REDUCTION OF POVERTY - AN IMFORTRANT KEY TO MITIGATION

Maitreyee Chakrabarty

Natural disasters have had a disproportionately large impact on the developing world and on poor people within those countries for a variety of reasons. Lack of access for both individuals and communities to productive assets and financial resources; high levels of illiteracy; inadequate health care and extremely limited access to social services are the major causes of poverty in the developing countries.

Poorer families may be forced into increased debt in order to rebuild their homes, replace assets and meet basic needs until they are able to recommence income-generating activities. These groups have also traditionally found it hardest to borrow from banks and other formal lending institutions as they lack collateral and are often regarded as a bad lending risk.

Poor people have less flexibility in protecting their livelihoods and homes against disaster due to lack of financial and material resources. Poverty forces people to live in risk-prone areas increasing their vulnerability. When disaster strikes, assets bought with loans (for example, a cow) can be instantly destroyed. This makes the poor, poorer, since they have to pay back the loan for an asset long lost. Poverty in its multiple dimensions has a strong influence on people 's vulnerability to disaster, and vice versa.

To improve the situation extreme poverty and hunger should be wiped out. The Government should initiate necessary steps for equitable and sustainable economic development; universal primary education; include Class Analysis in Gender Mainstreaming; use a Capacity-Building Approach in Poverty Reduction and Disaster Mitigation Programs; more accessible basic health facilities; ensure environmental sustainability.

Finally, identifying the problems and thereby reducing the vulnerability of poor can become a key mitigation measure reducing potential losses from future disasters.

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Mainstreaming DM Concerns into developmental efforts

Pavan Kumar Singh[1] & S. K. Jena[2]

Abstracts

Disasters disrupt progress and destroy the hard-earned fruits of painstaking developmental efforts, often taking nations decades backward in their quest for progress. Though the whole world faces frequent and severe disasters, the developing countries suffer much more significantly the impact thereof. Those living in developing countries are naturally much more adversely affected as compared to those in the developed world, largely on account of their inherent vulnerabilities and the lack of preparedness.

At the national level, India has put into action a paradigm shift, from the erstwhile relief-centric syndrome to a proactive prevention, mitigation and preparedness-driven approach to DM. These efforts will conserve developmental gains and also minimize losses to lives, livelihood and property. ^

For the Xlth Plan document the Planning Commission took the important step of setting up a Working Group (WG) on DM. The recommendations of the WG emphasize the mainstreaming of DM concerns into the overall developmental effort. This essentially means looking critically at each developmental activity from the perspective of reducing disaster vulnerability in its plan as well as implementation. This would also minimize the possible potential of such an activity contributing to increasing disaster risk in the future. Most importantly, this mainstreaming action will ensure vital funds for disaster management in an ongoing and committed

In recent times, lessons leamt from past disasters internationally as well as regionally have begun to play a significant part in reducing disaster risk through knowledge sharing.

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LEARNING TO LIVE WITH DISASTER

Dr. Narottam Sahoo & Dr. Bindu Nair

Nature is always changing and moving. We human beings are a part of the nature and our quality of life depends on all the living things that share this planet with us. We must take care of our mother nature, because our weilbeing depends on it. This happens in different ways, for instance through natural phenomena that occur quite regularly, such as rain, winds, earth tremors or the natural processes of soil erosion. The more we learn, the more we understand that we must nurture the Earth as we would our children, for their sake.

Earthquake, floods, fires, volcanic eruptions, tropical storms, tornadoes, landslides, droughts, plagues and other phenomenon such as El-Nino and La-Nina are a part of nature, just like the sun and the rain. These natural phenomena affect almost the entire Earth. Today, the world has a wealth of knowledge and information on disaster risk reduction at its disposal; the key is sharing and using this in a pro-active way through awareness-raising and educational initiatives so that people can make informed decisions and take action to best protect themselves, their property and their livelihoods during natural hazards.

The National Bio-resource Development Board under the Department of Biotechnology (DBT), Government of India has launched a new activities targeting to the large number of school children to form DNA Clubs (DBT's Natural Resources Awareness Clubs for School Children) in their school premises to work on Biodiversity and sustainable development. The Gujarat Science City (GSC), working under the aegis of Department of Science & Technology, Government of Gujarat is taking a bold step in designing an exciting hands-on and minds-on activities and science programme in environment education integrating with to develop awareness, knowledge, and skills related to understanding our world. GSC has been recognized by the DBT as a Regional Resource Agency for the DNA Club programme and coordinating the activities with lots of innovation and creativity that inspire curiosity and supports life long learning.

