



RESILIENCE

"Promoting a culture of prevention, mitigation and preparedness"

NDMA Newsletter

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Cover Story

Worst-ever catastrophe tests resilience of the Nation

The monsoon season, 2010, brought along with it the destruction and devastation of unprecedented scale hitherto unknown in the recorded history of Pakistan. The nightmare started when the easterly monsoon system collided with the developing western system over North-Western Khyber Pakhtunkhwa on July 2010. The resultant high intensity downpour in Khyber Pakhtunkhwa generated floods of unprecedented



Prime Minister Yusuf Raza Gilani presiding over the 3rd meeting of the National Disaster Management Commission

scale in Swat and Kabul rivers. The magnitude of the calamity can be gauged from data compiled by the Federal Flood Commission, which states that the flow of rivers Swat and Kabul combined touched new historical height of 400,000 cusecs as against the previous figures of 250,000 cusecs recorded in 1929. After playing havoc with life and property in Khyber Pakhtunkhwa, the Flood waters traveled downstream through the barrages in Punjab and Sindh until they reached the Arabian Sea downstream of Kotri Barrage but on its way left behind a long trail of death and devastation across length and breadth of Pakistan.

The worst ever floods affected seventy eight districts and covered over 100,000 square Km. They have affected more than 20 million people with over 1,980 reported deaths and nearly 2, 946 injured. The floods also destroyed 1.6 million homes while causing damage to thousands of acres of crops and agricultural lands. The damages sustained by public infrastructure were also enormous. A total of 25,088 Km of roads, 10,436 education



President Asif Ali Zardari presents a cheque to an elderly flood affectee on a visit to a relief camp in Sukkur.

centres and 515 health facilities have been damaged. According to the Damage and Need Assessment Report by World Bank and Asia Development Bank, the country sustained an estimated loss of USD 10 billion on account of direct and indirect damages to social and physical infrastructure, economic sectors, governance and environment. In short, the scale of devastation caused by the worst ever catastrophe is more

EDITOR'S NOTE

Dear Readers

Pakistan faced yet another natural calamity, but this time around the scale of destruction caused by the worst ever catastrophe across length and breadth of the country is of Biblical proportions. The response to the calamity was equally befitting. National resources and institutions were mobilized within no time and a massive relief operation of unprecedented scale was successfully conducted. The support from the international community, donor agencies and humanitarian community was phenomenal and proved to be the crucial element in the success of the relief operation. The relief phase is nearing its end and the early recovery phase has already been initiated as the situation in most of the flood affected areas has stabilized.

As the Nation is grappling with the aftermath of the worst ever calamity, the soon to be launched rehabilitation and reconstruction phase in the flood affected areas provides an opportunity to rebuild a better and safer Pakistan. It is of paramount importance that the element of disaster risk reduction is incorporated into all rehabilitation and reconstruction programs.

This edition of Resilience is being issued at a belated stage as the whole editorial team along with other staff members of the NDMA remained overwhelmingly engaged in coordinating relief activities. Next time around, we will try our best to ensure timely issuance of the Newsletter.

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Chief Editor

than the Pakistan Earthquake, 2005, Cyclone Katrina, Indian Ocean Tsunami, Cyclone Nargis and Haiti Earthquake combined in terms of area and population.

The National response to the calamity was swift and befitting. The National Disaster Management Authority (NDMA) led the relief operations at the federal level in close coordination with all relevant stakeholders. The round the clock Operations Room of the NDMA was made operational on immediate basis to receive field information and situation reports and monitor and coordinate relief operations. A Strategic Leaders Group, comprising of seniors officials representing the concerned government departments, UN agencies, donors, Pakistan Humanitarian Forum (PHF), National Humanitarian Network (NHN), Pakistan Red Crescent Society (PRCS) and Armed Forces, was established. The Forum held weekly meetings to discuss the varying issues related to relief operations and provided strategic guidance to all stakeholders in dealing with the emergent situation. A Flood Relief Coordination Forum having representation of all stakeholders involved in field operations, was also

Summary of Damages

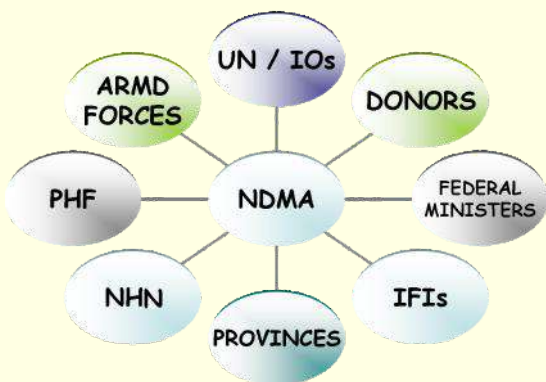
Sector	Damages	Cost (US \$)
Housing	1.6 m	1.588 bn
Education	10,436 education centers	311 m
Health	515 health facilities	50 m
Communication	25088 Km	1.328 bn
Water & Sanitation	6841 Schemes	109 m
Energy	92 plants, 32 grids, 3000 km line	309 m
Irrigation		278 m
Agriculture & live stock	2.1 m hectares agri land, 0.3 m large & 1.2 m small animals	5.1 bn
Private sector	146 industries, 0.1 m hotels/shops	282 m
Financial Sector	90 banks, 10 ATMs	674 m
Governance & Environment	1457 structures	82 m

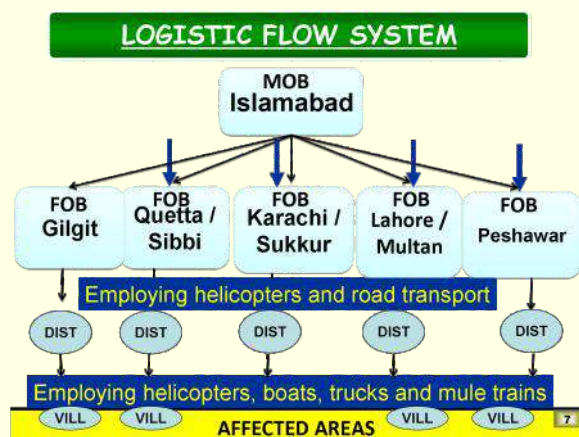
Overall Damages – USD 10.056 bn

constituted to ensure effective coordination in relief operations. The meetings of Flood Relief Coordination Forum were held on daily basis at the NDMA to discuss operational issues, identify gaps in relief operations and provide solutions for effective and timely provision of relief assistance in the flood affected areas. The NDMA also established a Coordination and Facilitation Cell at the Chaklala Air Base, to coordinate and facilitate the international relief flights and foreign relief personnel. To coordinate aviation efforts, an Aviation Coordination Committee, headed by GOC Army Aviation Command, was constituted with representation from senior officials from all stakeholders involved in air relief operations. The meetings of the Aviation Coordination Committee were regularly held at PAF Base Chaklala to ensure optimum utilization of aviation assets in relief operations.

In coordination with all stakeholders, the NDMA also devised a comprehensive Logistic Flow System (LFS), to

STAKE HOLDERS





ensure timely and efficient receipt and dispatch of relief goods. The PAF Base Chaklala was declared as Main Operating Base (MOB), which was linked with Forward Operating Bases (FOB) at Gilgit, Quetta, Sibbi, Karachi, Sukkur, Lahore, Multan and Peshawar. As per instructions from the NDMA, relief assistance in kind received at MOB was dispatched to FOBs through air transportation or by road for onward transportation to the District Nodal Points in coordination with local formations of armed forces and district administrations. From District Nodal Points the relief assistance was transported to the affected villages/ areas employing helicopters, boats, trucks and mule trains as per demand of the situation.

With above response mechanism in place, a massive rescue and relief operation was launched under the auspices of NDMA through active participation by Pakistan Armed Forces, UN Agencies, humanitarian community and individual philanthropists. The relief operation was augmented by unprecedented aviation support involving aviation assets of Pakistan Armed Forces, friendly countries and UN. At the peak level, a total of 88 helicopters were deployed for rescue and relief operations in the affected areas. Almost 1.4 million people were rescued while more than 0.4 million tents, 1.8 million blankets, 10 million Food packets, 0.3 million tons of food items, 0.16 million hygiene kits, 0.29 million

mosquito nets and other relief items were provided to the affectees. On August 19th, 2010, the meeting of the National Disaster Management Commission was convened under the chairmanship of the Prime Minister to review the flood situation. The NDMC took several key policy decisions which included establishment of National Oversight Council (NODMC), provision of immediate financial assistance to affected households, carrying out of damage and need assessment, registration of affected populace, formulation of a Health Response Plan and mobilization of resources through international community and donor agencies for reconstruction and rehabilitation.

