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Sociatal Risk Management: A Tool to Sustainable Development

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Abstract

Disaster risk is seen as a function of the hazard, exposure and vulnerability, denoted by the mathematical function: Disaster Risk = function (hazard, exposure, vulnerability where "exposure" refers to the element which is affected by natural disasters, people and/or property. To reduce disaster risk, it is important to bring down the level of vulnerability and to contain 'exposure' by relocating populations and property away from the hazardous zones. Understanding risk involves the governance function of risk management. Risk management is essentially a function of governance involving policy planning, setting up an organisational framework involving government agencies, private corporate sector and the non- government community action groups, professional associations and outside experts. It is defined as the "systematic application of management policies, procedures and practices" to assess the requirements of risk reduction, through identifying risk and taking stock of constraints, factoring the same in policy, monitoring risk with a view to updating risk assessments periodically developing thus institutionalising a culture of prevention. This paper is an attempt to analyse and evaluate various aspects which help a society to cope with the emerging risk. This paper also enlightens various components which are necessary for effective risk management.

Key Words: Risk management, Sociatal risk, Risk Assessment. Etc.

Introduction

Risk is a technical concept, which is used by engineering and management specialists to arrive at an estimation of losses in the event of a disaster and the expected probability of its occurrence. Risk is precisely defined by the ISDR as "the probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human induced hazards and vulnerable conditions". Conventionally, the notation expresses risk: Risk = Hazards x Vulnerability.

Some disciplines also include the concept of exposure to refer particularly to the physical aspects of vulnerability. Risk is sometimes taken to be synonymous with hazard, but risk has an additional implication of the probability of a particular hazard actually occurring. Risks are created due to excessive resource use that leads to serious degradation of the environment. Factors behind such intensified resource use are rapid population growth, market induced demand, greed of the rich and resource exploitative public policies such as mining for which rocks are blasted and poisonous substances are released in the environment. Invariable consequences are the disruption of conditions conducive to biophysical processes that ultimately harm the stability and sustainability of mountain environments.

Understanding risk involves the governance function of risk management. Risk management means reducing the threats posed by known hazards, whilst simultaneously accepting unmanageable risks, and maximising any related benefits. Thus, understanding and managing risks can easily achieve risk mitigation. The process involves analysing the risk(s), estimating potential effects, positive against negative and determining its implications for planning, diverse skills and disciplines and allows communities to undertake risk management activities that have been considered the domain of the engineering experts"(Guzman, 2005). The detailed process, as explained by the IDNDR ESCAP (1999) consists of the following steps:

- Identify the stakeholders exposed to or affecting the risk of the disaster;
- Identify public and private property, social systems and environmental elements at risk;
- Estimate the disaster risk, i.e. the likelihood and consequences of the disaster;
- Assess the acceptability of the disaster risk;
- Define disaster risk treatment strategies;
- Monitor and review disaster risks and the effectiveness of risk treatment, and
- Communication between the community and risk management agencies.

Risk Management has two components (a) Risk Assessment (b) Risk Evaluation. Risk Assessment is understood as "the methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that could pose a potential threat or harm to people, property, livelihoods and the environment on which they depend."

"The process of conducting a risk assessment is based on a review of both the technical features of hazards such as their location, intensity, frequency and probability; and also the analysis of the physical, social, economic and environmental dimensions of vulnerability and exposure, while taking particular account of the coping capabilities pertinent to the risk scenarios…."(I.S.D.R.)

Risk evaluation entails assessment of proposed risk reduction measures from the point of view of cost efficiency. Efficiency is examined by means of cost-benefit comparisons, which imply assessing benefits procured or expected to be procured from a measure against costs likely to be incurred. Assessment has significant administrative implications in that precise understanding of the underlying process of a hazard enables formulation of targeted risk reduction policies. Precise quantification of risk is often difficult in the absence of adequate data and proper analyses techniques. Moreover, certain areas are multi-hazard prone, which poses challenge for risk assessment. Risk reduction policy for such areas requires risk assessments regarding each type of hazard to arrive at an estimation of losses involved. Besides, risks are not amenable to simple quantification in that intangible factors are involved that cannot be easily identified and quantified.

Objectives of the Study

Risk management denotes the strategies to mitigate disaster threat. It involves planning at the state level to build coping capacity through planned development strategies. It is necessary to understand risk management programmes and its application needs highly qualified management and policy makers for its successful implementation. Keeping in view the need of risk management, this study is aimed to achieve following objectives:

- To gain general understanding of societal risk management
- To identify and discuss various components of societal risk management.

