

# Assessment of Impact of Drought on Men, Women and Children

## An Inter-Agency Initiative



Banda, Chitrakoot, Siddharth Nagar, Sonbhadra & Mahoba  
Districts, Uttar Pradesh



## Executive Summary

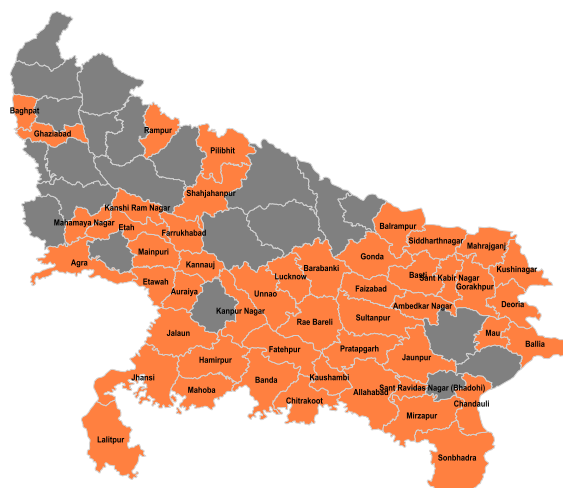
Acute water scarcity has developed into a severe drought situation. While there has been monsoon deficit of 2014, differential rainfall pattern<sup>1</sup>, hail storm in Feb-Mar of 2015 crop losses have turned more macabre due to the subsequent rainfall deficit in many places during Jan-Feb of 2016; to untimely snow-balling into major crisis that most of the most vulnerable in Bundelkhand find themselves sucked into, some of whom are out of options.

This document is an attempt to capture key findings of the Inter-Agency assessment of impact of drought on men, women, children, families, communities. It has tried to capture key aspects of migration during this period, water-sanitation and hygiene, food security, nutrition and IYCF, and key observations on government response. Please refer to *Annexure 1 for Terms of reference of the Assessment*

There is need for urgent attention being paid to the region in view of acute food security challenges being faced by the most vulnerable in the region. The situation is alarming with severe repercussions for children as well as women whose social status. Timely action is needed to avert a looming crisis. In the absence of regular growth monitoring, severe malnutrition among children abounds. The most vulnerable people are bearing repressions of the acute crisis every single day.

In order to avert a major crisis, key actions at the recommended in the immediate term (upto 3 months), Among the urgent actions recommended to be implemented, the key ones are: implementation of provisions of National Food Security Act, immediate supplementation of mid-day meals, provision of subsidized fodder and monitoring nutrition levels of children across all affected districts. It is absolutely essential that life saving drugs for children are available free of cost, micro-nutrients be made available to children Mobile Health Units be operationalized and atleast two Fair Price shops are started in each affected district in line with good practice from West Bengal

Medium term (3-12 months) and long term (12-48 months) actions are also recommended to prepare for and mitigate the drought situation in future.



*Area/districts of Uttar Pradesh that are declared drought hit are highlighted in orange*


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<sup>1</sup> Differential rainfall patterns, in large part being ascribed to climate change are such that even within a Panchayat, while one part get some rain while another doesn't.

## 1.0 Background

Water scarcity is nothing new to Bundelkhand, a region home to 18 million people<sup>2</sup> spread over 7 districts of Uttar Pradesh and 6 districts of Madhya Pradesh. For a small farmer, it is not the most favourable place to be in, with interplay of factors pitted against him. Little wonder then, that the area has a population density of less than one-third of the UP state average. 79% live in the rural areas of which one-third households are officially Below Poverty Line (BPL) entitling them to state's welfare schemes. Over 75% of Bundelkhand's population continues to depend on agriculture, while 96% of the total income is raised from agriculture and livestock together. 30% of this population has a land holding between 1-2 acres. As is well documented, the region experienced a major drought in every 16 years during the 18th and 19th centuries, which increased by three times during the period 1968 to 1992 (Samra, 2008)<sup>3</sup>.

The last time India experienced back to back droughts was in 1986-87. It was only the fourth time in a century that the country battled two consecutive years of scant rainfall. The drought of 2015 was the worst India has experienced in recent years. Nearly half the districts in the country recorded a rainfall deficit of 20% or more.



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More recently, the Drought Crisis Management plan, 2015 of Government of India recognizes a more than three-fold increase in drought occurrence in Bundelkhand region to once in 5 years.

However efforts at mitigating drought are yet to bear visible fruit at a large scale<sup>4</sup>

Drought is widely recognized as 'no longer a mere absence of or scarcity of rainfall but related to inefficient water resource management'<sup>5</sup>. It is worth noting that December '15 and January '16 are considered the warmest winter months in the last 100 years. "The deficiency of more than 50% rainfall has greatly reduced the ground water level, as a result the availability of water for irrigation dropped considerably, which has led to severe crop failure. The districts of Bundelkhand region suffer particularly severely, as their economy relies heavily on agriculture."<sup>6</sup>

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<sup>2</sup> Figures as per 2011 census of India figures

<sup>3</sup>According to Inter-ministerial Central Team's report on drought mitigation strategies for UP and MP Bundelkhand under Dr. J. S. Samra

<sup>4</sup> As a response to the chronic drought like conditions, a Special package for implementation of drought mitigation strategies in the region was approved by the Central government in 2009. As part of the package, Rs 7266 crores (approx. 121 million USD) were allocated for Uttar Pradesh and Rs 3760 crores (approx. 627 million USD) for Madhya Pradesh. A further one hundred crore rupees each for Uttar Pradesh and Madhya Pradesh were approved in 2011 under the 12th Five year plan.

