

Corporate Social Responsibility (CSR) and Disaster Risk Reduction (DRR)



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ABOUT THIS ISSUE

This issue of Southasiadisasters.net is titled 'Corporate Social Responsibility (CSR) and Disaster Risk Reduction (DRR).' It highlights the importance of building resilience societies by investing in DRR as a strategic CSR activity.

The various aspects highlighted in this issue serve to describe how India has a long-standing tradition of corporate philanthropy, by explaining the CSR tradition in the country and different examples in which it has been applied. The clause 135 of the Companies Act 2012 describes the areas in which CSR projects are developed, however the guidelines do not mention directly the need for investing in DRR. Companies should comprehend that by investing in DRR as a strategic CSR activity they will preserve livelihoods from disasters and at the same time they will ensure their business viability.

Therefore this issue will show different examples of how business sustainability can be reached by contributing CSR donations into DRR. Experiences such as CAIRN in India; the need to children and youth as equal partners in all stages of DRR in Post Sendai Framework; and the importance of social media, Geographical education, IGU and Science-Policy are some examples this issue will address in order to understand the importance of integrating DRR as a strategic CSR activity for building a resilient society. ■

- AIDMI Team

DRR and CSR: What Must be the Agenda?

While India has a long-standing tradition of corporate philanthropy, there is today an increased focus on CSR or corporate social responsibility with the government issuing clear guidelines on expenditure regarding activities classified as CSR. The clause 135 of the Companies Act 2012 provides a framework for private and public companies to spend 2% of their profits after tax on socially responsible activities in thematic areas suggested under schedule VII of the bill.

In its initial versions Schedule VII did not mention natural or man made disasters – neither relief nor mitigation – speaking only of environmental sustainability. Subsequently though, it was later modified to include only disaster relief. The guidelines urge a liberal interpretation of the Schedule VII and give ample opportunity for contributing to various areas based on the requirement of the region and corporate.

Disaster Risk Reduction (DRR) positively impacts the economics, social welfare and natural resources of a country. Corporates would be fostering both national welfare and their business sustainability by contributing CSR donations into DRR. To align with Schedule VII,

and for ease of reporting to the public and authorities, the agenda for DRR under CSR could be approached by companies in partnership with organisations and NGOs specialising in DRR under the following thematic areas:

1. Promotion of Education

Education is high on the CSR agenda and many corporates support learning and skill building. Fortunately both these are easily accommodated as components under DRR.

Capacity and Skill Building

Vulnerability to disaster and the ability to contribute to DRR varies according to gender, region, caste etc. Hence there is a need to build capacity in communities through existing institutions since it can go a long way in mainstreaming disaster risk management. Policies and initiatives also need to account for these differences. Educating and cultivating relevant vocational skills in children, women, elderly, and the differently abled would be synergetic to companies working with communities in vulnerable regions.

Livelihood Protection and Enhancement

Traditionally, there has been focus by corporations to contribute to

The agenda for DRR under CSR could be approached by companies in partnership with organisations and NGOs specialising in DRR under the following thematic areas: Promotion of Education on Capacity and Skill Building and Livelihood Protection and Enhancement; Empowerment of Women and Gender Equality; Focusing on Environmental Sustainability; and Rural Development and Poverty Alleviation.



Photo: AIDMI.

Round Table Discussion on CSR and Disaster Risk Reduction, August 10, 2016, New Delhi.

livelihood generation initiatives; hence protecting livelihood streams would be a natural next step for such donors. Disasters can cause unprecedented damage to the livelihood streams of the rural and marginalized population – businesses, infrastructure and agriculture are all hit with equal velocity. It would be in everyone's interest to be suitably prepared through instruments like insurance or be armed with the necessary knowledge to combat the impact of disasters. There is a reasonable case to organize such initiatives and get the desired outcome in reducing risk and building resilience.

2. Empowerment of Women and Gender Equality

We have seen that women are very vulnerable to the impacts of a disaster, and they are not made a part of the planning and implementation of disaster risk reduction or management. An increase in their understanding of the risk, and, their robust participation would be a strong empowering exercise for the affected women. They can also be included in futuristic planning

through participation in programs promoting renewable energy, in leading small environmentally sustainable businesses and building resilient families and communities. They can be empowered with climate resilient agricultural methods too. Through CSR programs robust knowledge sharing, information exchange, capacity building and skill development to proactively participate in climate centric development and monitoring.

