

### RESILIENCE



Towards A Disaster Resilient Pakistan

January - December 2016

### INSIDE THIS ISSUE

- CHAIRMAN'S FOREWORD
- COVER STORY
- RESPONSE OUTLOOK
- FORGING RESILIENCE -DISASTER RISK REDUCTION
- CAPACITY BUILDING INITIATIVES
- GLOBAL OUTREACH
- OUTREACH TOWARDS AWARENESS
- FROM THE NEWS DESK
- EVENT CALENDAR
- NATIONAL DISASTER WATCH
- GLOBAL DISASTER WATCH

### COVER STORY

### Tragic Airline Crash - PIA ATR 42 PK- 661 7 December 2016

On 7th December 2016, PIA ATR (42 aircraft Flight No PK-661), carrying total 47 passengers from Chitral to Islamabad led to an unfortunate crash leaving wreckage ablaze strewn over an area about 2 square kilometres on the side of a hill between villages of Saddha Batolni and Gug near Pakistan Ordnance Factory, Havelian in Khyber Pakhtunkhwa. The recovery operation was conducted in four phases; recovery from accident site to Ayub Medical Complex Abbottabad by road, transportation of dead bodies from Abbottabad to PIMS Islamabad by air, DNA sampling and storage of dead bodies in Islamabad, identification and handing over of bodies to NOKs.

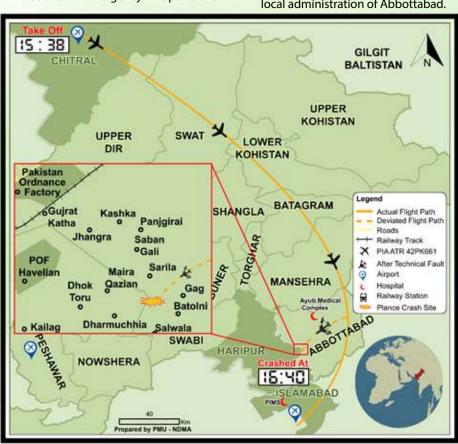
NDMA took a lead role in rescue and recovery operation through collaboration of all relevant stakeholders.

National Emergency Operations

Centre (NEOC) was activated to ensure timely and prompt response.

- CDA, USAR team was mobilized for rescue operation.
- NDMA made available 3 helicopters (requisitioned from Ministry of Interior) for transportation of the dead bodies to Islamabad PIMS Hospital.
- NDMA Teams were deputed both at the Plane crash site and at PIMS Hospital Islamabad for effective coordination besides transportation of dead bodies.
- Voluntary Assistance by Medical Staff comprising pathologist from Combined Military Hospital Peshawar, forensic experts from Civil Hospital Peshawar and other philanthropist organizations augmented efforts of local administration of Abbottabad.

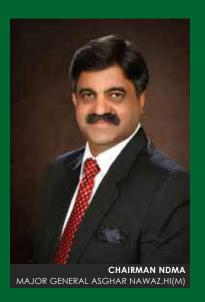




### **CHAIRMAN'S FOREWORD**

Pakistan's extreme vulnerability to natural and man-made disasters is a well-known fact. Flash Floods in Chitral, Gadani Ship Fire incident and PIA, ATR Crash are only a few manifestations of this fact where NDMA has played leading role for the coordination of rescue, relief and recovery efforts with all stakeholders. NDMA not only oversees all phases of disaster management but also constantly endeavors to create awareness about the Disaster Risk Reduction. Pakistan is also member of relevant international forums on DRR which affords us an opportunity to learn from global best practices in the realm of DRM enabling us in improving our own protocols and SOPs.

During the proceeding one year, NDMA has successfully persuaded the formulation of National Fire Safety Provisions in the Existing Building Code. Pakistan School Safety Framework, National Risk Insurance Framework and National Disaster Risk Management Fund, First National Guidelines and Execution Methodology for MHVRA and completion of MHVRA in 5 districts were the major initiatives which NDMA spearheaded. Besides this notwithstanding resource constraints and challenges, a concerted and well coordinated proactive response is much warranted to thwart the effects of disasters. I commend our stakeholders and partners for their support to NDMA towards realization of our shared vision "Tayyar Pakistan".





Abbottabad: Coordinated efforts to dispatch dead bodies from Abbottabad to Islamabad.

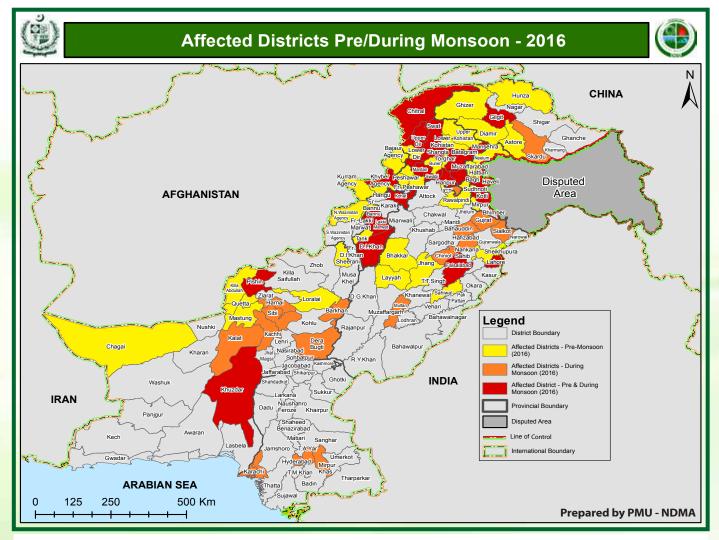
- NADRA Mobile Biometric Identification teams assisted in early identification process through available thumb evidences.
- NDMA facilitated availability of Forensic Odontologist from Health Department, Govt of Punjab to PIMS, dental evidence was effectively used in early recognition process of deceased.
- Facilitation desks were established by district administration Abbottabad and PIMS to facilitate the bereaved families.
- Management for disposal of dead bodies was coordinated by NDMA from a central location at PIMS due to non-availability of morque capacity to store all 47 bodies in Abbottabad.
- Safe Custody of Black Box and belongings of victims by Law Enforcement Agencies ensured evidence saving and early recovery of dead bodies.
- 30 Ambulances were arranged at Helipad Islamabad.
- Constant updated information to local/foreign media was

- ensured by NDMA.
- Personal Involvement of Minister for CADD, District Administration and PIMS Administration ensured timely identification process and disposal of bodies.

During current times, possibility of air crash disasters can not be ruled out. Though integrated National rescue and recovery efforts were launched. Yet gaps in response milieu to such disasters are also anticipated. Thus, impact can be mitigated to lowest through analysis for configuring a corresponding response. In this regard, capacity enhancement of atleast one hospital each in four Provincial capitals including the Federal capital to handle mass casualties, allocation of dedicated aviation assets to NDMA to ensure timely outreach to the accident site, creation of a Disaster Victim Identification Unit each at Federal and Provincial Capital level, merger of organization with overlapping mandates at National level are some of the predominant factors.

### **RESPONSE OUTLOOK**

### **MONSOON MENACE-2016**



Affected Districts Pre/During Monsoon - 2016

Pakistan has experienced recurring flooding every year since 2010, though, the Year 2016 did not experience major flooding incident, yet it was outlined by recurrence of extreme weather events. More pronounced factor during the year was emergence of intense Pre-Monsoon rains which coupled with Monsoon 2016 posed challenges for disaster management structure of the Country. The pre monsoon spell started from 9 March and lasted till April 2016 resulting in 267 deaths besides damage to 3,028 houses.

While, Monsoon Season 2016 unfolded with five rain spells starting from 28 June till 16 September 2016 caused 149 deaths, 71 injuries and damage to 691 houses. Significant events of the Season included urban flooding (Quetta, Karachi, Hyderabad, Lahore), flash flooding (Chitral, GB, Khyber Agency, Lasbela), flooding in District Sialkot (Deg & Aik Nullahs) and landslides (GB, KP, AJ&K). More pronounced was the blockade of KKH from 3-15 April 2016 due to multiple landslide and flash flood incidents in district Chitral on 2 July 2016. In response, immediate relief assistance was provided to the affectees across the Country.

