




**REPORT ON PREVAILING DROUGHT LIKE SITUATION IN SINDH WITH  
PARTICULAR REFERENCE TO DISTRICT THARPARKAR  
NOVEMBER 2018**

**GOVERNMENT OF PAKISTAN  
NATIONAL DISASTER MANAGEMENT AUTHORITY  
(PRIME MINISTER'S OFFICE)  
ISLAMABAD**

1. **Overview:**

- a. Drought has greater impact, as compared to other major disasters as the later are mostly of short duration and geographically limited, while drought, by contrast, affects large geographical areas for considerable period of time. The frequency and severity of drought have increased in our country in recent years due to a combination of increasing temperatures, increasing events of El Nino and a reduction in the number of rainy days. A significant increase in the frequency of heat waves, an indicator of forthcoming drought, has been reported.
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- b. A major drought situation tends to visit the country in 16-20 year cycles and the lesser impact version, every 3-4 years in the south. The 1999-2002 drought is considered to be one of the worst, it impacted 58 districts, affecting over 3 million population and causing loss of 2.5 million livestock. This drought caused direct and indirect losses of US\$1.2 billion to the national economy.
- c. The climate change phenomenon is responsible for current onset of the drought conditions since late 2013, across Southern and Eastern parts of Sindh, Southern Punjab and most of arid Balochistan. Below average / less rainfall during the monsoon season 2018 particularly in Sindh Province (desert areas) resulted in acute shortage of water, food and fodder. The intensity and frequency of such phenomenon is likely to increase. This alarming situation warrants quick and effective measures and concentrated interventions.
- d. **Drought Condition in District of Sindh 2018/19.** The districts of Sukkur, Khairpur, Sanghar, Umerkot, Badin, Tharparkar, Kachho & Kohistan areas of Districts Thatta, Jamshoro and Dadu are frequently hit by drought. Less than anticipated rains during this monsoon season has worsened the situation in the above districts. The Deputy Commissioners of the above districts have reported that grass grown up in natural pastures/grazing areas and crops or seedling sown has dried up and requested to Relief

Department to declare affected Dehs as Calamity Affected Areas in terms of Section 3 & 4 of Sindh National Calamities (Prevention & Relief) Act, 1958 and provide relief package to the affectees for 3 months period.

- e. Accordingly, the Provincial Cabinet in a meeting held on 20<sup>th</sup> August, 2018 constituted a committee under the Chairmanship of the Senior Member/Relief Commissioner, Sindh alongwith Secretaries of the relevant provincial Departments and concerned Commissioners. The Committee recommended effective and transparent relief measures. The Committee also convened meetings with district line departments and Civil Society Organizations on 21<sup>st</sup>, 24<sup>th</sup> and 25<sup>th</sup> August, 2018 at District Headquarters of Tharparkar and Umerkot and conducted field visits of drought affected areas for on-ground assessment. Subsequently the Chief Minister Sindh ordered on 28.8.2018 that before launching of a relief campaign following action be taken:-
  - i. List of concerned beneficiaries (Head of Families) may be sought from the NADRA through PDMA in respect of Dehs / areas recommended by Deputy Commissioner.
  - ii. Wheat may be distributed amongst house hold of affected Dehs from the safe & secure "Sentinel Points" the number and site of which will be determined and supervised by the concerned Deputy Commissioners.
- f. Accordingly DG PDMA requested NADRA and NDMA to provide lists of head of families in 513 x Drought Hit Dehs in 8 x districts of Sindh. The NADRA furnished details of head of 420,946 x families in the pre-identified/affected Dehs. District-wise details are at **Annexure- I**.
- g. Subsequently, Chief Minister, Sindh declared affected areas / Dehs of above mentioned districts as "**Calamity Affected Areas**".
- h. In compliance of the orders of Chief Minister Sindh, the distribution of free wheat started from **24.09.2018**. Till 30.10.2018, **227,661** families have received free wheat of 50 K.G each. District-wise details are at **Annexure-II**. Whereas process for distribution of free wheat to remaining **193,285** families is ongoing.
- i. Apart from above Chief Minister also approved distribution of 149,710 Ration bags purchased from Canteen Store Department (CSD) containing 30 Kilograms of food items alongwith 4 Nos. of Antibacterial Soap for distribution for distribution to PDMA Sindh amongst 49,910 pregnant and



family through 376 sentinel points after completing codal formalities for hiring of transport. **190,536** families have received wheat till 30<sup>th</sup> October, 2018.

