process for land acquisition with the least disturbance to the owners of the land and other affected families; provides just and fair compensation to the affected families whose land has been acquired or proposed; makes adequate provisions for such affected persons for their rehabilitation and resettlement; ensures that the cumulative outcome of compulsory acquisition should be that affected persons become partners in development and for matters connected therewith or incidental thereto.

He introduced various definitions as suggested under the Act like 'Administrator', 'affected area', 'affected family' 'Commissioner', 'Resettlement Area', 'Scheduled Areas' and 'small farmer'. He highlighted various sections which are relevant to rehabilitation and resettlement. Emphasising on public hearing for Social Impact Assessment, he put forth that whenever a Social Impact Assessment is required to be prepared under Section 4, the appropriate Government shall ensure that a public hearing is held at the affected area, after giving adequate publicity about the date, time and venue for the public hearing.

## **Need for Policy for Resettlement of erosion affected people**



**Shri Sanjeev Kumar Jindal,  
Joint Secretary (DM), Ministry of Home  
Affairs**

India's coastal regions and river basins are home to millions on the front lines of a shifting climate, sea-level rise, erosion, and natural disasters such as floods, tropical storms and cyclones. All these disasters place people's livelihoods and homes in jeopardy, with the flight to safer places occurring voluntarily or, as a last resort, through government intervention.

India has shown exemplary leadership in disaster management since Super Cyclone 1999 and Bhuj Earthquake, 2001. The DM Act 2005 and the NPDM 2009 marked the institutionalisation of a paradigm shift in disaster management in India, from a relief-centric approach to one of proactive prevention, mitigation, and preparedness. The Disaster Management Act, 2005 (DM Act 2005) lays down institutional and coordination mechanisms for effective Disaster Management (DM) at the national, state, district and local levels. The National

Disaster Management Plan (NDMP) provides a framework and direction to the government agencies for all phases of the disaster management cycle. It is in accordance with the provisions of the DM Act 2005, the guidance given in the National Policy on Disaster Management (NPDM) 2009, and the established national practices.

Communities along the country's east coast are exposed to tropical storms from the Bay of Bengal; in the north and north-eastern parts of India, the Brahmaputra, Ganges and Yamuna river basins are also vulnerable to flooding due to erosion. It may also be noted many of India's metropolitan cities such as Mumbai, Chennai and Kolkata are at high risk of flooding and sea-level rise, with millions living in these urban coastal areas requiring relocation to safer places in the future.

While most of the existing mechanisms in India address displacement from rapid-onset disasters such as floods, cyclones, by providing Central and State assistance from NDRF/SDRF, displacement due to slow-onset disasters such as coastal and river erosion is yet to be addressed. The reason for the above is that displacement and migration due to sudden-onset disasters are easy to recognise, it is often harder to examine migration patterns from slow-onset disasters such as sea-level rise. Given the challenges of climate change, the relocation of many human settlements as a pre-emptive disaster management strategy will be unavoidable as the intensity and

frequency of disasters increase in the future, requiring a future-looking national-level policy on managed retreat in India. Though many structural interventions to prevent erosion are being undertaken, given the long coastline and large area in each river basin, it is going to be a herculean task to prevent displacement.

The resettlement is often a complex social, political, and psychological process that requires the integration of fairness of compensation, land rights, and compensating the loss of original livelihoods. Many coastal communities like fishermen and salt pan workers stay in or adjacent to the coast. The coastal zone provides them unique livelihood opportunities with a specific skill set. Hence, any resettlement must address the loss of livelihoods along with damage to houses or loss of land. Giving an example of Cyclone Gaja (2018), he emphasised upon the reluctance of the community to shift to safer places because of social and economic causes. Any policy must ascertain that communities are not uprooted from their social and cultural roots.

Along with the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, other Acts like the Environmental Protection Act (EPA), 1986 or Water Act, 1974 needs to be thoroughly examined for any provisions for the erosion or loss of land.