3. Focusing On Environmental Sustainability

There is already a willing corporate participation in nurturing ecology and building environmental sustainability through CSR initiatives. Fortunately the DRR agenda also includes maintaining an ecological balance, conservation of forests and natural resources like soil, water etc. Thus initiatives to invest in the environment can be readily integrated with disaster risk management.

4. Rural Development and Poverty Alleviation

There is a valid case for CSR

contributions in preparing the country to reduce risk of and manage disasters including climate change fall-out. Sound DRR strategies and management have a direct impact on business continuity. Initiatives can also be extended to taking preventive health measures and investing in sanitation, clean water etc. Infrastructure development, financial access and risk-transfer mechanisms also empower the poor and marginalized. A disaster has significant impact on the economics of the people and the region and thus DRR initiatives would be a win-win for rural development in vulnerable areas.

It is time to understand the importance of DRR in the context of existing sustainable development frameworks. It is necessary to thematically integrate it within larger programs or as a part of a whole. It is inherent in most areas of focus defined in the CSR agenda and can be easily integrated to lend gravitas to existing and future initiatives. ■

- Ms. Madhu Singh Sirohi,
Former Country Head,
Vodafone Foundation

DRR and CSR: Experience of CAIRN in India

CSR and DRR

The concept and practice of corporate social responsibility in India is by and large restricted to initiatives related to the socio-economic development of the people living in the vicinity of their operations. In times of disaster, the corporate efforts are mainly channelized towards relief and rehabilitation. Very seldom have we seen deliberate CSR interventions in the area of disaster risk reduction and building of resilience. However since marginalized communities are more vulnerable and have less resilience to disasters and the focus of CSR activities are these vulnerable communities, corporate through their CSR efforts can contribute significantly to DRR and build 'National Resilience'.

The CAIRN Experience

As with all CSR initiatives, the main thrust of the Cairn CSR effort is to attain a sustainable future of the communities in the areas of our operation – Rajasthan, Gujarat, and

Andhra Pradesh. Towards this end, our programs primarily focus on reaching across communities for bringing about an overall improvement in the socio-economic indicators.

This article will bring to light how a program envisaged for socio-economic development, not only achieved its goals but how it became a major component and contributing factor in DRR.

As part of our 'Livelihood Initiatives', Project 'Unnati' a farm based livelihoods program covering three blocks of Barmer District was launched in 2013 to increase income through productivity enhancement of agriculture and livestock.

Among the various components of this program, one module- 'The Soil and Moisture Conservation Program' which mainly consisted of building *Khadins*, not only achieved the objectives for which it was designed

but can be said to have a direct impact on DRR.

Khadin is an ingenious construction designed for in-situ conservation of soil and moisture in the agriculture field and for harvesting surface runoff water for agriculture. It is an earthen embankment built across the general slope which conserves the maximum possible rainwater runoff within the agricultural field. The Khadin system is based on the principle of harvesting rainwater on farmland and subsequent use of this water-saturated land for crop production.

The Direct Impact of the Khadins

- Converting 100 hectare the long fallow/waste land to cultivable land
- Increasing soil moisture and productivity in 300 hectares
- Estimated volume of water harvested – 3,75,000 cum. This harvested rain water contributed towards the ground water recharge, leading to rising of the water table in the wells
- Runoff from the catchment harvested in a storage area of 90 hectares to an average height of 0.6 m and estimated volume of water harvested is about 5,40,000 cum.

While this direct impact was visualized and intended, what this program contributed indirectly came to be slowly recognized and visible in year three when about 270 Khadins were complete.

Indirect Impact

- Harnessing the flood water runoff effectively
- Improvement in land productivity - cultivation of second crop and crop diversification which increased



Household individual Khadin.



Jalela Community Khadin (Before & after rain pictures, harvested around 43000 Cum rain water).

