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Shaping the Community's Disaster Resilience through Education and Research

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Abstract:- Indian education system has reached greater heights today and has created a niche for itself in the modern world. There has been a continuous demand for talented and skilled workforce world over. The country is also doing quite well despite many economic hurdles due to the demographic advantage and aspirations of its young population. They have excelled in many fields with their innovative application and technological knowhow keeping pace with internal and external demands. However, some of the disciplines have not received their due recognition. Disaster Management is one such field which has not generated enough interest among the academia. Despite tremendous potential due to its practical application in the society, educational establishments have not created an opportunity for such studies. Through education, research and innovation it is possible to deal with many local and global issues looming at large on our economies. Although hazard related education started to appear after International Decade for Natural Disaster Reduction (IDNDR)in 1990s, not many institutions and universities have been forthcoming in imparting education in disaster management. Wherever they have been able to create opportunities, not much has helped the community in distress due to its extremely slow pace and percolation. Any system of education if it doesn't help the society often loses its relevance.This paper is an attempt to highlight the importance of disaster studies and responsibilities of the educational institutes to work for their community to help them in achieving disaster resilience. It also provides a step wise guide and a working model for making the education system disaster sensitive and inclusive.

Keywords:- *Disaster, Resilience, Education, Model, Community.*

I. INTRODUCTION

Disasters have been affecting our societies since time immemorable. Yet in the last few decades the world has experienced economic and social turmoil borne out of constant fear of disasters. There was a realization that all progress will cease to happen if disasters become a recurrent phenomenon world over. Till 1980s, most of the efforts were concentrated on relief and reconstruction activities post disaster. With increasing incidences of disasters in every part of the world, the global community emphasized the need for Disaster Management during the 1990s with the UN declaration of International Decade for Natural Disaster Reduction or commonly known as IDNDR. The Yokohama strategy in 1994, called for participation by all countries to make efforts to reduce the impact of disasters. Thus, 'Building a culture of prevention' became a worldwide slogan.

International Strategy for Disaster Reduction (ISDR) provided a global framework for building resilient societies which can be possible through raising awareness and creating this culture of prevention and not just limit itself to reactions. The Global Assessment Report (GAR) of 2015, pointed out to the change in perspective needed to create risk knowledge from risk information. The need for education on disaster prevention was highlighted in all texts and research papers. It was increasingly believed that despite past incidences of repeated disasters, ***most disasters are yet to happen*** (GAR, 2015) and thus requires a society which is well aware, concerned and is prepared enough to manage their risks.

The world was gradually moving towards disaster literacy and public awareness since late 1990s and early 2000. Indian education system also started to initiate curriculum changes and adding new courses in Disaster Management in some public and private institutions. Even after its first inception till today, there has been no significant headway on disaster education at all levels and in all institutions. It is still in its beginning stage and not achieved maturity. From schools to universities, adoption of disaster education and training is still lagging behind. Whether it is the school boards or University Grants Commission's agenda, there has been a serious lacuna in its implementation despite some guidelines framed under the Disaster Management Act of 2005 in the country.

Some sporadic efforts have been made lately in context of Disaster Management and its inclusion in the curriculum at school as well as University level. However there has been a general failure to achieve concrete goals in both spreading awareness and generating expertise. Due to lack of integration with the societal demands it has not taken off in the right spirit. Similarly, community level responses have not yet become a formal process.

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II. HOW DISASTER MANAGEMENT BECAME A BUZZWORD YET UNDER-RATED?

Teaching learning material developed for the welfare of the society should be people centric and should be scientifically evaluated. In the research domain too most of the output doesn't translate into mindful application on the ground and remains buried within the four walls of the institutes. Somewhere, the responsibility also lies with the institutions themselves to informally push for active engagement of the young people to work beyond their curriculum for social engagement and community outreach.