# Presentation by States

## Resettlement issues due to River Erosion and best practices

### State of Assam



**Shri M.S. Manivannan,**  
**CEO, ASDMA, Assam**

Shri M.S. Manivannan, Commissioner and Secretary, Revenue and Disaster Management Department, and CEO, ASDMA made a presentation on the Rehabilitation Policy for Erosion affected families of Assam – 2020. During his presentation, he informed that Assam is perennially affected by flood and erosion. Assam comprises two valleys, the Brahmaputra and Barak Valley. He also informed that after receiving the draft report from XVth FC, the State government prepared and adopted a policy with the approval of the Cabinet. He described the eligibility and ineligibility criteria for consideration as beneficiary. According to this policy, there are three categories of rehabilitation packages, which include:

Category I – Families who have lost all their lands, both homestead, and agricultural land due to erosion and they

have no other land anywhere in the State;

Category II – Families who have lost their homestead land, and not agricultural lands;

Category III – Families who have lost all their agricultural lands, but have homestead lands.

He further described the procedure for the selection of beneficiaries, procedures for purchase of land etc. has been mentioned in the policy document of Assam State.

### State of Bihar



**Shri M. Ramchandrudu,**  
**Additional Secretary, DM Department,**  
**Bihar**

Shri M. Ramchandrudu in his presentation informed that Bihar is divided into three geo-climatic zones. Every year, Bihar faces floods because of the presence of rivers – Kosi, Gandak, Ganga etc. He explained the problem of soil erosion in Bihar. In many areas, the problem of

erosion is severe, though in some areas it is less. During Kosi flood, 2008 large areas were eroded and this is a problem faced every year, though yearly data of erosion is not available.

He informed that for resettlement and rehabilitation, there is a Bihar Raiyati Land Lease Policy 2014. According to this policy, the State Government acquires the land on lease basis in case of displacement of people due to natural disasters such as floods. Under Bihar Kosi Flood Recovery Project, houses were constructed in 35

blocks of 5 affected districts. He further said that to prevent soil erosion in the State, Bihar Government is implementing Jal Jeevan Hariyali project for last one year. Under this programme, the State Government gives emphasis on afforestation, construction of soil and water conservation structure, checking of dams etc. Department of Water Resource, State Government of Bihar is constructing soil erosion control structures. At the end, he informed the need of a policy on river erosion.



# Presentation by States

Resettlement issues due to Coastal Erosion and best practices

## State of Odisha- Coastal Erosion and Satabhaya Resettlement -a case study



**Dr. Mishra**  
Chief General Manager, OSDMA, Odisha

Dr. Kamal Mishra informed that all the coastal districts of Odisha are highly populated and prone to natural calamities. A stretch of 480 km is prone to coastal erosion. Districts of Kendrapada, Jagatsinghpur, Puri and Ganjam are prone to erosion whereas Bhadrak and Balasore are prone to accretion activities.

A preliminary assessment was conducted by National Institute of Ocean Technology (NIOT) in India and Bangladesh along the coastline of BoB. The report agrees with the findings of the shoreline management plan under Intercoastal Zone Management Plan (ICZMP) and undertook numerous interventions to prevent