The activities are an ideal way to integrate classroom curricula, stimulate the academic and social growth of young students, and promote the conservation of the natural environment and aims to provide opportunities to be actively involved in restoring, and protecting the environment as well as to minimize the risk of disasters.

We can not stop natural phenomena from happening, but we can make them less damaging if we understand better why they happen and what we can do to prevent or mitigate them. There is a great role for the younger generation in understanding about various natural catastrophes and to orient the family and the community to challenge the situation.

Disaster Management: Key Concerns and Prevention Measures

By

Syeedun Nisa

Disasters are either natural, such as floods, droughts, cyclones, and earthquakes, or manmade such as riots, conflicts, refugee situations, and others like fire, epidemics etc. What ever be the form of disaster, they cause lot of destruction and devastation to the human life, property, occupation, and natural resources.

India is one of the most disaster prone countries in the world. The locational and geographical features render 85% of land area vulnerable to a number of natural hazards such as cyclones, droughts, earthquakes, fires, landslides and avalanches. 54% of the land is vulnerable to earthquakes, 8% to cyclones, 5% to floods and as a result approximately 1 million houses are damaged annually other than human, social and other losses. 190 ■districts are multi hazard prone. Apart from natural disasters serious manmade disasters can also take place without adequate preparedness. Therefore, it is necessary that we should prepare our self more about how to deal with disaster and should ready ourselves with all the information and tools to deal it strategically as soon as it occurs.

This paper aims at discussing some of the pressing key concerns in India related to disaster occurrence & management. It also discusses useful prevention measures that may help in overcoming the disaster. The paper briefly outlines the Indian experience of disasters, discusses infrastructural, institutional and financial arrangements available for disaster management and the response towards these in the country. The paper concludes by suggesting some strategic measures to be taken after the occurrence of disaster in order to formulate safer environment for the country.

Lessons Learnt from Chabahar Free Trade and Industrial Zone Disaster Management Master Plan as a Sustainable Development Framework

Bijan Yavar and Vlaisam Mirtaberi

Experience obtained through different disasters reveals that sustainability and especially sustainable development needs a safe and secured environment through which the activities can flourish. This environment will be more important when economical, commercial and trading action and activities should take part in that. The investor who invests his or her property in the free zone considers the pay back of the money and this can be insured throughLa_£afe. and secured area and region which will end up in sustainable development, but for this a comprehensive disaster management master plan better be designed based on the free zone characteristics that will finally end up and cause the sustainable development, which will be in focus of this paper which will come by. Continuing the paper after the research methodology, at first, In this paper we wilt shortly go through the activities undertaken in the Chabahar Free Industrial Zone (CFZO) Disaster Management JVlaster Flan and programs at present

and for the future and also we will have a discussion on what are the main facts, the key notes of this project will be mentioned and then the lessons learnt from the project as an outcome will be discussed later on which will be ended by the conclusion. Some of the lessons leamt are as follows:

- The importance of assuring the investors for having a good disaster management plan (business continuity).
- The effects impacts of using disaster management data base in disaster management and planning.
- The global and regional network effects on quick analysis and effective disaster management and planning.

The importance of this project is **thai this** is **the** lira project from its Kind undertaken in the country and is a very good experience for other free zones in the country, region and in the world.

Is Indigenous Knowledge enough to live with floods? An Assessment in Indo-Nepal Flood Plains

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The diverse communities in perennially hazard zones Indo-Nepal floodplains, since centuries, have learnt to live, cope and reduce their disaster risks through the inherited indigenous knowledge. Originated within communities - based on local needs and specific to the locale specific culture and the context, this vast knowledge resource has withstood the test of time. This knowledge capital has helped in building the community resilience and enhancing their coping mechanisms. Available within cultural practices and using the traditional languages, skills, and the materials based on local ecology, construction methods, rituals and folklores, it is important to recognize the value of indigenous knowledge and create the enabling mechanisms wherein this could be integrated better in disaster risk reduction especially at the community level. It is however also important to recognize that Indigenous knowledge (IK) is not enough for the community to live with increasing risks emanating from multiple disasters and the extreme events. This knowledge needs to be effectively synergized with the scientific knowledge and disseminated in the form and manner that a community acts upon with the greater sense of empowerment especially hi the context of disaster risk reduction. The question is how to merge and then how to disseminate to those on the risk to act upon for their greater empowerment leading to risk reduction. The present paper examines a variety applications emanating from the case studies drawn from perennially flood-prone regions of Indo-Nepal boarder. The knowledge capital generated by seamless integration of indigenous and explicit knowledge forms the value chains for the community at risk.

