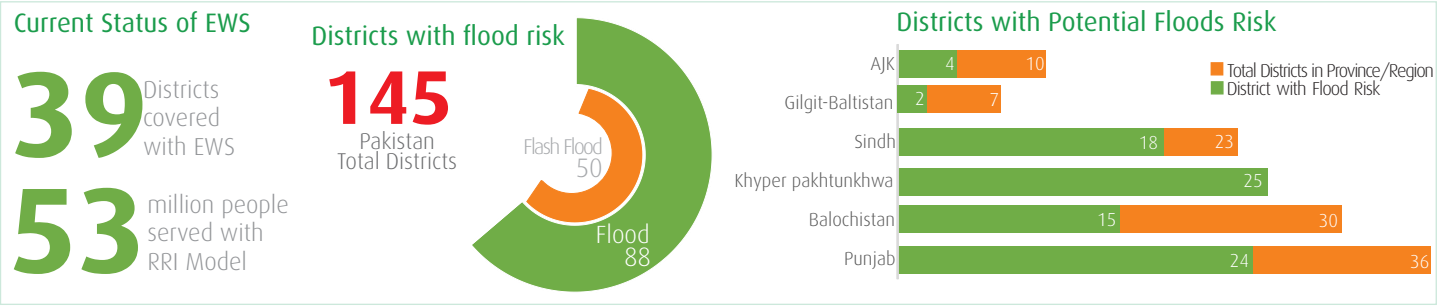
Target 7

Early warning systems and Disaster risk information

This briefing note provides information relevant to the agreement of target (vii) of the draft Post-2015 Framework for Disaster Risk Reduction (DRR) for national monitoring , which reads: Ensure access to impact-based early warning and disaster risk information [to 90% of the people] by 2030



Context

Since 2000, Pakistan has been greatly affected by impacts of natural disasters on its people, society and economy. The losses from disasters are believed to have delayed the national and international development goals.

According to EM-DAT data, over 880,000 people have been killed by floods, rains, earthquakes and droughts in Pakistan during the period 1990-2014. While a staggering 70 million were affected in the same period. During 2010 -2012 alone, the three consecutive floods incurred economic losses of 16 billion USD. These floods are thought to be lined to the changing climate in the region. The IPCC has warned that extreme events, heat waves and floods like 2010 may become frequent and intense.

In addition to the climate changes, the vulnerability to natural hazards is growing because of rapid population increase and accumulation of both human and physical capital in risky unplanned urban areas.

Trends

An analysis conducted by LEAD Pakistan yields that 88 out of145 districts of Pakistan can potentially be impacted by floods. Half of these potential districts have a high probability of getting affected every year.

According to National Disaster Management Authority (NDMA), more than 50 districts in Pakistan fall directly in the path of flash floods, which usually occur during the monsoon season, between July and September each year. Melting glaciers in the north raise water levels in rivers, which are further raised by torrential monsoon rains.

NDMA recognizes inefficient early warning system and poor communication are leading causes of vulnerability of communities in flood plains and near riverbeds. The present hazard forecasting and early warning systems lack capacity to monitor multi hazards and timely dissemination of actionable information to the vulnerable population and local institutions.

More than 39 districts are now being covered with the flood forecasting and early warning system of Integrated Flood Analysis System (IFAS), and more than 53 million residents in 32 districts located in the lower river basin are now served with the new flood hazard maps generated by the Runoff-Inundation (RRI) model.

Among urban areas, a Flood Forecasting and Early Warning System has been established at 'Nallah Lai' (a hill torrent flowing through Islamabad and Rawalpindi). 'Nallah Lai' lies in the catchment area of Margallah hills and frequently hit by flash foods.

The disease early warning system (DEWS) was introduced right after 2005 earthquake in order to minimize morbidity and mortality due to communicable diseases particularly aftert disaster.