- the community's resilience to drought and reduced socio economic vulnerability
- Mitigated the adverse effects of desertification and adverse climatic conditions
- Restored ecological balance by

harnessing, conserving and developing Natural Resources i.e. land, water, vegetative cover and increasing land productivity. These can be clearly categorized as an impact of CSR on Disaster Risk

Reduction and contributing to the resilience of the community to disasters of drought and flood. ■
- **Sahima Hannan Datta**,
DGM, CSR, Cairn India Limited,
Gurgaon, New Delhi

CASE STUDY

Role of The Akshaya Patra Foundation in Relief

Going beyond meals, Akshaya Patra has also extended support to millions of people during natural calamities and disasters as a part of its disaster relief initiative. During the Chennai Floods in January, 2016, Akshaya Patra supported flood ravaged Chennai to alleviate the distress in the region. To this effect, our team constantly served freshly cooked meals every day with the aim of increasing the reach to 10,000 meals a day. Cumulatively 89,600 meals were served, including food packets to people in need at sixteen different locations in and around Chennai.

When a massive earthquake wrecked Nepal during April 2015, Akshaya Patra set up an Earthquake Relief Centralised Kitchen in Nepal with the collaboration of Siproddian Sahayata Sanstha (SSS) and the Tata Trust. The

kitchen was set up over an area of approximately 2,500 sq.ft at Bhaktapur. One lakh meals comprising of puris, pickles, cakes, biscuits, channa and makhana were prepared in the Jaipur kitchen, and transported to Delhi, from where it was airlifted to the relief site. The Nepal kitchen closed operations on September 17, 2015 after serving 1.4 million meals across 88 days in the region.

About The Akshaya Patra Foundation

The Akshaya Patra Foundation with its every endeavour wants to eradicate classroom hunger for school going children in India. In June 2000, The Akshaya Patra Foundation started the mid-day meal programme in Bengaluru, Karnataka, with an aim that "No Child in India shall be deprived of education because of hunger". What started as a humble

beginning of serving mid-day meals to 1500 children across five Government schools in Bengaluru, we are able to feed 1.6 million children in 12,652 schools, across 10 states and 24 locations. With partial support from the Government, we also depend on corporate funds, philanthropic donors, volunteers and well-wishers for managing this large operation. This year (2016), we achieved the milestone of cumulatively serving 2 billion meals making us the first not-for-profit to have achieved this feat in the world ever. In appreciation of our work, **The President of India, Shri Pranab Mukherjee recently** visited our foundation on the 27 August to take part in commemoration of serving **2 Billion Meals.** ■

- **Mr. Muralidhar Pundla**, Director -
Quality & Continual Improvement,
Projects, The Akshaya Patra Foundation

Children and Youth in the Sendai Process

Over the last century, the number of disasters has increased significantly, as have the number of affected people. The economic impact grave, along with breakdown of social systems and environmental destruction.

In parallel to this, we have an inflation of the humanitarian needs. Disaster Risk Reduction (DRR) investment can no longer be ignored by any sector. The Sendai Framework for Disaster Risk Reduction (agreed to in March 2015 in Japan) has created consensus among countries to act of this critical topic.

Children and youth constitute over half of the population of the world, and owing to special needs, they are specially vulnerable in situations of disasters. They are also drivers of change.

They recognize the importance of DRR, and have not waited for global political consensus to start working on all aspects of DRR. A few recent instances include medical students



Keep in hand with hot air full of International Youth Forum, March 15, 2015, Sendai.

providing assistance and first aid during the Nepal earthquake in April 2015, and youth groups leading development and distribution of home-made water cleaning sets to be used during disasters.

In order to sustainably and inclusively implement the Sendai Framework, it is critical that children and youth in all their diversity are included as equal partners in all stages including decision making,

planning, implementation, monitoring, and review.

For this engagement to be meaningful, it needs to be facilitated and protected through mandated institutionalized spaces. The United Nations Major Group for Children and Youth (UN MGCY) as a United Nations General Assembly created and mandated space for young people is one of the existing avenues for young people around the world.



Disaster Medicine Training.

It has facilitated youth participation in intergovernmental and other allied processes (now over 10) at the UN since 1992. The UN MGCY mobilized thousands of youth, facilitated dozens of consultations around the world, and advocated for the priorities of youth in the negotiations of the Sendai Framework throughout the cycle of the process including the regional meetings, preparatory committee meetings, and the Sendai conference itself.

