



Establishing a Baseline of school safety practices using RapidPro real-time SMS technology in Khyber Pakhtunkhwa

Education Section
UNICEF Pakistan Country Office

By Elliot McBride
February, 2017

Contents

Table of Tables.....	3
Table of Figures	3
Acronyms	3
Acknowledgements	4
Executive Summary	5
Report Objectives.....	5
Overview/Rationale	5
Key Highlights	6
Recommendations	6
Hypotheses	7
Section 1: Background	8
Section 2: Design	11
Aim	11
Method	11
Sampling	12
Section 3: Results	13
General emergency concern.....	15
Emergency Confidence Mean (ECM)	16
Armed attack	19
Flooding.....	20
Earthquakes	21
Section 4: Conclusion	26
General emergency preparedness	26
Armed.....	26
Flooding.....	26
Earthquakes	26
Medical concerns and Other concerns	26
References	27
Annexure	28
Protocol for RapidPro applications within programmes	33
Question development	34
Testing.....	34
Checklist.....	34

Table of Tables

Table 1: RapidPro SMS Survey	11
Table 2 Survey Result Metrics	13
Table 3 mean concern rates across all Tehsils.....	16
Table 4 RapidPro Safety in Schools Baseline Survey	28
Table 5 Data Collected From RapidPro Safety in Schools Baseline Survey.....	30

Table of Figures

Figure 1: OCHA map – MapDoc:Pak766_v11	10
Figure 2 Emergency Types Least prepared for	15
Figure 3 Help needed for School safety plan - remainder	15
Figure 4 Help needed for School safety plan - ALL emergency concern	15
Figure 5 Effects of Training Rates on General safety concern levels.....	16
Figure 6 Rates of School safety plans on Emergency Confidence Means (ECM)	17
Figure 7 School Safety Plans and Emergency Confidence Means	17
Figure 8 Effect of Training rates on teaching School safety plans.....	18
Figure 9 Effect of School safety plans on Attack concern rates in FATA bordering and non FATA bordering Tehsils	19
Figure 10 Training rates on ECM in FATA bordering and non FATA bordering Tehsils.....	20
Figure 11 Concern rates for flood preparedness in flood affected and non-flood affected Tehsils	20
Figure 12 School safety plans and flood concern rates	21
Figure 13 Average overall levels of flood concern and earthquake concern	21
Figure 14 Earthquake concern in earthquake affected and non-earthquake affected Tehsils	22
Figure 15 - Emergency Confidence Mean (ECM) results found no significant difference in FATA bordering Tehsils.	23
Figure 16 Flood affected regions and concern surrounding flood preparedness	24
Figure 18 Earthquake heat map.....	25

Acronyms

ATC	Attack Concern
ANOVA	Analysis of Variance
EA	Earthquake affected region
EAC	Earthquake concern
ECM	Emergency Confidence Mean
EMIS	Education Management Information System
EQ	Earthquake
FA	Flood affected region
FGDs	Focus Group Discussions
FLC	Flood concern
HOSP	Number of hospitals
IASC	Inter-Agency Standing Committee
KP	Khyber Pakhtunkhwa
MEDC	Medical concern
NDMA	National Disaster Management Authority
OCHA	United Nations Office for Coordination of Humanitarian Assistance
TR	Training Rate
UNICEF	United Nations International Children’s Emergency Fund

Acknowledgements

A number of different participants were responsible for making this initiative successful. First and most significantly, to Stuart Campo and Kalee McFadden from the UNICEF Global Innovation Centre (GIC). Thank you for your constant guidance, quality control and grand strategy. You remain the energy that Pakistan innovations programmes require to achieve meaningful impact.

A very large thank you to the Government of Khyber Pakhtunkhwa, Department of Education for an effective partnership, which included community outreach and helpful coordination. To the Education Section within UNICEF Pakistan headquarters in Islamabad, Mr Toumane Dianka and Mr Yasir Arafat, for coordination and assistance throughout the project lifecycle. In the Khyber Pakhtunkhwa education section, Muhammad Riaz for troubleshooting, phone number assimilation and assistance.

To Masooma Qazilbash for technical and expert assistance in Disaster Risk Reduction, thank you for the survey development, editing, finalization and consistent technical and expert help through the timeline of this report. To Mr Cal Lee, thank you for the assistance with technical coding necessary to complete this project on time and to a high and professional standard. To Evan Wheeler, another technical specialist who has made himself available without limit or complaint for troubleshooting beyond our abilities.

Finally, thank you to the relevant section and office chiefs. Ellen Van Kalmthout from Education, Daniel Timme from Advocacy and Communication and the Chief of Khyber Pakhtunkhwa field office, Francois Kampundu. Without your direction, encouragement, and management at this senior level, obstacles with this project simply would not have been overcome with the efficiency and professionalism that made this project possible.

As is clear from the above, many individuals and organizations have made significant contributions to this study; any errors and omissions, however, are the consultant's responsibility.

Elliot McBride

Innovation Coordinator

Islamabad Pakistan

Executive Summary

Pakistan's extensive history with disasters is the basis of this confidence and safety practice assessment in Khyber Pakhtunkhwa. This baseline assessment was designed to serve a dual purpose. First, it analyses the levels of confidence and habits surrounding safety in schools and compares those metrics with Khyber Pakhtunkhwa, where disasters occurred between 2005 and 2015. Second, it provides pre-intervention measurements for any potential impact evaluation on safety training due to be given to schools in Khyber Pakhtunkhwa. Following safety preparedness training given to schools, a follow up survey can be distributed, using the pre training survey results as an initial measurement for training impact.

RapidPro is an open source software platform that sends and receives messages from beneficiaries over SMS and consolidates their responses for post-hoc analysis. Until now, there has not been a platform that automated, two-way communication with beneficiaries at scale, in multiple languages and across multiple modes of communication. RapidPro has the potential to revolutionize monitoring and evaluation by automating data entry and analysis. Furthermore, the penetration rate for SMS feedback in Pakistan is much higher and further reaching, enabling the analysis of beneficiary data disaggregated by gender, location, age and other factors such as profession, and minority status.

Report Objectives

This report disseminates results from a census of government schools in Khyber Pakhtunkhwa which measures safety confidence and practices. Phone numbers of education focal points working at these schools were available through the Education Management Information System (EMIS). Each school had a total of one focal person who was contacted. The EMIS database often provided 2 focal points however only one was included per school.

The survey will be a self-reported metric of confidence surrounding for school safety situations. This will take metrics in 2 ways:

- a) Safety concern rates – levels of concern surrounding preparedness for specific emergencies (earthquake, flood, etc.)
- b) Safety confidence means - a mean of confidence scores in school regions preparedness in the event of general emergencies. It is noted as confidence and not actual preparedness as this survey is self-reported. No measure of performance is able to be taken with this survey.

While these two metrics are measuring emergencies on opposing scales, they are not necessarily correlated (i.e. an increase in emergency confidence does not equal a decrease in emergency concern); therefore, the two metrics are measured and analyzed independently.

This report also aims to measure the impact that safety practices have on comfort around emergency preparedness. The relationship between safety training and perceived emergency preparedness will also be measured to determine training effectiveness. Furthermore, existing School Safety Plans (School safety plans) will be measured against preparedness. All data taken from Khyber Pakhtunkhwa will be geographically plotted by Tehsil. A Tehsil is a subdivision of a district. This measurement was taken to give a more accurate geographical distribution of collected data.

The results will also be compared to recent emergencies in order to examine regional perceptions of preparedness based on previous disasters. Three maps have been created to examine the results of flood-affected areas and confidence in flood preparedness, earthquake-affected areas and confidence in earthquake preparedness, and a heatmap of the ECM in proximity to FATA.

Overview/Rationale

Previously, feedback on safety programming could only be collected during active training, whether through focus group discussions (FGDs) or other activities conducted in the field. This method leaves a time gap between the programme and incorporation of the feedback that is received. Incorporation of RapidPro technology allows a real time information component to be included from a distance so that preparations can be made to future initiatives based on user feedback prior to delivery, not after programme implementation. A key part of the "Transformative Agenda" introduced by the Inter Agency Standing Committee (IASC) in July 2012, which sought to reform humanitarian interventions, is "accountability to affected populations," including principles such as transparency, feedback and complaint resolution". This RapidPro initiative is positioned to maximize the line of communication between the beneficiary and UNICEF through the collection and dissemination of real time information.

UNICEF Pakistan is now using RapidPro as an innovative way to monitor programmes in real-time. The survey was successfully completed by 3842 school focal points across Khyber Pakhtunkhwa. Respondents self-selected in either English or Urdu. Results of incomplete surveys were also included.

After registration, respondents were asked 4 questions with 2 sub questions:

Question	Follow up
1. Has your school received safety training in the last 2 years? Yes/No	
2. Do teachers at your school teach children about what to do in the event of an emergency such as earthquakes, floods, attacks and medical emergencies using a plan? Yes/No	If No, does you school need assistance with a school safety plan?
3. Between 1 and 5 how well prepared is your school where 5 is completely prepared and 1 is not prepared?	If 4 or 5, what makes your school so prepared for an emergency? If 1 or 2, what makes your school so unprepared?
4. What emergency are you least prepared for? Earthquake, Flood, Armed attack, medical, All, None, Other	

Key Highlights

1. There were significant differences in concern rates surrounding preparedness for flooding if the region has previously experienced flooding.
2. There were significant differences in concern rates surrounding preparedness for earthquakes if the region has previously experienced earthquakes
3. Tehsils where school training is higher have increased confidence in preparedness and increased amounts of reported school safety plans.
4. Schools with higher training rates are more likely to report teaching school safety plans.
5. School Safety plans and school safety training are correlated with lower reported scores of concern concerning floods, however the results were not significant with earthquakes.
6. If a Tehsils schools have higher rates of training, they are more likely to experience higher rates of confidence surrounding emergency preparedness, this is true of both FATA-bordering and non FATA-bordering Tehsils.
7. Despite extensive flooding, there is greater concern about medical emergency preparedness than flooding.
8. There was no geographical relationship between FATA proximity and emergency or attack confidence.

Recommendations

1. It was discovered from the results that the Emergency Confidence Mean (ECM) was too broad a metric. In order to measure deficits with greater accuracy, there should be an adjustment in the questionnaire that focuses less on the general safety preparedness of schools and focuses on specific deficits. i.e. regarding your most vulnerable type of emergency, how well are you prepared for it?
2. This assessment can be used as an impact assessment for safety training was to regions within Khyber Pakhtunkhwa, if training is given to a region, this assessment can be conducted again in order to measure the impact that the training has delivered in those schools.
3. Future studies should include deficit types (training, infrastructure, staff/personnel) including a question on type of deficit that affects safety preparedness.
4. Emergency specific training should be targeted to regions who are prone to disasters ad should take into account geographical differences for previously disaster affected areas.

