

POST DISASTER REPORT

MONSOON 2016

1. **Background**. Monsoon Season 2016 unfolded with five rain spells at regular intervals starting from 28 June to 16 September 2016. As per Pakistan Meteorological Department (PMD), Monsoon 2016 remained **25% Above Normal** against predicted rainfall of 10 - 20% Above Normal. During the month of August, rainfall was largely in **excess** across much of the Country while in July, the Country experienced **slightly less** rainfall. Significant events of the Season included urban flooding (Quetta, Karachi, Hyderabad, Lahore), flash flooding (Chitral, GB, Khyber Agency, Lasbela), flooding in District Sialkot (Deg Nadi, Aik Nullah) and landslides (GB, KP, AJ&K). A well-integrated National effort in the shape of timely forecast by PMD, apt analysis by NDMA and configuring correct response by disaster management bodies at Provincial / District levels led to mitigate hydro-meteorological hazards of the Season. A comparative analysis of damages / losses due to Pre-Monsoon and Monsoon rains indicates that **Pre-Monsoon rains were more intense** in nature as compared to the Monsoon Season – 2016.

2. **Aim**. To document major events of Monsoon 2016, analyse lessons learnt and good practices adopted during management of the Season and recommend future course of action.

3. **Significant Events of Monsoon 2016**. Significant events of Monsoon 2016 included flash / urban flooding, canal breaches and landslides. Details of Monsoon Season 2016 are attached as **Annex A**.

4. **Major Rainfall Record**. Summary of significant rainfall during Monsoon Season 2016 is attached as **Annex B**. Monsoon 2016 unfolded in five major rain spells, details are as under:-

a. **1st Monsoon Spell (28 June – 24 July 2016)**

- (1) All major rivers were flowing at Normal Levels.
- (2) Urban Flooding in Quetta on 27 June 2016
- (3) Flash Flooding in Ursoon Valley, Chitral on 2 July 2016 and Harmosh Valley, GB on 15 July 2016.
- (4) Landslides along Murree – Muzaffarabad Road, Abbotabad – Nathia Gali Road, S-1, N-90, Dir – Chitral Road (N-45), Charsadda – Kalam Road (N-95) and Murree – Kohala Road.
- (5) Breaches at Shahiwah and Manjhuti Canal District Sohbatpur, Balochistan on 10 July 2016.

b. **2nd Monsoon Spell (26 – 30 July 2016)**

- (1) All major rivers were flowing at Normal Levels.
- (2) Flooding in Deg Nadi and Aik Nullah in district Sialkot from 27 - 29 July 2016.
- (3) Flash Flooding in Khyber Agency on 30 July 2016.
- (4) Landslides along S-1 and KKH.

c. **3rd Monsoon Spell (2 – 12 August 2016)**

- (1) River Chenab at Marala reached Peak Level of Season 412,065 Cusecs on 7 August 2016.
- (2) Landslides along S-1.

d. **4th Monsoon Spell (25 August – 9 September 2016)**

- (1) All major rivers were flowing at Normal Levels.
- (2) Mangla Dam has achieved Maximum Conservation Level of 1,242.00 feet on 16 August 2016.
- (3) Landa Bridge on Quetta – Karachi Road (N-25) at Winder, District Lasbela, Balochistan was damaged due to Flash Flood on 27 August 2016.
- (4) Landslide on Sudhnoti – Rawalpindi Road at Azad Pattan, Tehsil Kahuta on 27 August 2016 and cleared on 29 August 2016.
- (5) Urban flooding in Lahore and Karachi on 27 August 2016.
- (6) Flash Flooding in Village Gamba, Tehsil Aliabad, District Skardu, GB on 2 September 2016.

e. **5th Monsoon Spell (12 – 15 September 2016)**

- (1) All major rivers were flowing at Normal Levels.
- (2) Breach was reported in Lehri Nadi in District Sibbi on 16 September 2016.
- (3) Windstorm in D.I.Khan on 22 September 2016.