Information Education and Communication or IEC is an important approach in Disaster Management, yet it has failed to generate systematic inclusion in the education system. Education not only means formal institutions of learning but a lot have to be done to impart educative experience through informal means too. This in turn can stimulate perceptional changes that will motivate the community to understand their risk and sensibly prepare for its management. The future societies cannot significantly reduce their risk in absence of understanding of their exposure and vulnerabilities. It is the education alone that can make people understand that risk can be reduced and disasters are avoidable and not an act of God.

Improving capacities to anticipate and understand risk, to cope up, respond to emergencies and fast recovery can rightly build resilience within economies. Disaster Risk Reduction (DRR) education is not yet an integral part of disaster risk management policy, planning and implementation. Often scientific and technical experts have taken upon themselves the task of developing education material with very little evidence of cross-disciplinary inputs from public health, communications, marketing and educational professionals (Petal, 2009).

DRR(Disaster Risk Reduction) education can effectively contribute to heighten consciousness among the educated youth and also contribute in welfare measures for community as part of the policy decisions. It can draw strength from the training they acquire when they themselves start practicing what has been preached to them. This will not only help in raising societal concerns but also job opportunities which will sustain long term actions in the field. The country not only need engineers and doctors but also disaster practitioners to create a welfare society. The mindsets have to change to incorporate these subjects as well.

Despite the existence of plethora of reading material, most of the educational efforts both targeting the school and college goers and for the public in general have neither been systematically conceived nor tested. Scientific evaluation of such material has also not been done to its minutest level.

Every individual, family organization, community agency, departments, jurisdiction and policy making body must recognize and embrace its own role in a large cooperative effort (Petal, 2009). It is just not about teaching disaster management in school; college and university level but develop a response system that can go a long way in promoting resilience. And this can be achieved using educational tools for capacity enhancement.

III. HOW DOES THE COMMUNITY BENEFIT?

As the world is gradually moving towards climate crisis and ecological collapse, disasters are going to impact everyone. Whether it is about bringing down the ecological footprint or adapting to the serious challenges, both will require knowledge, skill and temperament to achieve the goals set by global policy framework. Our country is also making efforts to improve its warning and responses system that has drastically reduced disaster casualties in some parts; while many regions and states are still struggling to cope up effectively. This will need interventions at community level when each individual would be empowered enough to understand and deal with their risk. For this education, educators and community have to work together in tandem.

When the youth and the community understand and are convinced that their contributions can help in reducing vulnerabilities, they might get genuinely concerned. As seen from IITs and AIIMs that have been successful in developing the best brains that draws attention of the entire global community. And the best minds have been involved in structural and methodical inclusion of study material catering to this supply chain. If the IT professionals can build the best software and apply artificial intelligence in many sectors for the benefit of the users, why can't they build technology, information and prevention strategies for humanitarian concerns and in shaping the community's capacity to deal with disaster emergencies.

To have a greater outreach, there should be interventions at various levels from developing curriculum for formal teaching to creating manuals or toolkits for those at risk. The culture of prevention and resilience can be meaningfully applied through educationist intervention. While formal education lays foundations for synoptic brain structure and the accompanying problem solving and cognitive skills, it also creates literacy to understand risk information (GAR, 2015). Informally it can be introduced to the community by training and public scheme initiatives based on their skills and livelihood options. Utmost importance has to be given to the content that has public appeal and acceptance. It should be presented in form of a ready to use guideline that should have ease of use and application in disaster scenarios.

Learning from the Hyogo and Sendai framework, where much stress has been put on education as a measure for building a culture of safety and resilience, the effort must aim to create a structural model of curriculum development as well as ground level research and initiatives. It should be ingrained in our system that a multi stakeholder perspective has to be developed. As per GAR, 2019, "Disaster Risk Reduction requires an all-of-society engagement and partnership and civil society volunteers, organized voluntary work organizations and community-based organizations to participate, in collaboration with public institutions".