- ii. Wheat distribution mechanism is transparent and fair enough to ensure that right quantity and appropriate quality of wheat is provided to the recipient.

2) **Water:**

- i. To ensure provision of safe drinking water, 258 additional RO plants are planned to be installed in addition to 589 already installed.
- ii. Out of 63 water supply schemes only 15 are functional while rest are non-functional.
- iii. Work on 9 x additional water supply schemes is in progress.
- iv. 18 small dams has been completed at a cost of Rs. 2583.303 million, while work in progress on construction of 9 x additional small dams at a cost of Rs. 1271.63 million.

3) **Health care:**

- i. To address health issues of the affected population, **Special Medical Camps** has been established by Health Department and PPHI since 14<sup>th</sup> October.
- ii. Doctors from DG Health, DHO, M.S Civil Hospital Mirpurkhas, and PPHI are running the camps.
- iii. Consultants, Gynecologists, Pediatricians and Specialists provided by Medical Universities and DG Health are stationed at District, Taluka Hospitals and Rural Health Centers.
- iv. Theme is to conduct multiple outreach sessions to treat pregnant and lactating women, children under 5 years of age besides inhabitants suffering from multiple diseases.
- v. Till 30.10.2018, **238** villages have been covered and **38,186** patients of remotest villages have been treated.
- vi. Screened out 36,708 Pregnant & Lactating women (PLWs) by Health, PPHI & HANDS NGOs (from 01.01.2018 till 25.10.2018)

- vii. Family Ration Packs Provided by PDMA, GOS has been distributed amongst 8,082 PLWs till 8.11.2018 while distribution amongst remaining is ongoing.
- viii. To prevent stunting, Social Welfare Department has been tasked to hire firms and partners to start interventions including conditional cash transfer program for pregnant and lactating women who will get the conditional cash transfer of Rs.1500 for 13 visits each. While Rs. 4,000/- will be given to each woman on the time of safe delivery.

4) **Livestock:**

- i. More than **1.060 million** small and large animals has been vaccinated, drenched and treated.
- ii. Distribution of fodder for livestock will be started soon.

5) **Awareness Campaign:**

- i. All teachers of the district will be trained on the Nutrition lessons incorporated in the curriculum of class 1-10, which is being finalized.
- ii. Agriculture extension workers conducted 40 male and 15 female farmer field farmer Awareness sessions to train the farmer for coping techniques to effectively tackle the drought situation.
- iii. 30 Kitchen gardens training sessions were completed.
- iv. Awareness sessions with the community will continue in future.

3. **Measures Taken by NDMA.** NDMA, being the federal lead agency and as per its mandate took the following measures:-

- a. Coordinated with NADRA in provision of Head of Family data/lists to PDMA Sindh / Relief Department, Sindh enabling them to distribute free wheat to affected families in calamity hit areas.
- b. Sought suggestions from PDMA Sindh for additional relief assistance required from Federal Government/NDMA (if any) to alleviate the hardships/miseries of affected people.
- c. Recovery & Rehabilitation Directorate, Operations Wing of NDMA was assigned the additional responsibilities to act as “**Drought Secretariat**” to ensure timely, coordinated and smooth flow of information between all the stakeholders.

- d. To analyze the current drought like situation in eight (8) districts particularly in district Tharparkar, NDMA in collaboration with PDMA Sindh and partner organizations i.e. UNFPA and UNICEF conducted a one day seminar on 30



October, 2018 in Karachi. More than 90 representatives of various Federal and Provincial governments, (i.e. Rehabilitation, Social Welfare, Health, Population Welfare, Women Development departments etc.), District Administration of 8 x affected districts, Pak army, Rangers, UN agencies, NGOs/INGOs, Civil Society, Media as well as senior officers of PDMA Sindh participated in the seminar. The aim and focus of the seminar was to plan sustainable short and long term remedial measures to mitigate the sufferings of the drought affectees.

