Consolidated Report:

PMD-UNDP Project " DRR in Pakistan"

Highlights:

- **Weekly discussion hours during monsoon 2014**
- **SMS ALERTs during September 2014 Floods**
- **Media Report**
- **Radio – an effective tools to reach rural communities**
- **Way forward**

PAKISTAN METEOROLOGICAL DEPARTMENT

ISLAMABAD

Pakistan Meteorological Department

Consolidated Report on:

PMD-UNDP Project "DRR in Pakistan" Code # 00085568

Executive Summary

This project was conceived in a side meeting between Director PMD and CTA,Disaster risk reduction,UNDP Islamabad during a national workshop in Islamabad. The main objective was how to disseminate the early warning information regarding extreme events (floods / droughts) to end users that is regularly being developed by PMD. It was decided that Climate discussion hours may be aired through FM radio channels on weekly basis to reach the rural communities. 22 FM channels covering most parts of country were engaged to achieve the objective. In these programs, climate outlooks and resultant coping strategies were broadcasted for educating farming and local communities. Live calls were entertained to respond to questions of listeners of their interest regarding weather, climate and mitigation strategies to expected extreme events. SMS System was conceived for providing warnings through mobile phones. The total financial allocation of the project was USD=50,000/-. Only US$ 40,000/= have been released so far.

During the implementation of project, extreme weather advisories/early warnings were also converted into local languages and sent to media for dissemination. This initiative was highly appreciated by local TV/Radio channels/newspapers. During Sep 2014, extreme flood event hit most parts of eastern Punjab and upper Sindh provinces of Pakistan. PMD in collaboration with PDMAs and PTA, issued millions of SMS alerts to vulnerable communities that helped timely evacuation and minimizing loss of lives and livelihoods like livestock, valuables etc. The inter-agency collaborative mechanism worked effectively and ALERTS were disseminated in a timely fashion.Two documentaries were developed and distributed to educate communities about the negative impacts of climate change like flash floods.

A project website is developed where all the relevant information is placed for the benefits of all stakeholders. The URL is http://www.pmd.gov.pk/undp/mediareport.html

PROJECT OVERVIEW

A-Context

Climate watch & outlook information and related services from the National Meteorological Service (NMS) are increasingly being demanded by the farming community to cope more efficiently with climate variability and the increasing incidence of extreme hydro-meteorological events such as droughts, floods, frosts and wind erosion. Considerable advances have been made in the collection, archiving and analysis of weather and climate data and their transformation into information that can be readily used by the farm sector.

The important objective of this project was to establish a system under the umbrella of PMD to spread climate watch and advisories to end users/communities at grass root level because dissemination of useful information to end users still lag behind, especially in rural areas of Pakistan where such information needs are the greatest. One of the important reasons is the lack of adequate and appropriate dissemination and communication procedures that can enhance the value of the agro meteorological information and climate watch services.

Disseminating information and educational materials are a key element of response to natural disasters. Electronic media greatly expedite the process of dissemination and enable prevention messages to reach an expanded audience. Through this project, these aspects have been covered and partnership with media personnel, radio channels and other stakeholders has been developed. So, this project is setting a model by engaging local electronic and print media for dissemination of translated climatic outlooks to rural communities of Pakistan.

B-Immediate Objectives, Outputs, Indicators and Activities:

The component activities of the pilot project were divided into three main activities, namely:

1) Provision of climate outlook, translation of climate outlook into impact outlook and crop management strategies which was the responsibility of the PMD.

2) Dissemination of the recommended management strategies to vulnerable communities which was done by Radio Network, supervised by PMD. Same information was posted on PMD web portal and sent e-mails to listed users. In order to increase the level of

adoption by communities to climate forecasts and its use for tailoring their cropping system, the knowledge of communities on climate information applications has been improved. The use of the popular channel /popular anchor approach for improving communities' knowledge on climate information application is effective. Therefore, a program called Climate Discussion Hour (CDH) was conducted in the project.

The idea of using the CDH approach was that the process for the dissemination of climate information to communities should be similar to the process of introducing new technologies. Communities should be convinced that the use of climate forecast information would benefit them and increase resilience to the extreme climate events.

3) **Media personnel** were educated about the importance of early climatic warnings for communities and encouraged to receive the information and help in disseminating it to end users.

So, this project has its impact immediately after start of project activities. The print and electronic media were on board and getting climatic outlooks from PMD on regular basis. While, the media was also disseminating those climatic information to rural areas by an effective and simple ways for clear understanding. The programs regarding the Climate discussion hours were highly appreciated by the public especially the farmer communities. They are very much interested that these types of CDH should continue to bring awareness to them.

C-Project Impact and Sustainability

This project has significant support to small communities in efficient management of their natural resources especially during climatic disorders. There was great need to provide support to rural communities by the use of advance technologies in finding early climate outlooks and coping strategies in different sectors by very simple and effective means like radio networks to avoid those disasters.