5. There remains an ongoing need for safety training resulting in the development of a school safety plan specific to each school. Doing so increases confidence in emergency preparedness.

Hypotheses

When assessing the practices of safety preparedness in Khyber Pakhtunkhwa, it is hypothesized that:

1. FATA bordering regions will have lower confidence in school safety and higher rates of concern surrounding armed attack preparedness
2. Regions affected by flooding will have higher concern surrounding flood preparedness than regions which have not been affected by flooding.
3. Earthquake prone regions will report higher rates of concern surrounding
4. Regions who have higher training rates will differ in confidence than those who have lower training rates in the last 2 years.
5. Rates where school training is higher will have increased confidence and increased amounts of reported school safety plans.
6. Schools with low confidence in preparedness will have lower rates of safety training and school safety plans.

Section 1: Background

Amongst the gamut of disasters that could be potentially measured in this survey, floods, terror attacks, earthquakes and medical emergencies are the most common types of disasters identified by UNICEF Pakistan's Disaster Risk Reduction unit for Khyber Pakhtunkhwa (KP). Assessing disasters outside of these types which have been identified is beyond the scope of this study. Whilst this initial program is for schools within KP only, it has been designed for scalability to the rest of Pakistan.

Pakistan lies on a competing tectonic plate (Indo-Australian) which is moving north into the Eurasian tectonic plate, creating the Himalayan, Hindukush and Karakoram Mountain ranges. These ranges cover most of Khyber Pakhtunkhwa with major mountainous areas to the north, and minor mountain ranges to the south in the Dir, Swat and Kohistan districts. As this plate is continuously moving north, it causes seismic activity which can be devastating to many parts of Khyber Pakhtunkhwa and Pakistan more broadly. This impacts population zones all over KP as shown in the below map of earthquake affected areas, including the many schools and school children within KP. These areas have experienced 4 major earthquakes in 1935, 1945, 1976 and 2005. Khyber Pakhtunkhwa has experienced many smaller, more frequent earthquakes with localized damage.

Pakistan is in a geographical region susceptible to seasonal monsoonal rains which have caused major flooding of the Indus river basin over the last 10 years. This has major economic and migration impacts for Pakistan¹. Since 2005, 37.23 million people have been effected by flooding throughout Pakistan.² The Indus river basin has a total area of 1.12 million squared kilometers. 47% of which lies in Pakistan with an approximate area of 520 000 km², or 65 percent of the nation. The entire provinces of Punjab and Khyber Pakhtunkhwa are covered by the basin.³ Major flooding of the Indus river basin occurs in monsoon season late in the summer between July and September. Monsoonal rains usually occur from the extending rivers from the basin rather than the basin itself.⁴ Snow fed rivers cause flooding during summer heat waves combined with monsoonal rains, furthermore dam bursts have propelled the propensity of flooding after heavy rainfall. The economic and social impacts of flooding have major impacts on schools. School infrastructure is often used as alternate housing when homes are damaged or inaccessible due to flooding. Furthermore, as flash flooding occurs rapidly schools often do not have effective coordination over their large population increasing risk for students and teachers during evacuations.

Armed attacks in Pakistan have been a consistent threat to civilians throughout Pakistan over the last 50 years. Schools in particular are at greater risk due to increased population density, openness and a lack of security. In KP alone there have been 103 armed attacks within KP including an attack at a school in Peshawar that claimed 140 lives, most of whom were children.⁵ Related to many disasters is the ability for schools to understand and respond to medical emergencies. This can include delivering first aid, ability to deliver assistance within the school grounds or access to medical facilities external to the school.

This initiative has been assembled by UNICEF Pakistan's Innovation unit in conjunction with UNICEF Pakistan sections for Education and Disaster Risk Reduction. UNICEF Khyber Pakhtunkhwa field office coordinated with the department of education in Khyber Pakhtunkhwa for outreach to school focal points and assimilation of contact numbers from the EMIS database. As the implantation of this project occurred without the use of an implementing partner, no other costs were involved past telecommunication expenses already incurred from the UNICEF innovation's RapidPro implementation.

Below is a map compiled by UNOCHA of the major disasters which have affected Pakistan between 2005 and 2015, it shows regions and populations which have been effected by floods, droughts, earthquakes, and complex emergencies. Complex emergencies in this instance can be defined by '*any event which results in a mass influx or efflux of internally displaced persons*'. This report will examine imminent emergencies only which will include medical, armed attacks, earthquakes and flooding.

¹ Fact sheet - Pakistan Humanitarian Pool Fund (PHPF) Pakistan, United Nations Office for the Coordination of Humanitarian Affairs. https://www.humanitarianresponse.info/en/system/files/documents/files/phpf_fact_sheet_august_2016.pdf

² Pakistan: Districts effected by major emergencies 2005-2015. Mapdoc Pak766_v11

³ Akhtar, Shamshad. "The south Asiatic monsoon and flood hazards in the Indus river basin, Pakistan." *Journal of Basic & Applied Sciences* 7, no. 2 (2011).

⁴ Food and Agricultural Organisation, United Nations & Aquastat. "*The Indus river basin*". http://www.fao.org/nr/water/aquastat/basins/indus/indus-CP_eng.pdf (2011)

⁵ The South Asia Terrorism Portal – Khyber Pakhtunkhwa Timeline 2016. <http://www.satp.org/satporqtp/countries/pakistan/nwfp/timeline/index.html> accessed 05/09/2016

⁶ Militant siege of Peshawar school ends, 141 killed. Dawn. Updated DEC 16, 2014 10:44PM <http://www.dawn.com/news/1151203>

In order to be emergency-ready, it is vital that schools develop a safety plan. Establishing a school safety plan greatly contributes to emergency preparedness and greatly decreases the risk of injury, death and recovery, post disaster. Numerous studies have shown the benefits of school safety plans in preparedness and ability to cope during an emergency.⁷ Safety plans cover an array of practices learned by teachers and taught to students in various ways such as, evacuation plans, designated evacuation areas, and general safety awareness. These safety plans should be regularly revisited during the schooling year in order to keep safe practice at the forefront of student awareness. Schools were surveyed for their safety plan status. Those who currently did not have a safety plan were then asked if they required assistance in developing one. They were also asked if they had received safety training in the past 2 years. Results were averaged from schools across KP.

School Safety Training is conducted in KP schools as preemptive counter measure to increase preparedness in the practices that save lives in the event of a disaster. School safety training is a mandatory measure throughout KP schools which aim to 'Discuss the concepts and principles of disaster risk. Identify key components in disaster risk assessment, and perform child-centered disaster risk assessment.'⁸

⁷The results of the below graph show a statistically significant relationship between continued school safety plans and training rates of <2yrs, with a linear regression value of $(P = >|t| = 0.000778, a = .95)$

⁸ Gender & child cell, national disaster management authority NDMA, Consolidated Report. *Child center DRR & comprehensive school safety training-pakistan*. (2014) pp1.

PAKISTAN: Districts Affected by Major Emergencies (2005 - 2015)

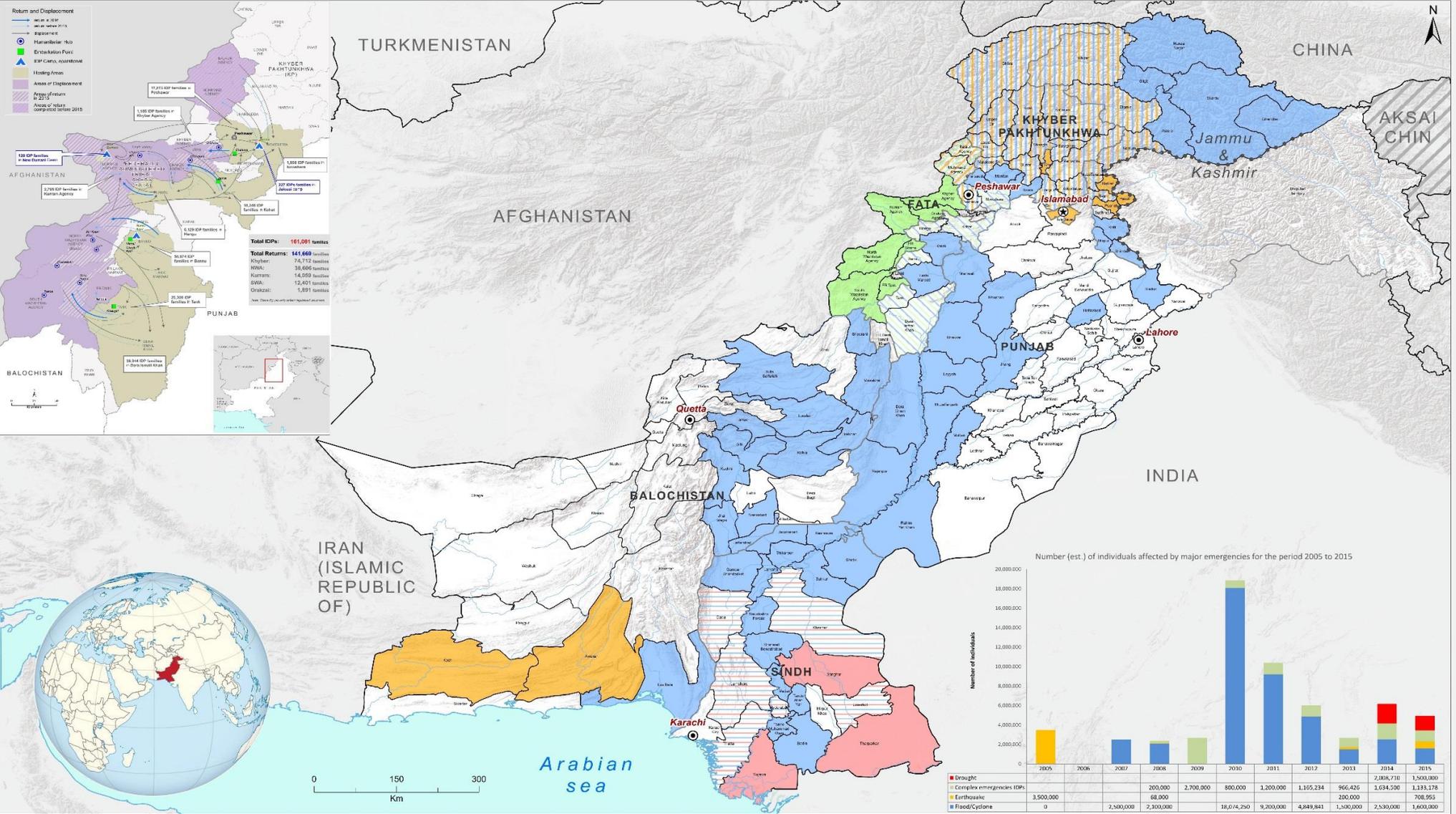


Figure 1: OCHA map – MapDoc:Pak766_v11

Disclaimers: The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations.