The immediate, rapid and extensive response to the

Name of Base	No of Flights International Relief
Chaklala	184
Multan	23
Peshawar	19
Quetta	6
Karachi	32
Lahore	3
Total	267

calamity by state institutions duely supported by international fraternity, humanitarian community and common people , led to stabilization of situation in the flood affected areas with few exceptions of some areas in Sindh and Balochistan, where flood water is yet to recede. The success of the relief operations can be gauged from the fact that there was no second wave of deaths, no report of epidemic outbreaks, shortage of food or medicines while ninety five percent of the displaced people have returned to their homes. As a result of the early recovery efforts by the government and

humanitarian community in reviving the livelihoods of the affected population, almost 90 percent of the submerged cultivable land has now been cultivated. This will also substantially reduce the risks associated with food security. As a part of government's overall plan to

PROVINCE/REGION WISE DISTRIBUTION OF MAJOR RELIEF ITEMS

Items	Punjab	Sindh	KPK	Balochistan	AJK	GB	Total
Tents	162,707	115,801	137,015	30,864	2,686	4,466	453,539
Tarpaulin	232,860	347,142	334,208	13,050	2,836	1,197	931,293
Blankets	366,734	655,429	779,385	55,695	21,237	19,830	1,898,310
Food Items (tons)	95,224	98,029	109,323	15,304	6,920	5,808	330,607
MREs	3,329,748	6,576,983	822,991	13,000	6,924	6,924	10,756,569
Hygiene Kits	27,641	44,083	75,427	12,262	691	364	160,470
Water Purification Units	519	1,791	2,067	19	-	-	4,396
Water Purification Kits	3,427	4,174	3,240	-	-	-	10,841
Mosquito Nets	39,532	118,588	59,918	72,224	-	-	290,262



PUNJAB



SINDH



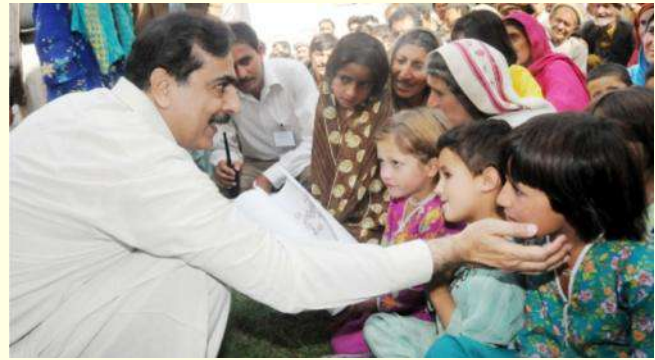
BALUCHISTAN



KHYBER PAKHTUNKHWA



GILGIT-BALTISTAN



Ghizer Aug 23: Prime Minister, Syed Yousuf Raza Gillani talks with children during his visits at flood affected area in Ghizer.

compensate and provide financial assistance to the affected households the Watan Card Scheme has been initiated. Under the scheme, as of 31st December, 2010, more than PKR 26 billion has disbursed amongst more than 1.3 million households.

As normalcy has started to return in flood affected areas, the relief phase will end by 31st January, 2011 with the exception of few areas where residual relief activities will continue for some time. The NDMA in collaboration with all stakeholders has already initiated the Early Recovery Phase under the "Pakistan Floods Relief and Early Recovery Response Plan" launched on 5th November, 2010 in collaboration with the United Nations. The Plan seeks USD 1.9 billion to enable the humanitarian community to support Government of Pakistan in addressing the residual relief needs and early recovery needs of the flood affected families for next twelve months. As on 31st December, 50.9% of funds out of the required amount of USD 1.9 billion have been received. Under the Plan, NDMA has already approved 367 projects to be executed by various implementing partners.

The Early Recovery Phase will be followed by the more intricate Reconstruction and Rehabilitation (R&R) Phase which is likely to take three to five years. These projects will require extensive mobilization of national and international resources. It is sanguinely anticipated that the pledges for financial assistance by international community will materialize in time to provide the much needed support to the Government in reconstruction and rehabilitation of flood affected areas.

Relief Flights by Friendly Countries



News & Events

Chinese Prime Minister visited NDMA headquarters



Islamabad 18 Dec: Chairman NDMA Lt Gen Nadeem Ahmed (Retd.) briefing the Visiting Chinese Premier Wen Jiabao.

On 18th December 2010 H.E. Wen Jiabao, Premier of the State Council of the People's Republic of China visited the National Disaster Management Authority along with his delegation. The dignitary was received by H.E. Syed Yusuf Raza Gilani, Prime Minister of the Islamic Republic of Pakistan and Chairman NDMA Lt Gen Nadeem Ahmed (Retired), on his arrival at the NDMA. The two Prime Ministers were briefed by the Chairman on the flood situation. The Chairman NDMA highlighted the importance of close cooperation between the two friendly countries in dealing with shared risks posed by natural disasters. Speaking on the occasion, Mr Gao Hucheng, Chinese Minister for Commerce,

highlighted the contributions made by the Chinese Government in flood relief efforts and assured his government's commitment in providing assistance in reconstruction and rehabilitation of flood affected areas. The Pakistani side expressed high appreciation and gratitude for timely and valuable assistance provided by Government of China in flood relief and rescue efforts. It also appreciated the provision of special Chinese relief assistance for the affected people of Gilgit Baltistan.

National Disaster Management Bill 2010 passed

On 8th December 2010, President of Pakistan assented to the National Disaster Management Bill 2010, which was unanimously adopted by the National Assembly and the Senate earlier in November 2010. After the President's assent, the Bill has been notified and enforced as an Act of the Parliament. The Act will serve as the primary law of the land for disaster management and will provide the legal framework for the establishment of a comprehensive disaster management system supported by dedicated institutions at the Federal, Provincial and District levels.

The Act defines the roles, functions and powers of the disaster management institutions at the federal, provincial and district levels encompassing the whole spectrum of disaster management.

REGISTERED No. ^{M-302} L-7646
The Gazette of Pakistan
EXTRAORDINARY PUBLISHED BY AUTHORITY
ISLAMABAD, SATURDAY, DECEMBER 11, 2010
PART I
Acts, Ordinances, President's Orders and Regulations
SENATE SECRETARIAT
<i>Islamabad, the 11th December, 2010</i>
No. F. 9 (28)/2010-Legis.—The following Act of Majlis-e-Shoora (Parliament) received the assent of the President on 8th December, 2010 and is hereby published for general information:—
ACT NO. XXIV OF 2010
<i>An Act to provide for the establishment of a National Disaster Management System for Pakistan</i>
WHEREAS it is expedient to provide for an effective national disaster management system and for matters connected therewith or incidental thereto;
AND WHEREAS the Provincial Assemblies of Balochistan, the Khyber Pakhtunkhwa, and the Punjab have passed resolutions under Article 144 of the Constitution of the Islamic Republic of Pakistan to the effect that Majlis-e-Shoora (Parliament) may, by law, regulate the national disaster management system to overcome unforeseen situations:
It is hereby enacted as follows:— (731)
Price : Rs. 20.50
[3062(2010)/Ex.Gaz.]

US hands over twenty bridges to NDMA

On 1st December 2010, Mr. Cameron Munter, the US Ambassador to Pakistan, handed over the remaining 8 Bridges to the Chairman National Disaster Management Authority (NDMA) aggregating the total to twenty. The



Islamabad 01 Dec: Chairman NDMA Lt Gen (Retd.) Nadeem Ahmed taking over 8 Bridges from American Ambassador Cameron Munter.

donation was part of US assistance in restoring the vital communications links affected by floods especially in Khyber Pukhtunkhwa.

Speaking on the occasion, US Ambassador to Pakistan Cameron Munter termed the donation of bridges as a friendly gift for the people of Pakistan meant to strengthen people to people contacts. He reiterated his government's commitment in providing every possible help to Pakistan in dealing with the emergent situation.

Chairman NDMA, Lt Gen (Retd) Nadeem Ahmed appreciated the invaluable assistance provided by the US government in dealing with the monumental challenges posed by the recent floods & expressed the hope that cooperation between the two countries will continue to flourish in future.