Owing to PMD's forecast for early Monsoon, preparedness activities started well in time. Best practices were adopted before

and during the monsoon season that ensured timely and comprehensive preparedness and helped in mitigating damages and losses.

- National Post Flood-2015 Review Conference was organized on 22 January 2016 to share lessons learnt for future preparations.
- High level consultative meetings were held at all provincial/regional levels and with respective Chief Secretaries to expedite Monsoon preparations.
- Pre-Pre-Monsoon Instructions were issued to relevant stakeholders on 18 March 2016.
- To facilitate compilation of provincial / regional contingency plans National Pre-Monsoon Preparedness Conference 2016 was held on 9 June 2016.
- National Monsoon Response Directive 2016 was issued on 15
   June 2016 to lay down response guidelines for all stakeholders at Federal and Provincial level.
- Innovative Virtual Call Centre (VCC) was set up at NDMA to ensure prompt response to calls from across the Country in the event of disaster.

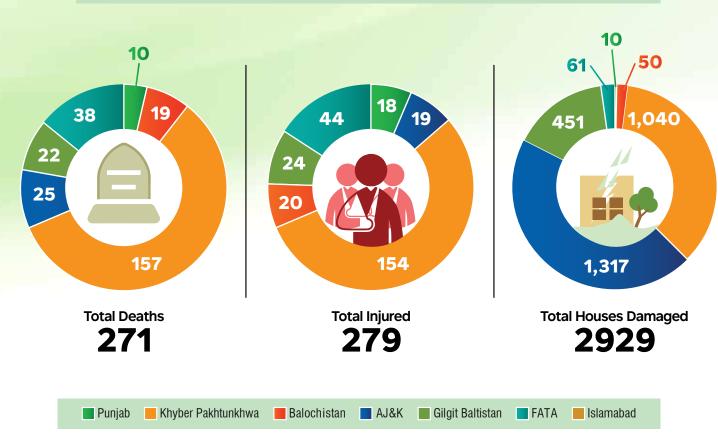
- ROBO Calls for Livestock Evacuation, Early Warning for farmers of vulnerable districts at Union Council/ Tehsil level were instituted first time in Punjab through Livestock & Dairy Development Department.
- Installation of boat and vehicle tracker system through PDMA Punjab.
- Regular SMS Alerts were generated by PMD.
- Rainfall data was regularly shared by PMD to ascertain trend of Monsoon Season.
- Emergency operation centres at National, Provincial and Regional levels remained activated for entire duration of the Monsoon Season.
- To monitor weather patterns and devise response strategy Monsoon Review Conferences were regularly organized in NEOC, NDMA.
- Daily Situation Reports, alerts/advisories were issued to relevant stakeholders by NDMA.
- Continuous monitoring of Eastern Rivers / tributaries discharges including Western Rivers helped avoid losses / damages during regulation of river flows.
- Timely evacuations of considerable population were ensured by local administration from the vulnerable areas of Harmosh Valley, GB on 15 July 2016, village Gamba, Tehsil Aliabad, District Skardu, GB on 2 September 2016 without any human losses.
- Swift clearance of landslides at important National arteries was ensured through integrated response by NDMA, NHA,

- Pak Army, FWO, concerned Provincial / District Administration.
- National reserve of flood fighting equipment was created by NDMA which was handed over to Pak Army for storage at Rawalpindi and Khanewal.
- Chairman NDMA visited district Chitral and Gilgit Baltistan to oversee rescue & relief efforts.

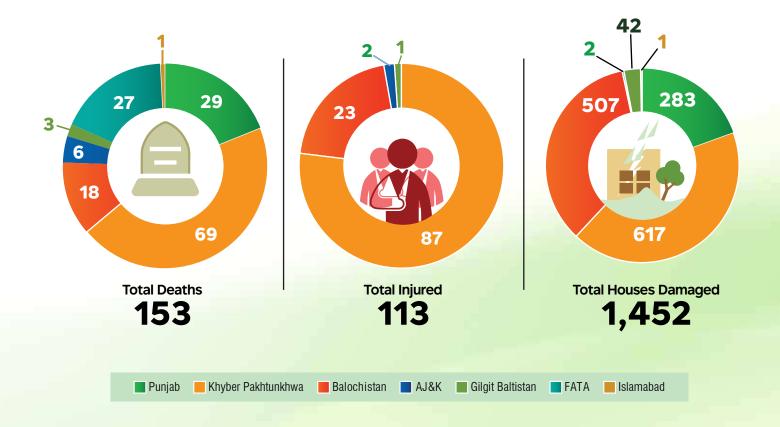
An early Monsoon phenomenon was experienced first time that proved more intense and devastating in nature than actual Monsoon 2016. A well-integrated National effort by all stakeholders including PMD, FFC, SUPARCO, NHA, WAPDA, USAR team, Pakistan Army, Pakistan Air Force, NDMA & disaster management bodies at provincial / district levels, led to successful mitigation of hydro-meteorological hazards of the Season.

However, to further augment response mechanism, pertinent recommendations based on validation of best practices and weaknesses observed during the management of Monsoon 2016 includes, need for enhanced coordination mechanism at inter provincial/regional level & among all relevant stakeholders, prepositioning of dedicated earth moving machinery at identified hazard prone areas, planning for rehabilitation of population under threat of flash floods at safe locations, identification of location for installation of relief camps, timely rehabilitation / strengthening of protective bunds, adequate capacities to mitigate urban & flash flood will help to mitigate losses and supplement response efforts in future.

### DAMAGES AND LOSSES PRE-MONSOON SEASON (MARCH-MAY 2016)



### DAMAGE AND LOSSES MONSOON SEASON (JULY-SEPTEMBER 2016)



### **RELIEF PROVIDED PRE-MONSOON RAINS (MARCH – MAY 2016)**

Province / Region	KHYBER PAKHTUNKHWA	BALOCHISTAN	AZAD JAMMU & Kashmir	FATA		G	ILGIT BALTISTA	N			
Provided by	PDMA-KP	PDMA Balochistan	NDMA	NDMA	GBDMA	PDMA PUNJAB	PDMA BALUCHISTAN	NDMA	UTILITY STORES	Total GB	GRAND TOTAL
Tents	1,600	409	270	60	8	1,000	-	550	-	1,558	3,897
Milk Powder (Tons)								0.48	1.03	1.51	1.51 Tons
Flour (Tons)			1				-	16	-	16	17 Tons
Mix Ration (Tons)	10	35.5	-		7.9	100	-	-	-	107.9	153.4 Tons
Tarpaulin		4	270		688	-	-	-	-	688	962
Blankets	1,800	610	400		-		-	5,350		5,350	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 Tons
Rice (Tons)	-	-	0.5	-	-	-	2.5	-	-	2.5	3 Tons
Sugar (Tons)	-	-	0.2	-	-	-	1.5	-	-	1.5	1.7 Tons

### **RELIEF PROVIDED MONSOON (JULY – SEPTEMBER 2016)**

Prov	vince / Region		KHYBER PA	KHTUNKHWA		BALOCHISTAN	PUNJAB	GB	GRAND
	Provided by	PDMA/ DDMA (KP)	NDMA	PDMA Sindh	PDMA Punjab	PDMA Balochistan	PDMA-PUNJAB	GBDMA	TOTAL
	Tents	1,031	-	100	300	1,150	-	15	2,596
	Food Items (Tons)	4.95	30	-	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
B	Fodder (Packs)	-	-	-	-	-	5,000	-	5,000
6	Oil Stoves	-		-	-	-	-	15	15
8	Water Coolers	-	- '	-	-		-	15	15



### **Snow Avalanche in District Chitral**

A snow avalanche occurred on 20 March 2016 affected Karimabad village in District Chitral consequently ten students were buried under the avalanche. Rescue teams were immediately mobilized by the Government of Khyber Pakhtunkhwa, District administration, police, levies, Chitral Scouts and local volunteers. On request of PDMA KP, NDMA transported CDA Urban Search and Rescue (USAR) Team via MI-17 helicopter requisitioned from Anti-Narcotics Force (ANF) to the site for rescue operation. Dead bodies of seven students were recovered while remaining three bodies were recovered after melting of snow.



