

WINTER CONTINGENCY PLAN



APRIL 2008

NATIONAL DISASTER MANAGEMENT AUTHORITY

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Acronyms

AJ&K	Azad Jammu and Kashmir
AI	Avian influenza
ANDMA	Afghanistan National Disaster Management Authority
ARF	Average Rainfall
ARI	Acute Respiratory Tract (Upper and Lower) Infections
BRSP	Balochistan Rural Support Programme
CP	Contingency Planning
DC	Deputy Commissioner
DCO	District Coordination Officer
DDMA	District Disaster Management Authority
DMT	Disaster Management Team
Deptt	Department
DHO	District Health Officer
ERC	Emergency Relief Cell
ERRA	Earthquake Reconstruction and Rehabilitation Authority
FWO	Frontier Works Organization
FAO	Food and Agriculture Organization
FFC	Federal Flood Commission
GTZ	German Technical Cooperation
IDPs	Internally Displaced Persons
IFRC	International Federation of Red Cross
INGO	International Non-Governmental Organization
IOM	International Organization for Migration
JSHQ	Joint Staff Headquarters
KKH	Karakorum Highway
MINDEF	Ministry of Defence
MINFAL	Ministry of Food, Agriculture and Livestock
MOH	Ministry of Health
MRF	Mean rainfall
MSA	Maritime Security Agency
NA	Northern Areas
NDMA	National Disaster Management Authority
NFI	Non-Food Items
NGO	Non-Governmental Organization
NHA	National Highway Authority
NLC	National Logistic Cell
NWFP	North West Frontier Province
PAF	Pakistan Air force
PDMA	Provincial Disaster Management Authority
PESCO	Peshawar Electric Supply Company
PHE	Public Health Engineering
PIA	Pakistan International Airlines
PMD	Pakistan Meteorological Department
PN	Pakistan Navy
PNSC	Pakistan National Shipping Corporation
PPA	Pakistan Poultry Association
PPE	Personal Protective Equipment
PR	Pakistan Railways
PRCS	Pakistan Red Crescent Society
PTCL	Pakistan Telecommunication Company Limited
SAR	Search and Rescue
SCO	Special Communication Organization

SDMA	State Disaster Management Authority (AJ&K)
SOP	Standard Operating Procedure
SRSP	Sarhad Rural Support Programme
SUPARCO	Space and Upper Atmosphere Research Commission
UNFPA	United Nations Population Fund
UNHABITAT	United Nations Human Settlement Programme
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNOCHA	United Nation's Office for the Coordination of Humanitarian Affairs
UNOPS	United Nations Office for Project Services
WAPDA	Water and Power Development Authority
WATSAN	Water and Sanitation
WFP	World Food Programme
WHO	World Health Organization

Executive Summary

1. Pakistan faces a range of natural hazards which includes floods and cyclones, seismic activity along the mountainous north and west and off the Balochistan coast, and prolonged spells of impoverishing droughts in the arid zones. The occurrence of such disasters cause massive losses in lives and livelihood and tend to retard economic growth. Reactive disaster management and emergency response system exacerbate hazard impact.
2. NDMA has initiated a process of introducing proactive preparedness regime for streamlining response at national, provincial and district level in coordination with relevant stakeholders. This process i.e. contingency planning for major hazards shall enable initiation of requisite mitigation measures and under-take a coordinated response to minimize loss of life and property in the event of a disaster. It is a stakeholders' inclusive exercise that takes stock of what exists in terms of plans and resources, hazards analysis to determine the likely relief caseload as a planning assumption. Strategies, objectives and role and coordination aspects of stakeholders are defined. Winter contingency planning constitutes the first exercise in this regard and will be followed by similar exercises for monsoon / sea based hazards, droughts, earthquakes and industrial / Technical hazards to facilitate preparation of national disaster preparedness and response plan by end 2008.
3. Winter hazards occurring through November to March are accentuated by heavy precipitation in the upper mountainous regions of NWFP, AJ&K, Northern Areas and northern Balochistan. Snow avalanches and slides either target vulnerable communities or isolate them by severing communication. Heavy rains can also cause flash floods in the catchment areas and semi-mountainous regions. Poor first responders and local response capacities and insufficiency in logistic resources for early access to disaster prone communities in remote mountainous regions or for reopening severed land routes further aggravate the situation. Winter emergency scenarios are based on last thirty years precipitation data. These are compared with the assessed precipitation forecast of the winter months furnished by PMD and international research institutes. Planning for winter emergencies caters for the worst case scenario. Besides latent socio-economic poverty, degree of vulnerability to hazards, scale and scope of risks, historical precedence, remoteness of hazard prone regions, inadequacy of local coping mechanisms are the key criterion in determining the likely affected and vulnerable population. Resource mapping of NWFP, Balochistan, AJ&K and Northern Areas generally indicates sufficiency in meeting shelter, NFI and emergency food needs but would require situation based support in emergency healthcare, reopening of remote roads, restoring potable water sources and livelihood.
4. Based on the emerging situation, national response to a major disaster would entail deployment of Armed Forces and CAF for search and rescue operations and also to provide immediate relief and emergency healthcare. Aviation assets to provide aerial relief, NHA, FWO, NLC and provincial resources are mobilised for early restoration of road communication. Emergency Relief Cell transports shelter, food and NFI utilising PAF strategic airlift assets if required. NLC resources are deployed to augment land based relief effort and Pakistan Navy and MSA assets for sea based operations. WAPDA, PTCL and SCO restore essential tele-communication services and MoH bolsters health response and deploys capacities to pre-empt onset of epidemics. Ministry of Social Welfare mobilises resources for restoring livelihood of vulnerable communities and Ministry of Foreign Affairs constitutes the focal point

for handling donor support consistent with national policies and also for securing access to Chitral through Afghan territory consistent with agreed arrangements.

General

1. NDMA constitutes the focal point for coordinating national preparedness and response to disasters. Its functions include capacity development of national stakeholders, hazard / need assessments, resource mobilization and generating a coordinated national response. This entails horizontal coordination with host of government line departments and autonomous bodies that furnish early warning, undertake search & rescue, conduct relief operations and meet needs of vulnerable segments. NDMA coordinates execution of these functions with Armed Forces, Emergency Relief Cell, National Logistic Cell, National Highways Authority, Pakistan Metrological Department, WAPDA and other relevant Federal Agencies. Vertical coordination occurs with PDMA's with regards to post disaster assessments and execution of response. NDMA also constitutes the point of contact for deploying external assistance for disaster response through UN agencies, INGOs and donors consistent with national policies. DMT forum aims at institutionalizing coordination and information sharing.

2. PDMA's coordinate preparedness and response to disasters horizontally with line departments and key ministries and vertically with NDMA and DDMA's. Similar processes are followed at the district tier by DDMA's. Tehsil Disaster Management Authority performs such functions at sub-districts / Tehsil levels. Union Councils and Village Councils offer support for coordination at the grass roots. Disaster management structures at district and below also integrate inputs of local NGOs. DDMA's are responsible for planning and executing immediate response to disasters. They are supported by law enforcement agencies and paramilitary forces. Armed Forces assistance is solicited for search & rescue, strategic and tactical air support and immediate relief. PDMA's support the affected DDMA (s) by supplementing health, food security, restoration of land access and essential services, veterinary and other need based support. Assistance from NDMA is sought to supplement shortfalls

3. NDMA leads an integrated contingency planning process for hazards that can engender humanitarian disasters or emergencies. Disaster risks in Pakistan are reflected in . Latent socio-economic poverty, particularly in remote rural regions, declining environmental health and a low awareness level with regards to hazard risk reduction, poor first responders' capacity and weak emergency response services tend to accentuate disaster impact. Contingency Plan addresses epidemics and pandemics in the context of winter emergencies focusing on Avian Flu, Dengue and Acute Respiratory Tract Infection.

Aim

4. To prepare national plan for Winter Contingencies (November – March), Epidemics and Pandemics Including hazard risk assessment, in consultation with all stakeholders with a view to formulating coordinated mitigation and response measures.

Objectives

5. Identification of key operational imperatives and constraints.
6. Identification of response preparedness levels of key stakeholders.
7. Identification of roles and responsibilities of various stakeholders.
8. Defining essential coordination measures.

Scope

9. Review of existing plans, evaluation of historical record and precipitation / snowfall data for identification of hazards, risks and vulnerabilities in consultations with all stakeholders.
10. Development of disaster scenarios for determining corresponding humanitarian caseloads.
11. Resource mapping for response and identification of critical deficiencies.
12. Defining sectoral response strategies, plans and coordination mechanism.

Risk Analysis - Winter Emergencies

13. Wide array of vulnerabilities tend to accentuate the impact of natural disasters in winters. Foremost being the element of geography which contributes in severing access to mountainous winter hazard prone regions thus putting stress on the limited coping capacity of vulnerable communities. Winter disaster hazards span upper regions of NWFP, AJ&K, Northern Areas, Balochistan and Galliat region of Rawalpindi district of Punjab. Heavy rains cause flash floods over semi-mountainous and mountainous tracts of the country in winters which are more pronounced as a consequence of summer monsoons. Heavy precipitation instigated winter hazards engender avalanches and land slides and very rarely cloud bursts. Severe cold waves cause winter illness and hypothermia in extreme cases. Relative remoteness and physical isolation of District Chitral of NWFP makes it very vulnerable to winter hazards. The only land route to the district from within NWFP via Lowari Pass is severed from mid-Jan to end March leaving circuitous access through adjoining Afghan territory.

14. Environmental degradation owing to rapid deforestation and soil degradation that occurred as a consequence of October 2005 earthquake in northern AJ&K and adjoining regions of NWFP enhances vulnerability of communities to land sliding and avalanches and concomitant severing of land communications. This was in evidence over the last two winters. The latent socio-economic poverty of population in remote mountainous regions coupled with poor social infrastructure and near absence of viable first responders capacity enhances their vulnerability.

15. Weakness of institutional support manifests itself in the shape of poor early warning mechanism particularly with regards to flash floods and weak local emergency / disaster response capacity. Absence of proactive planning coupled with resource scarcity results in weak / negligible surge capacities, inadequacy in deployment of heavy plant for restoring severed land communications and in pre-stocking of emergency relief needs and provision of emergency health care. Development of infrastructure in disaster prone regions with scant regards to risk prevention and reduction consideration tends to amplify the impact of disasters. For example location of Shadikot Dam (Pasni, Gwadar district of Balochistan) within the storm water path caused its collapse in February 05 in the face of flash floods. Similarly, in the aftermath of Cyclone Yemyin of 2007, Mirani Dam's structure was perilously endangered again by virtue of being located in flood drainage path in Kech District of Balochistan. Consequently, vulnerable communities in the mountainous / semi mountainous regions run the risk to life from snow avalanches, sliding activity and flash floods.

Scenarios for Winter Emergencies

16. Winter emergency scenarios are built on empirical data accessed from Pakistan Meteorological Department (PMD). It indicates past thirty years average rainfall (ARF) spread over the winter months and maximum rainfall (MRF) received in the vulnerable districts over 24 hours over the past thirty years.

Provincial Average Mean Winter Rainfall (MM) - last 30 years				
Month	NWFP	NA	AJ&K	Balochistan
November	14.52	6.90	36.27	2.87
December	17.48	10.93	63.63	14.00
January	24.16	17.02	98.17	21.54
February	29.53	18.02	121.03	22.00
March	37.84	35.57	166.50	25.31
April	29.39	36.65	98.10	12.11

Provincial Average Heaviest Winter Rainfall (MM) in 24 hrs - last 30 years				
Month	NWFP	NA	AJ&K	Balochistan
November	74.19	27.88	118.27	20.24
December	62.51	38.25	121.67	35.82
January	68.02	28.18	94.63	52.84
February	63.39	29.82	112.10	50.31
March	100.76	58.03	150.47	72.65
April	73.23	67.68	84.47	36.71

17. Past precipitation pattern indicates districts Chitral, Mansehra, Kohistan, Abbotabad, Battagram, Upper Dir, Swat and Shangla to be vulnerable in NWFP; Ghanche, Astor, Skardu, Diamir, Ghizar and Hunza-Nagar in Northern Areas; Neelum, Muzaffarabad, Bagh and Rawalakot in AJK; and Ziarat, Qilla Saifullah, Qilla Abdullah, Pishin, Zhob and Kalat in Balochistan. It also indicates a gradual rise in precipitation from November which peaks in February and March. Snowfall occurs in higher mountainous regions and it generally corresponds to the precipitation pattern.