5. **Significant Peak Discharge Reported on Various Hydraulic Structures / Reservoirs**

Serial	Date	Dam / Headwork	Peak Discharge (Cusecs)	River	Flood Category
a.	7 August 2016	Marala	393,690	Chenab	High
b.	8 August 2016	Khanki	398,500	Chenab	Very High
c.		Qadirabad	405,500	Chenab	Very High

6. **Maximum Conservation Level of Major Hydraulic Structures / Reservoirs**

Serial	Dam / Reservoir	Design Capacity (Feet)	Maximum Level (Feet)	Date
a.	Mangla Dam	1242.00	1242.00	16 August 2016
b.	Tarbela Dam	1550.00	1544.07	2 September 2016

7. **Affected Areas.** During the month of July 2016, Central Punjab and KP while in month of August 2016, North & Central Punjab, KP, Sindh, Eastern Balochistan and AJK experienced some significant rains. During September 2016, only R.Y.Khan and Lahore districts of Punjab experienced significant rains. Summary of affected areas is as under:-

Serial	Province	Districts
a.	Federal	Islamabad
b.	Punjab	Lahore, Faisalabad, Sialkot, Multan, Gujrat, Chiniot, Mandi Bahauddin, Hafizabad
c.	KP	Chitral, D.I.Khan, Swat, Bannu, Lakki Marwat, Mardan, Kohat, Mansehra, Shangla, Malakand, Swabi, Upper Dir, Abbottabad, Haripur, Battagram
d.	Sindh	Karachi, Hyderabad, Tando Allahyar, Mirpur Khas
e.	Balochistan	Barkhan, Sibi, Khuzdar, Harnai, Kalat, Kachi, Dera Bughti, Sohbatpur, Pashin
f.	AJ&K	Bagh, Kotli, Rawalakot
g.	GB	Gilgit, Skardu
h.	FATA	Khyber Agency

8. **Pre-Monsoon Rains**

a. **Damages / Losses**

Province	Deaths				Injured	Houses Damaged		
	Male	Female	Child	Total		Partially	Fully	Total
Punjab	3	2	5	10	18	6	4	10
Balochistan	12	7	-	19	20	49	1	50
KP	62	30	65	157	154	701	339	1,040
AJ&K	4	10	11	25	19	866	451	1,317
GB	8	7	7	22	24	248	203	451
FATA	38	-	-	38*	44	57	4	61
G.Total	127	56	88	271	279	1,927	1,002	2,929

*Including 7 casualties due to Orakzai Coal Mine incident on 10 March 2016.

b. **Relief Provided.** Details at Annex C.

9. **Monsoon Season – 2016**

a. **Human Losses**

Province	Deaths				Injured			
	Male	Female	Children	Total	Male	Female	Children	Total
Punjab	12	2	15	29	-	-	-	-
KP	24	16	29	69	28	30	29	87
Balochistan	14	-	4	18	13	8	2	23
AJ&K	2	4	-	6	2	-	-	2
GB	1	1	1	3	-	-	1	1
FATA	2	9	16	27	-	-	-	-
Islamabad	-	1	-	1	-	-	-	-
Total	55	33	65	153	43	38	32	113

b. **Private / Government Property / Livelihood Losses & Damages**

Province	Houses Damaged			Villages Affected			Cattle Head Perished	Gov't Property
	Partially	Fully	Total	Partially	Fully	Total		
Punjab	220	63	283	29	-	29	-	-
KP	413	204	617	3	1	4	-	2
Balochistan	357	150	507	1	10	11	40	-
AJ&K	2	-	2	-	-	-	4	1
GB	28	14	42	1	-	1	150	-
Islamabad	1	-	1	-	-	-	-	-
Total	1,021	431	1,452	34	11	45	194	3 School

c. **Relief Provided.** Summary of relief effort by all sources is attached as **Annex D.**

10. **Salient Aspects**

a. **Pre-Pre-Monsoon 2016 Instructions.** Pakistan Meteorological Department (PMD) issued a **Seasonal Outlook for Spring and Early Summer 2016** on 8 March 2016 which stated that “*Prevailing oceanic, atmospheric and surface climatic conditions suggest uncertainties in Pakistan’s weather pattern will persist towards the **early Summer till the El Nino comes to neutral phase in May – June 2016**”.* Early Monsoon phenomena was experienced first time which dictated formulation of innovative response mechanism to meet its challenges. NDMA issued Pre-Pre-Monsoon Instructions to relevant stakeholders on 18 March 2016. These timely instruction bridged anticipated gap in National response mechanism as Pre-Monsoon rains proved more intense and devastating in nature than actual Monsoon 2016.

