

**DISTRICT DISASTER RISK MANAGEMENT PLAN
BADIN, SINDH PROVINCE**

**SEOND Draft
2007 – 2008
DISTRICT BADIN, SINDH**

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List of Acronyms

BRDS	Badin Rural Development Society
CP	Contingency Plan
DA	District Administration
DCO	District Coordination Officer
DDO	Deputy District Officer
DDMA	District Disaster Management authority
DDRMP	District Disaster Risk Management Plan
DG	District Government
DM	Disaster Management
DO	District Officer
DPOD	Dhoro Puran Outfall Drain
DP	Disaster Preparedness
DRR	Disaster Risk Reduction
EDO	Executive District Officer
HR	Humanitarian Response
INGO	International Non-governmental-organization
KPOD	Kadhan Pateji Outfall Drain
LBOD	Left Bank Outfall Drain
LBCAWB	Left Bank Canals Area Water Board
LGFW	Local Government Frame Work
LHDP	Laar Humanitarian and Development Programme
NDMA	National Disaster Management Authority
NDMO	National Disaster Management Ordinance
NGO	Non-Governmental Organization
PDMA	Provincial Disaster Management Authority
PH	Public Health
TMA	Taluka Municipal Administration
UNDP	United Nations Development Programme

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Distribution List

1. National Disaster Management Authority (NDMA)
2. Provincial Disaster Management Authority (PDMA)
3. United Nations Development Programme Pakistan (UNDP)
4. District Nazim, Badin
5. District Coordination Officer, Badin
6. Taluka Nazim Badin
7. Taluka Nazim Talhar
8. Taluka Nazim Tando Bago
9. Taluka Nazim Shaheed Fazil Rahoo
10. EDO Health
11. EDO Education
12. EDO Agriculture & Livestock
13. EDO Works & Communications
14. Civil Defence
15. Local NGOs

Planning Authority

District Disaster Risk Management Planning authority is headed by District Nazim (Chairman), District Coordination Officer (Secretary), EDO Revenue, EDO Finance & Planning and three co-opted members from other stakeholders with the approval of the Chairman.

Approval of the Plan

District Council Badin is the approval authority for District Disaster Risk Management Plan, Badin

Amendments to the Plan

As per situation and need the planning authority will propose the amendments to the District Disaster Risk Management Plan, Badin while District Council has the right to approve the amendments in the Plan

Review and Updates

The plan shall be revised on yearly basis to incorporate any changes according to the existing situation and circumstances.

1. Preface

To be provided by UNDP/NDMA

Section No. 01: Overview of Badin district

Subsection 1.1. Geography

History of Badin is related with the history of Sindh in general and with lower Sindh in particular. This area was the centre of the ancient Indus Valley Civilization. Badin is hazard prone district of Sindh province lying between Thar Desert and coastal stretches of Arabian Sea. It is the major part of lower Sindh and Indus Delta. Badin district is situated between 24°-5` to 25°-25` north latitude and 68 21' to 69 20' east longitude. The district is a part of Lower Indus plain formed by the alluvial deposits of the Indus River. Being a vast alluvial plain, its land is very uniform in character and is not diversified by hills or rivers. The general elevation of the district is about 50 meters above sea level; Badin was created as district on 1st January 1976.

District Badin comprises of five talukas out of which two talukas are coastal; these talukas include Matli, Talhar, Tando Bago, Badin and Golarchi. More than 86% of the population lives in rural areas. It is bounded on the north by Hyderabad district on the east by Mirpurkhas and Tharparkar districts, on the south the Arabian Sea and Runn of Kutch, which also forms the international boundary with India, and on the west it is bounded by Thatta and Hyderabad districts. The total area of the district is 6,726 square kilometres; there are 46 union councils, 109 Tapas and 511 Dehs.

The climate is moderate, and is tampered by the sea breeze which blows for eight months of the year from March to October, making the hot weather comparatively cool. During the monsoon period, the sky remains cloudy with very little precipitation. The climate in summer is generally moist and humid. The cold weather in Badin starts from the beginning of November when a sudden change from the moist sea breeze to the dry and cold north-east wind brings about, as a natural consequence, an immediate fall in temperature. The maximum temperature in the hot weather does not usually exceed 40C, while the minimum reading in winter does not fall below 8C. The autumn sets in September and lasts for 1 ½ months.

Subsection 1.2. Demography

The population of Badin district was 1,138, 604 in 1998 as compared to 7, 77,000 in 1981. The current population (2007) of district Badin is 12, 65,000 souls. 84% percent of the population is rural while 16% percent is urban while population density is about 170 persons per sq. km. Male and female composition was 52.5% and 47.5% of the total population respectively, in 1998. The 82% percent of the urban and 79.89% percent of the rural population is Muslim. 18.85% percent are Hindus. The literacy ratio of the district is 24.63% percent¹. The male literacy ratio is nearly three times higher at 35.01% percent as compared to 12.90% percent for females in 1998. The ratio in urban areas is more than double at 44.76% percent as compared to 20.52% percent in rural areas. In rural areas male literacy is more than three times higher at 20.66% percents compared to female literacy ratio at only 9.23% percent. It is 56.24% percent for males and 31.33% percent for

¹Source: www.badin.gov.pk

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females in urban areas. There is only one Civil Hospital and four Taluka Hospitals in the district. Besides, there are nine Rural Health Centers and 49 Basic Health Units in the whole District out of which 35 BHUs are functional. The number of Dispensaries and Maternity Homes is 15 and 3 respectively (Department of Health District Thatta Brochure 2006). There 07 Veterinary Hospitals, 02 Dispensaries and 49 Veterinary Centres.

Table No. 1.1. Health Facilities

Service	Contact	Beds	Quantity
Civil Hospital			01
Taluka Head Quarter Hospitals			04
Rural Health Centres (A Type)			06
Rural Health Centres (B Type)			05
Basic Health Units			38
Medical Centres (20 Bedded)			01
Govt. Dispensaries			16
Experimental Dispensaries			40
MCH Centres			02
Unani Shafakhana			01
District Council Dispensaries			30
District Health Development Centre			01
Public Nursing School			01

Source: EDO Office Health

Subsection 1.3. Economy

Badin district is divided into two distinct economic zones. One is purely agricultural and the other is mixed having both fishing as well agriculture based population. The Upper part of the district starting from taluka Matli, Talhar and Tando Bago {except for two union councils} constitutes purely agrarian zone and taluka Golarchi (Shaheed Fazil Rahoo) and Badin up to taluka Diplo district Tharparkar constitutes mixed economic zone. There are two coastal talukas namely Badin and Golarchi.

The most of the areas of Badin was once paddy growing; swampy deltaic land saturated with natural salts². At present sugarcane is the major cash crop as compared to paddy. The entire lands are irrigated by water coming from Sukkur and Kotri barrages. The irrigation network mainly comprises of Gooni, Phulali, Akram Wah and Nasir canals. The total irrigation supply is 15,208 cusecs for the command area of 0.603 million hectares³. The total cultivable area on these canals is 2.8 million acres. Out of 12,000 watercourses, only 2000 watercourses have been lined up to 30% length.

The net-cropped area is 182512 hectares, mainly because of lack of irrigation water. Crop statistics of Badin district for 2002-03, indicate cotton cultivation on 6427.65 hectares, sugarcane on 50386 hectares, rice on 63839 hectares, wheat on 29217.6 hectares, sunflower on 37858.5 hectares, chillies on 6167 hectares, banana on 2639.78 hectares, other gardens on 2259 hectares and

²Source: Census Report, 1999

³Source: Panhwar, 2002

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tomato on 4265 hectares. Total area under orchards is around 4856.25 hectares⁴; there are two main forests namely Buharki and Rarri.

District Badin comprises of network of 28 distributaries, 39 drains and sub drains, 24 dhands (Lakes) and dhoras and 9 major depressions. In addition to 21 water areas with key potential of fish, prawns and lobster⁵. There are 370 fishponds spread on 16,500 acres; however, Badin district has two Ramsar sites namely the Indus delta, the Jhabo Lagoon (706 hectares), and the Nurheri Lagoon (2540 hectares). The livestock population was 1,140,122 in 1998, which declined to 857,501 after the 2003 floods⁶. Average crude oil production per day from four oilfields of Badin district was recorded to be 20,043 barrels in 1995, 20,970 barrels in 1996, and 26,335 barrels per day in 1997. The "record" production of 30,000 barrels per day was obtained in 2001.

Subsection 1.4. Shelter

Total housing units are 101,669⁷ out of which Pucca (brick or cement made) households were 11,553 or about 11% percent while 81.82% percent are one room houses. The percentage in rural areas is higher at 84.38% as compared to urban areas at 65.85% percent. Housing units with 2-4 rooms are 17.55% percent in the district which is two times higher at 32.53% percent in urban areas as compared to 15.14% percent in rural areas. The rural domain extends about 4,000 settlements; only 1547 are large settlements of various sizes above 200 people. The water supply is available to 13% housing units in urban areas. Hand pumps are installed in 26% of housing units in urban areas as compared to 14% of houses in rural areas. Electricity was available to 35 % housing units in 1998; presently 77% housing units in urban areas and 28% units in rural areas are benefiting. More than 70% housing units in coastal and rural areas are using kerosene oil for lighting in rural areas. 93.64% Acacia Arabica wood is used as fuel for cooking.

Subsection 1.5. Society

The majority of population is Muslim. Major castes include Syed, Soomra, Talpur (Mir) Leghari, Memon and Mandhra, Chandio Sheedi, Mallah, Noohani and Bhurgri. Many Baloch races are settled at scattered places of the district. The Hindu population of Badin district fall roughly into three main classes such as Lohanas, Kolhies and Bhils in addition to small portion of Brahmans. The 89.82% language is Sindhi spoken with gliding tone (dialect) from rest of province. There are numerous shrines of the saints where annual festivals are common organized by respective devotees. These annual fairs, besides being reflective of the local culture are also the great source of the entertainment for people of the district.

⁴Source: Statistical Office Badin

⁵Out of total fish production of 80,659 metric tons in Sindh province in 2002, 14,152 tons or 17.5% percent was produced in Badin district

⁶due to diseases and sale of animals by poor families as a coping mechanism to survive the aftermath of natural disasters

⁷According to 1998 census

Subsection 1.6. Administrative System

Zila Nazim is the head of district government Badin. However, Badin is the district headquarters headed by the District Co-ordination Officer with revenue set-up of five talukas. Each taluka is headed by Deputy District Officer (Revenue) in addition to Taluka Municipal Administrations which are responsible directly to respective Taluka Nazims.

Section No. 02: Disaster Risks in District Badin

Disasters experienced by Badin district can be divided into two broad categories such as natural disasters and man-made disasters. Cyclones, heavy rainfall, floods and droughts are common natural disasters which frequent in quick succession. As for as the man-made-disasters are concerned one of the living disaster ever countered by the coastal populace is Left Bank Outfall Drain (LBOD) and its components have proved to be huge technical failure and affecting coastal population of Badin district to a great extent.

Table: 2.1. Disasters history of Badin district⁸

#	Disaster	Year	Severity	Areas most affected
1.	Cyclone	1964-65	High	Union Council Ahmed Rajo, Union Council Bhugra Memon, Union Council Seerani, Union Council Mithi III, Union Council Khoski
2.	Cyclone	1999	High	Entire District particularly coastal belt
3.	Cyclone	2007	Medium	Union Council Ahmed Rajo, Union Council Bhugra Memon, Union Council Khorwah, Union Council Tarai, Union Council Garho, Union Council Seerani
4.	Flood	1976	High	Ahmed Rajo, Bhugra Memon, Khorwah, Tarai, Garho, Seerani
5.	Flood	1988	Medium	Ahmed Rajo, Bhugra Memon, Seerani
6.	Flood	1994	High	Entire District
7.	Flood	2003	High	Taluka Badin, Taluka Shaheed Fazil Rahoo
8.	Heavy Rainfall	1973	Medium	Taluka Badin, Taluka Shaheed Fazil Rahoo
9.	Heavy Rainfall	2007	Medium	Taluka Badin, Taluka Shaheed Fazil Rahoo
10.	Earthquake	2001	Medium	Taluka Badin, Taluka Shaheed Fazil Rahoo

Badin district is prone to cyclones, floods, sea intrusion and hydrological as well as metrological droughts. The coastal areas are more vulnerable as compared other rural areas. The 215, 080 acres of land are affected while 370, 000

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populace is living in danger zone where as 294 Dehs are directly affected in all type of disasters. There exist both structural and non-structural dimensions of vulnerability in Badin district. The dwellings, hamlets and villages that are situated in close proximity to the Arabian Sea (and LBOD) have been the most frequent subjects of recurrent disasters. The structure and location of the physical infrastructure and remoteness to constitute the physical vulnerability of the communities generally. The issues pertaining to the ownership, distribution and use of natural resources have added more to the existing vulnerabilities. The absence of land and fishing rights, lack of access to their productive resources and no formal protection or safety nets reduce social resilience and coping capacity against hazards.