Through this project, early warnings about drought and floods to small communities at grass root level were provided through the use of electronic media (Radio programs) and SMS ALERTS. PMD in collaboration with PDMAs and PTA, issued millions of SMS alerts to vulnerable

communities during September 2014 floods that helped timely evacuation and minimizing loss of lives and livelihoods like livestock, valuables etc. After getting useful information from PMD, the communities prepared themselves before such disasters and planed their farming activities to adapt such climatic disorders. As a result, there was minimum financial and environmental losses beard by them. Ultimately, this contributed in the improvement of livelihoods of poor rural communities of Pakistan.

Impacts

- The information translated in local languages and disseminated through the proposed system for the benefit of communities. This helped them to cope with natural hazards more effectively and ultimately to poverty.
- Climate Discussion Hours highlighted the importance of early warning and its dissemination timely by media to end user. The climate discussion hours fulfill the gaps between PMD and local community to some extent. By conducting these live programs people showed keen interest by participating in these discussion hours and it provided an opportunity to interact more with the PMD and understand about the forecasting and early warning information
- In order to increase the level of adoption by communities to climate forecasts and its use for tailoring their cropping system, the knowledge of communities on climate information applications would to be improved.
- Through documentaries, stakeholders were educated about the impacts of climate change and vulnerabilities to flash floods werehighlighted so that communities may contribute in minimizing negative impacts of climate change.

- **Best Practices**

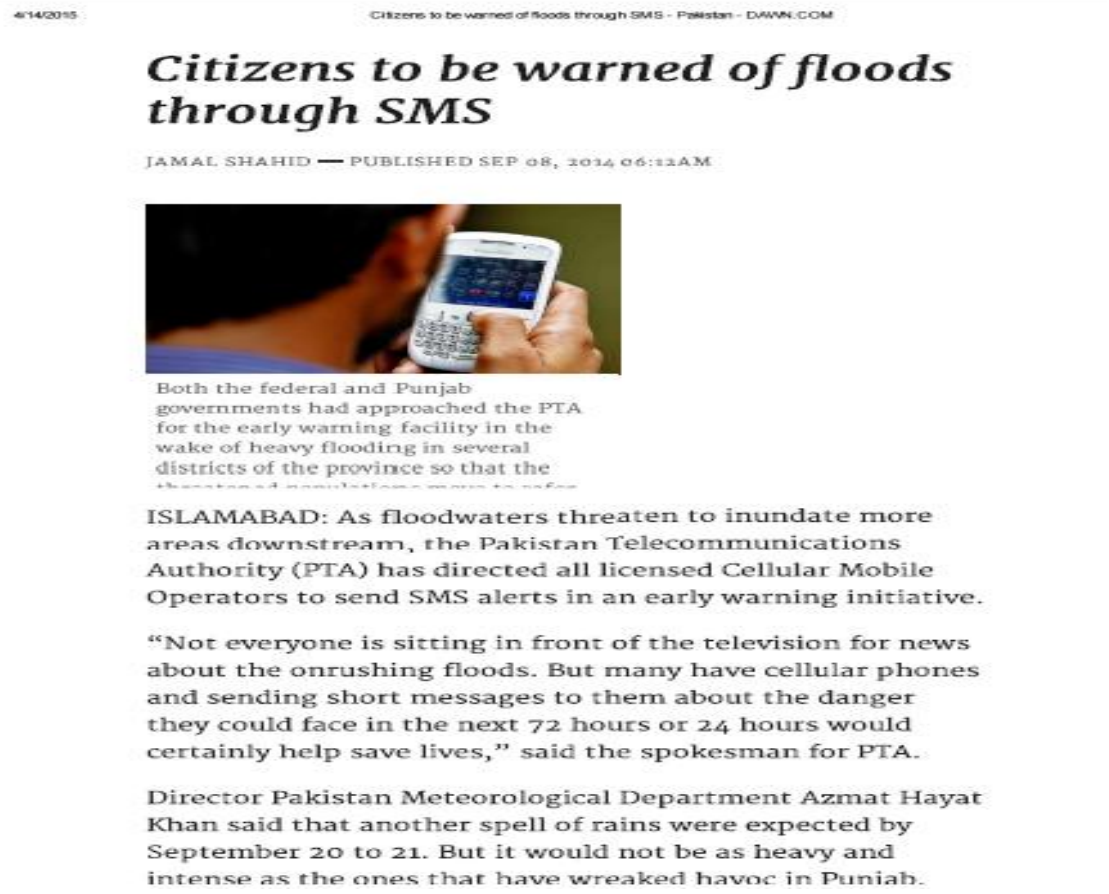
    - It was the first time in the history of PMD that press releases and advisories of floods were issued through SMS as PTA directed all the cellular mobile operators to send SMS alerts in early waring activities (http://www.dawn.com/news/1130543). It was highly appreciated in the local communities as it was easier to understand the information in its simple language.

    - Secondly, the climate discussion hours conducted live on radio, which is a common and easy source of communication in rural community opened a new era of learning

and getting information about weather. It was conducted during the prime time and people shown keen interest by participating in live calls and they suggested such program of discussion should conduct on weekly basis.

- **Sustainability**

It was seen that this project brought a close relationship among the radio and electronic media and PMD. Now Electronic Media highlights the weather information like the general news and they break this news in the form of weather alerts and give proper coverage by taking live conversation with meteorologist/weather forecaster during the news.