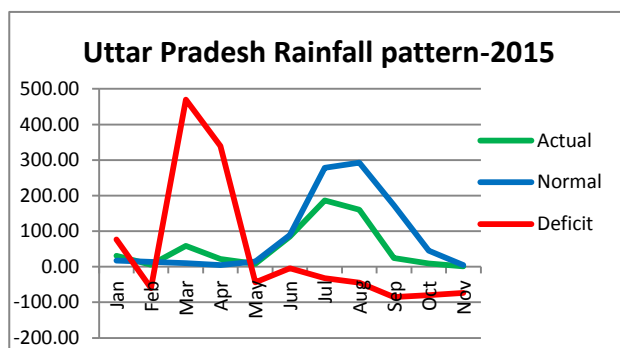
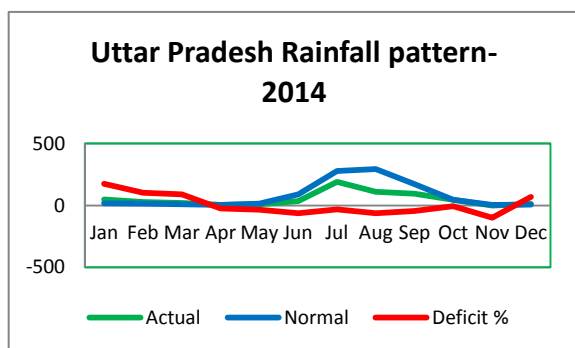
<sup>5</sup> Management of drought, National Disaster Management Guidelines, September 2010, NDMA

<sup>6</sup>Verbatim quoted from version 8 of the unpublished report of the Rapid Impact Assessment Mission of Drought in Bundelkhand region, by Dr. D. Caravotta, Health Consultant at UNICEF, Uttar Pradesh and others

Social consequences of such high levels of distress are many. Media has for years reported the distress of young men of marriageable age not getting bride due to acute water stress in their village. In the current situation on the other hand, crop failure and lack of employment has led to migration of working adults leaving children and elderly behind and as rapid assessment has revealed, large scale desertion of livestock to save them from starvation!

Water bearing ponds of Bundelkhand, many of them silted during the course of Independent India, still provide precious water, thus forming the backbone of an otherwise precarious living in Bundelkhand. Furthermore, fast depleting ground water reserves that have anyways been widely categorized as the ultimate last resort, low productivity of land, recent dependencies on high investment crops by the farmers and the continued increased need for irrigated fields along with a challenged development scenario of the region are other important factors within the context of Bundelkhand. Debt burden upon farmers is forcing suicides.

Rainfall data of the state for 2014 and 2015, although aggregated, highlights the deficit in rainfall in the last three cropping seasons in the state.



Despite years of well-intentioned Central and State level funding allocations, Meterological failure has repeatedly causing drought disaster in Bundelkhand despite years of Central and State level schemes, funding allocations and hosting of international level institutions within the region with large financial outlays.<sup>7</sup>

Acute scarcity has caused crippling effect on the food security and livelihood support system beyond the level of community resilience. Anecdotal references as well as British era gazetteers from as recent as 1860s provide mention of forest reserves and high cotton yields in Bundelkhand, both of which are critical components of livelihoods for the rural poor.

As a response to the critical situation, 50 districts of Uttar Pradesh have been officially declared as drought affected. Independent figures point to 40% of the country being under drought like conditions.

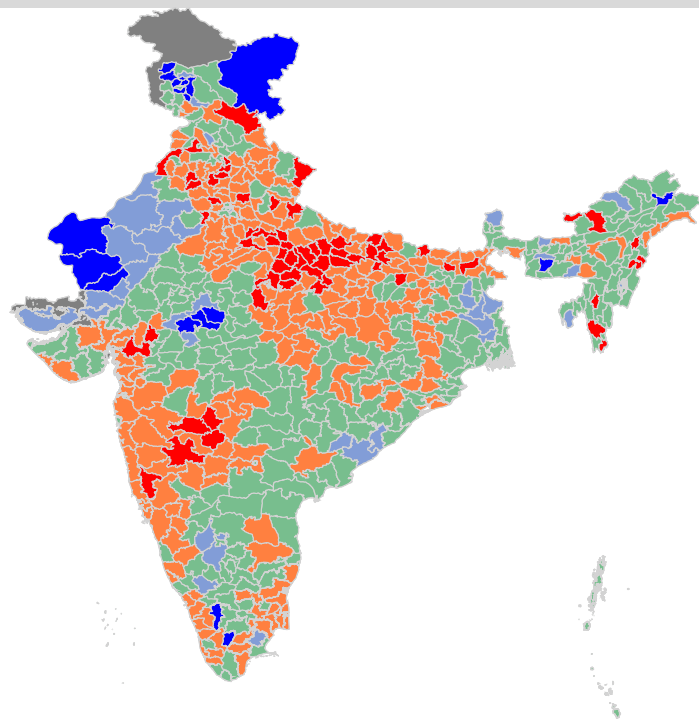
<sup>7</sup> While the rate of its occurrence varies, researchers point to the 'stoic inevitability of its occurrence'. Currently 39% of the country's landmass is suffering due to drought. As per the National Drought Manual, 2009, three hundred and twenty nine million hectare of land covering 103 districts and 16 states of India are chronically drought prone. (An area close to 70% of the net sown area of the country).

