INTRODUCTORY NOTE:

The growing drought situation in India is opening up the greater need to work in an integrated manner, so as to address the livelihoods, livestock and agricultural needs of the people. Initially 167 districts were declared drought affected and later on the number has grown to 246 and presently 253 districts are drought hit. However updated information is available for 246 districts. Some of the states, like Andhra Pradesh, which witnessed the suicides of farmers, have not yet declared as drought hit.

Sphere India, Unified Response Strategy, through this Drought Bulletin is highlighting the drought condition and its impact on various states of India. Sphere URS Team has also mapped the institutions and technical research organizations which are working on agriculture and allied activities. Further bulletins will be highlighting the work of State Inter-Agency Groups (IAGs), humanitarian agencies and Government, in drought relief and mitigation initiatives in the drought hit states of India.

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Introduction:

The Indian sub-continent is predominantly characterized by a tropical monsoon climate and entire regime is distinguished mainly by the differences in rainfall both in quantity and distribution. The most important feature is the regional and temporal alteration of atmospheric flow patterns associated with monsoon. There are two monsoon systems operating in the region (a) the southwest or summer monsoon and (b) the northeast or the winter monsoon.


Droughts in the Indian region are mainly due to various kinds of failures of rains from southwest monsoon. Also there seems to be some association between El Nino and La Nina events and weak monsoons. Over more than hundred years period between 1871-1988, 11 of the 21 drought years were El Nino years. During the 90 years period between 1901-1990 rainfall was sufficient in all 7 strong El Nino cases. The El Nino phase of the Southern Oscillations (ENSO) has direct impact on drought in India which causes weak or enhanced summer monsoon.

The Meteorological Department of India has confirmed that 2009 has been a typical drought year. Till now, eight states have been significantly affected by the drought. S Kaur, Director General at the Meteorological Department declared this in light of the figures for the week ending August 12. During this week, the department registered 27.4mm of rainfall, 56 per cent less than all-India average. The country, on an average, receives 62.7mm of rainfall. Of the 36 weather divisions set up by the department all over India, 31 received scant or deficient rains – this accounts for about 161 of 600 districts.

On a regional basis, North-West India registered a 42 per cent deficiency in rainfall, followed by North-East India which received 36 per cent less rain; the Southern peninsula registered a 22 percent deficit while the Central region registered a 29 per cent shortfall. India which is still a largely agricultural economy is a rain-dependent economy and is heavily dependent on rainfall as a source of irrigation. Deficient rains this year has destroyed some of the sugarcane crop leading to a rise in the prices of sugar. Further, a large amount of winter sown crops, including wheat, that were to be sown in train-fed fields now have to depend on other forms of irrigation such as ground water which is also scarce.

It was hoped that this year even though the rains had begun much later than their usual target of June 1, that the situation would still be manageable. However the month of
June proved to be the driest in about 83 years. The department had been providing rainfall forecasts for all drought-affected areas and had to constantly revise the figures later. Though rainfall did go on to improve in certain regions since last month, rains are still 29 per cent below normal. Eastern UP, Rajasthan, Bihar, Andhra Pradesh and Jharkhand are a few of the States affected by this dire situation. Bihar, in fact is facing the onslaught of a dual tragedy, with floods in the Northern parts of Bihar and drought in the Southern areas. Chief Minister Nitish Kumar declare drought in several regions of the State on Monday.

With such a drought, fears of food crises have also started to surface. While the government has assured that it has sufficient food stocks to tide over any possible crisis, these fears can lead to hoarding of grains as well as the prospect of increased inflation. The department has just reported that there would be heavy showers in the next few weeks over the Central regions and the North-West.

**Salient Features of 2009 Monsoon:**

Although rainfall reached about one week in advance (23rd May, 2009) in Kerala but its advancement to North stagnated soon for about 10 days and again regained advancement northward at fast rate. However, deficit was negative right in the first week of June in the country as a whole as well as in all the four broad regions (Table Below). The rainfall deficit reached maximum in the end of June, temperature also increased above normal, damaged vegetables and reduced milk yield especially of cross-bred cows. The country’s average rainfall deficit decreased from -54% to -19% progressively during July and reached normal only in Central and South peninsula. Drought again intensified after 5th August, 2009 and further forecasts are not very encouraging.

**Week by Week Progress of Monsoon Rainfall 2009:**

<table>
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<th>Period Ending</th>
<th>Country as a Whole</th>
<th>Northwest India</th>
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<td>-73</td>
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The cumulative seasonal rainfall for the country as a whole during June 1 to August 9, 2009 has been 28% below the Long Period Average (LPA). Out of 36 meteorological sub-divisions the rainfall has been excess/normal in 9 cases only, deficient in 24 and scanty in 3. The sub-divisions with deficiency of 50% or more include West Uttar
Pradesh (-53%) and Rayalaseema (-50%). The district-wise status is reported in Table - 3.

