

Nurturing Climate Financing and Socially Responsible Investment for Building Resilient Infrastructures in India

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Abstract

It is very high time to act now without making any further delay in developing resilience infrastructure to secure a safe, healthy, and prosperous environment on planet earth for our generation next as extreme changes are taking place due to climate change. Since disasters are not natural but the hazard is, so we have to counter only natural hazards and our own people's behaviour on climate change. Innovative Disaster Risk Reduction (DRR) techniques are to be adopted for reducing the reoccurring damages caused by the natural hazards like cyclones, droughts, earthquakes, and floods by developing resilience infrastructure for its prevention and proper mitigation. DRR is one of the fast emerging concept and practices followed by today's world under the aegis of UNDRR for reducing the risk of disasters through sincere efforts by analysing and reducing the causal factors being responsible for disasters. Reducing our exposure to natural hazards and reducing the vulnerability of surrounding people and loss of their property, judicious management of land and the environment, and recuperating our preparedness and deploying multi-hazard early warning systems for adverse events are a few examples of DRR methodologies. As disasters often follow natural hazards and their severity depends on how many knock a natural hazard has on the society and on the environment itself. The scale of the blow of disaster in turn depends on the choices we make for our lives and for our environment. These choices relates to how we grow our food, where and how we build our houses, what kind of government we have, whether good governance principles are in place and how our financial system works and even what we teach in our schools? Every decision and action makes us more vulnerable to disasters or makes us more susceptible to them. Thus Climate Financing and Socially Responsible Investments must now be promoted to develop the long-term infrastructures and investment planning based on the robust Environmental Social and Governance Analysis (ESG). In order to achieve the Sustainable Development Goals and attain Environmental Sustainability (ES), the risk-informed finances and investments are needed for countering the increasing uncertainty in the present external environment aroused as a result of ignoring the consequences of Climate Change.

Keywords

Climate change, Climate financing, Environmental protection responsibility, Environmental Social & Governance (ESG) analysis, Environmental sustainability, and Resilient infrastructures.

1. Preface

The indications of climate change are quite prominently visible and often felt now-a-days, one can visualize the effect of climate change in the recent heavy down-pour in the cities of Bangalore, Hyderabad, Mumbai, Pune, Gurugram, and Bhopal, recent heavy floods in Assam, Bihar, and State of MP, cloud burst, avalanches, and landslides in the Uttarakhand and Jammu Kashmir regions etc. Other globally visible prominent Climate Change Indications for examples are melting of glaciers, avalanches, average 3-5 degree temp rise, flash flood, heavy downpour, cloud burst, landslides, tsunamis, cyclone, wild forest fire, coastal floods, melting of glacier ice, green-house gas effects, droughts, earth quacks, frequent lightning strikes, pandemic, dust storms, heavy thunders and wind storms, extinction of certain eves and species, profuse deforestation, wild-life de-habitation, heavy air pollution, coastal erosion, tide locking, storminess and wind damage, severe heat, cold fog, frequent hurricane hazels, tornadoes, rise in sea levels, depletion of ozone layers, extinction of giant reptiles, tiny sparrows and planet's beautiful butterflies to name a few. Let us not forget that there are many conspicuous signs we shall not ignore which gave us very clear warnings and indications that we must prepare ourselves for countering the effect of climate change and start taking risk-informed business decisions by promoting climate financing and socially responsible investments for building resilience infrastructures in India for saving our generation next from the future hellhole of natural disasters arising as a result of climate change.