NDMA-UN Pakistan's Floods Relief & Early Response Plan 2010 launched

On 5th November 2010, the Government of Pakistan, in collaboration with the United Nations, officially launched the revised "Pakistan's Flood Relief and Early Recovery Plan 2010" under the auspices of NDMA. The ceremony was attended by Minister of State for Economic Affairs Hina Rabbani Khar, Special Envoy of the United Nation's Secretary General for Assistance to Pakistan Mr. Rauf Engin Soysal, Ambassadors and High Commissioners, dignitaries, representatives of NGOs and INGOs along with high level Government Officials.

The Pakistan Initial Floods Emergency Response Plan was launched on August 11 seeking an initial \$459 million to meet the immediate relief needs of flood-affected communities. However, funding requirements had to be revised on the basis of fresh needs assessments. The revised Plan is based on the fresh estimates with a funding requirement of \$1.9 billion to enable international

partners to support the Government of Pakistan in addressing the residual relief needs and early recovery needs of flood-affected families for the next twelve months. The overarching goal of this plan is to prevent excess morbidity and mortality and to enable flood-affected communities to return to their normal lives. Some of the critical interventions envisaged under the Plan that are required to be made during the next twelve months include provision of adequate public health services to the flood-affected population through an integrated approach, provision of food assistance and other social protection measures to offer a basic safety net, especially to the most vulnerable, provision of sustainable shelter solutions, restoration of on and off-farm livelihoods, with a focus on agriculture and livestock, and restoration of basic community services and supporting the re-establishment of public administration, health, and education systems.



Chairman NDMA is addressing the participants at the launching ceremony of Pakistan Floods Relief & Early Response Plan.

Damage and Needs Assessment done

In the wake of the floods, the Government of Pakistan requested ADB and WB to lead the Damage and Needs Assessment (DNA). Accordingly DNA exercise was carried out jointly by the World Bank and ADB and the report submitted in November 2010. The DNA report presents the extent of the damage and the required needs for rehabilitation and reconstruction of the damaged assets and infrastructure; and restoration of livelihoods and economic productivity. It represents a quantification and validation of physical damage and presents sector level recovery and reconstruction strategies in respect of public and private infrastructure, services, and livelihoods. The DNA report focuses on medium- to long-term reconstruction and provides the guiding principles for recovery. An assessment of the damage and reconstruction strategies for each sector are provided in the detailed sector assessments. The seventeen sectors covered in this DNA can be broken down into four categories: (i) cross-cutting; (ii) social infrastructure; (iii) physical infrastructure; (iv) economic sectors.

Damage and Reconstruction Costs

Province / Region	Damage Costs	Reconstruction Option 1	Reconstruction Option 2	Reconstruction Option 3
	USD millions	USD millions	USD millions	USD millions
AJK	86	155	163	188
Balochistan	620	321	404	684
FATA	74	89	93	112
Gilgit-Baltistan	49	78	81	118
Khyber Pakhtunkhwa	1,172	1,247	1,293	2,116
Punjab	2,580	1,100	1,269	1,384
Sindh	4,380	2,681	2,986	3,173
Federal/Cross Cutting Sectors	1,095	1,128	1,128	1,140
National Total	10,056	6,799	7,418	8,915

Turkish Prime Minister visits flood hit areas

On 13th October 2010, Turkish Prime Minister Recep Tayyip Erdogan, who arrived on a two day official visit of Pakistan paid a visit to flood affected areas. Accompanied by the Prime Minister of Pakistan, Syed Yousaf Raza Gillani, the Turkish Prime Minister visited various flood affected areas of Sindh and Punjab. The Turkish Prime Minister also visited the relief centers established by the Turkish Government in flood affected areas.

Addressing a ceremony held to distribute 1600 large tents provided by the Turkish Red Crescent, Turkish PM said that it was natural for Turkey and Pakistan to help each other in hard times. He recalled with appreciation the support and assistance provided by Pakistan in the aftermath of Earthquake 1999 in Turkey. The Turkish Prime Minister expressed his country's commitment and

desire to actively participate in the reconstruction and rehabilitation of public infrastructure in the flood affected areas.



Visit of parliamentary delegation to NDMA

On 28th September 2010, a delegation of women parliamentarians led by the Speaker National Assembly, Ms Fehmida Mirza paid a visit to National Disaster

Management Authority (NDMA). Chairman NDMA Lt Gen (Retd) Nadeem Ahmed gave a detailed briefing to the delegation on the current flood situation and the

ongoing relief activities in the flood affected areas. While speaking on the occasion, the Speaker National Assembly showed her confidence in state institutions to deal with the situation in an efficient and effective manner and expressed government's resolve to mobilize all of its resources to alleviate the sufferings of the flood affectees.



Ten bridges from UK arrive in Karachi

Ten bridges that set sail from London in August arrived in Karachi on 23rd September 2010, at the Pakistan International Container Terminal. The bridges, provided by the UK government, will replace some of those destroyed by the floods in Khyber Pakhtunkhwa and the Federally Administered Tribal Areas (FATA). A team of

DFID-funded engineers has been on the ground since early August 2010, identifying priority sites and planning delivery of the bridges. The donation of bridges is part of a £10 million recovery and rehabilitation project being sponsored by DFID in the flood affected areas.

Meeting of Chairman NDMA with US Special Envoy for Pakistan & Afghanistan



US Special Envoy Richard Holbrooke is being received by Chairman NDMA at the NDMA headquarters.

On 17th September 2010, Chairman National Disaster Management Authority (NDMA), Lt Gen (Retd) Nadeem Ahmed met US Special Envoy, Richard Holbrooke who called upon him. The meeting discussed important issues regarding the current flood situation in the country and the on going relief and rescue efforts. Chairman NDMA apprised the dignitary about the humanitarian interventions of the federal government and other organizations to provide relief to the flood affectees and mitigate their hardships. The US Special Envoy Mr. Holbrooke assured Lt Gen Nadeem that both the countries have long standing bilateral ties and the United States will support Pakistan in this hour of need. He said that all possible help including aviation support will be given to Pakistan until this calamity is finally over.

Chairman NDMA visits Sukkur on Eid-ul-Fitr

Chairman National Disaster Management Authority (NDMA) Lt Gen (R) Nadeem Ahmed visited the flood affected areas of Sukkur on 12th September 2010, the very next day of Eid-ul-Fitr. He mingled with the affectees and gathered first hand knowledge about the problems being faced by them and issued on the spot instructions to the relevant authorities for their resolution.

He assured the affectees of government's commitment to mobilize all its resources to mitigate their hardships and take all possible steps to help them return to their normal lives.



President Zardari apprised about flood situation at NDMA headquarters

On 23rd August, President Asif Ali Zardari visited National Disaster Management Authority's headquarters where he was briefed about the flood situation in the country. The President was briefed about the scale of devastation caused by floods in different areas and the current situation. The briefing focusing the government's relief activities in flood-hit areas, was also attended by Minister for Foreign Affairs Shah Mehmood Qureshi, Minister for Economic Affairs Dr Hafeez Sheikh, Minister for Railways Ghulam Ahmad Bilour and Minister for Food Nazar Muhammad Gondal. Ambassador to United States Mr. Hussain Haqqani was also present.



UK Deputy PM Nick Clegg visits flood affected areas in Sindh

On 1st September 2010 Deputy Prime Minister of United Kingdom Nick Clegg announced the roadmap for the distribution of humanitarian aid from the UK while visiting flood affected areas of Sindh. He said that the UK Government will allocate £9 million to Save the Children, Concern and Oxfam for relief activities in the flood affected areas. The Deputy Prime Minister was on a special visit to Pakistan to have first hand knowledge about devastation caused by the floods and needs of the flood affected people. In Sukkur, he visited a World Food Programme store house and met with Oxfam, Save the Children, and other UN aid agencies.



Saudi Prince expressed solidarity with flood victims of Pakistan



On 30th August 2010, Saudi Prince Alwaleed bin Talal along with Prime Minister Gillani visited flood affected

areas of Pakistan. Prince Alwaleed said that, "the kingdom stood with Pakistan during its worst hit calamity". He said that the two 100 bedded hospitals donated by the kingdom will soon be handed over to the government of Punjab and Sindh while a Saudi medical team has also arrived in Islamabad to establish two mobile field hospitals ordered by the Saudi Government to assist victims of the devastating flood. Prince Alwaleed assured Pakistan that the kingdom will provide all possible assistance it needs for the relief and rehabilitation of the flood victims.