- a. **Normal Scenario.** Rainfall pattern through winters (November-March) either corresponding to or remaining less than ARF falls within the “**Normal Scenario**” (Alert Level 1).
- b. **Worst Case Scenario.** If it exceeds ARF by over 25% or more or approaches MRF it will then be determined within the “**Worst Case Scenario**” (Alert Level 2).

18. **Likely Occurrence Pattern.** Geographical contiguity and past trends indicate winter hazards impacting regions across the country in the following priority in terms of severity of impact.

- a. In District Chitral of NWFP and regions of Northern Areas severe snowfall and precipitation is likely to cause avalanches and land slides, some impacting directly on the communities, thus causing severance of land communication, thereby engendering humanitarian emergencies and posing risk to lives and livelihoods.
- b. For similar reasons and consequences Districts Mansehra, Battagram, Abbottabad of NWFP and Neelum, Muzaffarabad and Bagh of AJ&K constitute vulnerable regions, where impact of

winter hazards tends to be accentuated by the Earthquake - 05 generated environmental degradation.

- c. Districts Upper Dir, Swat, Shangla, Kohistan and Kurram Agency in the Koh-e-Sulaiman Range in the west constitute another vulnerable region in NWFP.
- d. Westerly winter monsoons impact Balochistan early and cause similar impact in northern regions of the province covering Districts Ziarat, Qilla Abdullah, Qilla Saifullah, Zhob, and Pishin while Gwadar, Kech, Bolan and Jhal Magsi remain vulnerable to flash floods.
- e. Flash floods can occur through winter months in the lower mountainous regions or catchment areas across the country.
- f. Past trends indicate greater winter emergency related risks occurring in the months of February and March

19. **Vulnerability Rating.** Provinces and districts are rated in terms of vulnerability as follows:-

- a. **NWFP.** Chitral, Mansehra, Kohistan, Battagram, Upper Dir, Swat, Shangla and Kurram Agency.
- b. **AJ&K.** Neelum, Muzaffarabad (Leepa region, Salmiah UC), Bagh (Tehsil Forward Kahuta) and Rawalakot (Chirikot area).
- c. **NA.** Ghanchee, Astor, Skardu, Diamir, Ghizer, Hunza-Nagar and Gligit.
- d. **Balochistan.** Ziarat, Qilla Saifullah, Qilla Abdullah, Pishin, Zhob, Kalat, Bolan, Jhal Magsi, Kech and Gwadar.

20. **Planning Assumptions**

- a. Response estimates for the national vulnerable population caseload so identified is planned for 15 days. This should cater for more prolonged relief needs as disasters tend to have a spatially limited foot print, thus impacting on a segment of the anticipated relief caseload.
- b. Latent vulnerabilities that tend to accentuate hazard impact are: relative inaccessibility of mountainous regions; socio-economic poverty; poor social support and local emergency response institutions; local environmental degradation; poor first responder's capacity; poor early warning mechanism and weak local governance.
- c. Population / communities at risk due to onset of winter hazards are likely to face physical isolation as a consequence of severance of road communication causing either or combination of food insecurity; loss of habitat; disruption in access to potable water and emergency health care and loss of livelihood.
- d. For any disaster which partially or fully overwhelms national response capacity there will be a consideration for appeal for international support on the determination of the competent national authority.
- e. Epidemiologic evidence indicates continued vulnerability to Avian Flu and Dengue fever.

- f. Projected humanitarian relief caseload for winter contingencies is as under:-

Province/State	Affected Population	Relief Caseload	Percentage of case load
NWFP	355,000	55,500	15.6 %
AJ&K	50,000	8,500	17 %
Northern Areas	110,000	21,000	19.1 %
Balochistan	135,000	10,000	7.9 %
Total	650,000	95, 000	14.8%

21. **Planning Parameters.** Response planning is based on “*Worst Case Scenario*”.

a. **Key Operational Constraints**

- (1) Difficulty of access in remote mountainous regions.
 - (2) Poor early warning and first responders' capacity.
 - (3) Reactive local and provincial response mechanism.
 - (4) Weak coordination and information sharing mechanism.
- b. In determining likely winter scenarios, predicted weather assessments for 2007/08 are compared with short term forecasts.
- c. Affected population is determined on the basis of being either directly impacted by hazards or rendered isolated, severity of humanitarian consequences notwithstanding.
- d. 5-10% of the affected population is identified as relief caseload on the basis of relative severity of humanitarian consequences warranting relief support exceeding 15 days.
- e. 2007 Cyclone and Floods residual relief case load in Balochistan and Sindh is also addressed in the winter emergency planning 2007/08.
- f. Voluntary UN / INGOs or donors assistance to disaster response will be executed consistent with national policies, agreed need assessment and through the prescribed DMT forum.

22. **Possible Triggers for Onset of Worst Case Scenario**

- a. Excessive but anticipated precipitation pattern in the vulnerable regions with anticipated humanitarian fallout.
- b. Erratic precipitation patterns contrary to anticipated assessments i.e. early (October – December) or late (end March / beginning April) precipitation with corresponding exaggerated humanitarian impact.
- c. Sudden conflagration of avian flu or dengue fever epidemics with a possibility of trans-frontier pandemic impact.

23. **Likely Indicators for Termination of Winter Emergencies.**

- a. Culmination of winter monsoon / precipitation as determined by PMD.
- b. Lack of evidence with regards to outbreak of avian flu or dengue fever based on epidemiological monitoring by Ministry of Health (MOH).

Winter Emergencies - Humanitarian Impact Analysis

24. **NWFP.** The province is vulnerable to the flash flooding, land slides, avalanches and heavy snow fall related hazards in the mountainous regions along Hindu Kush Range and its lower reaches covering districts Chitral, Upper Dir and Swat in the north and western reaches of Himalayas in the northeast covering districts Mansehra, Battagram and Abbotabad. Environmental degradation of the earthquake regions encompassing the latter has revealed risks associated with sustained precipitation. Likely Affected Population: 3,55,000 and Likely Relief Caseload 55,500. Vulnerable districts (shown as red) and their relief caseload are indicated below:-



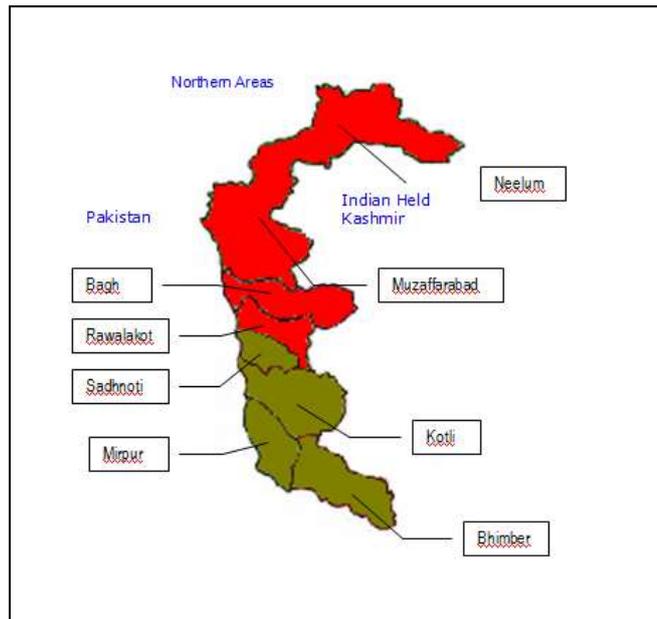
- a. **District Chitral.** The entire district faces accessibility problem in winters as Lowari Pass (for land link with NWFP province) generally remains closed from Dec to March. Its total population is 3,85,000 persons. Tehsils are Chitral and Mastuj with 24 UCs. (**Total Affected Population: 158,000 and relief case load: 30,000**)
 - (1) **Garam Chashma (Tehsil Chitral).** 70 kms (from Chitral)
 - (a) Reasons of Vulnerability. Remoteness and severe winter hazards
 - (b) Population Affected. 30,000
 - (c) Case Load for Relief. 3,500
 - (2) **Arkari Valley (Tehsil Chitral).** 40 Kms
 - (a) Reasons of Vulnerability. Accessibility , rock fall and other winter hazards.
 - (b) Population Affected. 8,000
 - (c) Case Load for Relief. 2,000
 - (3) **Karimabad Valley (Tehsil Chitral).** 30 km
 - (a) Reasons of Vulnerability. Very poor accessibility, winter hazards.
 - (b) Population Affected. 10,000
 - (c) Case Load for Relief. 2,000
 - (4) **Lowari – Drosh (Tehsil Chitral).** 80 km
 - (a) Reasons of Vulnerability. Winter hazards, flash floods, in particular.
 - (b) Population Affected. 10,000

- (c) Case Load for Relief. 2,000
- (5) **Magaklashat Valley (Tehsil Chitral).** 60 kms from Drosh
- (a) Reasons of Vulnerability. Winter hazards, snow and landslides in particular.
- (b) Population Affected. 5,000
- (c) Case Load for Relief. 1500
- (6) **Yarkhund Valley (Tehsil Mastuj).** 150 kms from Mastuj
- (a) Reasons of Vulnerability. Extremely poor accessibility. Adjoins Wakhan strip, winter hazards.
- (b) Population Affected. 30,000
- (c) Case Load for Relief. 6,000
- (7) **Thorkoh Valley (Tehsil Mastuj).** 80 kms
- (a) Reasons of Vulnerability. All hazards.
- (b) Population Affected. 25,000
- (c) Case Load for Relief. 5,000
- (8) **Mulkoh Valley(Tehsil Mastuj).** 80 kms
- (a) Reasons of Vulnerability. Excessively hazard prone
- (b) Population Affected. 40,000
- (c) Case Load for Relief. 8,000
- b. **Issues Specific to Chitral and Generally Applicable to other Districts**
- (1) Restoration of land routes – pre-positioning of heavy plant at vulnerable locations
- (2) Provision of emergency health cover & operationalization of health Facilities
- (3) Helicopters for emergency relief support
- (4) Employment of Armed Forces / Paramilitary for immediate relief and emergency health support
- (5) Availability of C-130 aircraft for strategic airlift
- (6) Restoration of essential services: electricity & Telephone
- (7) Support Livelihood regeneration by agri-subsidies, provision of seeds and cash for work
- (8) Ensuring access through Afghanistan
- c. **Kohistan.** Its total population is 545,000, 4 Tehsils and 38 UCs. It is a mountainous and poorly accessible district astride Indus. Following valleys are vulnerable to winter emergencies ranging between 4000 – 6500 feet height:-
- (1) Kandian Valley – 40 km from KKH
- (2) Harban Valley - 25 km
- (3) Jalkot Valley - 15 kms
- (4) Kyak Valley - 16 kms
- (5) Palas Valley - 15 kms

- (6) Reasons of Vulnerability
- (a) Extremely poor land communication and abysmal social support infrastructure accentuate vulnerabilities. For example there is no district hospital
- (b) Population in these valleys and other regions remain mostly isolated in winters and are vulnerable to land sliding, precipitation and excessive snowfall
- (7) Population Affected. 60,000
- (8) Case Load for Relief. 5,000
- d. **Mansehra.** It was severely affected by Earthquake-05 and the district is more vulnerable to winter emergencies due to resultant environmental degradation. Its population is 1,330,000. Tehsils are Mansehra, Balakot and Ughi with 79 x UCs. Relief Operations will normally include:- Shelters / NFI , Food security Health, Livelihood restoration, Camp management, Infrastructure restoration and restoration of education facilities.
- (1) **Tehsil Balakot.** Kaghan Valley at Kaghan & Naran – 120 kms from Mansehra
- (a) Reasons of Vulnerability. Vulnerable to land slides and physical isolation in Upper reaches of Kaghan Valley astride and beyond Kaghan & Naran
- (b) Population Affected. 25,000
- (c) Case Load for Relief. 4,000
- (2) **Tehsil Ughi.** Kala Dhaka region - 70 kms from Mansehra
- (a) Reasons of Vulnerability. Vulnerable to snowfall, land slides and physical isolation
- (b) Population Affected. 10,000
- (c) Case Load for Relief. 1,000
- e. **Battagram.** Again severely affected by the Earthquake- 05, which makes it more vulnerable to winter emergencies. Its population is 3, 65,782. Its tehsils are Battagram and Allai with 20 x UCs.
- (1) **Allai Valley.** 70 kms from Battagram
- (a) Reasons of Vulnerability. Very poor access off KKH from Thakot. Population residing in the remoter part of the valley, known Upper Allai that includes Batang, Rashang, Biari and Pashtu is more vulnerable Tends to be isolated for prolonged periods due to heavy snowfall and avalanches.
- (b) Population Affected. 25,000
- (c) Case Load for Relief. 4,000