b. **Timely Initiation of Monsoon Preparations.** Preparedness activities were started well in time which led to better preparation to face the challenges of Monsoon. Some of the highlights are:-

(1) **National Post-Monsoon Review Conference 2015.** The Conference was organized on **22 January 2016** at Islamabad. Lessons learnt, good practices established, bottle necks identified and valuable experience gained during Floods 2015 were compiled and shared with all stakeholders for better preparations.

(2) **High Level Consultative Meeting.** In order to sensitize all provinces / regions to expedite Monsoon preparations as well as bridge identified gaps, Chairman NDMA visited all PDMA and respective Chief Secretaries as under:-

(a) PDMA Sindh and Chief Secretary Sindh on 17 June 2010 at Karachi.

(b) PDMA KP, FDMA and Chief Secretary KP on 22 June 2016 at Peshawar.

(c) SDMA and Chief Secretary AJ&K on 24 June 2016 at Muzaffarabad.

(d) PDMA Punjab and Chief Secretary Punjab on 1 July 2016 at Lahore.

- (3) **National Pre-Monsoon Review Conference**. The Conference is generally conducted during the month of July every year. Owing to PMD's forecast for early Monsoon this year, complete process of Monsoon preparations was started early. On culmination of provincial / regional consultative process, National Pre-Monsoon Preparedness Conference 2016 was held on **9 June 2016** at Islamabad. The forum facilitated compilation of provincial / regional plans and input to build a well-coordinated National response against impending Monsoon Season.
- (4) **National Monsoon Contingency Response Directive 2016**. To lay down response guidelines for all stakeholders at Federal and Provincial level, ensure sound disaster management against possible floods and configure a coherent response against visualized contingencies of Monsoon 2016, National Monsoon Response Directive 2016 was issued to all stakeholders on **15 June 2016**.
- c. **Resolution of Frequency Interference Issue of Lai Nullah**. NDMA successfully resolved a long outstanding issue between Frequency Allocation Board (FAB), Ministry of Interior and Pakistan Meteorological Department (PMD). This facilitated PMD to predict **possibility of flooding in Lai Nullah** during Monsoon 2016.
- d. **NDMA Virtual Call Centre**. To ensure round the clock availability of Response Team, NDMA set up an innovative Virtual Call Centre (VCC) before onset of Monsoon Season. The initiative ensured response by NEOC officials to all calls made from any part of the Country. The first ring on given telephone number was to be attended by duty officials at NEOC. In case, the call was not answered by on duty NEOC officials, it was transferred to next higher official in the chain, as per its default configuration.
- e. **ROBO Calls for Livestock Evacuation Early Warning**. ROBO Calls through 9211 System by Livestock & Dairy Development Department, Government of Punjab was instituted first time in Punjab. The system helped to register and generate early warning for farmers of vulnerable districts at Union Council and Tehsil level. Total 59817 ROBO Calls were made during the Season.
- f. **Analysis of Rainfall Data by PMD**. PMD regularly analysed progress of rainfall data against predicted rainfall and reflected the same on its website on daily / monthly basis. The initiative assisted to ascertain trend of Monsoon Season and initiate corresponding measures.
- g. **Monsoon Review Conferences**. To review / monitor progress on significant developments / weather pattern during Monsoon Season, coordination conferences were regularly organized in NEOC. Such meetings were chaired by Chairman NDMA

and attended by DG PMD and representative ex SUPARCO. These meetings assisted in prospective decision making and issuance of crucial instructions to relevant stakeholders.