Table: 2.2. Disasters history of Badin district⁹

Disaster	Year	Impact/Losses				
		Death	Houses Destroyed	Land Degraded/ Hectare	Live Stock	Displaced People
Cyclone	1964-5	90	1650	20000	80000	170000
Heavy Rainfall	1973	20	1400	30000	40000	250000
Flood	1976	40	2000	30000	98000	210000
Flood	1988	15	1000	10000	20000	160000
Heavy Rainfall	1994	20	1200	15000	60000	225000
Cyclone	1999	176	56678	263055	17289	452000
Earthquake	2001	05	800	28000	5000	171000
Flood	2003	115	22567	80937	85000	560000
Flood	2006	02	500	5000	3500	45000
Cyclones	2007	-	1500	-	-	25000

Subsection 2.1. Vulnerable Areas

The most vulnerable areas in Badin district are Badin, Nindo Shahar, Dando, Kadhan, Rip, Lunwari Sharif, Seerani, Behdami, Bhugra Memon, Mithi III, Khoski, Golarchi, Khorwah, Ahmed Rajo, Garho, Matli, Tando Ghulam Ali, Budho Qambrani, Kapri Mori, Thari, Phalkara, Gulab Leghari, Tando Bago, Dai Jarkas, Pangrio, Rajo Khanani, Ghulam Shah and Talhar.

Subsection 2.2. Hazards

- a. High priority
 1. Cyclone
 2. Flood
 3. LBOD
 4. Sea Intrusion

- b. Medium priority
 1. Heavy Rainfall
 2. Industrial waste

- c. Low priority
 1. Earthquake
 2. Social conflict

Subsection 2.3. HIGH PERIORITY

Cyclones

Badin district lies in zone II regarding cyclones and is more vulnerable to tropical cyclones. The tropical cyclones, which are characterized by torrential rain, gales and storm surges, causing heavy loss of human lives and destruction of property, crops and loss of cattle. The 80% per cent cyclones hitting coastal belt of Badin district develop into the Bay of Bengal and adjacent areas. Cyclones bring lot of devastation not only to human settlements but economic cycle is completely shattered. People, hardly, happen to be able to recover up to years as evident in cyclone A-2.

Table: 2.2. Cyclones and its Severity Measurement¹⁰

Category	Wind Speed	Damage Category
Deep Depression	52 - 61 km/h	Minor
Cyclonic Storm	62 - 87 km/h	Moderate
Severe Cyclonic Storm	88 - 117 km/h	Moderate
Very Severe Cyclonic Storm	118 - 167 km/h	Large
Very Severe Cyclonic Storm	168 - 221 km/h	Extensive
Super Cyclonic Storm	222 & above km/h	Catastrophic

Floods

Floods are the most probable disaster which comes in coastal belt every year. The 12 union councils are the most floods prone. The district is subject to frequent floods from the speedy water of irrigation channel, storm surges and heavy precipitations. After cyclone A-2 in May 19th, 1999 the flood experienced by coastal people in 2003 was the more devastating due to increased quantum of losses pertaining.

Left Bank Outfall Drain

The entire coastal belt of southern part of Sindh province (350 km) is the most vulnerable due to existence of huge drainage network called the Left Bank Outfall Drain. Through this three staged drainage network the effluents, toxic and subsoil brackish water of seven districts is emptied out into the Arabian Sea at Shah Samado creek taluka Jati district Thatta. It is catalytic to worsen the situation during small or large scale emergencies like cyclone, floods, heavy rainfall and upsurge. Due to subsoil seepage and erosion thousands of hectares of agricultural lands have been degraded; consequently people are compelled to undertake distress migration.

The major issues related to this emergency are relevant with the communities living along the coastal belt of Sindh particularly in district Badin. The livelihood resources are depleting rapidly and alternative options are non-existent due to traditional means of production. This development induced disaster is promoting distress migration while jeopardizing the domestic resource. On the

¹⁰Source: World Meteorological Organization

other hand it is again promoting forced urbanization which itself is an early warning of societal disaster.

Sea Intrusion

After cyclone A-2 in May 19th, 1999 Badin district experienced worst shortage of water which caused subsoil sea intrusion. The quantity of outflow to sea has been progressively reducing due to shortage of water in down stream Kotri after cyclone A-2. The present salinity level of 40 to 50 ppt (particles per thousand) compared to 15 to 20 ppt half a century ago has already crossed the dead level mark. As a result of reduction in fresh water discharge and reduction in silt down stream Kotri these sites have been pushed to death. Consequently massive sea intrusion has resulted in irreparable environmental damage to the entire coastal belt.

Subsection 2.4. MEDIUM PERIORITY

Heavy Rainfall

District Badin often experience heavy rainfall with thunderstorm when ever low pressure develops in Bay of Bengal or Arabian Sea. The monsoon enters in lower Sindh by the 22nd of July and lasts up to 1st week of September normally. The average Rainfall in the district is 125 mm. Since the increase in global warming the monsoon patterns have been affected. The precipitations received during 2003 and 2006 were premature with increased level up to 270 – 320 mm.

Industrial waste

Six agro-based industries¹¹ (sugar mills) are contributing pollutants to surface drains as well as nearby depressions. In urban areas of the district, the supply of contaminated water, unsafe disposal of municipal waste and solid waste, unsafe disposal of infectious hospital wastes and congested housing also create environmental degradation. There are no water treatment plants installed at sugar industries, Fly ash emitted from chimneys contain particle size ranging from 38 um to 1000 um¹² flying. The wastewater of all the sugar mills is dumped into LBOD through small drains and small irrigation channels at some places.

The wastewater of 09 other Sugar Mills belonging to districts Nawab Shah, Sanghar, Mirpur Khas and Hyderabad is released into LBOD through small drains. The sewerage water of Badin main cities is fallen into irrigation channels which is also the source of water supply for the entire population of district Badin and reaches upto coastal stretches.

Subsection 2.5. Disaster Trends

¹¹Mirza Sugar Mill Kadhan, Army Sugar Mill Badin, Diwan Sugar Mill Khoski, Pangrio Sugar Mill Pangrio, Diwan Sugar Mill Talhar and Ansari Sugar Mill Matli

¹²Sugar industries waste

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A chronology of disasters over the last five decades reveals that the district has remained in the grip of an uninterrupted cycle of disasters in one form or the other. Erstwhile, the disaster occurrence was not so frequent; the first cyclone 'A-1' experienced by district was in 1964-65 while the second devastating cyclone 'A-2' was witnessed in 1999; i.e. after 35 years gap. However, the gap between two upsetting disasters from 1999 to 2003 is 04 years.

The flood season coincides with monsoon onset which usually starts from second week of July and goes on till the end of September. This is first time (2007) that the monsoon precipitation was recorded in the fourth week of June. This is evident that the frequency of disaster recurrence cycle has changed remarkable with the passage of time. From second week of June 2007 to second week of July 2007 coastal stretches of district Badin came across with seven depressions converting into full cyclone. The consequent distress migration and resultant forced urbanization has been inserting dynamic pressure on built environment of low profile urban areas. This is another kind societal disaster for Badin district caused by unplanned development.

Another major problem faced by district Badin is linked with global warming; although global warming is slow on set disaster yet has been laying prominent negative impacts on the socio-economic life of society in the district. The conversion of wetlands/Ramsar¹³ sites, agriculture lands into degradation and shortage of freshwater is an indicator for future disintegration of livelihood resources of district Badin. Global warming is not a matter particularly relevant to developed countries rather the impacts is localized. Human-driven climate change is caused by the emissions of carbon dioxide and other greenhouse gases that have accumulated in the atmosphere mainly over the past 100 years. Climate change¹⁴ is global in its causes and consequences yet it presents a unique challenge for economic activities.

Table: 2.3. Month wise 30 years mean maximum, minimum temperature, precipitation and humidity¹⁵

Month	Mean Temperature (°C)		Precipitation (Millimetres)	Relative Humidity (%)
	Maximum	Minimum		
January	25.78	8.73	0.96	50.38
February	28.59	11.60	3.60	48.81
March	34.02	16.80	2.30	48.36
April	38.40	21.80	2.49	48.97
May	39.85	25.47	0.69	53.10
June	38.02	27.46	10.76	60.70
July	35.1	27.04	70.49	69.61
August	33.61	26.06	89.88	72.55

¹³Two major Ramsar Sites of Badin namely Jhabo and Nurheri are non-existent, which were the major source of income for fishing community

¹⁴The temperature has increased by 1.27 Celsius globally

¹⁵Data specific to Badin, source: Data Processing Centre Pakistan Meteorological Department Karachi

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September	34.36	24.87	34.43	69.78
October	35.80	21.70	3.72	59.15
November	31.87	15.86	1.67	53.88
December	26.68	10.10	1.11	52.46
Annual	33.48	19.76	221.64	57.56

Subsection 2.6. Institutional Capacity

Until now disaster management was an ad hoc activity undertaken only in case of emergencies while exercising the powers vested under Calamity Act 1956. The District administration of Badin makes contingency planning annually before onset on monsoon season. Under CP the district administration establishes emergency cell (EC) in district headquarter i.e. in the office of DCO.

Subsection 2.7. Review of Contingency Plan

The CP prepared by district administration for Badin district gives the background of only flood in 2003 and informs about inadequate structural measures. However, it does not include the structural measures but suggests addressing the structural deficiencies. It gives only non-structural measures (flood warning system, laws and regulations and readiness for providing relief measures to the affected population).

Section No. 03: Vision, Mission and Objectives of DDRMP

Subsection 3.1. Vision

To achieve sustainable social, economic and environmental development in district Badin through minimizing risks and vulnerabilities by effectively responding to and recovering from all types of disaster events.

Subsection 3.2. Mission

To protect human life, property and the environment from natural as well as man-made disaster through awareness, mitigation preparedness.

Subsection 3.3. Objectives

- 3.3.1.** To contribute achievement of sustainable development through minimized human suffering, loss and damage to the economic infrastructure by promoting and strengthening district level capacities for disaster management
- 3.3.2.** To localize disaster to the maximum extent possible so as to minimize the impact on life, livelihood and environment.

Section No. 04: Priority Strategies for Disaster Risk Management

The National Disaster Management Framework (NDMF) under National Disaster Management Ordinance (NDMO) 2006 has set nine priority areas to promote disaster risk reduction and develop capacities at all levels of government. The District Disaster Risk Management Plan (DDRMP) Badin refers to the National Framework and has adopted a set of six vital components objective to support the National Government and to enhance its own capacities in the district. The District Disaster Management Authority (DDMA) will prepare operational policies, tools and related activities for each of the component

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objectives as specified under. The priorities set out in this plan are initially for next two years period. .

Subsection 4.1. Institutional Arrangements

The National Disaster Management Ordinance 2006 provides for the establishment of Disaster Management Authorities at national/provincial and district level to develop and implement effective disaster risk management strategies. In district Badin series of individual meetings have been had with district authorities and government functionaries to highlight the importance of NDMO 2006 and community benefits of implementation of DDRMP in district Badin.

The response of district administration/government during previous disasters was good according to their capacity that was void of humanitarian approach practically. Usually district administration prepares contingency planning annually for coping with floods and cyclones. In emergencies the district administration exercises Calamity Act 1952 to provide food support at subsidy rates.

In case the disaster happens to be severe all necessary makeshift arrangements were made without keeping in mind the minimum standards. In the light on NDMO 2006 the establishment of the District Disaster Management Authority is an immediate action which the District Government has to take on priority basis in the first year. The constitution of DDMA with clear delineation of roles, functions and tasks before, during and after disasters provides operation space to devise departmental strategies to be consolidated for effective implementation of disaster risk reduction strategies in the district.

The roles and key functions of local government from taluka, union council, village council and citizen community boards will also have to be further clarified. The District Nazim, District Coordination Officer and the Planning Department will take the lead role in this priority area. For the development of all necessary operational systems and procedures consultations will be held with relevant agencies, organizations, local government and communities to inform them about plan to ensure its ownership. This consultation will also focus on acquiring staff/identifying key personnel in charge of DRM as well as support staff.

Establishment of District Emergency Operation Centre (DEOC)

The District Emergency Operation Centre will be established at public secretariat with the consent of District Nazim and District Coordination Officer. The District Nazim will authorize District Coordination Officer to prepare PC I to be submitted to the Chief Secretary Sindh/National Disaster Management Authority (NDMA) through Provincial Disaster Management Authority (PDMA) for approval and execution. The DCO will be the chairman of DEOC while separated experienced staff will be taken on board. Initially this centre will recruit staff for the period of two years which will be extendable based on performance.

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The district government will earmark separate budget allocation for DEOC; which will be autonomous body having coordination with rest of other line departments particularly revenue, buildings and irrigation. However, the District Office Bait-ul-Mal and Ushar & Zakat will be focal points for local assistance as both of them have ceiling specific for development¹⁶ of marginalized segments. Five member committee comprising of XEN Irrigation/LBOD, EDO Revenue, EDO Health, EDO Education and EDO Works and Services will be constituted to provide technical input while the DCO/District Nazim will be the lead person.