## As rain Gods turn away (... a run up to the current drought situation)

Overall, there is a below normal rainfall of about 14% across the country, with vast regional and intra-state variations (Even at the national aggregate level, while normal rainfall is 887.6 mm, actual rainfall was 760.6 mm).

Definitely, the Gangetic belt of India is the worst affected with severe shortage of rainfall. State of Uttar Pradesh is the worst affected with all the districts receiving less than normal rain. 32 of its districts received scanty rainfall of less than 50% of normal rainfall, 35 of them less than 20% rainfall and just four of them normal rainfall (i.e. less than average, but within -20% range). It must be noted that states like Punjab, Haryana, Uttarakhand, Himachal Pradesh, Maharashtra and Bihar are also severely affected. Madhya Pradesh, Chattishgarh, Gujarat, Karnataka, Kerala, Andhra Pradesh, Telengana and Jharkhand have several districts with deficient rainfall (between - 20% to - 50%). Only the State of Jammu & Kashmir has had excess rainfall across all districts but for a few.

Intra-state variations are also highly visible. The state of Arunachal Pradesh has districts varying between - 68% (deficit rain) to + 283 % (excess) rainfall. Tamilnadu, Meghalaya, Madhya Pradesh and Rajasthan too have 2 to 4 districts receiving excess rainfall, with others getting deficit rainfall. In the case



of West Bengal, the usually high rainfall fed sub-Himalayan West Bengal (normal 2103.5 mm) , including Darjeeling hills have received a - 19% (deficit) rainfall (actual 1770.7 mm); the Gangetic West Bengal has received about +13 % (actual 1299 mm) rainfall from normal (1150.3 mm).

States with exposure to higher climate variability seem to have been impacted by the severe shortage and high intra-state deviations of rainfall. This is closely in line with the ranking based on Exposure related indicators of ICAR (Central Research Institute for Dryland Agriculture) on "Climate change: Vulnerability & Implications to Drought

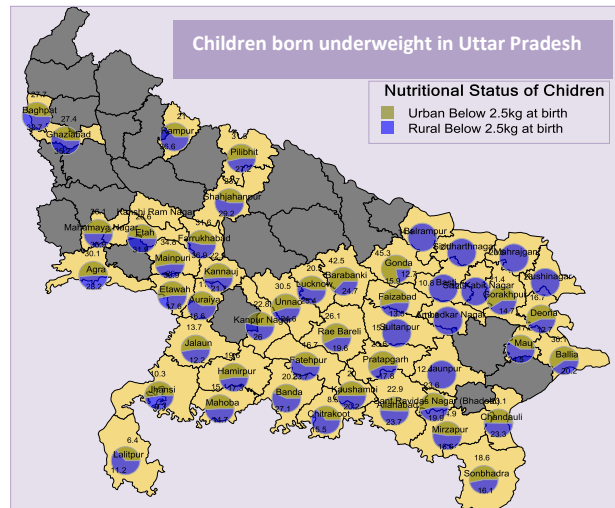
Programming in India" that considers rainfall variations, heat wave conditions, dry spell period, intensity of rainfall and other climate variable indicators for ranking the districts.



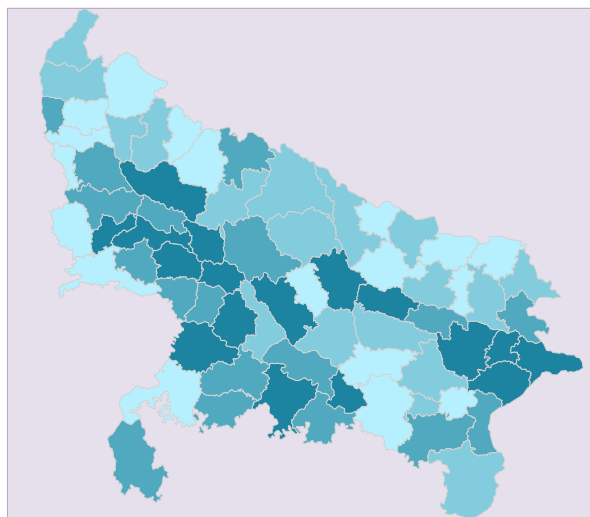
## Development scenario in Bundelkhand, Uttar Pradesh

While this document pertains specifically to the impact of prevailing drought condition in Bundelkhand on men, women and children; development deficits, particularly those relating to child survival, development and growth have been a challenge in the whole of Uttar Pradesh. Figures indicate that 21.6 % children of Uttar Pradesh are born under-weight and so are in need of additional support. Please refer *Annexure 2 for Urban Rural Divide of Low Birth Weight among Children in Drought Affected Districts*

Nearly one-third of India's child laborers come from Uttar Pradesh. More than 55 % of children are stunted, and the state has the highest neo-natal mortality in the country. It is to be noted that children breast fed within one hour of birth in Uttar Pradesh is 39.4% (In rural areas it is 38.9%). Exclusive breastfeeding in first six months is just 20.8 % across the state.