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Our national policy and plan should also be updated to include a stepwise educational model after a thorough consultation with educators and community leaders. Since this model should consider both strengthening the existing disaster education coupled with community-based approaches, a carefully planned educational model has been presented. In the next section, an attempt has been made to integrate beneficiaries of education and community together in order to practically apply the learning outcomes for the larger benefit of the society.

IV. THREE STAGED MODEL FOR FACILITATING DISASTER INCLUSIVE STUDIES AND ITS APPLICATION

The model is based on the inputs, suggestions and contributions from various experts engaged in academia, public and private institutes, research organization, NGOs and central and state agencies working in disaster management, and individuals. They were interviewed on the basis of their expertise mainly raising questions on rating of disaster education in the country and their reasons for the same; suggestions to enhance the educative capacity in the country; and the process of creating an interface between educators, professionals and the community.

All three means of education system, that is formal, non-formal and informal methods are required for risk awareness and mitigation and also to deal with responses during and after disasters. However according to the scope of the study, a structured system of disaster education has been highlighted to introduce a systemic change and a guideline that can be applied in the present scheme of things. The other two processes are inbuilt in any system and can be followed by both institutions and community in general. Also, the formal structure can also take support of the other two types while applying their methods in the field. Since community always learn from many informal methods passed on through generations of acquired knowledge and wisdom, the field researcher or practitioner should also respect and understand these values and ethics. Combining the two-knowledge system can bring more concrete results and acceptable perceptional change. Formal methods are sometimes quite difficult to follow without political willingness. Thus, it is in everyone's interest to involve the administrative machinery in evaluating the prescribed method. Once the structure is in place other processes will automatically set in within the system.

Also, lot of learning today happens outside the classroom. Thus, it is absolutely essential to use these tools effectively to everyone's advantage. It is also the duty of educational departments to upload informative material in form of documentaries, case studies and media campaigns through social media platforms for different age groups. Material available to the users should not be completely random but a well-designed effort to draw the attention of the users towards a noble cause.

Figure 1, depicts the broad structure that can be applied for the country to maintain uniformity all across states and provinces. The objective will be to build an integrated structure with formal education system mainstreaming disaster studies along with a supporting role played by institutions and corporate establishments. Along with voluntary work, job opportunities can be created both by the industry and the government sector. Both have to serve the community in need planning right from risk awareness to risk mitigation. This can be further facilitated by NGOs, media and local bodies in an informal manner. At the apex would be the central agency like National Institute of Disaster Management supported by state level education departments and State Disaster Management Agencies. Various informal approaches that work well within the identified area, both rural and urban spaces can be used for educating the masses.

All community level work can be evaluated and recognition can be given to good practices both to field level workers and their institutions. Further, credit system can add extra credit for such outreach activities thus incentivizing the whole process. Over time, each practitioner can build rapport with the community to get better accessibility and acceptance within their society.

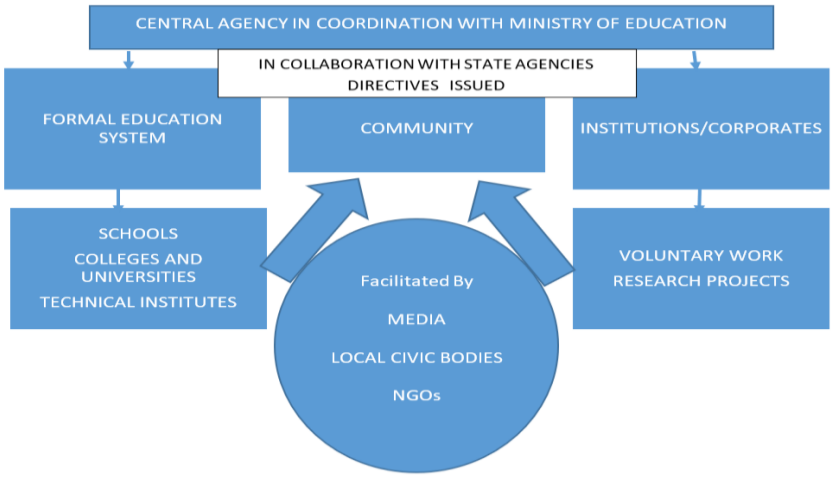

Fig. 1: Three Staged Model for Disaster Education

Source- Designed by the Authors

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V. THE BEGINNING- CURRICULUM DEVELOPMENT