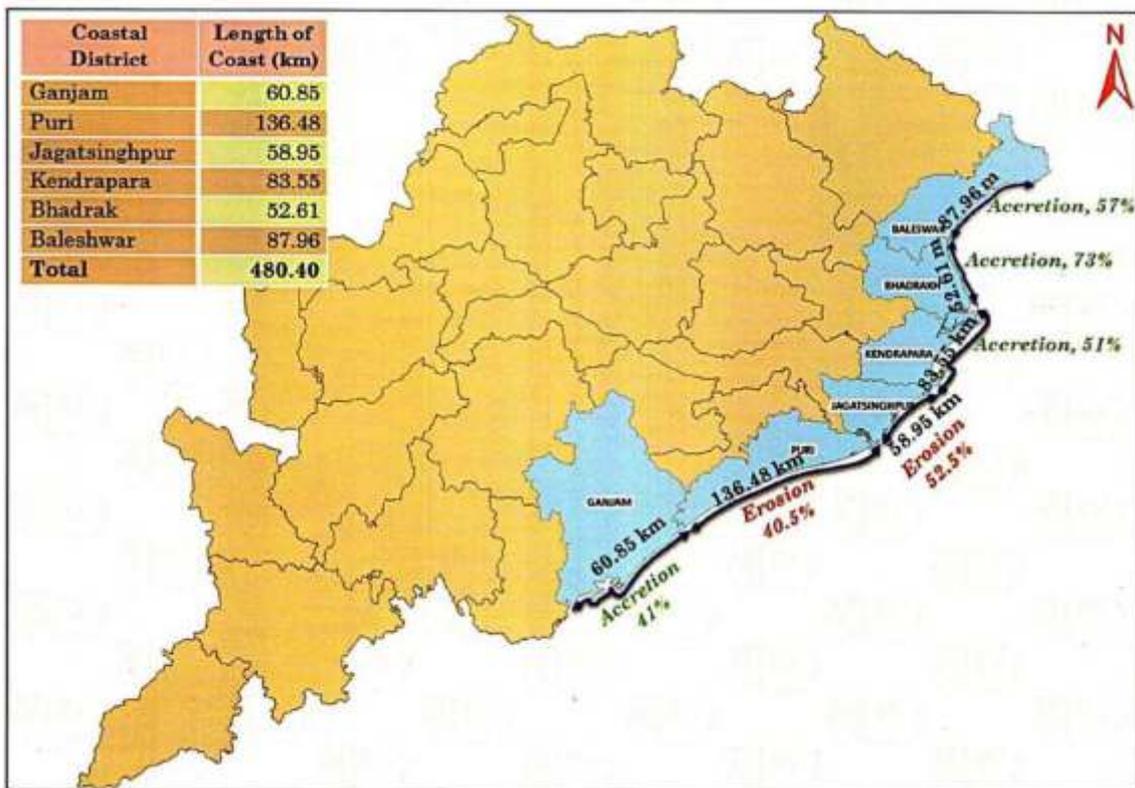


Figure 3 Map showing erosion and accretion of Odisha Coast

**Fig. 2: District-wise erosion, accretion characteristics of Odisha coast**

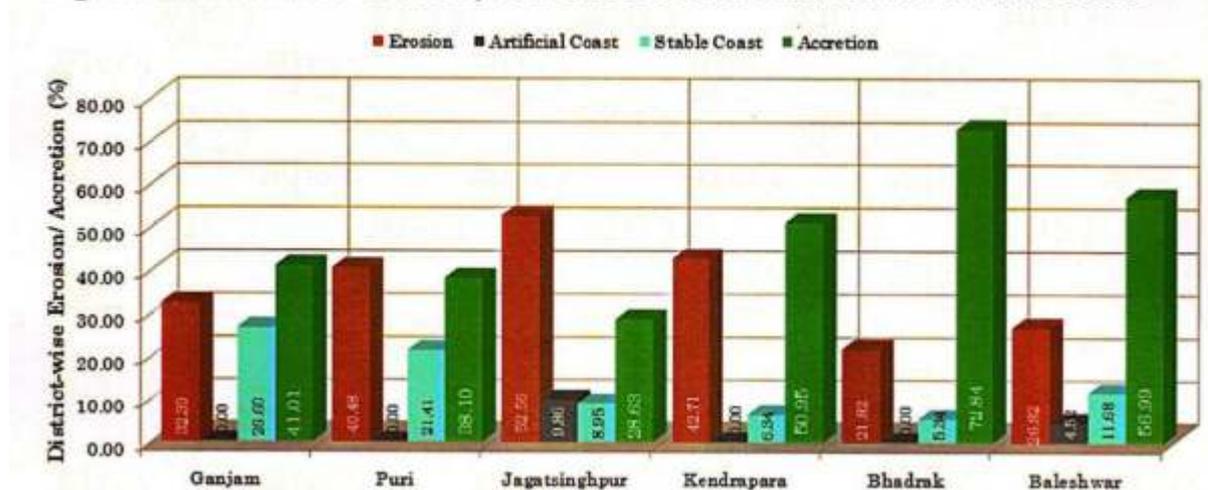


Figure 4 District wise erosion, accretion characteristics of Odisha Coast

erosion like geo tubes, the opening of the river mouth etc. However, it is evident from the field there is no one best solution, rather each section of coastal needs to be managed differently. Further scientific studies need to be undertaken to understand the process of coastal erosion. Technical know-how and studies may be undertaken at the national level and shared with States.