Source: Census of India, 2011



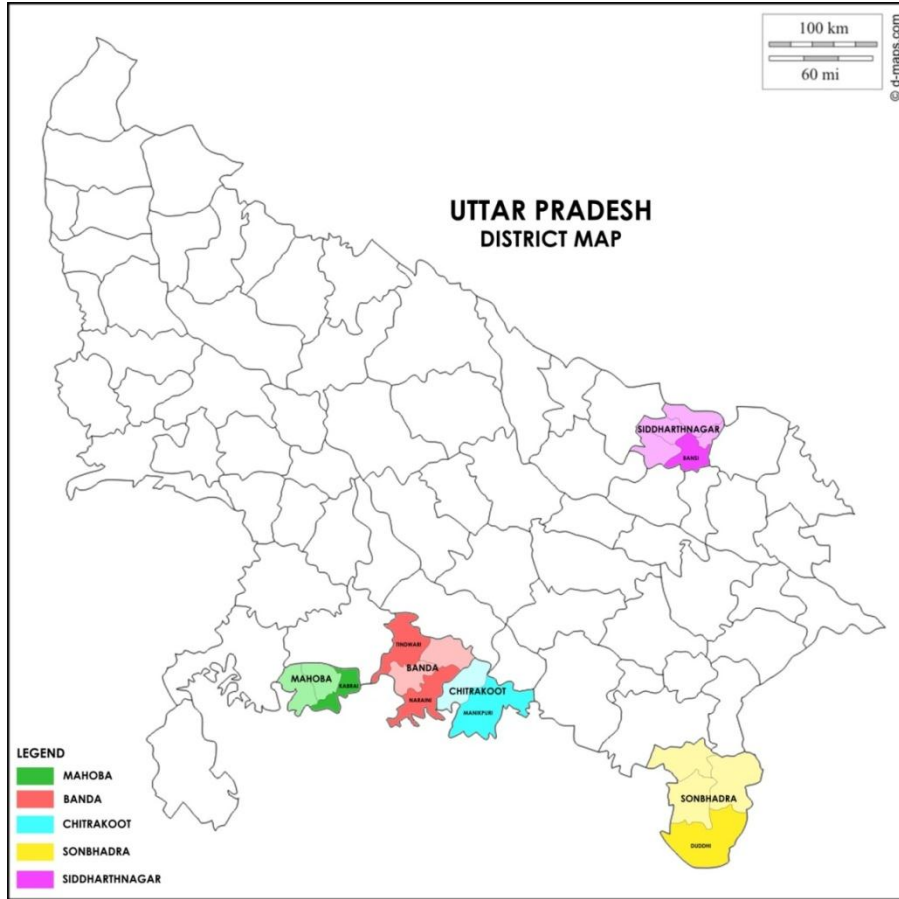
Source: Census of India, 2011

**Percentage of households accessing water from tubewells**

About 20 million people of the state practice open defecation<sup>8</sup>. It is also recorded that over 45% of adolescents in the state do not go to school. Even at an aggregate level, only about 19 % of households have access to treated piped water. Understandably, this water supply is limited to urban and semi-urban areas. 22 districts among the drought affected districts have less than 15% of their households covered by tap water supply. Please refer *Annexure 3: State wise comparison of development indices*

<sup>8</sup>Source: <http://www.thiswormyworld.org/maps/open-defecation-in-uttar-pradesh-india>

## Methodology for assessment



In view of the worsening drought situation in the state, Inter-Agency group took upon itself to conduct rapid needs assessment from 09<sup>th</sup>-11<sup>th</sup> February of a drought situation that has become a matter of immediate and urgent attention for all. Below mentioned five most affected districts selected for RNA are indicated in Figure XXX

DISTRICT	BLOCK
BANDA	Naraini, Tindwari
CHITRAKOOT	Manikpuri
SIDDHARTHANAGAR	Bansi
SONBHADRA	Duddhi
MOHOBA	Kabrai

## Criteria for selection of blocks

The following were the criteria for selection of the blocks for the rapid assessment:

- Among areas with highest water stress and with highest vulnerabilities
- Presence of CSO partners and therefore logistically feasible to conduct assessment
- Discussion with district administration officials for selection of target blocks. e.g. The district Magistrate of District Chitrakoot also suggested to pick Manik Pur as one of the block for assessment.

Five teams comprising of members from - Action Aid, Water Aid, UNICEF and Oxfam partner agencies were formed and a common field tool was used. Orientation of the field staff/enumerators was conducted on 8th of February 2016 by Action Aid & UNICEF on IRA methodology.

The assessment team met with district officials (List of people met is attached in *Annexure 4*) and conducted house visits in the most affected 22 villages.

Key findings and recommendations arising from this exercise are given in the following sections.



## Section 2: Key Findings

### Food Security

The following are the key findings from the rapid assessment related to food security issues:

- There is a high degree of stress prevalent in the region on account of access to food . In two out of every three villages, report of eating smaller meals (less filling meals) and fewer meals was reported. In addition to this, the cultural practice in the region of women eating leftovers at the end of the meals, is sure to have adverse impact on the health of women in general and pregnant and lactating women in particular.
- In all the places visited, people are concerned that they are not able to purchase the type of food according to their choice due to lack of resources. People are presently reporting to be eating same type of food day after day. In about 50% of cases, people reported to be eating things that they would not like to eat in normal circumstances. Grain quality in the local market is not good, yet high prices are being charged.
- In about 40% cases, people reported to have gone to bed hungry as they had no or inadequate food. Nearly 50% families have limited their regular intake of food to potatoes and rice, or wheat and potato with some salt. Lentils, which are a source of essential protein have been taken off their menu.