NDMA dispatched Search & Rescue Team to assist in search & rescue operation at Susum avalance area in District Chitral.

### Landslides along Karakorum Highway (KKH)- Gilgit Baltistan

Pre monsoon rain spell resulted in landslides at multiple places along KKH and Gilgit Skardu road, disconnecting road network to GB from 3-15 April 2016. In response, NDMA coordinated timely clearance of about 159 landslides and opening of the roads in assistance with NHA, FWO, Pak Army and Governments of KP & GB. NDMA coordinated 23 Sorties of C-130 with PAF from Islamabad to Gilgit and transported 102 tons of relief items & 16 tons of Wheat. One MI-17 helicopter was provided to PAF from Pak Army for supply of relief to Nultar Valley and evacuation of ailing women from the remote valley to Gilgit which only had air access link.



Gilgit Baltistan 12 April 2016: NDMA sends relief for landslide affectees

### Flash Flood in Ursoon Valley, District Chitral

On 2 July 2016, flash flood in Ursoon Valley, Tehsil Droash, District Chitral washed away a mosque and local civilian population claiming 27 deaths, 4 injured and damaged 55 houses. NDMA, Pak Army and other PDMAs made substantial rescue and relief efforts to manage the disaster. NDMA distributed 30 Tons flour to the flood affectees who lost their wheat stocks during flood.



Chitral 11 July 2016: NDMA teams distributed relief among flood affectees

### Relief Assistance to Displaced People of Unprovoked firing along LOC

On 22 November 2016, NDMA handed over 2000 winterized tents and 1,000 Tarpaulins to the State Disaster Management Authority (SDMA). These tents were provided on the request of SDMA to cater the needs of the people displaced by the unprovoked firing of Indian occupied forces from across the Line of Control in AJ&K. On the direction of the Prime Minister of Pakistan, NDMA paid Rs. 101.60 million in December 2016 as grant-in aid to 237 affectees.



## Cash Assistance Provided to Affectees of Unprovoked Indian Firing Across LOC RS. 101.60 RS. 101.60 RS. 1000,000 RS. 1000,000

### FORGING RESILIENCE-DISASTER RISK REDUCTION

### First NDMP Steering Committee Meeting on NDMP Implementation Road Map

NDMP Steering Committee, constituted for monitoring & evaluation of National Disaster Management Plan (NDMP) Implementation Progress, was convened at NDMA on 7-8 January, 2016. The meeting provided Strategic Policy Guidelines in the realm of NDMP Implementation Roadmap (NDMP-IR) 2016-2030 which was unveiled on 19 October, 2015 covering non-structural interventions including Multi Hazard Vulnerability and Risk Assessment (MHVRA), Community Based Disaster Risk Management (CBDRM), Government Officials Emergency Response Exercise (GOERE) and Mobilization of Volunteers Emergency



Islamabad 7 - 8 January, 2016: First meeting of NDMP Steering Committee

Response Exercise (MOVERE). The meeting was concluded with a resolve to rigorously monitor progress made against each intervention enlisted in NDMP-IR.

### National Seismic Working Group (NSWG) Activities

National Seismic Working Group (NSWG), comprising National Experts, has been constituted by NDMA for planning, monitoring and coordination of activities pertaining to Seismology. In this regard a meeting was held on 4 February 2016 to review progress made on interdepartmental data sharing, appraisal on PMD's Seismic Web Portal and discussion on scope definition of future activities. The meeting was attended by representatives of GSP, PMD, PEC, Pakistan Atomic Energy Commission, Earthquake Study Center, WAPDA, NHA,



Islamabad 4 February: Seismic Hazard Consultative Meeting

ERRA, NESPAK, Survey of Pakistan, University of Engineering & Technology Peshawar, Ministry of Petroleum & Natural Resources and SUPARCO.

### Strengthening Weather Early Warning System

In order to develop an integrated and efficient early warning system at National, Provincial & Local levels, NDMA took initiative to augment PMD capability for weather forecasting and early warning system by creating synergy among relevant organizations. In this regard a meeting was held on 7 March 2016 at NDMA with representation from PMD, Civil Aviation Authority, Pak Navy and PAF to discuss areas of deficiency and limitations with respect to meteorological aspects. The meeting stressed the need to augment PMD's capability of weather forecasting, SOPs for



Islamabad 7 March 2016: Meeting to discuss Strengthening Weather Early Warning System

data sharing and professional trainings. In follow up, NDMA was instrumental in recommending a six year modernization plan to Federal Government which has now been included in CPEC.

### Resolution of Frequency Interference Issue of Lai Nullah

NDMA has successfully resolved a long outstanding issue between Frequency Allocation Board (FAB), Ministry of Interior and Pakistan Meteorological Department (PMD) for restoration of allocated frequency to Radio Telemetry Communication System installed at Lai Nullah by PMD in 2006. The system plays critical role in Early Warning against the flash flood. The initiative restructured real time capability of PMD to predict possibility of flooding in Lai Nullah during Monsoon 2016.



Islamabad 15 June 2016: Meeting on frequency allocation issues at Nullah Lai

### NDMA Hosted 13th Regional Consultative Committee (RCC) Meeting

13th Regional Consultative Committee (RCC) Meeting on Disaster Management themed "Operationalizing Global Frameworks for Risk-Resilient Development in Asia" was hosted by NDMA in collaboration with Asian Disaster Preparedness Center (ADPC), Bangkok from 17-19 October 2016 in Islamabad. 16 delegates of 13 countries (Afghanistan, Bhutan, China, Indonesia, Maldives, Mongolia, Myanmar, Nepal, Philippines, Sri Lanka, Thailand, Turkey and Vietnam) attended the meeting and shared their recommendations / proposals for operationalization of global frameworks especially, Sendai Framework for Disaster Risk Reduction (SFDRR). The Meeting concluded with a self-explanatory "Islamabad Statement" which proposed a solid regional input of RCC Countries for "Asia Regional Action Plan" adopted at Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR) held in India from 02-05 November, 2016 at New Delhi, India.



Islamabad 17 October 2016: Participants of 13th Regional Consultative Committee Meeting on Disaster Management

### NDMP Steering Committee Meetings on Multi Hazards Vulnerability Risk Assessment (MHVRA)

NDMP Steering Committee Meetings were convened on 9th September & 19th December 2016 to review MHVRA Punjab Study undertaken by Project Management Unit (PMU), NDMA with the financial support of WFP, and to evaluate "MHVRA Policy Guidelines & Methodology for the conduct of MHVRA". The meetings were chaired by Chairman NDMA in which participants from S/F/GB/PDMAs, Ministry of Planning, Development &

Reforms, Finance Division, Economic Affairs Division, PMD, FFC, GSP, Survey of Pakistan, SUPARCO, NIDM, Pakistan Atomic Energy Commission, Center for Earthquake Studies and Earthquake Engineering Centre - UET Peshawar participated. The Committee unanimously endorsed both the MHVRA Punjab Study and Policy Guidelines & Methodology for publication and enforcement.



9 September 2016: NDMP Steering Committee meeting on MHVRA



Islamabad 19 December 2016: NDMP's Steering Committee Meeting - reviewed progress on MHVRA study in line with NDMP implementation.

### Fire Safety Provisions-2016 in Building Code of Pakistan

Building Codes of Pakistan were formulated in 1986 and further modified in 2007 with inclusion of seismic provisions but lacked the provision for Life and Fire Safety. NDMA took initiative to review fire safety regulations in the Country and signed MoU costing Rs 7.824 million with PEC on 15th October 2015 for Development of Building Code of Pakistan – Fire Safety Provisions 2016 (BCP-FSP). The document on Life and Fire Safety Provisions has been formulated & approved by PEC Governing Body on 31 March 2016, approved by M/o Science and Technology and vetted by M/o Law & Justice.