Figures of estimated population affected for the period of 2005 to 2015 are considered only for major emergencies, where the term "major" identifies number of individuals affected above a threshold of 2 million (approx. 1% of the est. Country population).

Section 2: Design

Aim

To understand the dynamics, and influences for confidence in school safety regarding emergencies. This will be undertaken by surveying the administrative focal points of schools in Khyber Pakhtunkhwa, measuring confidence levels and standard practices surrounding safety within schools. This will determine the best predictor(s) of confidence surrounding safety in schools. Furthermore, this study aims to examine the effects that two mitigating measures (school's safety training and school safety plans) have on confidence and emergency preparedness. Both of these practices have been measured in the schools within Khyber Pakhtunkhwa.

Method

Implementation of this project was conducted through local government and UNICEF staff in Khyber Pakhtunkhwa field office. Implementation of this project was aligned with the UNICEF innovation protocol which can be found in the annexure (item 3). There was no external implementing partner used in this project. All work was undertaken between the UNICEF Pakistan innovation unit, the UNICEF KP field office and the department of education.

Table 1: RapidPro SMS Survey

Question	Answer options	Follow up question(s)
<i>Which Tehsil do you work in?</i>	1 Name of Tehsil	NA
<i>Has your school received safety training in the last 2 years?</i>	2 A) Yes B) No C) Unsure	NA
<i>Do teachers at your school teach children about what to do in the event of an emergency such as earthquakes, floods, attacks and medical emergencies using a plan?</i>	3 A) Yes B) No	If No – Do you need assistance developing a school safety plan? If Yes – how often are they taught about emergencies? A) weekly B) monthly C) per semester D) Every Year
<i>Between 1 and 5 how well prepared is your school where 5 is completely prepared and 1 is not prepared?</i>	4 1 – not prepared 2 – poorly prepared 3 – neither prepared nor unprepared 4 – mostly prepared 5 – completely prepared	If 5 or 4 - What makes your school so prepared for an emergency? (answer in 1 sentence only)
<i>What emergency are you least prepared for?</i>	6 a) Flood b) Medical c) Armed attack d) Earthquake e) All	NA

	f) None	
	g) Other	

Sampling

This study is dividing KP at the Tehsil level, this is to provide a more detailed level of geographical insight into results than if districts were used. All data in the used set was segregated to this level. Traditional feedback methods are only capable of reaching groups of beneficiaries who are coordinated in FGDs or by word of mouth, bringing into question issues of quality of content. This method is unable to match populations reached when compared to RapidPro. RapidPro programme monitoring has greater external validity as the much larger sample sizes obtained are far more representative of the general population.

This sample was conducted as a census of all government school focal points within Khyber Pakhtunkhwa. A school focal point in KP is a teacher, principal or administrator who acts as is the point of contact for the KP Government Department of Education surrounding matters of curriculum, planning and administration. This is the justification for their selection as the survey sample, as they are the person most accustomed to individual school safety in KP. All focal points are required to have a cell phone and all school focal points are registered in a database kept by the department of education with phone numbers. The survey was available in English or Urdu for participants to select, therefore no school focal points were excluded from not possessing the required level of ability.

As the survey method was via SMS where the contact details were entered via upload from the EMIS database, as the surveys were not supervised with each member an issue of non-response bias must be considered. That is where individuals not responding to the SMS survey might be somehow correlated to the variables of interest, and therefore the results that received are not properly representative of your target population. As the contact details of all government school focal points are available and all contacts within it were sent a survey. Despite having issues with gaps in completed surveys each school focal point had an equal opportunity to complete the survey. Therefore the sample who responded can be considered representative of the population of school focal points throughout KP and eliminating non-response bias. As there was no way to tell if the owner of the phone is the one completing the survey, there remains an unmitigable risk for this project.

3842 school focal points completed the survey. As survey participation was voluntary and self-selecting, frequency of respondents could not be controlled past the point of instruction from district level government officials. The results of 5 tehsils have been removed due to a lack of representative samples (Kalam Kalkot Barawal PirBaba Chagharzai). The data collected and presented in this report is designed to be an introductory baseline of issues surrounding safety for schools in KP.

Section 3: Results

Data used in these results have been compiled from multiple sources including the RapidPro survey delivered to school focal points. Below is a chart of data items, their acronym and the source from where the data has been recorded and how it has been cleaned. A full table of results can be found at table 2 in the annexure.

There are 2 types of self-reported measurement in this study, it is important to note that 'confidence' is a measure of how well prepared a school is where 5 is very well prepared and 1 is not prepared. While 'concern' is an average of the scores for how many times a certain emergency was nominated as the school's vulnerability. This results in the two measures being inverted, where if confidence in safety preparedness is increasing concern should be decreasing (however this relationship has not been properly correlated).

Table 2 Survey Result Metrics

Acronym	Name	Measurement	Data source
<i>allc</i>	All Concern	% of schools within each tehsil who reported 'All' attack as emergency type least prepared for.	Data collected by RapidPro school safety survey Q 5
<i>atc</i>	Attack Concern	% of schools within each tehsil who reported Armed attack as emergency type least prepared for.	Data collected by RapidPro school safety survey Q 5
<i>ea</i>	Earthquake affected region	Region which has incidences of Earthquakes between 2005-2015	UNOCHA Pakistan: Districts effected by major emergencies 2005-2015. Mapdoc Pak766_v11
<i>eac</i>	Earthquake concern	% of schools within each tehsil who reported Earthquakes as emergency type least prepared for.	Data collected by RapidPro school safety survey Q5
<i>ecm</i>	Emergency confidence mean	Mean for scores of each tehsil to question: between 1 and 5 how confident are you in event of an emergency? Where 1 is not confident and 5 is completely confident	Data collected by RapidPro school safety survey Q4
<i>fa</i>	Flood affected region	Region which has experienced flooding between 2005-2015	UNOCHA Pakistan: Districts effected by major emergencies 2005-2015. Mapdoc Pak766_v11
<i>flc</i>	Flood concern	% of schools within each tehsil who reported Earthquakes as emergency type least prepared for.	Data collected by RapidPro school safety survey Q5
<i>medc</i>	Medical concern	% of schools within each tehsil who reported Medical emergencies as emergency type least prepared for.	Data collected by RapidPro school safety survey Q5
<i>tr</i>	Training rate	% of school focal points who reported yes to the survey question has your school received safety training in the past 2 years	Data collected by RapidPro school safety survey Q2
<i>ssplan</i>	Rate of School Safety Plans	% of school focal points who reported yes to	Data collected by RapidPro school safety survey Q3

		currently teaching a school safety plan	
--	--	--	--

Measuring emergency preparedness

The below shows the raw scores for responses to question 3, 'Which emergency are you least prepared for?'

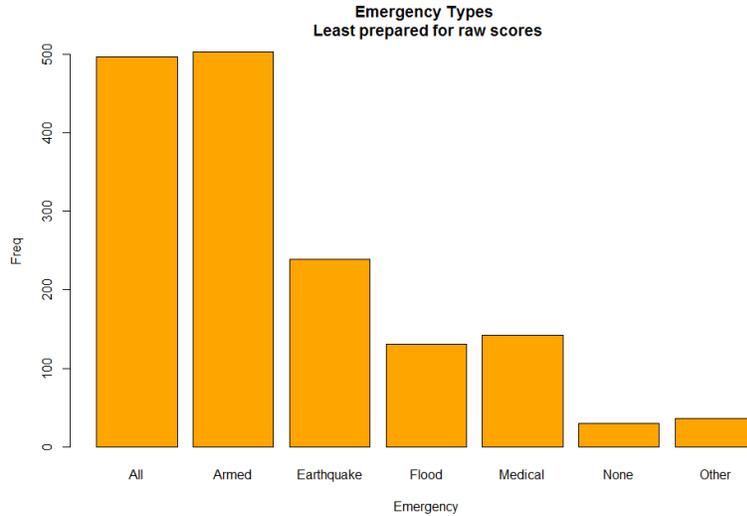


Figure 2 Emergency Types Least prepared for

In response to this question, nearly the most common responses to emergency type least prepared for was 'All' emergencies. This is indicative that general confidence in emergency preparedness is low in many areas. Below graphs show rates of desired assistance for a school safety plan between schools that responded with "All" and Schools that responded with anything else. Schools that responded that they were least prepared for All emergency types equally were also more likely to require help developing School Safety plans and were less likely to have training in the last 2 years (All – 4.04%, Everything else – 10.2%).