2. Objective of the Study

In spite of seeing conspicuous warning signs in the past against the unnoticed natural events, we were not able to estimate the risk of disasters in its real sense though there were visible signs and warnings which were not properly exposed. However, the modern disaster risk reduction (DRR) techniques facilitate us to foresee the dangerous situation in advance and direct us to take all adequate safety measures in anticipation and in a more disciplined way through the latest scientific detection and warning systems in the early stages of disasters for saving the precious life and habitats. Therefore the main objective of this research study paper is to spread awareness to build the Climate Resilience (CR) Societies by

sharing the basic knowledge among private and corporate sectors for developing the risk proof value chains with full government support, and to encourage the Climate Financing (CF) for private sectors and to promote Socially Responsible Investments (SRI) for initiating Corporate Social and Environmental Protection Responsible (CSEPR) Activities in the corporate as well as in government sectors to develop the resilient infrastructure for reducing the risk of disasters and to ensure that the disaster-prone livelihoods were not exposed to risk in their day to day working life. Thus a meticulous Environmental Social and Governance Analysis (ESG) on all the mysterious aspects of Climate Change is currently needed to build the climate resilient societies among all affected inhabitants with the help of full government support and through private sector alliance, where people can live and work together fearlessly from the present era of working and living dangerously in the uncertain environment aroused mainly due to the prominently visible effects of the Climate Change (CC). So in order to achieve a considerable reduction in the risk of disaster and loss of life and properties, we must set our action priorities to take immediate remedial action to counter the effect of Climate Change and to achieve the 7 global strategic targets and 38 indicators, as set by the UNDRR under Sendai Frame Work to focus on the Target G: “Substantially by 2030”.

3. Survey of Literatures

During the last two decades, disasters have killed 1.3 million people and affected 4.4 billion in others in irreversible ways. World-wide it is a reported fact that in past three decades the frequency of disasters has almost doubled and the financial losses have tripled. If no investment is made in for building resilience the sustainable developmental goal will never be achieved (Mami Mizutori, 2018). Disaster is subjective in nature (Mohd Iqbal, 2020), it affects all people and all sectors, and it never discriminates (E Garnier, 2019). Since nothing undermines development and prosperity like a disaster, thus we must ensure the building of resilient societies. The damages caused by the natural hazards like cyclones, droughts, earthquakes, and floods can be substantially reduced through an act of identifying the risk in advance and reducing the same for the prevention of hazard (UNISDR, 2016). By adopting the latest innovative DRR techniques (Words into Action, 2022) we can substantially reduce our exposure to hazards, which also diminishes the defenselessness of surrounding populations and the loss of their properties. Thus wise management of land and the environment, and efforts for improving the preparedness and latest methods of early detection and advance warning systems for predicting adverse events may perhaps be adopted for

reducing the heavy economic losses reported due to disasters. The disasters are not natural, as disaster risk is equal to hazard multiplied by its exposure and multiplied by its vulnerability (USAID, 2013). Further, the disaster risk $(R) = (V*H/C)$ can also be mathematically defined as equal to vulnerability (V) of exposure multiplied by the impact of hazard (H) and divided by the capacity (C) of coping, as illustrated above (Dewald van Niekerk, 2011). Hazard themselves does not constitute a disaster, but the magnitude of the disaster is termed as its adverse effects which, hazards have on our lives, our property, our infrastructure, and the environmental damage and cost of post-disaster recovery and rehabilitations etc. (Ilan, Kelman, 2020). Natural hazards do not have to roll into disasters to break the ferocious cycle of disasters, we have to Respond, Recover, and Repeat (Principles for Resilient Infrastructure, 2022). Thus we have to understand the risk of disasters in all their dimensions. Reducing the risk of disaster is everything we have to do to prevent or reduce the damages caused by natural hazards like earthquake, floods, droughts and storms (Strategic Framework 2022-2025). The aim of disaster risk reduction is basically its prevention, but when it is not possible then we have to think of minimizing the harm to people, their assets, and livelihoods by deploying an early warning system. The recently released UNDRR-WMO joint report analyzes the current status of the multi-hazard early warning systems (MHEWS) against the global target G of the Sendai Framework (Aminesh Kumar, 2022). Hazard risk assessment methodology basically consists of three components namely hazard identification, estimation of risk its vulnerability, and the social consequence evaluation (Ferrier and Haque 2002). For managing the risks associated with climate change, it is very essential for making long-term planning and taking the right policy decisions and adaptation measures, which shall be taken immediately (Yohe Gary, 2010). The world has seen the huge devastations unleashed by the recent floods in the Asia-pacific region. Extreme weather events will happen, but they do not need to become deadly disasters. Therefore real and concrete action plans on losses and damages must be made a global priority. All international financial institutions and civil societies must start investing in MHEWS and provide end-to-end support to those who do not have capacities, as we need to stop the destructions happening out of the disasters and contribute to a more resilient future (Mami Mizutori, 13 Oct 2022).

