Science for Humanitarian Emergencies and Resilience (SHEAR) scoping study: Annex 1 - Results of a stakeholder questionnaire

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Report Summary

The objective of the Science for Humanitarian Emergencies and Resilience (SHEAR) scoping study is to provide the UK Government's Department for International Development (DFID) with evidence-based recommendations on future research priorities for risk assessments and early warning systems for weather-related hazards (e.g. cyclones, floods, droughts) for humanitarian and development purposes for low-income countries across Africa, South Asia and the Caribbean.

As part of the scoping study, an internet-based survey aimed at stakeholders based in or working in the three regions was produced. The objective of the survey was to get an overview of risk assessments and early warning systems for weather-related hazards with respect to their effectiveness in reducing loss of life, their accessibility to a range of stakeholders, as well as an understanding of the opportunities to improve them. Of the 247 respondents, 180 completed the survey in its entirety.

In Africa drought was perceived by the respondents to have the most impact on people followed by fluvial flooding. The main barrier to the effectiveness of early warning systems loss of life was seen to be the lack of high quality data. This was closely followed by the lack of technological capacity to generate forecasts. Just over half the respondents indicated that some form of risk or vulnerability maps for at least one type of weather-related hazards are available. However, this mapping is most commonly seen to result in low levels of reduction in loss of life, and thus low levels of effectiveness

In the Caribbean tropical cyclones have the greatest on people. Over 75% of respondents indicated cyclone early warning systems exist with the majority stating these offer substantial or good effectiveness in reducing loss of life. A paucity of high quality data and uncertainty in the warnings were seen as the main barriers. Over 50% stated that some form of risk or vulnerability maps existed, (primarily for tropical cyclones). The barriers to the effectiveness of these maps were seen to be their lack of accessibility to relevant stakeholders and a dearth of information on factors affecting people's vulnerability.

In South Asia, fluvial flooding, followed by tropical cyclones have the most impact on people. Over 60% of respondents are early warning system for river flooding in place with 50% stating that these offer substantial or good effectiveness in reducing loss of life. The main barriers to improving early warning systems were seen to be the lack of technological capacity to generate forecasts and the lack of high quality data. Just less than 50% the respondents indicated that risk or vulnerability mapping has been produced for fluvial flooding in South Asia. The available mapping was most commonly considered to provide an average reduction in loss of life. The main barrier to the effectiveness of risk and vulnerability mapping in reducing the impacts of weather-related hazards to people in South Asia is the lack of availability of information on factors affecting people's vulnerability, followed by the lack of accessibility of such maps to relevant stakeholders.



SECTION 1

Introduction

The objective of the Science for Humanitarian Emergencies and Resilience (SHEAR) scoping study is to provide the UK Government's Department for International Development (DFID) with evidence-based recommendations on future research priorities for risk assessments and early warning systems for weather-related hazards (e.g. cyclones, floods, droughts) for humanitarian and development purposes for low-income countries across Africa, South Asia and the Caribbean.

The recommendations from this study will inform the proposed SHEAR programme, which will invest in research related to systematic, transparent and comprehensive risk assessments and early warning systems.

In 2012 DFID's Strategy Paper "Promoting innovation and evidence-based approaches to building resilience and responding to humanitarian crises", summarised the "four big problems" as:

- Decision-makers do not have routine access to good information about risk;
- It is not really known which interventions are most effective in reducing risk, saving lives and rebuilding livelihoods after crises;
- The capacity to design and deliver humanitarian response and to build resilience is already stretched and will become increasingly overwhelmed;
- The right systems and incentives are not in place to ensure that evidence is available and used to inform decision-making.

(DFID, 2012)

Dealing with these "big problems" is key if effective early warning and risk assessments for weather-related hazards are to be put in place in low-income countries.

For the purposes of this scoping study, HR Wallingford led a team comprising the United Nations Office for Disaster Risk Reduction, the Global Water Partnership, the Institute for Development Studies and Practical Action plus a number of other academic partners.