More than a million Watan Cards issued



The Watan Card Scheme has been initiated as a part of government's overall plan to compensate and provide financial assistance to the affected households. The Scheme envisaged a uniform and transparent mode of disbursement of compensation amongst the affected households. Lists of entitled households have been drawn by the respective provincial governments in close collaboration with NADRA. Each entitled household will get a compensation of Rs 100,000 which is to be disbursed through Watan Cards. The disbursement of first instalment of Rs.20,000 as initial financial assistance to each affected household is in progress which will be followed by the disbursement of the remaining Rs 80,000 to each household. Under the scheme, as of 31st December, 2010, more than PKR 26 billion has disbursed amongst more than 1.3 million households through Watan Cards.

Province/Region	Cards Issued	Amount Disbursed (PKR)
Punjab	608,179	11,983,054,677
Sindh	472,034	8,877,743,021
KPK	195,135	3,784,280,000
Balochistan	80,233	1,350,415,250
AJ&K	6,760	120,040,000
GB	2,939	48,630,500
Total	1,365,279	26,164,163,449

COAS visits flood affected areas

On 25th August 2010, Chief of the Army Staff, General Ashfaq Parvez Kayani visited the flood affected areas of Balochistan, Sindh and southern parts of Punjab. The COAS flew over the affected areas and visited Sukkur, Kandhkot, Kashmore, Sohbatpur, Multan and Kot Addu to assess the current flood

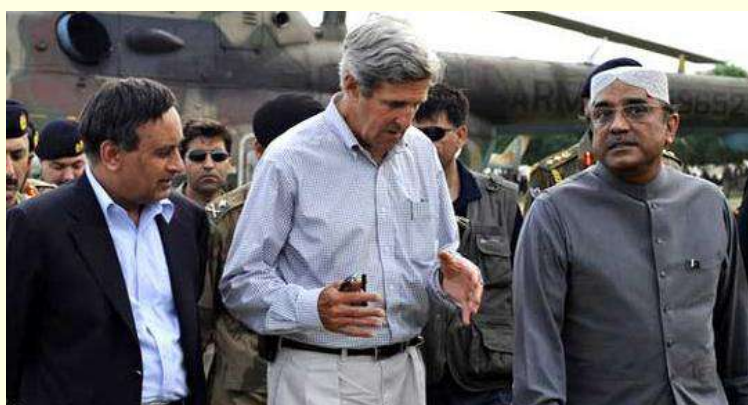


situation. He was briefed by the local field formation commanders about the progress of rescue and relief efforts by the Army. The COAS greatly appreciated the tireless efforts of the field formations and Army Aviation in providing timely relief to the people in distress.

US Senator John F. Kerry visits flood hit areas

On 19th August 2010, US Senator John Kerry visited the flood hit areas to personally review the damage caused by devastating floods. President Asif Ali Zardari also accompanied the visiting US Senator.

The US Senator was appreciative of the effective response to the calamity by the state institutions. He also observed the strong and effective cooperation between civil and military administration in the relief work being carried out in the flood affected areas of Pakistan with international help and support. He highlighted United States long term commitment with Pakistan that will be ensured through more help and assistance to the flood affected people.



UN Secretary General visits flood affected areas

On 15th August 2010, UN Secretary General Ban Ki-moon visited flooded areas of Pakistan and called upon world nations to help victims of the deadly floods. "I am here to see what more needs to be done and to urge the world community to speed up the assistance to the



Pakistani people," Ban said. Mr. Ban Ki-moon also termed the floods as "a slow motion tsunami" which was triggered by the worst monsoons in 80 years causing widespread flooding and killing more than 1985 people leaving up to 20 million homeless. "I am here... to share my sympathy and solidarity of the UN together with the people and government of Pakistan at this time of trial," he added.

The UN Secretary General said that the recent floods in Pakistan are the worst natural disaster in human history and urged all the nations to contribute generously in the relief and recovery efforts for the flood affectees. He appreciated the coordinated efforts of the Government of Pakistan, international community and humanitarian community in providing timely relief to the flood affectees.

The UN Secretary General was profoundly moved by the scenes of devastation he witnessed during his visit to the flood affected areas and called for a special session of the UN General Assembly to create awareness among member states about the enormity of the disaster. The UN special session was convened on 19 August during which the international community agreed to enhance and expedite the provision of relief assistance to Pakistan.

The Government and People of Pakistan are beholden to the outstanding efforts made by Mr. Ban Ki-moon in galvanizing international response to the natural calamity and extending invaluable support to the Government in dealing with the situation.

The University of Huddersfield UK confers honorary Doctorate upon Chairman NDMA Lt Gen Nadeem Ahmed

On 13th July 2010, in recognition of his outstanding contributions in the field of Disaster Management, the University of Huddersfield, UK conferred an Honorary Doctorate upon Lt Gen (Retd) Nadeem Ahmed, the Chairman National Disaster Management Authority.

Apart from his outstanding career in Pakistan Army, Lt. Gen.(Rtd) Nadeem Ahmed also has a vast experience of handling disasters of diversified nature. In 2005, as Chief Military Coordinator of the Federal Relief Commission, he supervised and implemented the entire spectrum of earthquake relief operations for both military and civil relief agencies, including the United Nations and foreign military elements. As Deputy Chairman of the Pakistan Earthquake Reconstruction and Rehabilitation Authority, General Ahmed strategized, implemented and supervised the entire early recovery, reconstruction and rehabilitation efforts. In 2009, as Chairman of the Special Support Group for Internally Displaced Persons, he managed the exodus of 3.5 million internally displaced persons from the conflict zone in North West Frontier Province and subsequently ensured safe return to their original abodes within just six months. He was Commander 1 Corp, Mangla till his retirement on 1st May 2010. Keeping in view his distinguished experience of handling both a "natural disaster" and a "complex emergency" through all its stages, the Prime Minister of Pakistan appointed him as Chairman, NDMA which he joined on 12th May 2010.



Lt General (Rtd) Nadeem Ahmed (C) with Mr. Patrick Stewart, Chancellor (L) and Professor Bob Cryan (R), Vice Chancellor, University of Huddersfield after the award ceremony

Margalla Air Crash – Air Blue

On 28th July 2010, at about 0945 hrs Air Blue Flight ED-202 (Air Bus A-320) operating from Karachi to Islamabad with 152 passengers onboard crashed into Margalla hills. The NDMA coordinated the immediate rescue and search operation with active participation of the Pakistan Armed Forces, District Administration of Islamabad, Rescue 1122, CDA Urban Search and Rescue Team and other government agencies/volunteers. The possibility of any survivors was bleak in view of the force of impact. Concerted efforts were made to locate and evacuate any survivors. In view of the difficulties faced by the rescue agencies in retrieving the dead bodies due to difficult and inaccessible terrain, additional helicopters (1 x MI-17, Lama and Alouette each) of the Army aviation were deployed. After hectic efforts 128 dead bodies were

retrieved from the crash site which were subsequently shifted to PIMS on the same day.



NDMA evacuates Pakistani students from Kyrgyzstan

Following the Kyrgyz-Uzbek ethnic violence, which left one Pakistani student dead and 262 Pakistani students/families stranded in the riot stricken city of Osh in Kyrgyzstan, Prime Minister of Pakistan tasked NDMA to

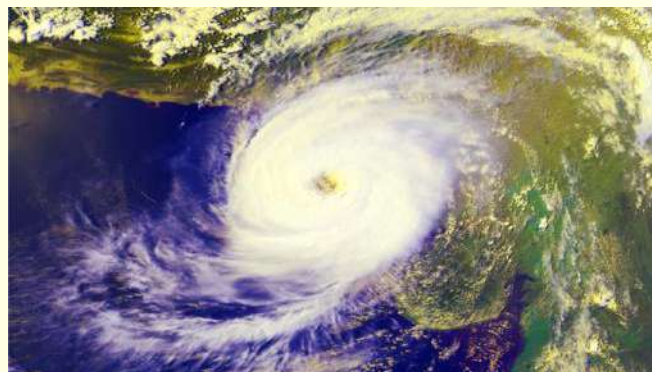
ensure safe return of the Pakistani students/families and the body of the deceased and also dispatch relief supplies for the people of Kyrgyzstan. Two special C130 sorties were deputed for the purpose. The first C 130 flight departed to Kyrgyzstan on 14th June 2010 along with a senior officer from the NDMA. The flight arrived back at PAF Air Base Chaklala on 15th June along with 134 persons evacuated from the troubled country. At the Air Base, the evacuees were received by Federal Minister for Information, Mr. Qamar Zaman Kaira and Lt. Gen (Retd) Nadeem Ahmed. The second flight of C 130 accompanied by a senior officer of the NDMA departed on 15th June and arrived back on the same day carrying the remaining 129 persons and the dead body of Mr. Ali Raza, who was killed during the riots. Families (foreigner spouse) of 19 Pakistanis had no legal documents for entering into Pakistan, they were facilitated and issued temporary visa for 72 hours to complete legal formalities subsequently.