Methodology

This paper is descriptive in nature. Available secondary data and the literature from various sources have been used to develop this paper.

Societal Risk Management

Disaster risk management takes community as the target group and regions as the unit of operation for interest articulation, voluntary activity and implementation of policy with regard to disaster prevention, preparedness and mitigation. Legislators, administrative agencies, local self-governing institutions and community level associations are involved in disaster management activities at the community level. By the above understanding, societal risk management involves value judgements in that a choice(s) may often be presented between economic utility and human welfare. Retrospective judgement of a decision on utility or welfare argument as also 'choice' regarding the desirability/feasibility /practicability of a policy (s) may not be easy given the imperative nature of both requirements. The objective of sustainable development is to strike the needed balance, which in other words can be explained as societal risk management. Societal risk management involves 'political choices' in resource allocation decisions which have distributional impacts involving, authoritative allocation of values in that certain values (interests) get emphasised to the exclusion of certain others in the process of sieving and sifting of alternative courses, arriving at the final choice(s). For example, a chemical plant is bound to lead to economic gain that could lead to spiraling growth in related sectors and overall spurt in the Gross National Product (GNP) but would create environmental susceptibilities or potential hazardous conditions. The 'elements' at risk in this case would be human health, environmental degradation, specifically air and water pollution overtime, and large scale loss of life in case a mishap occurs (example, Bhopal Gas leak). Such policy choices involve significant questions concerning welfare economics in that tangible and intangible gain and losses have to be studied, in relation to one another to identify the gainers and the losers in each case in order to strike the balance always in favour of net social welfare.

Rudimentary concepts are beginning to emerge in disaster welfare economics though they are still at the conception stage. Cost estimations are presently being attempted on three chief bases, signifying three chief requirements of cost assessments. Cost assessment by the welfare economics criterion are based on the idea of 'consumer surplus', that is' apart from property costs to firms and households consumers face changes in welfare due to changes in the availability of certain market products, changes in environmental quality, changes in the availability of recreational sites, and stress. Effort is needed to incorporate such non-monetary aspects of disasters in cost-benefit analyses. Computing costs on basis of an accounting framework, economists attempt to make cost assessments consistent with the format of national accounts since information is readily available on a systematized basis.

Input- Output (I/O) analysis and computation of General Equilibrium can be easily done on the basis of data presented under accepted cost heads.

Cost assessments need also to cater to macroeconomic requirements. Macroeconomics is concerned with the larger issues of inflation, poverty, unemployment and income levels in the economy. There are important resource allocations decisions involved in rebuilding houses, infrastructure and machinery and equipment, which will obviously divert money away from spending in other potential areas. According to Veen Aan Van, questions to be asked are; how does the economy deal with this shock? What is the net effect on unemployment, government deficit, and inflation, and what other macro-economic implications and those involving international politics are involved?

There is need for an integrating framework to address the issues involved in each of the three aforesaid approaches. Efforts of economists are currently devoted to achieving such integration. From all the three perspectives however, estimation of secondary or indirect impacts of disaster are considered important. One emerging theory of loss assessment is that to assess the value of the loss by either taking the stock value (capital lost) or the flow value (impact on business transactions) into account corresponding concepts being direct costs and primary and secondary indirect costs. Direct costs relate to loss of land, capital and machinery, (thus to stocks), and primary indirect costs to business interruption (which means a flow). Moreover, secondary indirect effects relate to 'multipliers' in the economy since every singular impact leads to spin- off effects in related sectors. Building economic resilience implies minimising such 'flows' or spin off effects by creating inertia in 'flows.' Disaster spending/losses would involve primary and secondary impacts. Mitigation Planning has to be directed to minimising such secondary impacts on the economy. The magnitude of indirect effects depends on:

- the availability of alternative sources of supply and demand;
- the duration of the disruption; and
- The possibility to extend production, given the constraints.