4. Statistical Data

Available secondary data are quite horrific and atrocious let's have a disastrous look!

Table 1: Annual Average Number of Deaths and Number of Millions Affected by Disaster Type in 20Y

| | | | | | |
|----------|------------|------------|-----------|---------------|--------------|
| Deaths | 37942 Nos. | 10442 Nos. | 8648 Nos. | 5185 Nos. | 2146 Nos. |
| Disaster | Earthquake | Strom | Ext Temp | Flood | Drought+rest |
| Affected | 82.7M | 67.5M | 37.4M | 6.3M | 6.2M |
| Disaster | Flood | Drought | Strom | Ext temp+rest | Earthquake |

Source: <https://undrr.org>

Table 2: Total Number of 250 Plus Reported Disasters per Country in the Last 20Y

| | | | | |
|----------|--------|----------|----------------|--------------|
| 1. China | 2. USA | 3. India | 4. Philippines | 5. Indonesia |
| 577 | 467 | 321 | 304 | 278 |

Source: <https://cred.be>

Table 3: Classification of Natural Hazards by Disaster Type

| | | | | | |
|---------------------|--------------|---------------------|-----------------------|--------------------|-------------------|
| Geophysical | Hydrological | Meteorological | Climatological | Biological | Extra-Terrestrial |
| Earth Quakes | Flood | Strom | Drought | Animal Accident | Impact |
| Dry Mass Movements | Land Slides | Extreme Temperature | Glacial Lake Outburst | Epidemic | Space Weather |
| Volcanic Activities | Wave Actions | Fog | Wild Fire | Insect Infestation | - |

Source: <https://emdat.be/new-classification>

Table 4: Total Number of People Affected in Millions with Major Events in the Last 20Y

| | | | | | |
|---------|---------|-------|-------|-------|---------|
| Events | Drought | Flood | Flood | Flood | Drought |
| Year | 2002 | 2003 | 2007 | 2010 | 2015 |
| Country | India | China | China | China | India |
| Numbers | 300 | 150 | 105 | 134 | 300 |

Source: <https://cred.be>

Table 5: Total Number of Reported Deaths in Thousands with Major Events in the Last 20Yrs

| | | | | | | |
|---------|-----------|-----------|------------|---------|------------|------------|
| Events | Heat-wave | Tsunami | Earthquake | Strom | Earthquake | Earthquake |
| Year | 2003 | 2004 | 2005 | 2008 | 2008 | 2010 |
| Country | 15 Euro C | 12 Asi/Af | Pakistan | Myanmar | China | Haiti |
| Numbers | 72.2 | 226.4 | 73.3 | 138.4 | 87.5 | 222.6 |

Source: <https://cred.be>

Table 6: Ten Deadliest Disasters Reported in the Last 20Yrs

| Event | Disaster Type | Country | Year | Death Toll |
|-------|----------------|--------------|-------------|---------------|
| 1 | Eq and tsunami | Indian Ocean | 2004 | 226,408 |
| 2 | Earth Quake | Haiti | 2010 | 222,570 |
| 3 | Strom | Myanmar | 2008 | 138,366 |
| 4 | Earth Quake | China | 2008 | 87,476 |
| 5 | Earth Quake | Pakistan | 2005 | 73,338 |
| 6 | Heat Wave | Europe | 2003 | 72,210 |
| 7 | Heat Wave | Russia | 2010 | 55,736 |
| 8 | Earth Quake | Iran | 2003 | 26,716 |
| 9 | Earth Quake | India | 2001 | 20,005 |
| 10 | Drought | Somalia | 2010 | 20,000 |