- e. Apart from above, a team of senior officers of NDMA, led by Member (Ops) and comprising Member (DRR), Member (A&F), Program Manager (GCC), Deputy Director (R&R) and Programme Officer (GCC) held a meeting with the



senior officers of PDMA Sindh, Secretary Rehabilitation, Government of Sindh, Additional Relief Commissioner, Board of Revenue, Relief Department, Govt. of Sindh, Deputy Commissioner Tharparkar, ADC-I Dadu, Programme Manager, NSP Sindh and representative from Pakistan Army and Rangers on 31 October, 2018. The meeting discussed the prevailing drought situation and agreed on coordinated approach by ensuring effective and result orientated remedial measures to minimize the adverse effect of drought in the province of Sindh.

- f. The participant were informed that previously, NDMA in collaboration with PDMA Sindh and with the technical support of Food and Agriculture

Organization (FAO) had conducted Sindh Drought Needs Assessment (SDNA) in 2015-2016. The recommendations of SDNA can be relied upon to design any future interventions/programmes for the drought affected communities (**Annexure-V**).

4. **Recommendations.** Participants of the Consultative Seminar discussed in detail availability of water for human consumption/agriculture and livestock. The issue of adverse impacts of drought on the livelihood and resultant migration were also discussed thoroughly. The impacts of drought on health and state of nutrition of pregnant/lactating women and causes of child mortality were also discussed threadbare.
5. The participants unanimously agreed to call for affective coordination among all district, provincial and federal stakeholders in terms of emergency response/relief, targeted mitigation measures, better management and optimum utilization of available resources. This requires a multi-sector and integrated approach to focus on Health, Nutrition, Agriculture, Livestock, Water and sanitation by involving government authorities, research institutes, academia, humanitarian agencies, public works agencies and civil society organizations etc. at each administrative level. The main recommendations of Two days deliberations are as follows:-
  - a. **Short Term Measures:**
    - (1) **Agriculture.**
      - i. Drought resistant varieties of different food and cash crops may be introduced in the drought stricken districts.
      - ii. Provision of fodder to livestock (6.5 million in number) owners to stop out migration.
      - iii. Possibility of planting suitable varieties of shrubs and trees be explored to provide fodder for animals.
    - (2) **Water.**
      - i. RO plants mostly remained non-functional due to poor maintenance and power supply issues. These may be made operational through proper maintenance
      - ii. Under construction small dams may be completed on fast track basis.
      - iii. Funds may be allocated for revival of non-functional water supply schemes.



(3) **Health and Nutrition.**

- i. Availability of medicines along with nutritional supplements / multi-vitamins may be ensured in all Government hospitals/ dispensaries round the year;
- ii. Availability of female gynaecologist for safe child delivery/birth to reduce child mortality due to delivery related complications. Introduction of MISP (minimum Initial Service package for women, girls and adolescents to prevent maternal and neonatal mortality and morbidity
- iii. Deployment of Mobile Emergency health services for mother and children in remote and especially off-road areas on regular intervals.
- iv. Screening of Pregnant & Lactating women (PLWs) may be done on monthly basis by Health Department with the assistance of NGOs.
- v. Family Ration Packs/ food supplements may be distributed amongst the mal-nutrient pregnant/lactating mothers and children under 5 years of age on regular basis.

(4) **Livelihood**

- i. Programs/interventions through public private partnership may be introduced to impart technical training in the fields of mining, Information Technology, automobile and non-farm professions to ensure employment of youth including female in the ongoing development projects in province.
- ii. Training programmes may be launched in the existing vocational institutes to boost local handicrafts and cottage Industry.

(5) **Awareness**

- i. Communication campaign may be conducted for local population to address the social issues and create awareness among communities on safe drinking water, sanitation, education, climate change adaptation, Gender Based Violence (GBV), etc.
- ii. Partner organization may be requested to extend support in capacity building initiatives and awareness creation etc.

