



MONSOON 2024 Sindh

*PROVINCIAL DISASTER MANAGEMENT AUTHORITY
Rehabilitation Department
Government of Sindh*

Monsoon 2024 in Sindh

from June 20, 2024 to September 30, 2024

PREPARED BY

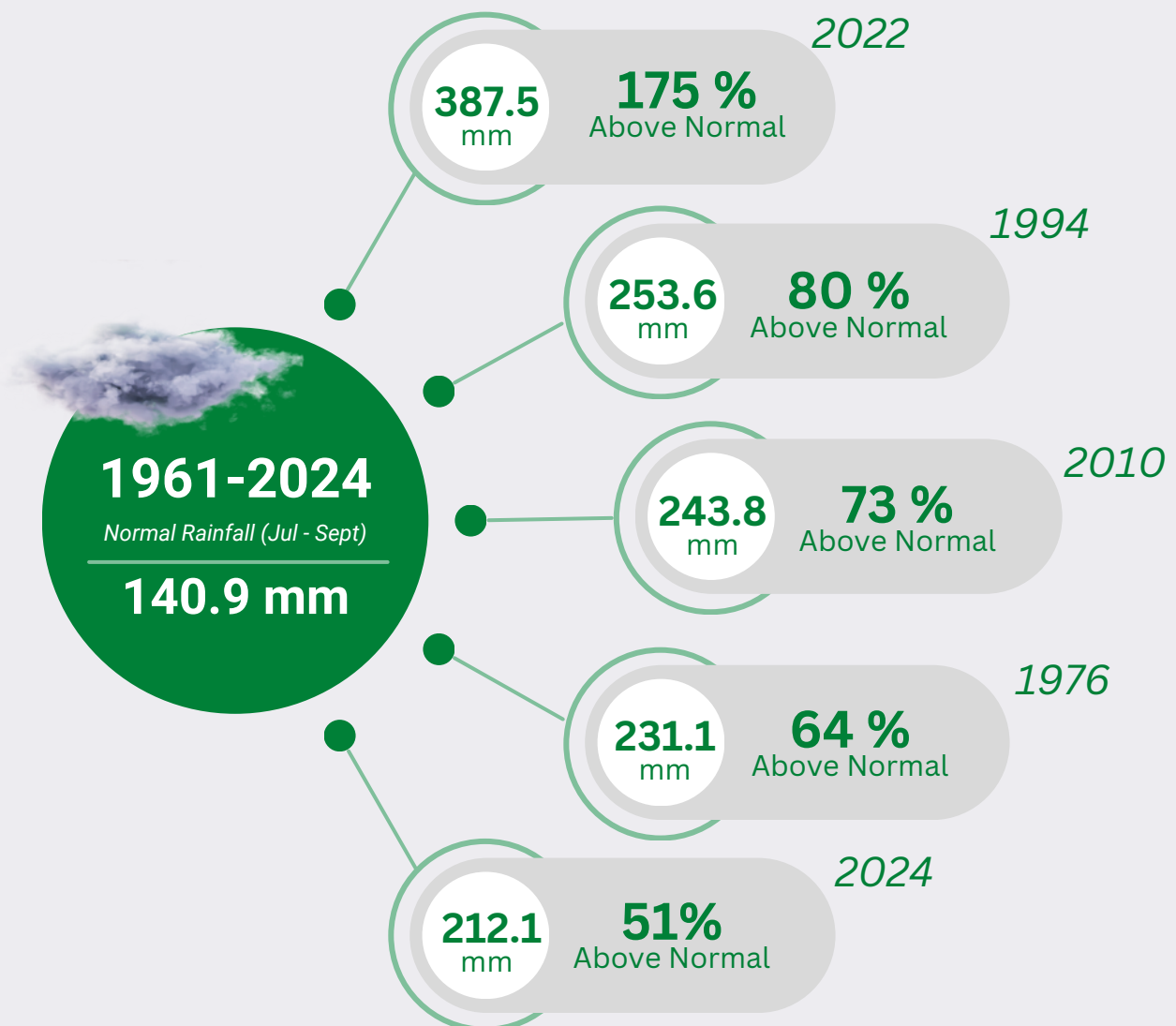


PROVINCIAL DISASTER MANAGEMENT AUTHORITY - SINDH
(PDMA - Sindh)

Monsoon 2024 - Pakistan

According to Pakistan Meteorological Department (PMD), Pakistan experienced excessively above-average rainfall (212.1 mm) during the entire monsoon season with a +51% deviation from the normal and was one of the wettest monsoon rainfall during the past 64 years (record is 387.5mm in 2022).