As part of the scoping study, an internet-based survey aimed at practitioners, and to a lesser degree researchers, based in or working in the three regions, was produced. The objective of the survey was to get an overview of risk assessments and early warning systems for weather-related hazards with respect to their effectiveness in reducing loss of life, their accessibility to a range of stakeholders, as well as an understanding of the opportunities to improve them. A number of disaster risk reduction and risk assessment experts provided feedback on the draft questionnaire enabling it to be refined in advance of it being circulated. The survey was designed so that it could be answered in less than 10 minutes. The final online survey was open for responses between 18 October 2013 and 15 November 2013. The survey was made available in English, French and Spanish.

The survey was kindly distributed via the Joint Research Centre in Ispra, Italy, the World Conservation Union, the Global Water Partnership, the United Nations Development





Programme, the United Nations Office for Disaster Risk Reduction, the Climate-L Digest email list, as well as via HR Wallingford's database of relevant stakeholders.

Of the 247 respondents, 180 completed the survey in its entirety. Details of the survey questions are provided in Appendix A. The proportion of responses across Africa, the Caribbean, South Asia and elsewhere is shown in Figure 1. Figure 2 shows the distribution of the responses across Africa and South Asia. We received responses from almost 40 different Africa countries. In the Caribbean responses were received from 11 different countries.



Figure 1 Regional response to survey

The survey benefited from a wide range of responses, from respondents stemming from different fields of expertise and organisational type. Aside from the named organisations in the survey a small number of respondents stated that they worked with "other" types of organisations; however, an analysis of the results indicated that these respondents could be classified into one of the seven named organisation categories in the survey. Figure 3 shows the distribution of the respondents across the different types of organisation.





Figure 2 Distribution of responses to the survey in Africa and South Asia











The respondents were asked to state where their main interest lay. Figure 4 shows the range of the main interests of the respondents. Of the respondents who chose 'Other' as a response, around a quarter indicated that they had an interest in all five areas.







SECTION 2

Survey data analysis

2.1 Introduction

The survey responses were disaggregated to determine and compare the views of African, Caribbean and South Asian respondents. Other opinions that often represented the views of an international organisation or expert were also examined. Key issues that emerged when comparing results between the three regions were looked at in more depth.

2.2 The perception of the humanitarian impacts of weather-related hazards

There are a number of weather-related hazards. The major weather-related hazards in the three regions in terms of their humanitarian impacts in the past ten years have been:

- Cyclones and hurricanes
- Droughts
- Floods (coastal)
- Floods (fluvial)
- Landslides and mudslides

The respondents were asked to rank these weather-related hazards in terms of their humanitarian impacts over the past ten years for the country or region in which they were working, as well as adding any other weather-related hazards of note. Their responses are shown in Figure 5. In several cases, respondents noted that there are 'other' weather-related hazards of note:

- A large proportion offered no further information on the type of hazard
- Some offered non weather-related hazards (e.g. earthquakes; epidemics; invasion of crickets; volcanic eruptions; saline intrusion to groundwater supplies; arsenic levels in groundwater supplies)
- Some mentioned weather-related hazards lumped together with other hazards
- Some mentioned weather-related hazards that arguably fall into the existing categories (e.g. flash floods; rain floods; pond floods)
- A few mentioned weather-related hazards that were not covered by the existing categories:
 - Harmattan (a dry and dusty West African trade wind)
 - Dust storms
 - Hail stones
 - Lightning strikes
 - Glacial lake outburst floods















2.3 The existence and effectiveness of early warning systems for weather-related hazards

The respondents to the survey were asked to consider the weather-related hazard that has the greatest impact on people in the country or region where they worked and to state whether an early warning system exists for this hazard. The responses are shown in Figure 6. If the respondents replied that an early warning system did exist, they were then asked to rate its effectiveness in terms of its impact in reducing loss of life, from having a substantial impact to no impact at all. These responses are shown in Figure 7.



Figure 6 Existence of an early warning system for the weather-related hazard that has the greatest impact on people by region





2.4 Accessibility of early warnings to the different types of stakeholders

For the weather-related hazard that was perceived to have the highest impact on people in the country or region in which the respondent was working they were asked to indicate the accessibility of early warnings to a range of different stakeholders. This is shown in Figure 8.