- h. **Timely Evacuation during Flash Floods.** Owing to awareness drive through a series of preparedness activities before start of Monsoon Season 2016, local administration evacuated considerable population of following districts before devastation by flash floods:-
- (1) On 11 July 2016, near Shahiwah & Manjhuti Canals, District Sohbatpur, Balochistan.
 - (2) On 15 July 2016 in Village Bilchi, Harmosh Valley, GB.
 - (3) On 2 August 2016 near Chachar & Kaha Sultan Nullahs, District Rajanpur, Punjab.
 - (4) On 4 August 2016 near Korai Wah & Mahesaro Canals, Tehsil Pano Aqil, District Sukkur, Sindh.
 - (5) On 6 August 2016 in Sangani Ghot, District Jhal Magsi and Shah Norani, Hub, Balochistan.
 - (6) On 7 August 2016 in Village Kechhi & Sarktti Michan Khel, District Lakki Marwat, KP.
 - (7) On 7 August 2016 in 8 x Villages of Tehsil Lehri, District Sibi while 2 x Villages of Tehsil Saroona, District Khuzdar, Balochistan.
 - (8) On 19 August 2016 in Tehsil Lehri, District Sibbi, Balochistan.
 - (9) On 27 August 2016 in Tehsil Uthal & Windar, District Lasbela, Balochistan.
 - (10) On 2 September 2016 in Village Gamba, Tehsil Aliabad, District Skardu, GB.
- i. **Joint Search & Rescue Operation in Balochistan.** On 6 August 2016, 5 x Vehicles carrying 54 x Passengers were hit by a flash flood in Zardalu near Mangi Dam District Harnai, Balochistan resulting in 5 x deaths. Search and Rescue operation was jointly conducted by Rescue 1122 Balochistan and Frontier Corps Balochistan under the supervision of DG PDMA Balochistan. 49 x Persons were rescued due to timely joint operation.
- j. **Swift Clearance of Landslides.** Due to continuous monitoring, timely coordination and a well-integrated response by NDMA, NHA, Pak Army, FWO and concerned Provincial / District Administration, frequent landslides along following important National arteries were cleared in time:-
- (1) Gilgit – Skardu (S-1) Road.
 - (2) Karakoram Highway (KKH).
 - (3) Nowshera – Chitral (N-45) Road.

- (4) Khawazakhela – Besham (N-90) Road.
- (5) Chakdara – Kalam (N-95) Road.
- (6) Kohala – Muzaffarabad (S-2) Road.
- (7) Abbottabad – Murree Road at Charian in Galiyat.
- (8) Murree – Kohala Road.
- (9) Rawalpindi – Sudhnoti Road.

k. **Creation of National Reserve of Flood Fighting Equipment.** To retain flexibility and enhance response capacity of Pak Army, NDMA created Central Reserve North and South as under:-

- (1) 25 x Fiber Glass Boats, 25 x OBMs and 750 x Life Saving Jackets were handed over to Pak Army for storage at **Rawalpindi**.
- (2) 25 x Fiber Glass Boats, 25 x OBMs and 750 x Life Saving Jackets were handed over to Pak Army for storage at **Abdul Hakeem**.

l. **Procurement of Boat Tracker System.** To facilitate location of real time movement of boats, PDMA Punjab provided 475 Boat Trackers to Rescue 1122. These trackers were installed in boats at D.G.Khan, Multan, Muzaffargarh, and Rajanpur.

m. **Provision of Timely Traffic Diversion.** A bridge on Karachi – Quetta Road (N-25) at Winder, District Lasbela, Balochistan was damaged due to flash flood on 27 August 2016. Prompt mobilization of available resources by local administration led to swift provision of diversion thus ensuring uninterrupted flow of traffic along an important communication artery between Balochistan and Sindh.

n. **Chairman NDMA's Visit to Ursoon District Chitral.** In the backdrop of devastation of flash flood of 2 July 2016 in Ursoon Village, Tehsil Droash, District Chitral, Chairman NDMA alongwith DG PDMA KP and PTV Team visited affected people on 8 July 2016. Visit of distressed people of Ursoon Valley by high ranking officials of disaster management bodies and announcement of a relief package helped addressing their urgent needs to a great extent.