Disaster as an Opportunity for Development:

Social Impact Assessment of Gujarat Emergency Earthquake

Reconstruction Project (GEERP)

Prof. Utpal Sharma (Dean, Faculty of Planning and Public Policy)

Prof. Madhu Bharti (Head, Department of Housing, Faculty of Planning and Public Policy)

On January 26th 2001, extremely severe earthquake occurred in Gujarat resulting in major loss of life, injury, damage to property, physical and social infrastructure. Kutch district is severely damaged followed by Ahmedabad, Patan, Jamnagar, Rajkot and Surendranagar.

In order to restore the livelihood security, social networking and sustainable infrastructure in the damaged areas, Government of Gujarat has launched a reconstruction programme and Gujarat Disaster Management Authority (GSDMA) act as a nodal agency for programme implementation. The Gujarat Earthquake Emergency Programme (GEERP) was launched with the State Government funding as well as assistance from Government of India, various Multilateral Funding Agencies like ADB, World Bank and others. The total estimates for this program were of Rs. 7,936 crore (approx. US$ 198 million) out of which nearly 50% was from the World Bank. It is a comprehensive multi-sectoral programme.

GEERP is having objectives of Repair, Retrofitting, Reconstruction, Rehabilitation, and Resettlement; involve people in the program; equality and gender empowerment; reduce vulnerability through long term mitigation; restore physical and social support systems. Different components of GEERP programme include; Livelihood support programme, Infrastructure, Social and community development. Disaster management capacity building and housing.

This paper is an outcome of study carried for assessing the implementation, processes and social impacts of GEERP program on different stakeholders, covering both positive and negative impacts. Situational analysis of towns to form the basic premise to begin the Social Impact Assessment Study has been carried out. It has tried to build up Pre-earthquake and Post earthquake scenario. Quantitative and qualitative methods were adopted for data collection. Primary household survey, Focus Group Discussion (FGD) was organized in selected wards and villages to cover the objectives and issues. Apart from this detailed structured interviews with officials of line agencies involved in Reconstruction & Rehabilitation program were also carried out for cross verification.

EMPOWERING PANCHAYATI RAJ INSTITUTIONS FOR DISASTER RISK REDUCTION

SHAKTI KUMAR

Panchayati Raj is a system of governance in which gram panchayats are the basic units of administration. It has 3 levels: village, block and district. Panchayats are local self-government institutions nearer to the people and they have a vital role to play in disaster management according to 73rd and 74th Constitution Amendments.

Panchayats have not given adequate responsibilities yet. Panchayats should have been granted appropriate powers to generate their own resources. In order to ensure that Panchayati Raj Institutions function as instruments of local government, it is important that other than the political autonomy their administrative (functional) and financial autonomy is guaranteed and transparency in their functioning. Availability of qualified personnel, at various levels, to assist Panchayati Raj Institutions is required.

As per Disaster Management Act-2005 a local authority shall ensure that its officers and employees are trained for disaster management; the local authority may take such other measures as may be necessary for the disaster management.
Panchayat Samities are to focus on planning, implementation, coordination and monitoring. Gram Panchayats have to play a leading role in execution of disaster prevention, mitigation, response, rehabilitation and developmental activities with the participation of local people. It has a lot of new ideas but it is not adequate. There is a capacity gap between different levels of institutions. My paper will elaborate that what are the capacity gaps and how PRIs would be capacitated in the areas of disaster prevention, preparedness, mitigation, resource mobilization, rescue, relief, restoration, rehabilitation, reconstruction and development.

This paper aims to find out the ways of strengthen the PRIs for better disaster risk reduction.