Figure 7 Effectiveness of early warning systems in reducing loss of life by region



















Some of the other types of organisations requiring early warnings for weather-related hazards were given as additional comments by respondents:

- Community based organisations
- Military
- HIV and gender teams
- Common initiative groups
- Academic institutions and researchers
- Aviation industry
- Agricultural industry
- Security agencies
- First responders



2.5 Barriers to the effectiveness of early warnings in reducing the impacts of weather-related hazards to people

The responders to the survey were asked to rank the main barriers to the effectiveness of early warning systems in reducing the impacts of weather-related hazards to people. The responses are shown in Figure 9.

2.6 The existence and effectiveness of risk and vulnerability mapping for weather-related hazards

The respondents to the survey were asked to consider the weather-related hazard that has the greatest impact on people in the country or region where they worked and to state whether risk or vulnerability mapping currently exists for this hazard. This is shown in Figure 10. If the respondents replied that risk or vulnerability mapping did exist, they were then asked to rate its effectiveness in terms of in terms of its impact in reducing loss of life, from having a substantial impact to no impact at all. This is shown in Figure 11.



Figure 9 Barriers to the effectiveness of early warnings for weather-related hazards by region













Figure 10 Existence of risk or vulnerability mapping for the weather-related hazard that has the greatest impact on people by region



2.7 Barriers to the effectiveness of risk and vulnerability mapping in reducing the impacts of weather-related hazards to people

The responders to the survey were asked to rank the main barriers to the effectiveness of risk mapping and vulnerability in reducing the impacts of weather-related hazards to people. This is shown in Figure 12.

2.8 Opportunities to improve early warning systems and risk mapping for weather-related hazards

Questionnaire respondents were asked what opportunities they felt there are to improve early warning systems and risk mapping for weather-related hazards for humanitarian purposes; they were invited to list up to three such opportunities.

The resulting feedback showed that the respondents felt the greatest opportunities for improving early warning systems and risk mapping (each taking 14% of the total number of comments) lie with the 'last mile'; that is, raised public awareness of early warning systems (and to some extent) risk maps, and more effective communication of early warnings and risk information. A summary of the main areas in which the respondents highlighted opportunities is presented below.





Figure 11 Effectiveness of risk or vulnerability mapping in reducing loss of life by region

















Figure 12 Barriers to the effectiveness of risk and vulnerability mapping for weather-related hazards by region



Community participation and public awareness

The respondents held widespread opinion that improved early warning systems can be achieved through raised public awareness, community participation and education.

Several community-based early warning systems have been developed, and it was noted that this type of approach might be expanded to a wider area. Existing systems could be strengthened, via gender-responsive community led approaches. New systems should be developed with the involvement of local communities, so that their indigenous knowledge of local issues is integrated into the systems, and to ensure that warning thresholds are set at relevant levels.

In terms of risk mapping, it was felt that there is a need for improved public awareness of the concepts of 'risk' and 'hazard', and of the impacts of the hazards. One respondent noted that it could be beneficial to have risk reduction committees at the community level.

Effective communication of early warnings and risk information

Respondents felt that effective early warning and risk information depends on appropriate communication methods and the availability of suitable communication channels.

Community participation was seen to be a strong component of effective communications; this should involve capacity building, and the involvement of local religious leaders. It was felt that community capacity should be developed to enable them to take a lead role in disseminating information at a local level.

A range of communication channels should be used; mobile phone technology was frequently cited (e.g. the use of SMS messages). The media (e.g. newspapers, radio and television channels) were suggested as under-used resources that could be put to good effect. It should be recognised that different social groups have access to different sources of information and technology. In some areas, internet and social media are becoming means of communicating warnings quickly and effectively. A sensible approach is to use several communication mechanisms in parallel.

The content of effective early warning and risk information should be developed with end users, to ensure that the information is communicated in appropriate terms and language. End users need sector specific, targeted warnings; they need more accurate, timely forecasts (e.g. inundation maps) that they can rely upon.