- iii. Psychosocial social support provided to females in order to reduce females deaths due to suicides

b. **Long Term Measures**

(1) **Agriculture.**

- i. Introduction of institutional reforms to modernize the existing irrigation system in the drought hit areas to maximize the number of farmers benefiting from public investments.
- ii. Capacity building of local agriculture, livestock, water management and other relevant line departments in terms of modern machinery, training and equipment.
- iii. Establishment of farm to market and other link roads and infrastructure will improve access of the far off communities to the markets.
- iv. A systematic food security monitoring and information system in order to help evidence based programmatic response.

(2) **Water**

- i. The feasibility for provision of piped water for drinking purpose from the nearest water source be explored as has been done in Cholistan Area in Southern Punjab.
- ii. South-eastern Sindh has huge deposits of ground water in third aquifer that can be judiciously used to promote bio-saline agriculture. Communities should be provided submersible pumps to extract third aquifer and grow vegetables and fodder.
- iii. Improve water storage systems such as recharge dams particularly in the South East, where rains are predicted to become more intense but for shorter period.
- iv. Construction of new ponds and small dams be planned at suitable sites using traditional as well as modern techniques.
- v. Alternative water supply as well as new irrigation technologies may be introduced. Government of Sindh may promote 'Rain Water Harvesting' in the drought hit districts
- vi. Feasibility studies be conducted through Universities and Research institutes to divert flood water to these 8 x district to recharge ground water.

**(3) Health and Nutrition.**

- i. Female Gynecologists, pediatricians, Anesthetists, FMOs & other Specialists may be posted or recruited for posting in Taluka Hospitals to provide health care services within their jurisdiction.
- ii. Special Incentive Package may be announced for Doctors, Nurses and Lady Health Workers posted in far flung and remote areas **OR** existing package / allowance may be reasonably enhanced.
- iii. Additional ambulances (4x4) may be provided to the District Authorities for each Taluka hospital.
- iv. Special mobile emergency health services for mother and children must be extended in remote and especially off-road areas on regular intervals.
- v. Provision of sufficient numbers of Incubators at each THQ Hospitals may be ensured;
- vi. The provincial government should institutionalize the coordination mechanism amongst all relevant government line departments, Community Service Organizations (CSOs), private sector and civil society to devise a system of close monitoring of morbidity rate.
- vii. Understanding of the local norms and habits to streamline the response to local needs and reduce wastage.
- viii. A strategy focusing on health and wellbeing such as changes to the diet patterns to enhance nutrition value be prepared and implemented.

**(4) Livelihood**

- i. Encourage the development of non-agricultural and labour-intensive economic sectors in extremely water scarce areas.
- ii. South-eastern Sindh with its huge coal and power industry will soon enter in an era of economic diversification. Therefore, local youth should be imparted new skills/vocational training to grab the likely future job opportunities.

## 6. **General Recommendations**

- a. Baseline survey on gender, age and nutritional status may be conducted in all 8 x drought affected districts of Sindh for detailed assessment of the situation before long term interventions are planned.
- b. A joint programme of action/Road map involving government institutions, UN agencies, INGOs/NGOs be formulated to ensure coordinated response capacities and development actions in the most vulnerable and fragile areas prone to droughts.
- c. PTA may be requested to approach Cellular Mobile Operators (CMOs) to increase the coverage area in the District so as to overcome communications gap.
- d. For community awareness special programmes on Radio Pakistan and Private FM Channels may be broadcasted which may focus to increase coping capacities of the affected population in the drought affected areas
- e. Coordination among the implementing partners needs to be improved to achieve the desired results of the interventions.
- f. A coordinated and integrated approach to support livelihood, alternate livelihoods with focus on gender empowerment, food security and the resilience of the populations be adopted by the Government and the development partners.
- g. Coordinated approach with all the partner may be adopted to ensure primary education as (education in emergency) in affected areas.
- h. The government should facilitate a focused response, through 'strengthening of coordination framework' to avoid duplication of efforts as well as address significant gaps in terms of water supply, sanitation, health and hygiene and livelihood.
- i. Government of Sindh may focus on providing education to girls in the age group of 5-12 through interventions on the lines of Tawana Pakistan to increase school enrollment and nutrition status of girls.