In post Sendai Framework adoption phase, it is now preparing to ensure meaningful participation of children and youth in its follow up and review including the High Level Political

Forum, the Asian Ministerial Conference for DRR & its preparatory process, along with other regional meetings, and the Global Platform. Furthermore, in the area of science and technology, in order to provide more evidence-based policy making, UN MGCY launched the young scientists platform on DRR at the *UNISDR Science and Technology Conference on Implementing the Sendai Framework* in January 2016. This platform is operated under of the UN MGCY Youth Science and Policy Interface Platform. It provides space for young scientists to share knowledge, leverage their capacity, and contributing to science-policy discussion through their own experience in research.

Through all these initiatives and efforts, we realize that partnerships and networks are crucial to build a

resilient society. Through adaptive learning, sharing knowledge, mobilization of resources partnerships and networks could be a strong instrument for an effective and collective approach to disaster risk reduction initiatives.

Children and youth are open to work together with all stakeholders in reducing disaster risk. We urge for stronger partnerships with all stakeholders, including government, civil society, the private sectors including business and corporates. However, it is crucial that the partnership is built on the base of recognizing children and youth's rights as equal partners.

In benefiting society, business practices must promote and focus on inclusive approach in their model. It can be embedded through CSR

programs aimed at building capacities for children and youth, engaging them in constant dialogue, decision-making, and accountability with community. Though CSR models alone are not enough, and should not become a whitewashing exercise without any accountability for the core business itself. Many private sector models and in some cases entire industries are serious contributors to actually enhancing disaster risk. CSR is of little relevance for rectifying this behavior and building genuine resilience.

You can learn more about the specific priorities of young people in the Sendai Process <http://childrenyouth.org/blog/2015/03/24/mgcy-updated-drr-policy-brief>. ■

- **Moa Herrgard**, UN MGCY DOP for DRR; and **Annisa Triyanti**, UN MGCY DRR SPI Focal Point

PRIVATE SECTORS AND DRR

The Private Sectors and DRR

The term 'private sector' is taken to mean businesses that produce goods and provide services for profit. This includes businesses of all sizes, from local enterprises up to transnational corporations. It also includes informal-sector enterprises as well as registered and regulated business: in developing countries, the informal sector is often extensive and significant economically and as an employer.

The social responsibility of the private sector goes beyond the sector's day-to-day operation of producing a certain range of products and services in the most efficient and economical manner. The social responsibility of the private sector (also referred to as corporate social responsibility) concerns the relationships of a company not just with its clients, suppliers and employees, but also with other groups, and with the needs, values and goals of the society in which it

operates. All these groups can be regarded as stakeholders in the company. Stakeholders can be identified as those individuals or groups of individuals that have an interest, or take an interest, in the behavior of the company both within and outside its normal mode of operation. (UN 2000: 2)

Therefore corporations and businesses have become important in disaster risk management even though there is still lack of regulations and incentives for the private sector to invest in DRR and CSR. The importance of addressing disaster risk factors through disaster risk-informed public and private investments is because it is more cost-effective than primary reliance on post-disaster response and recover, and by doing this it contributes to sustainable development.

The private sector is already heavily involved commercially in disaster

reduction. Engineers, consultants, software designers, insurers, transporters and suppliers of goods and services of many kinds are among those for whom risk and disasters are business opportunities for two main reasons:

1. The necessary replacement of the old command-and-control style with more integrated, collaborative approaches involving a range of organisations; and
2. The sheer scale of many international humanitarian crises, especially those resulting from conflict.

Where does the role of the private sector lie in disaster management?¹

- In training, equipping and achieving proficiency for effective response capacity for high risk communities.

1 Disaster Management: A Role for the Private Sector, <https://www.gdrc.org/uem/disasters/dm-privatesector.html>

- In assessing institutional needs, developing and implementing programmes to assist key organizations with sustainability issues and measures
- In improving disaster consciousness of the general population
- In improving access to accurate information and basic communication, energy and water systems for high-risk communities by facilitating appropriate technology alternatives on credit to qualifying communities.