- f. **Upper Dir.** Its population is 685,498. Its tehsils are Dir, Barawali, Wari and Khail with 31 x UCs.
- (1) **Barawal Tehsil.** 60 kms from Dir
 - (a) Reasons of Vulnerability. Within the Barawal Tehsil area known as Kohistan is excessively vulnerable to winter hazards. Is linked via 'katcha' road prone to land sliding.
 - (b) Population Affected. 13,000
 - (c) Case Load for Relief. 3,000
- g. **Swat.** Its population is 1,497,043 and tehsils are Swat and Matta
- (1) **Matta Tehsil.** 80-100 kms from Mingora (district HQ)
 - (a) Reasons of Vulnerability. In the northern end of Swat district Kalam, Gabral and Mahodand valleys are vulnerable to land sliding and avalanches.
 - (b) Population Affected. 25,000
 - (c) Case Load for Relief. 3,000
 - (2) **Malam Jabba.** 55 kms from Mingora
 - (a) Reasons of Vulnerability. In the north of Swat District , Kalam, Gabral and Mahodand valleys are vulnerable to land sliding and avalanches.
 - (b) Population Affected. 10,000
 - (c) Case Load for Relief. 1,500
- h. **Shangla.** Its population is 501,000 with 2 x Tehsils and 28 x Ucs. A mountaious and difficlut to access disitrc, which lies between Disitrc Swat and River Indus. Is served with poor road communicaiton.
- (1) **Puran Tehsil.** located at a height of 5,000 but is excessively disiffclut to approach and remians cutoff even as a consequence of mild snowfall.
 - (a) Reasons of Vulnerability. It is linked with Swat through Shangla Pass which remains snow bound most winters.
 - (b) Population Affected. 15,000
 - (c) Case Load for Relief. 2,000
- i. **Abbottabad.** Its population is 881,000 and , Tehsil is Abbotabad with 44 UCs.
- (1) **Galliat.** Tehsil Abbotabad
 - (a) Reasons of Vulnerability. Thandiani, Nathiagali and Barian tend to be temporarily isolated due to heavy snows and land sliding.
 - (b) Population Affected. 15,000
 - (c) Case Load for Relief. 1,000
- j. **Kurram Agency**
- (1) Reasons of Vulnerability. Remote valleys of tribal areas.
 - (2) Population Affected. 10,000
 - (3) Case Load for Relief. 1,000

25. **Northern Areas.** Straddled astride Karakorums and the Indus Valley, terrain is characterized by Alpine mountain ranges with scattered population dispersed in deep valleys. Though winter stocking for humans and domestic animals is very much part of the local culture but vulnerable segments subsisting on bare minimum are at risk in face of winter hazards. The eastern Districts of Ghanche and Skardu encompass wide mountainous spaces and pose accessibility problems. Astor and parts of Diamir reveal recurring seismic vulnerability and its narrow valleys are prone to closure due to land



sliding. Winter hazards, on the whole, range from avalanches, land sliding; flash floods which put much stress on the fragile road communication network and eventually put isolated communities at peril. **(Likely Affected Population 1,10,000 and Likely Relief caseload 21,000)**

- a. **Ghanche.** With a population of 83,366 it straddles Shyok and Indus valleys and also abuts Siachen Glacier
 - (1) **Vulnerable Areas.** Goma, Gyong, Olding, Piyun. About 150-200 kms from Skardu.
 - (2) **Reasons of Vulnerability.** These areas are mainly vulnerable to heavy snowfall, avalanches and lower valleys to flash flooding. Likely affected population 15,000
 - (3) **Relief Case Load.** 3000
- b. **Astor.** It has population of 71,666 and straddles Astor river along and narrow valley north of Nanga Parbat
 - (1) **Vulnerable Areas.** Burzal Pass isolates the eastern Portion of valley for nearly six winter months and isolates Minimurg, Kamri and Rattu Located about 125-175 kms from Gilgit
 - (2) **Reasons of Vulnerability.** Vulnerable to land sliding and avalanches putting at risk isolated communities within smaller valleys Likely affected population is 20,000
 - (3) **Relief Case Load.** 5,000
- c. **Skardu.** With a population of 214,848 the district spreads across Indus and Shigar Valleys and it encloses significant arid regions.
 - (1) **Vulnerable Areas.** Upper end of Shigar Valley & Dambu Das
 - (2) **Reasons of Vulnerability.** Avalanches and landslides. Likely affected population 15,000

- (3) Relief Case Load . 3,000
- d. **Diamir**. With a population of 131, 925 it is located astride Indus and KKH on the approach to Gilgit. Nanga Parbat is located in the district.
- (1) Vulnerable Areas. Batorogah Nullah, Thugh Nullah, Khaner Nullah, Darel and Tangir valleys about 100 -170 kms from Gilgit
- (2) Reasons of Vulnerability. Avalanches, land slides and flash floods. Likely affected population 20,000
- (3) Relief Case Load. 3,000
- e. **Ghizar**. Population of 120, 218 it is located west of Gilgit along the road to Chitral.
- (1) Vulnerable Areas. Bathreat Valley, Darkut Valley, Thui Valley and Phander
- (2) Reasons of Vulnerability. Avalanche, land sliding and vulnerable due to communication severance. Likely affected population – 15,000
- (3) Relief Case Load. 3,000
- f. **Hunza – Nagar**. A newly created district which straddles KKH north of Gilgit and Rakaposhi is located in it.
- (1) Vulnerable Areas. Shamshal, Nagar and Chakarkot valleys. Located 60 – 90 kms from Gilgit
- (2) Reasons of Vulnerability. Avalanches and land sliding. Likely affected population – 15,000
- (3) Relief Case Load. 2500
- g. **Gilgit**
- (1) Vulnerable Areas. Hiramush, Bagrot and Chakarkot valleys.
- (2) Reasons of Vulnerability. Avalanches and land sliding. 10,000
- (3) Relief Case Load. 1500

26. **Azad Jammu and Kashmir**

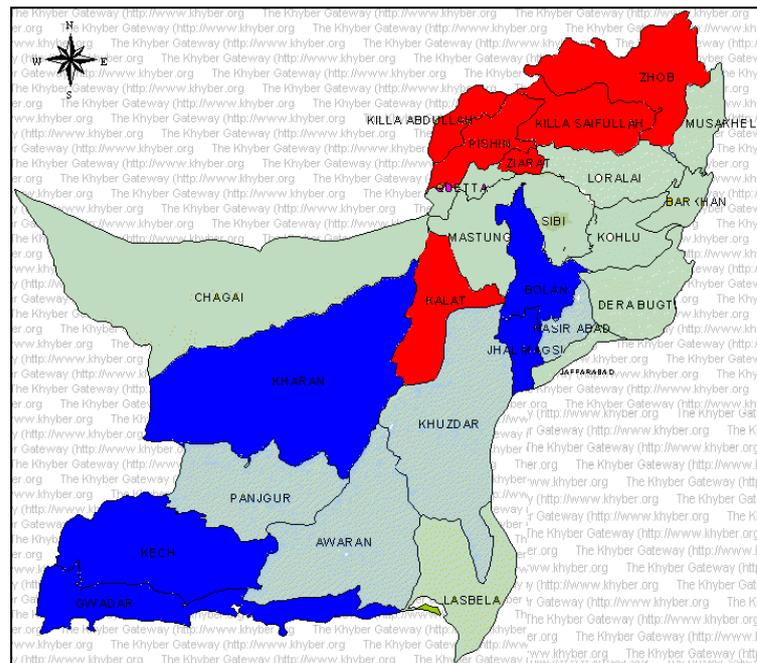
(Precipitation and Snowfall Data. Four northern districts of AJ&K, Neelum, Muzaffarabad, Bagh and Rawalakot are vulnerable to winter hazards accentuated due to environmental degradation as a consequence of Earthquake 05 . Terrain is configured in mostly coniferous mountains with average heights ranging 7,000 – 11, 000 feet. Being western extension of Himalayas and Pir Punjal range, the mountainous terrain



experiences intense snowfall and precipitation in winters and is vulnerable to the full range of hazards. Vulnerable segments of the population suffer imminently in such circumstances. Rivers Jhelum and Neelum flow through the upper districts. In periods of heightened tension with India, regions close to Line of Control are subjected to all types of conventional fire by the Indian military disrupting and endangering lives. (**Likely Affected Population 50,000 and Likely Relief caseload 8,500**).

- a. **Neelum.** With a population of 126,000 the district is configured in a narrow valley flanked with steep mountains astride Neelum River. Vulnerable areas are: Sharda, Kel, Nikruh (120 -150 kms from Muzzafabad). Land slides normally occur between Sharda and Toa Butt, also avalanches and snowfall related emergencies. Likely affected population is 20,000 where is likely relief case load is 3000.
- b. **Muzaffarabad.** It is the state capital with a population of 871,658. The district is traversed by both Jhelum and Neelum Rivers. Vulnerable areas are: Leepa Valley, Pandu, Chikar, Sudhan Gali. (Approximately 70-100 kms from Muzzafarabad). Leepa valley is very vulnerable with a vulnerable land link from Jhelum Valley. Hazards: landslides, avalanches and snowfall related emergencies. Likely affected population is 15,000 where is likely relief case load is 3000.
- c. **Bagh.** Population 459,198 and is among the severely affected earthquake districts. Vulnerable areas are: Forward Khuta, Lasadana, Haji Pir (About 200 kms east of Rawalpindi). An isolated valley adjoining the Line of Control. Vulnerable to nearly all winter hazards. Likely affected population is 10,000 where is likely relief case load is 2000.
- d. **Rawalakot.** Population of 480, 230 and it straddles Poonch River. Chrikot, and Lasadana are vulnerable to landslides and avalanches. Likely affected population is 5,000 whereas likely relief case load is 500.

27. **Balochistan.** Balochistan experiences comparatively less winter precipitation compared to other regions. Except for Quetta Valley and adjoining regions which are routinely swept by cold waves, most snow vulnerable mountainous regions bear scant human settlements (*Red colour represents Winter Emergencies Vulnerable Districts, where as blue colour represents Flash Flood Vulnerable districts*) There is no consistent history of winter hazards akin to upper regions of NWFP, NA and AJ&K. However, the



much quoted Feb 2005 Shadi Kot Dam burst in District Gwadar indicates vulnerability of coastal regions and

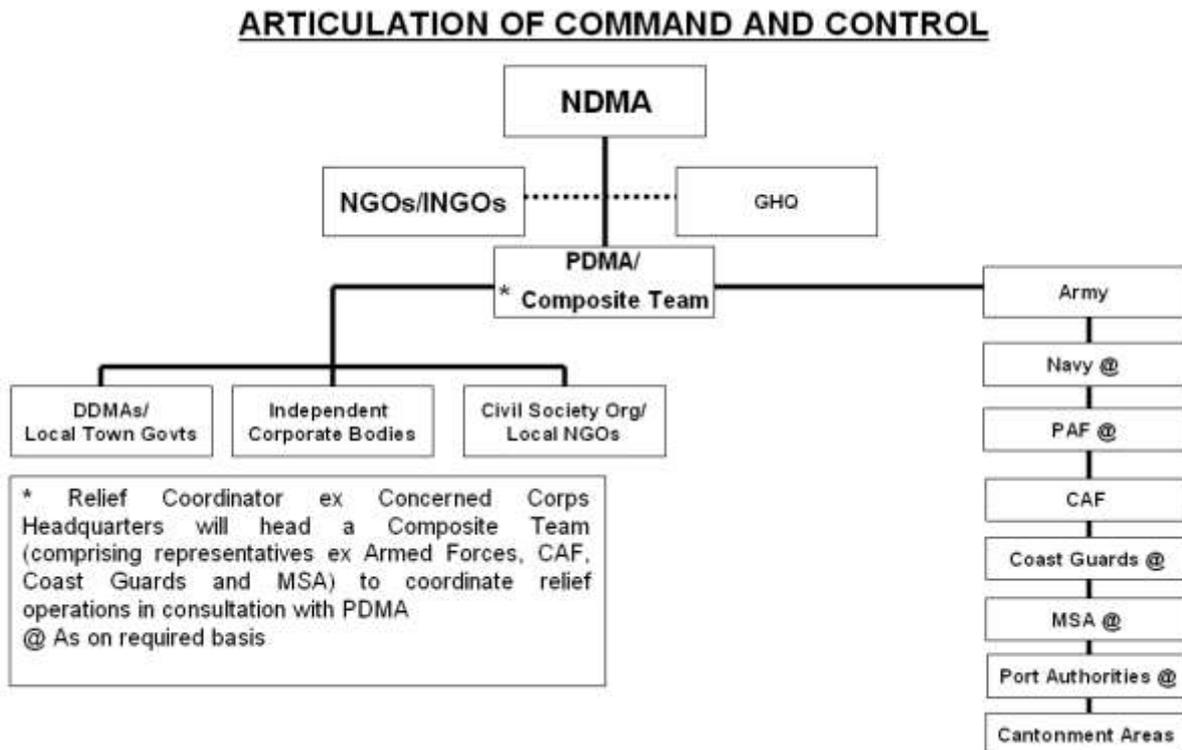
some other areas of the province to flash floods. Winter hazards in Balochistan include heavy snowfall, avalanches precipitation, flash floods in semi-mountainous and coastal regions. Local population in snow affected regions normally stock their food and animal fodder needs for 2-3 months. Snowfall and severe cold normally lasts till mid February whereas scant rains continue through March. (**Likely Affected Population is 50,000 and Likely Relief caseload is 8,500**).