The formal education system can have a three-tiered arrangement for DRR studies: introduction of the concept in the school curriculum; college level specialized studies and; researchers in the university and technical institutes.

It is not about learning a difficult problem without understanding its real application in our daily life, but it is about each individual learning to understand and deal with potential risk. Also evolve ways to enhance skills to respond during and after disasters. Once there is an understanding that they can reduce their vulnerabilities rather than being victims.

At the **school level** disaster education should be made compulsory and integrated with environmental education. Only schools have the potential to introduce concepts to its students which can have long term impact in their life. As one often says students are the citizens of tomorrow, any positive habit inculcated at this stage can lead to a strong foundation; in this case a habit of disaster safety in daily life and also bringing down many of the vulnerabilities that stem from unsustainable behaviour.

Ministry of Education should play a pivotal role in sending directives to school boards who in turn should design a user friendly, interesting and practical curriculum in consultation with disaster management agencies and experts. There should be a uniform pattern for all boards, with addition of responses for respective areas with specific disaster risk. Emphasis should be given on visual tools and positively engage the students to raise the skills for preparedness. The students should not be burdened further with exams and assessment but given practical training. Like sports it should capture their muscle memory and build reflexes during physical and mental emergencies.

Later, the schools can also help the students understand their specific risk-based issues based on their geographical location and hazard exposure. It should be introduced in a manner to learn and develop skills and responses during hazards and disasters. The teachers or facilitators should teach them innovatively, and make positive impact on their fresh, receptive and impressionable minds. Regular drills should be part of this entire curriculum in order to bring this logical change. The buzzword should be 'Catch them Young'.

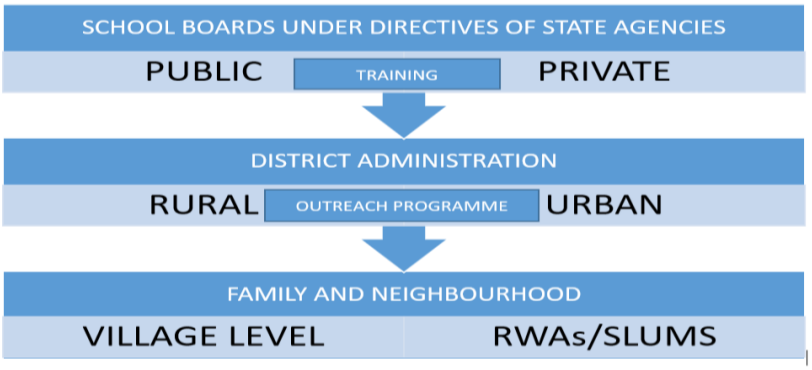

Fig. 2: School Based Model

Source: Designed by the Authors

The emphasis should be on educating both the public and private school students with round the year capacity building programmes. They can be taken to study and apply their understanding of the subject through field visits and observations. They can also be asked to create projects on their family preparedness plan or even at neighbourhood level.

The **college curriculum** should be well balanced and have some connections with the school curriculum. It should have a smooth transition from the schools without losing focus and leaving intermittent gaps. They should have a field-based approach which will not only help them understand the real-world problems but also promote interactions with community and exchange of ideas. They should be encouraged to devise innovative solutions. Both the public and private sector can share their responsibility in providing internship opportunities to these students. From time to time, a review can be done to understand the impact factor on the community with respect to knowledge percolation and trickledown effect.