**Mapping of Rainfall Distribution:**
Characteristics of 2009 Monsoon:

The monsoon set in early (on 23rd May instead of normal 1st June) at Kerala coast and was a good start.

- The ‘Aila’ Cyclone in the Bay of Bengal disturbed the normal monsoon pattern just after its setting in and discharged the system completely.
- This weakened the early monsoon advance landwards and its progress towards north was tardy.
- Lack of clouds and rainfall, and clear sky in the northern India raised air temperature during the second fortnight of June which damaged vegetables and had adverse effect on milch animals, especially cross-bred cows.
- This year, so far no ‘Westerly System’ has set in the North India and deficit of rainfall continues.
- The rainfall is patchy, scanty and lacks normal vigour in the North India. 
- Droughts have happened in the traditionally flood prone areas of Assam, Bihar and high rainfall areas of Jharkhand, Uttar Pradesh and Himachal Pradesh.
- Drought prone areas of Rajasthan, Gujarat etc. had relatively better rainfall.
- For the first time in the history of drought management, electricity and diesel (energy) are in great demand of the States.

Types of Land in India:
PRESENT STATUS OF DROUGHT:

As on August 21, 2009, 246 of India's 593 districts are declared as being affected by drought. Absent from this list are districts in the states of Uttarakhand, Punjab, Haryana and Andhra Pradesh. The rain deficit is now at least moderate and otherwise severe in most of the meteorological subdivisions that cover these states. There are outright drought conditions in several states including major food grain producing states. The water stocks position is worsening in the country's major reservoirs - these are monitored every day by the Central Water Commission. Already, at the beginning of June, water stocks were under extraordinary stress with a number of India's major reservoirs recording levels under their ten-year lows.

The widespread rain deficit has led agriculture departments in the major states which grow food grain and commercial crops to begin revising estimates for the monsoon sowing season of 2009. Scanty rainfall has delayed the sowing of important crops - including paddy - in Uttar Pradesh, with state agriculture directorate officials already anticipating a drop of 20-30% in yields this season. In the big western state of Maharashtra, the coverage of crop land under cereals has declined 9% per cent, that of all foodgrain is down 5% already and land under oilseeds is down by 6%. The impact on urban India has come swiftly and harshly - retail prices of items in the basic food basket are rising with pulses recording the highest increases in consuming centres all over India. A kilo of one of the staple lentils is now over Rs 100 in several cities, a rise of 50% within a month.

Owing to poor monsoon in the country, India's farm production in the Kharif (monsoon) season could fall by 15 to 20 percent as drought situation has been declared in 252 districts in ten states, said Indian Finance Minister Pranab Mukherjee on Friday.

"Coming to the impact on the Kharif (monsoon) crop, exact quantum will be known only when the harvesting starts. But from the picture of sowing, one can easily estimate that there is likelihood of a shortfall to the extent of 15-20 percent," he told reporters here on the sidelines of a seminar. "Drought is there, rainfall deficiency is to the extent of 26 percent. Presently, 252 districts in ten States have been declared affected by drought," he said.
Elaborating on the same, he said: "In the list of drought-hit states, there are 58 districts from Uttar Pradesh and 38 districts from that of Bihar while Punjab and Haryana were provided with power supply to access underground water so that yield is not affected in these key states."

"Also crop production in West Bengal and Andhra Pradesh is going to be affected but it should be taken into consideration that drought is a phenomenon that needs to be tackled with," he added. The statistics available till August 21 show that 246 districts were declared as drought affected, out of the 600-plus districts in the country. "We have certain areas of concern like drought, inflationary pressure, government borrowing and its consequences on long term funding of corporate sector that need to be worked upon," Mukherjee added.

Drought situation in Andhra Pradesh:

The first reports of drought-related suicides have begun filtering in from the districts. Farmers in the eastern coastal state of Andhra Pradesh are taking their own lives - the toll is said to be 20 farmers over the last 40 days. The state is one amongst many which has so far been forsaken by the South-West monsoon in 2009. Its parched districts have received only 153 mm of rain as against a monsoon normal, till mid-August, of 624 mm. An official with the state agriculture department has called the conditions the worst in 50 years. But the state government has still not declared Andhra Pradesh as hit by drought. Such declarations have in India become politically charged positions that the state ruling is forced to take, instead of being policy conclusions that can quickly bring relief and rehabilitation. The important question is that, the signs were there to see by end-June, so why did state administration and the central government not react weeks earlier?