### Penalty Provisions for Non Implementation of Existing Building Code

NDMA since 2010 has been pursuing legislation for Enforcement of Building Code with its violation to be treated as a criminal offence. After 26th October 2015 Earthquake, the House of Senate of Pakistan referred the matter to Senate Standing Committee on Law, Justice and Human Rights. NDMA tasked as Lead Agency and the core group to formulate proposals after holding consultations with Federal & Provincial stakeholders in

the form of a Bill. A framework has been recommended with the support of NDMA, ERRA, M/o of Housing & Works, CDA and PEC, in November 2016 for implementation of Code with reference to Penal Provisions regarding violation of the said code. This Framework is presently under scrutiny with Senate Standing Committee for legislative process.

### Multi Hazard Vulnerability Risk Assessment (MHVRA) Studies

PMU, NDMA under financial arrangement with WFP carried out MHVRA Study in five districts of Punjab, viz a viz Bahawalpur, Khushab, Jhang, Rahim Yar Khan and Multan. This was first of its kind Study in which all concerned government departments were taken on board to ensure provision of authentic datasets, methodologies and long term sustainability of products. The Study has also been certified by the NDMP Steering Committee. Similar studies are planned to be carried out all across the country

in 157x districts in phased manner in accordance with NDMP Implementation Roadmap (2016-2030). Currently MHVRA studies in Ghotki and Kashmore Districts are being initiated in collaboration with WFP & DFID. Further, MHVRA studies in five districts of Sindh (i.e. Thatta, Badin, Tando Allah Yar, Tando Muhammad Khan and Mirpur Khas) had already been completed with financial support of WFP and technical expertise of ADPC.





NDMA PMU team during field assessment at Multan

NDMA PMU team during field assessment at Bahawalpur

### **Conduct of Geological Hazard Assessment Surveys**

During the year 2016, several Geological Hazard Assessment surveys were carried out in reported vulnerable localities of Districts Ghanche, Gilgit, Skardu, Ghizer & Chitral (village Boson Rai, Tehsil Garm Chasma) and Abbottabad (Village Puna) at the request of GBDMA and PDMA-KP. These surveys were conducted

by Geological Survey of Pakistan (GSP) with the financial support of NDMA. The findings of these surveys along with mitigation guidelines have been shared with concerned quarters for timely implementation.

### Institutional Assessment on the Integration of DRR in Agriculture Sector

NDMA through FAO and in consultation with all Federal and Provincial stakeholders has finalized a Report on Institutional Assessment on Integration of Disaster Risk Reduction in the Agriculture Sector of Pakistan. The Study will facilitate Government

Authorities to redefine priorities and initiate interventions commensurating to dictates of mainstreaming DRR into Agriculture Sector. It will thus contribute towards the desired end state of Disaster Resilient Pakistan in line with NDMP interventions.

### Implementation of DFID Inception Phase of "Building Disaster Resilient Programme" (BDRP)

NDMA in close coordination & financial support of DFID has implemented Inception Phase of Building Disaster Resilient Programme (BDRP), as per agreed Terms of Reference. The Project will be implemented in four districts (Muzaffargarh & Rajanpur in Punjab and Ghotki, Kashmore in Sindh). The intended outcomes include assistance to village communities in preparing for disasters

through early warning systems, risk information, community level response mechanisms and improved linkages with Disaster Management Authorities(DMAs), Community Based Disaster Risk Management (CBDRM), climate change adaptation measures, support government capacity at national, provincial and district levels to better manage disasters.

### **Establishment of Pakistan Fund for Disaster Management**

Government of Pakistan through Ministry of Finance and EAD requested Asian Development Bank (ADB) for a 'Trust Fund' for disaster management. A letter of Exchange (LoE) was signed between EAD and ADB in August 2015 for National Disaster Risk Management Fund as loan from ADB according to which ADB will invest US\$ 1 billion for total cost of NDMP and National Flood

Protection Plan (NFPP-IV) in four tranches with US\$ 250 million each. First tranche of US\$ 250 million has been released by ADB in November 2016. The Fund's programmatic windows are disaster risk management measures based on NDMP and NFPP-IV priorities, disaster risk financing, relief, recovery, reconstruction and rehabilitation.





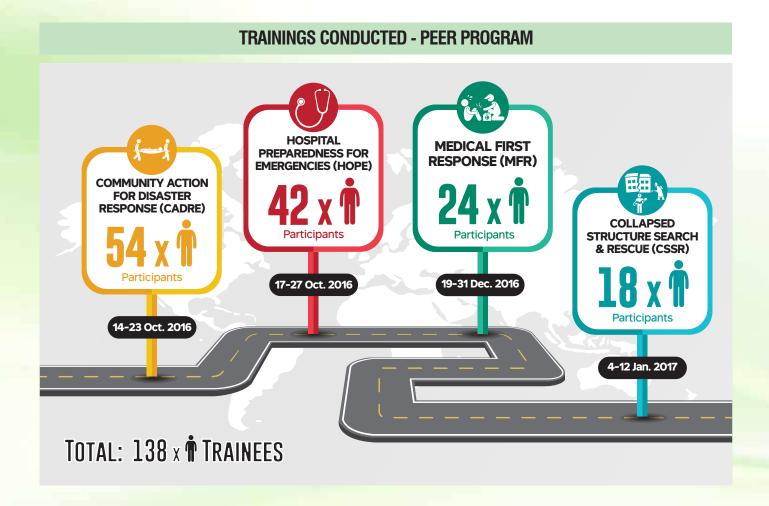
Islamabad 28 June 2016: Meeting with officials of ADB- discussion on Pakistan National Fund for Disaster Management

### **CAPACITY BUILDING INITIATIVES**

### Programme for Enhancement of Emergency Response (PEER)-IV

PEER aims to enhance disaster response capacity, reduce mortality, and increase the survival rate of disaster victims with institutionalize disaster preparedness training programs in ten Asian countries; Bangladesh, Cambodia, Indonesia, India, Lao PDR, Nepal, Pakistan, Philippines, Vietnam and Thailand. Earlier, from 2007 to 2014 periods, approximately 1,500 persons have been trained. In order to plan implementation of PEER, 4th Programme termed as PEER Stage

IV in Pakistan, from 2016 – 2019 a country planning meeting was held at NDMA on 22nd January 2016. The trainings on 4 main courses have successfully been completed in Pakistan from October to January 2017 by implementing partners including NIDM, PRCS, NHEPRN and Emergency Services Academy 1122 Lahore. 138 individuals have been trained from different departments/organizations.



### Second National Industrial Hazards Simulation Exercise

Second National Industrial Hazards Simulation Exercise was organized by NDMA in collaboration with PDMA Sindh, DDMA Ghotki and Engro Fertilizers Limited on 29 March 2016 at Dharki, Sindh. All relevant response agencies/departments including Armed Forces, neighboring fertilizers, Power and Sugar Industry, Civil Defence Sindh, PAF CBRN Defence School and CAER (Community Awareness Emergency Response), industries like FFC, Mari Petroleum Company, Fatima Fertilizers and Liberty Power participated in the exercise. Missing links observed in response mechanism against industrial disasters were compiled and shared with all concerned in the form of Post Exercise Report.



Fire water curtain formation by emergency team

### **Creation of Reserve Stocks of Rescue Equipment**

As part of Flood Contingency Response to retain flexibility and enhance response capacity of Pak Army, NDMA created central reserve North and South, with 50 Fiber Glass Boats (25 each), 50 OBMs 40 hp (25 each), 30 De-watering Pumps (North only) and 1500 life jackets (750 each) which were handed over to Pak Army as a National Reserve on 16 August 2016. These boats have been placed in Multan and Rawalpindi.