The next level is for those **technical courses or researchers** that specialize in Disaster Risk Management. They should deal with the real time data and understand all perspectives about disasters. A lot of empirical study should go into it along with use of technology driven tools like the Geo Spatial System. They should be made aware of policy and institutional framework of the country. Also, the dimension on economic and environmental costs of disasters has to be well understood. The sustainable angle to the development goals has to be incorporated. Courses such as engineering, architecture, medicine and planning should also include modules on disaster management so that they can make decisions that are disaster prevention friendly.

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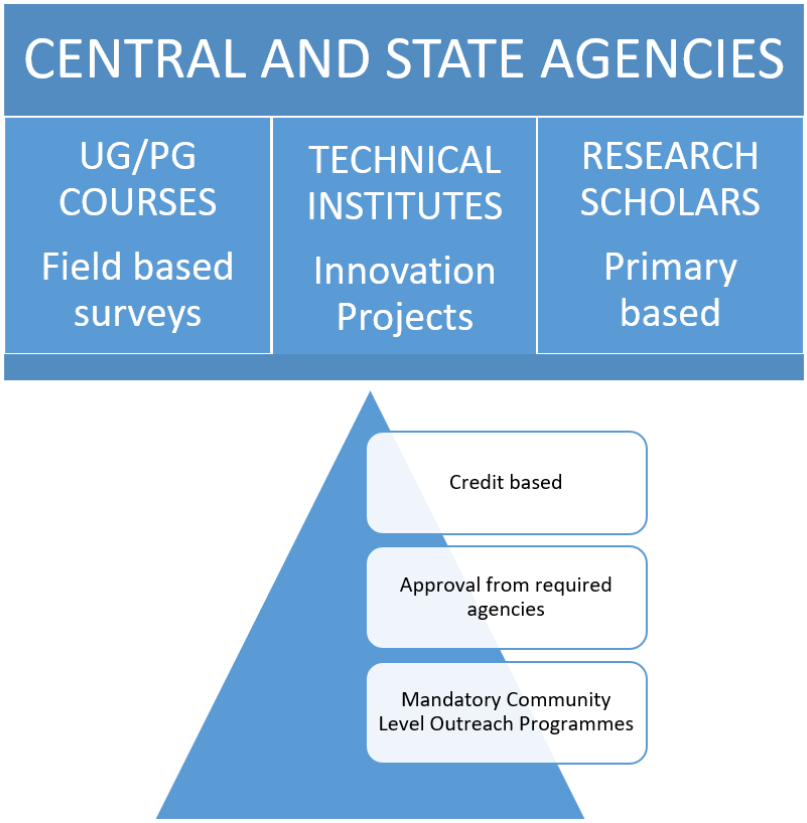

Fig. 3: College and University Level Model

Source- Designed by the Authors

The universities can design common courses to fit everyone's curriculum irrespective of their core courses. It will also bridge the gaps between these disciplines and disaster studies can become truly **trans-disciplinary**. All Science and Social Science departments should also promote disaster research in their MPhil and PhD programmes. It should ensure community level participation from these researchers to justify the applicability of their work. This will guarantee more comprehensive and grass root level study that might help the vulnerable communities. Care should be taken to integrate all these so as to reduce gaps and follow a continuum in the education process. There can be exchange of ideas between different group of students.

VI. WORKING WITH THE COMMUNITY THROUGH EDUCATOR'S INTERFACE

Solution oriented toolkits have to be developed for each region which should be popularized through local NGOs, media and by voluntary and civic bodies. There are various ways one can develop this toolkit and its effectiveness will depend on how seriously the community learns from it. Since disasters are never a primary fear for people, there can be a tendency to ignore or simply not giving due importance tosuch issues. Their daily experience with problems of water, electricity, livelihood and other basic needs may not allow them to raise genuine concerns.