Source: <https://cred.be>

Table 7: Total Numbers of People Affected by Disaster Types in the Last 20Yrs

| | | | | | |
|-----------------|--------------|--------------|-------------|------------|---------------|
| Disaster Type | Flood | Drought | Strom | Earthquake | Rest & Others |
| People affected | 1.65 Billion | 1.43 Billion | 727 Million | 118 M | 109M |
| Events % | 41% | 35% | 18% | 03% | 03% |

Source: <https://cred.be>

Table 8: Total Number of People Deaths by Disaster Types in the Last 20Yrs

| Disaster Type | Earth Quack | Strom | Extreme Temperature | Flood | Rest & Others |
|-------------------------|-------------|---------|---------------------|---------|---------------|
| Reported Deaths in Nos. | 721,318 | 199,718 | 165,923 | 104,614 | 42,564 |
| Events % age | 58% | 16% | 13% | 09% | 3% |

Source: <https://cred.be>

Table 9: Top Ten Countries by Total Population Affected in Million by Disasters in Last 20Yrs

| China | India | Philip pines | Bangl adesh | USA | Thai land | Pakist an | Etho pia | Brazil | Vietn am |
|-------|--------------|--------------|-------------|------|-----------|-----------|----------|--------|----------|
| 1729m | 1083m | 149m | 112m | 110m | 77m | 60m | 46m | 41m | 39m |

Source: <https://cred.be>

Table 10: Top Ten Countries Most Affected by Disasters per 100,000 Inhabitants in Last 20Yrs

| Eswat ini | Maur itania | Cuba | Soma lia | Mong olia | Zimba bwe | Philip pines | Lesot ho | Domi nica | Niger |
|-----------|-------------|------|----------|-----------|-----------|--------------|----------|-----------|-------|
| 11380 | 9279 | 9051 | 8939 | 8664 | 8511 | 7796 | 7650 | 7560 | 7500 |

Source: <https://cred.be>

Table 11: Top Ten Countries by Total Deaths Reported by Disaster in the Last 20Yrs

| Haiti | Indonesia | Myanmar | China | Pak | India | Russia | Sri Lanka | Iran | France |
|--------|-----------|---------|--------|-------|-------|--------|-----------|-------|--------|
| 230077 | 187121 | 139759 | 113178 | 84604 | 79732 | 58300 | 37010 | 29636 | 25917 |

Source: <https://cred.be>

Table 12: Top Ten Countries by Total Deaths Reported per Million Inhabitants in the Last 20Yrs

| Haiti | Myanmar | Sri Lanka | Somalia | Dominica | Bahmas | Samoa | Indonesia | AmSa moa | Niue |
|-------|---------|-----------|---------|----------|--------|-------|-----------|----------|------|
| 1159 | 139.9 | 95.2 | 86.4 | 67.3 | 54.2 | 46.1 | 41.6 | 35.0 | 29.2 |

Source: <https://cred.be>

Table 13: Breakdown of Recorded Economic Losses per Disaster Type in the Last 20Yrs

| Strom | Flood | Earth Quack | Drought | Wild Fire | Rest & Others |
|---------------|-------------|-------------|-------------|------------|---------------|
| 1.39 Trillion | 651 Billion | 636 Billion | 128 Billion | 93 Billion | 63 B\$ |
| 47% | 22% | 21% | 04% | 03% | 03% |

Source: <https://cred.be>

Table 14: Breakdown of Recorded Economic Losses by Disaster per Continents in the Last 20Yrs

| America | Asia | Europe | Oceania | Africa |
|---------------|---------------|---------------|---------------|--------------|
| 1.32 Trillion | 1.26 Trillion | 271 Million\$ | 82 Billion \$ | 27 Billion\$ |
| 45% | 43% | 09% | 02% | 01% |

Source: <https://cred.be>

Table 15: Top Ten Countries by Economic Losses as % of GDP by Disaster in the Last 20Yrs

| Domini ca | Cayma n | Hai ti | Grena da | Turk s/ Caic os | Baham as | Guya na | Pric o | Beli ze | Samo na |
|-----------|---------|--------|----------|-----------------|----------|---------|--------|---------|---------|
| 15% | 9.1% | 8% | 7.8% | 5.8% | 4.3% | 3.6% | 3.5 % | 4.3% | 2.1% |