### NDMA Launched Pakistan School Safety Framework (PSSF)

Gender and Child Cell (GCC) NDMA, with the support of its partners UNICEF and British Council developed a comprehensive Pakistan School Safety Framework (PSSF) in close consultation with Government and private sector stakeholders. It aims to provide direction for DRM in schools to prepare against natural or man-made hazards. Framework was pretested in selected 68 public and private schools. Trainings of master trainers, teachers and external evaluators have been concluded from 22 November to 20 January 2017 in Balochistan (Quetta), Punjab (Lahore), Gilgit Baltistan (Gilgit), Islamabad, Sindh (Karachi) and Khyber Pakhtunkhwa (Peshawar). The findings of pilot programme will be reviewed by third party evaluators, before its scale up implementation across Pakistan.



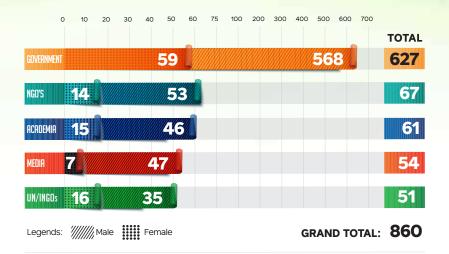
Islamabad 18 August 2016: NDMA in collaboration with UNICFEF organised National Consultative Meeting on Pakistan School Based Disaster Management (PSBDRM) Framework

### **National Institute of Disaster Management (NIDM)**

NIDM is recognized as a premier institute for its valuable efforts in capacity building of relevant stakeholders in the field of disaster management nation-wide. NIDM is endeavoring to achieve desired goals envisaged in NDMP 2012-2022 focused on human resource development to ensure timely preparedness and

coordinated response. During the year 2016, NIDM conducted 20 training courses/workshops and trained 860 individuals from various federal/provincial departments and humanitarian organizations.

### **NIDM TRAININGS CONDUCTED - 2016**





### **Establishment of Humanitarian Response Facilities (HRFs)**

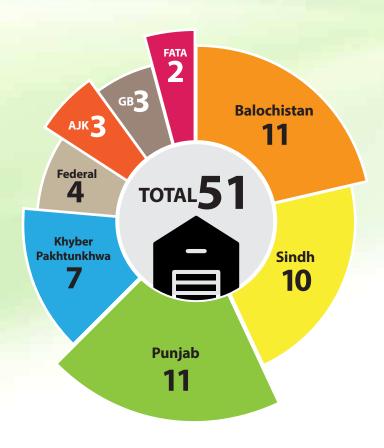
Recurring natural disasters in Pakistan substantiate the need to strengthen the Country's emergency disaster preparedness and response capacity at all levels. NDMA and WFP joint endeavor to establish warehouse network at eight strategic locations in most disaster prone districts to facilitate relief operations at district level. In addition to completion of five HRFs at Muzaffargarh, Quetta, Lahore, Peshawar and Hyderabad, HRF at Sukkur was also completed on 18 May 2016 with funding support provided by the governments of Japan, Australia, Canada, Denmark, Netherlands and the US and have also been officially handed over to respective PDMAs.



Sukkur 18 May 2016: Humanitarian Response Facility (HRF)

### **Installation of FLOSPANS**

In addition to HRFs, NDMA envisioned further enhance storage capacity of districts for stockpiling emergency rescue/relief goods and built strategic reserves in disaster prone districts across the Country, NDMA in collaboration with WFP has successfully completed installation of 51 pre fabricated Flospans as following:



**FLOSPANS Across Pakistan** 

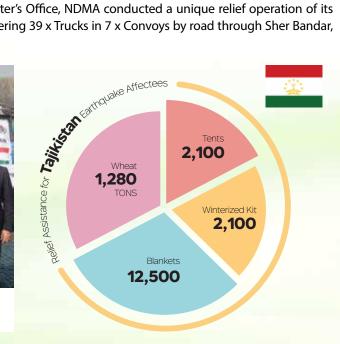
### **GLOBAL OUTREACH**

### Relief Assistance for Tajikistan Earthquake Affectees

An earthquake of 7.2 magnitude hit Gorno-Badakhshan region of Tajikistan on 9 February 2016. The earthquake affected considerable population of Tajikistan. On directives of Prime Minister's Office, NDMA conducted a unique relief operation of its kind, comprised of 40 days. NDMA dispatched relief assistance covering 39 x Trucks in 7 x Convoys by road through Sher Bandar, Afghanistan to Tajikistan from 9 February to 18 March 2016.



Islamabad 9 February 2016-On behalf of GoP, Chairman NDMA handed over 1st relief consignment to Ambassador of Tajikistan H.E. Jononov Sherali

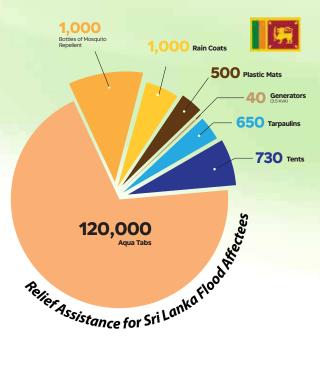


### Relief Assistance for Sri Lanka Flood Affectees

In May 2016, torrential rains resulted in floods and landslides across Sri Lanka affecting massive population. On Directives of the Prime Minister's Office, NDMA coordinated dispatch of relief assistance through 3 x C-130 sorties from Karachi to Colombo from 24 – 28 May 2016.



Srilanka, Bandaranaike International Airport Katunayake, 24 May, 2016: 1st relief consignment handed over by High Commissioner of Pakistan in Sri Lanka
HE Maj Gen (R) Syed Shakeel Hussain to
Sri Lankan Minister for DM Hon. Anura Priyadarshana Yapa M.P.



### **OUTREACH TOWARDS AWARENESS & ADVOCACY**

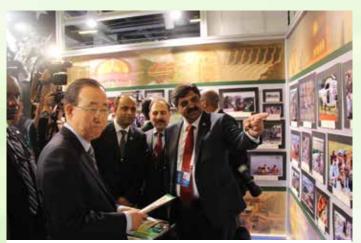
### National Consultative Dialogue on Role of Media in Disaster Management

A National Media Consultative Dialogue organized on 9<sup>th</sup> January 2016 at Islamabad aimed at improving role of media in disaster management and identified key challenges faced during disaster reporting. Eminent media anchors, print media persons, politicians and representatives from civil society participated. The Dialogue concluded with signing of Declaration titled 'Role of Media in Disaster Reporting' focusing on active media participation during pre-disaster preparedness & early warning, bridge communication gap between Media, NDMA, PDMAs and all Government institutions and specialized training of media persons for disaster reporting.



### **Participation in First World Humanitarian Summit (WHS)**

NDMA actively participated in first WHS Istanbul from 21 – 25 May 2016 aimed at re-inspiring and reinvigorating commitment to humanity for better preparation/response and mutual sharing of best practices. The Summit covered 9000 participants from 173 member states including 55 Heads of State and Government. Pakistan participated in all three events i.e. side event in the form of a Seminar themed "Reaching People in need; Pakistan's experience", Exhibition Fair- showcasing Pakistan's experiences in disaster management through picture gallery and publications related to DRM. NDMA along with NADRA participated in Innovative Marketplace where Pakistan's Cash Transfer Program "Watan Card" was showcased as one of the world's best practices.



Turkey 24 May 2016: Chairman NDMA briefing UN Secretary-General Ban Ki-moon during his visit to Pakistan's stall

### **Media Workshops on Disaster Reporting**

NDMA with support of UNICEF organized three media workshops on "Reporting Disasters-An all Inclusive Approach" aimed at sensitizing local media community on National disaster management system and engaging reporters towards meaningful disaster reporting. The workshops were conducted on 28 May at Lahore, 4 June at Karachi and on 6 June at Islamabad. Total 86 journalists from electronic and print media were provided training during workshops.



Islamabad 6 June 2016: Prime Minister's spokesperson Mussadiq Malik and Chairman NDMA along with participants of media workshop

### **Commemoration of National Disaster Awareness Day**

NDMA observed National Disaster Awareness Day on 8 October 2016, in collaboration with all Provincial / Regional DMAs. The day was marked with theme "Hamara Azam- Tayyar Pakistan" to reaffirm commitment to build a disaster resilient Pakistan. With the aim to showcase the importance of awareness and education

about disasters as well as highlight need for preparedness, NDMA organised Cyclothon with cyclist wearing printed T-shirts and caps, Flag March by emergency response units of CDA USAR team in Islamabad and awareness drive through city branding in twin cities of Islamabad and Rawalpindi.