11. **Weaknesses**

a. **Non-Adoption of Standardized Situation Report (SITREP) Format.** To ensure uniform and objective disaster reporting by all stakeholders, NDMA issued a well deliberated and comprehensive SITREP Format before Monsoon Season. The aim was to compile error free data, analyse, plan and assist quick decision making by avoiding lengthy method of data compilation susceptible to erratic disaster reporting. The effort did not yield desired results as only PDMA KP & Balochistan followed given SITREP Format during the Season.

- b. **Gaps in Inter Provincial Coordination.** Rawalpindi – Kashmir Road at Azad Pattan, Tehsil Kahuta, District Rawalpindi was blocked due to a landslide on 27 August 2016. The road being in the domain of C&W Department Punjab at a far flung area had shortage of earth moving resources. Coordination for quick mobilization of existing earth moving resources of AJK Government being in close vicinity could not materialize due to delays in response mechanism. The road was cleared for traffic through exhaustive efforts by local administration and available resources of C&W Department but it resulted in delay of two days to open an important communication artery between Punjab and AJK.
- c. **Gaps in Coordination Mechanism.** Some important events were not passed in time to NDMA by relevant stakeholders forcing direct interface with terminal response tier for updation / monitoring of events thus bypassing input of intermediary response tier in the process. Monitoring of flooding in Aik & Pulkhu Nullahs and Deg Nadi on 27/28 July 2016 was undertaken through direct contact with District Flood Control Centres.
- d. **Incomplete Flood Mitigation Measures Downstream Mangla Dam.** To protect life and property of the people along River Jhelum, installation of control gates / structures alongwith sumps / wells at drainage outlet of Jhelum City was undertaken by Jhelum District Administration. However, issue of encroachment removal from Jhelum River especially at Barakas Nullah and rehabilitation of protective bunds remained oscillating between Jhelum District Administration, NHA and WAPDA.
- e. **Inadequate Capacity for Urban Flooding.** Continuous rains led to Urban Flooding in Karachi and Hyderabad on 6 August 2016. PDMA Sind in close coordination with local administration avoided losses, however, some of the capacity issues surfaced during management of Urban Flooding like shortage of high powered de-watering pumps and inefficient sewerage water disposal system.
- f. **Loss of Lives due to Neglect.** On 30 July 2016, a van carrying 27 x Passengers ventured a nullah having flash flood in Khyber Agency resulting into death of all passengers. The accident pointed out disregard of flood warning and driving in a hill torrent in rainy condition.
- g. **Rehabilitation of Shori Nullah Protection Bund.** A breach in Shori Nullah Bund, district Rajanpur inundated a significant area on 11 July 2016. To avoid any damage to Kashmore City / Cantonment, Punjab Government was sensitized to strengthen / raise Shori Nullah Bund on emergency basis in coordination with Sindh Government. The issue is still unresolved and merits immediate attention.

- h. **Ursoon Valley Flash Flood – A Case Study**. On 2 July 2016, flash flood in Ursoon Valley, District Chitral claimed 27 x deaths, 4 x Injured and 55 x Houses damaged. PDMA KP assisted by NDMA, Pak Army and other PDMAs made substantial rescue and relief efforts to manage the disaster.

12. **Way Forward**. To refine response mechanism, pertinent recommendations based on the management of Monsoon 2016 are given below. All concerned are requested to take appropriate actions as part of preparedness for Monsoon 2017:-

- a. **Enhanced Response Mechanism**. Following measures are likely to infuse added refinement in response mechanism for management of Monsoon Season:-

- (1) Provision of timely information regarding incidents and response.
- (2) Innovative use of modern technology.
- (3) Special conferences by relevant stakeholders on occurrence of any extreme events will assist timely decision making process.
- (4) PDMAs to make use of NDMA's Standardized Situation Report (SITREP) Format & system of incident reporting has to be made more efficient.
- (5) Placement of earth moving machinery in remote mountainous districts of AJK, GB & KP for timely clearance of roads / landslides.