The DEOC will function permanently as the district is most vulnerable against disasters; existence of such centre is very important in this district. Instead of taking staff on deputation for this centre it is strongly advisable that the staff consisting on five persons may be hired/appointed and required furniture & fixture along with necessary mobility will be provided in addition to access to digital means of communication and dissemination. The major functions of DEOC are as under:

1. The DEOC will function regularly like other departments and pursue the same timings and benefits ensured to Sindh government employees.
2. During emergency, it will be activated and manned to function round the clock.
3. The DEOC will coordinate with all the departments working in the district ensuring that the disaster risk reduction approach has been incorporated in all the development schemes prepared by respective departments.
4. Development and implementation of Community education and Preparedness Programmes to overcome any disaster given wide publicity through posters, banners, handbills in the district mostly in vulnerable areas.
5. The DEOC will prepare flood control programme/update contingency plan every year before onset of monsoon through consultation with the members of the District Disaster Management Authority.
6. The warnings will be circulated to all the concerned departments, TMAs, Union Council Administrations officially and the most vulnerable villages through involvement of NGOs working in that area.
7. Design training modules; arrange simulations and mock exercises for representatives from line departments, taluka/union council Nazims, NGOs, and CCBs.
8. Maintain and manage emergency stockpiling at district level and update virtual stockpiling list for quick supplies in case of emergency.
9. Review the operational strategies of key departments and provide technical support and input where it is necessary.
10. Monitor the situation frequently and keep the record of changes taking place in addition to preparing situational specific coping strategies.

Table: 4.1.1. Work plan

Activities	Lead Agency / Department	Cooperating Agency / Department	Period of Completion	Verifiable indicators
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¹⁶Individual Financial Assistance (IFA) General, Medical & Education with PBM and Rozgar Scheme with Ushar & Zakat Department

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Notification by PDMA for constitution of DDMA Badin	District Nazim, DCO	Provincial Government	Within 06 months	PDMA notification Minutes of meeting,
Constitution & Notification of DDMA	District Nazim, DCO	Planning Department and HRD	Within 06 months	Minutes of meeting, list of members
First meeting of DDMA set-up	District Nazim, DCO	Provincial Government, HRD	Within 06 months	Minutes of meeting, participants list
Conduction of DDMA orientations for each line department of the district	CDD, Civil Defense	DCO, EDOs	Within 06 months	Minutes of meeting, participants list
Seminar to familiarize district council about the DDMA	District Nazim, District Naib Nazim	Planning Department and HRD	Within 06 months	Minutes of meeting, participants list
Conduction of workshops to clarify DRM structures, roles and responsibilities at taluka, union councils and village level	Planning Department and HRD	TMA's and UC officials, NGOs	Within 06 months	Minutes of meeting, participants list, terms of reference
Multi-stakeholders meeting for introduction of DDMA and discuss operational mechanisms	Planning Department and HRD	District Nazim, DCO, concerned line department	Within 06 months	Minutes of meeting, participants list, draft operational mechanisms
Establish and resource a functional District Emergency Operation Centre (DEOC)	Planning Department and HRD	District Nazim, DCO, PDMA/NDMA	Within 1 st Year	Terms of reference, appointment letters, physical appearance of DEOC
Workshop on development of consolidated contingency plan based on worst case scenarios for specific disasters	Planning Department and HRD	District Nazim, DCO, concerned line department	Within 1 st Year	Minutes of meeting, participants list, contingency plans
Support taluka, union council and village administration in developing Disaster Risk Management Plans	Planning Department and HRD	District Nazim, DCO, TMA's, U/Cs	Within 1 st Year	Minutes of meeting, participants list, DRM plans

Subsection 4.2. Risk Assessment

Hazard and Vulnerability Assessment is very important phase of disaster management planning in addition to risk assessment through participatory approach. This kind of assessment answers the fundamental question that fuels the natural hazard mitigation planning process. There is no systematic and proper database available at district level yet plenty of information is available with different NGOs working on DRM.

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The Revenue Department, Community Development Department and District Emergency Operation Centre will be the lead agencies to perform this task and developing database. They are responsible to develop appropriate assessment methodology, identify the sources required and ensure the quality and standard of baseline data, meanwhile, the NGOs and other relevant agencies will be involved in the whole process. The District Disaster Management Authority through Revenue Department, Community Development Department and Emergency Coordination Centre, local NGOs and Technical Experts will conduct the hazard vulnerability and capacity assessment of entire district through utilization of PPA and PRA Tools under participatory approach. The Revenue Department and Emergency Coordination Centre are directly responsible for preparation of hazard specific digital map with the support of SUPARCO highlighting the dangerous zones categorically. In this entire process the TMAs and Union Council Nazims and Councillors will be involved.

The vulnerability and capacity assessment will identify key infrastructures and environmental resources in addition to various social groups in each local area which is prone to devastation caused by hazards. Pakistan Metrological Department, WAPDA, Telecommunication and NGOs working on DRM will provide all necessary support during conduction.

Table: 4.2.1. Work plan

Activities	Lead Agency / Department	Cooperating Agency / Department	Period of Completion	Verifiable indicators
Review current data and collection methods and analysis process by various departments to conduct disaster risk analysis	Revenue Department	DCO, HRDO, CDD, TMAs, NGOs, CBOs	Within 06 months	Minutes of meetings, TORs developed, appointment letters, list of assessment tools
Development of HCVA field manual along with practical guidelines and assessment methodologies	Revenue Department	DCO, HRDO, CDD, TMAs, NGOs, CBOs	Within 06 months	Minutes of meetings, draft reports, draft tools
Identification of HCVA facilitators/resource persons	Revenue Department,	DCO, CDD, TMAs, NGOs, CBOs	Within 06 months	List of facilitators
Conduction of 1st Facilitator's Training of HCVA field practitioners	Revenue Department / HRDO	DCO, CDD, TMAs, NGOs, CBOs	Within 06 months	Training report, list of participants
Conduction of HCVA of villages and union councils included in high priority hazard zones, specifically generating hazard specific maps indicating the location of various hazards with zonation of risk levels;	Revenue Department, HRDO, HCVA Facilitators	Community Development, TMAs, NGOs, CBOs	Within 06 months	Draft HCVA report per village

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e.g. low, moderate and serve				
Triangulation and analysis of HCVA's	HCVA facilitators	HRDO, Revenue Department, TMAs, NGOs, CBOs	Within 06 months	HCVA report per village
Develop Damage Needs Capacity Assessment formats	HCVA facilitators	HRDO, Revenue Department, TMAs, NGOs, CBOs	Within 06 months	DNCA forms for village, UC, taluka and district level
Set-up database of district	Revenue Department / HRDO / HCVA facilitators	Community Development, TMAs, NARIMS, NGOs, CBOs,	Within 06 months	HCVA report per U/C and taluka level, HCVA database
Update, contextualization and standardization of assessment formats	Revenue Department, ECC, HRDO	DCO, CDD, TMAs, NGOs, CBOs	Within the 1 st year	List of facilitators
Update district database of district	Revenue Department, HRDO	CDD, TMAs, NGOs, CBOs,	Within the 1 st year	HCVA report per village, UC and taluka, HCVA database

Subsection 4.3. Training, Education and Awareness

One of the major gaps found in the modus operandi of district departments and concerned authorities depicts lack of knowledge of disaster management practices and approaches. The government departments are seldom provided training opportunities except deliberations on contingency plan. The district departments usually receive very specific departmental trainings. Enhancing the knowledge and skills of decision makers and at risk communities is also essential in order to promote a culture of resilience. The main purpose of training, education and awareness raising activities will be to develop a cadre of experts who will be able to analyse risks; develop and implement disaster risk management programmes in district.

The DRM training, education and awareness raising is essentially required in multiple sectors such as civil servants, technical staff, NGOs, media, elected representatives and communities. It is vital for them to develop an understanding about disaster preparedness, response and overall disaster risk management. In addition to these specialized trainings will be organized such as search & rescue, site planning & camp management, evacuation mechanism, first aid & fire fighting, beneficiaries' identification & relief distribution, disaster preparedness and risk management.

The Human Resources Development Department (HRDD) under the Office of the District Coordination Officer, District Emergency Operation Centre (DEOC) and Community Development Department (CDD) will be the lead agencies.

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These agencies will assess the levels of awareness, training and skills needed among government personal and design, implement and evaluate awareness campaigns, skills training and simulations. Training Needs Assessment (TNA) will be conducted to ensure appropriate training is imparted to all. These HRDD and DEOC will liaise and work with other technical agencies, NGOs and UN to support training of personal.

Table: 4.3.1. Work plan

Activities	Lead Agency/ Department	Cooperating Agency/ Department	Period of Completion	Verifiable indicators
Identification of resource persons Development and Conduct Training Needs Assessments	HRDO, DEOC	CDD, NGOs	Within 6 months	TORs developed, appointment letters, Facilitators list
Preparation of outline and resource material and its validation	HRDO, DEOC, Resource persons	NGOs, technical agencies	Within 6 months	Resource pack developed
Organize TOT for pool of trainers	HRDO, Resource Persons	Line Departments, NGOs; technical agencies	Within 6 months	Training report, participant list
Design village awareness -raising campaigns	HRDO, CDD	EDOs, TMAs, U/Cs, NGOs, technical agencies	Within the 1 st year	Minutes of meeting, Draft reports, Draft tools
Implement awareness raising campaigns in villages	HRDO, CDD	EDOs, TMAs, U/Cs, NGOs, technical agencies	Within the 1 st year	Activity reports, participants list
Design and conduct training programmes	HRDO, Resource persons	EDOs, TMAs, U/Cs, NGOs, technical agencies	Within the 1 st year	Training curricula, training designs, training material & report Participants list
Development and Conduction of mock exercises/simulations and monitor activities at various levels	HRDO, CDD, Revenue Department	DCO, EDOs, TMAs, U/Cs, NGOs, technical agencies	Within the 1 st year	Training reports, activity reports, participants list
Development of DRM curriculum	HRDO, EDO Education, NCHD	DCO, EDOs, TMAs, U/Cs, NGOs, technical	Within the 1 st year	Assessment report, curriculum

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	agencies		prepared,
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Subsection 4.4. Community Based Disaster Risk Management

Disaster risk management entails measures to curb disaster losses by addressing hazards and people's vulnerability. Community Based Disaster Risk Management Programme is good and practical model at community level which has been practised by some NGOs in Badin district.

The DDMA will work together with local communities to help increase understanding and resilience before, during and after disasters. It is quite important to develop the ability of district authorities, NGOs, union councils, village councils and communities to act efficiently when an extreme natural event takes place so that it may not develop into a full-scale disaster.

The ability of a community to protect itself against natural events/hazards is decisive. The taluka, union councils and village authorities will design localised disaster risk management plans for their respective areas. Each plan will contain analysis of area, potential hazards, vulnerabilities, coping mechanism, available and required resources, strategies for risk reduction and roles & responsibilities of each stakeholder.

Table: 4.4.1. Work plan

Activities	Lead Agency/ Department	Cooperating Agency/ Department	Period of Completi on	Verifiable indicators
Development of curriculum for CBDRMP training	HRDO, CDD	DCO, EDOs, TMAs, U/Cs, NGOs, technical agencies	Within 6 months	TNA reports
Resource Generation and Programme Planning	Planning & Finance EDO	District Nazim DCO	Within 6 months	Funds available or appropriate
Identification and Hiring of Resource Persons	HRDO	Planning department, ECC, NGOs, technical agencies,	Within 6 months	Training report, participants list
Develop public awareness campaigns and materials	CDD, HRDO	Media, IT department, Education department, NGOs	Within the 1 st year	Public awareness materials and kits
Conduct School-based Disaster Management training	DEOC, Revenue Department, CDD	Media, IT department, , NGOs, HRDO	Within the 1 st year	School based awareness materials such as posters, billboards, comics, etc.
Generate resources: (from government, NGOs,	Planning & Finance EDO,	District Nazim, DCO, DEOC	Within the 1 st year	Funds available or appropriated

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UN, etc.)	Taluka and UC Nazims			
Conduct public awareness activities in villages and communities	DEOC, Revenue Department, NGOs	Media, IT department, education department, NGOs, HRDO	Within the 1 st year	Activity reports, Participants list, photo documentation
Construction of disaster resilient community infrastructures	Planning & Finance Department, DEOC, Revenue Department	District Nazim, DCO, Taluka Nazim, UC Nazim, NGOs	Within the 1 st year	Replication Strategy

Subsection 4.5. Multi Hazards Early Warning System

The district based early warning system with network of sub stations at least at taluka level is very important for DRM. To be effective, early warning systems must be people-centred. A complete and effective early warning system comprises four inter-related elements: risk knowledge, monitoring and warning service, dissemination and communication, and response capability. A weakness or failure in any one of the part could result in failure of the whole system. The main objective of people-centred early warning systems will be to empower individuals and communities threatened by hazards to act in sufficient time and in an appropriate manner so as to reduce the possibility of personal injury, loss of life, damage to property and the environment, and loss of livelihoods.