In a rare event, Cyclonic Storm ASNA formed in August 2024 from a monsoon low in the Bay of Bengal, intensifying as it tracked westward, bringing severe winds and heavy rains to southern Sindh and widespread rainfall across Pakistan.



Few of the wettest monsoon rainfall records from the past

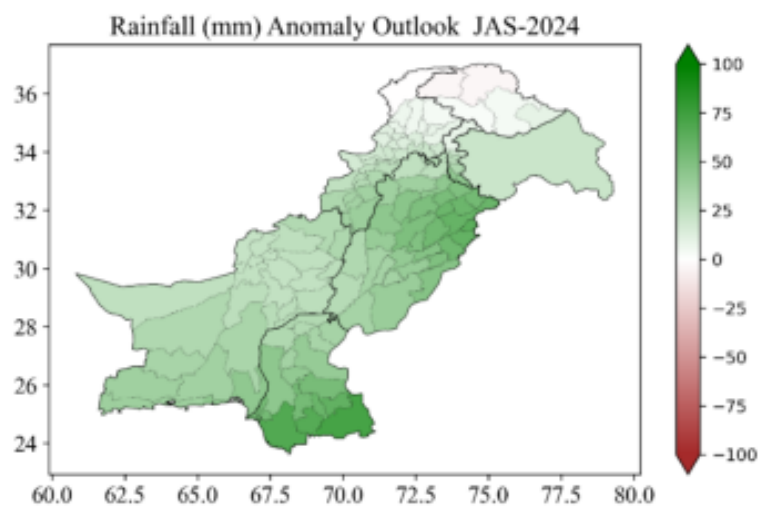
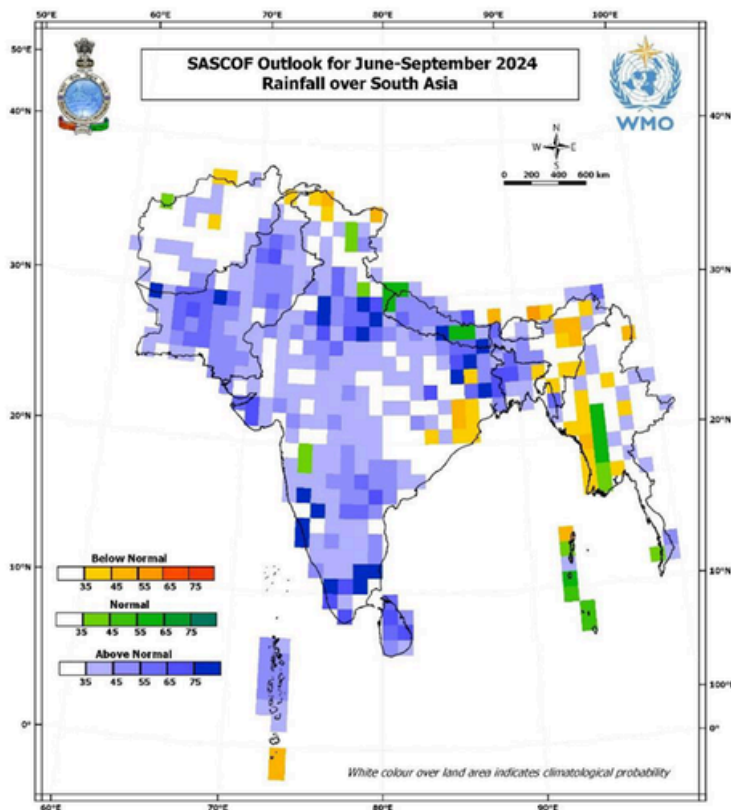
Seasonal Forecast

