HUMANITARIAN INNOVATION FUND

Final Report

- Please try not to exceed 5 pages (Arial, 12pts) excluding attachments –

Organisation Name	Pragya

Project Title	Citizen-based DRR model to reduce disaster toll in Himalayas
Problem Addressed / Thematic Focus	Increasing vulnerability of Himalayan communities to natural disasters and lack of forewarning and relief & support, and risk reduction in the Himalayan region.
Location	Indian Himalayas
Start Date	1st September, 2012
Duration	16 months (initial proposal: 6 months)
Total Funding Requested	19,977 GBP

Partner(s)	NA
Total Funding	32,269 GBP

Innovation Stage	Invention
Type of Innovation	Process
Project Impact Summary	

Reporting Period	Sept 2012 – Dec 2013
Total Spent	GBP 32,269

ACTIVITIES CARRIED OUT. *Describe all the activities carried out.*

Consultations at grassroots: District-level workshops with participation of community representatives and district officials, helped prioritise the key hazards for the region and associated needs and early warning indicators, and draw out hazard indicators that were available in traditional knowledge, for each of the natural hazards deliberated on. Reference tables were used to enable rating the hazards on frequency of occurrence, impact or extent of damage, and degree of vulnerability, and capture the event intensity and associated extent of losses caused by it. These

consultations also drew out indications from physical surroundings or movements/behaviours of living beings that are connected to weather conditions, as predictors of the hydro-meteorological disasters, along with reliability ratings for each such TK-based indicator.

Consultations with sector experts: Interviews with key stakeholders (Himalaya-experts, NGOs, CBOs, district authorities, international stakeholders) in the target districts and at the national level elicited inputs on the potential indicators for various natural disasters, that would enable continual surveillance and timely warning, from the respondents. Meetings were also held with national DRR authorities in the districts and states and at the national level, and helped draw out the suggestions from these expert stakeholders on the following: the process for surveillance along with the relevant scales & indicators for early warning, as well as the process for recording & relay of environmental, hazard and disaster information. Inputs were also sought from the DRR authorities, as well as NGOs with a mandate for DRR as well as Relief Aid Agencies with significant experience in this sector, on the kind of information required during/post disaster, for effective relief measures. Discussions were held with regional research institutions as well as meteorological and hydrological and geologic research institutions to elicit information on the local institutional capacity for weather monitoring & forecasting, including locations & adequacy of available local & regional weather monitoring stations, and their capacity, infrastructural and human, for forecasting temperature & precipitation and extreme events; the discussions also helped identify the information gaps, and thereby the key areas for which information would need to be collected via the proposed citizen science program, towards creating an adequate information system that could aid DRR decisions.

Learnings from flood relief operations: A multi-day cloudburst that caused devastating floods (being called the Himalayan Tsunami) in the Indian Himalayan states of Uttarakhand and Himachal Pradesh in June 2013 and two of the project districts were among the worst affected. While working to address one of the worst humanitarian crisis of the decade in the Himalayas, the research team continued to interact with relevant stakeholders in the district including NGOs, CSOs working for relief and response, emergency coordinators from UN Disaster Management Teams, representatives of District Disaster Management Authority (DDMA) and nodal officers for external aid, representatives of media, coordinators of Sphere India district networks. These provided precious understanding of post-disaster convergence behaviour and relief chain (for 1st, 2nd and 3rd responders), and their effectiveness, and first-hand knowledge of the coordinating mechanisms in place and their effectiveness/drawbacks. Discussion/correspondence were held with representatives of first responders/rescuers, second responders including private entities/corporates, and those involved in reconstruction phase, as well as stakeholder coordination agencies. These focused on role and effectiveness of various agencies, the bottlenecks, factors that influence decision making and responsiveness, beneficiary prioritisation and indices of measurement of effectiveness, capacity of various agencies and suitable roles for each, preparedness of local communities and relief agencies, relief efforts with a focus on long-term development objectives. They also revolved around modes of data collection for assessment of on-ground situation, reliability of various sources, community involvement and use of technology.