The structural interventions may include by-passes of constructions eg. ports, embankments, dikes/polders, groynes, revetments, breakwaters, closure dams, cross dams, land reclamation, sand nourishments, dune restoration, mangrove conservation, restoration, hybrid solutions, setback lines, zoning, managed realignment and protected areas. Non-structural measures for disaster management through preparedness and mitigation measures include early warning system, evacuation plans, infrastructure improvement,

cyclone shelters, refuge areas, flood proofing (houses, infrastructure), CBDRM and awareness-raising, emergency response, relief & recovery programs, insurance and livelihood improvement programmes.

#### **Satabhaya Resettlement- Case study**

Dr. Mishra shared the case study of coastal erosion on Satabhaya villages of Kendrapada District and then their relocation and resettlement thereof. The word 'Sata-bhaya' literally means seven brothers in Odia – a reference to seven villages that existed along this coast several decades ago, with agriculture and fishing as the mainstay of their robust economies. As the villages went into the sea one by one due to coastal erosion the villagers moved inland to create five new villages. Presently, the remaining 571 families of Satabhaya Gram Panchayat of Satabhaya, Kahnupur and four other villages at Kendrapada district affected

by coastal erosion are being resettled 9 Kms away in Bagapatia Village.

The government of Odisha has earmarked 182.10 acres out of which 132.10 acres for houses, roads, schools, land development, and public amenities and 50 acres for future consideration of other rehabilitated households from villages like Panchubarahi, Kahnupur etc. Each household has been allotted 10.00 decimal of land and each family to get a Pucca House under Biju Pucca Ghar Yojana (BPGY).

Basic Amenities are provided like pipe water supply to houses, toilets, electrical connection to houses, internal earthen roads, anganwadi center, Multipurpose Cyclone Shelter (MCS), market complex, smasanghat upper primary/high school

provided through the State Administration out of Chief Minister Relief Fund (CMRF) and other Central Aided Fund. The resettlement of these affected funds was accessed from various sources like CMRF, State budget, Central government budget, and disaster management fund.

The major challenge faced by the government of Odisha was that the area allocated was low lying and was required to be filled up before building houses with reference to the existing houses. Along with landfilling, the government of Odisha carried out social engineering method like shifting of village deity Maa Panchubarahi to the resettled community. The resettled people were given assurance by disaster management authorities that their rights and interests will be safe guarded.



## State of West Bengal



**Shri Amal Kanti Roy,**  
**Senior Consultant- DRR**

The coastal stretch of West Bengal, bordering Bangladesh and located on the eastern end of the Indian peninsula, is one of the largest deltaic regions of the world. The coastline has numerous rivers and the largest single block of tidal halophytic mangroves. The 534 sq. km coastline of West Bengal is regularly hit by tides, tropical cyclones and storm surges, and therefore undergoes erosion. The Sunderbans consisting of 102 islands on the Indian side, only 54 are inhabited and are home to five million people. These southernmost inhabited islands change their shape almost every day, with shifting courses of river channels and powerful tidal waves eroding land from one side and building sandbanks elsewhere. The districts in North and South Paraganas are

exposed to river and coastal erosion. These communities face a constant threat of coastal and river erosion. He pointed out that the vulnerabilities are different for all communities and must be examined before undertaking resettlement programs. The emphasis must be laid down on addressing the loss of livelihood. Social protection schemes for women, children, and socially backward sections need to be given priority. Accordingly, he suggested that basic civic amenities like electricity, housing etc are important for any resettlement projects to be successful.

## State of Kerala



**Dr. Sekhar Lukose Kuriakose,**  
**Member Secretary, KSDMA**

Dr. Sekhar L. Kuriakose pointed out that the problem with reference to Kerala is very