Such information is vital for better accounting and also for macro-economic policy. Another problem is that there is lack of a common framework in literature on different kinds of natural hazards, for example, floods, hurricanes and earthquakes. An exception is the disaster handbook by Hewitt (1997), who centers his ideas on the concept of risk. Very little attention is paid to the structural and economic effects of large-scale disasters (Veen Aan Van, 2005). Risk management approach is based on the application of conventional and tested risk management techniques for specific sectors/ areas. This approach covers developing the

scope of the process; collecting detailed information on existing approaches; identifying hazards/vulnerabilities/risks; evaluating the probability, nature, and magnitude of the risk; formulating a strategy to reduce the risk; making working plans to implement the strategy; structuring a plan for verifying and evaluating the management of risk. Risk society produces and seeks to legitimise the very hazards, which are beyond the control of its institutions concerning areas of science, politics, industries, market and capital. The entry into risk society occurs at the moment when the hazards, which are now decided and as a result produced by society, weaken and/or cancel the established safety systems as per state's existing risk calculations. In contrast to the early industrial risks, nuclear, chemical, ecological and genetic engineering risks:

- Can be limited in terms of neither time nor place;
- Are not accountable according to the established rules of causality, blame and liability; and
- Cannot be compensated or insured against (Beck, 1996).

When examining environmental risks it is immediately apparent that there are no times, spaces or places outside of 'nature', just as there are no positions from which a media person may objectively observe such risks. In response to identified risks, individuals and groups have historically used a number of techniques for reducing or mitigating adverse health effects of a facility/resource. These include the following:

- Avoiding or eliminating the risk, such as prohibiting the use of a potentially dangerous object or substance;
- Regulating or modifying the activity to reduce the magnitude and/or frequency of adverse health effects, such as, by constructing dams, levees, and sea walls;
- Reducing the vulnerability of exposed persons and property, example, by requiring the use of the safety devices, by elevating buildings in floodplains, by immunising the population, by implementing quarantine laws, or by establishing disaster warning systems.
- Developing and implementing post-event mitigation and recovery procedures, for example, by establishing search and rescue teams, stock piling food, providing first aid training, or providing fire extinguishing equipment and services.
- Instituting loss-reimbursement and loss-distribution schemes through such mechanisms as insurance systems or incentives pay schedules for high-risk activities.

Risk Management Components

According to Somers, 1995, the risk management components are categorised into three main categories. These components are available to any society or its administrative and executive bodies to manage risks may. These are:

1) Regulatory

2) Educational

3) Economic

Each of these may be applied in conjunction with others. The policy option, the one most immediately associated with government action should be regarded as encompassing the whole range of regulations from Acts of parliament to guidelines, recommendations, and codes of practice issued from time to time. The techniques used to implement these options are varied and diverse in that they can range from subsided technology, to hazard identification, to media publicity. The educational approach can serve to make producers, workers, and the general public aware of the risks so that they make provision for reducing or avoiding these risks. Public information programmes can enhance health promotion by advocating sensible life-styles such as not smoking cigarettes, having safe sex, limiting fatty foods and regular exercise. Governments can strengthen the impact of these programmes through advertising in the media to vulnerable groups. Community leaders and role models, for example, doctors, film actors or sportsmen can reinforce these messages through examples. Workers can be educated in the hazards of chemicals by courses, posters, films, and by the explicit labeling of chemical products. Similarly, consumers can be made aware of the need to handle the pharmaceuticals, household chemicals, pesticides, and garden products with due care and attention. Positive reinforcement, by publicity, can be given to those manufacturers who show corporate responsibility by the safe and judicious treatment of their products, both within and outside their plants. Economic options provide both positive and negative incentives to measures for control of hazards. The 'polluter pays' is a principle espoused by the Organisation for Economic Cooperation and Development (OECD) with the intention of maintaining equitable trading practices by encouraging polluters to reduce emissions. Other economic instruments include pollution control delay penalties, market emission permits and subsidies for environment friendly production technology. In the first case, schedules are established in which the maximum allowable emissions are decreased over time. Subsidies such as grants for pollution abatement equipment may be used as monetary incentives for pollution control. Tax deductions, rebates and credits all play a part in the fiscal policy of a government's economic control of hazardous products.

Conclusion

Appropriate risk management depends on the accurate risk assessments following understanding of the concept of Risk, the vulnerabilities involved and the nature and extent of exposure to hazard/hazards. Risk assessment is a technical area of expertise in disaster management, in which experts from the field of scientific research, particularly relating to earth sciences are involved. Presently, the significant administrative issues relating to risk assessment is granting enough say to the specialists in the public administration decision hierarchy as against generalists concerning disaster mitigation policy planning. The issue of generalists and specialists is an old public administration issue area, which needs to be resolved in the interest and context of the emerging specialist public administration services like disaster management and rural development.