CBDRM approach or Community Based Disaster Risk Management, have been quite effective in many countries. Such examples can help generate some enthusiasm among people who can be trained to reduce their respective vulnerabilities. All economic classes of people need coaxing and cajoling to accept and acknowledge risk so that the community doesn't suffer from disaster ignorance. The task is to make the community take cognizance of their own role in preparedness and reducing risk both at individual and group level. The civic society should be empowered to take responsibility. A special focus should be given to the needs of **children, elderly and differently-abled** while training and capacitating them. **Women** should find a special place in these studies along with their active participation.

Another initiative should be to incorporate disaster management training imparted by police, paramedics, para military and youth wings like NCC and NSS. Almost as a routine, drills should be conducted from time to time in different community spaces. The workplaces should also have awareness on building safety and use of hazardous material if any, apart from the major disasters from which the community is always facing risk. Safety audits should be part of their regular policy.

A special plan should be formulated for media that holds a major responsibility in raising awareness, communicating to the people and assisting in developing responses for disaster mitigation.

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Having a look at disaster affected areas in the country one often feels that disasters continue to be in their life for a long time as it severely affects their livelihood and causes psychological impacts. Educating the survivors on the principle of **Build Back Better** (BBB) has to be followed very strictly. A nation cannot grow if the well-being of its citizens is affected to a point of no return. India still needs lot of researchers and professionals in **psychological first aid too**.

A cursory look at the world level disaster education shows that some of the most structured school curricula exists in Japan, Australia, USA, UK and New Zealand. Similarly, community level participation is highest in Japan. Besides a very strong and effective disaster prevention school education, general public also gets to play an active role as civilian disaster managers. Training and drills are regularly held at educational centres as well as at workplaces.

VII. SOCIAL CORPORATE AND INSTITUTIONAL RESPONSIBILITY

As one of the key constituents of DRR, Community Preparedness, which enhances adaptability and capability of the society to mitigate disasters, is considered the best mechanism for reducing risks. Both educational institutes and other organisations as part of their social responsibility can reach out to their communities. Case studies from Japan and Indonesia has shown how interventions at the community level helps in preparing the citizens physically and mentally.

Fig. 4: CBDRM Assessment Model

Source- Designed by theAuthors

Community based model should be based on adoption of a Study Area Based Approach, whether rural or urban, based on interest and commitment of the institutes and organizations. It will be on them to take complete responsibility to train the researcher as well as the community members to assist them in Disaster Risk Reduction initiatives. They should also assess the methods used by the researcher along with the feasibility of application of various tools from time to time. The institutes or organisations can also be ranked and rewarded accordingly.

Thus, it should be the responsibility of the institutions as well as the corporates to create a working environment with professionals in the field along with community leaders using their own local expertise and skills. As these community groups form and exchange trans-contextual knowledge, new communication patterns begin to form, linking otherwise separated sectors of experience(GAR, 2019). This will facilitate in developing Community Based Disaster Risk Management (CBDRM) initiatives at local level. This would help in developing a place-based model providing local solutions and risk reduction approaches by analysing their strengths and capacities. It is in the interest of the nation as well as the young population to learn from these experiences and contribute towards self-reliance and resilience.

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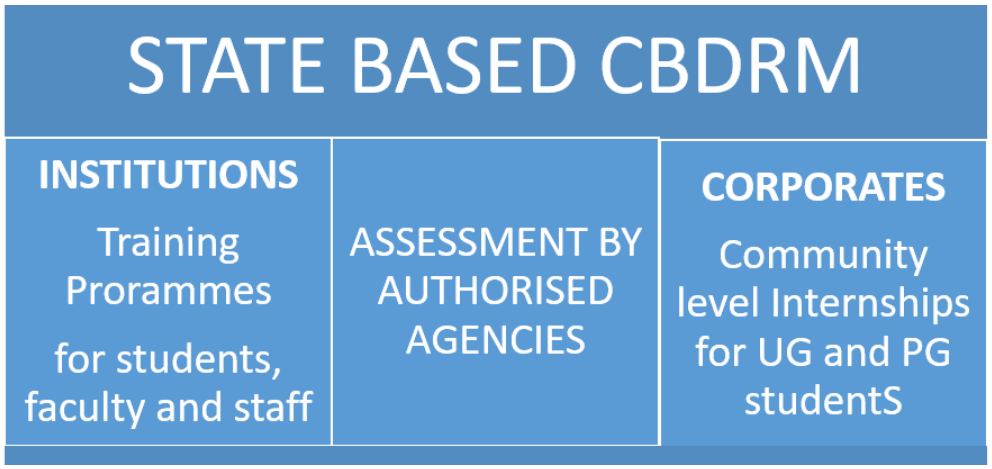