- b. **Protective Measures against Flash Flood**. Monsoon Season 2016 quantified anticipated losses due to flash flood events. Following protective measures based on experiences of Monsoon Season 2016 will help mitigate such losses in future:-

- (1) Awareness drive of recorded flash flood history in known water channels.
- (2) Long term planning for rehabilitation of population under threat of flash floods. To start with, population residing in Ursoon Valley may be suitably rehabilitated at a safe location to avoid similar losses in future.
- (3) Signposting of waterways in local language with known flash flood history. It should clearly demarcate threat level of waterways preventing any misadventure to cross.
- (4) Exercise community based vigilance mechanism for settlements near or inside waterways as under:-
 - (a) Placing of round the clock lookouts especially at night or during the period of intense rain.
 - (b) Use of sirens or announcements on loud speakers of mosques.
 - (c) Lightening of fire and drum beating by the people living at higher places in an area.

- c. **Protective Measures against Urban Flooding.** Following protective measures based on experiences of Monsoon Season 2016 will help mitigate such losses in future:-
- (1) Identification of low lying areas prone to ponding / inundation in congested areas of mega cities.
 - (2) Preparation of hazard maps of major cities against Urban Flooding based on recorded history or envisaged circumstances for sensitization, awareness, early warning and evacuation of vulnerable communities.
 - (3) Capacity building of Municipal Corporation with priority to Municipal Corporations of mega cities. Attention must be given to availability of requisite number of heavy duty de-watering pumps and generators.
 - (4) Widening / dredging of sewerage drains.
 - (5) Removal of encroachments from sewerage drains thus reclaiming original extents of such drains.
- d. **Inter Provincial / Regional Coordination.** During management of disasters, inter Provincial / Regional coordination mechanism can render required assistance especially in far flung areas in shortest possible time thus reducing sufferings of distressed population. Information about resources of neighbouring Provincial / Regional Government resources can be more conveniently incorporated in response phase.
- e. **Resolution of Major Issues.** Following issues need to be resolved by relevant stakeholders at priority:-
- (1) Flood mitigation measures downstream Mangle Dam.
 - (2) Rehabilitation / strengthening of Shori Nullah Protection Bund.
- f. **Lessons of Ursoon Valley Flash Flood.** Management of Ursoon Valley Flash Flood has resonated the need to keep District Chitral in special focus as far as disaster management is concerned. Following measures are necessary:-
- (1) Placement of response measures before the onset of Monsoon. This may not only be considered for Monsoon Season but also as part of preparedness activities for other disasters, as accessibility across Lowari Top becomes questionable especially after onset of Winter Season.
 - (2) Procurement and placing of heavy earth moving machinery for District Chitral as per already identified hazard prone areas.
 - (3) Commissioning of Rescue 1122 service in District Chitral.

- (4) Feasibility for construction of a warehouse in Chitral for forward placing of Provincial relief assets. As an interim measure, placing of a FLOSPAN each at tehsil level in Chitral District may be considered.
- (5) In case of a disaster in Chitral, contingency planning for guaranteed Aviation effort.
- (6) Execution of DRR specific interventions in the district at a fast pace.
- (7) Afghanistan National Disaster Management Authority (ANDMA) is to be approached through MoFA for exchange of casualties / dead bodies taken away by Kunar River.

13. **Conclusion**. After Super Floods of 2010, it was year 2016 which saw relatively less intense Monsoon Season but more pronounced factor during the year was emergence of intense Pre-Monsoon Rains. Pre-Monsoon Rains coupled with actual Monsoon 2016 posed myriad challenges for disaster management structure of the Country. It was through paradigm shift from reactive to proactive approach with focus on prevention, mitigation, preparedness and capacity enchantment of relevant disaster management bodies that above challenges were handled in a more confident manner.