Secondary research: To supplement the information from the grassroots consultations regarding the frequency of disaster events and their impacts, studies and data on environmental threats in the target region were examined for trends in frequency and scale of impact, for slow onset as well as rapid onset disasters, both atmospheric hazards and hydrological/mass movement ones; there was a special focus on floods and droughts. The research extracted and used both statistical data as well as media reports to supplement the verification process of the hazards prioritised in each target district. Data in DRR portals, crowd sourcing databases, government websites, data portals of inter-agency collaboration agencies, were explored for the same. The secondary research also examined all research conducted on the natural hazards prioritised, in order to identify markers and parameters that could be adopted for the model, as well as the threshold levels and tools that could be used for measurement and communication. Further, inputs on good practices and critical success factors were also gathered through the process. These studies were guided by the inputs received from the consultations carried out with technical experts, and the relevant sources shared by them.

Designing the model: The data collected through consultations and secondary research have been analysed to develop simplified systems for recording & analysis of data on climate and hydrologic/mass movement. Essential parameters for data recording have been drawn out along with recommendations for the measurement process/instruments, scale & frequency of monitoring of various indicators, methods for relay of data, and analysis as well as procedures & methods for issuing warnings etc. These parameters and processes are envisaged to be a part of a citizen science (CS) program to be anchored with trained local youth, for ongoing information creation that could enable risk-reduction & preparedness. A Relief Information System (RIS) has been designed for collecting data on damage & need assessment during/after a disaster, and communicating to relief agencies.

Dissemination and orientation: Subsequent to the design of the citizen-based EWS and RIS, workshops were conducted in the 3 Himalayan zones, to disseminate the model systems developed, deliberate and validate/finetune their design, and discuss their implementation modalities, including roles of various agencies in the process. Participants included community representatives (panchayat heads, youth participants for the CE program), district level officials, representatives of the DDMAs) in all zones. The workshops also included sessions to orient the youth participants to the systems, with mock sessions conducted to test their understanding as well as the feasibility of implementing the systems.

ACHIEVEMENTS. *Describe all the results achieved through the activities indicated above and indicate if the project achieved the objective set out.*

The project objective (to develop DRR methods & tools uniquely suited to Himalayan conditions towards reduction & mitigation of disaster risk on the ground and to aid in decision & policymaking) has been well met. Two systems have been created, as had been planned: a) Himalaya-EWS for citizen-based surveillance and early warning on 5 prioritised natural hazards for each of the target areas (a total of 7 hazards across all 3 Himalayan divisions); and b) Himalaya-RIS for damage assessment and estimation of relief needs over 3 stages of a disaster's evolution/progress, for all 7 prioritised hazards. These systems have involved deep and extensive consultations with stakeholders and experts and are made exclusively

for the Himalayas, incorporating local scientific & TK inputs, and suited to the local infrastructure, capacity and communication constraints.
The EWS and RIS systems have been disseminated to stakeholders in the districts to facilitate their adoption, and to researchers, development workers, and government, to enhance uptake and propel mainstreaming, and decision and policymaking. The model systems were well-accepted by the stakeholders [community representatives (panchayat heads, youth participants for the CE program), district level officials, representatives of the DDMAs) in all zones, a few issues were flagged up, viz, regarding funding for instruments and adequate training & support for the youth anchoring the program, and necessary networking with expert institutions and relief mechanisms. Project personnel are continuing their efforts to influence relevant government agencies to provide requisite support to address these issues, and it is expected that with the adoption of these systems, there would be significant reduction & mitigation of disaster risk for Himalayan communities.