*Affordability is limited to a few families, the differentiation is evident in the fodder quality too*

- The following coping mechanisms were observed:
  - About one-fourth families are borrowing money/food from others
  - About 15% in total are coping from collecting wild fruits and other produce
  - Only about 50% were working for the food
  - As high as 30% were seen bartering/ exchange of good with others for foods
  - In general food aid/dependency on PDS of government is in about 20% cases
  - fall back on stored food at family level (10%)
  - loan from money lenders was specifically mentioned in one case; purchase food with existing resources and earnings from work (over 70%). Most people use one or more strategies.

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It is clear that there is high degree of stress in the current situation, and if timely and appropriate action is not taken, the situation is likely to get much worse as people run out of options

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### ***Suggestions from community:***

Proper and regular opening of the PDS shops has been suggested by most as they find irregular opening of PDS shops as a critical constraint. Suggestions are also for (a) increase the quantity of food supplies per person until the coming monsoon; (b) make more materials available through the PDS

## **Nutrition**

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The following are the key findings from the rapid assessment related to nutrition and IYCF issues:

- Only 10 % of the villages reported of regular growth monitoring having been conducted in the recent months, which has been undertaken only after the declaration of drought by the state
- In a test in 6 locations, 17 undernourished children and 35 severely malnourished children could be recorded at an average of about 9 per hamlet. This is a clear sign that the risk to children is high in the present situation.
- In about 40% of locations, supplementary nutrition programs in the form of dry ration through ICDS etc are available to children of 7 months to 6 years age group.



*Considering the severity of the problem, ground reality of ICDS is too dismal- new evidence suggests, however, that large numbers of children with severe acute malnutrition can be treated in their communities without being admitted to a health facility or a therapeutic centre!*

- In 25 % of cases, children are said to be moving with parents, which could have implications for their nutrition, access to health services and development.
- In 30% places people confirmed Vitamin A Supplement being provided to children under five years. At about 10 % places children showed signs of Vitamin A deficiency. At least in 50% of places children's eye had been tested for Vitamin Deficiency, and only in 20% of cases people confirmed distribution of de-worming tablets.
- People are being supported in some locations by locally wealthy people, money lenders and other well intended persons. However, these resources are expected to run out soon. In few places people have begun to change the way they manage their food habits.
- In 65% cases informants mostly mothers stated that their milk was insufficient to meet the demand of the infant and they resorted to buying expensive commercial products from the market
- In the case of young child feeding, 25 % of families reported non-availability of (poor capacity to purchase) lentils as a key issue for inadequate feeding of children. In other cases families reported that the children had same food as family (with addition of milk, where possible). It must be noted that, as per RSOC report of 2013-14 22.5% % newborns in Uttar Pradesh have

low weight at the time of birth. The report mentions that nearly 65% families give water and animal milk / supplementary milk products within the first six months of children; about 10% receive semi-solid food or adult food in that period.

***Suggestions from Community:***

Make supplementary nutrition (micro-nutrient fortified food ) available regularly for children at the ICDS centers; monitoring of child growth should be regular and timely referral of malnourished children is important for early management. All anganwadi centres should be opened regularly and food be provided.

## **Health**

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The following are the key findings from the rapid assessment related to Health issues:

- In 70% of cases surveyed, families had access to primary health (health sub-center or PHC), as the point of access. Others had access to secondary services and facilities such as the CHC. 30% people only mentioned of having access to doctors, and others have access to an ANM or the pharmacist as the highest level of staff that provides services to them.
- 40% families can access health facilities within 5 kms of their house; 10 % need to travel between 5 – 10 kms and the rest need to travel more than 10 kms. About 45 % mention that the access to health facilities is very difficult. They identified difficulties relating to transportation as the critical issue; about 5 % marked lack of roads to access health centers as the primary problem.
- Cold & fever, acute respiratory problems and diarrhea besides cases of jaundice and malaria are the main problems for which people visit the health services. This is in tune with the information available from health centers, and corresponds to AHS 2012-2013 to a large extent.
- Unclean water is identified (marked in questionnaire) by nearly everyone as the main cause of morbidity among children and adults. 20 % also mentioned trauma and other non-infectious diseases as the reason for morbidity.
- Outreach for routine immunization and polio immunization seems to be much better as people had the immunization cards with adequately updated information.
- Whereas the initial immunization such as BCG is mentioned to be at about 85% (as per AHS reports), the drop is in measles vaccination, which is around 15%<sup>9</sup> in the case of areas surveyed, marking sharp decline from BCG to Measles.
- In 80 % of the cases mortality surveillance is not done, especially in the case of children.
- In case of adults; accidents, respiratory diseases, complications arising from alcohol abuse, communicable diseases such as AIDS, malaria, diarrhea, non-communicable diseases, other diseases and unnatural deaths (suicide) are reported as major reasons. In the case of children under 5 years, respiratory diseases, diarrhea, pneumonia, under-nutrition, lack of care of

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<sup>9</sup>This resonates with the findings of the study undertaken in 2008 on the drought conditions in Bundelkhand region.

children, not availing timely treatment for diseases, measles and rickets are considered major contributors to child mortality. This also goes well with the behavioral issue of open defecation and contamination of water and environment, and its negative results.

- Three major contributors to limited availability of health services are: (a) poverty / lack of finance; (b) lack of transportation / distance from health services; and (c) lack of facilities at the health institutions.

### ***Suggestions from Community:***

Mobile health facilities and mobile health camps need to be increased to improve access to services. Separate health camps for women and children may be organized from time to time. Government must also focus on building health awareness among people. Make more medicines available at hospitals so that people need not purchase most medicines with their own money.