## Types of erosion in Kerala



Debris flow Erosion



Tunnel Erosion



Coastal Erosion

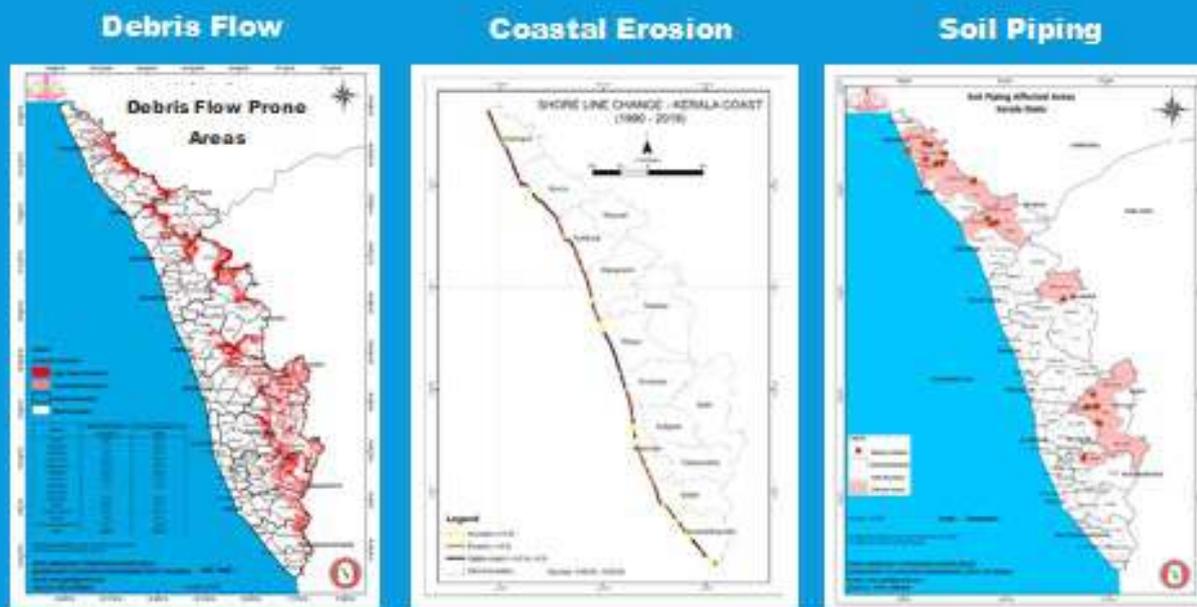


Figure 6 Areas prone to different types of erosion in Kerala

different given the very high density of population across the State. Kerala is prone to 3 types of erosion: erosion consequent to debris flows, coastal erosion, and sub-surface tunnel erosion–soil piping. The Western Ghats and foothills are prone to debris flows. Land subsidence due to tunnel erosion or soil piping is a slow hazard that has been recently affecting hilly areas. A scheme was started by the government of Kerala in June 2018 which provides for a total of INR 10,00,000 for relocating to a safer location which includes Rs. 4, 00,000 for new house and Rs. 6,00,000 for a minimum of 3 cents of safe land. The program is funded from CMDRF and State Government funds. The families eligible under this scheme are houses that should be located within 50 meters from the high

tide line. The house location needs to be certified by competent technical agencies (GSI, KSDMA, Mining & Geology, Soil Conservation, and Water Resources Dept) as non-livable. Presently 18,685 people have houses within 50 metres and to date 8911 have availed the scheme. The State Government implemented this Scheme and provided assistance for housing relocation to the beneficiaries during 2018 and 2019 floods. He requested NDMA to expand the scope of the scheme to cover all notified disasters – both at national and the state level. It is important to initiate a generic scheme with a checklist for identification of vulnerable sites/vulnerable households than project linked funding to address the inclusion of all.

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# Discussion and Way Forward

Following the presentations, Dr. Vatsa, Member NDMA informed that the primary purpose of the webinar is to formulate the policy for the resettlement or rehabilitation of the people affected by coastal and river erosion. The formulation of policy document is necessary with reference to recommendation of XVth Finance Commission.

The presentations made by National Centre for Coastal Research (NCCR), Central Water Commission (CWC), Department of Land Resources and Ministry of Environment & Climate Change highlighted the issues and addressed the problem related to coastal and river erosion.

The State Government officials also presented their views to deal with the issues of coastal and river erosion. During the presentations, it was observed that the problems are different along with the solutions. Therefore, State-specific solutions are paramount, for which issues with reference to coastal and river erosion and steps required in the process of resettlement and rehabilitation need to be identified.