4/14/2015 Citizens to be warned of floods through SMS - Pakistan - DAWN.COM

Citizens to be warned of floods through SMS

JAMAL SHAHID — PUBLISHED SEP 08, 2014 06:11AM

Both the federal and Punjab governments had approached the PTA for the early warning facility in the wake of heavy flooding in several districts of the province so that the

ISLAMABAD: As floodwaters threaten to inundate more areas downstream, the Pakistan Telecommunications Authority (PTA) has directed all licensed Cellular Mobile Operators to send SMS alerts in an early warning initiative.

"Not everyone is sitting in front of the television for news about the onrushing floods. But many have cellular phones and sending short messages to them about the danger they could face in the next 72 hours or 24 hours would certainly help save lives," said the spokesman for PTA.

Director Pakistan Meteorological Department Azmat Hayat Khan said that another spell of rains were expected by September 20 to 21. But it would not be as heavy and intense as the ones that have wreaked havoc in Punjab.

Details of SMS ALERTS disseminated to various districts of Sindh Province

(Source: PDMA Sindh)

DETAIL OF SMS SENT TO DISTRICTS

FLOOD EMERGENCY 2014

S.No	District of Sindh	No Of Sms Sent							Total
		8/9/2014	9/9/2014	10/9/2014	11/9/2014	12/9/2014	13/9/2014	14/9/2014	
1	Larkana	81,874	1,132,250	260,929	195,238	264,918	6,256	381,802	2,323,267
2	Sukkur	59,055	2,800,515	313,978	105,221	317,193	15,746	671,139	4,282,847
3	Jacobabad	39,506	1,145,820	169,684	60,562	188,639	Discontinued		1,604,211
4	Shikarpur	24,480	418,630	184,187	58,877	215,056	8,106	139,261	1,048,597
5	Kashmore	22,292	223,655	137,282	70,770	138,158	15,596	139,261	747,014
6	Qamber Shahdadkot	14,739	336,915	58,694	65,614	Discontinued			475,962
7	Khairpur	14,702	604,725	465,531	147,332	3,534	158,443		1,394,267
8	Ghotki	9,214	723,260	401,185	67,646	7,148	179,492		1,387,945
	Total	265,862	7,385,770	1,991,470	771,260	1,134,646	383,639	1,331,463	
Grand Total									13,264,110

Project Targets and Accomplishments

PLANNED ACTIVITIES	Progress till 31st December 2014	Financial Impacts (Rs)
Provide regular Climate outlook updates and translate into impact outlook and advice for flood preparedness/agricultural system adaptation action that is well understood by communities and community members at risk of floods and droughts.	Outlooks on extreme weather phenomena and weekly, monthly and seasonal climate were regularly prepared for the entire period and provided to all stakeholders.	Rs. 300,000/=
Agree with PDMA on a protocol for dissemination of impact outlook and advice for action that ensures no delays in dissemination of early warning	PDMAs Punjab and Sindh provided impact outlooks during flood 2014 based on PMD flood warnings that were disseminated to vulnerable communities.	NIL
Engage FM Radio station operators/mobile phone operators and organize regular dissemination of impact outlook/advice for action through FM Radio and SMS to cover Peshawar, Charsadda, and Nowshera (KPK)	22 FM channels across the country were engaged for dissemination of climate outlooks during July-Sep 2014 period. Hourly programs were LIVE aired through these FM channels on weekly basis and listeners live questions were taken for reply.	Rs. 25,35,000/= M/s Black Box Sounds was selected as service provider through competitive bidding.
Verify if impact outlook message and advice for action is widely received, understood and advice for action is considered by recipients at the community level.	PTA ensured timely dissemination of ALERT messages through mobile operators to millions of users http://www.dawn.com/news/1130543	NIL
Optimize early warning dissemination and messaging through coordination with PDMA	Meetings were arranged between PMD and PDMAs.	NIL

Develop and distribute two video documentaries. One on flash flood risk in KPK and desired community response to minimize risk. Another on hydro-meteorological hazards in Pakistan during winter and precautionary measures. One thousand copies of each video will be distributed among colleges, universities, DRM agencies after introduction in a media workshop. The videos will also be put online on the www.	1st videos received that has been distributed to stakeholders during a workshop help in Peshawar on 26 November 2014. 2nd video has been received Jan 2015.	Rs. 12,49,000/= M/s SP Production was selected as service provider through competitive bidding.

