

Missing disaster data and DRR

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Data, or record refers to quantified information, often numeric, regarding events, processes, persons, and objects generally collected by observation. Importance of data stems from the fact that its effective use provides strategic advantage to the ones who commands it.

Data is generally put to various usage that include trend analysis for effective planning, prioritising interventions, justifying investment, ensuring informed decisions, setting goals, and evaluating outputs, and ensuring effective, and timely deployment, and utilisation of resources.

Our record keeping tradition

Before proceeding further, it needs to be accepted that we do not have a strong tradition of data collection, and record keeping; particularly pertaining to historical events, and occurrences. This assertion is testified by the fact that major portion of our history is reconstructed on the basis of secondary sources.

We thus know about socio-economic and political affairs during major portion of the ancient period from the accounts of foreign travellers. Fa-Hien's Foguoji- Record of Buddhist Kingdoms (399-411) is utilised for the time of Chandragupta-II, while for the state of affairs during the time of Harshavardhan, we refer to Hiuen Tsang's Si-yu-ki- Record of the Western Countries (629-644).

Likewise, when it comes to disaster incidences we have fragmented record, and that too is limited to previous 200-250 years. To cover up this shortfall we often refer to Fading Affect Bias that makes humans forget stressful events. We hold this responsible for masses not having idea of the hazard profile of their region, and thus general ignorance of disaster safety measures.

Fading Affect Bias however pertains to human memory, and not to records. Moreover, maintaining previous data or records is a tool for refreshing the memory. It is worth noting that China has continuous record of seismic events since Zhou Dynasty (780 BC).

Data usage

Needless to say that records of previous incidences help in better understanding of the hazard profile of an area, as also impact of events with very long recurrence period. This is strategically highly important for developmental planning, and ensuring safety, and resilience.

The need of systematic data of previous disaster incidences is therefore being raised not only by disaster risk reduction(DRR), and response professionals, and agencies but also by

development professionals. Previously, data needs were addressed on an ad hoc basis by collecting the required information at the time of emergency.

Effective data collection, analysis, and management are however increasingly being recognized as potent tools for achieving both short, and long-term development goals, besides identifying, and addressing disaster risk.

Data of previous disaster incidences is also being utilised for better understanding of changing pattern of vulnerability, and risk which is then being utilised as an effective tool for formulating appropriate policies, and management inputs for safeguarding human interests.

This data is also utilized world over for justifying investment on various DRR initiatives, and convincing the ones responsible for approving schemes, and allocating budgetary outlays. These persons generally prioritise investment on the basis of cost of undertaking certain interventions as against omitting these, and based on this rational they approve investment on certain sectors, and withhold the same on others. In the absence of data, particularly that of disaster induced economic losses, DRR professional are often not able to justify the investment sought by them.

Present state of disaster related database

Based on the achievements of our science, and technology institutions we have certainly set up robust cyclone, and tsunami warning systems, and we are at present producing, and even exporting Covid vaccines. We often take pride in these and portray ourselves as leader in the field of DRR.

Despite all this, it is a harsh reality that we have not been able to set right the state of affairs at the grassroots level. Many of you might not believe, but then we still do not have a mechanism in place for collecting data related to disaster incidences, and disaster-induced losses.

It is logical, and you might also hold the concerned department, or authority responsible for this lapse. However, lack of an objective definition of disaster is identified as being a reason thereof.

Definition of disaster

Disaster Management Act, 2005 defines disaster as being a catastrophe, mishap, calamity, or grave occurrence in any area, arising from natural, or man made causes, or by accident, or negligence which results in substantial loss of life, or human sufferings, or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area.

You would agree that this definition is very extensive, and covers almost all incidences that have adverse impact on human interests. The responsibility of managing these incidences is accordingly dispersed over many departments, and agencies.

Moreover, rather than providing a lower limit of losses to qualify an incidence as being a disaster, it defines “substantial loss” as the criteria which is highly subjective. Together with

this the incidence being “beyond the coping capacity of the affected community” is put forth as another criteria for classifying an incidence as being a disaster. The Act however does not provide an objective criterion for assessing the coping capacity of the community.

The definition of disaster provided by the Act is therefore highly subjective. Based on this definition it is hard to objectively identify certain events as being disaster. In such a situation it is not justified to expect any single organisation, or agency to keep track of all the incidences that qualify as being disaster according to the definition provided by the Act.