Pakistani students after evacuation from Kyrgyzstan arriving at Chaklala Airbase, Islamabad

NDMA coordinates response to cyclone “PHET”

On 31 May 2010, tropical depression in Central Arabian Sea resulted into formation of tropical cyclone “PHET”. The cyclone caused excessive rains at Gwadar (370 mm) and along the Sindh coast (near Mirpur Sakro) between the period from 4 to 6 June before moving towards Indian Rajasthan. As a result of the excessive rains caused by the cyclone, 16 deaths were reported from Sindh while 2 deaths were reported from Balochistan. Almost all of the deaths were caused by electrocution and collapse of walls. Fortunately no major destruction to infrastructure was reported.



The NDMA coordinated the response to the emergency situation caused by the cyclone and resultant rains. As part of preparatory measures, weather advisories and warnings were issued well in advance to all relevant departments with the directions to take requisite measures to avoid any loss of life and minimize damage to property. Specific instructions were issued to the City District Government Karachi to take all precautionary measures, including removal of dangerous bill boards, loose wiring etc, to avoid loss of life and property. Fishermen were stopped from venturing into the open sea and those who were in the open sea were evacuated through Pakistan Navy and Maritime Security Agency.

As the cyclone and the resultant rains struck the coastal areas of Balochistan and Sindh, immediate search and rescue operations were launched in the affected areas. More than 7000 personnel of Pakistan Army, Pakistan Navy and Civil Armed Forces were deployed in the affected areas to lead the rescue and relief operations. The ground forces were actively supported by aviation and naval assets of Pakistan Armed forces which included 9 helicopters, 9 ships, 2 hover crafts and 2 assault boats. A total of 102,269 people were rescued from the affected areas and shifted to safer places. The

displaced people were accommodated in 214 camps (205 in Sindh and 9 in Balochistan). Essential relief items were immediately dispatched and disbursed in the affected areas which included tents, food items, medicines, mosquito nets, cholera kits, water filtration plants etc. Over all losses as compared to 2007 Cyclone Yemyin (420 deaths) remained very low due to timely warning, preparatory measures and effective coordination between the state institutions.

Relief Provided	
Camps established	214
People Rescued	102,279
Mobile Medical Teams	24
Food/Medicines	300 (tons)
Tents	1000
Cholera Kits for Thatta & Badin	2 Kits
Net Mosquito for Gwadar by PRCS	5000
De-flooding Pumps	23
Filtration Plants	2

An update on Atta Abad Lake situation

The lake which was created by a massive landslide on the 4th of January, 2010 took 20 invaluable lives, injured 8 and destroyed 141 houses. The NDMA, in coordination with all stakeholders, launched a comprehensive recovery and response operation in the area. Immediate steps were taken to ensure provision of timely relief to the affected people. The relief provided to the affectees included 1854 tents, 8885 blankets, 1700 warm jackets, 6000 shawls, 4417 plastic mats, 17 Pallets of Emergency Medical Modules & 36 tons of food items through the



Chairman NDMA inspecting the progress on Attabad Lake spillway

Gilgit-Baltistan Disaster Management Authority.

Besides this assistance, NDMA coordinated deployment of 6 Aviation Squadron helicopters for conduct of relief operations in support of Gilgit-Baltistan Administration. These helicopters made 1964 sorties evacuating 18,746 affectees and hauled 511 tons of relief items.

NDMA also provisioned 15 motorized boats from the Pakistan Army with effect from 15 February, 2010 to facilitate the relief operation/movement of persons across the lake.

Pakistan Army is also operating a Class 50 ferry over the lake for transportation of vehicles/trucks and heavy loads.

On request from NDMA, WFP is also providing 6,000 tons of food assistance (Gilgit-4,000 & Skardu 2,000 tons).

The Government of China stood with Pakistan in this hour of need and on the request of National Disaster Management Authority responded immediately providing 74 tons of diesel, 15 tons of petrol and 3,000 tons of household coal in the end of November 2010.



Group photo of Chinese and Pakistani officials after handing over ceremony of the relief assistance.

The Government of China also provided 1,710 tons of wheat/flour, 90 tons of cooking oil, 180 tons of pulses, 535 tons of rice, 43 tons of dry milk, 43 tons of black tea, 19.35 tons of salt, 90 tons of sugar, 0.9 million litres of diesel and 0.18 million litres of petrol to cater for the six month needs of the entire stranded population of the Upper Hunza.

An amount of Rs. 315 million has been released to Gilgit-Baltistan Government recently on account of “Prime Minister Relief Package” announced by Prime Minister on 26th May 2010, which includes an assistance of Rs: 200,000 per household to all those who have lost their land, Rs 400,000 for completely destroyed house and Rs 160,000 for partially damaged house, Livelihood cash grant of Rs 5,000 per family per month for six months to those who have lost their houses. Arrangements were also made to distribute this amount through the UBL in a

transparent manner. To augment all these humanitarian initiatives the government of GB dumped wheat and flour in Upper Hunza to be distributed free of cost to affected population for two months.

NDMA specifically designed “Business Revitalization Program” for the small, medium and large businesses affected in villages of Attabad, Sarat, Shishkat, Gulmit, Gulkin, Ainabad and Hussaini due to the Attabad landslide. Financial grant of Rs. 200,000, 150,000 and 100,000 each for large, medium and small business owners respectively, was given to 132 business owners from the affected areas on 9 October 2010. The total amount of money distributed among the affectees was approximately Rs. 13 million, which is expected to contribute positively to the revival and improvement of local economy. The programme was financed by the



Vehicles are being transported to Upper Hunza through boats.

USAID, Pakistan on the request of NDMA. The Agha Khan Rural Support Program (AKRSP) and the Khushali Bank assisted in the verification and disbursement of funds, respectively.



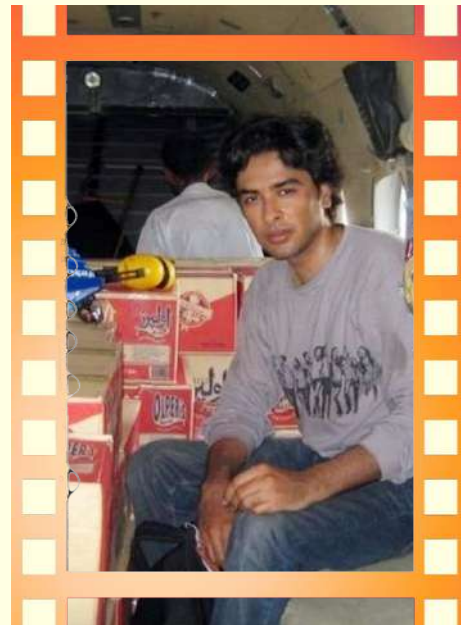
The Frozen Attabad Lake

The common belief, that the water would slowly broaden the spillway to the extent that the lake water will reduce to a level where at least the KKH could be utilized did not materialize. FWO is now working on two options of simultaneously going for a “lake tap” as well as physically lowering the spillway bed level using plant equipments.

Celebrities share grief with flood affectees



The plight of millions of flood affectees touched the hearts of people all over the globe and the celebrities were no exception who expressed solidarity with the distraught flood victims. The corollary include Oscar winning Hollywood actress and UNHCR Goodwill Ambassador Angelina Jolie who also donated US \$ 100,000, UNDP National Goodwill Ambassador & Pakistani pop star Hadiqa Kiyani, match winning star batsman Shahid Afridi, famous Punjabi pop star with an international following Ibrar ul Haq, singer Shahzad Roy, popular singer Atif Aslam, US Open runner up & UNDP National Goodwill Ambassador Aisam Ul Haq. All of these leading figures from diverse professional fields felt the grief of the flood victims and raised substantial funds for the flood affectees. Several other Pakistani celebrities are also leading different fund raising campaigns for the flood affectees.