Mainstreaming Disaster Risk Reduction (DRR) in Development in India
Incentives, Instruments and Measures

Nisheeth Kumar, Knowledge Links

This paper deals with the following questions: what constitutes mainstreaming DRR in development; how it works and with what results; how can the results be measured. The paper examines the nature and efficacy of instruments of mainstreaming DRR in development in India. This is done in terms of: one, the incentives for mainstreaming i.e. who wants to mainstream and with what interests, or in other words, who owns it; two, choice of the instrument/s of mainstreaming and factors determining that choice; three, the efficacy of the instrument used in terms of enabling disaster resilient development from a long term perspective. The core contention of the paper is that integration of disaster risk (both micro and macro) reduction elements in mainstream development initiatives calls for major policy and institutional shifts, accompanied with need based capacity development interventions at various levels. This is a challenge that is worth taking in order to make the rhetoric of disaster resilient development real.

The instruments examined include: policy initiatives; design of development programs and projects; budgetary allocation; implementation strategies; capacity development; knowledge management and; monitoring and evaluation. The paper examines the inter-dependent nature of these instruments and their role in making DRR happen in development. The paper basically deals with conceptual and methodological issues and argues that they do and can impact policy and practice in many significant ways, even in terms of shaping the very nature of the actual initiatives undertaken.

The paper looks at the ways in which DRR concerns are integrated into mainstream development policies, plans and programs and the concrete measurable results that they lead to. The paper looks at two sets of Acts, programs and projects and their underlying policy perspectives: one, related to disaster management and climate change including India's National Disaster Management (DM) Act, Government of India and UNDP's joint Disaster Risk Management (DRM) Program, post-Tsunami recovery and rehabilitation projects, and National Action Plan on Climate Change, and; two, related to national initiatives in different development sectors that include National Rural Employment Guarantee Act (NREGA), National Rural Health Mission (NRHM), JNNURM, Sarva Shiksha Abhiyan, Total Sanitation Campaign (TSC) etc. The paper identifies budgetary allocation to be the most critical instrument signifying real concern backed by investment and commitment to action for mainstreaming DRR into development.

Disaster and Development: An Anthropological Enquiry from Policy to Practice

Dr. Sunita Reddy

It is increasingly apparent that large scale disasters will be central features of the 21st century. Disasters in developing countries are much more frequent and cause major losses compared to developed nations. The focus on disaster is more of physical and geographical compared to socio-economic and political. The term 'disaster' is often misused in common parlance and in academic discourse it has undergone a number of reformulations. With the new forms of terror related disasters, the concept 'disasters' has to be reconceptualised for analytical and research purposes. Disasters are undoubtedly social phenomenon calling for social science perspectives. Systematic and extensive sociological studies on disasters have been going on for the past six decades. Yet anthropology has not explored much in to this area, though it can contribute immensely to the disaster discourse due to its inherent multidimensionality and methodological rigor. The current paper focuses on how anthropology can contribute to understanding disaster.

Communities being the first responder calls for community preparedness and understanding community vulnerabilities can provide a foundation upon which mitigation and disaster risk reduction can be formed. Studies should incorporate the perceptual, interactional processes that shape community response to problematic situation. Disasters are often seen as an event and miss out on the processes.

The comparative and cross cultural studies gives as an added advantage and the biological, physical, cultural, archaeological, historical branching of anthropology provides a perfect framework for capturing the complexities of disasters. The 'emic' perspectives and the ethnographic method can give insights into what has gone wrong in the process of relief, recovery and reconstruction. The research – practice interface is recommended. From pure research to pure practice, there is need for increase in research-practice collaboration. The focus is on event, emergency and relief, the most neglected phase 'rehabilitation' calls for ethnographic, longitudinal research to understand the process and interface of disaster and development.

Mainstreaming Disaster Risk Reduction: From Reconstruction to Development; A Case Study of Gujarat Earthquake Reconstruction

V.Thiruppugazh

Post-disaster situations are said to open a window of opportunity not only for building back better but also for long-term disaster risk reduction. Reconstruction undertaken in the aftermath of catastrophic disasters aims at vulnerability reduction of the built environment through hazard resistant construction. The initiatives undertaken due to various reasons ranging from the conditions of the international lending institutions to political will cannot be one time intervention but should be sustainable. For sustainability these risk reduction initiatives should be mainstreamed to integrate them with the normal development process and should be extended in space and time to cover the state/country. This presentation highlights how the post-disaster reconstruction opportunity was effectively used in Gujarat to mainstream some of the risk reduction initiatives. This presentation argues based on Gujarat experience, that a realistic understanding of the limits to mainstreaming is essential to prioritize the interventions.