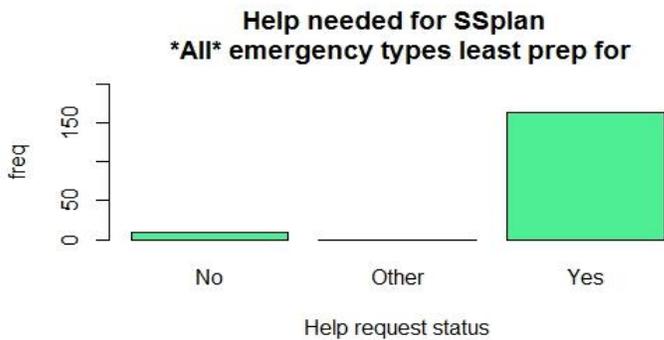


Figure 4 Help needed for School safety plan - ALL emergency concern

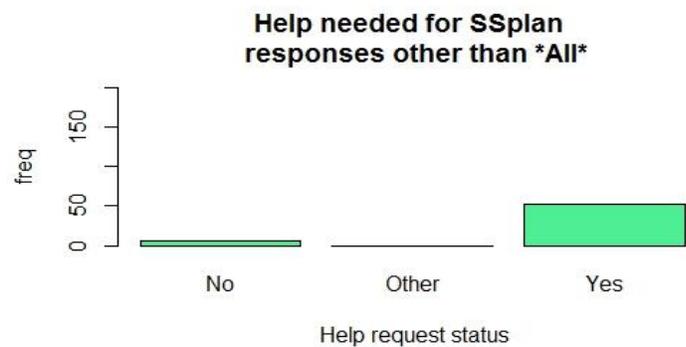


Figure 3 Help needed for School safety plan - remainder

General emergency concern

When asked 'what emergency are you least prepared for' the options were each type of emergency being measured including an 'All' or 'Other' option. 'Other' results were insignificant, and were therefore omitted. This question resulted in 5 data points compiled in the results table (see annexure) - All Concern (Allc), Attack Concern (Atc), Flood Concern (Flc), Medical Concern (Mdc) and Earthquake Concern (Eac). It is important to note that as these metrics are measuring concern and not confidence they are inverted compared to the rest of the data collected. i.e. Higher scores are indicative of more concern surrounding emergencies and not more confidence in their ability to deal with these emergencies. These points were disaggregated by each tehsil as a percentage of overall responses to that question therefore a score of 21% for Eac

was means that 21% of all responses have registered earthquakes as the emergency that they feel they are least prepared for, the data was not inverted as a 21% concern rate does not equal a 79% confidence rate as there has been no relationship investigated between confidence and concern. Below are the raw scores for the responses to this question, without being first disaggregated by tehsil. 'All' emergencies therefore indicate that there are deficits in preparedness generally. Furthermore, if scores for each Tehsil are taken as an average compared with other emergency types, 'All' emergencies are the highest score on average when measured by Tehsil. Indicating that while raw scores for Armed attack are higher, Tehsils are more concerned about general emergency preparedness.

Table 3 mean concern rates across all Tehsils

Mean 'All'	Mean 'Flc'	Mean 'atc'	Mean 'Medc'	Mean 'Eac'
36.05011	8.291364	30.2947	13.38542	15.31318

However, training is effective at reducing concerns surrounding general preparedness. There is a correlation between lower scores of general emergency concern (or 'All' concern) and increased levels of school safety training. Indicating that school safety training is effective in reducing general preparedness concerns.

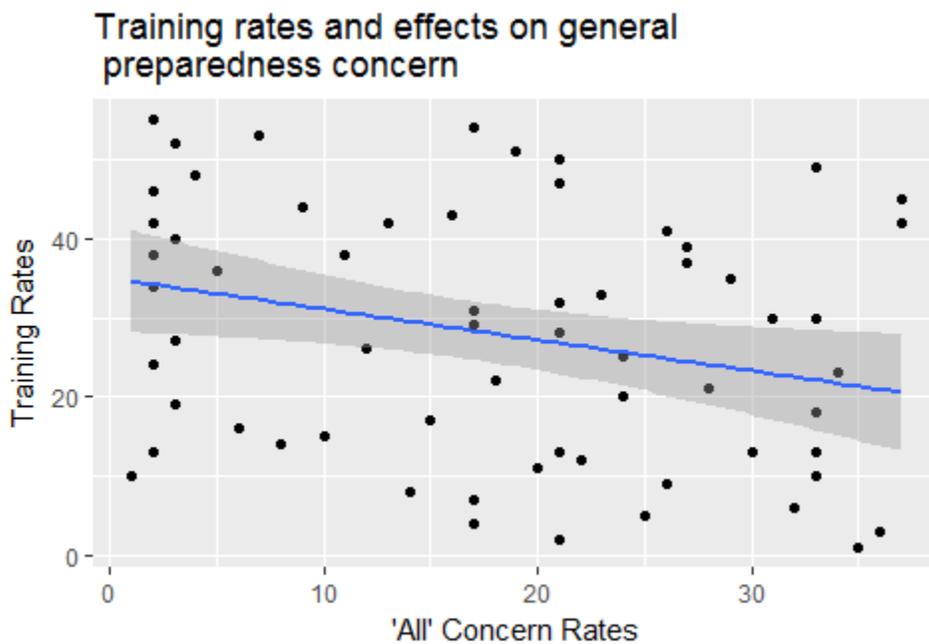


Figure 5 Effects of Training Rates on General safety concern levels

While there is a low R-squared value associated with this linear regression the slope of the model indicates that there is a relationship between higher levels of training and lower levels of general concern. ($r = -0.282$). A similar trend was recorded between general concern and school safety plans however results were not significant. ($r = -0.024$)

Emergency Confidence Mean (ECM)

When developing the questionnaire an overall measurement of 'confidence surrounding emergency preparedness was required. A Likert scale was used to answer the question 'Between 1 and 5 how well prepared is your school where 5 is completely prepared and 1 is not prepared?' The result was a general emergency measurement aimed to determine the confidence of each school in their preparedness with emergencies common to Khyber Pakhtunkhwa. The mean of the results was taken across each Tehsil to determine the Emergency Confidence Mean (ECM). As this was a self-reported metric, it has been labeled as a measure of 'confidence' to reflect how the school focal person feels that the school would perform, and is a good indication as to the mindset reflected if ever having to respond to an emergency. FigureX below is a heatmap for all of the ECM's across Khyber Pakhtunkhwa, with the red border demarcating the border between the Federally

Administered Tribal Areas (FATA), and Khyber Pakhtunkhwa. This was intended to be used as an indicator of where to focus the targeting of school training in consistent with regions of lower safety confidence.

There were consistent patterns where higher rates of training and existing school safety plans were equal to higher ECMs, however these results were only general correlations and could not be called significant. To replicate this study moving forwards, there must be a more specific question that generates a measurement of safety confidence, such as 'considering your least prepared for emergency is x, how prepared for x are you between 1 and 5? This will provide a measure of safety confidence most relevant to each school's vulnerabilities and will be therefore a better measure of safety confidence and will allow assistance to be a more targeted and effective intervention.

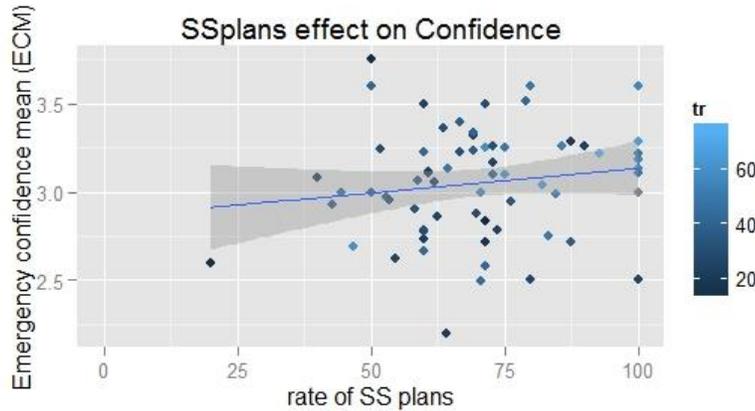


Figure 6 Rates of School safety plans on Emergency Confidence Means (ECM)

The ECM plotted by color in the above graph is difficult to associate to a pattern as the range of the ECM variable is very small, however this relationship is more easily examined in the below graph when trying to identify the impact that school safety plans have on Emergency preparedness. While the above graph does not show a great level of significance per each tehsil, with scores taken as an average, the graph below highlights the relationship trend that safety plans have on Emergency Confidence, by measuring raw scores of emergency confidence and their SSplan status.

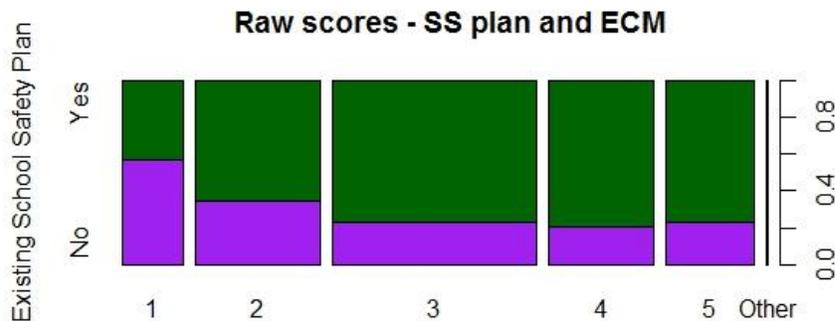


Figure 7 School Safety Plans and Emergency Confidence Means

In the above graph bin width represents score frequency, as it is displayed above the raw scores for ECM are normally distributed. The above data shows consistent trends in the relationship between school safety plans, and the effects on the ECM of a tehsil. Training rates were also found to be effectual in retaining school safety plans. A preliminary inspection of the data found that the higher the rates of school safety received by the school focal point the higher the retention of school safety plans, the data shows a significant correlation between training rates and prepared school safety plans.



Figure 8 Effect of Training rates on teaching School safety plans

Armed attack

Overall the emergency type that schools feel they are least prepared for is an armed attack. Armed attacks are an important emergency to be prepared for as Khyber Pakhtunkhwa has witnessed some horrific attacks within schools, such as the Peshawar school massacre in 2014 and the Bacha Khan University attack in 2015. However, to truly understand how to better assist schools who feel vulnerable to these attacks we must understand the impact of what counter measures such as training and emergency preparation have on safety confidence.

Khyber Pakhtunkhwa's proximity to Pakistan's Federally Administered Tribal Areas (FATA), make it especially vulnerable to armed attacks. It was hypothesized that schools, in tehsils which border FATA, would have a higher rate of concern surrounding preparedness for armed attacks. However, it was found that there was a small, non-significant trend in confidence for FATA bordering tehsils. As such the result shows there is no difference in safety confidence between FATA bordering and non FATA bordering tehsils.

School safety plans and school safety training have been found to decrease concern regarding armed attack. The below graph shows attack concern rates and the relationship that school safety plans have for tehsils that border FATA compared to tehsils which do not. The linear regression model for FATA bordering tehsils shows that there is a moderate significant relationship for schools that have safety plans and lower rates of concern surrounding armed attack. There is a small trend for non FATA-bordering tehsils however this relationship is not significant with the grey region indicating an 80% confidence interval. Training rates have also been shown to have a positive impact on school safety confidence, as school training rates were positively correlated with higher ECMs ($r= 0.20$).

