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# Standardized Precipitation Index statistics for the month of September 2016 and for the southwest monsoon season (June- September) 2016

Standardized Precipitation Index (SPI), is an important and well accepted index for drought monitoring and is based only on precipitation. This index is widely used over different parts of the world as well as included in Word Meteorological Department recommended index for monitoring meteorological drought. This index is negative for drought, and positive for wet conditions. As the dry or wet conditions become more severe, the index becomes more negative or positive. India Meteorological Department is monitoring meteorological drought over India in district scales since January 2013. In addition Standardized Precipitation Index map is also prepared in every week for the use in national level agricultural advisory bulletin of India Meteorological department. The following statistics will provide the moderately/severely/extremely dry/wet situations of the country during the southwest monsoon season 2016.

Fig 1 & 2 give SPI values in different categories for the districts in India during the month of September 2016 and cumulative June – September 2016 respectively. Actual district rainfall for the month of September 2016 is used for SPI computation while the base period of the SPI computation is 1901-2000. The SPI is generated at the end of every month to identify the regions with prevailing or beginning/ending of the extremely/severely/moderately dry/wet conditions.

**Fig 1**

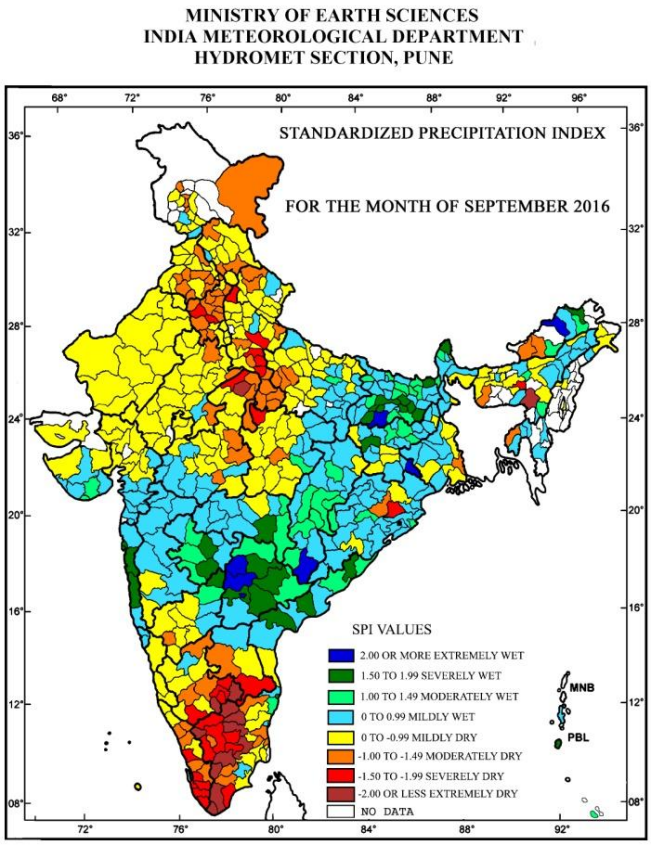
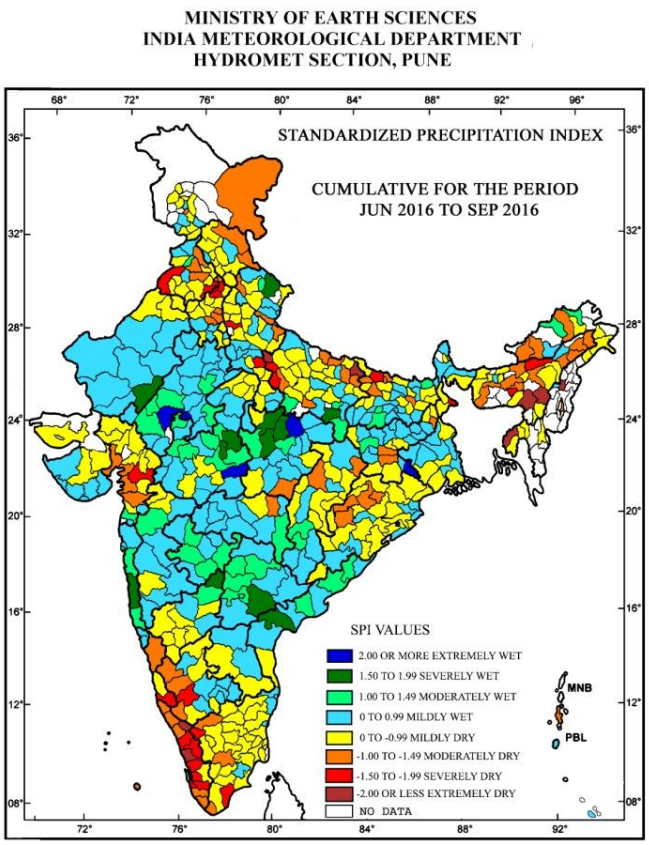