It is worth noting out here that Centre for Research on the Epidemiology of Disasters (CRED) which maintains global database of disasters uses objective criterion for admitting incidences to its database; (i) 10, or more people killed, or (ii) 100 or more people affected, or (iii) declaration of a state of emergency, or (iv) call for international assistance.

So, without regard to “substantial loss”, or being “beyond the coping capacity of the community concerned” an incidence is registered in the CRED database as disaster, if any of the foregoing 04 conditions is fulfilled.

I do not suggest that we emulate the criteria of CRED, but then we ought to have an objective definition of disaster without which it would be difficult to create a meaningful database of disasters. Moreover, it is a reality that DRR professionals at the grassroots level are often not clear if an incidence is to be treated as a disaster.

Criteria of relief, another bottleneck

As you must be aware, there exists a provision of providing relief to the disaster victims for which the states are provided grants under State Disaster Response Fund (SDRF) in accordance with the recommendations of the Finance Commission.

As per the norms of expenditure out of SDRF disaster victims are entitled to immediate relief at a standardised rate that has no relationship with either magnitude of the incidence, or actual losses incurred by individuals.

Moreover, relief out of SDRF is admissible only to the victims of certain hazards that are formally notified either by the Ministry of Home Affairs (MHA) or the concerned state. At present the hazards notified by MHA include (i) cyclone, (ii) drought, (iii) earthquake, (iv) fire, (v) flash flood, (vi) cloudburst, (vii) avalanche, (viii) landslide, (ix) pest attack, (x) hail storm, (xi) tsunami, and (xii) cold wave/frost. Apart from these states have also notified some hazards based on local ground realities.

So the database of disaster incidences, and losses incurred by these available formally with the concerned department or authority often pertains only to the notified hazards, and relief provided to the affected community.

It is a reality that the concerned department or authority does not generally have any data pertaining to other hazards. Even this data is not complete as an incidence is formally recorded only if the nature of loss requires relief to be provided out of SDRF.

Numerous instances in which relief is not provided are therefore missed out.

It is important to note that SDRF guidelines do not provide for relief in case of loss of commercial assets. So the incidences affecting only commercial assets do not get registered as a disaster.

This is the reason for you not often coming across details of disaster-induced loss to commercial assets.

Experience of the grassroots level suggests that only the losses illegible for relief are recorded as disaster induced losses, and interestingly relief amount provided to the victims is often recorded as the monetary value of losses.

The assets lost in disaster, but not covered by SDRF norms are therefore not recorded.

Another interesting point out here; even amongst the items qualifying for relief the affected individual is sometimes provided relief only to the extent of a predefined limit.

In case of loss of residential houses qualifying for relief, an individual is provided relief only for loss of one residential house, even if his two or more houses are destroyed in the disaster. In such a case only one house is recorded as being lost in the disaster.

Likewise, for the loss of farm animals the upper limit pertains to 3 large, or 30 small milch animals, or 03 large, or 06 small draught animals. The official record of the animals lost in a disaster incidence is thus always in conformity with this limit, and the actual loss is often not recorded.

Moreover, relief is provided at a standardised rate that has no relation with the value of the assets lost. So, there exists no incentive for anyone to evaluate, and record the value of the lost asset. So, rather than economic value, the losses are recorded in terms of units, and relief amount provided against these.

The data pertaining to actual economic losses incurred in a disaster incidence is therefore never available.

Vulnerability functions of damaged assets

It is important to note that there exists no provision of recording vulnerability functions of the infrastructure damaged by the disaster. So based on the available data one can never assess if the losses have some relationship with the vulnerability of the damaged infrastructure.

Major disaster incidences

On the aftermath of a major disaster, it is a general practice for the affected state to prepare a memorandum summarising the losses, and seek assistance out of National Disaster Response Fund (NDRF) for the repair, and restoration of public infrastructure damaged by disaster.

Here too the losses incurred to the infrastructure covered by SDRF norms alone are recorded; losses incurred to Primary Schools and Primary Health Centres are thus recorded as these are covered by SDRF norms but the losses incurred to the Middle Schools or Inter Collages and

other hospitals often go unrecorded as these are not covered by SDRF norms. As is the case with individual losses, resources for repair, and restoration of damaged infrastructure are often provided at generalized rates, and therefore the value of the lost assets are often not recorded.

Moreover, it is a general practice for the central government to sanction only a fraction of the assistance sought by the state, and therefore the loss of public infrastructure as reported by the state is generally inflated. This is often used as an arm-twisting tactics, if the state is ruled by a political party other than one ruling at the centre.