Disaster Risk Reduction Activities

NDMA and the UN organize “Inception Workshop on HFA Progress Reporting”

On the 26th and 27th October, 2010, the NDMA, in coordination with One UN System, organized a two day Inception Workshop On HFA Progress Reporting at Bhurban. The objective of the workshop was to generate national inputs on HFA progress through multi stakeholder engagement process and to report consolidated inputs to UNISDR through the HFA Monitor. The report will be ultimately analyzed for inclusion in Global Report on Disaster Risk Reduction next year.



National working group meets to discuss mainstreaming DRR in development process

On the 27th of November, 2010, in order to review the progress on “Mainstreaming Disaster Risk Reduction (DRR) into Development Process”, which is one of the nine priorities for the next five years as per National



Disaster Risk Management Framework of Pakistan, 7th Meeting of National Working Group on DRR was held under the chairmanship of Lt Gen (R) Nadeem Ahmed, Chairman NDMA who is also the chairman of this National Working Group. Currently 10 Federal Ministries, including Planning Commission of Pakistan, are part of the initiative. The meeting was attended by the senior officers of 10 Ministries and their attached departments, representatives of Provincial Disaster Management

Authorities (PDMAs), International Donors, PEC, PCATP, and other key players related to DRR Mainstreaming.

NDMA & UNESCAP arranged Regional High-Level Expert Group Meeting to Reduce Flood Disaster Risks in Pakistan

On the 9 & 10 Nov, 2010, in the back drop of floods, NDMA, in collaboration with UNESCAP, arranged a Regional High-Level Expert Group Meeting in Islamabad to Reduce Flood Disaster Risks in Pakistan. The objectives of the meeting were, to share information on the findings of assessments conducted by various organizations, learn from each other through exchange of information and experiences in critical disaster risk reduction strategies in light of the region's experiences with major flood disasters, exchange information and experiences in formulation and implementation of viable, inclusive, and disaster-resilient livelihood opportunities and foster regional cooperation in the integration of



effective disaster risk reduction strategies into recovery and reconstruction plans.

NDMA & UNDP organize One Day Consultative Workshop for Creating Partnership for the New Disaster Management System

On 29 Nov, 2010, The National Disaster Management Authority (NDMA), in collaboration with the United Nations Development Programme (UNDP), organized a one day consultative workshop titled “Creating Partnership for the New Disaster Management System”. The objective of the workshop was to review the Disaster Management System in Pakistan and develop strategic partnerships for an effective, participatory and resilient disaster management system at different levels of the government. Chairman NDMA, Lt Gen Nadeem Ahmed (Rtd) along with UN Resident Coordinator Timo Pakkla,



UN Humanitarian Coordinator Martin Mogwanja, Toshihiro Tanaka, Country Director UNDP, representatives of PDMA's & other high level government functionaries attended the workshop.

NDMA & FAO successfully conduct Hazard, Livelihood and Vulnerability Baseline Assessment

The National Disaster Management Authority (NDMA) in collaboration with Food & Agriculture Organization (FAO) under One UN DRM Joint Programme successfully conducted Hazard, Livelihood and Vulnerability Baseline Assessment in districts Haripur, Jhang, Dadu, Gwadar and Gilgit. It provided the necessary data for addressing vulnerability and socio-economic development in these districts. The document could be used by all the stakeholders as a key planning and preparedness tool.

NDMA & UNDP collaborate for DRR capacity building

National Disaster Management Authority (NDMA), in collaboration with the UNDP, is currently implementing a capacity building programme on Disaster Risk Management for the District and Tehsil Authorities under its National Action Plan 2009-2010. Under the programme, the NDMA has conducted a series of eight courses on "Disaster Risk Management" with two courses in each province. Until now more than 300



Group photo of the DRM Balochistan Course Participants with the Senior Member Board of Revenue, Balochistan

officers have been trained and sensitized on the DRM system in Pakistan. During November 2010, NDMA organized two training courses on "Disaster Risk Management" for district/tehsil officers in Peshawar, with the collaboration of PDMA Khyber Pukhtoonkhwa Province attended by 41 participants and in Quetta with the collaboration of PDMA Balochistan, which had 43 participants.



Director PMD is explaining the ozone measurement machine during study visit of the participants to PMD office, Quetta



Group photo of the participants of the training course from KPK & FATA



A participant of the training course is receiving participation certificate from Director Operations (PDMA-KPK)

NDMA & the Planning Commission organize one day consultative workshop on "Integration of DRR into Development Process"

NDMA and Planning Commission jointly organized a one-day consultative workshop on 11 Aug, 2010, on "Integration of Disaster Risk Reduction into Development Process" under the Chairmanship of Mr. Ahmad Owais Pirzada, Additional Secretary, Planning & Development Division in Islamabad. The main agenda of the workshop was to finalize the proposed DRR Checklists and changes in PC Formats. After detailed deliberations recommendations of the committee constituted to finalize the DRR Checklists and changes in PC formats were approved.

Apart from the Planning Commission, currently nine Federal Ministries (Housing & Works; Water & Power; Industries & Production; Defence; Communication; Education, Health; Environment; Food & Agriculture), two lead international donors (World Bank, DFID) are part of the DRR Mainstreaming initiative of NDMA.



Curriculum developed for the short courses

Under the One UN DRM Joint Programme, the NDMA is also developing curriculum for the short courses which would run under National Institute of Disaster Management (NIDM) in future. For the year 2010, the following training modules have been developed and can soon be downloaded from NDMA website www.ndma.gov.pk.

- Disaster Risk Management
- Flood Mitigation
- Cyclone Mitigation

These training manuals have been developed for 5 day training courses.

The training manuals are useful for all those officials from the Government, Semi Government, UN and Civil Society Organizations who have a key role in dealing with the Disaster Risk Management.



NDMA Call Center – A Sympathetic Listening Ear

In the wake of floods 2010, National Disaster Management Authority (NDMA) immediately set up a Call Center at its headquarters in the Prime Minister's Secretariat, Islamabad. The Call Center is manned by a five member team of diligent and dedicated officers who discharge their duties in two shifts. It has been established with the purpose of facilitating swift redressal of the grievances of flood affectees. Complaints are received in the Call Centre and then communicated to the concerned government departments at the federal as well as provincial levels for appropriate action. The Call Centre has so far received a total of 10,244 complaints which have been referred to relevant authorities for immediate redressal.



Speaker National Assembly Ms. Fehmida Mirza visiting NDMA Call Centre.

IN FOCUS

Need and importance of DRR education in the context of Pakistan

By Prof. Dr. Amir Nawaz Khan, Director
&
Kamal Ahmed, Research Associate
Centre for Disaster Preparedness and Management
University of Peshawar

Pakistan had been a frequent victim of natural hazards and disasters throughout its history. The trends reveal that the cost of disasters is too high to afford for a struggling economy like Pakistan. The top 10 disasters, classified on the basis of killing & affecting people and economic damages, have cost 0.16 million innocent lives, affected around 42.73 million people and caused economic damages worth \$10 billion respectively during the last century. However, a negligible extent of significant measures had been taken towards prevention, mitigation and preparedness for disasters on sustainable basis despite of the alarming trends of disaster damages in the country. In this connection, a dire need in the paradigm shift from response to prevention and better preparedness was immensely felt after the Oct 08, 2005 devastating earthquake.

These disasters have widely damaged the livelihood assets. The damage caused by disasters to the livelihood assets could be reduced by prioritizing investments for the efficient and effective practice of the sustainable livelihoods framework. By placing the human capital on the top priority of investment, a multiplier effect of investment could be observed. The investment in the human capital would influence the other livelihood assets in a positive way. The best mode of making an investment in the human capital is education. Consequently in the context of disaster risk reduction, the best probable option would be the DRR education (Figure-1). DRR

education may be defined as, “the required knowledge and skills to achieve the possibilities of minimizing vulnerabilities and disasters in a society to prevent, mitigate and prepare for the adverse impacts of hazards.”

The DRR education programme, which is interdisciplinary in approach, needs to be organized in educational institutions of all levels directed towards the general public in particular with a view to educate them and enable them to manage and reduce disaster risk with which they are confronted in their regions. Providing DRR education in Pakistan needs to be both via formal and non – formal education at various levels for the purpose. The DRR Education programme can be implemented and executed via the Integration Strategy. This integration strategy is to be a two – prong strategy throughout the country. In the first step, the DRR education could be made an integral part of the total curricula through infusion strategy. In the second step DRR education would be introduced as a separate discipline, which would most suitably be at the university level. This would give birth to a special cadre specifically trained in DRR.