WAY Forward:

- An important outcome of the project is that a close relationship among the radio and electronic media and PMD has been developed. Now Electronic Media highlights the weather information like other important news and they break this news in the form of "WEATHER ALERTS" and give proper coverage by broadcasting live conversation with meteorologist/weather forecaster during the news.
- Since, next monsoon season is approaching, immediate intervention can be the extension of project with more allocation so that FM Channels may be hired for weekly "Climate Discussion Hour" activity.
- The short to medium term intervention may be Phase-Wise "Establishment of MET RADIO for the country". A concept proposal is attached herewith for the purpose as **Annex-2**
- The long term intervention includes policy measures that atleast "ONE HOUR / WEEK " must be obligatory for electronic media channels (Radio /TV etc) to broadcast weather & climate outlooks.
- Cell Broadcast (CB) Technology is the most effective tool for timely dissemination of Early Warnings to vulnerable communities. CB can effectively target communities at specific location as well as over large area, Its implementation is highly recommended **(Annex3).**

Annex 1 /01

Financial Statement of PMD-UNDP Project "DRR in Pakistan"

S.No.	Name/Company	Cheque No.	Amount in PKR	dated	Project Code where Expenditure posted
1	Employees related expenses	793175-81	1,50,000	20/8/2014	71405
2	M/s Ideas Workshop pvt ltd	793182	11,373	2/9/2014	71305 & 72165
3	M/s BBS (Radio Programe)	793183	800,000	25/9/2014	72165
4	M/s Bussiness Plus (Scanner)	793185	9,851	5/11/2014	72520
5	Peshawar Workshop (Misc.)	793186	7,507	7/11/2014	72520
6	M/s SP Production	793187	400,000	11/11/2014	72520
7	M/s BBS pvt ltd	793188	1,557,550	14/11/2014	72165
8	Employees related expense	793198-00 19315726-29	1,50,000	11/12/2014	71405
20	M/s Ideas Workshop pvt ltd	19315730	38,666	28/01/2015	71305
21	M/s SP Production pvt ltd	19315732	720,000	20/02/2015	72520
	Total		**4,050,700**		

FACE Form 1st Oct 2014

Funding Authorization and Certificate of Expenditures (FACE)

UN Agency: UNDP

Date: 1-Oct-14

Country: PAKISTAN

Programme Code & Title:

Project Code & Title: 00085568 & Supporting Community Resilience

Reference Code:

Responsible Officer(s): Herman Bergsma

Implementing Partner: NDMA

Type of Request:
- ☑ Direct Cash Transfer
- ☐ Reimbursement
- ☐ Direct Payment

Currency: PKR

Activity Description from AWP with Duration	Coding for UNDP	REPORTING				REQUESTS / AUTHORIZATIONS		
		Authorized Amount A	Actual Project Expenditure B	Expenditures accepted by Agency C	Balance D = A - C	New Request Period & Amount E	Authorized Amount F	Outstanding Authorized Amount G
Provide regular Climate outlook updates and translate into impact outlook and advice for flood preparedness/agricultural system adaptation action that is well understood by farmers and community members at risk of floods and droughts	71405	150,000	150,000.00	150,000	0	256,600	769,800	513,200.00
Engage FM Radio station operators/mobile phone operators and organize regular dissemination of impact outlook/advice for action through FM Radio and SMS to cover Peshawar, Charsadda, and Nowshera (KPK)	72165	830,800	811,373.00	811,373	19,427	641,500	1,924,500	1,283,000.00
Verify if impact outlook message and advice for action is widely received, understood and advice for action is considered by recipients at the community level	71305	-				128,300	384,900	256,600.00
Develop and distribute two video documentaries.One thousand copies of each video will be distributed among colleges, universities,DRM agencies after introduction in a media workshop. The videos will also be put online on the www.	72520					1,026,400	1,026,400	0.00
Total		980,800	961,373		19,427 #	2,052,800	4,105,600	2,052,800

CERTIFICATION

The undersigned authorized officer of the above-mentioned implementing institution hereby certifies that:

- ☐ The funding request shown above represents estimated expenditures as per AWP and itemized cost estimates attached.
- ☐ The actual expenditures for the period stated herein has been disbursed in accordance with the AWP and request with itemized cost estimates. The detailed accounting documents for these expenditures can be made available for examination, when required, for the period of five years from the date of the provision of funds.

Date Submitted: _____

Name: Mr.Azmat Hayat

Title: Director, Pakistan Metrological Department

AZMAT HAYAT KHAN
Director
Pakistan Meteorological Department
Islamabad

NOTES: * Shaded areas to be completed by the UN Agency and non-shaded areas to be completed by the counterpart.

FOR AGENCY USE ONLY:

FOR ALL AGENCIES
Approved by:
Name: Hidayat Ullah Khan
Title: Programme Analyst, CPRU, UNDP
Date:

FOR UNICEF USE ONLY			
Account Charges		Liquidation Information	
Cash Transfer Reference: CRQ ref. no., Voucher ref. no.		DCT Reference: CRQ ref. no., Liquidation ref. no.	
GL codes:		DCT Amount	0
Training	0	Less:	
Travel	0	Liquidation	
Meetings & Conferences	0	Amount	0
Other Cash Transfers	0		
Total	0	Balance	0

FOR UNDP USE ONLY
New Funding Release
Activity 1
Activity 2
Administration
Total

FACE Form 22nd Dec 2014

Funding Authorization and Certificate of Expenditures (FACE)

UN Agency: **UNDP**

Date: 22-Dec-14

Country: PAKISTAN

Programme Code & Title: 00072484 & Supporting Community Resilience

Project Code & Title: 00085568 & Supporting Community Resilience

Reference Code:

Responsible Officer(s): Herman Bergsma

Implementing Partner: PMD

Type of Request:

☑ Direct Cash Transfer

☐ Reimbursement

☐ Direct Payment

Currency: PKR

Activity Description from AWP with Duration	Coding for UNDP	REPORTING				REQUESTS / AUTHORIZATIONS		
		Authorized Amount A	Actual Project Expenditure B	Expenditures accepted by Agency C	Balance D = A - C	New Request Period & Amount E	Authorized Amount F	Outstanding Authorized Amount G
Provide regular Climate outlook updates and translate into impact outlook and advice for flood preparedness/agricultural system adaptation action that is well understood by farmers and community members at risk of floods and droughts	71405	254,275	223,450	223,450	30,825	0	0	30,825.00
Engage FM Radio station operators/mobile phone operators and organize regular dissemination of impact outlook/advice for action through FM Radio and SMS to cover Peshawar, Charsadda, and Nowshera (KPK)	72165	635,688	635,688	635,688	0	0	0	0.00
Verify if impact outlook message and advice for action is widely received, understood and advice for action is considered by recipients at the community level	71305	155,438	38,666	38,666	116,772	0	0	116,771.50
Develop and distribute two video documentaries.One thousand copies of each video will be distributed among colleges, universities,DRM agencies after introduction in a media workshop. The videos will also be put online on the www.	72520	76,221	69,721	69,721	6,500			6,500.00
Total		**1,121,621**	**967,525**	**967,525**	**154,097**	-	-	**154,097**

CERTIFICATION

The undersigned authorized officer of the above-mentioned implementing institution hereby certifies that:

☐ The funding request shown above represents estimated expenditures as per AWP and itemized cost estimates attached.

☐ The actual expenditures for the period stated herein has been disbursed in accordance with the AWP and request with itemized cost estimates. The detailed accounting documents for these expenditures can be made available for examination when required for the period of five years from the date of the provision of funds.

Date Submitted: 22-Dec-14

Name: Mr.Azmat Hayat

Title: Director, Pakistan Meteorological Department

AZMAT HAYAT KHAN
Director
Pakistan Meteorological Department
Islamabad

NOTES: * Shaded areas to be completed by the UN Agency and non-shaded areas to be completed by the counterpart.

FOR AGENCY USE ONLY:

FOR ALL AGENCIES
Approved by:
Name: Hidayat Ullah Khan
Title: PO, CPRU, UNDP
Date:

FOR AGENCY USE ONLY:

FOR ALL AGENCIES
Approved by:
Name: Aadil Mansoor
Title: ACD, CPRU, UNDP
Date:

Annex 1 /04

FACE Form 24th Narch 2015

Funding Authorization and Certificate of Expenditures (FACE)

UN Agency: **UNDP**

Date: 24-Mar-15

Country: PAKISTAN

Programme Code & Title: 00072484 & Supporting Community Resilience

Project Code & Title: 00085568 & Supporting Community Resilience

Reference Code:

Responsible Officer(s):

Implementing Partner: Naeem Iqbal PMD

Type of Request:
- √ Direct Cash Transfer
- ☐ Reimbursement
- ☐ Direct Payment

Currency: PKR

Activity Description from AWP with Duration	Coding for UNDP	REPORTING				REQUESTS / AUTHORIZATIONS			
		Authorized Amount	Actual Project Expenditure	Expenditures accepted by Agency	Balance	New Request Period & Amount	Authorized Amount	Outstanding Authorized Amount
		A	B	C	D=A-C	E	F	G
Provide regular Climate outlook updates and translate into impact outlook and advice for flood preparedness/agricultural system adaptation action that is well understood by farmers and community members at risk of floods and droughts	71405	30,825.00	30,825			0	0	0.00
Engage FM Radio station operators/mobile phone operators and organize regular dissemination of impact outlook/advice for action through FM Radio and SMS to cover Peshawar, Charsadda and Nowshera (KPK)	72165	0.00	-			0	0	0.00
Verify if impact outlook message and advice for action is widely received, understood and advice for action is considered by recipients at the community level	71305	116,771.50	116,772			0	0	0.00
Develop and distribute two video documentaries.One thousand copies of each video will be distributed among colleges, universities,DRM agencies after introduction in a media workshop. The videos will also be put online on the www.	72520	6,500.00	6,500			0	0	0.00
Total		154,097	154,097	-	-	-	-	-

CERTIFICATION

The undersigned authorized officer of the above-mentioned implementing institution hereby confirms that:

☐ The funding request shown above represents estimated expenditures as per AWP and itemized cost estimates attached.

☐ The actual expenditures for the period stated herein has been disbursed in accordance with the AWP and request with itemized cost estimates. The detailed accounting documents for these expenditures can be made available for examination, when required, for the period of five years from the date of the provision of funds.