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**STATEMENT OF DISTRICTS, DEHS AND NUMBER OF HEAD OF FAMILIES  
IN DROUGHT HIT AREAS OF SINDH**

<b>DISTRICT</b>	<b>NO. OF DEHS</b>	<b>NO. OF FAMILIES</b>
Thatta	06	10,681
Dadu	88	23,067
Sanghar	07	9,159
Tharparkar	167	276,152
Umerkot	25	31,390
Kamber Shahdadkot	22	8,008
Jamshoro	110	29,738
Badin	88	32,791
<b>Total</b>	<b>513</b>	<b>420,946</b>

**Annexure-II****FREE DISTRIBUTION OF WHEAT IN CALAMITY HIT AREAS TILL 30.10.2018**

<b>DISTRICT</b>	<b>NO. OF HOUSE HOLD</b>	<b>TOTAL NO. OF HOUSE HOLD WHOM WHEAT BAGS DISTRIBUTED</b>	<b>BALANCE</b>
Tharparkar	276,152	184,127	92,025
Umerkot	31,390	3,331	28,059
Dadu	23,067	15,229	7,838
Thatta	10,681	6,506	4,175
Sanghar	9,159	6,465	2,694
Kamber	8,008	2,079	5,929
Jamshoro	29,738	9,924	19,814
Badin	32,751	-	32,751
<b>Total</b>	<b>420,946</b>	<b>227,661</b>	<b>193,285</b>

**Annexure-III****DETAILS OF NUTRITION ITEMS AND RATION BAGS PROVIDED TO THE  
PREGNANT & LACTATED WOMEN**

Ser.	ITEM	QUANTITY	REMARKS
1	Atta (fortified)	10 kg	<b>Ration Bags to be provided for 03 Months.</b>
2	Rice Arri	10 kg	
3	Dal Mong	2 kg	
4	Lobia (Kidney Beans)	2 kg	
5	Dal Channa	2 kg	
6	Oil (With Vita:A+D)	2 kg	
7	Sugar	1 kg	
8	Salt (iodized)	1 kg	
9	Soap Antibacterial	4 Nos.	

S.NO.	DISTRICT	PREGNANT WOMEN	LACTATING WOMEN	TOTAL
1	Tharparkar	20,210	15,122	35,332
2	Umerkot	8,330	6,248	14,578
<b>TOTAL</b>		<b>28,540</b>	<b>21,370</b>	<b>49,910</b>

**HISTORICAL RAIN FALL DATA OF DISTRICT THARPARKAR SINCE 2014**

TALUKA	YEAR & RAINFALL RECORDED IN MILLIMETERS			
	2018	2017	2015	2014
<b>Mithi</b>	58	261	422	180
<b>Islamkot</b>	24	337	362	167
<b>Diplo</b>	51	379	512	33
<b>Kaloi</b>	10	114	Taluka was not created	Taluka was not created
<b>Chachro</b>	105	173	363	77
<b>Dahli</b>	120	123	266	Taluka was not created
<b>Nagarparkar</b>	40	324	588	43



**SINDH DROUGHT NEEDS ASSESSMENT (SDNA)  
THE STATE OF AGRICULTURE, LIVELIHOOD, FOOD SECURITY, NUTRITION,  
WATER AND SANITATION IN DROUGHT AFFECTED COMMUNITIES IN SINDH  
AUGUST 2016**

**Recommendations**

This SDNA report 2016 has focused on identifying the impact of the drought and household vulnerability to the drought. This assessment provides an estimate of the impact of the drought on agricultural production through water scarcity, household vulnerability, and its impact on food consumption and nutrition. The report also emphasizes that the trend will be towards an increase in water scarcity, due primarily to population growth, and increasing occurrence of hydro-meteorological hazards, due to the predicted increase in rainfall variability. These factors will drag Sindh to become one of the most vulnerable regions to climate change across the planet.