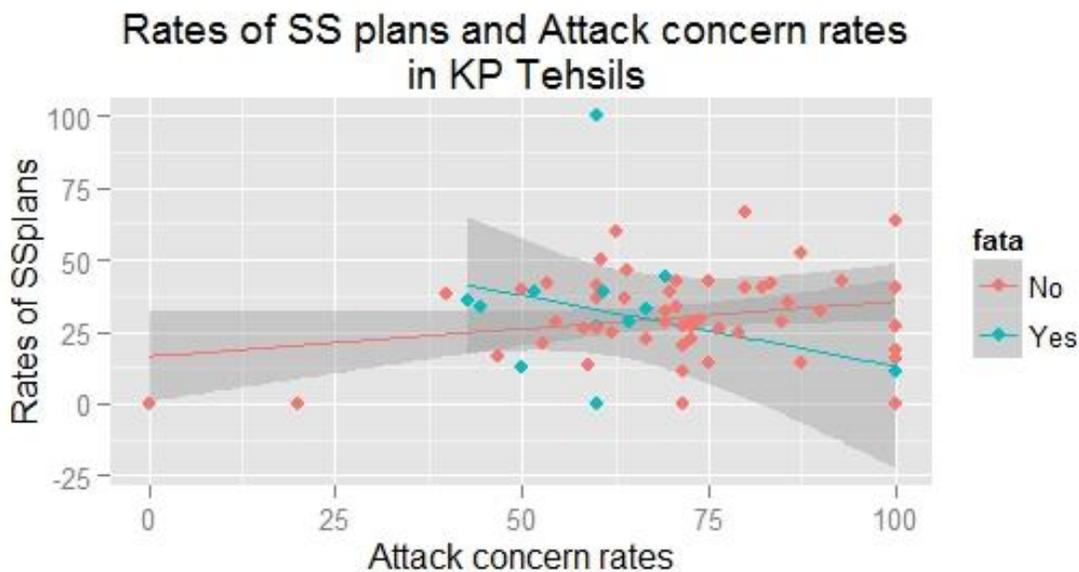
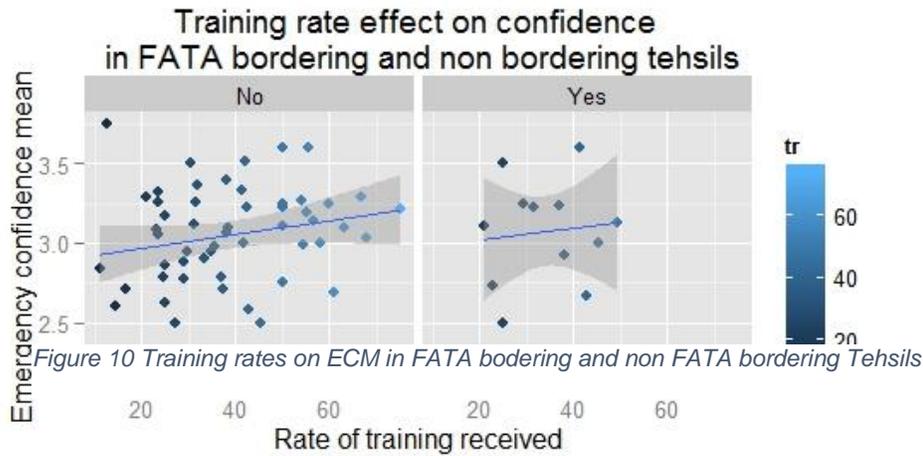


Figure 9 Effect of School safety plans on Attack concern rates in FATA bordering and non FATA bordering Tehsils

It was also found that there were consistent trends between school safety training rates and higher ECM scores. In tehsils with higher rates of school safety training their reported emergency confidence means were also higher, this was consistent in FATA bordering and non-FATA bordering tehsils, also rejecting the hypothesis that FATA bordering tehsils would show less confidence in armed attack emergency preparedness.



Flooding

KP was the most comprehensively affected province of the 2010 flood that occurred in late July which originated at the Indus River basin. This was the worst flooding experienced by Pakistan in the nation's history. 274 millimeters (10.8 in) of rain fell in Peshawar during 24 hours⁹. Out of the 70 tehsils in KP only 12 were not flood affected between 2005 and 2015. Due to the high rate of flooding, it has left many KP regions with a flood prone status. It was found that tehsils with a flood prone status had higher levels of concern surrounding their preparedness for flooding.

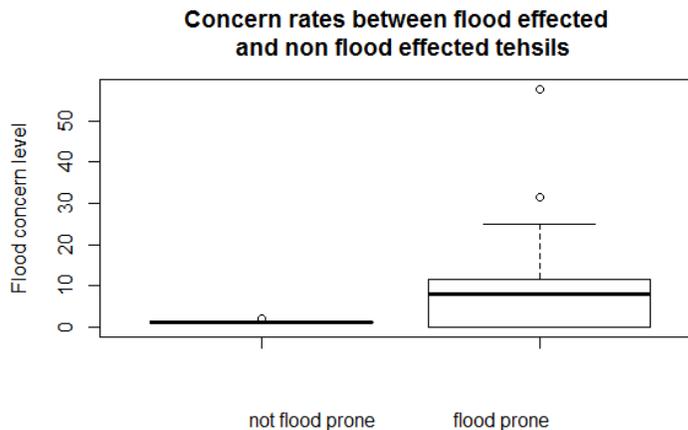


Figure 11 Concern rates for flood preparedness in flood affected and non-flood affected Tehsils

Precautionary measures for flooding have been in school standard operating procedures under mandatory implementation from the KP department of education. It has also been found that school safety plans reduce the concern rates regarding flooding. A linear regression was conducted between rates of school safety plans and the rates of concern surrounding

⁹ "UN starts relief works in flood hit provinces". Dawn. 30 July 2010. [Archived](#) from the original on 3 August 2010.

flood preparedness in schools who nominated that flooding was a concern.¹⁰ The below correlation shows that in tehsils which have higher rates of school safety plans, have lower levels of concern surrounding flooding preparedness.

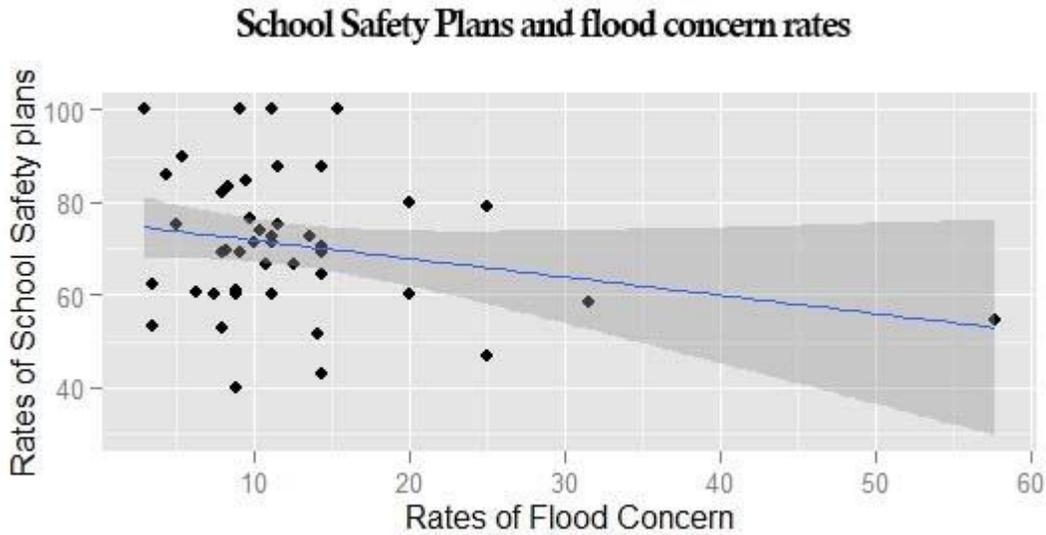


Figure 12 School safety plans and flood concern rates

Earthquakes

As a result of the historically active earthquakes across the Asiatic tectonic plate the impacts of earthquakes are a frequent and devastating disaster that affects KP schools. As such earthquake concern is significant amongst the KP school focal points targeted in the RapidPro results. Regions that are prone to earthquakes are significantly higher in concern in their preparedness to respond to an earthquake disaster. Furthermore, Khyber Pakhtunkhwa as a whole is more frequently concerned about earthquakes as reported overall by school focal points. Earthquake affected regions have a higher mean earthquake concern rate than floods. (i.e a higher percentage of schools reported that earthquakes are the disaster they are least prepared for, when compared with flooding affected schools.)

Mean earthquake concern (earthquake affected tehsils)	Mean flood concern (flood affected tehsils)
19.08696	12.4058

Figure 13 Average overall levels of flood concern and earthquake concern

¹⁰ Tehsils which did not nominate flooding within their sample at least once were omitted as outliers. Only tehsils which considered flooding a safety concern were included.

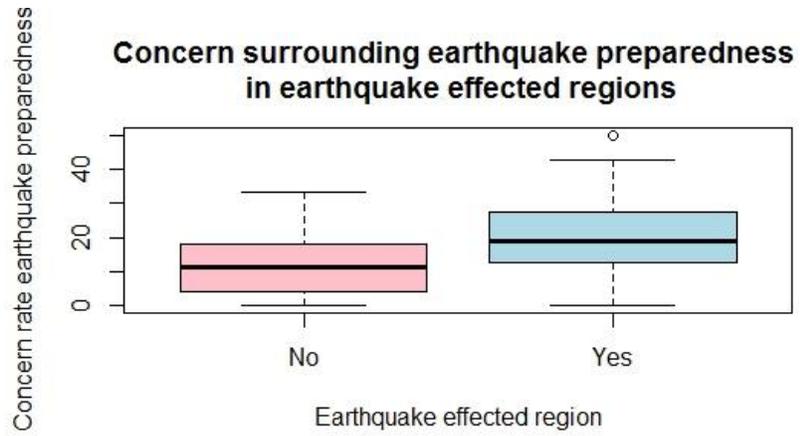


Figure 14 Earthquake concern in earthquake affected and non-earthquake affected Tehsils