- a. **District Ziarat**. Population 35, 833, One Tehsil and 9 UCs. In winters about 30-40% population moves to adjoining regions. Located at a height of 8040 feet . It is about 90 kms from Quetta. Snowfall, avalanches and landslides causes temporary closure of roads for 2-3 days. Likely affected population is 15,000 whereas likely relief case load is 2500.
 - b. **Qilla Saifullah**. Population – 2, 16002, 4 Tehils and 18 UCs. Kan Mittarzai (vulnerable area) consists of heights ranging between 6000 to 7000 feet. Snow fall causes temporary closure of road for 2-7 days in remote areas. Likely affected population is 10,000 whereas likely relief case load is 1,000.
 - c. **Qilla Abdullah**. Population – 502536, 2 Tehsils and 14 UCs. Khojak Pass (vulnerable area) at a height of 6000 feet and has scattered population. Snowfall and sliding causes temporary closure of roads 2-8 days. Likely affected population is 5,000 whereas likely relief case load is 500.
 - d. **Pishin**. Population – 469,375, 3 Tehsils and 18 UCs. Height ranges between 4000 and 5000 plus feet. Worst affected area is Burshore with a scattered population along Afghan border. Snowfall, sliding and temporary closure of roads 2-8 days. Likely affected population is 5,000 whereas likely relief case load is 500.
 - e. **Zhob**. Population – 3,05576, 4 Tehsils and 21 UCs. Qamar Din Karez and Dobandi are snow affected areas along Koh-E-Sulaiman range adjoining Afghan border. Snowfall causes temporary closure of roads up to 15 days. Likely affected population is 8,000 whereas likely relief case load is 1,000.
 - f. **Kalat** . Population – 250779, 4 Tehsils and 19 UCs. UC Harboi (Vulnerable area) is at 8400 feet and is vulnerable sue to snowfall, avalanches and slides. Likely affected population is 5,000 whereas likely relief case load is 1,000.
 - g. **Bolan, Jhal Magsi, Noshki, Kharan, Gwadar and Kech (Flash Floods)**. Flash Floods are likely to occur in disitrcets Bolan and Jhal Magsi in the east; and Noshki and Kharan in the northwest; and Gwadar and Kech on the south. Total population of these districts is 1580774. Likely affected population is 79,032 where as relief caseload is 10,000.
28. Provincial Resource mapping and identifications of shortfall is included in Annex A.

Response-Worst Case Scenario

29. **Articulation of Command and Control.** PDMA in consultation with concerned Corps Headquarters in their respective areas will be responsible for relief operations. Relief Coordinator ex Concerned Corps Headquarters will head a Composite Team (comprising representatives ex Armed Forces, CAF, Coast Guards and MSA) to coordinate relief operations in consultation with PDMA.

a. Diagrammatic layout is as under:-



b. **PDMA.** Lead integrated planning for monsoon disaster response in respective province.

c. **Provincial Government.** Responsible for restoration of essential services and dewatering of worst affected areas & major roads. Necessary coordination in this regard will be made by PDMA.

d. **Local Town Govts / Cantonment Areas / Independent Corporate Bodies**

(1) Will respond to disaster as per their local response plans but under the overall coordination of PDMA.

(2) All stakeholders will identify focal person for response and clear responsibilities (with well defined SOP's) for response both of stakeholders and their key / point persons will be spelled out.

e. **Composite Teams.** Will coordinate rescue and relief operations by the armed forces in consultation with PDMA.

30. **Sectoral Strategies and Plans.** Response measures are aimed at multi-sectoral preparedness in terms of resource mobilisation for winter contingencies and create awareness amongst vulnerable communities

with regard to anticipated hazards. These would also enable mounting of timely and effective response to winter emergencies by mobilizing the potential of all stakeholders to save human lives, reduce human sufferings and losses to habitats and livelihoods. District Chitral to be accorded priority in multi-sectoral resource mobilisation and response by national agencies and NWFP government due to challenges posed for access during winters.

31. **Alert Levels**

- a. **Alert Level 1.** Normal winter emergency scenario
- b. **Alert Level 2.** Worst Case Scenario for winter emergencies.

32. **Sectors**

- a. **Early Warning.** Provide early warning to vulnerable communities and all national stakeholders for disaster preparedness and response.

Agency	Tasks	Coordination Measures
PMD	Disseminate long term winter forecasts to all stakeholders by 15 Dec. Provide medium and short term forecasts on winter precipitation for early warning purposes. Furnish empirical data on precipitation patterns to facilitate preparedness for winter contingencies	NDMA to trigger appropriate Alert Level NDMA and PDMA's facilitate dissemination of information to all relevant governmental and non-governmental stakeholders
SUPARCO	Furnish satellite imagery to facilitate winter contingency planning on as and when required basis Develop GIS data base indicating past events of snow cover, cold waves and precipitation for supporting contingency planning.	
FFC	Monitor and early warn abnormally high river flows during winter months	National / provincial response stakeholders and NDMA / PDMA's to be informed in time
PN and MSA	Provide early warning to PDMA's Sindh and Balochistan on sea based hazards	NDMA, MINDEF and JS Headquarters to Coordinate

- b. **SAR and Immediate Relief.** Save human lives by undertaking live saving SAR operations and providing relief support with regards to food, shelter, emergency health, field engineering and communication support to restore local communications. .

Agency	Tasks	Coordination Measures
MINDEF/ JS Headquarters	Pakistan Army will launch need based SAR operations deploying aerial, riverine or dismounted operations to save human lives.	NDMA to provide adequate early warning and trigger Alert Level.
Pakistan Army	Pakistan Army will deploy life saving relief operations to cover food, shelter, emergency healthcare, field engineering and communication support. .	NDMA to coordinate operations with JS Headquarters / service headquarters and respective PDMA's
PAF	Pakistan Air Force will deploy strategic air effort for situation based resource mobilisation in support of national response effort.	
	Pakistan Army will reinforce local communications and	

	information management capacities. Armed forces will provide need based helicopters for relief operations	
Pakistan Navy	Launch situation based sea and air based SAR and relief operations along coastal regions as per national plan. Provide need based logistic support along the coastal regions	NDMA to coordinate with PN PN to coordinate with relevant PDMA (S)
PAF	Launch strategic airlift support to national disaster response efforts	NDMA to coordinate through Ministry of Defence
MSA	Launch relief operations in coastal regions consistent with national response plan. Provide need based logistic support along the coastal regions	NDMA to coordinate with MSA MSA to coordinate with relevant PDMA
Coast Guards	Launch relief operations in coastal regions consistent with national response plan	NDMA and MINDEF
Provincial Home Deptts	Ensure law and order for interrupted prosecution of relief operations	

c. **Shelter / NFI.** Provide safe and suitable shelter to those rendered homeless.

Relief Caseload	Responsibility	Preparedness	Response	Coordination Measures
16,000 families approx	ERC	Maintain stocks of tents / NFIs for winter emergencies	Deliver tents/non-tent shelters as per national response plan to concerned DDMA/SDMA	NDMA, PDMA in consultation with relevant DDMA to carry out situation based need assessment for winter emergencies
	ERRA		Support shelter needs in earthquake affected region by deploying reserve stocks on need basis.	NDMA to coordinate with ERRA. ERRA to coordinate with relevant SDMA / PDMA / DDMA
	PDMA and SDMA	All PDMA to build stocks and warehousing capacities as per respective relief caseloads PDMA NWFP to build stocks for emergency response for 5000 families in Chitral	Release need based stocks to DDMA for emergency response. Provide non-tent solutions for shelter based drawing from local materials.	PDMA to coordinate action on preparedness and relief tasks as per needs

d. **Food Security.** Provide food support to the disaster affected population with priority to the vulnerable sections.

Relief Caseload	Responsibility	Preparedness	Response	Coordination Measures
16,000	USC	Maintain stocks for winter	Release food stocks as per	NDMA, PDMA in

families approx		emergencies as per needs Maintain reserve stocks in Chitral in support of PDMA NWFP / DDMA	national response plan	consultation with relevant DDMA's to carry out situation based need assessment for winter emergencies
	NLC, PR		Transport emergency food/relief stocks as per national plan	ERC to coordinate with NLC/PR
	ERRA		Provide emergency food support within earthquake zone as per needs	NDMA to coordinate with ERRA. ERRA to coordinate with relevant PDMA's / DDMA's
	All PDMA's/ DDMA's Food Deptts	Provincial, AJ&K and NA Food Departments to maintain winter stocks in vulnerable regions as per policy Provincial Food Deptts of , AJ&K and NA to maintain reserve stocks in warehouses supporting vulnerable regions as per policy	Release need based stocks to DDMA's for emergency response	PDMA's to coordinate preparedness and relief tasks with DDMA's.

e. **Emergency Healthcare.** Reduce risk of death and spread of contagious disease / epidemics.

Relief caseload	Responsibility	Preparedness	Response	Coordination Measures
16000 families	MoH	Prepare national health response for winter emergencies Support vulnerable provinces in meeting critical health resource gaps	Be prepared to support PDMA's, NA and AJ&K on need basis in health response	Health response plan to be integrated in NDMA response plan
	ERRA		Reinforce health response within earthquake zone	NDMA to coordinate with ERRA. ERRA to coordinate with relevant PDMA's / DDMA's
	Provincial Health Deptts	Prepare emergency health support plan for winter emergencies Undertake requisite resource mobilisation Reinforce critical health response needs of vulnerable districts	Launch a need based health response to winter emergencies.	PDMA's and provincial health deptts to coordinate plans and implementation.

	PDMA	Facilitate provincial resource mobilisation for health response	Facilitate provincial, AJ&K and NA health response	PDMA to coordinate with Provincial Finance Ministry for resource mobilisation
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- f. **Water and Sanitation.** Ensure early access of vulnerable population to potable water sources by according priority support to the vulnerable segments.

Relief caseload	Responsibility	Preparedness	Response	Coordination Measures
16000 families	NDMA	Facilitate provincial resource mobilisation for PHE Deptts for emergency response		NDMA to advocate with provincial governments through PDMA
	ERC	Maintain need based reserve stock of water purification plants	Deploy need based potable water purification capacity,	NDMA to coordinate in consultation with PDMA
	MoH	Address WATSAN response within national emergency health plan	Reinforce water purification capacities integral to provincial health response	MoH to coordinate with provincial Health Ministries
	ERRA		Reinforce WATSAN response within earthquake zone	NDMA to coordinate with ERRA. ERRA to coordinate with relevant PDMA / DDMA
	PHE provinces	Mobilise resource for need based restoration of potable water sources / infrastructure in winter emergency vulnerable districts. Undertake requisite resource mobilisation Meet critical health response needs of vulnerable districts	Launch a need based response to restore potable water sources in vulnerable districts / areas. .	PDMA and provincial MoH to coordinate plans and implementation.
	PDMA	Assist in provincial resource mobilisation for PHE Deptts	Facilitate PHE Departments need based response	PDMA to coordinate with Provincial Finance Ministry for resource mobilisation

- g. **Restoration of Essential Services.** Ensure early restoration of power and telecommunications in disaster affected regions / districts.