Fig. 5: State Based CBDRM Model for Institutions and Corporates

Source- Designed by the Authors

VIII. CONCLUDING REMARKS

Disaster education brings a culture of prevention along with a mindset that also promotes sustainable development. This would mean a disaster free built environment along with a well-informed citizenry. At the same time, it should be kept in mind that the guidelines should be in sync with the local practices and knowledge. Thus, one needs to incorporate elements of indigenous knowledge in their curriculum and during dissemination process. It should not be taken straight out of leaf of a book that is alien to the local environment and culture.

As understood through literature and more through the lens of the experts working in the field, disaster education should be integrated in the present system of education at all levels along with application of informal tool of raising awareness within communities. Although changes in perception and behaviour may take some time nevertheless it can become more acceptable practice in future once the outcomes of this process are clearly evident in the society. Disaster sensitization will thus promote a gradual and systematic shift from a disaster vulnerable, to a disaster resilient society.

With widespread ecological deluge and climate fear, disasters will increasingly affect lives and livelihood. Without physical and psychological preparedness adapting to these critical situations would be difficult. Education seems to be the only hope to make people aware of the future risk, instil a sense of self protection and follow sustainable lifestyles.

In the words of Kofi Annan, former Secretary General, United Nations, *"We must, above all, shift from a culture of reaction to a culture of prevention. Prevention is not only more humane than cure, it is also much cheaper…. Above all, let us not forget that disaster prevention is a moral imperative, no less than reducing the risks of war."*

REFERENCES

[1.] Assam State Disaster Management Authority & Doctors for You (2013) Community Based Disaster Preparedness Course Book, asdma.gov.in

[2.] Building Research Institute and National Graduate Institute for Policy Studies (2007) Disaster Education, www.preventionweb.net/files/3442_DisasterEducation.pdf

[3.] Disaster Management in Japan White Paper (2015) Cabinet Office, Japan, www.bousai.go.jp/kaigirep/hakusho/pdf/WP2015

[4.] Petal M (2009) Education in Disaster Risk Reduction in Rajib Shaw and R R Krishnamurthy (Eds) Disaster: Global Challenges and local Solutions, University Press, Hyderabad.

[5.] Shaw Rajib, Takeuchi Yukiko, Gwee Qi Ru and shiwaku k (2011) Disaster Education: An Introduction in Rajib Shaw, Koichi Shiwaku and Yukiko Takeuchi (Eds) Disaster Education, Emerald Group Publishing Limited, UK.

[6.] Takeuchi Yukiko, Mulyasari Farah and Shaw Rajib (2011) Disaster Education: An Introduction in Rajib Shaw, Koichi Shiwaku and Yukiko Takeuchi (Eds) Disaster Education, Emerald Group Publishing Limited, UK.

[7.] UNISDR (2015) Global Assessment Report 2015 on Disaster Risk Reduction, Geneva, Switzerland.

[8.] UNISDR (2019) Global Assessment Report 2019 on Disaster Risk Reduction, Geneva, Switzerland.

[9.] Urban Disaster Management Toolkit; An Assessment Based Approach to World Vision's Disaster Management Dimensions, 2014, World vision International, California, www.preventionweb.net/files/42707.