The communities, particularly the most vulnerable ones, are central to people-centred early warning systems. Their input to system design and their ability to respond ultimately determines the extent of risk associated with natural hazards. They should be aware of the hazards and the related effects to which they are exposed and be able to take specific actions to minimize the threat of loss or damage. Early warning will help to reduce economic losses by allowing people to better protect their assets and livelihoods.

For example, they can safeguard homes, sell livestock or select appropriate crops for a drought, thus limiting not only the immediate impact of a disaster but also the knock-on effects on assets that can reduce economic well being and increase poverty. Early warning information allows people to make decisions that contribute to their own economic self sufficiency and their countries' sustainable development. If well integrated into a systematic framework of risk management, early warning systems can provide many development benefits.

Early warning systems also promote the development and the application of scientific knowledge, including improved science and technology information dissemination. They contribute to the creation of data archives and information bases that are essential to longer term economic development planning and decision making. Early warning systems may enhance community capacities through participation processes, public-private partnerships, and recognition of indigenous knowledge and values.

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Developing and implementing an effective early warning system requires the contribution and coordination of a wide range of individuals and institutions such as district line agencies and NGOs. Each has a particular function for which it should be responsible and accountable. This is primary responsibility of district government to be actively involved in the design and maintenance of early warning systems, and understand advisory information received to be able to advise, instruct or engage the local population in a manner that increases their safety and reduces the possible loss of resources on which the community depends.

NGO(s) will play a critical role in raising awareness among individuals and organizations involved in early warning and in the implementation of early warning systems, particularly at the community level. In addition, they play an important advocacy role to help ensure that early warning stays on the agenda of government policy makers. Meanwhile, the public sector technical institutes will provide all necessary input to the functionality of Early Warning System properly. The private sector has a diverse role to play in early warning, including developing early warning capabilities within their own organizations.

Media plays an important role in improving the disaster consciousness of the general population and disseminating early warnings. In addition, the private sector has a large untapped potential to help provide skilled services in the form of technical manpower, know-how or donations (in-kind and cash) of goods or services, especially for the communication, dissemination and response elements of early warning.

Table: 4.5.1. Work plan

Activities	Lead Agency/ Department	Cooperating Agency/ Department	Period of Completion	Verifiable indicators
Identification of required resources and techniques	HRDO, TMAs, Met Office, Revenue Department	DCO, District Nazim, NGOs, Technical Agencies	Within 6 months	Reports, list of resources identified
Development and Conduct EW Trainings at Community, U/C, Taluka, District level	HRDO, Revenue Department	TMAs, UCs, NCHD, Technical Agencies, NGOs	Within 6 months	Event reports, list of participants
Establishment of EWS at U/C, Taluka, District level	EDO Planning & Finance, Revenue Department, TMAs	District Nazim DCO, EDO CDD	Within 6 months	EWS established
Dissemination of EW	TMAs, Revenue Department	DCO, Taluka Nazims, U/C Nazims, NGOs, HRDO, Technical	Within the 1 st year	Information disseminated, record maintained

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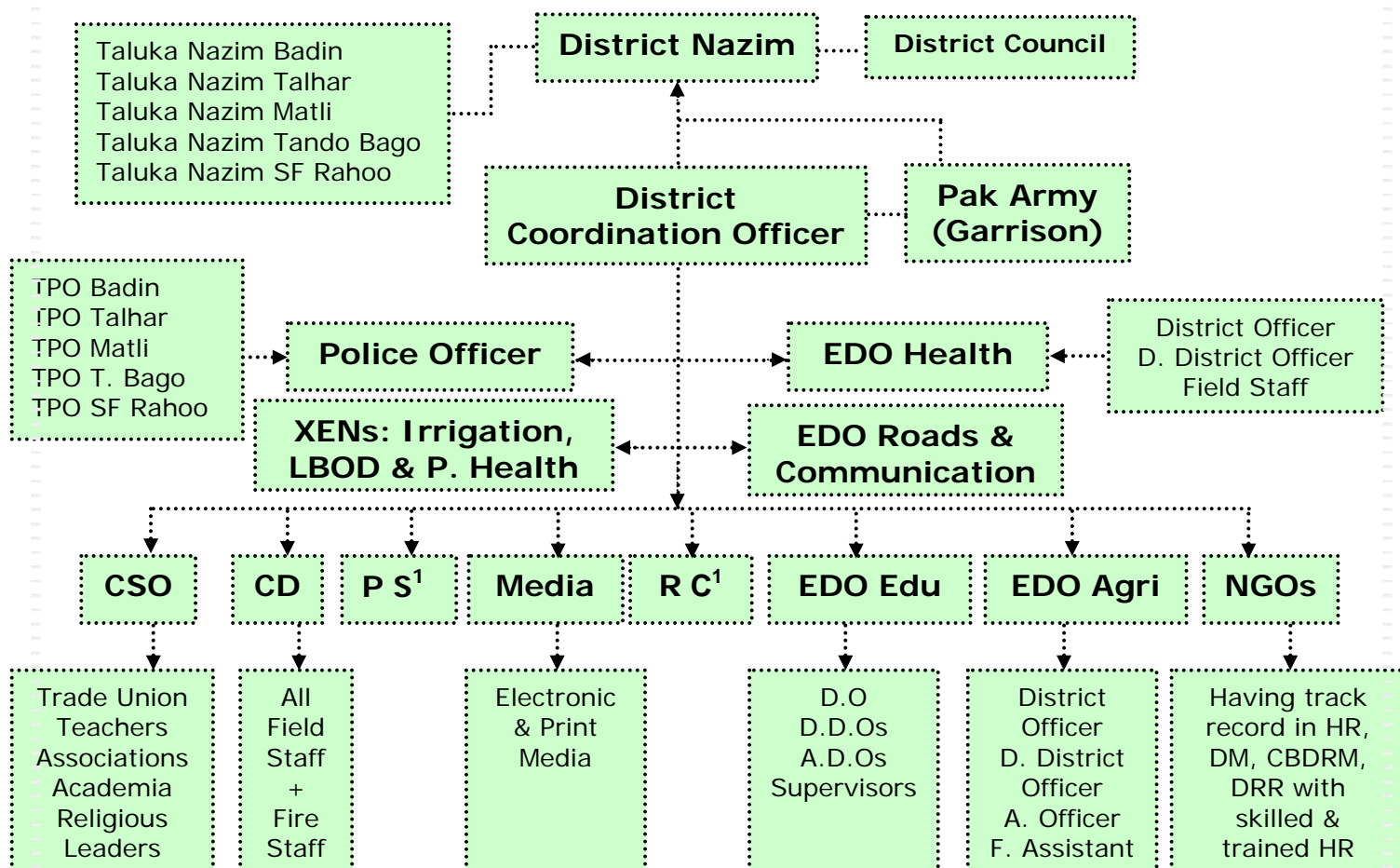
		Agencies		
Update EWS	TMAs, Revenue Department	DCO, Taluka Nazims, U/C Nazims, NGOs, Technical Agencies	Within the 1 st year	EWS updated and synchronized

Section No. 5: STRUCTURE FOR DISASTER RISK MANAGEMENT AND KEY STAKEHOLDERS

The structure of disaster risk management at district level is based on Sindh Local Government set up and Contingency Plan to combat cyclones & flood. This is an inclusive plan having involvement of multi stakeholder already functional in the district. The foremost stakeholder is district government/administration particularly line departments such as:

1. Health,
2. Revenue
3. Education,
4. Agriculture & Livestock
5. Irrigation & LBOD
6. Public Health Engineering
7. Works & Services
8. Civil Defence and Fire Service

Administrative Chronogram



The second key stake holder includes:

1. NGOs¹⁷ (Local, National, International)
2. Media (electronic and print media)
3. Private Sector

Subsection 5.1. Precautionary Measures

As soon as warning for flood (state of emergency) is received, all the agencies responsible for flood protection/search & rescue and relief work will take necessary actions immediately. During the acute emergency, these agencies will send regular daily situation reports to the district government/administration through DEOC.

Subsection 5.2. Arrangements to be taken at the time of Emergency

The head (Executive District Officers) of each department is responsible to develop operational strategy/contingency plan along with resource mapping for their own departments keeping in view the perspective of minimum standards, cultural dimensions, code of conduct and DRM. The In charge DEOC is the focal point to receive and analyse the copies of such strategies/plans. This is the responsibility of the Executive District Officer Revenue to develop Incident Control System (ICS) and its operational strategy for district Badin likewise District Police Officer (DPO) is responsible to develop Security Framework Management (SFM) and its strategy plan for district Badin. The in charge of DEOC will provide all necessary technical support for the development of ICS, SFM and DS (departmental strategies).

5.2.1. Flood Control Cell

During monsoon¹⁸ period the Irrigation department and LBOD division will establish jointly a “Flood Control Centre” (FCC). The FCC will be headed by the XEN LBOD with the support of Sub District Officers and is directly responsible to submit DEOC updates accurate and timely so that DEOC may be in position to develop quick response strategy according to changing situation and needs.

The XEN Irrigation will provide all necessary technical support to FCC developing plans of operation as per situations. This is the responsibility of XEN LBOD and Irrigation to develop warning codes and its communication mechanism for FCC. On the basis of information received the XEN will prepare forecast to be submitted to the DEOC. In case the situation turns sombre the XEN will immediately release codified signal to the DEOC according to the situation of that time demanding immediate response.

Subsection 5.3. Establishment of Rapid Relief Force

¹⁷specifically working on Disaster Management

¹⁸(3rd week of June to 2nd week of September)

5.3.1. Logistic arrangements

The arrangement of transport¹⁹ is the responsibility of District Officer CDD and Deputy District Officer Revenue. British Petroleum will provide fleet of Double Cabin High Lax vehicles (with fuel) therein. The in charge of DEOC will provide all necessary technical support during the entire process.

5.3.2. Search and Rescue

DEOC and NGO(s) will play pivotal role in rescue operation during emergency; if the devastation is at large scale the support of Pakistan Army (Garrison) can be requested by district government/administration. There are some NGOs which have capacity to carry out search and rescue operation in emergency along with emergency stock piling. The District Officer Revenue is overall in charge of the rescue work with the support of DEOC and NGO(s) and will be responsible to maintain minimum standards.

5.3.3. Evacuation/Relief Camping

The District Officer Revenue and the concerned Taluka Police Officer are responsible for the evacuation of people to safer places with the support of DEOC. NGO(s) will persuade the inhabitants of endangered zones to move out with their possible belongings to the safe places. Meanwhile, DPO is responsible to ensure law n' order situation and maintain status quo in absence of the villagers. District Nazim/District Coordination Officer is directly responsible to ensure that the evacuation is fulfilled according to the 'Code of Conduct and humanitarian charter'²⁰.

5.3.4. Relief packaging

The District Food Controller (DFC) will be responsible to ensure availability of food supply during emergency. District Nazim/District Coordination Officer will provide all necessary legal support therein. The Executive District Officer Community Development Department (CDD) and NGO(s) will be responsible to design food relief package as per SPHERE STANDARDS. The food distribution will be carried out through DEOC and NGO(s). However, the concerned Taluka Municipal Administration will be responsible for the arrangements of water and sanitation as per minimum standards. The concerned taluka Nazim and union council Nazim will be responsible to monitor the entire operation and play the role of trouble shooter where it may be possible and will remain in close coordination with district government.

Subsection 5.4. Establishment of Relief Camps

EDO Education, EDO Health, XEN Public Health and SDO WAPDA will be directly responsible to prepare 'site selection plan and relocation plan' for accommodation of villagers or IDPs during acute emergency period. The plans will be developed according to minimum standards (SHERE STANDADRDS). The in charge of the DEOC and NGOs will provide all relevant technical support therein. EDO Health will ensure provision of pre-medication in all camps as per minimum standards.

¹⁹(4x4 vehicles, trucks, Mazda, OBE fibre boats)

²⁰Principal of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Response Programmes

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Meanwhile, XEN Public Health will be responsible to make sure uninterrupted supply of sweet and clean drinking water and sanitary facilities (gender segregated) as per minimum standards in all the camps. Whereas, the District Officer Livestock will be responsible to make all possible arrangements for vaccination, de-worming and supplementary food for livestock.

The education department has good functional network of schools in district Badin. Most of the schools in coastal belt are without building²¹. The total number of primary {boys & girls} schools is 96, middle schools 52 while the high schools are 5. The total number of schools in coastal belt is (input needed) out (input needed) of schools have building and the rest of schools have been running without building. The Health department has also good network of BHU/RHU; there are several hospitals, dispensaries, health centres and clinics in the district.