Data availability

The need for better monitoring and observation networks was raised in almost 10% of the responses. This involves not only the installation of new networks and enhancements to existing networks, but also the maintenance of the networks; this can be aided by involving local communities in cooperating to maintain the networks and gain 'ownership' and understanding of their purpose. There is a need to gather and analyse data over the longer term for better understanding of potential climate change effects. Gauges should be situated so that they can support a better representation of orographic effects on rainfall.

Spatial representation of rainfall is best captured with high resolution radar data. This is particularly useful in inaccessible areas where gauge installation is impracticable. End users need training to enable them to understand the spatial data and how to handle them.

In addition to gauging of time series of parameters such as rainfall and temperature, better topographic data acquisition is required in many areas to support flood risk mapping. It was also noted that it would be useful to monitor the soil moisture levels of agricultural land to help manage food security.

Increased availability of better quality global data sets would support early warning and risk mapping.

Availability of forecast information was seen as a key issue. There is a need for better forecasting technology and more accurate downscaling of forecast information to a higher resolution. More accurate, widespread seasonal forecasting is required. In tandem with forecast data improvements, there should be better information on what the data represent, and guidance on how to use them.

Modelling and mapping

Many respondents felt that there is a need for funding to develop new early warning systems and risk mapping, to enhance existing systems and mapping, and to extend the coverage of early warning systems and mapping. Furthermore, it was noted that it can be useful to integrate early warning systems in certain areas. Risk mapping needs to take social and economic factors into account. Mapping should include a multi-hazard approach. It would be useful to have detailed local-level maps and maps of disaster hotspots, as well as regional maps, supported by national risk databases. Maps should be made available to all stakeholders, and should ideally be developed in collaboration with end users.

Several respondents felt that there is a funding issue at the heart of the lack of available fitfor-purpose models and maps. Many felt that there is a need to use the latest technology to support developments in these areas. Some respondents indicated a need for improved modelling to support early warning and risk mapping; in some cases, (e.g. floods) this would require a two dimensional modelling approach¹. Not only is better mapping widely required, but the maps, and other risk information, should be regularly updated and disseminated to stakeholders. One respondent suggested that it could be useful to link weather hazard data to socio-economic vulnerability data to produce meaningful indicators (e.g. number of people affected, response cost required).

In terms of the perceived gaps in availability of models and maps for specific hazards, the need for drought early warning and landslide early warning was raised. Some respondents felt that there is a need for better land use mapping, which should capture land use change.

Capacity building

In all areas, the need for capacity building and training was raised. This applies to the need for better trained operators of early warning systems, through to the education of stakeholders in procedures for carrying out risk assessments and for developing, using and interpreting risk maps. In general the limitations of currently available expertise and capacity were raised.

Political and institutional aspects

Many respondents felt that there is a need for increased political will and awareness to enable the various other opportunities to be realised. It was noted that this would require capacity building at the highest level, and may require concrete studies that demonstrate early warning systems reducing economic and non-economic damages.

At the institutional level, the various institutions involved in early warning and risk management need to be strengthened and to interact more closely and in a more coordinated manner, so that the end-to-end process of early warning in particular is well supported (it was suggested that this might even reach as far as integrated health facilities). It was noted that it could be useful to have dedicated early warning offices, where they do not currently exist, with a clear mandate. The approach to risk management needs to be more proactive. There is a particular need for strengthening links to national meteorological services.

Several respondents noted the need for better cross-border cooperation to enable better downstream forecasts. There is currently very limited sharing of data across international borders for hazards such as floods, which limits the lead time that downstream countries can

¹ This requires detailed digital terrain models and ideally hydraulic models that calculate flows, depths and velocities over a two dimensional surface rather than models of flow in a one-dimensional channel and floodplain network.

achieve in their warning services. Generally, it would be useful to have a platform to share experiences and cooperate with other countries or regions facing similar early warning and risk management problems, to enable sharing of best practices and innovations.