Financial Arrangements for Disaster Management

Pavan Kumar Sinah' & Nawal Prakash[3]

Disasters disrupt progress and destroy the hard-earned fruits of painstaking developmental efforts, often taking nations decades backward in their quest for progress. Thus, efficient management of disasters rather then mere response to their occurrence has. in recent times, received increased attention both within India and abroad the **Government** of India (Gol), in recognition of the importance of DM as **a** national **priority,** had in August 1999 set up a High Powered Committee under **the** Chairmanship of Shri J. C. Pant. Also an all party National Committee **on** Disaster Management (DM) was set up after the Gujarat earthquake for making recommendations on the preparation of DM plans and suggesting effective **mitigation** mechanisms. **On 23 December** 2005, the Gol took a defining step b> piloting the enactment of the Disaster Management Act (DM ACT, 2005).

The economy of India is the third largest in the world as measured by purchasing power parity (PPP). When measured in USD exchange-rate terms, it is the twelfth largest in the world, with a GDP of US S1.0 **billion.** After independence, India opted for a centrally planned economy model to achieve **an effective** and equitable allocation of national resources and balanced **economic** development. The process of formulation and direction of the Five-Year Plans is carried out by the Planning **Commission,** headed by the Prime Minister of India as its chairperson.

Tlie Act requires all agencies at the Central and State level to provide the funds required for operatioualizing these DM Plans. In this regard. National Disaster Management Authority has requested the Planning Commission to assist in ensuring in the provision of necessary funds for DM in Annual and Five Year Plans of Central Ministries and Departments ofGOi and State Governments.

Financing Disaster Management in India: Possible Innovations

Rupalee Ruchismita, Javed Hazarika, Mangesh patankar

Description of various types of catastrophes prevalent in India particularly focusing on nature of the risk, risk specific financing mechanisms etc. Experiences about financial risk management solutions from other nations. It will also discuss the Scope for risk specific replication of financial measures of disaster risk management and its viability both ex-ante (Insurance, Reinsurance, Capital markets, Government relief, International funds and other measures)and ex-post.(Detailed risk specific analysis of possible mechanisms like mobilization of relief funds , CRF, NCCF, Loan, Grants etc

Insurance Mechanism and the Funding of Post-Disaster Relief

Dr. George E Thomas,

Disaster management involves a multi-pronged approach. Ex-post approaches include mitigation, response, relief, rehabilitation and the expenditure on all these activities. Ex-ante measures include disaster prevention, planning and preparedness for facing and mitigating the consequences of disaster and more than anything else, providing for the funds for meeting the costs of rolling the conditions back to normal and all related activities.

While most of the ex-ante measures are subjects of detailed preparation and planning, in the developing country context, the large scale funding that is required post-disaster, for relief and rehabilitation including restoration of infrastructure are met by the government by reprioritizing planned budgets, increasing tax and borrowings more. On the whole, in this scenario, it is the sole responsibility of the Government to arrange for the funds. It would be practically impossible for a government to anticipate the cost of post-disaster funding and make adequate provisions. It would be also impracticable for any government to stack up huge amounts of money for uncertain contingencies when provisions have to be made for meeting more tangible and current requirements of the economy. Ex-post funding is usually done by utilizing funds earmarked for other activities, mostly development activity and throwing financial planning out of gear.
Insurance contracts can cover a large section of physical losses like costs of repairing or reconstructing buildings, repairing or replacing contents thereof, repairing or replacing damaged or lost property/ vehicles/ personal belongings etc. Insurance contracts can also provide agreed compensations towards loss of life, loss of wages to workmen, operating losses of factories, loss of crop; as well as reimburse accident related medical costs.

Insurers have recently vide the 'Kyoto Statement of the Geneva Association' signed by 50 insurers and re-insurers re-endorsed their commitment to the cause of creating a structure of sustainable, market-friendly incentives for climate risk adaptation and mitigation. Insurers, whose core expertise is managing the balance between risk exposure and financial stability, are in an ideal position to suggest how this can be done effectively. Insurers are keen to use their core skills for setting risk-based premiums based on scientific data.

It would make a lot of sense to meet the cost of post-disaster relief through insurance.