METHODOLOGY. *Describe how the methodology used was or wasn't appropriate to carry out the activities or achieve the objectives set out.*
The methodologies employed were found to be appropriate to the project's objectives. The wide-ranging consultations involved various levels of stakeholders and elicited strong participation from them. Information elicited through these processes enabled clear evaluation & prioritisation of hazards, which would in turn allow maximum reduction/mitigation of disaster risk; secondary data and discussions with scientific personnel validated these as well. The process for development of the EWS included and permitted a convergence of scientific inputs and traditional knowledge for indicators for the prioritised hazards, thereby ensuring necessary localisation as well as suitability for local community capacities. For the RIS, the methodology also drew strongly on the 2010 experience of flashflood event in Leh, and the flashfloods in Uttarakhand in 2013; the latter in particular, added significant value. It must be noted that identifying suitable TK-based indicators for incorporating in the EWS, proved to be difficult; hence rating scales were devised and helped by providing reliability assessments for each TK-based indicator.

MAJOR OBSTACLES. *Describe all the obstacles faced during the implementation of the project and how they affected the planned activities and results. Indicate what steps have been taken to address these obstacles. Indicate whether amendments to the planned activities and objectives have been made.*
The project was initiated in September 2012, just prior to the onset of winter, which is typically very severe in the Himalayan region, and leaves it completely snowbound and inaccessible. Hence there was a forced, weather-induced break of implementation for the winter months, which threw the project schedule off-course. Project activities could be restarted in April 2013, and most of the groundwork in terms of consultations and data collection had been completed by June, when it had to be stalled yet again due to flashfloods in Uttarakhand. All organisational personnel were diverted to the essential relief and response activities, and focus remained on this till November 2013, particularly since the work needed to be completed before the onset of winters in the region. The remaining work on the project, including the final design of the systems and the dissemination and training was completed

thereafter. The issues mentioned above necessitated amendments to the schedules. Apart from the timelines however, the activities were not affected, and the results have actually improved because of the inputs from the 2013 Uttarakhand disaster.

BENEFICIARIES/HUMANITARIAN INTERVENTIONS IMPACTED. *Indicate the beneficiaries as well as the humanitarian interventions that have benefited from the project.*

Stakeholders involved in the design phase and those that the systems were disseminated to, as well as the youth trained in them, have benefited from an understanding of the systems necessary for DRR. The process of consultations brought together the multiple stakeholders and responders with respect to disasters in the target area, and facilitated understanding amongst them; the dissemination process also helped create coordination and communication mechanisms among the levels of stakeholders and responders in the specific districts. The systems developed would ensure residents of all target districts have reduced vulnerability to disasters in the region. In addition, learnings from the initial activities under the project facilitated our response to the floods in Uttarakhand. These learnings were also disseminated to stakeholders in Uttarakhand and benefited the flood victims as well as the responder organisations.

PARTNERSHIPS AND COLLABORATION. *Describe the partnership arrangements and how these may have changed during the course of the project.*

NA

DISSEMINATION. *Indicate the steps taken to disseminate project findings/outputs to outside stakeholders.*

Workshops were held in the districts to disseminate project findings, and have built initial capacity in these districts to implement the systems designed under the project. A presentation has also been created and is being used to disseminate to responders nationally. In addition, Pragya staff have been involved in the design of a course on DRR, particularly for use in training responders in the Uttarakhand region via community radio, and would continue to be involved in the roll-out as well; through this avenue, the project outputs are being incorporated at an academic level as well and being disseminated very widely.

TRANSFERABILITY. *Please indicate if there is any potential to replicate the project and how.*

The processes developed by the project in terms of citizen-based surveillance and communication would be eminently replicable for all remote areas. Specific hazards and their surveillance indicators and related processes would however have to be localised to the specific hazards of each such area; likewise, the institutional stakeholders would also need to be as per the prevailing institutional framework of the particular nation and province. Within India, the systems could be disseminated widely to all remote areas and area-specific localisation facilitated, along with help in implementation. A presentation and report on the project's outputs could also be shared widely, internationally, via the web.