Need Assessments	Responsibility	Preparedness	Response	Coordination Measures
To be determined by Power	WAPDA	Facilitate need assessment and resource mobilisation efforts of NWFP, Balochistan, . AJ&K and NA power	Support restoration of electricity by providing human / material resources	WAPDA to coordinate with provincial, AJ&K and NA power companies

and Telecom deptts / agencies		companies		NDMA to coordinate
	PTCL	Facilitate need assessment and resource mobilisation by provincial, AJ&K and NA telecom agencies (SCO)	Support need based restoration of electricity by providing human / material resources	PTCL to coordinate with provincial telecommunication deptts / SCO NDMA to coordinate
	SCO	Mobilise resources for response for restoration of telecommunication in AJ&K and NA. . Reinforce critical needs of vulnerable districts	Launch a need based response for early restoration of telecommunication	PDMA NA and SCMA AJ&K to coordinate and facilitate
	Provincial power companies	Undertake resource mobilisation for winter emergencies	Restore power in affected districts with minimum time delay	PDMA to coordinate and facilitate

- h. **Livelihood Regeneration.** Meet the immediate livelihood regeneration needs of the disaster affected population as a empowerment and self enablement measure.

Relief load	Need Assessment	Responsibility	Tasks	Coordination Measures
18000 families	Respective PDMA's and DDMA's	Federal Government / NDMA	NDMA to define policy for cash grants to the vulnerable and Federal Government to release funds.	NDMA to coordinate with relevant Federal Agencies and PDMA's
	PDMA's	Provincial Government And PDMA's	Ensure cash disbursement as per policy parameters through transparent and stakeholders inclusive process	PDMA to coordinate with affected DDMA's
		Pakistan Armed Forces	Be prepared to assist the relief cash disbursement exercise and need assessments	
		MINFAL	Undertake resource generation for seeds and agri inputs disbursement as a livelihood generation measures	NDMA to coordinate
		Provincial Agriculture Deptts	Undertake resource generation for seeds and agri inputs disbursement as a livelihood generation measures Launch livelihood support programme consistent with need assessments to make up the loss in rabi crop.	PDMA to coordinate

- i. **Support to the Vulnerable.** Support Vulnerable segments as a livelihood regeneration and humanitarian support measure.

Agency	Tasks	Coordination Measures
NDMA / PDMA	<p>NDMA to define policy for cash disbursements as an immediate relief measure</p> <p>NDMA, PDMA and DDMA to undertake early need assessment of vulnerable based on a defined criterion for possible cash disbursement</p> <p>Undertake cash disbursements through a transparent and stakeholders inclusive process</p> <p>Pakistan Armed Forces may be called upon to assist the process.</p>	NDMA to coordinate with Federal Government, relevant PDMA and Armed Forces. .
Ministry of Social Welfare (MSW)	<p>Define a policy for support to the vulnerable in consultation with NDMA and other stakeholders</p> <p>Mobilise resources through Pakistan Bait-ul-Maal, Zakat institutions and external stakeholders</p>	MSW to coordinate with NDMA and PDMA for need assessments and with Federal Government and external stakeholders for resource mobilisation
NDMA	Define a policy for meeting residual relief and facilitate in resource generation	NDMA to coordinate with PDMA ,
PDMA	Execute residual relief measures in coordination with DDMA.	PDMA and DDMA to coordinate implementation

- j. **Livestock.** Ensure survival of livestock through winter emergencies.

Relief caseload	Responsibility	Preparedness	Response	Coordination Measures
To be determined by respective provincial AJ&K and NA Livestock Deptts	NDMA	Facilitate provincial resource mobilisation for livestock survival through winter emergencies		NDMA to advocate with provincial governments through PDMA
	MINFAL	Facilitate provincial resource mobilisation for livestock survival through winter emergencies	Be prepared to support PDMA, NA and AJ&K on need basis in livestock response plan	MINFAL to coordinate with NDMA and provincial Livestock Deptts
	Provincial Livestock Deptts	<p>Mobilise resources for provincial livestock survival response.</p> <p>Reinforce critical needs of vulnerable districts</p>	Launch a need based response for livestock survival during winter emergencies.	PDMA and provincial Livestock Departments to coordinate plans and implementation.
	PDMA	Assist in provincial resource mobilisation for PHE Deptts	Facilitate PHE Departments need based response	PDMA to coordinate with Provincial Finance Ministry for resource mobilisation

33. **Summary Of Need Assessment -Worst Case Scenario.** Hazard analysis has yielded an anticipated national affected population caseload of 650,000 and a potential relief caseload of 95,000. Response needs are correspondingly defined for 15 days.

Sectors (in priority)	NWFP	AJ&K	Northern Areas	Balochistan	Suggested Remedial Measures
Relief case load	55,500 (9,166 families)	8,500 (1,416 families)	21,000 (3,500 families)	10,000 (1,666 families)	Total: 95,000 (15,833 families)
Shelter / NFI					
With province	2642 tents and NFIs with Rel Comsr NWFP	2500 tents in warehouse in Islamabad.	547 tents NFI s for 200 families 4000 kg of mixed food	3000 tents in stock. 1700 yet to be delivered.	
External Support	8000 tents and NFIs to be provided by ERC	ERC to transport in case of need	Will require external support from ERC	NDMA to expedite delivery in case of emergency	
Food Security	All provinces, NA and AJK have enough stocks to meet emergency food needs. However, temporary food shortage can be caused due to severance of local communication, provincial roads in particular for long durations. Food supplements for the vulnerable population groups will be required to be mobilised from external sources / voluntary contributions				There may be a need for heli-based response to meet temporary food shortages
Health	Emergency health response will cost the province about Rs 200 million There are no standing emergency health outreach services	Army medical facilities are deployed in vulnerable regions to boost local response. Resource mobilisation of Rs 2-5 million will be required for emergency health response.		Rs 100 million plus will be required for resource mobilisation for emergency healthcare for a major disaster Emergency health outreach facilities are weak to cope with a major disaster	Armed Forces helicopter based emergency health response will be deployed for a major emergency ERRA / local affiliates supervised health facilities can augment emergency health response in AJK and adjoining NWFP regions External support is required
C&W / PWD (Route opening)	Except for NWFP, external support will be required for AJ&K, NA and Balochistan for mobilisation of heavy plant for reopening provincial roads. NHA has comparatively need based resources pre-deployed to restore traffic on national highways in all the winter affected regions.				Provinces, AJ&K and NA must create / improve their capacities for route opening. External support is

					required. . NHA and Armed Forces resources can also be deployed for reopening provincials roads
PHE	All provinces indicate a deficient capacity for emergency response in restoring potable water supply sources. External support will be required for mobilising need based water purification capacity in the affected regions.				Provinces, AJ&K and NA must build emergency response capacity for reactivating potable water sources in vulnerable districts External support will be required
Fuel	Fuel shortage both for electricity generation and for domestic needs can occur due to prolonged disruption in land communication. Past experiences indicate fuel becoming a high priority need in major disasters.				This should be addressed by electric supply companies, provinces, AJ&K, NA and vulnerable districts in disaster preparedness planning
Livestock	Rs 60 million will be required for mobilisation of emergency livestock response which includes provision of fodder, medicines and logistic support	Rs 1 million for resource mobilisation	Rs 35 Million	Rs 30 million	This is again a neglected area where provinces need to build capacities in providing emergency response. External support will be required
WAPDA	PESCO needs to build capacities for restoring electrify in Chitral based on 2007 winters experience. WAPDA will be required to support Balochistan, Northern Areas and AJ&K electric supply companies in resource mobilisation, human resource and logistic support in the event of a major disaster				
Telecom	PTCL and SCO (for AJ&K and NA) have the capacity to respond to winter emergencies. Ever enlarging commercial GSM coverage substantially augments fixed line capacities.				
Agriculture	Provinces, AJ&K and NA maintain minimal winter crop damage in mountainous regions owing to excessive snowing or precipitation. However, damage could be extensive in a flash flood situation in Balochistan or elsewhere which could require external support for regenerating livelihoods				

Education	Restoration of education is not considered to be priority need as in most winter emergency vulnerable regions education institutions are closed for winter months. However, a need based response may be required in case of a major disaster in lower regions with summer schedules or for restoration / repair of infrastructure.
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Response for Epidemics and Pandemics

34. **Epidemics and Pandemics-Context Analysis**

- a. **Avian Influenza**. Avian influenza (H5NI) or bird flu occurs due to a highly pathogenic influenza virus. It is currently affecting at least ten countries in Asia leading to frequent outbreaks of severe disease and mass deaths and culling of chickens. H5N1 virus has the capacity to be transmitted from infected chickens, migratory fowls and pet birds to humans to cause severe disease and high mortality in humans. Multiple poultry outbreaks of H5N1 influenza have been occurring in Pakistan since 2006. According to the Ministry of Health, eight suspected human cases of H5N1 were reported from NWFP in 2007. A majority of the outbreaks have occurred in the 'Poultry Belt' of NWFP, particularly in the Abbottabad and Mansehra regions, cases of infection in wild birds have also been reported in Islamabad Capital Territory. An active surveillance regime has been put in place in NWFP with safety guidelines and infection control protocols. At national level, coordination between MINFAL and MOH in collaboration with PPA (Pakistan Poultry Association) has been strengthened and Avian Influenza guidelines, detection and outbreak control plans review is underway.
- b. **Dengue Hemorrhagic Fever**. Dengue Hemorrhagic Fever is a mosquito borne infection which has become an international public health concern in recent years. According to the Pakistan Ministry of Health, there have been 2,176 suspected cases of Dengue Fever reported in Pakistan since early October 2006, with 672 confirmed cases. Recent outbreak has resulted in 30 deaths. As per MOH mortality rate accruing from Dengue Fever suspected cases has reduced from 2% to 1.86% due to better hospital management of the disease. Dengue fever is caused by the Aedes mosquito bites and especially the months following the monsoon season are usually the worst for dengue infections. Initially plaguing the Sindh province, especially Karachi, there have been cases reported in Islamabad and Lahore as well. MOH policies focus on making medicines available, putting in places surveillance regime and on public education.
- c. **Acute Respiratory Tract (Upper and Lower) Infections (ARI)**. In winters people tend to spend more time indoors resulting in crowding, closer contacts and in house pollution. Thus acute respiratory infections tend to increase. Most are caused by self limited viruses, and do not leave sequels. However, among young infants as well as in the elderly, cases of lower respiratory tract infections (bronchitis, pneumonia) requires hospitalization, this stressing health facilities particularly in rural regions.

35. **Scenarios for Epidemics / Pandemics**

- a. **Normal Scenario for Avian influenza.** Onsite precautions to stop the spread of disease are mandatory. Rearing poultry is one of the important economic activities in cold climatic regions of NWFP and AJ&K. Poultry flocks, being carriers of Avian virus, pose grave danger to human lives there.. The scenario describes limited human to human transmission. Gaps in dengue fever control regime indicate possible limited outbreaks. However its occurrence season now reaching its end thus limiting the possibility of mass outbreak.
- b. **Worst Case Scenario.** The risk of H5A1 virus outbreaks in poultry remaining very high, if appropriate outbreak control and damage control measures are not put in place the chances of human-to –human transmission and can conflagrate into an epidemic with its attendant consequences on the health management with marginal capacities. Its wider spread would have grave consequences with regards to loss of human life, to the economy and on food security repercussions.
- c. In case of Dengue fever incidence in not controlled the disease can be fatal as deaths tend to occur within 12-24 hours of its contraction. It can overwhelm tertiary hospitals in large cites putting stress on human resource and medicinal availability. Consequences, however, would be far worse for vulnerable population in rural areas with rudimentary medical and logistic support. Both H5Ai and dengue fever in the worst case scenario can engender mass casualties with serious regional implications.
- d. For ARI , the worst case scenario will include higher numbers of severe bronchitis and pneumonia cases requiring hospitalization with will put much stress on limited logistic support in our health facilities the shape of nebulisers , oxygen and respirators. Staff will be overwhelmed and can fall sick as well. In short its wide outbreak could cause increased mortalities among children, old and feeble besides putting much stress on health support system.