Disaster Management and Commercial Banks

Bibhuti B. Mahapatra

Commercial banks touching lives of billions of people worldwide need to maintain their services 24 X 7, so that the world doesn't come to a halt because of some disaster or the other. This has been emphasized all the more by acts of terrorism, outbreaks of pandemics, and various widespread natural disasters.

In 2004, the Financial Stability Forum and the Bank of England co-hosted a symposium on business continuity issues. A formal working group of the Joint Forum constituted after the symposium developed a set of high-level principles for business continuity, which could apply across the financial system globally.

Business Continuity Planning (BCP) in banks in India

Following the international developments as mentioned above, RBI emphasised in its Circular dated April 15, 2005 that Business Continuity planning is a key pre-requisite for minimising the adverse effects of one of the important areas of operational risk in banks - business disruption and system failures. It also laid down the BCP methodology in detail.

Role of banks in Disaster Management

RBI has instructed the banks in its Circular dated 20.12.07 to discharge Corporate Social Responsibility entailing the integration of social and environmental concerns, play their role in Sustainable Development maintaining the quality of environmental and social systems and do Non-Financial Reporting especially as regards the triple bottom line, that is, the environmental, social and economic accounting.

Financial Sector Assessment

The Advisory Panel of the Committee on Financial Sector Assessment jointly set up by Government of India and Reserve Bank of India tried to ascertain the level of preparedness of banks with regard to business continuity and observed in the report published in March, 2009 that at the aggregate level, although banks are sensitised to the issue of business continuity management (BCM), certain deficiencies exist in respect of its implementation. These deficiencies need to be addressed to make the BCM process more resilient, pro-active and robust, since BCM is a journey and not an end.

Banks need to apply themselves to the above and other related issues and also effectively tackle the problems, which may crop up during the course of implementation of their Disaster Management/ Business Continuity Plan for the betterment of their own organisation as well as of the society.

FUNDING DROUGHT RISK IN DEVELOPING COUNTRIES: A PERSPECTIVE BASED ON THE USE OF PRODUCTS AND SERVICES FROM EARTH OBSERVATIONS SATELLITES

Sanjay K Srivastava and VS Hegde

The farmers of arid and semi-arid regions, with limited and increasingly declining marketable surplus, have always been subjected to the manipulations of the market as well as extremes of the weather.

The governmental policy thrust till now has been on strengthening production technology and input delivery systems and regulating the market price of products through minimum support price structures. This hasn't been enough to give farmers a shield for their vulnerability, especially in the context of drought.

Agricultural insurance, aims at insuring farmers against production and price risks, is a new paradigm. The scheme envisages seeing the government giving a premium subsidy and guaranteeing farmers a minimum income to reduce their vulnerability. Under this scheme, an 'Area Approach or Area Yield' is being used for actual yield and price measurement of the insured crop. The government is to give a premium subsidy cent in the case of small and marginal farmers.

Financial agencies including World Bank, Asian Development Bank, Private Banks and some of the Insurance companies have proposed weather-based index insurance. These schemes also operate on the basis of 'Area Approach or Area Yield'. The key advantage of this kind of insurance is that payouts are based on the occurrence of a weather event, rather than on actual crop losses and therefore not subject to the possibilities of manipulation when insurance payouts are linked to actual crop losses. The weather or "trigger" event (rainfall deficit) during the critical stage of crop growth can be independently verified by analyzing EO based crop inventory, taking into account the sensitivity of key crop growth parameters, viz., Leaf Area Index (LAI) with rainfall.

Earth observations (EO), though limited, but have played catalytic role in promoting agricultural insurance globally. For example, NOAA weather data and analyses based on EO inputs are being used in crop insurance services in United States. NOAA data is used directly and indirectly used in establishing rates and coverages, high-risk areas, planting and harvesting dates, crop hardiness areas, new crop programs and developing crop models and current year loss estimates. Insurance services and compliance programs use historical and current EO data as an additional information resource in determining if losses are reasonable. The use of EO inputs/products in crop insurance, in the developing countries of ESCAP region, has to be context specific and to focus more on fragmented land holdings with typical multiple cropping systems of dryland agriculture.