Table No. Details of Health Facilities

Subsection 5.5. Responsibilities and Duties of EDO (Revenue)

Department / Agency	Pre-disaster responsibilities	During disaster responsibilities	Post disaster responsibilities
Revenue	<p>To ensure establishment of control rooms at each Mukhtiarkar Office round the clock under the supervision of ECC and DDO Revenue.</p> <p>To prepare contingency plan for evacuation of people in consultation with ECC, NGOs and Union Council Administration.</p> <p>To take immediate steps for the arrangements of Relief Fund/Humanitarian Support from DDMA/PDMA in case of emergency.</p>	<p>To establish relief camps in coordination with Executive District Officer Education, ECC, and NGOs where necessary in emergency.</p> <p>To make arrangements for the availability of sufficient number of family tents for emergency.</p> <p>To form quick response teams comprising of representatives of all concerned departments, ECC and NGOs.</p> <p>To arrange possible transportation means and manpower (police force) to be engaged in emergency response.</p>	<p>To mobilize villagers in emergency response with the support of ECC and NGOs during monsoon.</p> <p>To take immediate steps for the arrangements of Relief Fund/Humanitarian Support from DDMA/PDMA in case of emergency.</p>

²¹Provided the building do exists it is in dilapidated condition

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		<p>To make prior arrangements of food supply as per minimum standards in coordination with food department, DEOC, CDD and NGOs.</p> <p>To make arrangements in coordination with District Police Officer for sufficient transport for the evacuation and relocation of affected communities.</p>	
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Subsection 5.6. Responsibilities and Duties of XENs Irrigation/SIDA & LBOD

Department / Agency	Pre-disaster responsibilities	During disaster responsibilities	Post disaster responsibilities
Irrigation, LBOD & SIDA	<p>To liaise with DEOC and all the concerned</p> <p>To prepare departmental contingency plan and circulate its copies to all the concerned stakeholders before monsoon onset.</p> <p>To identify the most vulnerable points of LBOD and Irrigation Canals.</p> <p>To remain in touch with DEOC, NGOs and PMD district Office and share the information/updates about emergency with all the stakeholders.</p> <p>To make all necessary infrastructural arrangements in case breaches take place suddenly.</p> <p>To establish special flood warning centres at union</p>	<p>To ensure functionalization of Flood Control Cell (FCC) in proper order.</p> <p>To make special arrangements for watch and patrolling of vulnerable points of LBOD and Irrigation Canals.</p>	<p>To liaise with DEOC and all the concerned.</p> <p>To remain in touch with DEOC, NGOs and PMD district Office and share the information/updates about emergency with all the stakeholders.</p> <p>To assist and coordinate repair work and maintain damaged infrastructures with the support of SIDA, Revenue and DEOC.</p>

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	<p>council level with the support of DEOC and NGOs.</p> <p>To make arrangements of sand-bags, machinery, human resource and other material to be used at the time of need.</p>		
XEN Drain	<p>To maintain the embankments of river and canals of the District during the rainy season.</p> <p>To take necessary measures to reinforce the bunds with stone pitching, wooden slabs and sand sacks.</p> <p>To operate the drainage system efficiently with special attention to the drainage regulators, which are discharging drain water in to the sea, round the clock, vigilance be made over the regulators.</p>	<p>To ensure that LBOD and other drains are working properly and the drains are disposing off rain/flood water is continuously and orderly.</p>	<p>To take necessary measures to reinforce the bunds with stone pitching, wooden slabs and sand sacks.</p>

Subsection 5.7. Responsibilities and Duties of EDO (Education)

Department / Agency	Pre-disaster responsibilities	During disaster responsibilities	Post disaster responsibilities
Education	<p>To deploy sufficient staff on duty at all relief camps.</p> <p>To train and organize relief teams to support the DDMA relief distraction teams.</p>	<p>To assist the DDO Revenue, TMA for properly establishing the relief camps in schools and provision of relief in case of emergency.</p> <p>To ensure that all basic facilities are made at each camp with the support of ECC, NGOs, CDD, TMA and XEN Public Health and monitor the duties of staff.</p>	<p>To take all necessary measures for functionalization of schools.</p> <p>To provide human resource for assistance in survey of damages and needs.</p>

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Subsection 5.8. Responsibilities and Duties of HESCO/WAPDA

Department / Agency	Pre-disaster responsibilities	During disaster responsibilities	Post disaster responsibilities
HESCO/WAPDA	To form special committee headed by Line Superintendent for inspection of electricity supply lines in the most prone areas.	To ensure that no case of electrocution may occur. To make sure that in case of breaking of live electric wires immediate steps are taken. To ensure supply of electricity at various points as per demand of agencies working at the time of emergency.	To make proper and immediate arrangements for maintenance of electricity supply.

Subsection 5.9. Responsibilities and Duties of EDO (Health)

Department / Agency	Pre-disaster responsibilities	During disaster responsibilities	Post disaster responsibilities
Health	To ensure availability of Doctors, Paramedical staff and required necessary medicines in all the hospitals, Basic Health Units and Rural Health Centres in emergency. To make sure availability of all vaccines especially dog bite, anti snake vaccines in emergency. To ensure establishment of high alertness system at union councils which are the most vulnerable	To depute fully equipped medical teams at all the relief camps in case of emergency. To make necessary arrangements for the prevention of epidemics/ASA. To make necessary arrangements for mobile medical teams with sufficient medicines during emergency.	Provide and disseminate on massive scale the information regarding precautions of epidemics.

Subsection 5.10. Responsibilities and Duties of EDO (Agriculture & Livestock)

Department / Agency	Pre-disaster responsibilities	During disaster responsibilities	Post disaster responsibilities
Agriculture & Livestock	To depute District Officer Animal Husbandry (Livestock) and concerned staff to save the livestock	Ascertaining quantum of damage done by disaster to crops, livestock and the	To make necessary and relevant arrangements for rehabilitation from mechanical wing in

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	<p>from flood induced diseases and losses during heavy rain.</p> <p>To make vaccination/de-worming arrangement against outbreak of contagious diseases to the livestock of affected areas.</p>	<p>fertility of land</p> <p>Provide necessary treatment to the ailing animals.</p>	<p>emergency.</p> <p>To establish Veterinary Relief Camps for Live Stock at accessible focal points.</p> <p>Providing necessary technical assistance to avoid fungus and other disaster related crop diseases.</p> <p>To arrange capacity building training opportunities of Agriculture department regarding DRM.</p>
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Subsection 5.11. Responsibilities and Duties of DFC (Food Department)

Department / Agency	Pre-disaster responsibilities	During disaster responsibilities	Post disaster responsibilities
Food Department	<p>To make arrangements of food supply from different parts of Sindh province in emergency.</p> <p>To maintain proper record of virtual food stocking and keep it updated.</p> <p>To make arrangements for shifting food stocks from vulnerable zones to safer areas.</p>	To arrange sufficient Packets of cooked food for the affected people living in the relief camps at the time emergency.	To establish food supply centers at feasible locations as required.

Subsection 5.12. Responsibilities and Duties of EDO (Works & Services)

Department / Agency	Pre-disaster responsibilities	During disaster responsibilities	Post disaster responsibilities
Works & Service	To keep ready public/private crane lifters.	To make sure the availability of staff and arrange machinery for removal of debris and keep all roads motorable for evacuation and relief.	To coordinate with DEOC for conduction of surveys, loss & damage assessment, extent of damage of community infrastructures.

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		<p>To ensure water supply, electricity and drainage at all relief camps in coordination with Executive District Officer Revenue, Education, XEN Public Health, ECC and NGOs in emergency.</p> <p>To ensure maintenance of roads and improvise bridges after cyclones/flood for making accessibility of humanitarian response more possible to affected areas.</p>	
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Subsection 5.13. Responsibilities and Duties of EDO (CDD)

Department / Agency	Pre-disaster responsibilities	During disaster responsibilities	Post disaster responsibilities
CDD	To ensure availability of maximum number of trained volunteers to assist in humanitarian response.	<p>To mobilize all the NGOs, CCBs and Business Community in humanitarian response.</p> <p>To help ECC maintaining record of the losses and developing coordination mechanism with INGOs, NGOs and UN Agencies for timely response.</p>	<p>To mobilize all the NGOs, CCBs and Business Community in humanitarian response.</p> <p>To prepare rehabilitation programmes together with DEOC</p>

Subsection 5.14. Responsibilities and Duties of District Police Officer

Department / Agency	Pre-disaster responsibilities	During disaster responsibilities	Post disaster responsibilities
Police	To provide help to the irrigation, LBOD and revenue staff to avoid closure of modules by landlords/agriculturists in case of flood in	To assist in evacuation and relocation of people from flooded areas by providing logistical support.	Provide Security to the Officer/Officials of Irrigation Department working at protective Bunds and Rescue Workers and assist the Rapid Relief force as

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	canals/water courses.	To maintain law and order situation in the affected areas particularly at relief camps. To provide necessary transportation security to relief material and its distribution if coming from far flung areas.	and when required.
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Subsection 5.15. Role of Armed Forces

As evident in the past disasters the Pak Army have played remarkable role during the Cyclones 1999, 2001 and Flood 2003 in District Badin. The Civil Administration has always been assisted by the Armed Forces during the Natural Calamities or Social Unrest in District Badin. Under the circumstances the District Coordination Officer may declare emergency and request the Pak Army (Garrison) for the assistance of the Civil Administration to perform the following tasks:

Department / Agency	Pre-disaster responsibilities	During disaster responsibilities	Post disaster responsibilities
Pak Army (Garrison)	To provide rescue and search trainings during simulations/mock exercises.	Rescuing the people from affected areas through boats ²² , heavy vehicles and helicopters. To assist in relief work particularly Food and Drinking Water supply to the affected people. To provide medical assistance where the EDO (Health) and his organization fails to have access. Maintain communication network and accessibility. To assist Irrigation department/LBOD division to protect and	To provide technical assistance for construction of flood resistant community infrastructures.

²²HQ 18 Division Hyderabad has 71 boats

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		supervise the vulnerable points as mentioned in the Contingency Plan.	
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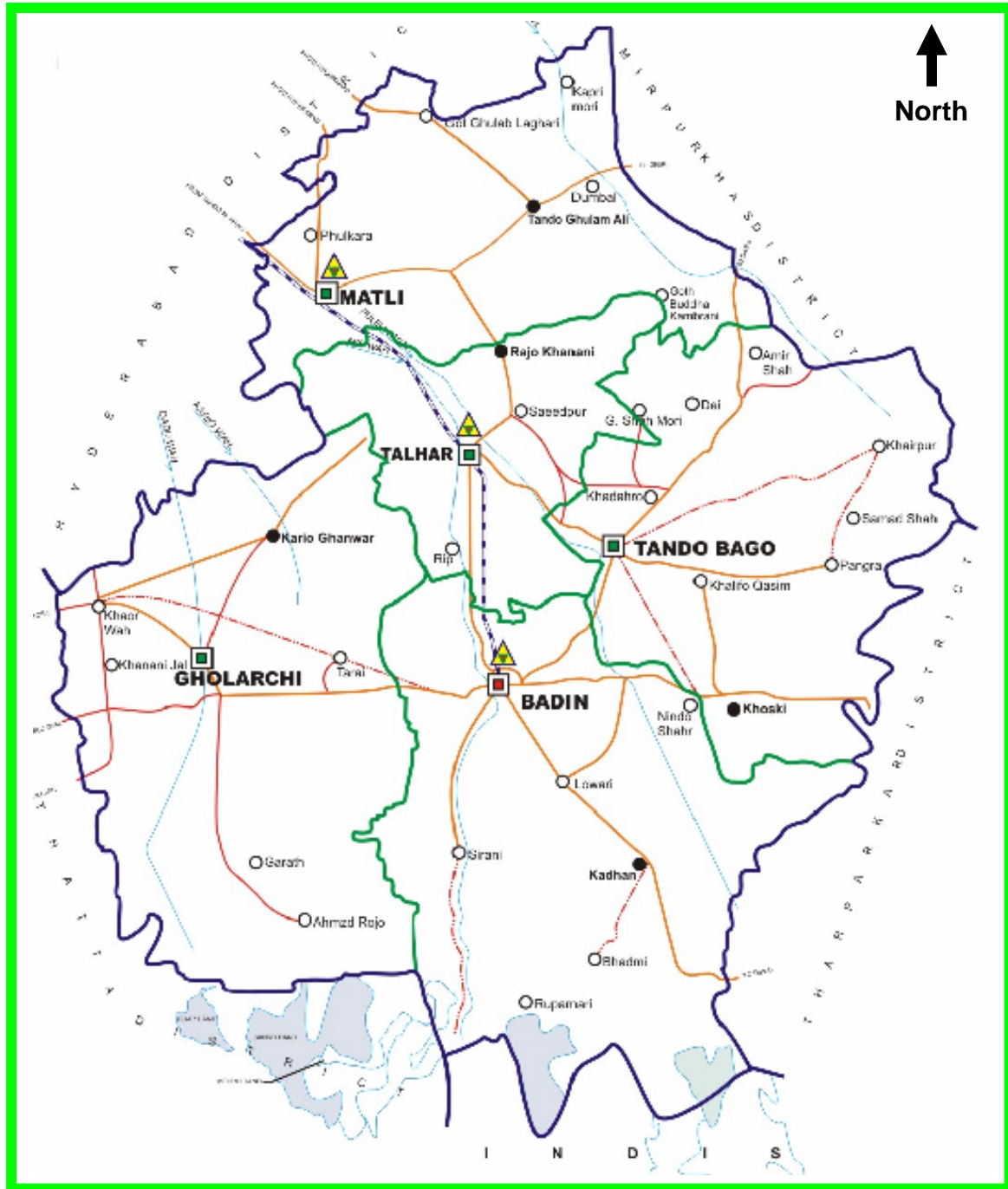
Section No. 6: Inventory of resources for disaster response