The impact of infusion approach in DRR education would prove long-standing. It is evident from the data that a considerable part of the population of the country is directly engaged everyday in educational institutions (schools, colleges, universities) as student, teachers as well as auxiliary and supporting staff. According to the Pakistan Education Statistics 2007-08, there are 37.46 million enrolled students in 0.26 million educational institutions of all categories, whereas the teaching staff in the same is 1.36 million. Apart from the auxiliary and supporting staff, if we look at the share of only the teachers and students of our educational institutions in the total population of Pakistan, which according to the Pakistan Demographic Survey – 2007 was almost 150 million, we come to know that the total share of this community is around 26% (Figure-2). This one fourth

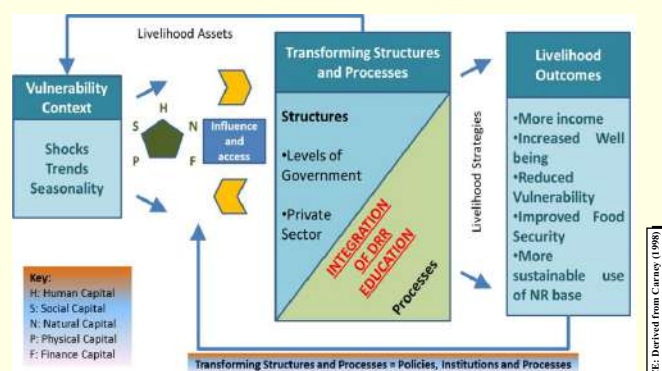


Figure-1: Sustainable Livelihoods Framework

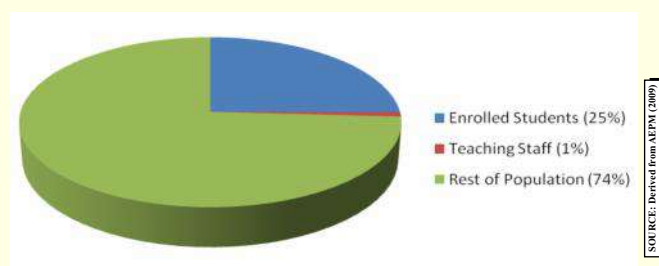


Figure-2: Share of Students and Teachers in Total Population of Pakistan

share of our population, directly linked with education, carries huge potential to absorb DRR education. It means that providing DRR education via infusion approach would lead us to cover one fourth of our population in one go. However, if we assume that each individual among this community shall forward the message of DRR education to no more than one such person who is not directly linked to education in Pakistan, we may come to the result of covering one half of the population in DRR education through infusion approach.

This two prong integration strategy will enable our youth to achieve an integral perception of the disaster risk reduction in the beginning and slowly and gradually will understand its specific nature in rational manner for the present and in the future. However, integrating disaster management education at all levels would certainly be facing some key challenges, for instance lack of information & awareness, capacity building, priority setting and institutional structure etc.

Most recent natural disasters were not the century's worst, USGS says

Killer landslides in Venezuela and Mexico, devastating earthquakes in Turkey and Taiwan, massive floods along the East Coast of the United States and Pakistan, nature has dealt staggering blows to the Earth and its people in 1999. But these were not the worst disasters of the century, either in the power of the events or in the loss of life and property that they caused.

"The costs of natural disasters -- lives lost, homes destroyed, economies disrupted -- have skyrocketed in this century, as the world's population has grown and has moved onto areas that are vulnerable to earthquakes, hurricanes, landslides, and other natural hazards," said USGS Director Chip Groat. "But there is reason for hope. By understanding how and where these natural events occur, so that we can build and live safely on the Earth, and by providing real-time information about floods,

earthquakes, and other hazards, so that we can respond effectively when disaster strikes, the USGS is helping build stronger, safer communities that are resilient to natural disaster."

Landslides

Landslides, lethal mixtures of water, rocks, and mud, generally are triggered by earthquakes, volcanoes, or weather events. The two largest landslides in the world this century occurred at Mount St. Helens, Washington, in 1980 and at Usoy, Tajikistan, in 1911. At Mount St. Helens, a moderate earthquake caused roughly 1.7 cubic miles of rocks and mud to break free and slide down the side of the volcano. The Usoy landslide, also triggered by an earthquake, moved 1.5 cubic miles of material and built a 40 miles long lake.

An earthquake caused the deadliest landslide this century, which caused 40,000-50,000 deaths in western Iran on June 20, 1990. A magnitude 7.8 earthquake at Mount Huascarán, Peru, on May 21, 1970, triggered a rock and snow avalanche killing as many as 20,000 people.

Weather-related landslides also proved deadly in recent years. The most costly landslide in U.S. history was a relatively slow-moving event in Thistle, Utah, in the spring of 1983 and consequent losses were estimated at more than \$400 million.

Earthquakes

The largest earthquake this century was a magnitude 9.5 event that struck Chile on May 22, 1960. More than 2,000 people were killed in Chile, Hawaii, Japan, and the Philippines from this earthquake and the deadly tsunami that the earthquake created. The most powerful earthquake in the United States, and the second largest in the world this century, was a magnitude 9.2 temblor in Alaska, the Good Friday earthquake of 1964. This great earthquake and ensuing tsunami took 125 lives and caused about \$310 million in property loss.

The planet's deadliest earthquake of the century, by far, was a magnitude 8.0 that struck Tianjin, China, on July 27, 1976. The official casualty figure issued by the Chinese government was 255,000, but unofficial estimates of the death toll were as high as 655,000. The magnitude 7.6 earthquake in October 2005 killed more than 3 million people in Pakistan and caused considerable damage to infrastructure.

Volcanoes

The largest eruption in the world this century occurred June 6-9, 1912, at Novarupta on the Alaska Peninsula.

An estimated 9 cubic miles of magma was explosively erupted during 60 hours beginning on June 6 - more than twice the volume of the Pinatubo eruption in 1991, the second largest this century, and about 30 times the volume erupted by Mount St. Helens in 1980. The whole of the eco system was destroyed in the area.

The eruption of Mount Pinatubo, Philippines, on June 15, 1991, blasted about 1 cubic mile of ash and rock into the atmosphere filling valleys with as much as 600 feet of volcanic debris. Close cooperation between the USGS and the Philippine Institute of Volcanology and Seismology enabled the eruption to be forecast accurately, saving at least 5,000 lives.

The deadliest eruption of the century was at Mont Pelée in Martinique, Lesser Antilles, in 1902 which caused 30,000 deaths. And a small eruption of the Nevado del Ruiz volcano in Colombia on November 13, 1985 killed more than 23,000 people in the city of Armero.

Floods

On average, floods cause more deaths each year than any other natural disaster, and the Galveston hurricane-induced flood of September 1900 was by far the deadliest flood in the United States this century, taking at least 6,000 lives. In 1927, the lower Mississippi flooded, inundating around 27,000 square miles and killing hundreds of people - more than 1,000 by some estimates. The great Midwest flood of 1993 was the costliest flood in U.S. history, with estimated damages of \$20 billion; however, only around 50 lives were lost.

China and Bangladesh have been devastated repeatedly by floods - Bangladesh lost 300,000 people in November 1970 and more than 130,000 in April 1991, from cyclone-induced flooding, and the massive flooding of the Yangtze River in China in 1931 caused more than 3 million deaths from flooding and starvation.

"Earthquakes, landslides, floods - these hazards are part of the way the Earth operates," said USGS Director Chip Groat. "Although we can't prevent natural hazards from happening, we can learn from them, and use this knowledge to prevent natural hazards from turning into natural disasters." "The next century gives us a new chance to apply the lessons we have learned about natural hazards," said Groat. "As we look ahead to the next millennium, we must continue to improve both our understanding of how the earth works and our ability to provide timely, effective, warnings, so that we can live safely on our planet."

As the nation's largest water, earth and biological science and civilian mapping agency, the USGS works in cooperation with more than 2,000 organizations across

the country to provide reliable, impartial scientific information to resource managers, planners and other customers. This information is gathered in every state by USGS scientists to minimize the loss of life and property from natural disasters, to contribute to the conservation and the sound economic and physical development of the nation's natural resources, and to enhance the quality of life by monitoring water, biological, energy, and mineral resources.