Pakistan Meteorological Department (PMD) informed in its seasonal forecast report, that El Niño condition was supposed to persist during the season with tendency to shift to La-Niña conditions in the end of the season and positive phase of Indian Ocean Dipole (IOD) due to which above normal rains were expected in the region. According to the outlook issued, following were the likelihoods for this monsoon season (July-September):

- *Normal to above normal rainfall expected in upper Punjab and Lower Sindh*
- *Slightly above normal rainfall in the remaining parts of the country*

In a consensus, issued in SASCOF-28* there was strong agreement among the experts that La-Niña conditions are likely to be favorable in the later half of the season for normal to above normal southwest monsoon rainfall over parts of South Asia.

Based on the seasonal forecast PDMA Sindh issued necessary preparedness measures to be taken by stakeholders to overcome any unlikely situation.



Rainfall Anomaly Outlook, JAS-2024, issued by Pakistan Meteorological Department (PMD)

SASCOF Outlook for June to September 2024 Rainfall over South Asia

* 28th Session of South Asian Climate Outlook Forum (SASCOF-28) and Climate Services User Forum (CSUF) took place on 29 April, 2024

Monsoon 2024- Sindh

Onset of monsoon in Sindh was observed from 1st July. This season brought below normal rains in July and September, however rains in August were above normal with development of a cyclonic event (Cyclone Asna) that caused heavy rains along with wind gusts upto 60 kph.

Season (July - September)

Departure

108 %

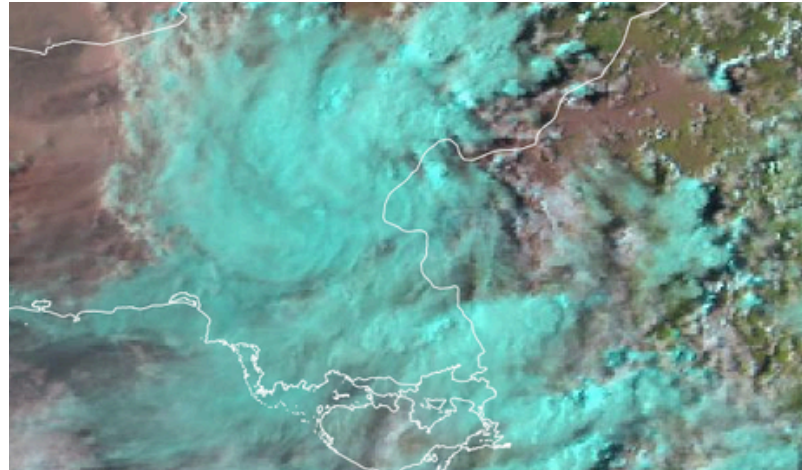
Above Normal

Normal

133.7 mm

Actual

278.4 mm



Cloud formation over Northern and South Eastern regions of Sindh on 3rd August, 2024 12:00 UTC

July

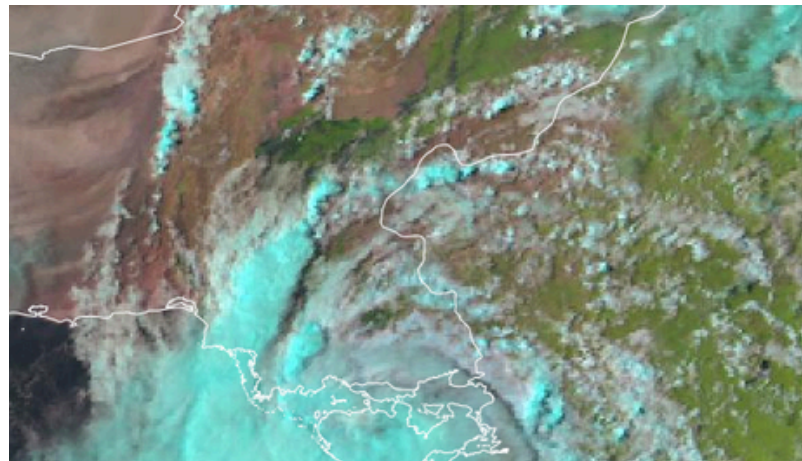
Departure

-44%

Below Normal

Normal **60.1 mm**

Actual **33.8 mm**



Cloud formation as a result of Cyclone Asna in the Southern and Central regions of Sindh on 29th August, 2024 11:00 UTC