Government Reaction to Drought Situation:

The central concern is that drought and allied conditions will adversely affect an economy that has showed signs of recovery after last year's global financial crisis. In his August 15, Independence Day address to the country, Prime Minister Manmohan Singh mentioned about the economic growth rate. "Restoring 9% growth is the challenge," he said. For those in the 167 drought-hit districts, growth is not the answer, resilience is, and for that need administrative India has very few solutions. Mr. Singh assured the Chief Ministers that there was "much elbow room" to deal with the drought situation with high stock of grains and multiple livelihood programmes.

The Ministry of Agriculture has issued its notification on providing a distress diesel subsidy - "to enable the farmers to provide supplementary irrigation through diesel pumpsets in the drought and deficit rainfall affected areas to protect the standing crops; this will help in mitigating the adverse impact of drought/deficit rainfall conditions on foodgrain production".
There is also the anticipation, at the central level, that more money will need to be allocated for importing foodgrain, pulses and sugar from international markets. The implication is that the widespread drought declarations will prompt the central government (and affected state governments) to cut back on social sector spending.

Agriculture Minister Sharad Pawar asked the states to start the relief operations in the drought affected districts and clamp down on hoarders to ensure that prices don’t shoot up while describing the year as difficult year for both farmers and consumers.

"This is not the first time we are facing drought situation. Fortunately, there is much more elbow room to deal with the situation. The wheat and rice stocks are very high," Singh said at the day-long Chief Ministers’ conference, where besides drought many other issues were discussed. "We have number of livelihood strategies like NREGA. Resources are there to deal with situation. We will find a practical and pragmatic solution," Singh said.

Pawar said at present there is 29 per cent deficit in rainfall, which is a cause of concern. "Continuation of the prevailing climatic conditions are likely to affect production and productivity of the sown crop adversely, thereby negatively impacting foodgrain availability," he said. He said poor rain is having an impact on prices of food articles, mainly pulses and sugar, causing "considerable hardship". Noting that speculation in the market has fuelled price rise, he said states should make judicious use of powers under the Essential Commodities Act.

"Strong enforcement of the provisions of this Act would deter any unhealthy practice of hoarding and black-marketing and would contribute to the national effort at controlling price rise," Pawar said.

Observing that only 18 states and Union Territories have issued orders imposing stock limits on essential commodities, the minister said "remaining states must also take necessary steps in this regard". The Centre’s directives came after prices shot up amid apprehensions over farm production following a drought-like situation in about one fourth of the country.
The India Meteorological Department, earlier this week, downgraded its rainfall estimate for the four-month monsoon season from 93 per cent to 87 per cent. The Met revealed that the weekly rainfall for the week ending August 12 was 56 per cent below normal. Thus, the first two weeks of August have seen 64 per cent and 56 per cent deficient rainfall. Given the bleak situation, experts believe that this year could result in a drought worse than that in 2002.

An area is said to experience “moderate drought” if rainfall deficiency is between 26 and 50 per cent from normal. Areas where deficiency is more than 50 per cent are classified as “severely drought-affected.” If the area affected by moderate or severe drought comprises 20-40 per cent of the total geographical area of the country and rainfall deficiency in the entire country for the season exceeds 10 per cent, the year is considered to be a drought year for the country. More than 40 per cent of the area under drought conditions results in an all-India severe drought year.

Global Drought Map:
Mapping of Drought Affected India:

[Map showing drought prone states in India with states highlighted: HP, UP, Assam, Nagaland, Manipur, Bihar, Jharkhand, MP, Maharashtra, Karnataka.]
State-Wise Impact of Drought in India:
Mapping of Agricultural Institutions and Sectoral Expertise:
Impact of drought on the economy:

The Food and Agriculture Minister stated that the rice production may slump by 10 million tonnes this Kharif season as drought has plagued over one-third of the country, prompting the government to boost the public distribution system and intervene in the market to curb price rise.

"Shortfall in monsoon may result in a shortfall in area coverage of paddy by about 5.7 million hectares compared with last year and the production of rice may be reduced by 10 million tonnes," Sharad Pawar said, addressing food ministers of states.

India produced 99.15 million tonnes of rice in 2008-09, including 84.58 million tonnes during the last Kharif. The minister observed that the dip in the Kharif output of rice might trigger an upward spiral of foodgrain prices and conveyed the Centre's action plan to counter a rise in rates.

"If required, the government would not hesitate to undertake open market intervention and release of wheat and rice under the open market sale scheme," Pawar said.

This means the government may buy more to build adequate reserves and strengthen the PDS for any contingency. And, Pawar asked states to ensure the purchase of at least half of the total rice procured by private millers for the PDS.

Also, Pawar expected some shortfall in the output of oilseeds and sugarcane due to poor monsoon, which has brought 29 per cent less than the normal rainfall in the country.
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