KHYBER PAKHTUNKHWA SAFETY SCALE OF SCHOOL FOCAL PERSONS

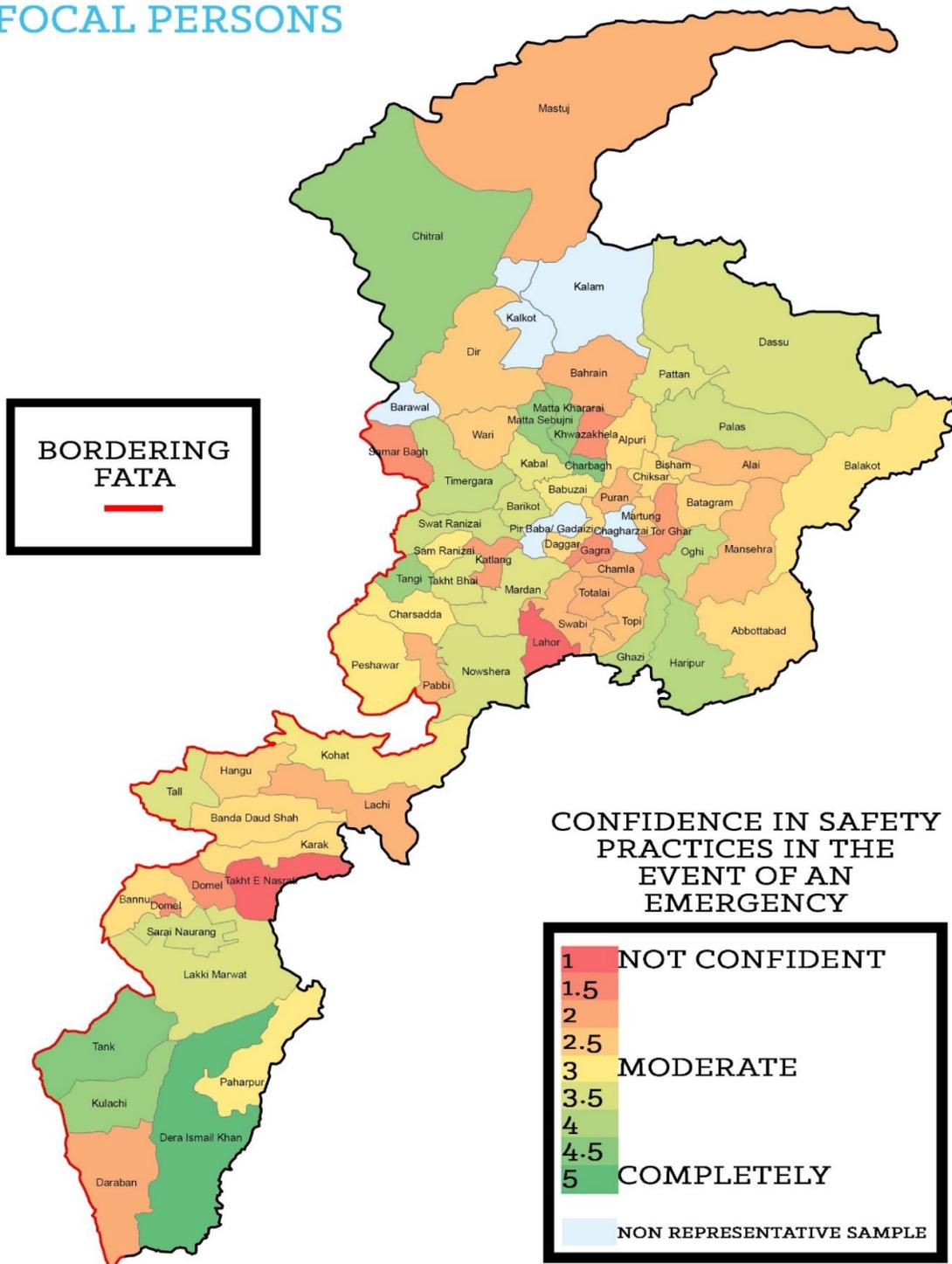
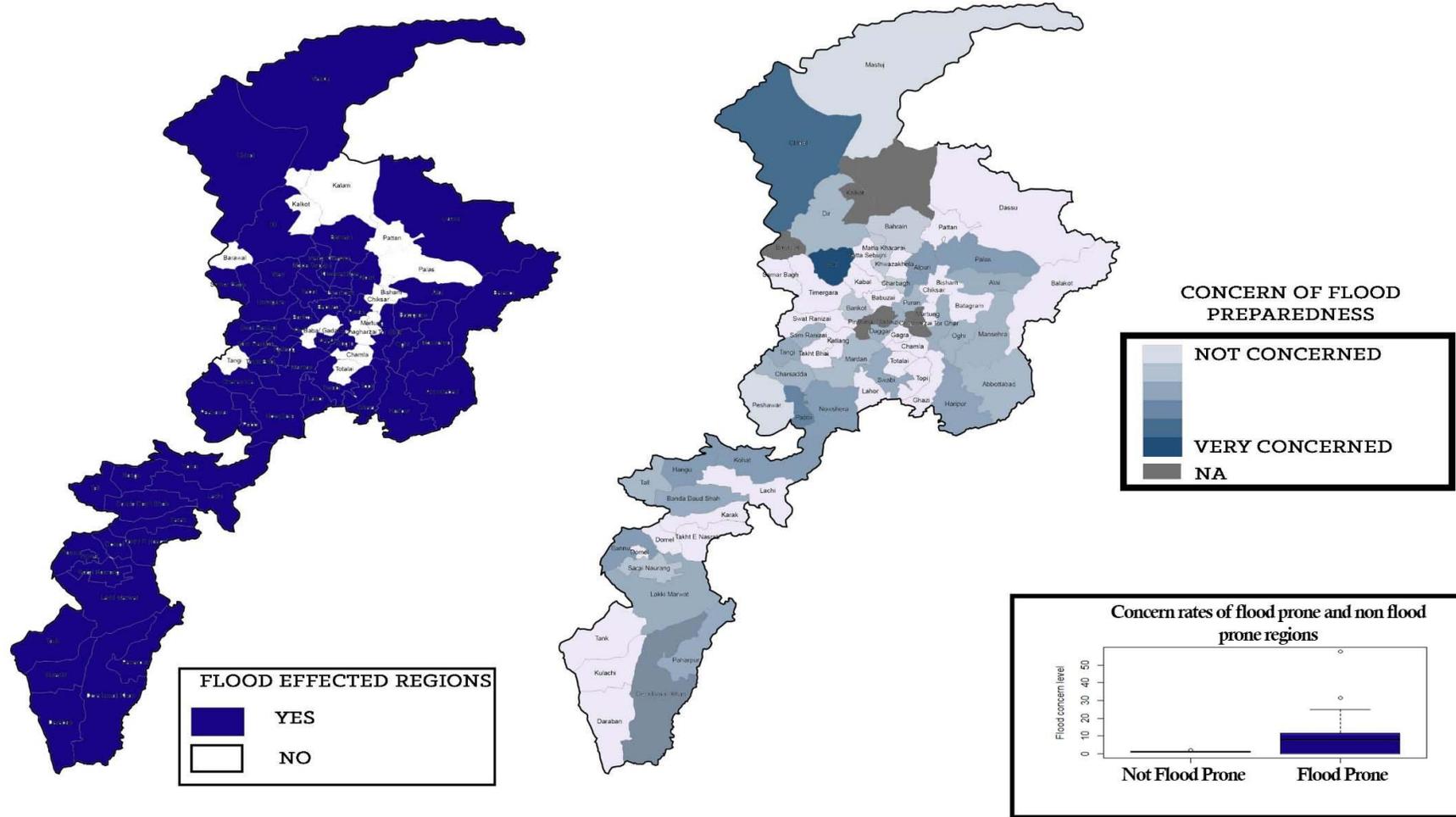


Figure 15 - Emergency Confidence Mean (ECM) results found no significant difference in FATA bordering Tehsils.

Figure 16 Flood affected regions and concern surrounding flood preparedness

KHYBER PAKHTUNKHWA - FLOOD EFFECTED AREAS AND CONCERN SURROUNDING FLOOD PREPAREDNESS



DATA SOURCE: UNOCHA PAKISTAN: DISTRICTS EFFECTED BY MAJOR EMERGENCIES 2005-2015. MAPDOC PAK766_V11



ounding

KHYBER PAKHTUNKHWA EARTHQUAKE EFFECTED AREAS AND CONCERN FOR EARTHQUAKE PREPAREDNESS (2005 - 15)

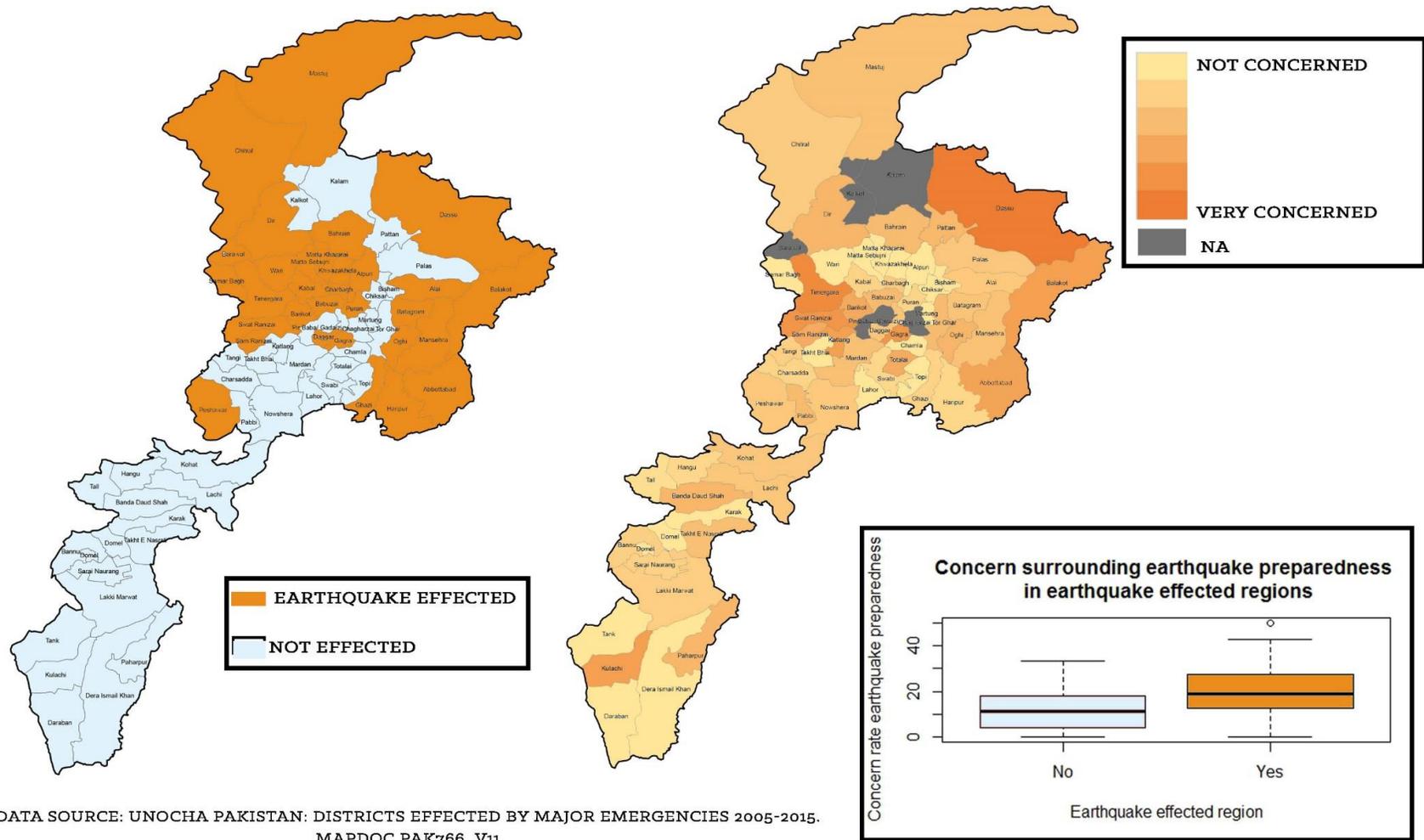


Figure 17 Earthquake heat map

Section 4: Conclusion

General emergency preparedness

Apart from armed attack emergencies it was found that 'All emergencies were reported as least prepared for. This is indicative that amongst KP school's general concerns about emergency preparedness are common. Supporting this, the least prevalent response was 'none' indicating that concerns rates of focal points who nominated 'All' contained at concerns about emergency preparedness rather than none. Based on these results It can be concluded then that the need for school trainings and school safety plans are a desired resource by schools in Khyber Pakhtunkhwa. While the emergency confidence mean showed consistent trends it lacked significance when correlated with other metrics. In future studies this metric should be more targeted to specific emergency deficits. E.g. Considering that you are least prepared for floods – between 1 and 5, how prepared are you in the event of a flood?