August

Departure

337%

Above Normal

Normal **53.6 mm**

Actual **234.0 mm**

September

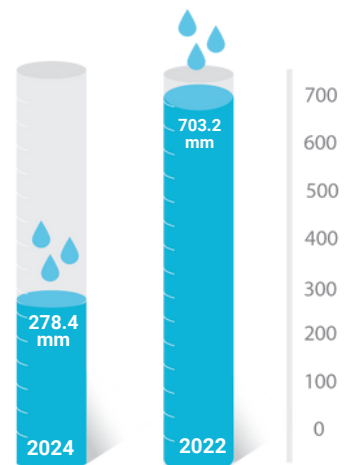
Departure

-47%

Below Normal

Normal **19.9 mm**

Actual **10.6 mm**



Comparison of Cumulative Rainfall Recorded During Monsoon 2022 and 2024 In Sindh

Image Courtesy: European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) Data Services

Rainfall Data Source: Pakistan Meteorological Department (PMD)

Losses and Damages

Initial data on losses and damages was collected through DDMA's for estimation and disaster response. Synoptic state of losses and damages is presented below;

Deaths and Injuries



Deaths
101



Injuries
208



Livestock
1,151

Population Affected



Affected Household
52,314



Displaced Population
143,101

Infrastructure Damages



Houses (Count)
45,273



Partial House (Count)
30,846



Fully House (Count)
14,427



Bridges (Count)
3

Crop Damages



Acres
558,339

Deaths and Injuries

Segregation of deaths and injuries, along with the district-wise distribution, are as follows;

District Wise Human & Livestock Death & Injuries

 Human Deaths



 Injuries

Badin	06	01
Dadu	05	-
Ghotki	02	01
Hyderabad	02	08
Jacobabad	07	05
Jamshoro	18	18
Kamber Shahdadt	02	05
Karachi	06	11
Kashmore	04	10
Khairpur	02	21
Larkana	06	04
Matiari	04	07
Mirpurkhas	05	17
Naushahro Feroze	03	12
Sanghar	01	29
Shaheed Benzairabad	01	03
Shikarpur	03	05
Sujawal	-	01
Sukkur	-	23
Tando Allayar	03	08
Tando Muhammad Khan	03	06
Tharparkar	14	06
Thatta	-	07
Umerkot	04	-

Deaths 101

Injuries 208

Most Affected Districts

		
Jamshoro	18	18
Tharparkar	14	06
Mirpurkhas	06	17

 Animal Deaths

Badin	53
Dadu	05
Hyderabad	55
Jacobabad	03
Jamshoro	33
Khairpur	31
Larkana	02
Matiari	04
Mirpurkhas	340
Sanghar	200
Shaheed Benazirabad	52
Sukkur	44
Tando Muhammad Khan	11
Tharparkar	285
Umerkot	33



Livestock

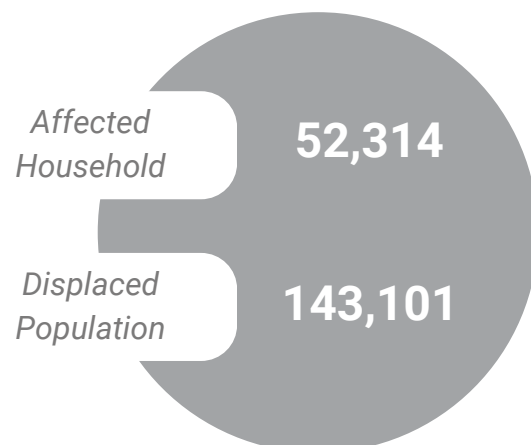
Livestock plays important role particularly in rural economy. It does not only support local consumption of dairy and meat but also large number of population depends on livestock business in Sindh. Loss of livestock results in loss of survival and livelihood for population engaged in this business. A number of livestock losses were reported. Details are;

Affected Population:

Heavy rains caused damages to weak structures as well as homes in low lying areas. As per initial survey conducted by DDMA's, the number of affected populations were recorded and relief measures were planned accordingly.