After countrywide flood emergency in 2010, the DEWS was expanded to 27 new districts. By end of 2011, 93 districts across all provinces of Pakistan were included in the DEWS, covering

Elements of early warning system & challenges

Early Warning System is the major element of disaster risk reduction. It prevents loss of life and reduces the socio-economic and material impact of disasters. An effective people-centered early warning system systematically collects data and undertakes

Priority 4: (draft post-2015 framework on DRR)

Enhancing disaster preparedness for effective response, and to Build Back Better in recovery, rehabilitation and reconstruction

To achieve the priority action 4 at national level, the post-2015 DRR framework draft document reads: (b) Invest in, develop, maintain and strengthen people-centred multi-hazard, multi-sectoral forecasting and early warning systems, disaster risk and emergency communication mechanisms, social technologies, and hazards monitoring telecommunication systems. Develop such systems through a participatory process. Tailor them to the needs of users, including social and cultural requirements, in particular gender. Promote application of simple and low-cost early warning equipment and facilities and broaden release channels for natural disaster early warning information.

risk assessments; develops sophisticated hazard monitoring and early warning services; communicates risk information and early warning in a clear and culturally compatible manner; and builds national and community response capabilities.

The interpretation of hazard information and translation of EWS must involve the people, who need to act, understand and internalize. The actions at community level will be mediated by preparedness, the level of trust in the institutions, and behavioral tendencies of the people. Community is the key stakeholder for non-structural measures.

Early warning systems when coupled with better preparedness and response mechanisms, can be very effective in reducing disaster risks and impacts in Pakistan.

Early warning dissemination and information system is the responsibility of Pakistan Meteorological Department PMD. For this purpose, PMD maintains a specialized Flood Forecasting Division (FFD) at Lahore. The PMD issues pertinent information on rivers' condition to local, provincial, and federal decision-makers and to general public. The current capacity allow PMD to predict weather for 2 days.

To attain medium range time scale (3-10 days) capacity, the PMD is establishing specialized medium Range Weather Forecasting Center (SMRC) which is expected to be operational in 2017. The project is a significant step towards the implementation of National Multi hazard Early Warning System Plan.

The FFD covers most part of the Indus river basin, however catchment areas of Kabul and Sawat rivers are beyond the current radar coverage of FFD. There were large number of human casualties and economic losses reported from this area during 2010 super floods.

To monitor coastal areas, Pakistan has received support of World Meteorological Organization(WMO) for cyclone detection. The detection radar has been provided by Japan to enhance the prediction of cyclones originating in Bay of Bengal and Arabian Sea.

At federal and provincial level, NDMA/PDMA issue warnings through TV channels and radio stations. At local level, early warning public messages are issued through tehsil, town and union council members/staff usually at the local mosques. At district level, agriculture and social welfare departments are the key implementing departments.

At the community level, there is generally low disaster risk awareness in Pakistan especially among women and children.

Disaster risk awareness is higher in area that have experienced floods in the past and have been involved in disaster risk management activities. Disaster management agencies have reported that people tend to ignore flood warnings, until they are hit by the hazard.

Role of Community

The draft document of post-2015 DRR framework recoginse the key role of community and indiginous knowledge for a successful EWS, which reads.

(iv) Older persons have years of knowledge, skills and wisdom which are invaluable assets to reduce disaster risk and should be included in the design of policies, plans, and mechanisms, including for early warning;

(v) Indigenous peoples through their experience and traditional knowledge provide an important contribution to the development and implementation of plans and mechanisms, including for early warning

Measurement and dissemination challenges

The access to impact-based early warning and disaster risk information to 90 percent population is difficult to operationalise in Pakistan's national context.

The 'access' only measure will reflect partial deployment of the EWSs in Pakistan. Mere setting up the access to information may not translate into useable and actionable advice. Moreover, most of the contents on the risk alerts or early warning are produced mainly in English and disseminated among limited number of organizations at Federal and provincial level. NDMA highlights the district level disaster management bodies are not functional in many areas of Pakistan so there is no custodian of the EWS at local level.

The absence of local governments and DDMA's pose dual challenge of measuring access to and from early warning systems.

The widespread penetration of Information and Communication Technologies (ICTs) and increasing presence of cable TV even in remote areas can play a critical role in all phases of disaster management in Pakistan particularly the early warning systems and disaster risk information.

In addition to the deployment of technology for EWS, there is a need to capitalize indigenous and cultural practices to provide communities with credible and actionable risk alerts as a large number of people in Pakistan live below the poverty line and do not have access to electronic and social media.

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