Annex A

To Post Disaster Report Monsoon 2016

CHRONOLOGICAL EVENTS OF MONSOON 2016

Serial	Date	Event	Location
1.	2 July 2016	Flash Flood	Ursoon Valley, District Chitral, KP
2.		Canal Bund Breaches	Shahhiwah & Manjhuta Bunds, District Sohbatpur, Balochistan
3.	10 Jul 2016	Landslides / Road Blocked	Murree – Kohala Road, Punjab
4.	11 July 2016	Canal Bund Breaches	2 x Breaches at Shahiwah Canal and 3 x Breaches at Manjhuti Canal District Sohbatpur, Balochistan
5.	12 July 2016	Bund Breach	Breach in Shori Nullah Bund, District Rajinpur, Punjab
6.	13 July 2016	Road closed	Due to rains, third lane on M-1 at 423-424 km marker along Median Drains Gilgit, KP
7.	14 July 2016	Landslides / Road Blocked	Dar, District Poonch & Afsar Market District Sudhnoti, AJ&K on Rawalpindi-Rawlakot Road (Goi Nullah Road)
8.		Landslides / Road Blocked	Malamjaba Speena, Swat, KP & Karora, District Shangla on Besham - Swat, KP
9.	15 July 2016	Flash Flood	Bilchi Village, Harmosh Valley, District Gilgit
10.		Landslides / Road Blocked	KKH was blocked at three places each between Gilgit - Hunza and Gilgit – Skardu
11.	15 July 2016	Lai Nullah Alert	Due to heavy rain following alerts were issued by PMD Punjab:- <ul style="list-style-type: none"> • Rainfall Alerts • Pre-Alert of water level at Kattarian, Rawalpindi • Water receded after the rain stopped and Lai Nullah started flowing at normal level
12.	17 July 2016	Landslides / Road Blocked	Naran, Gilgit, KP
13.		Landslides / Road Blocked	Gilgit - Skardu Road (RD-26)
14.		Landslides / Road Blocked	Matti Khwar and Baradam near Lowari Tunnel on Dir – Chitral Road (N-45), KP
15.	19 July 2016	Mudflow / Road Blocked	Tattapani, AJK, SDM and between Chilas - Gilgit, (Km 467+270 & 662+00)
16.		Landslide/ Road Blocked	Charsadda – Kalam Road (N-95) at Km 41+225 near Fizagut Park, KP

Serial	Date	Event	Location
17.		Landslides / Road Blocked	Abbottabad - Murree Road at Charian Near Bara Gali in Galiyat, KP
18.		Landslides / Road Blocked	Gilgit –Skardu Road (S-1) at Shangus
19.	22 July 2016	Landslides / Road Blocked	Abbottabad - Murree Road at Charian Near Bara Gali in Galiyat, KP
20.		Landslides / Road Blocked	Khawazakhela - Besham Road (N-90), KP
21.	27 July 2016	Road Blocked	Havelian - Rajoya Road, Abbottabad, KP
22.	27/28 July 2016	Flooding due to Heavy Rains	Aik, Palkhu and Deg Nadi Nullah, Sialkot, Punjab
23.	28 July 2016	Mud Slides / Road Blocked	KKH at Km 475 near Raikot, Distt Chilas, KP
24.	30 July 2016	Flash Flood	Khyber Agency, KP
25.	2 August 2016	Nullah Flooding	Nullah Chachar, Nullah Sultan, District Rajanpur, D.G.Khan, Punjab
26.	3 August 2016	Road Blocked	D.I.Khan - Mughal Kot (N-50), 415-417 Kms, District D.I.Khan, KP
27.	4 August 2016	Canal Breaches	Korai Wah Canal, Tehsil Pano Aqil, District Sukkur, Sindh
28.	5 August 2016	Canal Breaches	Mahesaro Canal, District Sukkur, Sindh
29.		Urban Flooding	Karachi, Sindh
30.	6 August 2016	Flash Floods	Zardalu Near Mangi Dam, District Harni, District Jhalmagsi, District Lasbela Balochistan
31.		Urban Flooding	Karachi, Hyderabad, Sindh
32.	7 August 2016	Very High Level Flood	Marala, Sialkot, Punjab Khanki, Qadirabad, Mangla, Dag Nadi
33.	7 August 2016	Sharp Peak of High to Very High Flood at Mangla	Mangla Dam Management called Flood Mitigation Committee meeting on 8 August 2016
34.		Very High Level Flood in Deg Nadi	Deg Nadi achieved 32,934 Cusecs, Sialkot, Punjab
35.		Breaches in Lehri Nadi	District Sibi, Balochistan
36.		Flash Floods	District Khuzdar, Balochistan
37.		Medium Level Flood	River Chenab at Trimmu, Punjab
38.		Flash Floods	Village Kechi and Sarkatti Michan Khel, District Lakki Marwat, KP
39.	10 August 2016	Rains / Storm	District Bannu, KP
40.		Road Blocked	Patch of Gilgit - Skardu Road (S-1) at Chamchu, Randu, District Skardu
41.	16 August 2016	Mangla Dam	Mangla Dam achieved Maximum Conservation level of 1,242 feet