At the same time, local authorities need to provide a more effective framework for unleashing the full potential of private sector contribution. This framework can include policies that contribute directly to safer industrial operation, and incentives for business to become more involved in disaster management programmes. Mechanisms whereby businesses and the authorities meet to discuss their respective roles and contributions to national disaster security need to be set up and operationalized on a regular basis.

In a session organized as a part of the World Conference on Disaster Reduction (WCDR, January 2005, Kobe, Japan), a number of interesting viewpoints were put forth:



View of highway between Gangtok, Bagdogara.

Disasters and the Informal Sector

An additional dimension to be considered for the needs of very low-income households is the role of the informal economic sector. In developing countries, 40 to 90 percent of all economic activities happen informally; 30 to 70 percent live in informal settlements, and more than 40-60 percent of an economic investment takes place using informal credit/finance.

At stake in the immediate aftermath of a disaster are informal sector jobs, informal enterprises, houses built in slums and squatter lands, etc. These issues become further complicated due to concerns of governance, legality and tenure of these informal sector activities.

1. It apparent that the private sector plays both vital and varied roles in emergency management. In fact, it is not an exaggeration to state that the contributions of businesses in mitigation, preparedness, response, and recovery activities have been woefully underestimated.
2. The private sector interacts frequently with the public sector to fulfill necessary community disaster functions. Therefore, the lines between the public and private sectors appear to be disappearing, blurring, or even artificial.
3. The public sector relies heavily upon the goods and services provided by the private sector. Many functions, such as public information, debris removal, and emergency medical care, could not be adequately performed without the assistance of the private sector.
4. Numerous factors facilitate coordination among the private and public sectors. Planning meetings, communications capability, and cooperation were mentioned as variables that promoted close collaboration.
5. Much more needs to be known about the roles of businesses in disasters. For example, are there functions performed by the private sector beyond those mentioned here.
6. Additional research on coordination will be required, focusing on the interaction of the public and private sectors in emergency management.
7. Methods of educating and involving businesses in emergency management must be promoted. Public officials and agencies should include, where possible, the private sector in all types of disaster prevention and planning activities.
8. Practitioners must continue to emphasize networking and partnering. The performance of emergency management is increasingly a result of successful collaboration among government agencies and the private sector.
9. The factors that hinder and help coordination must be explored by academia. Practitioners should familiarize themselves with the lessons provided by scholars in order to augment future emergency management capabilities. ■

- Brij Chauhan, AIDMI

CSR and DRR: The Indian Narrative

Corporate Social Responsibility (CSR), like many concepts underpinned by positive motives, is often misconstrued and practiced as a pragmatic tool businesses use to limit consumer and civil society pressures. Grippingly, India, the first and perhaps the only country in the world to enshrine corporate social allocations, offers insights on how to reimagine and embed CSR as both a narrative and practice.

Under the Companies Act of 2013, private and public companies "with a net worth of Rs 500 crore (or a turnover of Rs 1,000 crore or net profit of Rs 5 crore¹," must invest at least two percent of their average net profit for the preceding three financial years on CSR activities. These activities span livelihoods, social, economic, and environmental categories that are paramount to India's development.

While there is need for greater clarity on compliance, particularly how complex company structures account for social spending, this is a formative moment for the emerging modern Indian narrative on CSR. The formalization of CSR spending has undoubtedly reenergized the practise and should be viewed as a distinct phase marked by the expansion of overall charitable spending by companies, and hopefully better CSR activities. Two years since the law came into effect; independent reports note that private businesses have spent nearly 250bn rupees, seven and

a half times more on charitable activities compared to 2013².

Though some critics contend that the formalization of CSR in terms of monetary contributions may dilute the spirit and level of corporate giving, and point to reduced giving by companies that would otherwise spend more than the rate required, I believe this shift at the policy level does more good than harm. The law broadens the range of firms that must give and has resulted in social spending being vastly higher today. It stipulates spending in critical facets of Indian life that, if done strategically, could address some fundamental development challenges. Reorienting CSR toward being a strategic action that enables risk management could change the nature of CSR for the better.