A popular opportunity lies with developing Standard Operating Procedures and best practices. One respondent suggested a decentralised plan and national law such as is applied in the Philippines. At the legal level, there should be increased regulation and enforcement of planning regulations regarding human settlements, to control development in high risk zones (such as flood plains, or areas prone to landslides).

Improved contingency planning is required, ideally with local participation in the planning process. In general, Disaster Risk Reduction planning and programming need to be inclusive and representative of all community-level stakeholders, with particular strengthening through engagement of initiatives with marginalised groups that have greatest exposure. Some respondents indicated that there is a gap between early warning and availability of contingency funds (and to response mechanisms in general); improving this link would mean that as soon as a problem is identified, action can be immediately taken. Clear triggers for initiating responses should be established, which are agreed by all. In general, it is necessary to integrate pre- and post-disaster interventions through appropriate institutional arrangements.

SECTION 3

Conclusions

Key themes that emerged as being pivotal to early warning systems and risk assessments for weather-related hazards in low-income countries were:

- Effective communication and accessibility of early warnings and risk information
- Data availability
- Modelling and mapping
- Community participation and public awareness
- Capacity building
- Political and institutional aspects

The results of the survey indicated that the main weather related hazard having the most impact is different in each region as follows:

- Africa droughts
- The Caribbean cyclones and hurricanes
- South Asia fluvial floods

In terms of the number of people affected this concurs with data collected by the Centre for Research on the Epidemiology of Disasters (CRED) that maintains an Emergency Events Database (EM-DAT).

To some extent, the nature of the hazard has an impact on the type of early warning system and risk mapping that needs to be in place, although the tools and technology are transferable in many ways. There follows an analysis of the differences between the three regions.

3.1 Africa

In Africa, the main weather-related hazard having the most impact is drought, followed by river flooding. Two thirds of respondents indicated that early warning systems exist for drought, but the overwhelming majority indicated that those early warning systems have just average or low effectiveness in reducing loss of life. This is the lowest level of effectiveness for the three regions.

Of the three regions studied, for Africa, the level of access by a range of stakeholders to early warnings for the main weather-related hazard is the lowest. National government has the best level of access (as it does in all three regions), followed by international organisations and Non-Governmental Organisations. The private sector and general public have the lowest levels of access.

The main barrier to the effectiveness of early warning systems in reducing the impacts of weather-related hazards to people in Africa was seen to be the lack of high quality data (note that this barrier ranked in the top two highest barriers for every region). This was closely followed by the lack of technological capacity to generate forecasts.

Just over half the respondents indicated that risk or vulnerability maps for at least one weather-related are available. However, this mapping is most commonly seen to result in low levels of reduction in loss of life, and therefore low levels of effectiveness.

The main barrier to the effectiveness of risk and vulnerability mapping in reducing the impacts of weather-related hazards to people in Africa is the lack of availability of information on factors affecting people's vulnerability, followed by the lack of accessibility of risk maps to relevant stakeholders; these two barriers are seen as the most common issues across the three regions.

3.2 Caribbean

In the Caribbean, the main weather-related hazard having the most impact is clearly cyclones and hurricanes. More than three-quarters of respondents stated that an early warning system for cyclones and hurricanes exists and the majority indicated that those early warning systems offer substantial or good effectiveness in reducing loss of life.

Of the three regions studied, for the Caribbean, the level of access by a range of stakeholders to early warnings for the main weather-related hazard is generally the highest. National government has the best level of access (as it does in all three regions), followed by the media and general public. Across all sectors, more than 50% of respondents indicated that early warnings are 'accessible to all' for every category.

The main barriers to the effectiveness of early warning systems in reducing the impacts of weather-related hazards to people in the Caribbean are seen to be the lack of high quality data and uncertainty in the warnings.

Around only half of the respondents indicated risk or vulnerability mapping for at least one weather related hazard exists in the Caribbean. This mapping is most commonly seen to provide average to good reduction in loss of life, and therefore has the highest levels of effectiveness of the three regions.