36. **Response for Epidemics and Pandemics**

- a. **Remedial Measures.** The situation specific to Avian Flu in the earthquake affected areas and the earlier experience relating to the health situation in the wake of October 8 earthquake raise several policy questions for medium- and long-term planning. Striking a balance between the short and the long-term measures; the capacity enhancement of the system to respond to a health crisis and the level of preparedness of the health systems to deliver emergency services are the pressing concerns.
- b. **Operational Measures for Prevention and Control of Epidemics**
 - (1) **Emergency & Crisis Management Cell.** Establishment of Emergency & Crisis Management Cell at national (Ministry of Health) and provincial/state level with a focal person for Avian Influenza and Dengue Fever is required.

- (2) **Epidemic Investigation Cell.** An Epidemic Investigation Cell is to be established at provincial/state level well capacitated and equipped to research and analyse the epidemic scenario. Risk Mapping of the districts should be carried out by Epidemic Investigation Cell and high risk areas and sentential sites should be identified. Linkages with DCO/DC and district health officers should be established for information gathering.
 - (3) **Provincial Programme Manager.** A Provincial Programme Manager should be appointed for surveillance and response to epidemics. Surveillance and Rapid Response Teams headed by an epidemiologist with adequate support staff, well equipped infrastructure and adequate logistic support should be established at provincial level having liaison with district health officers. The Emergency & Crisis Management Cell in concert with Epidemic Investigation Cell should launch Rapid Response Teams in the case of outbreak of disease.
 - (4) **Information Management Cell.** An Information Management Cell should be established at provincial/state and district level to manage and appropriately disseminate the incoming and outgoing information. Having liaison with media and district authorities, the cell should produce realistic, verifiable and prompt information messages.
 - (5) **Epidemic Response Action Plan.** Means of communication and transportation can be severely disrupted due to heavy snowfall and rain in the earthquake affected areas hence an Epidemic Response Action Plan at provincial level should be drafted accordingly and the roles and responsibilities of the concerned line departments and other non governmental organizations should be clearly defined. The districts can adapt the plan in the leadership of DHO and DC/DCO as per their requirements.
- c. **Management of Avian Influenza.** The provincial government in concert with local government and NGOs working in the area should take notice of the epidemic situation and prepare a response plan in the light of risk mapping carried out by Epidemic Investigation Cell with the help of district line departments and community. Field operation guidelines for emergency responders should address roles and responsibilities, quarantine and movement controls, appraisal and compensation, disposal, cleaning and disinfection, biosecurity, and wildlife management. Minimum standards of quality for poultry farms operating should be drafted. Price monitoring of meat products should be carried out. Finally, the response plan provides for the stockpiling and use of personal protective equipment (PPE) for AI responders. Being multi-sectoral issue, the concerned line departments should be involved in developing the plan especially, Agriculture and Livestock, Environment, Wild life, information departments and Pakistan Army and other law enforcing agencies. Proper coordination mechanism among

line departments, NGOs and community should be outlined and information management strategy should be defined.

- (1) **Surveillance and Monitoring.** Surveillance and monitoring is the fundamental activity to control the outbreak of Avian Influenza. AI viruses are most often found in migratory waterfowl hence a strict surveillance needs to be carried out to reduce contact between wild birds and domestic birds, particularly free and open range poultry and commercial poultry farms. AI spreads primarily by direct contact between healthy and infected birds and by indirect contact with contaminated equipment and materials. The virus is excreted from infected birds through feces and secretions from the nose, mouth, and eyes. Contact with infected fecal material is the most common means of bird-to-bird transmission. So a strict surveillance strategy is required during non-outbreak time to avoid the disease. The surveillance teams should be legally authorized to carry out operations and measures to detect, control, or eradicate any pest or disease of livestock, including poultry. The role of Epidemic Investigation Cell is very important during non-outbreak times to keep record of all poultry farms in their area of operation. Research and investigation on the virus should be carried out. They should keep the provincial authorities updated on the international scenario and notify the modern diagnosis and treatment methodologies. In case of outbreak of disease, the 10 kms radius around the premises of bird epidemic should be monitored strictly. Stricter surveillance is required in case of outbreak of disease. The legislative steps should be taken to prohibit or restrict the importation, entry, or inter-province/district movement of poultry. Surveillance those humans who come in direct contact with these birds like poultry workers, community members and health workers are mandatory.
- (2) **On-sight Management.** When AI outbreaks occur in poultry, the preferred eradication and control methods are quarantine, enforcement of movement restrictions, and depopulation (culling) of all infected, exposed, or potentially infected birds, with proper disposal of carcasses and rigorous cleaning and disinfection of farms and surveillance around affected flocks. Chemical and physical measures such as heat, extremes of pH, and dryness can inactivate AI viruses. In addition, AI viruses are inactivated by organic solvents and detergents. The poultry workers should not handle poultry without being equipped with personal protection equipment. In human reported cases, strict quarantine of the patient and use of appropriate medicines is necessary. The staff of the impact site should be put on high alert. Rapid Response Teams should come into action.
- (3) **Capacity Building and Training.** Training of poultry staff for precautionary measure during non-outbreak and outbreak times is mandatory. They should be provided with

personal protective equipment for handling poultry. Cleanliness and hygiene should be given top priority and their capacity should be built for responding to the outbreak. Capacity building of clinical staff and laboratories is also necessary. Timely and quick diagnosis, proper treatment and quarantining issues should be properly addressed. Stockpiling of medicines and antivirals is necessary and part of preparedness and response mechanisms. Community should be made aware of the symptoms of the disease and consequent action to save lives. Day to day precautionary measure should be taught to avoid the outbreak.

- (4) **Media and Awareness.** The role of media is pivotal in preventing the outbreak of disease and in case it breaks out its rapid spread can be avoided by creating awareness through media. Mass awareness campaign about risks of disease, its symptoms and preventive measures should be carried out. NGOs and community workers can be involved to ensure the dissemination of information. Authentic media releases, information brochures and newswires can control panic and effectively disseminate the required message. Religious leaders should be made aware of their pivotal role in controlling the psychological impacts of the disease and reducing the misconception about the disease.

- d. **Management of Dengue Fever.** All stakeholders should be encouraged to actively plan for dengue fever management in consultation with provincial manager and develop complementary plans within their own organisations. Stakeholders' responsibilities include identifying training needs, resource capacity (both labour and non-labour), equipment and insecticides to be used during outbreak or non-outbreak surveillance and control situations. Staff to be utilised for these purposes should be provided with the appropriate training before an outbreak occurs and not left to be trained during an outbreak. Revision of training should be conducted in case of outbreak.

- (1) **Surveillance and monitoring.** Mosquito surveillance and control has an important preventive role during non-outbreak periods to monitor mosquito numbers. Mosquito surveillance involves yard-to-yard inspections. Mapping of all breeding sites of mosquitoes should be carried out by district health department. A proper risk map of low-, medium- and high-risk areas should be identified. The Provincial Programme Manager should keep the record and the Surveillance team should monitor the sites. During non-outbreak times active role of Epidemic Investigation Cell is important to keep investigating and researching on different developments of international practices regarding treatment of the disease and tailoring it according to the local context. In collaboration with NGOs, community and local government for breeding site treatment or eradication should be carried out. In non-outbreak situations, larval surveillance involves locating and mapping areas likely to have containers that could

breed mosquitoes. Draining of possible mosquitoes breeding sites and fumigation/spraying of insecticide of the sites that cannot be drained should be carried out. The tree holes should be filled with sand. Owners of premises should be encouraged to take specific preventive measures of insecticide spray to ensure vegetation, water-holding containers inside the house, drains, gutters and the like do not contribute to mosquito breeding or harbourage. However, the owner must also take other measures necessary (within reason) to ensure no part of his/her premises serve as a breeding place or harbourage for mosquitoes. In the event that the owner or occupiers fail to comply with these sections, proper legislation should allow local government to enter the premises and perform such works. In case a case of Dengue fever is reported intensive larval and mosquito control should be conducted at all premises within a 200-400m radius of the dengue case. Intensive activity of the elimination or treatment of all active and potential breeding sites should be carried out. Surveillance and Rapid Response Teams should be sent to the affected site providing daily progress report to the provincial manager in concert with district health officer. Again, permission to inspect the premise and treat containers should be given to inspect the houses water holding sites. The adult mosquito prefers to rest in dark areas inside and under houses and buildings. Favourite resting spots are under beds, tables and chairs; in wardrobes and closets; on piles of dirty laundry and shoes; inside open boxes; in dark and quiet rooms; and even on dark objects such as clothing or furniture. An effective way to kill the adult mosquito is to apply a residual insecticide onto the areas where they prefer to rest.

- (2) **Capacity Building and Training.** The capacity building, awareness and educational training of medical staff, response team, community members of the risk sights is mandatory. The community should be given training about symptoms and possible treatment of Dengue fever. The training of medical staff is mandatory to handle epidemic emergencies like Dengue. During an outbreak, increased medical practitioner awareness of dengue may mean that hospital emergency department doctors and local pathology laboratories will remain on alert for dengue symptoms and/or pathology results consistent with dengue. This way, the authorities can be alerted early to the new cases and new outbreak locations. It is important that medical practitioners continue to request dengue testing throughout the duration of the outbreak. The response teams should be trained for carrying out the treatment/eradication activity properly. They should be provided with personal protection equipment for their safety. Diagnostic capacity of laboratories should be enhanced for quick and authentic testing. Stockpiling of medicines is mandatory to avoid any causality due to time lapse. The response team and the provincial manager

should prepare a list of required antibiotics and equipment as a priority for effective disease response.

- (3) **Media and Awareness**. Awareness campaign should be conducted informing the general public about the risk of outbreaks overview of dengue fever and its symptoms, facts about disease and the importance of being pro-active and the larval and adult mosquitoes control procedures. Media releases, public messages, brochures and posters about the disease and media conferences are different methods of raising awareness among people about disease. Management of psychological impacts of outbreak through media is necessary. Enlightenment of religious leaders about the disease holds special significance. Increased hygiene and sanitary awareness in the community should be given importance to prevent a main source of mosquito breeding. Proactive role of NGOs holds special significance.
- e. **Acute Respiratory Tract Infections (ARI)**. According to a careful estimation Acute Respiratory Tract (upper and lower) infections (ARIs) (such as colds, ear infections, and bronchitis) collectively are the single most frequent reason for seeking medical care in Pakistan. ARIs can be fatal in children under five and elderly. Appropriate use of antibiotics, bed rest, steam inhalation, use of Vitamic C, warm water gargles and keeping the patient warm are the appropriate ARI reponse strategies. Stockpiling of antibiotics and proper guidance of the patients is mandatory to avoid loss of human lives.

37. **Summary of Federal Agencies Contributions for Winter Emergencies / Epidemics and Pandemics**

- a. **PMD (Early Warning)**
- (1) Provide empirical data on precipitation and snowfall for scenario building.
 - (2) Analyse data and issue forecasts.
 - (3) Early warning of precipitation /snowfall related Emergency situations.
- b. **SUPARCO (Early Warning)**
- (1) Furnish satellite based long term weather prediction.
 - (2) Satellite based monitoring to assist post hazard relief operations.
- c. **Federal Flood Commission (River and major water channels flow monitoring)**
- (1) Monitoring of river flows and early warning of floods.
 - (2) Approval of flood control/protection schemes prepared by provincial governments and concerned federal agencies.
 - (3) Recommending regulation of reservoirs for flood control.
- d. **MoH (Emergency Health, Epidemic and Pandemic Control)**
- (1) Reinforces emergency health support in response to emergencies and disasters consistent with all hazard contingency planning likely caseloads. .
 - (2) Support provincial WATSAN response.