## **Water, sanitation and hygiene**

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The following are the key findings from the rapid assessment related to water, sanitation and hygiene issues:

- Hand pumps are the most common source of water. However, on an average, 1/3rd of the pumps are dysfunctional due to depletion of water table up to 15 – 20 feet in some areas. In about 40% cases, open wells are being used for water collection.



*Dysfunctional hand pumps due to steep drop in ground water level, and dysfunctional abandoned toilet  
Location: Chheria Khhur/Buzurg*

an water was reported from Banda district. In all villages assessed, open defecation is the common practice. In 8 out of 10 places, animals are sharing water with the humans from the same water sources.



*Remnants of ambitious water supply schemes dot the landscape. Meanwhile, the current situation of acute water scarcity is pushing people to the brink. There is drastic drop in water level in the wells, the only source in many cases. Women spend an average of 1-2 hours collecting 20-25 litres of water, barely sufficient to meet family needs*

- Open defecation is common practice this can be substantiated with numbers. With high open defecation in rural areas and less availability of water, potential for contamination of remaining water sources is high. In 1/3<sup>rd</sup> of the houses, toilet is very close to the water source, indicating high possibility of water source contamination.
- Basic cleanliness and maintaining hygienic environment in and around family toilets also is a challenge.

### ***Suggestions from community:***

Government needs to make water available to the people for their consumption and that of animals in places where the situation is severe; tube wells may be further deepened (deep tube wells) and re-boring of tube wells may be undertaken. The government needs to concentrate on water purification. Construction of toilets and provision for soaps may be considered urgently.

## **Migration**

- One out of five families is moving out with families. This is mainly visible in Banda district, and could be an indication of stress in the region. In large numbers, cattle and livestock are seen wandering as they are being left by the owners as there is dire paucity of fooder.
- Brick kilns have been a source of livelihood for the people of the region. However, most brick kilns are under closure under direction of the National Green Tribunal (NGT) for lack of clearance from Central Pollution Control Board (CPCB). This has also brought about additional stress

## **On Government response<sup>10</sup>**

- Nearly everyone felt that no additional efforts have been done to improve access to water and sanitation related services. 55 % felt that some non-food items such as blankets have been provided by the government, and 50% felt that food items are being provided through PDS for people. Others felt that nothing significant is being done to improve availability and access to food by the people.
- 45 % of the respondents feel that supplementary nutrition is available through ICDS centers (mostly in the form of khichidi, daliya and lentils)
- 40 % feel that the Health department is working to promote Infant and Young Child Feeding (IYCF)

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<sup>10</sup> For Central and State level efforts in drought response, please refer to Annexure 5

***Suggestions from community:***

- (a) There is a need for more frequent visits by concerned government officials to affected villages so that the needs and emerging situations are monitored, and people's needs are taken up on priority.
- (b) Streamline relief supplies so that people get access to supplies in due time with less delays and in right quantity.
- (c) Be prepared to provide for water and fodder for the needs of animals.
- (d) Work to improve irrigation systems to avoid / minimize crop failures.
- (e) The government also needs to take steps to improve transparency and accountability of revenue department in provisioning of relief supplies. Improve the system for verification of beneficiaries.
- (f) Review the functioning of government service providers (such as PHC, ICDS centers and PDS shops), to make them functional immediately.



### 3.0 Key Recommendations

In view of the acute crisis that the region is going through, there is need for all stakeholders to work together in well coordinated manner in order to avert the large scale humanitarian crisis. The following key recommendations have come up from the rapid assessment. The list of medium and long term actions is not exhaustive, but serves as a good starting point:

#### Immediate term (0-3 months)

##### To Government

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##### Coordination

- The Government has a member of Committees at the district level. Participation by CSO's in these committees will help improve coordination between the government and the civil society. District Magistrate, Hamirpur has constituted a committee called 'Samvedna' where two NGO's are members. The Committee meets twice a week on designated days. District level water scarcity task force under the chairmanship of District Magistrate should be constituted with representation from NGO's/CSO's and subject experts.

##### Food Security

- National Food Security Act should be implemented ; pulses, edible oils and other basic food items should be provided through an improved Public Distribution System until end of July 2016. An older system of the BPL categorisation for PDS is widely considered notoriously restrictive, unreliable and outdated and therefore is in dire need for updation.
- Mid Day Meal should include the provision of eggs and milk for children. In addition, it should be run continuously throughout the summer when the schools close.
- In addition to the crop compensation, subsidised animal fodder should be provided to the distressed farmers.
- Train anganwadi workers, (if not possible, engage trained volunteers from select NGOs), to monitor nutrition level of children across all affected districts, and set regulated reporting system
- Ensure cooking of hot cooked meal at AWC daily. Supplementary nutrition should be distributed for the recommended 25 days.

##### Health

- Ensure more varieties of generic medicines for common ailments and all life saving drugs for children are available free of cost at all health centers
- Make micro-nutrients available to children through anganwadis and to women in reproductive age through health institutions. Corporate engagement to provide for additional micro-nutrients may be sought in case of lack of funds.
- Start at least two Fair Price Medicine shops (as done in West Bengal) in each district
- Mobile Health Units should be operationalized.