Subsection 6.1. Resources available with different stakeholders

#	Stakeholder	Type	No.	Location	Condition
1.	Revenue Department				
2.	Education Department				
3.	Agriculture Department				
4.	Works & Services Department				
5.	Health Department	Pickups	38	Badin	On road
		Pickups	10		Off road
		Pickups	07	Headquarters	On road
		Pickups	15	Headquarters	Off road
		Public Ambulance	16	Distt. Badin	On road
		Private Ambulance	07	Distt. Badin	On road
6.	Community Development Department				
7.					
8.	LHDP	Boats with OB	02		
		Engines and other	02	Badin	Good
		emergency material	25		
		+ emergency	500		
		stockpiling	1000		
			5000		

Section No. 7: Annexes

Table: 7.1. Map of Badin



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Table: 7.2. Departmental focal points for emergency response

#	Designation	Office	Residence
1.	Army Cantonment Badin	861200/861201	-
2.	District Nazim Badin	862081/862108	862082/862108
3.	DCO Badin	861001	862362
4.	DPO Badin	861667/861324	861234
5.	EDO Revenue	861744	861744
6.	EDO Education	861183/861784	862248
7.	EDO Works & Services	862283	862248
8.	SE Irrigation	861259	861259
9.	EDO Agriculture	861623	857241
10.	Taluka Nazim	862165	-
11.	Taluka Nazim Talhar	8730230	-
12.	Taluka Nazim Matli	8740760	-
13.	Taluka Nazim Tando Bago	854120	-
14.	Taluka Nazim FS Rahoo	853018	-
15.	SDO HESCO Badin	861972	-
16.	Civil Surgeon Badin	8619081/862479	862285
17.	Deputy Manager SSGC	862241	861255
18.	SDO Telephones	861266/861111	861961
19.	Fire Brigade Badin	116	-
20.	Emergency Police Badin	15	-
21.	Edhi Centre Badin	115	-
22.	XEN Highways Badin	861410	-
23.	DO Roads & Transport	861840	861840
24.	DO CDD Badin	861232	861232
25.	D. Controller C. Defence	861996	-
26.	DDO Revenue Badin	861358	-
27.	DDO Revenue SF Rahoo	853197	-
28.	DDO Revenue Matli	8740255	-
29.	DDO Revenue T. Bago	854037	-
30.	Mukhtiarkar (R) Badin	861245	861245
31.	Mukhtiarkar (R) Talhar	8730280	8730280
32.	Mukhtiarkar (R) SF Rahoo	853053	853053
33.	Mukhtiarkar (R) Matli	8740205	8740205
34.	Mukhtiarkar (R) T. Bago	854037	854037
35.	A. Engineer Drainage	861422	-
36.	PMD Badin	861125	862174
37.	District Zakat Officer	861322	-
38.	XEN Irrigation	861422	861422
39.	XEN LBOD		-

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Table: 7.3. Hazard maps for the district²³

Hazard	Probability	Impact	Vulnerability		Capability	
			Existing	Future	Existing	Future
Storm Surges	High	Medium	Medium	High	Low	High
Droughts	Low	Medium	Low	High	Low	High
Cyclone	High	High	High	High	High	High
Floods	High	High	High	High	High	High
Sea intrusion	High	High	High	High	High	High
LBOD	High	High	High	High	High	High
Earthquakes	Low	Medium	Medium	Medium	Low	High

Table: 7.4. Machinery & equipments available in the district with different stakeholders

Name	Machinery	Equipments
LHDP Main Kadhan Road Badin Ph. & Fax: 0297 861959 Email: lhdp_org@yahoo.com	-	02 Fibre Glass OBY 30 & 40 hp engines with trolleys, 25 life saving jackets, 15 staff emergency kits, 100 latrine slabs, 500 packets of Musaffa, 1000 hygiene kits, 1000 plastic sheets, 500 buckets, 01 vehicle, 05 computers, 01 printer and 01 fax machine
PFF Cantt road Badin Ph. & Fax: 0297 810015 Email: fisherfolk@cyber.net.pk		Not available

Table: 7.5. List of Fire Brigades available within TMAs

#	Name of TMA	No.	Condition
1.	Badin	2	01 in good & 01 in poor condition
2.	Matli	1	Working condition
3.	Talhar	1	Good condition
4.	Shaheed Fazil Rahoo	1	Good condition
5.	Tando Bago	1	Good condition

²³Source: LHDP Disaster Database and outcomes of consultative workshop held in Badin

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Table: 7.6. List of de-watering pumping machines

Stakeholder	Own	²⁴ Purchased	Total	Working Condition	Out of order
D.O.R	5	-	5	4	1
D.D.O.R	10	-	10	-	10
TMA Badin	-	9	9	7	2
TMA Tando Bago	2	5	7	6	1
TMA Matli	4	4	8	8	-
TMA Talhar	4	1	5	5	-
TMA SF Rahoo	5	6	11	9	2
Total:	30	25	54	39	16

Table: 7.7. Specialized teams available and their capacities

#	Name of NGO	Specialization	Capacities
1	Laar Humanitarian and Development Programme (LHDP)	Humanitarian Response, Disaster (flood, cyclones, earthquake, floods, droughts & social conflicts) preparedness and management, Disaster Risk Reduction, Community Based Disaster Risk Management, Sustainable Livelihood	ECB and ADPC trained human resource that can be mobilized within hour
2	Badin Development & Research Organization (BDRO) Seerani Badin	Community Development	Welfare & Development
3	Badin Rural Development Society (BRDS) near Ahmed CNG Badin	Community Development	Education & Community Development
4	Laar Development Association (LDA) Golarchi Road Badin	Community Development	Welfare & Development
5	Society for Science, Education and Research (SSER) Seerani Badin	Education	Education & Development
6	Young Sheedi Welfare Organization Abid Town Badin	Social Mobilization	Community Development
7	Sindh Aurat Development Association Cantt. Road Badin	Women Rights	Women Development
8	Nindo Shahar Welfare Association Nindo Shahar, Taluka Badin	Community Development	Welfare & Development
9	Village Development Association Village Moosa Soomro Badin	Health	Health & Mobilization
10	Sukh Des Development Society Talhar	Community Development	Welfare & Development
11	Pakistan International Peace & Human Rights Organization Nindo	Human Rights & Community Development	Community Development
12	Sindh Graduates Association (SGA) Hospital Road Badin	Community Development	Welfare & Development

²⁴Purchased from District Government Budget

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13	Sindh Abadgar Board Golarchi	Agriculture	Agriculture
14	Family Planning Association of Pakistan Bagh Mohalla Badin	Family Planning and Health Services	Health Services
15	National Rural Support Programme Hyderabad Road Badin	Micro Credit	Community Development
16	Preh Phuti Welfare Association Matli	General Welfare	Welfare
17	ECO Friends Society Karachi Road Badin	Environment Degradation, Environment Risk Reduction, Environmental Perspective of Disaster Management	Skilled and experienced teams with practical knowledge of environmental issues and sustainable solution.
18	Pakistan Fisher folk Forum	Mobilization, communication & fishing rights	Human resource, availability of 01 vehicle, 02 motorbikes, 02 PCs, 01 printer, fax machine and furniture

Table: 7.8. Volunteers

#	Department/Institute/ NGOs	No. of Trained volunteers		Area of interest
		Male	Female	
1.	Laar Humanitarian and Development Programme (LHDP)	30	20	Assessments, Humanitarian Response, Public Health Promotion & Engineering, Disaster Preparedness & Risk Management and Climatic Risk Management
2.	ECO Friends Society Badin	15	5	Assessment, Public Health Promotion, Fieldwork & Humanitarian Response
3.	Pakistan Fisher folk Forum Badin	08	03	Health, community mobilization,
4.	Young Sheedi Welfare Organization	05	05	Social Mobilization
5.				

Table: 7.9. List of NGOs in the district

#	Name of NGO	Full Address	Focal Point
1	Laar Humanitarian and Development Programme (LHDP)	Main Kadhan Road Badin 0297 861959 Email: lhdp_org@yahoo.com	Mr. Iqbal Haider
2	Badin Development & Research Organization (BDRO) Badin	Near new Seerani bus stop, Seerani Road Badin (0277-861429) Email: bdrobadin@hotmail.com	Mr. Mohammed Khan Samoon
3	Badin Rural Development Society (BRDS) Badin	Near Badin X-ray, Badin (0297-861683) Email: brdsngo@yahoo.com	Mr. Dr. Akash Ansari
4	Laar Development Association (LDA) Badin	Golarchi Road Badin, (0297-862318) E.mail:	Mr. Ghulam Hussain

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		laarbadin@hotmail.com	Mallah
5	Society for Science, Education and Research (SSER) Badin	Shah Latif Public School , Seerani Road Badin (0297-862303) Email: sserbadin@hotmail.com	Mr. Khadim Talpur
6	Young Sheedi Welfare Organization Badin	Abid Town Badin	Mr. Allah Bachayo
7	Sindh Aurat Development Association Badin	Kadhan road Badin (0227-61143)	Ms. Dr. Najma Junejo
8	Nindo Shahar Welfare Association Nindo Shahar, Taluka Badin	PO Nindo Shahar Taluka Badin (0227-720282)	Mr. M. Khatti
9	Village Development Association Village Moosa Soomro, Badin	C/o Sagar Tailor Near Mohammadi Petroleum Services Badin 0227-61346	Mr. M. Suleman Soomro
10	Sukh Des Development Society Talhar	PO Talhar District Badin (0227-730126)	Mr. Anwar Panjwani
11	Pakistan International Peace & Human Rights Organization	PO Nindo Shahar Taluka Badin (0227-720227) Email: piphro@yahoo.com	Mr. Fayaz H. Abro
12	Sindh Graduates Association (SGA)	Memon hall district council road Badin	
13	Sindh Abadgar Board	0297 861149/ 861237/ 861697	Mr. M. Nawaz Memon
14	Family Planning Association of Pakistan	Bagh Mohalla Badin Ph. 0297 861306	Ms. Razia Ujjan
15	National Rural Support Programme	Al-Aman Hotel Hyderabad Road Badin 0297 862253	
16	Preh Phuti Welfare Association Matli	Village Ali Mohammed PO Kapri Mori Taluka Matli	Mr. Karim Nohrio
17	ECO Friends Society	Main water supply road Badin (0297 8) E.mail: efs_org@yahoo.com	Mr. MB Phalkaro
18	Pakistan Fisher folk Forum	Main Cantt road Badin	Mr. Mithan Mallah

Table: 7.10. List of emergency supplies needed

#	Items	Quantity	Responsible
1	Fibre Glass Motor Boat (flat bottom) 19ft	03	District Government/Administration and Taluka Municipal Administrations
2	Fibre Glass Motor Boat (flask bottom) 24ft	03	
3	Outboard Engine Yamaha 30 hp	03	
4	Outboard Engine Yamaha 40 hp	03	
5	Life saving jackets (different sizes)	30	
6	Emergency staff kits	50	
7	Family size double ply tents	1000	
8	Boat Trolleys	06	
9	Latrine slabs	2500	
10	Musaffa	5000	
11	Jerry cans	2500	
12	Hygiene kits	5000	
13	Kitchen kits	2500	
14	Dry fruit tin packs	5000	

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15	Food compound pills (children and LPW)	10000	
16	Bladders	500	
17	Impregnated Mosquito Net	5000	
18	Tarpaulin	5000	
19	Animal Feed bags	1000	
20	De-wormer bottles/Seasonal vaccines	5000	

Table: 7.11. Contact of emergency suppliers

#	Item	Supplier & Address	Contact
1	Fibre Glass Boats	Marina Ship Manufacturing Company UAE	
2	OBE Yamaha	Marina Ship Manufacturing Company UAE	
3	Life Saving Jackets	Marina Ship Manufacturing Company UAE	
4	Staff Emergency Kits	Marina Ship Manufacturing Company UAE	
5	Musaffa	PCSIR Hyderabad/Karachi	
6	Tents	Mohammad Ali Tent House Karachi	
7	Animal Feed	ICI Karachi/Hyderabad	
8	De-worming/vaccines	Marvi Veterinary Store Hyderabad	
9	Tarpaulin		