- (3) Directs and facilitates epidemic and pandemic control measures.
- e. **Ministry of Interior**. Ensures law and order in disaster affected areas and uninterrupted prosecution of relief operations
- f. **National Highway Authority (Infrastructure Restoration)**
 - (1) Early restoration of national highways in support of national response plan.
 - (2) Pre-deployment of heavy plant in critical areas for all hazards emergencies.
 - (3) Support provincial C&W Departments in early post disaster reopening of severed provincial roads
- g. **Pakistan Army (Immediate Relief & Tactical Air Support)**
 - (1) Launch SAR and immediate post disaster relief operations
 - (2) Provide emergency health care, shelter, food support and combat engineer support.
 - (3) Deploy helicopter support in mountainous regions in support of relief operations
 - (4) Reinforce capacities of affected DDMAAs
- h. **Pakistan Air Force (Strategic Air Support)**
 - (1) Strategic airlift for support national response national response.
 - (2) Participate in post disaster heli-based SAR and relief operations.
- i. **Pakistan Navy (SAR / Relief Operations and Early warning)**
 - (1) Provide post –disaster SAR and relief support to PMDAs Balochistan and Sind along coastal regions
 - (2) Provide local early warning to PDMA Sindh and Balochistan for costal precipitation related hazards.
 - (3) Reinforce post-disaster national logistic effort along the coastal regions.
- j. **ERRA (Multi Sector Relief Support)**. Immediate relief: emergency health, shelter, WATSAN, camp management
- k. **Emergency Relief Cell (Post disaster relief support)**
 - (1) Maintain stocks of critical post disaster stocks of relief stores consistent with all hazards contingency planning.
 - (2) Release relief stocks in support of national response plan.
 - (3) Mobilise need based relief stores from the open market in support of national response plan.
 - (4) Receive and deploy external donor support for disaster response consistent with national response plan.
- l. **Utility Stores Corporation (Post Disaster Food Security)**
 - (1) Meet need based post disaster emergency food needs as per national response plan.
 - (2) Maintain food stocks to cater for contingency planning relief caseloads for all hazards.
- m. **National Logistic Cell (Strategic Post Disaster Logistic Support)**
 - (1) Transport post –disaster relief stores in support of national plan to all hazards.

- (2) Undertake logistic tracking to monitor relief supply consistent with the needs.
- n. **Pakistan Railway (Restoration of Rail Infrastructure and Post Disaster Logistic Support)**
- (1) Facilitate in transportation of post disaster relief stores as per national response plan
- (2) Ensure early restoration of rail traffic in disaster affected regions.
- o. **WAPDA (Restoration of Essential Services)**
- (1) Supports provincial / regional electricity authorities in early post disaster restoration of electric supply for humanitarian reasons and for sustaining local economies in disaster affected regions
- (2) Ensure adequate deployment of electricity restoration capacity in district Chitral during winter months
- p. **PTCL (Restoration of Essential Services)**. Support in early post disaster restoration of line/radio communication in all hazards disaster prone regions.
- q. **Maritime Security Agency (Post Disaster Relief Support, Early Warning and Post Disaster Logistic Support)**
- (1) Undertake post disaster SAR and relief operations along the coastal regions.
- (2) Provide early warning of sea based hazards to PDMA Sindh Balochistan.
- (3) Support national post disaster logistic effort in the coastal regions.
- r. **Coast Guards (Post Disaster Relief Operations and Post Disaster Logistic Support)**
- (1) Undertake post disaster SAR and relief operations along the coastal regions.
- (2) Support national post disaster logistic effort in the coastal regions
- s. **PNSC (Post Disaster Logistic Support)**. Support national post disaster logistic effort in the coastal regions
- t. **MINFAL (Post Disaster Restoration of Livelihood and Support to Livestock)**
- (1) Agricultural and rangelands rehabilitation
- (2) Reinforce provincial efforts with regards to seeds and fertilizers distribution to the disaster affectees as a livelihood regeneration measures
- (3) Reinforce provincial capacities for livestock emergency support.
- u. **Ministry of Social Welfare (Support to the Vulnerable)**. Prosecute need base measures for support to the vulnerable in coordination with other national and non-governmental stakeholders
- v. **Ministry of Foreign Affairs**
- (1) Ensure access to Chitral through Afghan territory through winter months as per existing arrangements.
- (2) Serve as the point of contact for coordinating external assistance in the event of disaster
- w. **PIA (Post Disaster Strategic Airlift)**. Undertake post disaster strategic airlift in support of national response logistic plan

**PROVINCIAL RESOURCE MAPPING AND IDENTIFICATION OF SHORTFALL
BASED ON WORST CASE SCENARIO**

Sector	Resources Available	Resource Shortfall
NWFP		
<u>Shelter / NFI</u> Source: Relief Commissioner, NWFP	Presently 2462 tents are held for emergency response.	There will be a need to provide winterised tents and NFI based on need assessments
<u>Food Security</u> Source: Mr Wadood Shah, Deputy Secretary Food Department , NWFP	<p>NWFP food needs for a year are 3.3 metric tons (MT) and its produces 1 MT. Deficiency is met from external sources. About 30-40% of wheat including the imported consignments are smuggled to Afghanistan, which constitutes a major reason for shortfall.</p> <p>A winter stocking policy is in place for Chitral and 300,000 MT is stocked for four winter months.</p> <p>Winter emergency vulnerable districts are supported form warehouses in Dargai: 50,000 MT (storage Capacity) , Nowshera (Azakot): 100,000 MT, Havelian (100,000 MT). 300,000 MT is planned to be kept as strategic reserves.</p> <p>However, in practice 30 -40% of the stocks are maintained.</p> <p>Only running stocks are maintained in most districts and they do not suffice to meet emergency situations.</p>	In a normal winter NWFP government will be able to meet food needs from its resources. Though interruption in supply due to physical isolation of disaster affected regions can cause temporary food security which must be met through emergency means.
<u>Emergency Health</u> Dr Shiraz, Director Emergency, Lady Reading Hospital	<p>Provincial Emergency health infrastructure is reflected at . District facilities, in general, cannot meet emergency situations, are not capable of generating outreach and can cope with routine load with 40 -50% efficiency.</p> <p>There is no provincial emergency response health budget. and it was advised that it should be included in next year's budget.</p> <p>In Kohistan, a poorly developed and a very vulnerable district from winter emergency viewpoint, there is no DHQ.</p> <p>Even provincial emergency response outreach for emergent response is weak and there is likely to be reliance on armed forces .</p>	<p>NWFP government has identified its emergency health mobilisation needs at Rs 250 million (Rs 200 million for medicines) and Rs 50 million for logistics) in case of serious winter emergency impacting more than 5 vulnerable districts.</p> <p>This would have to be met through provincial and external sources</p>
<u>PHE</u> Source, Mr	<p>Annual budget of O&M is Rs 248,782,000</p> <p>30% is used for winter period : Rs 74,634,600</p>	External support to the tune of approx Rs 20 million is required for response to a

Shamsuduha, Dy Secretary provincial C&W Department	Rs 50 million in addition is required for winter emergencies. Rs 20 million approx can be mobilised from provincial resources.	severe emergency in winters for procurement of hardware and replacement of unserviceable machinery.
PHE		
<u>Livestock</u> Source: Malik Ayaz, Epidemiologist, Livestock Deptt, NWFP	There is no budget for emergency response in the livestock department out of annual non-operational budget of Rs 10 million. 30% of livestock population exists in mountainous districts, most of which is vulnerable in winters. For a severe winter emergency affecting more than four vulnerable districts approximately Rs 60 million will be required for response mobilisation: Rs 30 million of medicines, Rs 20 million for fodder and Rs 10 million for logistics,	Rs 60 million must be mobilised through provincial and external resources
<u>Agriculture</u> Capacity for Emergency Support Rabbi crops	No input from Agriculture Department	It is assumed that for a major disaster seed and agri inputs will be provided by provincial Agriculture Deptt, MINFAL / external sources.
<u>WAPDA</u> Mr Siddique, Director PESCO	As a matter of policy PESCO maintains emergency stocks across Lowari Pass to meet winter needs. However, DCO Chitral contended that PESCO resources to meet even a routine emergency are insufficient and their policy needs to be revised both in terms logistic and operational capacity PESCO maintains that it should be able to meet emergency winter needs in other vulnerable districts	External support will be required to restore electricity in Chitral.
<u>Azad Jammu and Kashmir</u>		
<u>Shelter / NFI</u>	2500 tents	
<u>Food Security</u> Source: Mohd Siddique Butt, AJK Food Deptt	Stocking policy in place for winter Months for Neelum & Lipa (6 months) Forward Kahuta (2 months)	Would require external support in a major disaster situation
	Central State Reserve – 15,000 Tons. Should take care of AJK pop (3.5 M) needs for one month.	
<u>Health</u>	Neelum Valley	

Dr Abdul Qadir Dir Health	MDS (Army) in Neelum and Tehsil Hospital in Athmuqam Lipa. MDS Forward Kahuta . Tehsil Hospital & MDS No gynaecologist, paediatrics & Anaesthesia facilities in Neelum & Other vulnerable areas Policy to stock medicines in Vulnerable areas not fully implemented	Emergency medicines purchase Support required for Rs 2 M.
B&R / C&W Mohd Sharif Dar , SE PWD	Lipa. Dumps trucks 4, Wh dozers 3, Bulldozers 3, Excavators 3, Crane 1, self loading truck 1, Tractor 1. Neelum. Dump trucks 3, wh dozers 3, bulldozers 2, excavators 4, Self loading truck 1, crane 1 Forward Kahuta . Dump trucks 3, Wh dozers 3, bulldozers 3, Excavators 4, misc vehicles 3 (vehicles donated by S Korea)	State government requires Rs 96 million to replace obsolete Equipment Would require external support to restore severed roads in remote regions as a consequence of winter emergencies
PHE		
Livestock Director Dr Abdul Qadir Qureishi	250,000 cattle affected in the Vulnerable regions.	Rs 1 million monetary support Required for generating health Response
Agriculture		
WAPDA Mushtaq Ahmad Goraya, CE Electricity	State work on self generation And sustenance of electricity	Rs 15 million required to buy reserve Generators stock for vulnerable regions
SCO	No input	
Northern Areas (Source: Asifullah Khan, Deputy Secretary Home Department)		
Shelter / NFI	Tents : 547 NFIs for 200 families Edible items / food – 4000 kg	
Food Security		
Health	Annual Budget: Rs. 10.70m	Rs. 26.5 m required for emergency response
B&R		Rs 99 million required for emergency response
PHE		
Livestock	Annual budget is Rs. 1.8 m	Rs 35 million required for emergency response

Agriculture		Rs. 54 m required for emergency response
WAPDA		
SCO		
Balochistan		
Shelter / NFI Source. DG PDMA	3000 tents in stock. 17000 yet to be delivered by Punjab NFIs for 2000 families in stock Source- Mr Khuda Bakhsh Baloch, DG PDMA	With delivery of tents from Punjab adequate stocks will be maintained for winter emergencies
Food Security Source. Qazi Abdul Jabbar, Deputy Secretary Food Department, Balochistan	Yearly food needs of the province is 8,64,000 metric tons Food production in province for 2006/07 is approx 8,72,066 Stocks of approx 7000 MTs are supposed to be maintained in the winter emergency affected districts. However, actual stock position is about 40-50% of the planned 30-40% of provincial stocks are smuggled to Afghansitan. Therefore, food shortage is more account of mismanagement and smuggling	Province needs to streamline its capacity for meeting disaster related emergencies. There may be a need for emergency food support from Federal government owing to temporary local shortages
Health Source. Dr Mahmud Sultan Piracha, Epidemiologist, provincial MOH.	Balochistan Government has elaborate health infrastructure in all winter emergency districts. Details at . However, it works at not more than 30-40% capacity and is generally inadequate in meeting emergency needs. Emergency health budget provincial allocation for current FY is Rs 15 million. However, emergency health support mobilisation needs covering medicines; logistic support is likely to cost Rs 130 Million. Provincial support is likely to be Rs 10 million.	Need based external resource mobilisation will be required to meet emergency health needs in case of winter emergencies.
C&W	About Rs 63 million has been released for maintenance of provincial roads against	There will be a need to support the provincial C&W Department either by

<p>Source: Mr Ali Bukhsh Baloch, Deputy secretary C&W Department.</p>	<p>need of Rs 110 million.</p> <p>Likely provincial road restoration work for severe winter emergency is about Rs 35 million.</p> <p>There will be resource shortfall for hiring heavy plant and human resource.</p> <p>Heavy plant deployed in vulnerable districts is reflected in .</p> <p>National highways in the province are reopened in emergencies within a 24 -48 hours</p>	<p>deploying NHA national resources like FWO and NLC or through need based cash support.</p>
<p>PHE</p> <p>Source, Mr Shamsuduha, Deputy Secretary provincial C&W Department</p>	<p>Annual budget of O&M is Rs 248,782,000</p> <p>30% is used for winter seasons: Rs 74,634,600</p> <p>Rs 50 million in addition is required for winter emergencies.</p> <p>Rs 20 million can be mobilised from provincial resources.</p>	<p>External support to the tune of approx Rs 20 million is required for response to a severe emergency in winters for procurement of hardware and replacement of unserviceable machinery. .</p>
<p>Livestock</p> <p>Source. Dr Muhamad Riaz, Assistant Director Animal Health Wing, Livestock Department</p>	<p>Livestock Department has no emergency response budget and Rs 30 million will be required to meet serious winter disaster for purchase of fodder, vaccination, logistic support and human resource.</p> <p>Provincial contribution is likely to be Rs 10 million</p>	<p>Need based external resource mobilisation will be required for meeting a severe winter disaster situation.</p>
<p>Agriculture</p>	<p>Provincial Agriculture Department maintains that it has enough resources to meet flash floods generated losses during winters. However, crop damage is not anticipated due to rains or heavy snowfall</p>	<p>No external support</p>
<p>Education</p>	<p>Schools are closed in winter emergency districts for most winters</p>	