Most Affected Districts


	Khairpur	Mirpurkhas
	25,000	23,057
	125,000	1,500

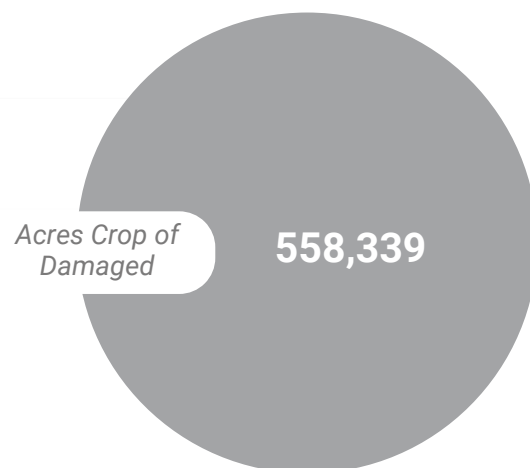


Crop Damaged:

Rainwater accumulated in crop areas being flat or low lying could not be drained out naturally which resulted in severe crop damages. Initial survey conducted by DDMA's reported crop damages as under:

Most Affected Districts



	Mirpurkhas	SBA	Naushahro Feroze
	132,710	80,493	68,482

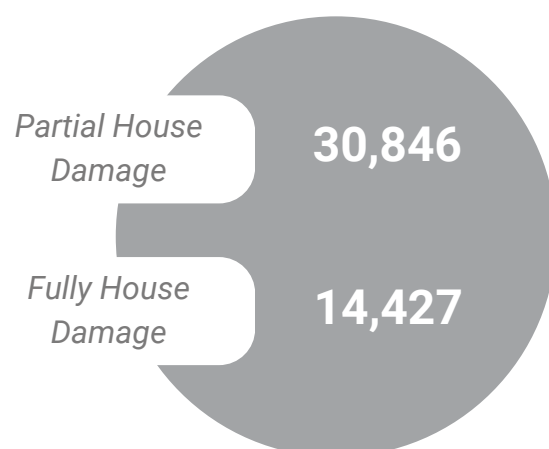


Houses Damaged:

Most of the houses structures in rural areas of the province are built without following SBCA rules & guidelines due to poverty. Heavy rains result in fully or partially damages of homes every year. The details for this monsoon are as under:

Most Affected Districts

		
Badin	10,550	10,328
Mirpurkhas	10,386	2,118
Sujawal	3,420	856



Relief Activities

Learning from the experiences of past monsoon seasons, this year PDMA Sindh on the directives of Chairman PDMA prepositioned sufficient number of relief peripherals at vulnerable districts which resulted in immediate distribution of relief articles among affected families. Besides that, PDMA Sindh mobilized its vehicle mounted dewatering machines alongwith trained staff at vulnerable points for smooth disposal of rainwater. The details are as under:

Shelter



Tents

31,857



Tarpaulin Sheets

6,500



Mosquito Nets

119,750



Animal Mosquito Nets

1,000

Food & Security



Kitchen Set

2,000



Hygiene Kits

10,500

Household



Cotton Mattress

12,300



Chatai

26,050



Jerry Cans

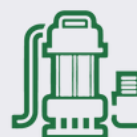
28,350

Machinery



Truck Mounted Dewatering Pump

145



Ground Standing Pump





136

Shelter:

PDMA provided tents for shelter to the displaced families in flood-affected areas of Sindh Province. Shelters were provided to 143,101 displaced / homeless people. With average family size comprising of 6 people about 2,627 persons were facilitated through shelters and establishment of 162 relief camps by DDMA's. In addition to tents, tarpaulins, mosquito nets, animal mosquito net, jerry cans, and kitchen sets were provided to flood affectees.

Tents	31,857
Tarpuline Sheets	6,500
Mosquito Nets	119,750
Animal Mosq. Nets	1,000

Most Recipient

					
Thatta	4,000	12,000	Mirpurkhas	5,000	-
Badin	3,500	10,500	TMK	1,000	-
Dadu	2,500	6,750	Matiari	-	1,000

Food & Security

Food & security is the basic need of affected households. PDMA Sindh in collaboration with DDMA's not only taken care of security of displaced families but also supported with Kitchen appliances. Besides that, in order cater the needs of women, PDMA Sindh also supplied Hygiene Kits to the affected populations.