Disaster Mitigation

With the tropical climate and unstable landforms, coupled with high population density, poverty, illiteracy and lack of adequate infrastructure, India is one of the most vulnerable developing countries to suffer very often from various natural disasters, namely drought, flood, cyclone, earth quake, landslide, forest fire, hail storm, locust, volcanic eruption, etc. Which strike causing a devastating impact on human life, economy and environment. Though it is almost impossible to fully recoup the damage caused by the disasters, it is possible to (i) minimize the potential risks by developing early warning strategies (ii) prepare and implement developmental plans to provide resilience against such disasters (iii) mobilize resources including communication/tele-medicinal services, and (iv) to help in rehabilitation and post-disaster reconstruction. Space technology plays a crucial role in efficient mitigation of disasters. While communication satellites help in disaster warning, relief mobilization and tele-medicinal support, earth observation satellites provide required database for pre-disaster preparedness programmes, disaster response, monitoring activities, post-disaster damage assessment, reconstruction and rehabilitation.

Various disasters like earthquake, landslides, volcanic eruptions, flood and cyclones are natural hazards that kill thousands of people and destroy billions of dollars of habitat and property each year. The rapid growth of the world's population and its increased concentration often in hazardous environment has escalated both the frequency and severity of natural disasters. With the tropical climate and unstable land forms, coupled with deforestation, unplanned growth proliferation, non-engineered constructions which make the disaster-prone areas more vulnerable, tardy communication, poor or no budgetary allocation for disaster prevention, developing countries suffer more or less chronically by natural disasters. Asia tops the list of casualties due to natural disaster.

Among various natural hazards, earthquakes, landslides, floods and cyclones are the major disasters adversely affecting very large areas and population in the

Indian sub-continent. These natural disasters are of (i) geophysical origin such as earthquakes, volcanic eruptions, land slides and (ii) climatic origin such as drought, flood, cyclone, locust, forest fire. Though it may not be possible to control nature and to stop the development of natural phenomena but the efforts could be made to avoid disasters and alleviate their effects on human lives, infrastructure and property. Rising frequency, amplitude and number of natural disasters and attendant problem coupled with loss of human lives prompted the General Assembly of the United Nations to proclaim 1990s as the International Decade for Natural Disaster Reduction (IDNDR) through a resolution 44/236 of December 22, 1989 to focus on all issues related to natural disaster reduction. In spite of IDNDR, there had been a string of major disaster throughout the decade. Nevertheless, by establishing the rich disaster management related traditions and by spreading public awareness the IDNDR provided required stimulus for disaster reduction. It is almost impossible to prevent the occurrence of natural disasters and their damages.

However, it is possible to reduce the impact of disasters by adopting suitable disaster mitigation strategies. Disaster mitigation mainly addresses the following:

- minimize the potential risks by developing disaster early warning strategies
- prepare and implement developmental plans to provide resilience to such disasters,
- mobilize resources including communication and tele-medicinal services
- to help in rehabilitation and post-disaster reduction.

Disaster management, on the other hand involves:

- pre-disaster planning, preparedness, monitoring including relief management capability
- prediction and early warning
- damage assessment and relief management. Disaster reduction is a systematic work which involves with different regions, different professions and different scientific fields, and has become an important measure for human, society and nature sustainable development



World at a Glance

Australia submerged by inland tsunami

After years of devastating drought, the La Nina weather phenomenon drenches the northeastern state of Queensland with its wettest spring on record. At least 34 people were killed and 59 are still unaccounted for after flash floods tore through an Australian valley.

More than three-quarters of Queensland state, or an area the size of California and Texas combined, has been declared a disaster zone after the worst flooding in 50 years. Queensland accounts for as much as 30 percent of the nation's horticultural output and 35 percent of its red meat production. An estimated 300,000 people have



been affected by the floods, which have estimated to have cost the state nearly \$10bn so far.

Chilean mine crisis



Thirty three Chilean Miners, having remained trapped in a collapsed gold & copper mine for 69 days, were finally rescued on 13/14 October 2010 in a very difficult but smoothly executed operation. The 2010 Copiapó mining accident occurred on 5 August 2010, when part of the San Jose, gold & copper mine, near Copiapo in Chile collapsed, leaving 33 men trapped deep below ground. The mine is located some 45 Kms from Copiapo in Northern Chile. The miners survived in the mine for a record 68 to 69 days. All 33 were rescued and brought to the surface on 13 October 2010, with the first miner emerging from the Phoenix 2, rescue capsule at 00:10

Chile date & time(CLDT) and the last at 21:55 CLDT.

The rescue operation spoke highly of the crisis/disaster management by the leaders of Chile, particularly the President, Sebastian Pinera and his Mining Minister, Laurence Goldborne. Think of it, that the President had just been on the job for a few months, having assumed post after March 2010 elections and a serious earth quake that had just rocked Chile before he became the President. It was mission not only impossible but just unthinkable. However, the results show that it was carried out with computerized precision. It holds valuable lessons regarding crisis management.



Dozens perish in new Mount Merapi eruption in Indonesia

At least 64 people have been killed in the latest eruption of Indonesia's Mount Merapi volcano in Cangkringan District, of the Sleman Regency, on the island of Java in

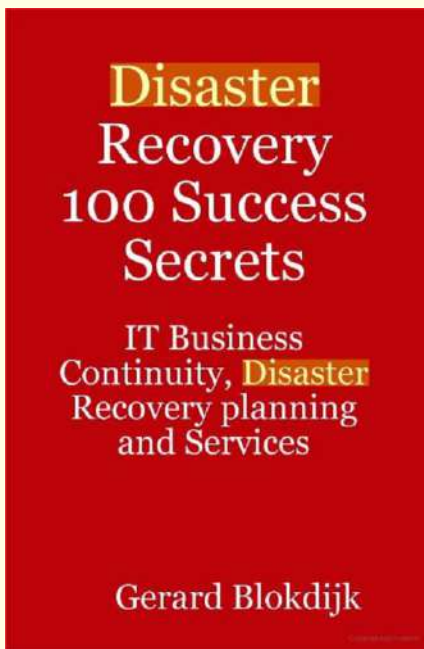
Indonesia on the 5th of November 2010- more than doubling the death toll since it became active again. More than 100 people are said to have been killed while

dozens are being treated for burns and respiratory problems after a gas cloud hit villages with even greater force than the previous eruptions. An estimated 75,000 residents have been evacuated from the area. Mount Merapi, one of the world's most active volcanoes, is located in a densely populated area in central Java.



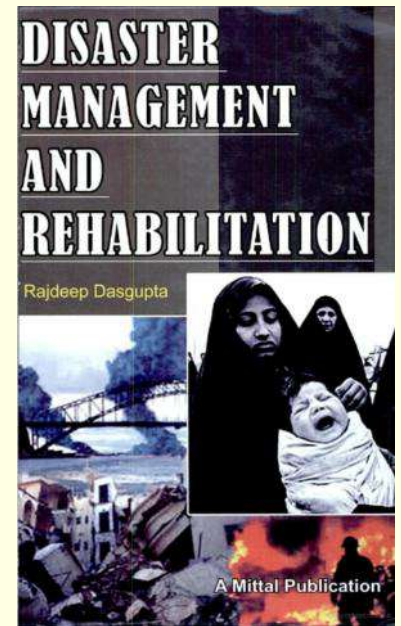
Books and Publications

This book is on the credit of Gerard Blokdijk and is published by Emereo Pty Ltd. This masterpiece has 209 pages and comes in paperback form. This is the first edition & was published On 16 July, 2010. There has never been a Disaster Recovery manual like this. 100 Success Secrets is not about the ins and outs of Disaster Recovery. Instead, it answers the top 100 questions that we are asked and those we come across in forums, our consultancy and education programs. It tells you exactly



how to deal with those questions, with tips that have never before been offered in print. This book is also not about Disaster Recovery's best practice and standards details. Instead it introduces everything you want to know to be successful with Disaster Recovery.

This book has been written by Rajdeep Dasgupta and published by Mittal Publications and was first published in 2007. This book brings to the reader a comprehensive coverage of the issue of disaster management. Compiling an erudite exploration of disaster management, the book starts with an enunciation of the types of disasters, immediate aid, and the risk factors. Also, it gives a compendious amount of information on emergency aid, and long-term plans to benefit victims chapters have also been included to help the disaster management professional so gauge potential risk, asses viability, evaluate probability and risks and assess damage.



Considering the relevance of disaster management today, this book with its all encompassing content should hopefully be highly enlightening to the reader.