The way forward

Available data of disaster-induced losses, being plagued with a number of shortcomings, is of little use for DRR or developmental planning.

This data pertains to the losses incurred by notified natural hazards alone, and moreover has records only of the losses qualifying for relief.

Data pertaining to loss of personal property is limited to numbers with not even faintest clue about their value, and there exist no details of the vulnerability of these assets.

The loss of personal property, and assets is therefore invariably underreported, while the loss of public assets is generally inflated.

Moreover there exists no data pertaining to the loss of commercial assets.

In such a situation no one really knows the magnitude of actual economic losses incurred in a disaster incidence.

In developed countries where most assets are insured the value of settled insurance claims is generally considered as being the economic losses incurred in the disaster. The insurance companies at the same time record nature of losses, and vulnerability of the assets so as to update their risk database that is later utilised for deciding the rates of insurance premium. Insurance coverage being limited this does not hold good for us.

Had we been good record-keepers there would have been no dearth of funds for risk reduction, and available funds would have been utilised on scientifically prioritised risk reduction measures. So with the passage of time risk of disasters would have declined.

The state of affairs is however starkly different; on the one hand we are unable to reduce risk while on the other hand we are continuously accumulating new risk. This does not really reflect our commitment towards DRR.

Given below are some measures, that if implemented in letter and spirit could make some difference.

(i) Loss estimation

As a first step towards DRR, it is required that a comprehensive strategy for collecting details pertaining to various aspects of all disaster incidences, natural or man-made, be formulated.

Current practice of recording losses only for the notified hazards be discontinued, and provision be made for recording actual losses incurred to private, commercial, community, and public assets, and infrastructure.

This record should invariably take note of the vulnerability status of the assets affected by disaster. Promotion of risk transfer tools could rope in insurance agencies in this exercise, thus reducing the burden of the state.

(ii) Record keeping

The responsibility of preparing, and maintaining the disaster database has to be taken by the SDMA's under overall supervision of NDMA. For this registering details of the losses into the database in a prescribed format can be made a precondition for spending SDRF resources.

Political pressure for prompt release of relief after a disaster incidence would ensure prompt compliance of this.

(iii) Relief linked to disaster magnitude

Relief be linked to the magnitude of the incidence rather than nature of hazard, as is the current practice. For small, and stray incidences risk transfer tools be promoted, and organized funds out of SDRF be utilized in case the magnitude of hazards exceeds a predefined threshold, and this assistance not be limited to notified hazards.

(iv) Objective definition of disaster

Disaster Management Act, 2005 be amended to incorporate an objective definition of disaster. In view of long lasting implications of this definition it is suggested that the opinion of various stakeholders be sought on the one being proposed. While doing so the criteria used by CRED can be used as a reference, and suitably modified to suit the ground realities.

(v) Detailed HRVA

Detailed hazard, vulnerability, and risk assessments be carried out, and access to the output be freely provided to all interested rather than restricting the same to a few individuals in SDMA which is the current practice.

Appropriate measures be taken for disseminating information on vulnerability, and risk amongst the masses in simple, and easy to understand format, and in vernacular along with locally pertinent examples. This should accompany simple, and implementable risk reduction measures.

This would promote voluntary compliance of DRR measures by the masses, and help in garnering political support for legislative interventions where required. This would at the same time desist people from opposing the rules so framed.

(vi) Strict enforcement

Appropriate measures be enacted for enforcing essentials of DRR. To start with, this could be tried out with building bye laws, landuse restrictions, debris, and waste water disposal, and linking of DRR to the licensing of all commercial, and public facilities.

(vii) Awareness and capacity building

Investment on mass awareness aimed at popularising DRR, as also on capacity building be enhanced significantly. All technical details highlighting importance of DRR initiatives be made public together with simplified versions of these so that both masses, and officials are able to appreciate the importance of indulging in DRR.

These should boldly state the cost, and consequences of ignoring DRR measures.

It the last it is again stressed that a comprehensive disaster database is the need of the hour, and a must for DRR.

Everyone around needs to appreciate that unless an objective, and comprehensive database of disaster incidences; particularly disaster induced economic losses is a reality, the priorities of DRR professionals would always be frustrated by political, and bureaucratic whims, and fancies, and there would really be no real risk reduction, and masses would continue to face adversities.