In the environmental sphere, a category wisely included in the approved fields for CSR spending under the 2013 legislation, companies must begin to see their CSR spending obligations not just as something to write-off as a gift to the marginalized, but as an investment in the crucial business and livelihoods ecosystems necessary for their own viability. In other words, investing in disaster risk reduction (DRR) as a strategic CSR activity is a 'no-regrets' activity as there is a strong business case for doing it. The most compelling indication of this is that India, which experienced the third highest number of climate and weather related disasters in the world between 1995 and 2015, loses nearly two percent (1.8%) of GDP per annum due to these disasters³. These costs are incurred directly by businesses, and indirectly when critical infrastructure that enables efficient business and economic flows are destroyed or damaged. So, while preserving

livelihoods is a primary motivator, it's important that more 'corporates' develop a more nuanced and progressive view of CSR, particularly as a risk management tool with direct livelihoods benefits - a 'win-win.'

This view is beginning to capture the minds of India's social sector and business community. Recently, AIDMI, a leading agency in the field, partnered with the Associated Chambers of Commerce of India, the country's leading business lobby, to explore the idea at a Round Table in New Delhi. The event highlighted a number of pioneering DRR oriented CSR work by corporates that should encourage all of us. However, the scale of these individual projects also points to the need for greater coordination, collaboration and imagination to safeguard livelihood and business ecosystems at a greater scale.

The key benefits of the policy shift goes beyond boosting livelihoods and potentially tackling big environmental and business risks. It serves a fundamental generative purpose by undermining the narrative and perception that India does not hold the moral high ground on questions of social responsibility. Compelling companies to contribute to alleviating key national challenges at a rate identical to the spending that NATO, the world's largest military alliance requires of member states, shows commitment and action that can result in seismic change. In my view, it minimizes what some consider a credibility gap for India in raising questions about risks and responsibility in other domains both nationally and internationally. ■

- Tyrone C. Hall, PhD Student,
Communication and Culture, York and
Ryerson Universities, Canada

1 The Indian Express (February, 2014). Mandatory 2% CSR spend set to kick in from April 1.

2 Satish Y. Deodhar (May 2015). India's Mandatory CSR, Process of Compliance and Channels of Spending. W.P. No. 2015-05-01. Indian Institute of Management.

3 Asian Development Bank.

Geography and IGU for DRR through CSR and Human Geoscience based Policy Making



Geographers with digital and spatial information technology knowledge have been promoting disaster risk reduction in order to illustrate socio-cultural, economic, ecological, institutional and political issues at different spatio-temporal scales. They provide biophysical, human, place-centered and region as system perspectives on the transformation of environments by society and nature at a variety of levels, from the local/regional to the national/global. Future imperatives demand focus on recent global initiatives viz. Disaster Risk Reduction, COP 21, Sustainable Development Goals, Urban Health and Wellbeing and Habitat III in order to solve common public challenges relating to food, energy, water, climate and health care using geographical education, social media knowledge, skill development, disaster mitigation, space informatics and sustainable innovations. The corporate sectors across the country is increasingly called upon to share the responsibility along with the policy makers and academia in finding viable and effective solutions to geographically vulnerable regions. Corporate Social Responsibility (CSR) is a initiative which has been evolved to help industry become "active partners" in these above mentioned initiatives and has been accorded legal status in India.

Disaster Risk Reduction (DRR)

Recently, the major disasters viz. Uttarakh and Srinagar Flash Flood, Earthquake in Nepal, Phailin Cyclone in Odisha and Drought in Marathwada caused serious

disruption of activities in India, but the calamities were drastically reduced during Phailin event due to better forecasting and community communication. In 2004, the losses incurred during Tsunami were high due to lack of technological expertise. As per World Bank estimate direct losses from natural disaster are up to 2% of the India's GDP. More importantly, the impact of most of the disasters is disproportionately high on the poor. In this context, there is an urgent need to recognize natural disasters in a comprehensive manner and take effective steps for prevention and mitigation in spatial perspective. In the Sendai Framework for Disaster Risk Reduction 2015-2030, it is important to thoroughly involve industry and businesses in various Disaster Risk Reduction initiatives. Active collaboration with the corporate world can provide much needed finance and technology in making disaster preparedness, mitigation and response effective and viable. Geography can prioritize the problem.