Quite a few countries in the region have been using EO inputs for agricultural statistics. Recasting these applications in tune with the 'Area Approach' method of crop insurance policy and also to expand them to cover specific dryland crops having greater risk per acre conceptually sound promising. The operational mechanisms that also include technological vis-

à-vis institutional factors need priority and reorientation. A roadmap in this direction could have the following steps:

Hazard zonation and risk assessment: In case of drought, it could be climate/weather based in tune with agro-ecological zones and socio-economic conditions. This is essentially to target the riskiest population, which could be targeted for social safety nets; other interventions including the risk transfer mechanisms through crop insurance scheme.
Local Area Statistics: In the selected risk zones, high precision EO base crop statistics related applications may hold ground. Assessment of yield or crop conditions at the individual field is not practical. Normally, for a crop insurance scheme based on the homogeneous area approach is called for. All that is needed is a delineation of agro-climatic regions, small enough to be homogeneous in the sense that the annual crop experience of a majority of farmers coincides with average experience of the area and large enough to enable the determination of the crop conditions and yield with reasonably small statistical errors.

Though agricultural insurance or other weather-based index insurance cannot fix all the ills of vulnerability, the small and marginal farmers are confronted with, especially with regard to drought; it however provides an opportunity to reach them out in terms of compensating a part of the losses they experienced. In case of drought, farmers deserve to be given an income guarantee based on yield, price, or area planted.

Success of crop insurance initiatives of insurance companies/banks lies in strong and dynamic 'Areas Specific' crop and weather statistics, for which awareness needs to built upon. The proposed concept deals with EO based solutions for crop and other weather-based index insurance implementation in some selected parts of the arid and semi-arid regions.

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Natural Disaster Management: An Issue in India

Kamini Narain, Taiyyaba Yazdani, Mohd. Muzamil Bhat and M. Yunus

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Abstract

India is one of the most disaster-prone countries in the world. On account of its unique geo-climatic conditions, geographic size, vast population and socio-economic circumstances, the country is acutely vulnerable to natural disasters, which continue to cause colossal losses to lives, livelihoods and property, both public and private. The Indian sub continent has been exposed to natural disasters from time immemorial. Natural disasters in India include droughts; flash floods, as well as widespread and destructive flooding from monsoonal rains; severe cyclones; tsunamis; volcanic eruptions; hurricanes; landslides; avalanche; snowstorms; and earthquakes. Disasters lead to enormous economic losses that are both immediate as well as long term in nature and demand additional revenues. Disaster management occupies an important place in this country's policy framework as it is the poor and the under-privileged who are worst affected on account of calamities/disasters. There is a need to have a paradigm shift in disaster management especially under changing climate. Over the past couple of years, the Government of India has brought about a paradigm shift in the approach to disaster management. More focus is laid on preparedness, mitigation and prevention. GIS and Remotely Sensed data are being increasingly used for preparing disaster management plans. Initiatives such as adaptation to changes, disaster auditing, cross-sectoral risk analysis, regulatory authority (legal framework), knowledge management (community awareness), training and capacity building, training of media personnel, coastal zone management, private-public partnership (PPP), research and development, and last but not the least, establishing rewards or incentives for good management could be undertaken.

Disaster as an Opportunity for Development:

Social Impact Assessment of Gujarat Emergency Earthquake

Reconstruction Project (GEERP)

Prof. Utpal Sharma (Dean, Faculty of Planning and Public Policy) Prof. Madhu Bharti (Head, Department of Housing, Faculty of Planning and Public Policy)

CEPT University Ahmedabad,
Gujarat, India

Abstract

On January 26th 2001, extremely severe earthquake occurred in Gujarat resulting in major loss of life, injury, damage to property, physical and social infrastructure. Kutch district is severely damaged followed by Ahmedabad, Patan, Jamnagar, Rajkot and Surendranagar.

In order to restore the livelihood security, social networking and sustainable infrastructure in the damaged areas, Government of Gujarat has launched a reconstruction programme and Gujarat Disaster Management Authority (GSDMA) act as a nodal agency for programme implementation. The Gujarat Earthquake Emergency Programme (GEERP) was launched with the State Government funding as well as assistance from Government of India, various Multilateral Funding Agencies like ADB, World Bank and others. The total estimates for this program were of Rs. 7,936 crore (approx. US$ 198 million) out of which nearly 50% was from the World Bank. It is a comprehensive multi-sectoral programme.