Source: <https://cred.be>

5. Setting Our Targets

The 7 global targets as set under Sendai Frame Work are to be made as a benchmark for setting the targets of every country in order to substantially reduce the global disaster mortality by the year 2030, with an aim to lower the average per 100,000 global mortality rates in the decade 2020-2030 as compared to the period 2005-15 and to substantially reduce the total number of people affected globally by the year 2030, aiming to lower the average global figure per 100,000 in the decade 2020 -2030 as compared to the period 2005-2015 and to reduce the direct disaster economic losses in relation to the global gross GDP by the year 2030. Therefore every country must substantially reduce the disaster damage to their critical infrastructure and disruption of basic services, like health, education, transportation, telecommunication and other basic facilities by developing its resilience by the year 2030. Every country must provide a helping hand in

substantially increasing the number of countries in the development of their national and local disaster risk reduction strategies by 2030 (UNDRR).

Every country must also take a lead role in substantially enhancing international cooperation with other developing countries through their adequate measures and sustainable support system to complement their national actions for fair implementation of the Sendai Frame Work by 2030 and finally every country must collectively act to substantially increase the availability of and access to their early warning systems and disasters risk information and assessments to the people by 2030 (UNDRR).

6. Our Action Priorities

The 4 Action Priorities as set under Sendai Frame Work must also be prioritized well in advance for its fair implementation by every country by 2030. They must understand the disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics, and the environment. Such knowledge shall be used for risk assessment, prevention, mitigation, preparedness and response system. They must strengthen the disaster risk governance to manage disaster risk at the regional, national, and global levels, which is very important for prevention, preparedness, mitigation, response, recovery, and rehabilitation, as it fosters collaboration and partnership. They must promote public and private investment in disaster risk reduction for developing resilience for disaster risk prevention and reduction through structural and non-structural measures to enhance the economic, social, health, and cultural resilience of persons, communities, countries, their assets, as well as of the overall environment. They must enhance their disaster preparedness for providing an effective response and to “Build Back Better” in case of recovery, rehabilitation, and reconstruction. The growth of disaster risk means, there is a need to strengthen the disaster preparedness for response, to take action in anticipation of events, and to ensure that their capacities are in place for effective response and recovery at all levels. Since the recovery, rehabilitation, and reconstruction phase is a critical opportunity to build back better by integrating the disaster risk reduction methods into development measures (UNDRR).

7. Our Commitments

The 5 commitments, which must be full filled to develop the risk informed business strategies and to develop resilient infrastructures by every country. This can be very well achieved by raising awareness with respect to disaster risk and mobilization of the private sector, by exercising influence in respective spheres of

expertise, by sharing domain knowledge, experience, and adaptation of the good governance practices amongst the private as well as public sectors, and by being a catalyst to generate innovation and collaboration in developing the risk informed business strategies and to develop resilient infrastructures by implementing the projects and activities to achieve the 7 global targets with 38 indicators of the Sendai Framework Resolutions as adapted by the United Nation Office for the Disaster Risk Reductions (UNDRR).

Thus every country, commitment shall be to prevent new and reduce the existing disaster risk by effective implementations of integrated, inclusive, economic, structural, legal, social, health, cultural, educational, environmental, technological, political, and institutional measures that overall prevents and reduces global exposure to hazard and vulnerability to disaster and increases the preparedness for an early response and recovery system, and in turn strengthen our resilience (Myung Hee, Kim, 2020).

8. Inferences and Recommendations

Imagine if in case we were not having Airport at Bhuj, how we should have received international aid in a few days of earth quack? Imagine if we have not built bridges across the giant Brahmaputra River then how we should have reached to the flood-affected people of the Upper Assam Region. Imagine if we have not planned for FCI and CWC food grain storage godowns then how we would have survived in drought and famine.