Participants of cyclothon



Flag March by emergency response units of CDA & USAR teams

### **Academia /Orientation Visits**

During the period officials from Radio Pakistan, Chinese Media Delegation, Foreign Services Academy, Peshawar University, Naval Officers 46th Inland Study Tour, Team of Auditors from Nepal visited NDMA for orientation course. Besides, NDMA as part of its outreach program also addressed at various forums of National educational

institutions including Fatima Jinnah Women University, National Defence University, Rawalpindi and Pakistan Civil Services Academy, Lahore to create awareness general among masses Disaster Management.



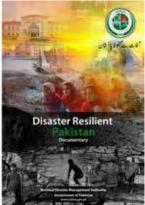
Islamabad 22 November 2016: Briefing at National Defence University (NDU)

### Library of IEC Material, Awareness & Advocacy

Enhanced public education and awareness on DRR has proved to be key in reducing risks and mitigate natural and man-made hazards. NDMA has built a library of Information, Education and Communication (IEC) material. NDMA's IEC kit includes, seven recorded Television and Radio Programmes on different subjects including, Heat Wave, Floods, Flash Floods, Earthquake, Drought, Fire Safety and Vulnerable Groups in Disasters. Sixteen Public Service Massages (PSM) Televisions Commercials (TVCs). Two Documentaries on "Disaster Resilient Pakistan" and "Vulnerable Groups in Disasters". Measure through print and electronic media including, issuance of timely weather advisories, early warnings, publication of 58 Press Releases in 370 newspapers. PSM in National & regional Print & Electronic Media (Radio/TV) & two Countrywide Awareness Supplements in National Media and weekly (live) programs on Radio Pakistan Islamabad during monsoon season.









### FROM THE NEWS DESK

### **National Post Monsoon Review Conference**

NDMA organized National Post Monsoon- 2015 Review Conference on 22 January 2016 at Islamabad to analyse and compile lessons learnt, good practices adopted, bottle necks identified during Floods 2015 by relevant stakeholders. Participants of meeting included representatives from PMD, all Provincial Irrigation Departments, all PDMAs, Army, NHA, Mangla and Tarbela Dam. The conference facilitated to record lesson learnt and resolve gaps to devise improved strategy for preparation of Monsoon 2016.



Islamabad 22 January 2016: Participants of Conference

### China handed over Tents to NDMA





Islamabad 25 January 2016: Chinese Ambassador Sun Weidong handed over relief consignment to Chairman NDMA at NDMA Warehouse.

As a gesture of solidarity with the Pakistani brethren and in continuation to the Relief Goods provided during Earthquake of October 2015, the Peoples Republic of China extended an additional tranche of 2,950 tents to the Government of Pakistan.

### **Undertaking on Seismic Activities (Earthquakes)**

An earthquake of 7.1 magnitude on Richter scale having depth of 236 km with epicenter in Hindu Kush Region - Afghanistan, originated on 10 April 2016. In view of expected aftershocks, meeting of National Seismic Experts was held on 11 April 2016 to evaluate the seismic situation in Hindu Kush Range. The meeting was attended by experts from NDMA, PMD, GSP, SUPARCO, MSSP-Pakistan Atomic Energy Commission and Earthquake Study Center of Quaid-e-Azam University. On the direction of the Chairman NDMA, fresh analyses were carried out to ascertain Hindu Kush Seismicity.



Islamabad 11 April 2016: Meeting of National Seismic Experts to review escalated Hindu Kush activity.

### **Chairman NDMA visits Gilgit Baltistan**

In order to assess situation and review relief & rehabilitation activities in response to blockade of KKH, Chairman NDMA visited Gilgit on 13 April 2016. He met Chief Minister GB and other relevant officials to coordinate relief efforts in wake of closure of KKH and restoration of road network connecting GB.



Gilgit Baltistan 13 April 2016: Chairman NDMA visit to Gilgit Baltistan

### National Pre Monsoon Preparedness Conference -2016

NDMA held National Pre-Monsoon Preparedness Conference 2016 on 9 June 2016 at Islamabad for input to build coordinated National Response Directive for Monsoon Season-2016. It was attended by senior representatives of various Federal Ministries, Armed Forces, WAPDA, Provincial Irrigation Departments, DGs of

PDMAs/SDMA/GBDMA/FDMA & IRSA, CDA, NESPAK, SUPARCO, Pakistan Red Crescent, UN agencies, Pakistan Boys Scouts & Pakistan Girls Guide Association and all other relevant Provincial & Federal Departments.





### **Chairman NDMA Visited Chitral**

In the backdrop of devastation caused by flash flood of 2 July 2016 in Ursoon Village, Tehsil Droash, District Chitral, Chairman NDMA along with DG PDMA KP and media team visited flood affectees on 8 July 2016 third day of Eid despite closure of Lawari Top due to inclement weather conditions. He also held meetings with officers of the local administration and provincial agencies to review progress on relief and rehabilitation work in flood affected areas of the district.



Chitral 8 July 2016- Chairman NDMA meeting with flood affectees

### Serena Hotels Donates Rs. 3,769,167 to NDMA

Serena Hotels Pakistan donated Rs. 3, 769,167 to NDMA on 11 July 2016. The amount was collected through its Social Environmental and Educational Development Programme under the slogan "Spirit of Compassion". The amount was transferred in

recognition of NDMAs vital role during the natural disasters like floods and earthquakes etc. Chairman NDMA appreciated efforts of Serena Hotels.

### Handing over of 08 Schools and Hospitals by Housing Foundation of Iran (HFI)

NDMA and Housing Foundation of Iran (HFI) signed MoU on 29 February 2012 for construction of 17 schools & hospitals in Flood 2010/2011 affected areas of Sindh and Punjab. As on 29 September 2016, 04 projects, each in Punjab & Sindh completed

and handed over to provincial authorities, whereas work on 09 schools & hospitals is in process and will be completed by February 2018.







Parveen Ehtesami Girls High School(Larkana)

NDMA teams during project site inspection at Mityari

Kausar Hospital at Khairpur

### Handing over of 2,525 Houses to 2012 Flood Affectees

After the floods 2012, Custodian of Two Holy Mosques Relief Campaign for Pakistan (CTHMRCP), a Saudi Organization approached NDMA for construction of 5000 houses, 30 schools and 25 BHUs in flood affected areas of all provinces of Pakistan. As

on 29 September 2016, 2,525 houses and one school was completed and handed over to the beneficiaries in Punjab, Sindh and KP. Construction work on remaining houses, schools and BHUs will be started upon registration of CTHMRCP.

### Release of Federal Share of Rs.2.0 billion for Housing Reconstruction Awaran (HRA) Project

In December 2013, the Prime Minister approved construction of 16,000 housing units for Awaran earthquake affectees with the cost of Rs.4.0 billion on equal share basis by Federal Govt. and Govt. of Balochistan. First instalment of Rs. 1.0 billion was released by Federal Govt. in December 2013, followed by 2nd installment of Rs.1.0 billion in February and March, 2016 respectively as per following details.

- · Rs 820.217 million through supplementary grant; and
- Rs 179.783 million from the Prime Minister's Balochistan Earthquake Relief Fund 2013

13,713 beneficiaries after getting 1st Cheque started construction work and 10,943 houses have been completed by the self-builders. 2,287 beneficiaries are yet to start work. Construction of 16,000 houses will be completed in September 2017.