Kitchen Sets	2,000
Hygiene Kits	10,500

Kitchen Sets

Mirpurkhas	2,000
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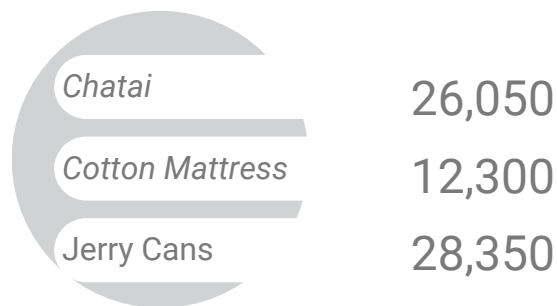


Hygiene Kits

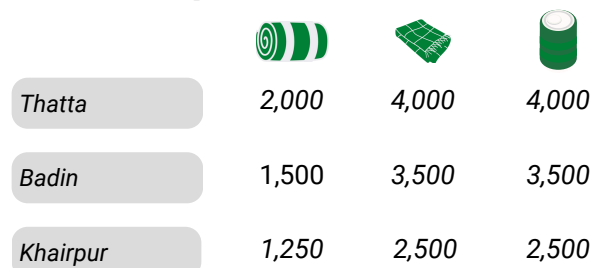
Badin	1,000
Dadu	700
Ghotki	200
Hyderabad	100
Jacobabad	900
Jamshoro	700
Kamber Shahdadt	50
Kashmore	600
Khairpur	700
Larkana	100
Matiari	200
Mirpurkhas	2,250
Naushahro Feroze	200
Sanghar	50
Shaheed Benazirabad	200
Shikarpur	100
Sujawal	700
Sukkur	300
Tando Allayar	50
Tando Muhammad Khan	200
Tharparkar	100
Thatta	1,100

Household

PDMA supported affected families with household necessities including Mattress, Jerrycan & Chatai to suppress their miseries, throughout the affected districts. The distribution is as under:



Most Recipient

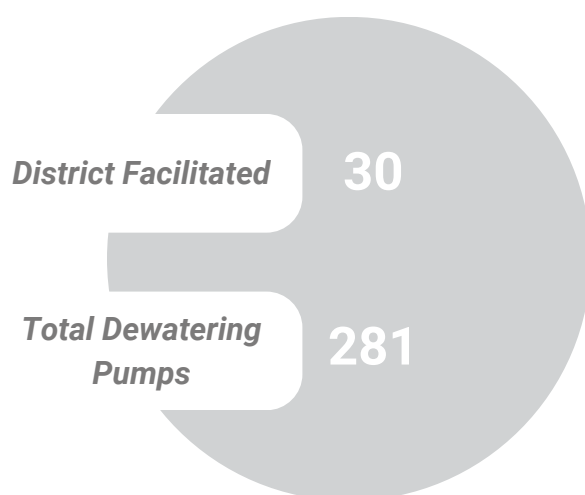


District Wise Distribution

	Cotton Mattress	Chatai	Jerry Cans
Badin	1,500	3,500	3,500
Dadu	1,000	2,250	2,250
Ghotki	300	600	600
Hyderabad	100	250	250
Jacobabad	50	700	1,000
Jamshoro	1,250	2,500	2,500
Kamber Shahdadkot	100	200	200
Kashmore	1,000	2,000	2,000
Khairpur	1,250	2,500	2,500
Larkana	200	400	400
Matari	300	600	600
Mirpurkhas	100	200	2,200
N. Feroze	300	600	600
Sanghar	100	200	200
Shaheed Benazirabad	300	600	600
Shikarpur	200	400	400
Sujawal	1,250	2,500	2,500
Sukkur	500	1,000	1,000
Tando Allahyar	100	200	200
Tando M. Khan	300	600	600
Tharparkar	100	250	250
Thatta	2,000	4,000	4,000

Dewatering Activities

Low gradients coupled with human interference have resulted in a challenging drainage system in the province. Most of the times water suction is required to dewater from settled areas. Like each monsoon season PDMA Sindh assisted concerned authorities by providing varying size dewatering pumps.