Serial	Date	Event	Location
42.	19 August 2016	Breaches in Nullah	Ghogi Nullah, District Kohlu, Balochistan
43.	27 August 2016	Road Blocked	Rawalpindi - Sudhnoti Road at Azad Pattan, Tehsil Kahuta, Punjab
44.		Flash Floods	Tehsil Uthal and Windar, District Lasbela, Balochistan
45.	2 September 2016	Flash Floods	Gamba, Tehsil Aliabad, District Skardu
46.	10 September 2016	Flash Floods	Village Palam, Tehsil Bahrain, District Swat, KP
47.	11 September 2016	Road Blocked	Road Chakdara - Kalam (N-95), near Madian (Km-83-85), KP

Annex C

To Post Disaster Report Monsoon 2016

RELIEF PROVIDED PRE-MONSOON RAINS 2016

Items	KP		Balochistan		AJ&K		FATA		GB						Grand Total
	PDMA	NDMA	PDMA	NDMA	PDMA	NDMA	PDMA	NDMA	GBDMA	PDMA Punjab	PDMA Baluchistan	NDMA	Utility Stores	Total GB	
Tents	1,600	-	409	-	-	300	-	60	8	1,000	-	550	-	1558	3,927
Milk Powder (Tons)	-	-	-	-	-	-	-	-	-	-	-	0.48	1.03	1.51	1.51
Flour (Tons)	-	-	-	-	-	1	-	-	-	-	-	16	-	16	17
Mix Ration (Tons)	10	-	35.5	-	-	-	-	-	7.9	100	-	-	-	107.9	153.4
Tarpaulin	-	-	4	-	-	270	-	-	688	-	-	-	-	688	962
Blankets	1,800	-	610	-	-	400	-	-	-	-	-	5350	-	5350	8,160
Plastic Mats	1,200	-	606	-	-	270	-	-	112	-	-	-	-	112	2,188
Kitchen Sets	-	-	-	-	-	-	-	-	25	-	-	-	-	25	25
Dall (Tons)	-	-	-	-	-	-	-	-	-	-	2.5	-	-	2.5	2.5
Rice (Tons)	-	-	-	-	-	0.5	-	-	-	-	2.5	-	-	2.5	3
Sugar (Tons)	-	-	-	-	-	0.2	-	-	-	-	1.5	-	-	1.5	1.7

Annex D
To Post Disaster Report Monsoon 2016

RELIEF PROVIDED MONSOON – 2016

Items	Khyber Pakhtunkhwa				Balochistan		Punjab		GB		Total
	PDMA / DDMA	NDMA	PDMA Sindh	PDMA Punjab	PDMA	NDMA	PDMA	NDMA	GBDMA	NDMA	
Tents	1,031	-	100	300	1,150	-	-	-	15	-	2,596
Food Items (Tons)	4.95	30 (Flour)	-	10	48.2	-	50	-	0.45	-	143.6 Tons
Blankets / Quilts	766	-	200	1,000	250	-	-	-	16	-	2,232
Plastic Mats	700	-	-	300	1,000	-	-	-	10	-	2,010
Kitchen Sets	100	-	-	-	-	-	-	-	-	-	100
Mosquito Nets	-	-	-	-	650	-	-	-	-	-	650
Cotton Mattresses	100	-	-	-	-	-	-	-	-	-	100
Dewatering Pumps	-	-	-	-	-	-	25	-	-	-	25
Fodder (Packs)	-	-	-	-	-	-	5,000	-	-	-	5,000
Oil Stove	-	-	-	-	-	-	-	-	15	-	15
Water Cooler	-	-	-	-	-	-	-	-	15	-	15