The main barrier to the effectiveness of risk and vulnerability mapping in reducing the impacts of weather-related hazards to people in the Caribbean is the lack of accessibility of risk maps to relevant stakeholders, followed by the lack of availability of information on factors affecting people's vulnerability.

3.3 South Asia

In South Asia, the main weather-related hazard having the most impact is fluvial flooding, followed by cyclones and hurricanes. Just over 60%s of respondents indicated that an early warning system for river flooding exists; around half indicated that these early warning systems offer substantial or good effectiveness in reducing loss of life.

For South Asia, the level of access by a range of stakeholders to early warnings for the main weather-related hazard varies widely across the sectors. National government has the best level of access (as it does in all three regions), whilst the private sector has the lowest level of accessibility.

The main barriers to the effectiveness of early warning systems in reducing the impacts of weather-related hazards to people in South Asia are overwhelmingly seen to be the lack of technological capacity to generate forecasts and the lack of high quality data.

Just less than 50% the respondents indicated that risk or vulnerability mapping has been produced for fluvial flooding in South Asia. The available mapping was most commonly considered to provide average reduction in loss of life.

The main barrier to the effectiveness of risk and vulnerability mapping in reducing the impacts of weather-related hazards to people in South Asia is the lack of availability of information on factors affecting people's vulnerability, followed by the lack of accessibility of risk maps to relevant stakeholders.

SECTION 4

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Appendix A Internet-based Survey

Survey of early warning and risk assessmen	s for humanitarian nurnoses	
	s for numanitarian purposes	
DFID Department HR Wallingford		
		8%
The British Government's Department for Internation humanitarian emergencies resulting from extreme we prioritising research needs.	al Development (DFID) is carrying out a s ather events (e.g. floods, cyclones, droug	coping study on research needs in risk assessment and early warning systems for ghts) in Africa, the Caribbean, and South Asia. The main objective is to assist DFID in
To gain a better understanding of the gaps and resear minutes to undertake this survey. Your responses wi	rch priorities, we are carrying out an inter help to shape DFID's programme.	met survey of relevant stakeholders. We would be most grateful if you could take a few
Your participation in this survey will not prevent you f	om applying for research funding from D	FID when the programme goes ahead.
All the information you provide will remain confidentia	I. Thank you for participating in this surve	зу.
1. Please provide the following information		
Name (optional)		
Organisation (optional)		
Role		
	Nov	*
	INEX	
Survey of early warning and risk assessments	for humanitarian purposes	
DFID Development HR Wallingford		
		15%
2. Which country are you based in?		
	Prov	aut -
	FIEV	ex.
Survey of early warning and risk assessments	for numanitarian purposes	
DFID Development HR Wallingford		
		23%
3. What type of organisation do you work for?		
Organisation type		×
Other (please specify)		
×		
4. Where does your specific interest in these areas	lie?	
Interest		•
Other (please specify)		
	Prev	Vext

5. Please rank these weather-related hazards in terms of their humanitarian impacts over the past ten years for the country or region in which you are working (Drag and drop the choices below and click N/A if the hazard is Not Applicable Cyclones and huminanes Cyclon
(Orag and drop the choices below and click N/A if the hazard is Not Applicable Cyclones and hurricanes
Cyclones and hurricanes Cyclones and hurricanes Cyclones and hurricanes Cyclones and hurricanes N/4 Cosstal floods N/4 Cyclones applicable to your country Cyclones applicable
Costal floods River floods River floods NV/ River floods NV/ Landslides and mudslides NV/ Other (please specify in Question 6 below) 6. Other weather-related hazards applicable to your country Prev Next Survey of early warping and risk assessments for humanitarian purposes
Landslides and mudslides
Conter (please specify in Question 6 below) Conter weather-related hazards applicable to your country Prev Next Survey of early warning and risk assessments for humanitarian purposes
6. Other weather-related hazards applicable to your country
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Survey of early warning and risk assessments for humanitarian nurnoses
Survey of early warning and risk assessments for humanitarian nurnoses
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DFID thereating HR Wallingford
38%
7 Consider the weather related hazard that has the greatest impact on people in the country or region where you work
Does an early warning system exist for this hazard?
○ Yes
O No
Prev Next
Current of each warning and tisk approximate for humanitation numbers
DFID Development Provide Anticipation Development
DFID Destination The Wallingford
DFID Bernarden Ander State And
A Please rate the effectiveness of this early warning system in terms of its impact on loss of life
B. Please rate the effectiveness of this early warning system in terms of its impact on loss of life 46% 1 = No reduction 2 3 4 5 = Substantial reduction
Effectiveness 2 3 4 5 = Substantial reduction
Effectiveness 2 3 4 5 = Substantial reduction