## **Water Sanitation and Hygiene**

- Monitor water availability in villages and towns, and provide for additional solutions such as (a) providing water through water tankers (b) availability of water purification systems – with engagement of civil society participation; (c) marking of drinkable water from water for other human and animal needs; (d) temporary mitigation measures in areas where above solutions are inadequate

## **Others**

- Provide free bus passes to all students for the purpose of attending schools and colleges in the affected districts till end of June 2016

## **To Humanitarian Agencies**

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- Undertake sectoral assessments, especially for Nutrition and WASH immediately, and design further plan of action as per the detailed sectoral assessment. An assessment on Livelihood and Food Security is also recommended.
- Monitor emerging situation through IAG partnership and village volunteers and establish a daily reporting mechanism for collation of qualitative and quantitative observations – to be operational till mid-June 2016
- Support in monitoring child health and nutrition levels, and provide for additional support as may be necessary in the case of malnourished children and pregnant women
- Undertake random school attendance along with Education Department to monitor and report any trends in lowering of school attendance.
- Organize awareness programs on maintaining sanctity of clean water, water purification and culturally acceptable locally available nourishment for children, aged and others in need.
- IAG to put together a Who's Doing What matrix to guide further action by humanitarian agencies

## **Medium term (3-12 months)**

- Take support of higher academic institutions to design employment generating programs in large numbers in order to increase coverage under MNREGA, and provide for speedy payment of wages.
- Ensure, in parallel on an urgent basis that eligible households are identified and appropriation of BPL cards brought to an end to stem the downward slide that only points towards hunger and deprivation in the region.
- UP State drought SoP should be drafted. There should be due acknowledgement that not only are the rainfall different in different districts, but also the possibility of differential possibility within the district itself. Indicators for emergency response must be setup for instance relating to loss of cropping due to less rainfall, withdrawal of monsoon and delay in monsoon for more

than four weeks, and percentage reduction in rainfall. There is a need to setup indicators for different stages of crisis:

1. Watch or alert Indicator based on meteorological data.
  2. Warning Indicator based on meteorological as well as water scarcity levels.
  3. Emergency Indicators linking water scarcity, livelihood vulnerability on the basis of risk scenario develop response scenario accordingly.
  4. Acute Indicators should lead to response action being initiated on war footing.
- Detailed assessment of governed programs should be carried out on a pilot basis with the government in one district of Bundelkhand.
  - Crop Insurance should be made mandatory and institutional arrangements should be made so that timely payment of insurance premiums can be made. Banking and insurance mechanisms should be dovetailed to ensure that credit is disbursed to the farmer after not only deduction of the premium amount, but immediate issuance of crop insurance/ premium paid receipt.
  - There is also need for large scale dissemination of Package of Practice (PoP) for drought resistant cropping and demonstrable examples from within the region should be viewed as learning opportunities. Peer learning and exchange mechanisms should be developed within and across districts

### Long term (12 - 48months)

- As a local resource, the indigenous bovine population has been largely viewed as a low milk yielding variety and almost never viewed as a farm resource of sustainable farming. As a remnant of the Green revolution of the seventies, there are many reported instances of Artificial Insemination (AI) efforts have had undesirable negative fallouts such as cattle loss owing to high temperatures in the region. In the absence of a cattle insurance outreach in the region, such losses are a difficult setback! Cattle insurance should be rolled out on pilot basis in one block on pilot basis in each of the Bundelkhand districts.
- Farming practices have largely ignored local farm based, small scale ponds, while favouring large irrigation structures. Farm ponds are good instruments for recharge of ground water and protective irrigation. Micro irrigation practices are yet to be sizeably up scaled. In the long term there is need for mainstreaming frugal technology and making it accessible to people for ensuring rural livelihoods. All micro-irrigation schemes of the GoI should be implemented in totality in Bundelkhand. Micro-irrigation and drip-irrigation projects should be implemented on a 100% saturation basis.

*Farm Pond (JalKhets) technology are being promoted by the civil society and NGO's efforts as a drought proofing measure. For instance, in Dewas district of Madhya Pradesh nearly 6000 farmers had invested on ponds since 2006, and it was determined that they were able to recover their initial investment in just 3 years on account for agricultural economy of the region due to the significant improvement in availability of irrigation water.*

- Sustainable Livelihood options are a pressing need. With the growing awareness of environmental sustainability and regulatory frameworks coming into force, alternate rural livelihoods are needed in large numbers.

Not only tanks, canals also need to be de-silted and enough measures be undertaken to ensure that tail end villages receive water.

## Annexure 1: Terms of Reference, Rapid Assessment (Drought) – Bundelkhand

### 1. Background

Uttar Pradesh has been roiled by three successive crop failures due to drought and unseasonal rains. The situation caused by extensive damage to Rabi crop in the month of April 2015 as a result of hailstorm and unseasonal rains and current drought has led to extensive crop damage worsened the life of small and marginal farmers and poor people of Bundelkhand. The successive crop failures have a convulsive impact on people: from worsening hunger to mass exodus of entire villages in Bundelkhand region. Due to the current situation of drought, the evidence of widespread intense crises of food, nutrition, drinking water, health ailments, and fodder for animals is visible in villages, small and marginal farmers are unable to pay off their mounting crop debts, due to recurring crop failure. The crisis of feeding the destitute, especially old persons, women and children has been critical and they are suffering the most in this situation. The state government has declared 50 districts as drought-hit in Uttar Pradesh.