Table: 7.12. Radio, TV and Newspaper contacts

#	Radio/TV/Newspaper	Focal Point	Contact
Press Club Badin			
1.	PTV Karachi	Malik Illyas	0333 2529900
2.	Sindh TV	A. Shakoor Mallah	0304 2900678
3.	Aaj TV	Shafi Memon	0345 3690427
4.	Rang TV	Gul Hassan	0333 2533970
5.	A TV	Gul Hassan	0333 2533970
6.	Roshni TV	G. Rasool Memon	0345 3690510
7.	Dhoom	Shafi Memon	0333 2529227
8.	Sun TV	G. Rasool Memon	0333 2529227
9.	Business Plus	Suhail Memon	0333 2522899
10.	Dunya, Shaam & Nao Sij	Altaf Memon	0346 3757137
11.	Jeo News	Rais Imran	0333 2529519
12.	Royal TV	Raja Shakeel Ahmed	0333 2521318
13.	ARY	Tanveer	0333 2520789
14.	FM 92	Zaffar Khaskheli	0333 2528131
15.	Sachal FM	Zaffar Khaskheli	0333 2528131
16.	Daily Jang	Rais Imran	0333 2529519
17.	Daily Nation	Shafi Memon	0333 2529227
18.	Daily Khabroon & Express	A. Razaque Khatti	0333 2525005
19.	Daily Jorat	Shafi Memon	0333 2529227
20.	Daily Sindhu	Nafess-ur-Rehman	0333 2531590
21.	Daily Mushrique	Nafess-ur-Rehman	0333 2531590
22.	Daily Islam & Pak	Usman Ansari	0332 3887242
23.	Daily Ibrat	Ashraf Memon	0333 2545997
24.	Daily Awami Awaz	Anees Memon	0333 2597993
25.	Daily Nawa-e-Waqit	Malik Illyas	0333 2529900

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26.	Daily Hilal Pakistan & PPI	A. Latif Zargar	0333 2520771
27.	Daily Faissilo	A. Majeed Mallah	0322 3887922
28.	Daily Sindh	Suleman Mandhro	0333 2523393
29.	Daily Jisarat	Allah Rakhio Mallah	0304 2916249
30.	Daily Mehran	Khalid Abassi	0333 3399354
31.	Daily Pak	Dodo Panhwar	0332 3889212
Chamber of Journalists Badin (0297 862033)			
1.	KTN	Haroon Gopang	0333 2521016
2.	Daily Kawish	G. Mustafa Jamali	0333 2520731
3.	Free Lancer	Abida Jamali	0333 2548304
4.	Daily Shaam	Haroon Gopang	0333 2521016
5.	Daily Koshish	Nasir Ali Abassi	0333 2521249
6.	Daily Kainaat	M. Usman Nohrio	0333 2520518
7.	Daily Aass	Maqsood Chandio	0333 2541006
8.	Daily Nijaat	Ali M. Soomro	0333 2540787
9.	Daily Halchal	Nusrat Jafferri	0333 2524255
10.	Daily Sobh	Shafi M. Junejo	0333 2523391
11.	Daily Ummat	Arsalan Yaseen	0333 2529714
12.	Daily Intakhab	A. Salam Umrani	0333 2527550
13.	Daily Sukaar	Roshan Hashmani	0333 2536709
14.	Daily Awami Awaz	Razaque Dino Khoso	0333 2540659
15.	Daily Alaam-e-Haque	Zaheer Haideri	0333 2522589
16.	Daily Nawa-e-Waqit	Khalid Memon	0302 3054786
17.	Daily Mehran	M. Aslam Memon	0297 744150
18.	Daily Sindhu	Mushtaque Memon	0345 3694078
19.	Daily Dawn	Hashim Bhurgri	0304 2900638

Table: 7.13. Common Formats for post disaster damage, needs and capacity assessment

Flash Reporting Format			
Part 1	Situation	Specific Information	
1.1.	Type of disaster		
1.2.	Date and time		
1.3.	Affected areas		
1.4.	Possibility of after effects		
Part 2	Initial Estimate of Effects	V. Approximate No.	Source of Information
2.1.	Dead		
2.2.	Injured		
2.3.	Missing		
2.4.	In need of food		
2.5.	In need of water		
2.6.	In need of shelter & clothing		
2.7.	Damage to lifeline systems		
2.8.	Damage to livelihood activities		
2.9.	In need of sanitation		
Part 3	Possible Needs for External	Circle	priorities

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Assistance			
3.1.	Search and rescue	Yes/No	
3.2.	Evacuation	Yes/No	
3.3.	Protection	Yes/No	
3.4.	Medical and health	Yes/No	
3.5.	Shelter and clothing	Yes/No	
3.6.	Food	Yes/No	
3.7.	Water	Yes/No	
3.8.	Sanitation	Yes/No	
3.9.	Repair of lifeline system	Yes/No	
Part 4	Transportation means	Specify	
4.1.	What types of vehicles are available		
4.2.	Which routes should be followed		
Part 5	Next Report	Specify	
5.1.	Date/time		
5.2.	Will be sent at		
5.3.	Preparation date/time		
5.4.	Prepared by		
<i>A Flash Report should be prepared and submitted immediately (within 1 – 3 hours) after a hazard strikes.</i>			

Initial Disaster Reporting Format				
1. Effect		Please specify		
1.1.	Type of disaster			
1.2.	Date and time			
1.3.	Affected areas (approx)			
1.4.	No. of casualties (approx)			
1.5.	Date/Time for next report			
2. Search and Rescue				
S. No.	Location	No. of people missing	Response status S&R resource deployed	Required additional S&R resources
2.1.				
2.2.				
2.3.				
3. Evacuation				
S. No.	Location	No. of people to be evacuated	Response status (No. of people evacuated)	Required additional evacuation assistance
3.1.				
3.2.				
3.3.				
4. Medical and Health				
S. No.	Location	No. of injured people	Response status (condition of medical facilities)	Required additional medical resources
4.1.				
4.2.				

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4.3.				
5. Shelter and clothing				
S. No.	Location	No. of people requiring shelter	Response status (No. of people provided shelter & clothing)	Required additional Shelter & clothing resources
5.1.				
5.2.				
5.3.				
6. Protection (if possible)				
S. No.	Location	No. of people needing protection	Response status (No. of people protected)	Required additional Protection resources
6.1.				
6.2.				
6.3.				
7. Food				
S. No.	Location	No. of people needing food	Response status (No. of people protected with food)	Required additional resources for meeting food
7.1.				
7.2.				
7.3.				
8. Water				
S. No.	Location	No. of people without drinking	Response status (No. of people supplied safe drinking water)	Required additional resources for supply of drinking water
8.1.				
8.2.				
8.3.				
9. Sanitation				
S. No.	Location	No. of people without adequate sanitation	Response status (No. of people provided adequate sanitation)	Required additional resources for sanitation
9.1.				
9.2.				
9.3.				
10. Lifeline systems				
S. No.	Location	Response status (No. of people protected)		Required external support
10.1.				
10.2.				
10.3.				
11. Livelihood				
S. No.	Location	No. of people	Response status	Required additional

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		demanding livelihood	(No. of livelihood affected people supported)	Protection resources for livelihood restoration
11.1.				
11.2.				
11.3.				
12. Next Report			Specify	
12.1.	Date/time			
12.2.	Will be sent at			
12.3.	Preparation date/time			
12.4.	Prepared by			

Post Disaster Damage Assessment Format			
Part 1	Situation	Specific Information	
1.1.	Type of disaster		
1.2.	Date and time		
1.3.	Affected areas		
1.4.	Possibility of after effects		
Part 2	Initial Estimate of Effects	V. Approximate No.	Source of Information
2.1.	Dead		
2.2.	Injured		
2.3.	Missing		
2.4.	In need of food		
2.5.	In need of water		
2.6.	In need of shelter & clothing		
2.7.	Damage to lifeline systems		
2.8.	Damage to livelihood activities		
2.9.	In need of sanitation		
Part 3	Possible Needs for External Assistance	Circle	priorities
3.1.	Search and rescue	Yes/No	
3.2.	Evacuation	Yes/No	
3.3.	Protection	Yes/No	
3.4.	Medical and health	Yes/No	
3.5.	Shelter and clothing	Yes/No	
3.6.	Food	Yes/No	
3.7.	Water	Yes/No	
3.8.	Sanitation	Yes/No	
3.9.	Repair of lifeline system	Yes/No	
Part 4	Transportation means	Specify	
4.1.	What types of vehicles are available		
4.2.	Which routes should be followed		
Part 5	Next Report	Specify	
5.1.	Date/time		

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5.2.	Will be sent at		
5.3.	Preparation date/time		
5.4.	Prepared by		

Need Assessment Format²⁵

NOTE: This assessment form contains questions which the interviewer must observe and answer and some of which the interview must ask the informant. The Interviewer should write down what he/she sees for the questions through observation.

Name of Interviewer:

Name of Interviewee:

Date of Interview: (dd/mm/yy)

Location - Camp name/Community name:

Who are you interviewing: (check one) Household/Community group

General

1. How many people are affected and where are they? Disaggregate the data as far as possible by sex, age, disability etc.
2. What are people's likely movements? What are the security factors for the people affected and for potential relief responses?
3. What are the current or threatened water- and sanitation related diseases? What are the extent and expected evolution of problems?
4. Who are the key people to consult or contact?
5. Who are the vulnerable people in the population and why?
6. Is there equal access for all to existing facilities?
7. What special security risks exist for women and girls?
8. What water and sanitation practices were the population accustomed to before the emergency?

Water supply

1. What is the current water source and who are the present users?
2. How much water is available per person per day?
3. What is the daily/weekly frequency of the water supply?
4. Is the water available at the source sufficient for short term and longer-term needs for all groups in the population?
5. Are water collection points close enough to where people live? Are they safe?
6. Is the current water supply reliable? How long will it last?
7. Do people have enough water containers of the appropriate size and type?
8. Is the water source contaminated or at risk of contamination (microbiological or chemical/radiological)?
9. Is treatment necessary? Is treatment possible? What treatment is necessary?
10. Is disinfection necessary, even if the supply is not contaminated?

²⁵Source: (UNDMT) Sphere Standards Checklist

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11. Are there alternative sources nearby?
12. What traditional beliefs and practices relate to the collection, storage and use of water?
13. Are there any obstacles to using available supplies?
14. Is it possible to move the population if water sources are inadequate?
15. Is it possible to tanker water if water sources are inadequate?
16. What is the key hygiene issues related to water supply?
17. Do people have the means to use water hygienically?

Excreta disposal

1. What is the current defecation practice? If it is open defecation, is there a designated area? Is the area secure?
2. What are current beliefs and practices, including gender specific practices, concerning excreta disposal?
3. Are there any existing facilities? If so, are they used, are they sufficient and are they operating successfully? Can they be extended or adapted?
4. Is the current defecation practice a threat to water supplies (surface or ground water) or living areas?
5. Do people wash their hands after defecation and before food preparation and eating? Are soap or other cleansing materials available?
6. Are people familiar with the construction and use of toilets?
7. What local materials are available for constructing toilets?
8. Are people prepared to use pit latrines, defecation fields, trenches, etc.?
9. Is there sufficient space for defecation fields, pit latrines, toilets, etc.?
10. What is the slope of the terrain?
11. What is the level of the groundwater table?
12. Are soil conditions suitable for onsite excreta disposal?
13. Do current excreta disposal arrangements encourage vectors?
14. Are there materials or water available for anal cleansing? How
15. If water sources are inadequate, is it possible to tanker water?

Vector-borne disease

1. What are the vector-borne disease risks and how serious are these risks?
2. What traditional beliefs and practices relate to vectors and vector-borne disease? Are any of these either useful or harmful?
If vector-borne disease risks are high, do people at risk have access to individual protection?
4. Is it possible to make changes to the local environment (by drainage, scrub clearance, excreta disposal, refuse disposal, etc.) to discourage vector breeding?
5. Is it necessary to control vectors by chemical means?
What programmes, regulations and resources exist for vector control and the use of chemicals?
7. What information and safety precautions need to be provided to households?

Solid waste disposal

1. Is solid waste a problem?
2. How do people dispose of their waste? What type and quantity of solid waste is produced?
3. Can solid waste be disposed of on-site, or does it need to be collected and disposed of off-site?
4. What is the normal practice of solid waste disposal for the affected population?

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(Compost/refuse pits? Collection system? Bins?)

Are there medical facilities and activities producing waste? How is this being disposed of? Who is responsible?

Drainage

1. Is there a drainage problem (e.g. flooding of dwellings or toilets, vector breeding sites, polluted water contaminating living areas or water supplies)?
2. Is the soil prone to water logging?
3. Do people have the means to protect their dwellings and toilets from local flooding?