### Chitral Rehabilitation Projects in the aftermath of Floods and Earthquake-2015

In compliance of instructions of the Prime Minister's Office, representatives of NDMA, NHA, PDMA KP, C&W Department and District Administration jointly conducted a field visit of the damaged bridges and link roads identified by Deputy Commissioner, Chitral

from 29 November to 01 December 2016. NHA was requested to prepare feasibility/cost estimate for reconstruction of prioritized bridges and link roads

### Representation at International Fora

In recognition of Pakistan's credible standing in humanitarian crises management in face of recurring disasters, NDMA actively participated in various regional/international forums consonant to disaster management. During the course NDMA has actively participated in SAARC Ministerial Conference at Nepal from 15 – 18 March 2016, World Humanitarian Summit (WHS) Istanbul from 21 –

25 May 2016, Expert Group Meeting for ECO Regional Framework for DRR at Tehran from 26 - 28 October 2016, COP 22 at Marrakech, Morocco from 7 – 18 November 2016, 5th RTG Meeting of DM-CBM at Kazakhstan on 9th December 2016. Besides NDMA officials also participated in 33 subject related foreign trainings.



Tehran from 26 - 28 October 2016-Expert Group Meeting for ECO Regional Framework for DRR

### **EVENT CALENDAR - 2016**



Islamabad 12 January 2016: Team of Auditors from Nepal visited NDMA during study visit of workshop on Disaster Management Audit.

Islamabad 15 January 2016: Chairman NDMA handed over 5 Suzuki Ambulances to Mr Nasib Ullah of PDMA Balochistan.



Islamabad 22 January 2016: Chairman NDMA attended COP21 Debrief 'From Paris to Marrakech - Learning and Way forward' organized by Lead Pakistan.







Islamabad 27 January 2016: Country Planning Meeting held at NDMA in cooperation with National Society for Earthquake Technology – Nepal (NSET), Network of Disaster Management Practitioners Pakistan (NDMP) and United States Agency for International Development (USAID) / Office for Foreign Disaster Assistance (OFDA).



Islamabad 28th January 2016: Meeting with UN Resident Coordinator & UNDP Resident Representative Pakistan Mr. Neil Buhne.



Islamabad, February 01 2016: NDMA & British Council signed MoU to develop 'Education in Emergencies' strategy.





Islamabad 8 February 2016: Call on by Begum General Saeed uz Zafar , Director Army Public Schools and Colleges.



Islamabad 10 February 2016: Meeting with Turkish Ambassador H.E. Mr. Baber Girgin



Islamabad 11 February 2016: Meeting with Chairperson NHN, Mr. Naseer Memon and Chairperson PHF, Mr. Ashraf Mall.



Islamabad 16 February 2016: Meeting with Country Director International Organisation for Migrant (IOM), Mr. Dravide Tarze.



Islamabad 17 February 2016: Orientation visit of Chinese Media Team.



 $Is lamma bad\ 18\ February\ 2016:\ Meeting\ with\ Global\ Leader\ WASH\ Cluster.$ 



Islamabad 18 February 2016: Project Review Board Meeting with UNDP.



Chairman Pakistan Engineering Council (PEC), Engr. Javed Salim Qureshi.



Islamabad 22 February 2016: Roundtable conference on 'Gender and Climate Vulnerabilities: Future Direction for Policy Research and Action', organized by LEAD, Pakistan.



Islamabad 1 March 2016: 12<sup>th</sup> Safe Secure Pakistan International Fire, Safety, Security and Health Exhibition & Conference- 2016 organized by Pegasus Consultancy at Pak- China Friendship Centre.



Islamabad 1 March 2016: NDMA & WFP signed MoU for WFP's Protracted Relief and Recovery Operations-Pakistan-Transition: Towards Resilient and Food-Secure Pakistan (2016 – 2018)



Islamabad 4 March 2016: Meeting with Pro-Rector Bahria University, Rear Admiral (Retd.) Saleem Akhtar HI (M)



Islamabad 10 March 2016: Meeting with officials MCII & Lead Pakistan/ CDKN on Risk Insurance.



Islamabad 10 March 2016: Meeting with Country Director UNOCHA, Mr. George Khauray.



Islamabad 21 March 2016: Chairman briefing CM Punjab on NDMA endeavours.



Chitral 23 March 2016: Search & Rescue operation during landslide in village Susum Tehsil Garam Chashma, District Chitral.



Islamabad 25 March 2016: Second Consultative Dialogue on National Policy Guidelines for School Safety against disasters held between NDMA and UNICEF



Islamabad 25 March 2016: Meeting with Ms. Cheryl Katzmarzyk and Mr. Reto Stocker, ICRC Representatives.



Islamabad 4 April 2016: Meeting with Australian High Commissioner, Ms. Margaret Adamson



Islamabad 4 April 2016: Meeting with State Mission of UNOCHA.



Islamabad 5 April 2016: Training on Urban DRR and Pilot of Sendai Framework Local/Urban Indicators in Islamabad, Pakistan





Islamabad 4 May 2016: Round Table consultation dialogue by NDMA in collaboration with UNOCHA and Embassy of Republic of Turkey as a prelude to World Humanitarian Summit held on 21-25 May 2016 at Istanbul, Turkey





Istanbul, Turkey 21-25 May 2016: NDMA Exhibition Stall showcased Pakistan experience in DM through picture gallery & DRM publications at WHS.





Istanbul, Turkey 23 May 2016: Minister for SAFRON, Lt. General (R) Abdul Quadir Baloch, visited NDMA exhibition stall at WHS.



Istanbul, Turkey 23 May 2016: Minister for SAFRON and Pakistan delegation at Innovation Marketplace setup by Pakistan at WHS



Lahore 28 May 2016: Media Workshop on 'Reporting Disasters'.



Karachi 4 June 2016: Media Workshop on 'Reporting Disasters'.



Islamabad 6 June 2016: Consultation Workshop on 'Developing synergies of the DRR Forum's future DRR related interventions with the NDMP implementation roadmap 2016-2030"



Preparedness and Contingency Planning.



Islamabad 21 June 2016: NDMA & UN Signed LOA for Gender Equality & The Empowerment of Women (UN Women)



Peshawar, Khyber Pakhtunkhwa 22nd June 2016: NDMA, PDMA KP & FDMA Consultative Meeting on Pre Monsoon Preparedness and Contingency Planning



Muzaffarabad, Azad Jammu & Kashmir 24th June 2016: Consultative Meeting on Pre Monsoon Preparedness and Contingency Planning



Chitral 2 July 2016: NDMA teams offered condolence with the bereaved families of the flood affectees.



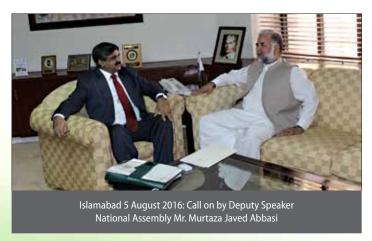
Chitral 2 July: Chairman NDMA distributed relief among the flood affectees



Islamabad 4 July 2016: Call on by Korean Ambassador



lslamabad 20 July 2016: Meeting with Country Director Oxfam Pakistan, Mr. Muhammad Qazilbash



Islamabad 8 August 2016: Meeting with

Sardar Mehtab Abbasi, Former Governor Khyber Pakhtunkhwa.



Islamabad 8 August 2016: Orientation visit of Peshawar University students.



Islamabad 8 August 2016: Project Review Board (PRB) Meeting with UNDP.



Islamabad 8 October 2016: National Disaster Awareness Day Participants of flag march - emergency response units of CDA & USAR teams.



Islamabad 17 August 2016: Chairman NDMA with President NDU, Lt General Nazir Ahmed Butt during briefing at NDU.



Islamabad 19 August 2016: Orientation visit of officers from Foreign Services Academy.



ISLAMABAD, 28 September 2016 NDMA and UNICEF signed MoU to extend their partnership for Child Centred Disaster Risk Management (CCDRM)



Prof. Ahsan Iqbal addressing the Inaugural Session of Regional Consultative Committee Meeting on Disaster Management (13 RCC).



Islamabad 19 October 2016: Federal Minister for Climate Change, Zahid Hamid addressing the concluding session of Regional Consultative Committee Meeting on Disaster Management (13 RCC).