Geography, IGU and Science-Policy Interface

The role of geographers to tackle spatial issues in disaster risk reduction have strong connotations for decision making through Science-Policy Interface. It is required to explore the new arena of human geosciences, integrating the earth, natural and social sciences, physical and technological sciences. The geosciences approach provides an innovative vision, society relevant goals, mobilization of resources, participatory design and diagnosis

and efficient science-policy-community linkages which should now evolve into science-policy-community-industry linkages. Focus should be to conduct integrated problem analysis taking into consideration science, community and economic activities. Various interactive issues are being debated during International Geographical Congresses towards need of exploring new frontiers like Weather forecasting and capabilities, Increased agriculture, water and biodiversity vulnerability in the context of climate change induced disaster, Identifying Urban Heat Island and impacts on Human Health and Wellbeing, Ocean observation system for monitoring SST and Integrated Coastal Zone Management (ICZM), Ecosystem services and biological productivity, Participatory Resource Management and ecological footprint, Natural hazards and disasters risk mapping, Risk of Glacier Lake Outburst Floods (GLOF), Demographic dividend in the region, Environment and security induced migration, LULC, Site Suitability Analysis and Livelihood security. All of these could be explored through utilizing Systems Approach for promoting disaster Sustainability (Figure 1).

The role of early warning system in disaster risk reduction in South Asia is very crucial. The emphasis need to be given on the importance of multi-stakeholder approach and community based disaster preparedness (CBDP) in the core concept of disaster management. Here, the integration of small and medium enterprises can prove to be