Date Submitted: 22-Dec-14

Name: Mr.Azmat Hayat

Title: Director, Pakistan Meteorological Department

AZMAT HAYAT KHAN
Director
Pakistan Meteorological Department

NOTES: * Shaded areas to be completed by the UN Agency and non-shaded areas to be completed by the counterpart

FOR AGENCY USE ONLY:

FOR ALL AGENCIES	
Approved by:	
Name:	Hidayat Ullah Khan
Title:	PO, CPRU, UNDP
Date:	

FOR AGENCY USE ONLY:

FOR ALL AGENCIES	
Approved by:	
Name:	Aadil Mansoor
Title:	ACD, CPRU, UNDP
Date:	

ANNEX 2

Pakistan Metrological Department, Islamabad

Proposed implementation Date: 1st July, 2015

Project Outline

Pilot Project title:

Strengthening of Early Warning system at community's level through Establishment of **MET RADIO** in vulnerable regions of the country

Duration: 18 months

Project area: Vulnerable regions to natural hazards

Beneficiaries: General public especially Fishers /farming communities

Implementing Partner: Pakistan Metrological Department, Islamabad

Budget line: **60** Million Pak Rs

Section A – PMD profile:

Pakistan Meteorological Department (PMD) is both a scientific and a service department and is responsible for providing meteorological service throughout Pakistan to wide variety of interest and for numerous public activities and projects which require weather & climate related information. Apart from meteorology, the department is also concerned with Agrometeorology, Hydrology, Astronomy and Astrophysics (including solar physics), Seismology, Geomagnetism and studies of the Ionosphere and Cosmic Rays. Pakistan Meteorological Department shoulders the responsibility to investigate the factors responsible for global warming, climate change its impact assessment and adaptation strategies in various sectors of human activities.

Section B: CONTEXT

Pakistan has an agriculture based economy and 80 % percent of its area is comprised of arid, semi arid and sub-humid areas with 250-300 mm precipitation rate. While, 70% of its population has been living in rural areas with more dependency on natural resource use and climatic conditions. Natural hazards have significant impact on natural resources in such areas of Pakistan. Which also trigger the land degradation and desertification process in such vulnerable areas if it is not managed proactively. So far, the farming communities due to social and economic constraints reacting such disasters at the time of its occurrence. They make

preparations based on their experiences and primitive concepts to handle such natural calamities. But, they are facing significant social, economic and environmental losses every year due to gaps in their counter measures and handling. They, most of the time, unable to receive forecast about extreme weather conditions. The climate change is a global phenomenon and has also contributed drought and flash floods disasters in such areas. These all factors contributing in environmental degradation especially in desertification process across the country. Ultimately, this is affecting negatively in livelihood options of poor rural communities of Pakistan.

Climate watch & outlook information and related services from the National Meteorological Service (NMS) are increasingly being demanded by the farming community to cope more efficiently with climate variability and the increasing incidence of extreme hydro-meteorological events such as droughts, floods, frosts and wind erosion. Considerable advances have been made in the collection, archiving and analysis of weather and climate data and their transformation into information that can be readily used by the farm sector.

These advisories and information are disseminated through PMD official web site www.pmd.gov.pk and other electronic and print media. But, communication gaps exist between the small farmers and PMD due to socio-economic situation and lack of facilities in rural areas of Pakistan. The climatic outlooks with its translations are not reaching to rural areas and not getting benefits out of it due to communication gaps between PMD and local communities. There is great need to fill these gaps by spreading technical climate outlooks through MET RADIO into a very simple climate forecast and coping strategies by capitalizing available technologies and mass awareness channels for rural communities of Pakistan

The important objective of this proposal is to establish MET RADIO under the umbrella of PMD to spread climate watch and advisories to end users/farmers at grass root level as the existing dissemination system lags behind, especially in rural areas of Pakistan where such information needs are the greatest

The important objective of this proposal is to establish a system under the umbrella of PMD to spread climate watch and advisories to end users/farmers at grass root level because dissemination of useful information to end users still lag behind, especially in rural areas of Pakistan where such information needs are the greatest. One of the important reasons is the lack of adequate and appropriate dissemination and communication procedures that can enhance the value of the agro meteorological information and climate watch services. Main features of MET RADIO project are;

- Radio has the widest outreach
- Radio is the most popular medium in Pakistan
- Radio is accessible
- Radio is handy
- Radio is Inexpensive

- Radio is the only medium, which remains intact during disasters
- 30 seconds away from disaster prone communities
- 24 hours connectivity with communities
- Disaster Risk Reduction through early dissemination of information
- Centralized programming from Islamabad to risk prone districts / areas

Disseminating information and educational materials is a key element of response to natural disasters. Electronic media specially the radio greatly expedite the process of dissemination and enable prevention messages to reach an expanded audience. This project will cover these aspects and develop programs on coping strategies and disseminate through MET RADIO, and other radio channels through partnership for the benefit of end users. So, this project will be setting a model by engaging local electronic and print media for dissemination of translated climatic outlooks to rural communities of Pakistan.

Section C – Immediate Objectives, Outputs, Indicators and Activities:

Climate watch & outlook information and related services from the National Meteorological Service (NMS) are increasingly being demanded by the farming community to cope more efficiently with climate variability and the increasing incidence of extreme hydro-meteorological events such as droughts, floods, frosts and wind erosion.