Division / District Wise Dispatch of Dewatering Pumps



Badin	16	-
Dadu	03	-
Ghotki	-	08
Hyderabad	24	16
Jacobabad	-	03
Jamshoro	04	-
Kamber Shahdadkot	02	02
Karachi Division	33	-
Kashmore	02	02
Khairpur	-	12
Larkana	09	04
Matiali	03	07
Mirpurkhas	07	05
N. Feroze	-	10
Sanghar	-	16
Shaheed Benazirabad	-	10
Shikarpur	01	02
Sujawal	06	10
Sukkur	11	23
Tando Allahyar	05	04
Tando M. Khan	04	-
Tharparkar	03	-
Thatta	06	-
Umerkot	06	02

Lesson Learned

Good Practices Established:

- Based on the seasonal forecast, PDMA Sindh took a proactive approach by prepositioning relief stock in districts identified as vulnerable. Ensuring that essential supplies were readily available to respond effectively to potential emergencies.
- In follow-up to the PMD Advisory, truck-mounted and ground-standing de watering pumps were deployed, accompanied by trained manpower at critical vulnerable points. This deployment took place well before each rain spell in major cities to mitigate urban flooding and ensure swift water removal.
- To ensure proper documentation of relief distribution, Beneficiary Information Management Software was utilized. Providing an organized approach to record and monitor relief efforts, ensuring that beneficiaries were identified and aided systematically.
- An inventory management system was implemented to coordinate and manage the movement of resources and relief items between PDMA and district administrations. Playing a key role in maintaining a steady flow of supplies and ensuring that relief efforts were carried out efficiently.

Conclusion

During Monsoon 2024, Sindh experienced heavier rainfall events, particularly in the latter half of August, attributed to unusual cyclonic activity named 'Asna' along the Sindh coast. Despite widespread forecasts by weather agencies predicting above-normal rainfall, July and September saw below-normal precipitation levels. Anticipating potential challenges before the onset of the Monsoon, the Provincial Disaster Management Authority (PDMA) Sindh proactively prepositioned material resources at the district level to address emergencies effectively.

Impacts of climate change and changing weather systems and patterns are visible all around the globe. In recent years, record breaking severe weather have had occurred in different parts of the world. This change is likely to continue in one form or other and will manifest in heavy rains, severe weather, heatwaves and alike hazards. Sindh is situated in cross roads of weather and may likely to receive more impacts of climate change. In this scenario, disaster management paradigm of the province needs to be changed. Currently, disaster management in the province is inclined more towards disaster response which should be focused and aligned to disaster risk reduction. Disaster risk reduction can only be achieved when all efforts are directional and cohesive to meet the future challenges. All actors of the society including public sector are required to act and implement disaster risk reduction in development for sustainable growth. All public departments are required to prepare disaster management plans in line with national and provincial plans.

Further, some permanent disaster threats exist in the province, which must be addressed for permanent remedies. The unattended rain water from Balochistan is a permanent threat for the population living on the right bank of the Indus. Similarly, well-planned, eco-friendly and holistic drainage system on the left bank is important for the safe conveyance of excessive water. Roads and other lateral structures require the inclusion of well-studied culverts/bridges to allow flow of water on natural routes. Depression require restoration to natural condition and above all major cities and town should have separate storm water systems. Permanent solution to such problems is only means for meaningful disaster management, otherwise, occurrence of each major event will exhaust government resources as adhoc solutions mostly waste resources.

Provincial Disaster Management Authority, Sindh with its limited resources is trying its best to bring disaster management on contemporary lines and gradually results of initiatives taken by the authority will be on surface. However, disaster management requires due role to be played by all actors related to development and disaster management.



**PROVINCIAL DISASTER MANAGEMENT AUTHORITY,
REHABILITATION DEPARTMENT
GOVERNMENT OF SINDH
PLOT NO. 26-C, MAIN KHAYABAN-E-JAMI, DHA PHASE-VII, KARACHI.**



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