Islamabad 18th November 2016: Meeting with officials of World Association of Girls Guide and Girls Scouts and officials of Girls Guide Association Pakistan



Islamabad 5 December: NDMA Organized Earthquake School Safety Drill at Model School for Girls, Islamabad



Islamabad 6 December 2016: Meeting with Country Director UNOCHA, Ms. Heli Uusikyla

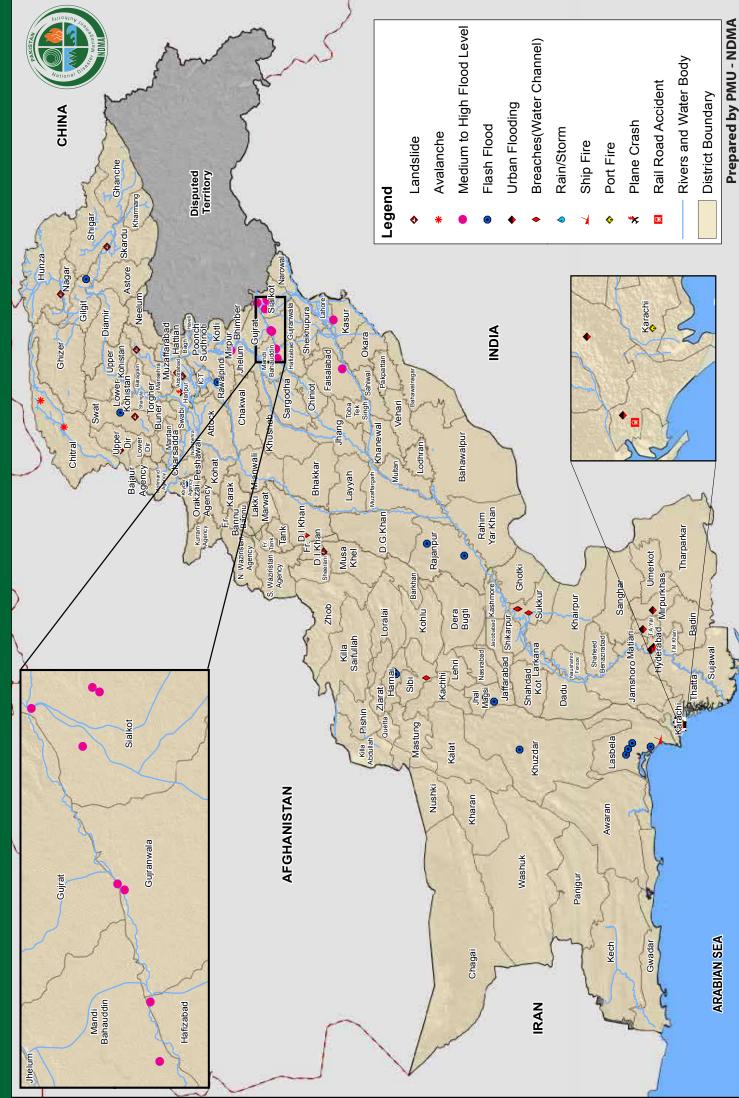


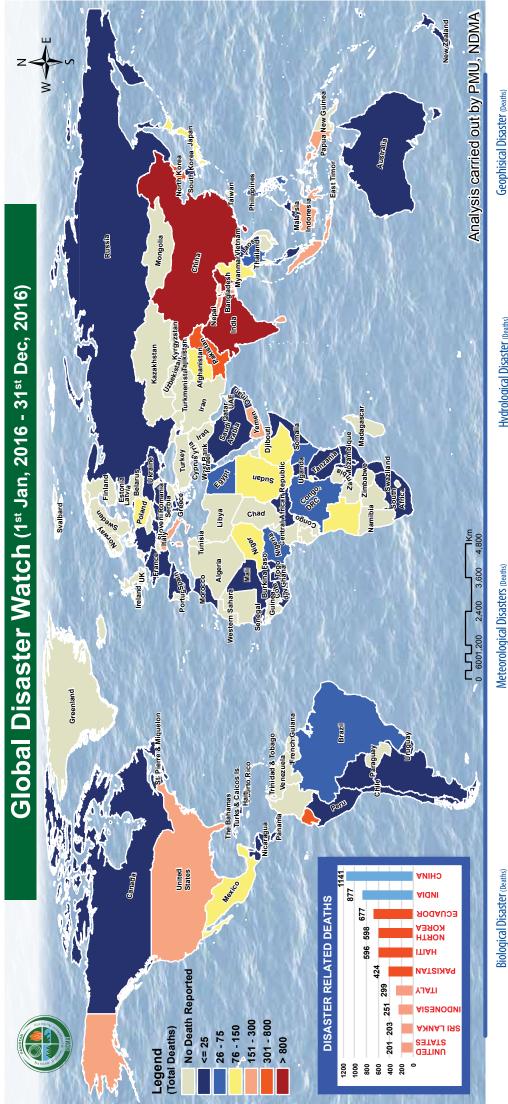
Islamabad 14 December 2016: Coordination Conference of Industrial Mock Exercise planned at Rahm Yar Khan.

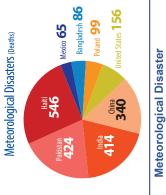


Islamabad 28 December 2016: Federal Minister for Climate Change, Mr. Zahid Hamid visited NDMA.

# National Disaster Watch - 2016







Niger 33

yanmar, **34** 



eaths)	Taiwan 117	Indonesia 100	Japan 58	
Geophisical Disaster (Deaths)	Italy 797		Ecuador 677	
G				

_
<u>a</u>
<u>ٿ</u>
(C)
Ö
in
$\Box$
_
_
iń
0
Ž,
$\overline{}$
.≃
m
_

Country	Disaster Type	Total Deaths	Affected Population
Congo, DRC	Epidemic	55	2087
Sudan	Epidemic	38	2539
Myanmar	Epidemic	34	1
Niger	Epidemic	33	235
Central African Republic	Epidemic	21	266
Sudan	Epidemic	19	632

Country	Disaster Type	Total Deaths	Affected
Haiti	Storm	546	21
India	Extreme temperature	300	

Haiti   Storm   546     India   Extreme temperature   300     China   Storm   273     India   Storm   273     Tahwan   Extreme temperature   85     Poland   Extreme temperature   85     Poland   Extreme temperature   77     Paskistan   Per-Morscon Heavy Rains   77     Paskistan   Morscon   153	Country	Disaster Type	Total Deaths	Affected Population
Extreme temperature Storm Storm Storm Extreme temperature Extreme temperature Pre-Monsoon Heavy Rains Monsoon	Г	orm	546	2100438
Storm Storm Storm Extreme temperature Pre-Monsoon Heavy Rains Monsoon		treme temperature	300	
Storm Extreme temperature Extreme temperature Pre-Monsoon Heavy Rains Monsoon		orm.	279	924900
Extreme temperature Extreme temperature Pre-Monsoon Heavy Rains Monsoon		orm	93	1
Extreme temperature Pre-Monsoon Heavy Rains Monsoon		treme temperature	85	:
Pre-Monsoon Heavy Rains Monsoon		treme temperature	77	:
Monsoon	_	a-Monsoon Heavy Rains	271	:
		noosuo	153	ı

7
ste
isa
ica ica
og
2
ڄ
_

Country	Disaster Type	Total Deaths	Disaster Type Total Deaths Affected Population
North Korea	Flood	538	000009
China	Flood	417	1060000
Sri Lanka	Flood	203	301602
Nepal	Flood	138	10551
India	Flood	261	1077097
Bangladesh	Flood	106	2400
Ethiopia	Flood	100	20000

_
<u> </u>
in
, S
100
.07
$\overline{a}$
_
_
l α
Ö
.≃
ဟ
<b> &gt;</b>
<b>–</b>
=
9
0
l o
CD
<b>-</b>

			A 60 - 4 - 4 - 5 - 5 - 5
Country	Disaster lype	lotal Deaths	Disaster Type   Total Deaths Affected Population
Ecuador	Earthquake	929	1230000
Italy	Earthquake	296	4854
Taiwan	Earthquake	117	525
Indonesia	Earthquake	100	152138
Japan	Earthquake	999	419232
Tanzania	Earthquake	47	139601