The important objective of this proposal is to establish MET RADIO under the umbrella of PMD to spread climate watch and advisories to end users/farmers at grassroots level as the existing dissemination system lags behind, especially in rural areas of Pakistan where such information needs are the greatest

History shows that Radio has been the most affective medium for information dissemination during disaster particularly for early recovery and rehabilitation.

- Over **500** PSA's produced and broadcast during 2010 floods
- Over **50** radio magazine programmes produced responding FAQ's
- Over **5000** radio sets were distributed in most effected areas

The pilot project will span over a period of 18 months. The nature of the project is mainly research. For the pilot phase, implementation of the project will be coordinated with Ministry of National Disaster Management in collaboration with the Pakistan Meteorological Department (PMD). As the components of the project move into the operational stage, coordination of the project will be taken over by the PMD.

The component activities of the pilot project will be divided into three main activities, namely:

1) Procurement of equipment for ten transmitting units in ten vulnerable rural districts

2) Dissemination forecasts, advisories and recommended crop management strategies to farmers, which will be done round the clock through MET RADIO Network, supervised by PMD.

Same information will also be posted on PMD WEB RADIO to be utilized by other interested channels.

3) The evaluation of dissemination system will be done by field offices and live interaction.

So, this project will start its impact immediately after start of project activities. Climatic outlooks from PMD will be issued on regular basis. While, the other media will also be disseminating those climatic information to rural areas by an effective and simple ways for clear understanding.

In order to increase the level of adoption by farmers to climate forecasts and its use for tailoring their cropping system, the knowledge of farmers on climate information applications needs to be improved. The use of the popular channel /popular anchor approach for improving farmers' knowledge on climate information application might be effective. Therefore, programs called Climate Discussion Hour (CDH) would be introduced by the project.

The idea of using the CDH approach is that the process for the dissemination of climate information to farmers should be similar to the process of introducing new technologies. Farmers should be convinced that the use of climate forecast information would benefit them and increase resilience to the extreme climate events.

Through workshops arrangements for electronic and print media's personals, the media will also be integrated issuance of early warnings through their respective medium. Through lectures/ discussions, realization of the values of climate products & importance of media role in dissemination to end users will be stressed. The PMD will develop formal and informal partnerships with media organizations for bridging the gap between PMD and remote rural areas of Pakistan. This networking will be utilized for dissemination of information on regular basis during and after the completion of this project.

Section D– Inputs:

Climate information system must ensure that tailored climate information to users' needs should get into the hands of the users in a timely fashion in order to have some influence on practical decisions. Considerable efforts are required to develop the appropriate means for the effective dissemination of the climate information to users.

PMD as part of its mandate will collect, analyze climate data and generate weather forecast with practicable strategies for farmers to cope such natural disasters efficiently.

The PMD will disseminate all information on weather forecasts and coping strategies by an effective and efficient manner towards rural communities in all provinces of Pakistan through MET RADIO for more proactive decision making.

Section E – Management:

This project will be implemented by PMD. PMD, Islamabad office will take lead role in implementation of this project. The PMD will assign a project director for general management of the project and coordination with other stake holders. While, the PMD, Islamabad office will deliver the project activities through its regional set ups at 4 provinces. The PMD will develop formal partnerships with selected media organizations for dissemination of climatic outlooks according to own set processes.

Section F – Proposed Work Plan:

Activity	July-Dec	Jan-June	July-Dec	Jan-Mar
Tendering for Radio equipment				
Hiring of professional organization for developing radio programs				
Installation / operationalization of Met Radio				
Preparation/dissemination of climate watch				
Evaluation of operational performance of the system				

Section G – Potential Project Risks & its mitigation plan:

PMD is preparing various types of climate information since decades. Recently, new tools and technologies have been implemented for timely processing of data and sustained availability of climate products. Therefore, low level of internal risks is involved. Even then, close monitoring will be done at PMD-regional offices for timely and quality climate outlooks development.

Externally, if the approved network service looses functionality, the alternate system (IVR) will be available to respond queries and vice versa. Close monitoring will be ensured to avoid such risks with regular sharing of feedback getting through different sources to responsible organizations.

Section H- Project Impact and Sustainability

This project will have significant support to small farmers in efficient management of their natural resources especially during climatic disorders. Presently, the communities are reacting on facing the natural disasters like drought and floods without any preparations and facing tremendous economic, social and environmental losses. So, there is great need to provide support to such communities by the use of advance technologies in finding early climate outlooks and coping strategies in different sectors by very simple and effective means like radio networks to avoid those disasters.

The recurring expenditure will be incorporated in PMD regular budget from next financial year to ensure the sustainability of this project. And, this successful community based early warning system will continue its operations after the completion of this project. This support will be a great contribution in the mandate of PMD, which will ultimately contribute in protection of land resources and economic development of Pakistan. This project will contribute significantly in combating Drought, Land Degradation and Desertification (DLDD) across the country.