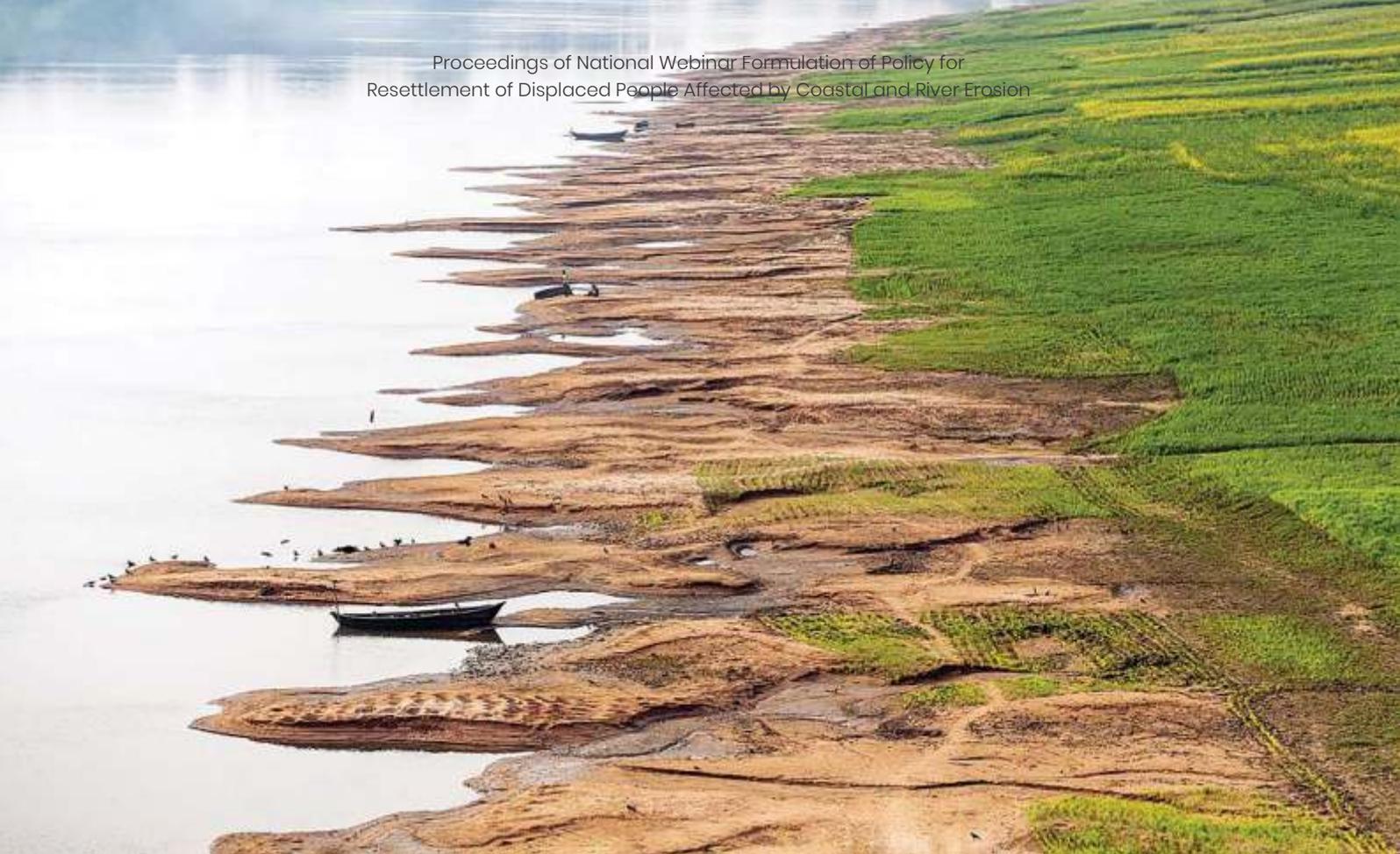
To address the issues related to coastal and river erosion, the approach is not only for recovery or resettlement but mitigation. This has been addressed in the recommendations of the XVth Finance Commission for mitigation window and recovery & reconstruction window under National Disaster Mitigation Fund/ State

Disaster Mitigation Fund and National Disaster Response Fund/ State Disaster Response Fund respectively.