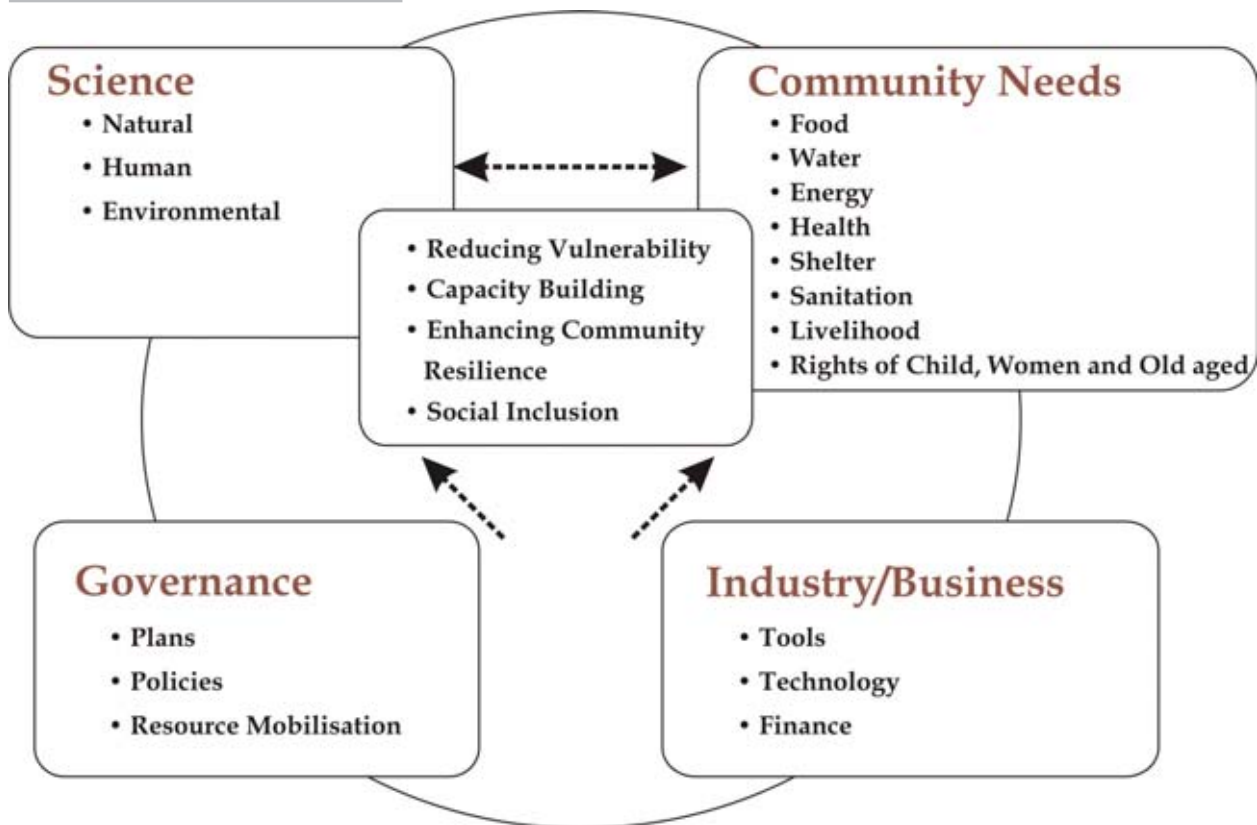


Figure 1: Understanding Disaster Risk Reduction (DRR) through CSR.

crucial in disaster response training, warning dissemination, public education and outreach. These enterprises can also play an inevitable role in recovery of livelihoods alternatives in the aftermath of a disaster.

Participatory Spatial Technology for Risk Reduction

In recent years, Participatory Spatial Technology incorporating community knowledge is becoming an effective tool for risk reduction. The five action points required for reducing risk include (i) Participation of local community, industry (through CSR platform) and academia in capacity development and awareness generation through Information, Communication and Technology (ICT) in DRR; (ii) Development of integrated assessment tools, methods and models for analysis and reducing risk; (iii) Proper implementation of

rules and regulations by adopting Build Back Better theme in construction of settlements/ infrastructure and management of environment and habitat around us; (iv) Learning from best practices available around us in reduction of risk and provision of multiple options to community; (v) Effective coordination between multiple agencies/stakeholders in dealing with DRR; and (vi) Self-promotion and initiatives taken by the people through risk neighborhood mapping in DRR.

Conclusion

As South Asia is among the most vulnerable regions to disasters, it is important to understand that the hazards are only natural phenomenon, but aggravated to disasters by human /anthropogenic interference. Media particularly social media is emerging as an important tool of change regarding disaster

prevention. There are some grave concerns of electronic and printed media regarding coverage and effective communication. Geographical education in general and IGU commission on Hazard and Risk in particular is required to solve disaster induced common public challenges relating to food, energy, water, climate and health care. The governance along with CSR needs to be pro-active and encourage efficient community partnership. The assessment, evaluation and monitoring is inevitable in DRR. The association of industry and business should be promoted by providing an enabling environment with avenues for debates and discussions, cooperation from bureaucracy and community leaders. ■

- **R.B. Singh**, Vice President- International Geographical Union (IGU) & Member, ICSU Scientific Committee; Department of Geography, Delhi School of Economics, University of Delhi, New Delhi

ROUND TABLE DISCUSSION

CSR and Disaster Risk Reduction

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- AIDMI Team

Editorial Advisors:

Denis Nkala

Regional Coordinator, South-South Cooperation and Country Support (Asia-Pacific), United Nations Development Programme, New York

Ian Davis

Visiting Professor in Disaster Risk Management in Copenhagen, Lund, Kyoto and Oxford Brookes Universities

Dr. John Twigg

Senior Research Associate, Department of Civil, Environmental and Geomatic Engineering, University College London, London

Madhavi Malalgoda Ariyabandu

Sub-Regional Coordinator, Central Asia & South Caucasus, United Nations Office for Disaster Risk Reduction (UNISDR), Kazakhstan

Mihir R. Bhatt

All India Disaster Mitigation Institute, India

Dr. Satchit Balsari, MD, MPH

The University Hospital of Columbia and Cornell, New York, USA

T. Nanda Kumar

Chairman, Institute of Rural Management Anand (IRMA), Anand, Gujarat, India



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ALL INDIA DISASTER MITIGATION INSTITUTE

411 Sakar Five, Behind Old Natraj Cinema, Near Mithakhali Railway Crossing, Ashram Road, Ahmedabad-380 009 India. Tele/Fax: +91-79-2658 2962

E-mail: bestteam@aidmi.org, Website: <http://www.aidmi.org>, www.southasiadisasters.net