References

1. "A Climate Risk Management Approach to Disaster Reduction and Adaptation to Climate Change," UNDP Expert Group Meeting, Integrating Disaster Reduction with Adaptation to Climate Change, Havana, June, 19-21, 2002,UNDP, at http://www.undp.org/bcpr/ disred/documents/wedo/icrm/riskadaptationintegrated.pdf
2. An Interim report of the Sub- committee on Disaster Reduction, July 2003, "Reducing Disaster Vulnerability through Science and Technology", National Science and Technology Council, Committee on Environment and Natural Resources, at http:// SDR_Report_ReducingDisasterVulnerability2003.pdf.
3. Beck, 1998, "Politics of Risk Society", Jane Franklin (Ed), Politics of Risk Society, Polity Press, Cambridge.
4. Beck, Richard S. and Dianne Franke, 1996, "Rehabilitation of Victims of Natural Disasters" Journal of Rehabilitaton.
5. Blaike, P. Cannon, I. Davis and B. Wisner, 1994, At Risk: Natural Hazards, Peoples' Vulnerability and Disasters, Rouletdge, London.
6. Brooks, Nick, November 2003, "Vulnerability, Risk and Adaptation: A Conceptual Framework", Research Working Paper, 38, Tyndall Centre for Climate Change.
7. Cannon, T, 1994, "Vulnerability Analysis and Explanation of Natural Disasters", A Varley, (Ed) Disasters Development and Environment, John Wiley and Sons. "Concept of Risk", referenced at http://www.chemeng.ed.ac.uk/~jskillin/teaching/safety4/ 2004-05/conceptofrisk.pdf
8. Coburn, A.W, 1991, "Geographic Analysis for Disaster Prevention and Preparedness", read on line at http://www. Proventionconsortium.org Coburn, A.W, R.J.S Spenece and

Pomonis, 1994, "Vulnerability and Risk Assessment Guide" Second Editon, Disaster Management Training Programme, Artifax.

9. Dhar, T.N, 2004, "Disaster Management: Policies and Imperatives", Theme Paper, Presented in the Training Programme on Disaster Management, Department of Public Administration, University of Lucknow. Disaster Terminology referenced at, http://www.unisdr.org/unisdr

10. "Disaster Risk Reduction: A Development Concern", at http://www.dfid.gov.uk/pubs/files/ disaster-risk-reduction.pdf

11. Fournier d'Albe, E.M, 1979, "Objectives of Volcanic Monitoring and Prediction", Journal of the Geological Society.

12. Guzman, M. D. Emmanuel, 2001 "Towards Total Disaster Risk Management Approach" at http://unpan1.un.org/intradoc/groups/publicdocuments/APCITY/UNPAN009657.pdf

13. Hamilton, J.I. and W.Kip Viscusi, 1999, Calculating Risks: The Spatial and Political Dimensions of Hazardous Waste Policy, The MIT Press, Massachusetts.

14. Harrison, S, (Ed.), 1999, Disasters and Media: Managing Crisis Communications, Macmillion

15. Press, London.

16. Kates, R.W, 1962, "Hazard and Choice Perception in Flood Plain Management", Research Paper Presented at the Department of Geography, University of Chicago.

17. Kates, Robert W. and Jeanne X. Kasperson, 1983, "Comparative Risk Analysis of Technological Hazards: A Review by the National Academy of Sciences", read online at, www.pnas.org/cgi/content/abstract/80/22/7027

18. Knight, Frank H, 1921, Risk Uncertainty and Profit, Harper and Row, London.

19. Neill, James, "The Concept of Risk: Perceptions of the Likelihood of Loss (R-) or gain (R+) in Outdoor & Adventure Education & Recreation" at http://www.wilderdom.com/ JamesNeill.htm

20. Sahni, Pardeep and Alka Dhameja, 2003, "Disaster Risk Reduction through Capacity Building of the Community and Panchayati Raj Institutions", Pardeep Sahni and Madhavi Ariyabandu (Eds), Disaster Risk Reduction in South Asia, Prentice-Hall of India, New Delhi.

21. Schrader, Frechette, K, 1991, Risk and Rationality, University of California Press, Berkeley.

22. Scutter, 2003, "Quantification of Risk, Vulnerability and Impact of Disasters", ISDR Inter- Agency Task Force on Disaster Reduction.

23. Smith, K, 2001, Environmental Hazards, Assessing Risk and reducing Disaster, Third Edition, Routledge, London.

24. Somers, E, 1995, "Perspectives on Risk Management", Risk Analysis, Vol. 15, 677-84.