PROVINCIAL RESOURCE MOBILIZATION**HEALTH INFRASTRUCTURE OF WINTER EMERGENCIES AFFECTED DISTRICTS**

Province/ State	District	No. of Hospitals	No of other Basic health facilities
NWFP	Chitral	4	53
	Mansehra	13	87
	Abbottabad	11	97
	Battagram	1	44
	Kohistan	1	45
	Shangla	5	28
	Upper Dir	2	56
	Swat	8	60
FATA	Kurram (1998 census)	-	-
Balochistan	Gwadar	1	51
	Quetta	26	66
	Ziarat	1	17
	Qilla Abdullah	2	45
AJK	Muzaffarabad		181
	Neelum		51
	Mirpur		92
	Bhimber		95
	Kotli		160
	Rawalakot- Poonch		106
	Bagh		125
	Sudhnoti		59
Northern Areas	Gilgit (pop 1998 census)	DHQ 1 Civil 5	BHU 4, Disp 23 MCHC 11, Fst Ad 41
	Astore	DHQ 0 Civil 2	BHU 2, Disp 3 MCHC 11, Fst Ad 22
	Ghanchee	DHQ 1 Civil 4	BHU 3, Disp 14, MCHC 12, Fst Ad 31
	Diamer	DHQ 1 Civil 4	BHU 4, Disp 20, MCHC 23, Fst Ad 36
	Ghizer	DHQ 1 Civil 5	BHU 2, Disp 12, MCHC 6, Fst Ad 29
	Skardu	DHQ 1 Civil 4	BHU 6, Disp 34, MCHC 16, Fst Ad 28

NORTHERN AREAS EMERGENCY RESPONSE STORE

Serial	Items	Qty
1.	Tents	547
2.	Blankets	3839
3.	Quilts	176
4.	Plastic Sheets	4000
5.	NFI	For 150 families
6.	Food	4000 kg

SUMMARY OF FEDERAL AGENCIES DISASTER RESPONSE ASSETS1. **SUPARCO**

- a. Satellite Remote Sensing (SRS) and Geographic Information System (GIS) technology for surveying and mapping earth resources
- b. Satellite-aided search and rescue COSPAS-SARSAT programme

2. **Maritime Security Agency**

S#	Items	Quantity
1	Corvettes	04 Nos
2	Speed boats/Zulu Boats	10 Nos
3	Defender A/C (Fixed Wing)	03 Nos
4	Base Office (Pasni Gwadar)	02 Nos

3. **Emergency Relief Cell**

S#	Items	Quantity
TENTS		
1	Tents RR Wing Lahore	04 Nos
2	Tents (Japan)	01 Nos
3	Tents (Turkey)	01 Nos
4	Tents Donation	819 Nos
5	Tents (Ex-Punjab)	15955 Nos
6	Tents Donation (Ex. Fame Lahore)	200 Nos
7	Tents (Ex-Spain)	60 Nos
8	Turpuline (22' x 15)	155 Nos
9	Fly Outer	35 Nos
10	Fly Inner (PWS)	456 Nos
11	Flies	65 Nos
MEDICINES (EX. SPAIN)		
	Blankets	1115 Nos Used+ 08 Bales Used
1	Blankets (Turkey)	01 No
2	Baby Blankets	2859 Nos +16 Bales
3	Blankets (Mattresses)	760 Nos
4	Stuffed Blankets	2400 Nos
MEDICINES		
1	Medicines Misc. (Local Purchase)	163 Ctns
2	Basic Unit 03 IEH (Ex. Spain)	10 Ctns
3	Surgical Equipments (Ex. Spain)	02 Ctns
4	0 R S (Ex. Spain)	06 Ctns
5	Bandages (Ex. Spain)	08 Ctns
6	Renewable (Ex. Spain)	05 Ctns
7	IEHK Drugs Basic (Ex. Spain)	09 Ctns

GENERAL STORES		
1	Plastic Mat (Local purchase)	138435 Nos
2	Net Mosquito (Local purchase)	12000 Nos
3	Generators 2.3 KVA (Japan)	10 Nos
4	Generators 2.4 KVA (China)	56 Nos
5	Generators 2.7 KVA (Japan)	09 Nos
6	Tarpaulin (21' x 15') (Bangladesh)	155 Nos
7	Polyester Tank	1 No
8	Sleeping Mattresses	1 Nos
9	Plastic Sheet	1 Roll
10	Ground Sheet	1 No
11	Dewatering Pump with water pipe (China)	5 Nos Serviceable + 08 used
12	Life Jackets (China)	2113 Nos SA + 493 used
13	Small Boats China)	25 Nos SA + 18 used
14	Children/Baby Napkins (Pak Made)	1 Ctn
15	Plastic Gloves (household) (China)	4450 Nos
16	Shoes Misc.	123 ½ Ctns/Bales/Bags + 02 Bags
17	Plastic Sheets	1165 Nos
18	Mitt ion Gloves (China)	1900 Nos
19	Caps (NCMC)	1000 Nos
20	Charpoy (Pak)	02 Nos
21	Sofa Cushion	35 Nos
22	Used Clothing Misc.	55 Bags/Ctns/Shoppers+ 25 Bags
23	Water Tank Large	01 Nos
24	Coal Stoves (China)	208 Nos
25	Socks (China)	03 Ctns
26	Jackets(China)	1252 Nos + 148 Nos (for children)
27	Plates	447 Nos
28	Plastic hammer	1300 Nos
29	Thread	04 Boxes/Ctns
30	Bowl	284 Nos
32	Cooking Pots	62 Nos
33	Coal Stoves (Small)	180 Nos
34	Jackets (Jubba) (Qatar)	397 Nos
35	Jai Nimaz	3 Ctns + 17 Nos
36	Knives	55 Dozens + 3 Ctns
37	Soap Pot Plastic	02 Ctns
38	Show Piece Jar (China)	40 Nos
39	Poncho Plastic	1 Ctn
40	Plastic Plates	6 ¼ Ctns
41	Plastic Tray	05 Dozens +01 Nos
42	Water Carrier Plastic	6 Ctns + 34 Nos
43	Beddings Items Misc. (Pak)	606 Bags

44	Water Purifier (Japan]	10 Nos
45	Rice 20 Kgs Bags (Japan and Sri Lanka)	80. 190 Tons
46	Pillow Used	03 Nos
47	lea (Bangladesh)	97 Kgs
48	Fry Pan (China)	2517 Nos
49	Fiber Glass Sheers (India)	3893 Nos
50	Bed Sheets	02 Nos
51	Kart	36 Nos
52	Tawa	15 Nos
53	Jerry- Cane Plastic (20 Ltrs)	03 Nos
54	Jackets	07 Nos
55	Stoves	495 Nos
56	Lota	75 Nos

4. Relief Goods Donations in ERC Warehouse

S #	Date	Source/ Country of Origin	Donation Items	Qty
1	30.12.1995	Government of China	De-Watering Pump	2 Nos.
2	08.11.2003	Pakistan Embassy Doha, Qatar	Used Clothes, Blankets & Shoes (packer in various sizes) Used Clothes, Blankets & Shoes (packer in various sizes) Used Carpets	39 Cartons 68 Shops 2Nos.
3	12.08.2007	United Nation's Office for the Coordination of Humanitarian Affairs (OCHA) Brindisi, Italy	Tents Emergency drinking Water Kit, litter Jerry Can, Collapse ble with zip 10L Water Purification Unit for dinking Water Storage Tank 1000 Liters Water Storage Tank 5000 Liters Water Storage Tank 10000 Liters Tarpaulin Mosquito Nets Blankets Oxidizer Buckets Yellow Buckets silver Colour 12 Liters Buckets black colour 12 Liters	120 Woo 76 Cartons 32 Cartons 3 Wood 15 Nos 10 Nos 10 Nos 72 Bales 72 Bales 304 Nos 18 Nos 20 Nos 51 Nos 27 Nos
4	13.09.2007	M/s Rotary International Pakistan.	Shelter Boxes	400 Nos
5	22.10.2007	The Kingdom of Saudi Arabia. Vide Bill of Lading No. MOF/KARACHI/SEPT Dated t2 09.2007	Dry Food items Blankets Carpet Tents	12500 595 250 999

NATIONAL HIGHWAY AUTHORITY EMERGENCY/DISASTER RESPONSE PLAN

1. Damages resulting from disasters are categorized as:-
 - a. **Total Destruction**. Road section / structures washed away by floods, damaged by earthquake etc.
 - b. **Partial Destruction**. Erosion of embankments, settlement, cracks, potholes, damages to toe walls, retaining walls, guide banks, pyrotechnic works and hydraulic structures like causeways and culverts.
 - c. **Soot Damages**. The damages are in spot / localized locations.
2. **Recovery & Reconstruction Strategy**
 - a. **Short term / Immediate**
 - (1) Restoration of access and making the roads trafficable.
 - (2) Stabilizations of embankments, structures and protective works to prevent further damage.
 - (3) Carrying out comprehensive condition surveys of all damaged road section and structures to plan and prioritize the reconstruction works.
 - b. **Medium & Long Term**
 - (1) Planning and engineering design.
 - (2) Procurement of works.
 - (3) Mobilization for reconstruction.
 - (4) Supervision and monitoring of reconstruction works.
3. **Roles and Responsibilities**. Roles and responsibilities refers to functions that are expected to be performed by concerned section / division with relation to disaster risk reduction preparedness, response and recovery after disasters. Not each section / division has a role in each phase of disaster risk management. Function of planning and control section is more relevant to disaster risk reduction while those of Operation are more related to disaster preparedness and response.
4. **NHA Disaster Management Response**. In the event of a disaster, National Highway Authority has to immediately restore the national highway network for traffic to ensure smooth conduct of relief & recovery operation and rehabilitation of affected areas. To ensure instant response, the following disaster management committees are constituted:-

- a. **Head Office**

- (1) **Composition**

- | | | |
|-----|---------------------|----------|
| (a) | Member (Operations) | Chairman |
| (b) | GM (Construction) | Member |
| (c) | GM (Planning) | Member |
| (d) | GM Operations | Member |

- (e) GM Regions Concerned Member
- (f) Secretary NHA Member
- (g) Director RAMS Secretary

(2) **Functions**

- (a) Coordination and liaison with NDMA, PDMA and other agencies involved in disaster management.
- (b) Obtain early information about the impending disaster.
- (c) Evolve strategies and action plans for immediate restoration of affected road sections.
- (d) Allocate funds and mobilize necessary equipment for restoration of road network.
- (e) Liaise & coordinate with Frontier Works Organization and National Logistic Corporation for necessary assistance.
- (f) Monitor and evaluate the implementation of action plans and disaster situation.
- (g) Prepare reports for information of Chairman, MOC and media.

b. **Regional Response Cell**

(1) **Composition**

- (a) General Manager Region Chairman
- (b) Director Maintenance Member
- (c) Director Construction Member
- (d) All DD's Maintenance Members

(2) **Functions**

- (a) Coordination and liaison with PDMA, DDMA, Flood Commission, C&W department and Irrigation Department.
- (b) Obtain early information from the concerned agencies about the impending disaster particularly of floods.
- (c) Obtain current / real time information about the disaster and communicate the same to the cell at HO.
- (d) Prior to monsoon, carry out inspections to ensure that all drainage structures are fully cleaned and functional.
- (e) Maintain an up-to-date record of all construction equipment in the area.
- (f) Pre-qualify contractors for emergency repairs in the respective area of responsibility as per NHA policy.
- (g) Evolve and implement action plans for immediate restoration of affected road sections.

- (h) Hire the necessary machinery for immediate restoration of roads with prior approval of the HO.
- (i) The DD maintenance will act as a focal person of NHA in the respective District Disaster Management Authority.

5. The detailed organization of the NHA Disaster Management Cell is given below:-