Armed

Before the outset of the baseline survey, it was hypothesized that FATA bordering Tehsils would have lower confidence in school safety and higher rates of concern surrounding armed attack preparedness. It was found that the most frequently reported type by all KP Tehsils regardless of region was "Armed attack" emergencies, however this was across all regions and not significantly different in FATA bordering Tehsils. This was reflected in the concern rates (ECM) across Khyber Pakhtunkhwa where no trend was found between FATA bordering and non FATA bordering Tehsils for emergency concern means. However, it was found that there was an increased effect of safety plans on concern rates for armed attacks in FATA bordering Tehsils, compared to non FATA bordering tehils where there was no correlation. As armed attack is the most common concern of all schools, it can be included into the necessary requirements for targeted training within schools in the future

Flooding

Considering that flooding poses a major risk for schools in Khyber Pakhtunkhwa, it was hypothesized that regions affected by flooding will have higher concern surrounding flood preparedness than regions which have not been affected by flooding. This was found to be true with significantly distinct differences in flood affected and non-flood affected regions as per figure 8 - Flood affected regions and concern surrounding flood preparedness. Both flood affected regions and non-flood affected regions see a decrease in concern rates when there is an increase of training rates and safety plans. This is also true when measuring concern in earthquake affected and non-earthquake affected Tehsils. Previously affected areas are significantly less confident in their preparedness compared to non-affected areas.

Earthquakes

Before the outset of the survey, it was hypothesized that earthquake concern would resemble that of flooding in regards to regions which are earthquake prone compared to those that are not. It was found that there was significantly more concern in regards to earthquake preparedness than flooding preparedness overall, and that if a school has previously been affected by earthquakes it is significantly more likely to have concerns with its preparedness for future earthquakes. Despite having training rates not significantly different than those of non-earthquake affected schools, priority should be given to these regions to alleviate concern and increase confidence. Overall concern surrounding earthquakes is more frequent and at concern rates at higher levels than floods.

Medical concerns and Other concerns

There were no significant levels of concern for other emergencies measured by the question "*What other emergency are you most concerned about*". There were a significant number of medical concerns however these were no correlated to School safety plans or training rates in Tehsils.

References

Akhtar, Shamshad. "The South Asiatic monsoon and flood hazards in the Indus river basin, Pakistan." *Journal of Basic & Applied Sciences* 7, no. 2 (2011).

Fact sheet - Pakistan Humanitarian Pool Fund (PHPF) Pakistan, United Nations Office for the Coordination of Humanitarian Affairs.

https://www.humanitarianresponse.info/en/system/files/documents/files/phpf_fact_sheet_august_2016.pdf

Food and Agricultural Organisation, United Nations & Aquastat. "*The Indus river basin*".

http://www.fao.org/nr/water/aquastat/basins/indus/indus-CP_eng.pdf (2011)

Gender & child cell, national disaster management authority NDMA, Consolidated Report. *Child center DRR & comprehensive school safety training-pakistan*. (2014).

Militant siege of Peshawar school ends, 141 killed. Dawn. Updated DEC 16, 2014 10:44PM

<http://www.dawn.com/news/1151203>

Pakistan: Districts effected by major emergencies 2005-2015. Mapdoc Pak766_v11

The South Asia Terrorism Portal – Khyber Pakhtunkhwa Timeline 2016.

<http://www.satp.org/satporgtp/countries/pakistan/nwfp/timeline/index.html> accessed 05/09/2016

Tehsils which did not nominate flooding within their sample at least once were omitted as outliers. Only tehsils which considered flooding a safety concern were included.

UN starts relief works in flood hit provinces. *Dawn*. 30 July 2010. [Archived](#) from the original on 3 August 2010.

Annexure

Table 4 RapidPro Safety in Schools Baseline Survey

English	Urdu
You have been identified as a school leader in Khyber Pakhtunkhwa, this is a voluntary school safety survey from the Department of Education and UNICEF. Please respond to all questions accurately. All SMS are FREE. Please select: A) English B) Urdu?	آپ خیبر پختونخواہ میں ایک اسکول لیڈر کے طور پر پہچانے گئے ہیں۔ اسکولوں کی حفاظتی صورتحال پر یہ سروے آپ کو ایجوکیشن ڈیپارٹمنٹ اور یونیسف کی طرف سے بھیجا گیا ہے۔ تمام سوالات کے درست جوابات دیں۔ زبان کا انتخاب کریں۔ برائے مہربانی 1 یا 2 لکھ کر جواب دیں۔ English (1) اردو (2)
Has your school received Safety Training in the last 2 years? A) Yes B) No C) Unsure	کیا آپ کے اسکول کو پچھلے دو سال میں حفاظتی تربیت یا ٹریننگ دی گئی ہے؟ Han (A) Nahi (B) Pata Nahi (C)
Thank you. What Tehsil is your school in? Please reply in English script	آپ کا اسکول کس تحصیل میں ہے؟ برائے مہربانی انگریزی زبان میں جواب دیں۔ مثال کے طور پر Peshawar
Sorry we could not identify your Khyber Pakhtunkhwa Tehsil, please enter it again in English script.	معاف کیجیے، ہم خیبر پختونخواہ میں آپ کی تحصیل پہچان نہیں پائے۔ برائے مہربانی اپنی تحصیل دوبارہ انگریزی زبان میں لکھ کر بھیجیں۔
Is your Tehsil...	کیا آپ کی تحصیل..... ہے؟
Do teachers at your school teach children what to do during an emergency such as floods, earthquakes, attacks or medical emergencies? A) Yes B) No	کیا آپ کے اسکول میں استاد، بچوں کو یہ سکھاتے ہیں کہ ہنگامی حالات جیسا کہ سیلاب، زلزلہ، حملہ یا طبی ہنگامی صورتحال میں کیا کرنا چاہیے؟ Han (A) Nahi (B)
Please answer A) Yes or B) No	برائے مہربانی Han (A) یا Nahi (B) لکھ کر جواب دیں۔
We did not understand that. Please enter A) Yes or B) No	ہمیں آپ کا جواب درست انداز میں موصول نہیں ہوا۔ برائے مہربانی Han (A) یا Nahi (B) لکھ کر جواب دیں۔
How often are children taught what to do during an emergency? A) Every week B) Every Month C) Every Semester D) Every Year	کتنے وقت کے بعد آپ کے اسکول میں بچوں کو ہنگامی حالات میں اٹھائے جانے والے اقدام کی تربیت دی جاتی ہے؟ Har Hafte (A) Har Maheene (B) Har 6 Maah Baad (C) Har Saal (D)
Does your school need help with a school safety plan? A) Yes B) No	کیا آپ کے اسکول کو حفاظتی تدابیر تشکیل دینے میں مدد کی ضرورت ہے؟ Han (A) Nahi (B)
Between 1 and 5, how well prepared do you feel your school in the event of an emergency? 5 Completely prepared 4 Very well prepared 3 Neither prepared nor unprepared 2 Poorly prepared 1 Not prepared for an emergency	آپ کا اسکول ہنگامی حالات کا سامنہ کرنے کے لیے کس قدر تیار ہے؟ 1، 2، 3، 4 یا 5 لکھ کر جواب دیں۔ 5. مکمل طور پر 4. بہت اچھی طرح 3. درمیانی سطح پر 2. غیر تسلی بخش طور پر 1. بالکل بھی تیار نہیں
Please respond with 1 2 3 4 or 5 where 1 is not prepared and 5 is completely prepared	برائے مہربانی 1، 2، 3، 4 یا 5 لکھ کر جواب دیں جہاں 5 کا مطلب ہے مکمل طور پر تیار اور 1 کا مطلب ہے بالکل بھی تیار نہیں۔
What type of emergency you are least prepared for? a) armed attack	کس قسم کے ہنگامی حالات کے لیے آپ سب سے کم تیار ہیں؟ 1، 2، 3، 4 یا 5 لکھ کر جواب دیں۔

b) flood c) earthquake d) medical e) all of the above f) other	1. مصلح حملہ 2. سیلاب 3. زلزلہ 4. طبی صورتحال 5. اوپر والے سب حالات کوئی اور حالات
What makes your school so prepared for an emergency? (answer in 1 sentence only)	صرف ایک جملے میں بتائیں کہ آپ کا اسکول کونسے اقدام کے دارومدار پر ہنگامی حالات کے لیے تیار ہیں؟
What other emergency are you not prepared for?	اور کون سے ہنگامی حالات ہیں جن کا سامنا کرنے کے لیے آپ کا اسکول تیار نہیں ہے؟