Section I- Project Budget: (18 months project)

S.#	Details	Costs Rs (Million)
1	**Equipment, spares & Training cost** Transmitting Equipment cost (10 Stations) (Transmitters, Antennas, Bays, RF Transmitter Cable, AVR, Air conditioners, Change Over Switch, Electric Boards, Boring, Tower, Audio Processors, Transmitter Cabin) **Studios Cost:** (2 Studios and work area in Islamabad) (Mixers, Microphones, Microphone Stands, Headphones, Air Conditioners, CD Players, Hybrid, Pronto Device, Audio Switcher, Computers, Connectors, Furniture, Sound Proofing) **Backup Cost (10 stations & Islamabad studios)** (Generator, UPS, Cables) **Installation & Engineering** **Total Equipment / Installation Cost:**	Rs. 18.25 M Rs. 3 M Rs. 3 M Rs. 2.5 M **Rs. 26.75 M**
2	Communication/ Advertisements in papers / TV Channels to inform people about new system of information dissemination.	**Rs. 2 M**
3	Office building re-enforcement /furnishing /security arrangements cost (10	**Rs. 5 M**

	stations + central office))	
4	**Operational Cost** • **Cost per Month :** (24/7 programming) Centralized programming from Islamabad to 10 districts. Mainly in Urdu and partially in regional languages • **Cost for 12 Months :** • **Cost includes:** (Cost of Rj's (Urdu & Regional Language), Production of Programmes, Engineers, Library, Programmers, Producers, Content Developers, Support Staff.)	Rs. 2 M **Rs. 24 M**
Grand Total		**Rs. 59.75 M**

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Annex 3

Pakistan Meteorological Department

Cell Broadcast – An Effective Early Warning Tool to reach millions in seconds

What is Cell Broadcast

A GSM network consists of thousands of cells (antennas); and facilitates the wireless connection of a (mobile) handset to the network. Cell Broadcast enables to send out a short message to all handsets in a particular cell, group of cells, or the entire network.

Every handset whose CB channels enabled and is within the coverage area of cells(Antenna) broadcasting a CB message, will receive this message. Cell Broadcast can be compared to radio; everybody tuned to the frequency, receives the message.

Interactive Cell Broadcast inserts the operator into the social community value chain. Cell Broadcast enables user-generated content to be broadcast with location relevance without the need to install costly Location Based Service capabilities into the network.

CB the best technology for public warning

Important differences between SMS and Cell Broadcast (CB) are:

- CB is point-to-multi-point / broadcast; i.e. messages are broadcasted to all handsets which are 'in the range of ' a certain CB channel. **Millions of handsets are reached in a matter of seconds**. On the other hand, SMS is point-to-point; meaning messages are individually sent to a known number, one after another.
-
- **CB is location specific; messages are broadcasted in a particular area** WHEREAS SMS is recipient / handset specific regardless of its location.
- **Regardless of network state (congested or not) CB is always available.** As opposed to SMS, CB is part of the so-called 'low-level' signaling between handset and network. e.g. **in the case of network congestion it will be impossible to use regular voice and SMS services while CB will remain fully functioning.**
-
- **Every CB message has a serial number and can be repeated for new handsets entering the area, without appearing on handsets which already displayed the message. Enabling real-time crowd control, guiding them to safety. Furthermore, Cell Broadcast always works, even when the network is congested.**
-

- SMS is facilitated centrally in a mobile network by the sender's own Short Message Service Centre (SMSC). CB messages are broadcasted by the base stations autonomously. The Cell Broadcast Centre (CBC) controls what the base stations will broadcast, where, when.

IS CB being standardized for public warning.

- **CB is already a fully standardized service; while CB is being adopted as a worldwide standard for public warning (such as ETWS in Japan, CMAS in the US and in The Netherlands).**
- 3GPP (a global telecommunications standardization institute) has conducted a study into a Public Warning Service and is now (early 2009) working on Public Warning System Requirements (PWSR). Examples to enhance the service are a specific alert tone dedicated for public warning purposes and overcome non-uniform public warning channel number (e.g. 112 vs 911).

COMPARISON OF EMERGENCY NOTIFICATION ALTERNATIVES

	Safe & Secure	Reach 100% of population	Geo Specific	Existing equipment	Database Free	Timely
Cell Broadcast	YES	NO But there is a very high penetration of mobiles	YES	YES	YES	YES Millions can receive message in 20secs.
Landline Dial Up	NO Anyone can make phone calls	NO Can't reach visitors or travellers	YES	YES	NO	NO Speed limited by number of phone lines
Wireless Dial Up	NO Anyone can make phone calls	NO But there is a very high penetration of mobiles	NO You only know where person registered	YES	NO	NO Speed limited by number of phone lines
SMS	NO Anyone can send an SMS	NO But there is a very high penetration of mobiles	NO You only know where person registered	YES	NO	NO Speed limited by network capacity
Email	NO Anyone can send an email	NO But there is a very high penetration of email	NO Emails can be retrieved from anywhere	YES	NO	NO You cannot control when emails retrieved
Fax	NO Anyone can send an email	NO Not many people have fax	YES	YES	NO	NO Speed limited by number of phone lines
TV/Radio	YES	NO Can't reach travellers	NO	YES	YES	YES
Signage	YES	NO Not everyone is in sight of a sign	YES	YES	YES	YES