The presentations made by the Central Water Commission informed that a lot of morphological studies for different rivers are with them. Similarly, National Centre for Coastal Research has data related to coastal zone. The availability of data as well as developed tools like environmental impact assessment and the social impact assessment are there to prepare the disaster risk assessment. The Government of India also has a range of policies and also a certain amount of legal framework available to formulate the policy document.

While formulating mitigation and recovery approach, climate change adaptation issues need to be taken into consideration. The sectors like housing, livelihoods, community infrastructure, education and health may be discussed in the policy document. For effective implementation, community-based approach may be adopted taking into consideration of social inclusion approach, particularly most vulnerable groups like women, children, persons with special needs, etc.

Therefore, the deliberations of the meeting need to be captured in the policy document. The concept of build back better needs to include better quality of life, access to livelihoods and social infrastructure. As per the



recommendations of the XVth Finance Commission, policy needs to be approved at the national level as well as state level. Hence, constitution of Working Group is necessary to formulate the policy on the resettlement or rehabilitation of the people affected by coastal and river erosion.

Dr. V. Thiruppugazh Additional Secretary, NDMA informed that a Working Group may be constituted for preparing the policy document on the resettlement or rehabilitation of the people affected by coastal and river erosion. The Working Group may comprise subject expert from the Ministries/ Departments, Institutions and the States. For scientific purpose, National Centre for Coastal Research (NCCR), National Centre for Sustainable Coastal Management, Chennai; Central Water Commission (CWC) and Ministry of

Environment, Forest & Climate Change (MoEF&CC) may be included in the group. Ministry of Rural Development should be included in the Working Group, as they are custodians of the 'Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 and National Resettlement and Rehabilitation Policy, 2007.

The States vulnerable to coastal and river erosion may be included in the Working Group as they have experience of addressing such issues. In addition, the State governments are requested to suggest names of Civil Society Organisations (CSOs) and experts who can contribute in preparing the policy document as the States are better aware of these organisations or experts in the field of rehabilitation and resettlement.

## Vote of Thanks



Dr. S.K. Jena, Joint Advisor (RR) proposed the vote of thanks on the occasion of the National Webinar for formulating policy on resettlement of displaced people affected by coastal and river erosion. First and foremost, he thanked Shri Sanjeeva Kumar, Member Secretary, NDMA for delivering the inaugural address. While delivering the lecture, he highlighted the issues related to displacement caused by coastal and river erosion and expressed that the deliberations of this webinar will be helpful to prepare the policy, as per the recommendations of XVthFC.

He expressed his gratitude to Dr. K.S. Vatsa and Shri Rajendra Singh, Members of NDMA for chairing the sessions of the National Webinar. He thanked the resource persons for participating in the national webinar and National Centre for Coastal Research (NCCR), Central Water Commission (CWC) and Ministry of Environment, Forest and Climate Change (MoEFCC) for highlighting the issues and challenges with reference to river and coastal erosion.

Following the issues and challenges, the resource person from Ministry of Rural Development (MoRD) explained Fair Comprehensive and Transparency in Land Acquisition, Rehabilitation and

Resettlement Act, 2013 and National Rehabilitation and Resettlement Policy 2007. Then, JA(OPS) NDMA elaborated the relevance of existing Act with reference policy to be prepared and Joint Secretary, Disaster Management, MHA highlighted the need for policy to deal with such issues.

The speakers representing the States of Assam, Bihar, Odisha, West Bengal and Kerala presented their views on resettlement issues with reference to coastal and river erosion.

In addition, he expressed his regards to all the participants representing Ministries/ Departments of Central Government and State Governments for their active participation in the meeting.

He also expressed his thanks to Dr. K.S. Vatsa, Member, NDMA and Dr. V. Thiruppugazh, Additional Secretary, NDMA for deliberating the issues in detail and suggesting a way forward. As per the deliberation of the national webinar, it is felt that there is a requirement of formulating a policy on resettlement of displaced people affected by coastal and river erosion. To prepare the policy, the members of the working group have been identified and NDMA will continuously follow up with the working group members to formulate a policy.

Lastly, Dr. Jena expressed his sincere thanks to Dr. V. Thiruppugazh, Additional Secretary, NDMA who was instrumental in organising this webinar. With his support, guidance and valuable contribution the programme was a successful one. He also placed record of thanks to the staff of PP Division and IT Division for their continuous support in organising this national webinar.





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