Table 5 Data Collected From RapidPro Safety in Schools Baseline Survey

Tehsil	ssplan	fa	ea	ecm	tr	fata	flc	eac	atc	medc
Abbottabad	52.94118	Yes	No	2.97561	35.62	No	7.894737	31.57895	21.05263	13.15789
Adenzai	60.71429	Yes	Yes	3.115385	31.03	No	6.25	6.25	50	12.5
Allai	73.77049	Yes	No	2.783333	24.62	No	10.34483	13.7931	29.31034	6.896552
Alpuri	70.58824	Yes	No	3	57.89	No	14.28571	0	42.85714	14.28571
Babuzai?Swat	100	No	Yes	3.136364	56.52	No	0	20	40	16.66667
Balakot	58.82353	Yes	No	3.0625	37.93	No	0	33.33333	13.33333	NA
Banda Daud Shah	100	No	No	3		Yes	11.11111	22.22222	11.11111	6.25
Bannu	51.6129	Yes	No	3.246377	29.47	Yes	14.0625	10.9375	39.0625	7.8125
Barikot	75	No	Yes	3.25	50	No	5	28.57143	14.28571	NA
Batagram?(Banna)	53.33333	Yes	No	2.95082	29.73	No	3.508772	15.78947	42.10526	7.017544
Behrain	62.5	No	Yes	2.857143	25	No	3.5	20	60	14.28571
Charbagh	100	No	Yes	3.6	55.56	No	3	12.5	18.75	NA
Charsadda	40	Yes	No	3.081081	23.08	No	8.823529	8.823529	38.23529	NA
Chitral	78.94737	Yes	Yes	3.517241	42.22	No	25	12.5	25	10.81081
Daggar?Buner	84.74576	Yes	Yes	2.985075	54.29	No	9.433962	15.09434	28.30189	10.71429
Daraban	60	Yes	No	2.666667	42.86	Yes	0	0	100	NA
Dassu	71.42857	Yes	Yes	3.25	60	No	0	50	0	NA
Dera Ismail Khan	50	Yes	No	3.75	12.5	No	NA	NA	NA	33.3333
Dir	69.76744	Yes	Yes	2.878049	28.81	No	8.163265	22.44898	38.77551	7.317073
Domel	100	Yes	No	2.5	25	Yes	0	0	0	NA
Gagra	70.68966	Yes	Yes	2.491228	45.31	No	0	37.5	33.33333	5.454545
Ghazi	63.63636	Yes	No	3.363636	31.82	No	0	9.090909	36.36364	NA
Hangu	42.85714	Yes	No	2.928571	38.1	Yes	14.28571	7.142857	35.71429	7.142857
Haripur	66.66667	Yes	No	3.395349	37.93	No	12.5	7.5	22.5	7.317073
Havelian	76.31579	Yes	No	2.942857	34.78	No	9.677419	16.12903	25.80645	9.375
Jahangira	80	Yes	No	3.6	50	No	20	20	40	NA
Kabal	100	No	Yes	3.1875	55	No	0	9.090909	63.63636	6.25
Kandia	0	Yes	Yes	NA	33.33	No	0	0	0	NA
Karak	44.44444	No	No	3	45.45	Yes	0	0	33.33333	NA
Katlang	20	Yes	No	2.6	14.29	No	0	33.33333	0	NA
Khadokhail	82.14286	Yes	Yes	3.035714	67.86	No	8	12	40	8

Khwaza Khela	80	No	Yes	2.5	27.27	No	0	0	66.66667	NA
Kohat	64.28571	Yes	No	3.131579	49.35	Yes	14.28571	14.28571	28.57143	11.11
Kulachi	60	Yes	No	3.5	25	Yes	0	33.33333	0	33.33
Lachi	87.5	Yes	No	2.714286	37.5	No	11.47541	14.7541	52.45902	14.28571
Lahor	64	Yes	No	2.2	20.69	No	0	0	46.66667	22.22222
Lakki Marwat	66.66667	Yes	No	3.226131	31.62	Yes	10.69519	12.29947	33.15508	9.574468
Lal Qila	85.71429	Yes	Yes	3.263158	54.17	No	4.347826	30.43478	34.78261	16.66667
Mandar	75	Yes	Yes	3.1	63.04	No	11.53846	23.07692	42.30769	17.24138
Mansehra	60	Yes	No	2.786885	37.04	No	8.77193	17.54386	36.84211	10.52632
Mardan	60	Yes	No	3.225806	42.37	No	7.407407	18.51852	40.74074	24.4898
Mastuj	71.42857	Yes	Yes	2.714286	16.67	No	0	18.18182	27.27273	NA
Matta Shamzai	100	No	Yes	NA	NA	No	NA	NA	NA	NA
Naurang	90	Yes	No	3.25974	23.33	No	5.405405	9.459459	32.43243	12.16216
Nowshera	72.72727	Yes	No	3.259259	31.43	No	13.63636	13.63636	27.27273	12.5
Oghi	69.23077	Yes	No	3.32	23.53	No	9.090909	22.72727	31.81818	4.545455
Pabbi	60	Yes	No	2.733333	22.73	Yes	20	20	26.66667	6.666667
Paharpur	72.72727	Yes	No	3.1	38.46	No	11.11111	22.22222	22.22222	11.6
Palas	87.5	Yes	Yes	3.285714	21.05	No	14.28571	14.28571	14.28571	28.57143
Paroa	46.66667	Yes	No	2.692308	61.11	No	25	16.66667	16.66667	8.333333
Pattan	92.85714	Yes	Yes	3.214286	75	No	0	21.42857	42.85714	7.142857
Peshawar	60.86957	Yes	Yes	3.104478	20.83	Yes	8.77193	14.03509	38.59649	NA
Puran	83.33333	Yes	No	2.75	50	No	8.333333	8.333333	41.66667	25
Razar	61.90476	Yes	No	3.055556	23.33	No	0	6.25	25	16.66667
Sam Ranizai	100	Yes	Yes	3.111111	50	No	9.090909	27.27273	27.27273	14.28571
Samarbagh?(Barwa)	0	Yes	Yes	NA	NA	No	NA	NA	NA	NA
Shabqadar	54.54545	Yes	No	2.625	25	No	57.14286	0	28.57143	NA
Sharingal	72.72727	Yes	Yes	3.166667	25	No	0	14.28571	28.57143	33.33333
Swabi	60	Yes	No	2.774194	29.09	No	11.11111	7.407407	25.92593	3.571429
Swat Ranizai	100	Yes	Yes	3.285714	66.67	No	15.38462	38.46154	15.38462	NA
Takht Bhai	100	Yes	No	3.21875	50	No	0	0	0	22.22222
Takht-E-Nasrati	50	No	No	3	41.67	No	0	18.18182	39.39394	16.66667
Tall	69.23077	Yes	No	3.230769	36.84	Yes	8	4	44	8.333333
Tangi	71.42857	Yes	No	3.5	30.43	No	11.11111	11.11111	11.11111	NA

Tank	50	Yes	No	3.6	41.18	Yes	0	0	12.5	12.5
Temergara	69.23077	Yes	Yes	3.333333	41.38	No	14.28571	42.85714	28.57143	4.347826
Topi	71.42857	Yes	No	2.833333	11.11	No	0	0	20	20
Tor Ghar?(F.R. Kala Dhaka)	71.42857	No	Yes	2.583333	42.86	No	10	20	20	NA
Wari	58.33333	Yes	Yes	2.903226	33.33	No	31.57895	0	26.31579	10

Protocol for RapidPro applications within programmes

This is a guide to formulating a strategy based on the initial factors which need addressing before SMS application RapidPro can be applied to programmatic functions. The following points must be considered prior to planning and implementation:

1. Identifying the central question
2. Develop a Timeline
3. Technical development
4. Survey Development
5. Testing
6. Communications Delivery
7. Delivery Monitoring

Identifying the central question:

What is it that we want our survey to discover? The question should be able to be put into a single sentence such as: “We wish to determine the use and access of men and women for WASH services in Sindh.” “We want to measure the satisfaction of beneficiaries in Punjab regarding their school safety”.

Determine the central questions you want answered by beneficiaries

- What is the satisfaction of ‘x’?
- How is your access to ‘x’?
- How often do you ‘x’?

You must also carefully consider which comparisons you want to make later in the data analysis.

- Male vs Female (is there a difference between gender for our measurement?)
- District/ provincial (is there a difference between geographical locations for our measurement?)
- Age (is there a difference between life stages for our measurement?)
- Literacy (will illiterate beneficiaries have different access/behaviours/habits?)

If these comparisons are relevant to your analysis, there must be registration questions included in your survey. However, any surplus questions should be omitted as the longer any survey is the higher the dropout rate before the survey has been completed. Any survey should not be longer than 7 questions including registration and follow up.

Develop a timeline of implementation.

- When is your survey delivered?
- What communications material need to be in place beforehand?
- If you are working with an IP, are they aware of critical dates?

These must be highlighted before any implementation begins including the date you expect to release communications materials or the RapidPro survey.

Technical development

First determine how the beneficiaries will be contacted by RapidPro (2 options)

- a. Users register by texting the shortcode from their handsets

If the users must register themselves, the shortcode delivery to the beneficiary becomes the priority. This aim becomes reaching beneficiaries who are within the scope of the survey and not informing those outside of the scope.

- b. Phone numbers are entered into the system by UNICEF staff
 - i. Where will the numbers come from?

This requires contact with an agent who has the phone numbers, formatting, and software delivery. This method, as it is not voluntary requires consent to be secured with an opt-out function. i.e. *“this is a voluntary survey that you do not need to complete”*

- ii. Will you contact the beneficiaries in advance telling them about the SMS?

This requires an organization that has communication access to target groups. It can be done via letters, billboards, and posters or through communication agencies such as Imams at local Madrassas, schools, workplaces etc.

Question development

There should be a maximum of 7 SMS questions total. This includes registration and follow up questions. The technical team who specializes in the programme section should be responsible for question development as it requires in depth technical knowledge about the programme topic. This can be then given to the innovations coordinator for system entry.

Testing

- c. Translation

Initially, the survey is likely to be developed in English as it is a common language between the technical officers i.e. WASH specialists and the innovations section. Later according to the region, specific translations are to be entered into the RapidPro system by a native speaker of the relevant language.

- d. Field testing

Prior to implementation it can be beneficial to conduct a pre-test of survey questions and concepts in an information session/FGD. This requires finding an IP that has an established ground presence and access to a population of willing participants.

Adaptations and changes can be made during and after – this is also a useful tool for advocacy of the RapidPro system.

- e. Technical testing

All users of the system should run through the survey on their phones and record any errors/ final adaptations to be made before delivery.

Checklist

Before the first SMS is sent/received by a beneficiary, you should have the following finalized:

- Launch date(s) finalized
- RapidPro questions completed/translated
- Number of products disseminated, finalized
- Communications materials sent with “FREE SMS” included on the product
- Shortcode in place and target group(s) informed of its purpose.
- FGD’s conducted with language/questions tested.
- Survey thoroughly tested on RapidPro with handsets.
- All completed before Launch date.