Inter-Agency coordination meeting of UP was conducted to discuss the drought situation in the state. IAG has decided to conduct rapid needs assessment on prevailing drought situation in 5 worst affected districts of Uttar Pradesh

### 2. Terms of Reference:

In the view of above, the terms of reference for mission is provided below:

- To assess the impact of the drought situation in Bundelkhand region in the UP affected and selected districts/villages).
- To assess the Government response to the drought.
- To assess the quantity and quality of the Health System and structure and the capacity of response in case of emergency/outbreak drought related.
- To study the coping mechanisms and resilience response of the population.
- To recommend sector-wise actions for (W&S, Nutrition, Health-Immunization) to the GOUP to decrease the impact of the drought to the affected populations in Bundelkhand region.
- Meeting with key stakeholders to assess the impact of the drought conditions on the population especially on women and children in the worst affected districts.
- An evaluation of the food availability, potable drinking water availability, health and nutrition status of the affected population with clear focus on the needs of children and action taken by the State/District authorities.
- The team should also study the coping mechanisms of the population. Availability of health and social services.
- To assess prevalence of morbidity, mortality and under nutrition by using standardized tools of assessment and the status of immunisation and child health services.
- To indicate the vulnerable areas where quick corrective action can be implemented.
- To recommend IAG support for mitigating the adverse impact of the drought, both in immediate response needs and in mid-term if required.

## Annexure 2: Urban Rural Divide of Low Birth Weight among Children in Drought Affected Districts<sup>11</sup>

S.No	Affected District	Rural	Urban	Total
1	Agra	28.2	30.1	29.3
2	Allahabad	23.7	22.9	23.5
3	Ambedkar Nagar	19.3	11.7	20.4
4	Auraiya	16.6	27.7	15.6
5	Baghpat	32.7	30.1	31.6
6	Ballia	20.2	20.8	21.6
7	Balrampur	14.4	42.5	13
8	Banda	27.1	23.1	26.2
9	Barabanki	24.7	8.8	26.5
10	Basti	10.8	16.7	11.9
11	Chandauli	23.3	28.6	23.3
12	Chitrakoot	15.5	20	15
13	Deoria	12.7	15.9	13.2
14	Etah	31.9	31.6	31.2
15	Etawah	17.6	16.7	18.1
16	Faizabad	13.5	27.4	13.8
17	Farrukhabad	36.9	45.3	35.2
18	Fatehpur	23.7	21.4	22.8
19	Ghaziabad	35.2	19.6	30.2
20	Gonda	12.7	13.7	15.7
21	Gorakhpur	14.7	10.3	16.8
22	Hamirpur	17.3	22.9	17.8
23	Jalaun	12.2	22.8	12.6
24	Jaunpur	12.4	20	12.6
25	Jhansi	9.3	6.4	9.8
26	Kannauj	21.7	20.5	21.9
27	Kanpur Nagar	26	36.1	23.6
28	Kaushambi	20.2	15.4	20.2
29	Kushinagar	26	34.8	25.9
30	Lalitpur	11.2	17.2	10.6
31	Lucknow	25.4	14.9	22.4
32	Mahamaya Nagar	35.9	31.5	35.9
33	Mahoba	14.7	23.6	14.9
34	Mahrajganj	20.5	26.1	19.6
35	Mainpuri	30.9	21	31.8
36	Mau	24.5	23.6	23.1
37	Mirzapur	16.6	23.7	16.3
38	Pilibhit	27.2	18.6	28
39	Pratapgarh	17.8	30.5	18.2
40	Rae Bareli	19.6	30.1	20.1

<sup>11</sup>Information for the district of Amethi is not available, and so, is not integrated in the table.



41	Rampur	36.6	22.9	31.5
42	SantKabir Nagar	12.9	11.7	13
43	SantRavidas Nagar (Bhadohi)	19.9	27.7	20.3
44	Shahjahanpur	29.2	30.1	28.1
45	Siddharthnagar	21	20.8	20.3
46	Sonbhadra	16.1	42.5	16.7
47	Sultanpur	15.6	23.1	15.9
48	Unnao	24.6	8.8	25.5

### ANNEXURE 3: State wise comparison of development indices

Uttar Pradesh is one of the states with high development deficits, with less access to education, health and nutrition; this is compounded by existential poverty and social discrimination. A detailed analysis measuring Uttar Pradesh against other states of the country in terms of multiple indicators (prepared by DRR Section of UNICEF Delhi Office in 2015) shows that the state is in most vulnerable position with high vulnerability and low capacity as shown in the table below:

Area Name	Risk Index	Child Protection	Education	Hazard	Health	Nutrition	WASH
Tamil Nadu	0.13	0.04	0	0.41	0	0	0.34
Karnataka	0.29	0.30	0.41	0.09	0.22	0.49	0.20
Assam	0.32	0	0.32	0.46	0.53	0.60	0
Maharashtra	0.34	0.26	0.25	0.43	0.19	0.60	0.32
Jharkhand	0.40	0.04	0.74	0.41	0.36	0.73	0.14
Chhattisgarh	0.41	0.01	0.47	0.35	0.69	0.85	0.11
Gujarat	0.41	0.09	0.50	0.37	0.56	0.80	0.15
West Bengal	0.41	0.32	0.55	0.52	0.25	0.53	0.30
Orissa	0.44	0.02	0.69	0.25	0.87	0.54	0.28
Andhra Pradesh	0.49	0.64	0.48	0.44	0.51	0.46	0.43
Rajasthan	0.51	0.58	0.61	0.26	0.80	0.49	0.32
Madhya Pradesh	0.59	0.45	0.51	0.40	1	0.74	0.45
Bihar	0.67	0.49	1	0.45	0.44	0.95	0.66
Uttar Pradesh	0.84	1	0.55	0.53	0.93	1	1