The households located in high drought, extreme water scarcity areas, and in South East zone have low ownership of assets, higher vulnerability due to unsafe water sources, difficult/very difficult access to health care, high mortality and prevalence of diarrhea, and poor nutrition. Although, it is encouraging to find that several kinds of assistance programs/interventions are being targeted towards these households/areas, unfortunately their situation is still very poor. This poor situation in the high drought and extreme water scarcity areas emphasizes the need for improvement in implementation of support programs/interventions.

It is paramount that the Government of Pakistan, led by the National and Provincial Disaster Management Authorities designs and implements strong mitigation responses. The complexity of the climate change and drought impact calls for strong coordination among the many institutions involved in the response in terms of emergency response, mitigation and water management. This requires a multi-sector approach involving research institutes, government authorities at each administrative level, humanitarian agencies and public works agencies. This assessment recommends the following actions/interventions to be implemented in the drought affected communities.

**Agriculture**

**Short term:**

- Agriculture support through provision of inputs in all water-scarce areas of Sindh, particularly in the West and South-East. Drought resistant seeds are mostly used in water scarce areas of the Irrigated zone. Inputs of water efficient crops are most needed.
- A livestock vaccination campaign and medicines for livestock would both help to respond to the disaster and sustainably increase livestock water productivity.
- Livestock breeders in the South-East and West urgently need fodder or synthetic feed.

**Medium term:**

- Shrub and tree planting (particularly small trees) in arid areas can limit desertification, reduce soil erosion and provide fodder for animals. Possibilities of planting suitable fruit varieties should be also explored along with forest plants and shrubs for livestock. It will diversify the livelihoods options along with improved nutrition.

- Establishment of water accounting systems in order to closely monitor water levels and respond promptly to dry spells and droughts disasters.
  - Enhancement of the extension services to increase yields, as this is most cost-efficient way to increase water productivity.
  - Increase of the water productivity through conservation agriculture. Conservation Agriculture conserves soil moisture and reduces the need for inputs, especially chemical fertilizers. It also reduces carbon emissions.
  - Introduction of the system of rice intensification that saves on irrigation water and reduces emissions of methane, a potent greenhouse gas.
  - Encouraging inter-cropping models will have nutrition effect through improved dietary diversity, as well as conferring advantages for agronomy and soil amelioration.
  - Diversification of agricultural crops and other livelihoods options. Large scale producers to be supported and involved for innovation and demonstration of new crops. It will help replicate the new ideas and generate employment opportunities.
  - Value chains to be developed around potential agriculture and non-agriculture products. Producers, processors and market players to be supported and facilitated for better quality and functioning.
  - Local and outside market linkages to be promoted through networking and exposure visits.

### **Long Term**

- Modernize irrigation systems, making public investment in irrigation repair more equitable, and maximize the number of farmers benefiting from public investments on irrigation through institutional reform aimed at increasing equity.
- Improve water storage systems such as recharge dams particularly in the South East, where rains are predicted to become more intense and less predictable. It would also help in increasing the level of water table in the drier areas.
- Enhance the capacities of local agriculture, livestock, water management and other relevant line departments in terms of modern machinery, training and equipment.
- Encourage the development of non-agricultural and labour-intensive economic sectors in extremely water scarce areas.
- Establishment of farm to market and other road infrastructure will improve access of the far off communities to the markets.

### **Off-farm Livelihood**

#### **Short Term**

- Food for assets (cash or food) should be continued in order to support livelihood of the vulnerable households and to help stabilize their food security.
- Government compensation, cash/food for work/training need to be extended to high drought areas as well.

#### **Medium/Long Term**

- Programs/interventions enhancing skills and generating employment/income for the locals need to be focused more; otherwise poor and vulnerable households will remain dependent on external sources for their food consumption and living.

### **Health and Nutrition**

**Short Term**

- Given the high prevalence of acute malnutrition, priority should be given in supporting the most at risk populations in order to improve the situation. The existing programmes on Community Management of Acute Malnutrition (CMAM) should be further strengthened.