Food security of livelihood groups

Are there groups in the community who share the same livelihood strategies? How can these be categorized according to their main sources of food or income?

Food security pre-disaster

1. How did the different livelihood groups acquire food or income before the disaster? For an average year in the recent past, what were their sources of food and income?
2. How did these different sources of food and income vary between seasons in a normal year? (Constructing a seasonal calendar may be useful.)
3. Looking back over the past 5 or 10 years, how has food security varied from year to year? (Constructing a timeline or history of good and bad years may be useful.)
4. What kinds of assets, savings or other reserves are owned by the different livelihood groups (e.g. food stocks, cash savings, livestock holdings, investments, credit, unclaimed debt, etc.)?
5. Over a period of a week or a month, what do household expenditures include, and what proportion is spent on each item?
6. Who is responsible for management of cash in the household, and on what is cash spent?
7. How accessible is the nearest market for obtaining basic goods? (Consider distance, security, ease of mobility, availability of market information, etc.)
8. What is the availability and price of essential goods, including food?
9. Prior to the disaster, what were the average terms of trade between essential sources of income and food, e.g. wages to food, livestock to food, etc.?

Food security during disaster

1. How has the disaster affected the different sources of food and income for each of the livelihood groups identified?
How has it affected the usual seasonal patterns of food security for the different groups?
3. How has it affected access to markets, market availability and prices of essential goods?
4. For different livelihood groups, what are the different coping strategies and what proportion of people are engaged in them?
5. How has this changed as compared with the pre-disaster situation?
6. Which group or population is most affected?
7. What are the short- and medium-term effects of coping strategies on people's financial and other assets?
8. For all livelihood groups, and all vulnerable groups, what are the effects of coping strategies on their health, general well-being and dignity? Are there risks associated with coping strategies?

(a) Shelter and Settlement Demographics

1. How many people comprise a typical household?
2. Does t-he affected community comprise groups of individuals who do not form typical households, such as unaccompanied children, or particular minority groups with household sizes that are not typical?
3. How many households are without any or with inadequate shelter and where are they?
4. How many people who are not members of individual households are without any or with inadequate shelter and where are they?

Risks

1. What is the immediate risk to life of the lack of shelter and inadequate shelter, and how many people are at risk?
2. What are the potential risks to the lives, health and security of the affected population through the need for shelter?
3. What are the potential risks to and impact on any host populations due to the presence of displaced households?
4. What are the potential further risks to lives, health and security of the affected population as a result of the ongoing effects of the disaster on the provision of shelter?
5. Who are the vulnerable people in the population, also considering those affected by HIV/AIDS?
6. What are the particular risks for the vulnerable people and why?

Household activities

1. What household and livelihood support activities typically take place in the shelters of the affected population, and how does the resulting space provision and design reflect these activities?
2. What household and livelihood support activities typically take place in the external areas around the shelters of the affected population, and how does the resulting space provision and design reflect these activities?

Materials and design

1. What initial shelter solutions or materials have been provided to date by the affected households or other actors?
What existing materials can be salvaged from the damaged site (if applicable) for use in the reconstruction of shelters?
3. What are the typical building practices of the displaced and host populations, and what are the different materials that are used to provide the structural frame and roof and external wall enclosures?
4. What are the potential risks to the lives, health and security of the affected population through the need for shelter?
5. What alternative design or materials solutions are potentially available and familiar or acceptable to the affected population?
6. How can the potential shelter solutions identified accommodate appropriate single and multiple disaster prevention and mitigation concerns?
7. How are shelters typically built and by whom?
8. How are construction materials typically obtained and by whom?
9. How can women, youths and older people be trained or assisted to participate in the building of their own shelters, and what are the constraints?

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Local resources and constraints

1. What are the current material, financial and human resources of the affected households and the community, and the constraints to meeting some or all of their urgent shelter needs?
2. What are the opportunities and constraints of current patterns of land ownership, land usage and the availability of vacant land, in helping to meet urgent shelter needs?
3. What are the opportunities and constraints of the host population in accommodating displaced households within their own dwellings or on adjacent land?
4. What are the opportunities and constraints of utilizing existing, available and unaffected buildings or structures to temporarily accommodate displaced households?
5. What is the topographical and environmental suitability of using accessible vacant land to accommodate temporary settlements?
6. What are the requirements and constraints of local authority regulations in developing shelter solutions?

Essential services and facilities

1. What is the current availability of water for drinking and personal hygiene, and what are the possibilities and constraints in meeting the anticipated sanitation needs?
2. What is the current provision of social facilities (health clinics, schools, places of worship, etc.) and what are the constraints and opportunities of accessing these facilities?

Host community and environmental impact

1. What are the issues of concern for the host community?
2. What are the organizational and planning issues of accommodating the displaced households within the host community or within temporary settlements?
3. What are the environmental concerns in providing the necessary shelter assistance (construction materials and access) and in supporting the displaced households (fuel, sanitation, waste disposal, grazing for animals if appropriate)?
4. What opportunities are present for building local shelter and settlement provision and management capacities?
5. What livelihood support opportunities can be provided through the sourcing of materials and the construction of shelter and settlement solutions?

(b) Non-Food Items: Clothing, Bedding and Household Items Clothing and bedding

1. What is the customary provision of clothing, blankets and bedding for women, men, children and infants, pregnant and lactating women and older people, and what are the particular social and cultural considerations?
2. How many women and men of all ages, children and infants have inadequate or insufficient clothing, blankets or bedding to provide protection from the adverse effects of the climate and to maintain their health, dignity and well-being, and why?
3. What is the immediate risk to life of the lack of adequate clothing, blankets or bedding, and how many people are at risk?
4. What are the potential risks to the lives, health and personal safety of the affected population through the need for adequate clothing, blankets or bedding?
5. Which social groups are most at risk, and why? How can these groups be best supported to empower themselves?

Personal hygiene

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1. What essential items to address personal hygiene issues did a typical household have access to before the disaster?
2. What essential items do affected households no longer have access to?
3. What are the particular needs of women, girls, children and infants?
4. What additional items are considered socially or culturally important to maintain the health and dignity of the affected people?

Cooking and eating, stoves and fuel

1. What cooking and eating utensils did a typical household have access to before the disaster?
2. How many households do not have access to sufficient cooking and eating utensils, and why?
3. What form of stove for cooking and heating did a typical household have access to, where did the cooking take place in relation to the existing shelter and the surrounding area, and what fuel was typically used?
4. How many households do not have access to a stove for cooking and heating, and why?
5. How many households do not have access to adequate supplies of fuel for cooking and heating, and why?
6. What are the opportunities and constraints, in particular the environmental concerns, of sourcing adequate supplies of fuel for the displaced households and the host community as appropriate?
7. What is the impact on the women in the displaced community of sourcing adequate supplies of fuel?
8. What cultural and customary use and safe practice considerations should be taken into account?

Demographics and social structure

1. Determine the total disaster-affected population and proportion of children under five years old.
2. Determine age and sex breakdown of the population.
3. Identify groups at increased risk, e.g. women, children, older people, disabled people, people living with HIV/AIDS, members of certain ethnic or social groups.
4. Determine the average household size and estimates of female- and child-headed households. Determine the existing social structure, including positions of authority/influence and the role of women.

Other (apart from questionnaire) if any

CAPABILITY ASSESSMENT FORMAT²⁶

²⁶Source: PGDM Hazard Mitigation Planning

1.0 DEPARTMENT/AGENCY/NGOs PROFILE:

- 1.1 Name:
- 1.2 Mandate:
- 1.3 List the major/main functions which are performed by the department/agency.
- 1.4 Provide a list of all the specific services you provide to the public.
- 1.5 What aspects of your functions or services are affected by the impacts of natural hazards?
- 1.6 Provide a detailed description of the [mitigation or preventative] measures this Ministry/department/agency has taken to lessen or prevent the impacts identified in 1.5 above.
- 1.7 Identify your major stakeholders?

2.0 INSTITUTIONAL CAPABILITY:

- 2.1 Which stage of the disaster management process are you involved in or responsible for? Select all that may apply:
 - Preparation (e.g. ensuring that contingency plans are exercised, securing property, etc)
 - Response (e.g. rescue operations, assessments, security, etc)
 - Recovery and reconstruction (e.g. cleaning-up, infrastructure repair, making financing available etc)
 - Mitigation (e.g. enforcement of planning and building regulations, physical planning, maintenance and upgrading of infrastructure to required standards etc)
- 2.2 List the specific responsibilities under the area(s) identified in 2.1.
- 2.3 What activities are required in fulfilling the responsibilities in 2.2?
- 2.4 Does this Ministry/department/agency carry out the activities required in 2.3?
- 2.5 What are the specific responsibilities of the Minister under which this Ministry/department/agency functions? List
- 2.6 What are the responsibilities of the Head of this Ministry Department/Agency?
- 2.7 Is interagency coordination required in performing the activities noted in 2.3? If yes, is it formal coordination or informal coordination? Explain.
- 2.8 Are there any existing impediments in performing the actions in 2.7? If yes list

3.0 LEGAL CAPABILITY:

- 3.1 Does your legislative mandate make provisions for carrying out the disaster related activities identified above in 2.3? If yes, go to question 3.3. If no, go to question 3.2.
- 3.2 What are the legislative powers that give you the authority to undertake any hazard/disaster related activity, which you now carry out?
- 3.3 Please identify the legislation and note the section that makes these provisions or gives such authority.
- 3.4 Does your legislative mandate apply to one or more of these groups? Select the ones that may apply:
 - Regulations – answer questions 3.5 to 3.17
 - Acquisition – answer questions 3.18 to 3.21
 - Taxation – answer question 3.22 to 3.23
 - Spending – answer question 3.24

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Regulations:

- 3.5 Does your existing legislation or legislative mandate enable you to regulate or prohibit conditions or actions that may endanger the public's health or safety? If yes, identify the specific regulations.
- 3.6 Which of the regulations identified in 3.5 are enforced?
- 3.7 How effective has the enforcement of these regulations been as it relates to 3.5 above?
- 3.8 Which of the regulations identified in 3.5 are not enforced?
- 3.9 Why aren't these regulations enforced?
- 3.10 What is required to enforce these regulations?
- 3.11 Is there an administrative system in place to carry out the enforcement of the regulations identified in 3.5
- 3.12 If yes, what is the structure of this system? If no, answer question
- 3.13 Is this administrative structure effective? If yes, state how.
- 3.14 Has the absence of an administrative system resulted in the lack of enforcement at 3.8 above? If not, explain.
- 3.15 In order to legally perform the activities under 2.3 above, which one of the following actions would be required:
- New legislation
 - Amendments to the existing legislation
- 3.15 If any amendments are required, give a brief description of what would be required.
- 3.16 When was the legislation under which your Ministry, Department, Agency operates last revised?
- 3.17 Is there a proposal for a revision? If yes, state the reason. For revision.

Acquisition:

- 3.18 Does your legal authority enable you to acquire property for public purposes? If yes, state the provision. If no, move to question 3.22.
- 3.19 Has this Ministry/agency/department ever exercised its power of property acquisition? If yes, give some examples.
- 3.20 Is there an administrative structure in place to carry out this activity? If yes, give a brief description of this structure. If no, answer question 3.21.
- 3.21 How does the Ministry/department/agency acquire property for public purposes?

Taxation:

- 3.22 Does your legislative mandate enable you to levy property taxes and other taxes in general? If yes, give a brief description of this provision.
- 3.23 Are there any provisions in your existing legislative mandate, which can be used to facilitate mitigation activity?

Spending:

- 3.24 Do your Ministry/department /agency have a budgetary provision for mitigation activity? If yes state type of activity budgeted for?

4.0 POLITICAL CAPABILITY:

- 4.1 Is there any interest in disaster management in your Ministry, Department, and agency?
- 4.2 What areas of disaster management are of most importance? Select those that may

apply.

- Preparedness
- Response
- Recovery and Reconstruction
- Mitigation

4.3 Are there any specific disaster related issues that are of interest in your Ministry, Department, and Agency?

4.4 Why are these issues important?

5.0 FINANCIAL/FISCAL CAPABILITY:

5.1 Does your Ministry/department/agency allocate revenue within its annual budget for the activities identified in 2.3 above? If yes, list the activities that receive funding.

5.2 List some potential sources for fiscal aid (Grants).

5.3 Are any provisions made for replacement of Capital structures, destroyed by any disaster event?

5.4 Does your Ministry /Agency/Department/require funding for disaster mitigation activity? If yes state the specific activities which require funding.

6.0 TECHNICAL CAPABILITY:

6.1 Does this Ministry/Department/Agency have adequate and the necessary technical expertise to administer or manage the activities in 2.3 above? If no, answer question 6.2 and 6.3.

6.2 Which function or group of activities lack the required technical expertise?

6.3 What levels of training are needed to administer or manage these activities?

6.4 Given existing technical expertise in your Ministry/Department/Agency, is this expertise used for informing policy planning and decision-making activities with respect to mitigation? If yes, indicate the areas where this is done.