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This paper is an outcome of study carried for assessing the implementation, processes and social impacts of GEERP program on different stakeholders, covering both positive and negative impacts. Situational analysis of towns to form the basic premise to begin the Social Impact Assessment Study has been carried out. It has tried to build up Pre-earthquake and Post earthquake scenario. Quantitative and qualitative methods were adopted for data collection. Primary household survey, Focus Group Discussion *(FGD)* was organized in selected wards and villages to cover the objectives and issues. Apart from this detailed structured interviews with officials of line agencies involved in Reconstruction & Rehabilitation program were also carried out for cross verification.

DEVELOPMENT OF A HIMALAYAN REGION FOR EARTHQUAKE RISK REDUCTION

Illa Gupta and RShankar

Abstract

India, in the past 20 years has witnessed six major earthquakes, three of which occurred in

Himalayan ranges. Himalayan ranges are seismically very active and if any major earthquake strikes here buildings would collapse killing and injuring hundreds of people as was witnessed by latest Kashmir earthquake of October 8. 2005. Hence, the need for developing these settlements for earthquake disaster reduction is profound. Narendranagar block of Tehri Garhwal district is chosen for these studies because of high seismic activity, high population density as compared to other hilly settlements, availability of data and special hiliy features like landslides, inaccessible **settlements** etc. The vulnerability and resource analysis suggest that Narendranagar block is characterized by high earthquake vulnerability and low resource potential for earthquake disaster management. The hypothetical earthquake scenario generated within the block provides the basis for the measure of the likely losses and shortage of existing resources. Thus, it is necessary to guide the developmental activities towards earthquake preparedness with the twin goals of vulnerability reduction and strengthening resource potential. **The** paper details out general preparedness measures to be taken within the block and detailed preparedness measures are suggested **for** three selected sample settlements. The important aspects for review, revision and effective implementation **of development** plans as **well** as the disaster reduction plans are suggested to make them reliable and easy to implement. The integration

of disaster management measures into development planning process would facilitate control over the future growth *of* potential disaster ioss and future mitigation of disaster damage to existing development. The guidelines provided for inclusion of disaster management plans with the development ptans should prove effective if implemented in other regions also.

Active Participation of the Panchayati Raj Institutions is the key to Success for any

Disaster Management Strategy: The case study of Andaman and Nicobar Islands

Shakeb Nabi

This paper is based on the paradigm shift associated with disaster response from relief & rehabilitation to Disaster Management which has a very important component of disaster preparedness and mitigation. It has been suggested during the recent discourse that Disaster Management activities should be made an integral part of long term development planning.

The paper would focus on the Andaman and Nicobar Islands of India where CARE India with the help of the European Commission is implementing a Community Based Disaster Preparedness Program

Methodology:

The methodology would comprise both the secondary research as well as the primary research. An appropriate sample size would be taken to elicit the response from the field.

Outcome

The outcome of the research would be a paper which will give the reader a detailed idea as to how active participation of the PRI Institutions will lead to better disaster preparedness of the community. The whole research would focus on the following points

- Transparency and accountability linking to RTI
- Roles and responsibilities of PRI related to 11th Schedule
- The legislative provisions of disaster management

The paper would also suggest some of the areas which will further enhance the effectiveness of the PRI towards better disaster preparedness.

- Integrating disaster management into development planning by looking at various
  schemes with the PRIs which can be used for disaster management at the village
  level.
- 11th schedule vis a vis its role in Disaster Management Strategies
- the devolution of power to Panchayat in the Andaman and Nicobar Islands
- Strengthening the PRI through capacity building
- Budgetary provisions to the PRIs for
- Enhancing the representation of the most vulnerable and the marginalized
  community into various programs

Analysis Regional Disparity of Disaster Vulnerability in Coastal Bangladesh by using Disaster Risk Index

Bishawjit Mailick, Utpai Kumar Das, Sudeb Kumar Das, Shaikh Shahidul Islam, Md. Nazrul Islam, Apurba Swatee Mahboob and Joachim Vogt

Abstract

The vulnerability of human populations and natural systems to climate change differs substantially across regions and across populations within regions. Regional differences in baseline climate and expected climate change give rise to different exposures to climate stimuli across regions. The natural and social systems of different regions have varied characteristics, resources, and institutions and are subject to varied pressures that give rise to differences in sensitivity and adaptive capacity. From these differences emerge different key concerns for each of the major regions of the world. Even within regions, however, impacts, adaptive capacity, and vulnerability will vary. Because available studies have not employed a common set of climate scenarios and methods and because of uncertainties