**Medium/Long Term**

- A system of close monitoring of morbidity rates with better coordination among the relevant government departments, CSOs, private sector to take preventive actions where outbreaks are detected. The Government should institutionalize this system.
- Access to health also needs to be improved by improving the road infrastructure and availability of transport, medical staff and medicines at health care facilities.
- Coordination among various related institutions to improve the health situation through improvement in basic health services.

**Water and Sanitation****Short Term**

- The immediate need is drinking water and that of acceptable quality. This need can be fulfilled with cleaning the brackish water and maintaining the wells. Since there is variable rainfall each and every drop of it must be harvested for drinking and livestock purposes.
- Provision of safe drinking water in all areas should be the priority of the government and partner organizations. Unsafe water consumption leads to poor health and nutrition and subsequently lower productivity and contribution to household and national economies.

**Medium Term**

- Ensure water availability to those who are facing the moderate to extreme drought situation especially the most vulnerable segments in these villages.
- The distribution and use of household level water purifiers and disinfectants should be ensured along with hygiene promotion activities.
- There is a dire need to ensure the 'water security' – government should take the responsibility to protect and construct new ponds for water storage. That would significantly help to create a medium term sustainable solution.

**Long Term**

- Alternative water service delivery can be ensured through looking into long term solutions such as developing alternative sources, installation of RO and desalinization plants with enhanced technical supervision, construction and rehabilitation of water systems including rain water harvesting systems and structures and ensuring adequate storage facilities etc.
- Unfortunately in Pakistan 'rain water harvesting' is less than 20% and still much less in Tharparkar. In recent past, UNICEF has assisted the government of Sindh through provision of 'Nadi Ponds' for 'Rain Water Harvesting' – but this model needs to be further replicated and adopted by the government in order to ensure the development of water supply infrastructure at large scale to address the needs of people in Tharparkar.
- The flood water needs to be diverted to the Thar Desert to recharge the ground and to fill up specially created tanks and ponds. A long terms water development solution would require a canal which can fulfil the needs of people of Tharparkar

who are consistently affected by droughts and others and have lowest socio-economic conditions in the province.

- In order to ensure that drinking water is provided to those in water scare areas, strategic water points should be established as part of more sustainable longer term efforts to ensure access to safe water to the affected communities and to ensure water security.
- Particular to costal belt of Sindh including Badin and Thatta, solar desalination could be another option to increase the water availability through treatment of saline water.
- Tanker water arrangements need to be ensured in the areas susceptible to worst drought conditions through making long term arrangements with the water vendors.
- The federal and provincial governments should look into the long-terms solutions to address the water scarcity due to the drought and low rainfalls.
- Agencies that can supply on-site technical support and WASH supplies should be identified and earmarked for the emergency support. These agencies should be intimated well in advance about the anticipated support to ensure adequate preparedness including prepositioning of stocks and response.
- Under the 'Thar Coal' project, it comes under 'Corporate Social Responsibility' to ensure the development of people of Tharparkar. Here is the significant opportunity to strengthen the
- Public Private Partnerships' for WASH interventions to address the droughts.

### **Integrated Approach**

- The coordination among the implementing partners needs to be improved to achieve the desired results of the interventions.
- Coordinated social safety net programmes in line with the Sustainable Development Goal (Goal 2)/zero hunger challenge need to be implemented.
- A systematic food security monitoring and information system in order to help evidence based programmatic response.
- It is important that a coordinated and integrated approach to support livelihood, food security and the resilience of the populations be adopted by the Government and the development partners.
- The government should facilitate a focused response, through 'strengthening of coordination framework' to avoid duplication of efforts as well as address significant gaps in terms of water supply, sanitation and health and hygiene. Due to the lack of WASH interventions, directly or indirectly, it can have a negative impact on nutrition sensitive interventions as well.
- UN agencies should look into the possibility of ensuring a joint response mechanism through finalizing a joint programme of action to accelerating coordinated response capacities and development actions in the most vulnerable and fragile areas prone to droughts.

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