Survey of early warning and risk assessments for humanitarian purposes

			545	
9. For the weather-related hazard that has the high	hest impact on people in the country or regi	on in which you are working, please indicate the	accessibility of early warnings to the following	g stakeholders
	Accessible to all	Accessible to some	Not accessible	Do not know
Non-Governmental Organisations	0	0	0	0
Private sector	0	0	0	0
nternational organisations	0	0	0	0
lational government	0	0	0	0
ocal government	0	0	0	0
Seneral public	0	0	0	0
Vedia	0	0	0	0
Other please specify below	0	0	0	0
Other (please specify)				

Prev Next

62%

Survey of early warning and risk assessments for humanitarian purposes

DFID Desirer HR Wallingford

10. Considering early warning systems and their effectiveness in reducing the impacts of weather-related hazards on people.

Please rank the main barriers below to their effectiveness 1 = Most significant 8 = Least significant
Tex Lack of technological capacity to generate forecasts
2 Lack of accessibility of the warnings
3 Lack of high quality data
Exact of relevance of the warnings to humanitarian response
5 Uncertainty in the warnings
E Communication of warnings from the forecasters to the end users
Text Institutional and governance issues
S Other reasons (please specify in Question 11 below)
11. Other reasons relating to the barriers to the effectiveness of early warning systems

Prev Next

Survey of early warning and risk assessments for humanitarian purposes	
DFID Destination Configuration	
P20	%
12. Considering the weather-related hazard that has the greatest impact on people in the country or region where you work.	

Does risk or vulnerability mapping exist for this hazard?

O Yes

O No

Prev Next

\mathcal{S}

Survey of early warning and risk assessments for humanitarian purposes					
	/allingford				
				77%	
13. Please rate the effectiven	ess of risk or vulnerability mapping i	in terms of its impact on I	loss of life		
	1 = No reduction	2	3	4	5 = Substantial reduction
Effectiveness	0	\bigcirc	\bigcirc	\bigcirc	\bigcirc
		Prev	Next		

Survey of early warning and risk assessments for humanitarian purposes DFID Territory HR Wallingford

85%
14. Considering risk and vulnerability maps and their use in humanitarian emergencies.
Please rank the major barriers below to their use. (Drag and drop the choices below)
Lack of availability of information on factors affecting people's vulnerability (e.g. levels of poverty, population density, health, age, gender etc.)
Lack of accessibility of risk maps to relevant stakeholders
Lack of relevance of risk maps to humanitarian purposes
Lack of inclusion of the risk maps in relevant emergency and disaster plans
Lack of accurate spatial information on weather-related hazards
Institutional and governance issues
Lack of capacity to interpret and use forecasts
Other reasons (please specify in Question 15 below)
15. Other barriers to the effective use of risk and vulnerability maps

Survey of early v	arning and risk assessments for humanitarian purposes	
	2 HR Wallingford	
		6
16. What opportu	ties do you feel there are to improve early warning systems and risk mapping for weather-related hazards, for humanitarian purposes (please list up to three)	
1.		
2.		
3.		
17. Please provid	the details of up to three national or international projects or programmes that you consider to be good examples of early warning systems, risk or vulnerability mapping	g for humanitarian purposes.
Name of the proje	for programme with the relevant internet site if available.	
1.		
2.		
3.		

Prev Next

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If you have answered yes to the above please provide your email address and if possible your Skype name or telephone numb

Thank you for taking part in this survey. The results will be made available to you in early 2014.

Prev Done