If no primary health centers were built at block levels then how we would have handled the recent pandemic? Don't forget, how better roads and logistics have helped us in supplying liquid medical oxygen tankers during the second wave of Covid-19. If no better communications means would have been developed then how we would have been remain connected to the rest of the world? And if we would not have developed the alternative renewable energy sources then how we would have solved the problems of scarcity of fossil fuels? "Thus to tackle climate change at a local and global level we have to rebuild our cities and economies to be greener, fairer, and more sustainable" (Sadiq Khan Mayor London, UK). Taking cognizance of on the prominently visible climate change effects and based on the above highlighted secondary data it is time to act fast, and without giving any second thoughts to it, we must start paying our highest consideration to ESG Policies to build upon the climate resilient infrastructures for everyone's safe and secure future at planet earth. We must develop our community-based early warning system for hazard monitoring and identify the warning signs of upcoming

disaster, and communicate the multi-hazard warning information well in advance to the surrounding population likely to be affected to save their precious lives.

At the same time, we must start and initiate our preparedness actions to provide rescue and response by supporting the livelihoods, so that life can bounce back to normalcy after the deadliest impact of disasters. Thus immediate measures are to be taken to promote climate financing and to increase socially responsible risk investments for creating climate-resilient infrastructure particularly in the domain of agriculture, building, construction, communication, education, energy, finance, health, transport, and water sanitation to name a few. We must conserve our agriculture works for food security even in times of drought; we must prepare shelters incorporating design elements to withstand different hazards like storms, rains, thunders, tsunamis, and earthquakes, etc. Geographically three side boundaries of our country are fully surrounded by oceans and one side is covered by gigantic Himalayas thus the danger of disaster owing to Tsunamis, Storms, Floods, Earthquakes, Avalanches, and Landslides are always present, thus we must promote climate financing and socially responsible risk investment to counter the adverse effects arising due to climate change.

Therefore it is high time that Government must promote risk informed investments in the projects meant for creating resilient infrastructures and encourage climate financing by means of providing colossal tax relief to the corporate as well as private sectors working in this domain in our country. Thus it is recommended that the Corporate Social Responsibility Policy as defined under clause (i) of Schedule VII of the Companies (Corporate Social Responsibility Policy) Rules 2014 of the Companies Act 2013 may perhaps be amended for promoting the education and employment sector

To ensure the enhancement of the vocation skills, and other livelihood enhancement projects meant for surrounding populations of the disaster prone areas. Accordingly amendments of Clause (ii) of Schedule VII of the Companies (Corporate Social Responsibility Policy) Rules, 2014 of the Companies Act, 2013, may also be considered for the promotion of gender equality, women empowerment and measures for reducing inequalities faced by the socially, and economically backward groups.

Similarly, amendments of Clause (iii) of Schedule VII of the Companies (Corporate Social Responsibility Policy) Rules, 2014 of the Companies Act, 2013, may perhaps be immediately considered for further strengthening the laws required for ensuring ecological balance and achieving environmental sustainability goals. Similarly amendments under Clause (iv) of Schedule VII of the Companies (Corporate Social Responsibility Policy) Rules, 2014 of the

Companies Act, 2013, can be considered for promotion and development of traditional arts and handicrafts to generate rural employment. For providing other livelihood options to the affected population similar amendments under Clause (v) of Schedule VII of the Companies (Corporate Social Responsibility Policy) Rules, 2014 of the Companies Act, 2013 may perhaps be considered. Risk-informed Investments from the corporate sectors in contributing to the funds set up by the Central Government for the socio-economic developments of the rehabilitees and for providing relief and measures for women's welfare as provided under Clause (viii) of Schedule VII of the Companies (Corporate Social Responsibility Policy) Rules, 2014 of the Companies Act, 2013 may be generously allowed with attractive tax incentives and similarly Climate Financing Schemes based on the low-interest rate loans may also be easily made available for making the investments required for rural development projects as provided under Clause (x) of Schedule VII of the Companies (Corporate Social Responsibility Policy) Rules, 2014 of the Companies Act, 2013.

In view of the above, it is judiciously hoped that by initiating these futuristic initiatives the Govt. will ensure that the overall objective of the CSR Policies of all the PSU Cos. will endeavor to formulate, implement, monitor, and evaluate their CSR, Environmental Protection Responsibility (EPR) and Environmental Sustainability (ES) Projects and set right other relative activities through a structured mechanism, to include the better CSR EPR and ESG Proposals in their company's annual budget and will further ensure the effective utilization of the allocated budget by providing a robust inspecting and auditing mechanism to promote the climate financing and sensible risk investments to counter the effect of climate change and building resilient infrastructures in India. As climate change, population growth, unsustainable consumption, biodiversity loss, ecological degradation, disease outbreaks, food insecurity, political instability and conflicts, financial instability, and inequality are the major driving risk factors and increasing vulnerability in the development and humanitarian contexts across the world. Since the risk is increasing quite systematically and risk is the probability of an outcome having a negative effect on people, systems, or assets and it is also portrayed as a function of the combined effects of hazards, assets, or people exposed to hazard and the vulnerability of those exposed. So for reducing the risk, we have to be increasingly joined up in our actions by working across sectors, with ESG adaptation in our CSR activities to ensure harmony and to achieve the Environmental Sustainability Goals.

9. Future Directions

This year on international day for disaster reduction, i.e. on 13th Oct, the UN, Secretary General has addressed that: “The climate disasters are hurting countries and economies like never before. These increasing calamities cost lives and hundreds of billions of dollars in loss and damages. Three times more people are displaced by climate disasters than by war. Half of humanity is already in the danger zone.

However, the world is failing to invest in protecting the lives and livelihoods of those on the frontline and those who have done the least to cause the climate crisis are paying the highest prices”. The entire population are being blindsided by cascading climate disasters without any means of prior alert, as people need an adequate warning to prepare for extreme weather event (Antonio Guterres, 2022). Therefore Climate Financing and socially responsible investments are required to be promoted for building strong resilience infrastructure to reduce the risk of disaster across all sectors of development by taking due account of environmental, social, and governance (ESG) adaptations while making financial and investment decisions among the Indian corporate sector to achieve the Sustainable Development Goals (SDG). Government may perhaps think of introducing “Climate/Nature Bonds” for PSUs, Corporate Sectors, NGOs, and Private Players like that of Electoral Bonds for funding for Climate Financing Projects, or may start “DRR/Climate Fund” for Creating Green Assets for future utilization in disastrous situations as designed by Lian-Biao CUI, et al (2014), and recently proposed by Dr. Ben Caldecott, (2020). Or as being adopted in the case of PM Drought/Flood Relief Fund or PM Care Fund as lastly created during Covid-19 period. As we all know that Sustainable Development is a paradigm which is adopted by the United Nations to promote the economic development, which is inclusive and makes the life of future generations secure. The adoption of this paradigm has become an urgent need due to threats of global warming and scarcity of natural resources (fossil fuels). At the same time, if the fruit of economic development is not reaching to the bottom of the pyramid, then social and political instability will hamper the economic growth of our country. Therefore Systematic Research based on the latest technology and artificial intelligence may perhaps be undertaken and it may be judiciously funded particularly only to those higher technical educational institutes of national importance willing to work for developing an “Early Warning System” for identifying the future threats of disasters in advance by increasing the presently levied Educational Cess on Income Tax further by one more percent to make out the full benefits of the

economic development and to keep it long-lasting, since there is a consensus around the world to strive for SDG without making any further delay (UNDRR Policy Brief No 2, Oct 2021). Therefore by focusing on the risk informed developments (as reported in the GAR, 2022) of the following core sectors namely agriculture, building and construction, education, energy, environment, finance, health, planning, telecommunication, tourism, transport, urban, and rural development, water and sanitation for building the climate resilience infrastructures and to achieve the environmental sustainability by increasing the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people in India by the year 2030. As sustainable development is the pathway to the future we want for all. It offers a framework to generate economic growth, achieve social justice, exercise environmental stewardship, and strengthen governance (Ban Ki Moon). Hope in COP 27 Climate Conference Egypt UN will launch an action plan for providing early warning systems to all the countries.

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