**Fig 2**




During the month of September 2016, Extremely / severely /moderately dry conditions prevailed over **most** districts of Kerala; **many** districts of Haryana, Delhi & Chandigarh, Rayalseema, Tamil Nadu, South Interior Karnataka; **few** districts of West Uttar Pradesh, Punjab, Jammu & Kashmir; **one or two districts** of Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram, Tripura, Gangetic West Bengal, Odisha, East Uttar Pradesh, Uttarakhand, Himachal Pradesh, East Rajasthan, West Madhya Pradesh, East Madhya Pradesh and North Interior Karnataka.

Standardized Precipitation Index (SPI) for the cumulative period June to September 2016 indicates extremely/ severely/moderately dry Conditions over **most** districts of Kerala, Lakshadweep; **many** districts of Assam & Meghalaya, Coastal Karnataka; **few** districts of Andaman & Nicobar Island, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, East Uttar Pradesh, Haryana, Delhi & Chandigarh Gujarat Region South Interior Karnataka; **one or two** districts of Sub Himalayan West Bengal & Sikkim, Orissa, Jharkhand, Bihar, West Uttar Pradesh, Uttarakhand, Punjab, Himachal Pradesh, Jammu & Kashmir, East Madhya Pradesh, Vidarbha, Chhattisgarh and Tamil Nadu.

Table 1 gives the percentage area and number of districts under each category of SPI for the month of September 2016 & for the cumulative period June-September 2016.

**Table 1**

| | September 2016 | | June-September 2016 | |
|---|---|---|---|---|
| **Categories(SPI range)** | **Percentage Area** | **No. of Districts** | **Percentage Area** | **No. of Districts** |
| Extremely wet( 2.00 or more) | 1.41% | 7 | 0.89% | 4 |
| Severely wet(1.50 to 1.99) | 5.11% | 29 | 3.22% | 12 |
| Moderately wet(1.00 to 1.49) | 7.89% | 45 | 10.25% | 46 |
| Mildly wet(0 to 0.99) | 29.35% | 169 | 36.72% | 183 |
| Mildly dry(0 to -0.99) | 40.73% | 219 | 36.26% | 234 |
| Moderately dry(-1.00 to -1.49) | 9.77% | 74 | 8.79% | 70 |
| Severely dry(-1.50 to -1.99) | 3.90% | 29 | 2.66% | 23 |
| Extremely dry(-2.00 or less) | 1.84% | 13 | 0.83% | 8 |

Table 2 gives the area weighted SPI valuesof the States for the month of September & Jun-Sep 2016 calculated from the district SPI values for each state. These values help to define the dry/wet conditions of the states.

**Table 2**

| STATE | AREA WEIGHTED SPI | | STATE | AREA WEIGHTED SPI | |
|---|---|---|---|---|---|
| | **September** | **Jun-Sep** | | **September** | **Jun-Sep** |
| ANDHRA PRADESH | 0.18 | 0.45 | MANIPUR | -0.04 | -1.33 |
| ARUNACHAL PRADESH | 0.60 | -0.30 | MEGHALAYA | -1.88 | -2.17 |
| ASSAM | 0.10 | -0.87 | MIZORAM | 0.17 | -0.25 |
| LAKSHADWEEP | -0.89 | -1.15 | NAGALAND | -0.26 | -1.05 |
| BIHAR | 1.15 | -0.05 | ORISSA | 0.30 | -0.50 |
| GUJARAT | -0.13 | -0.34 | PUNJAB | -0.89 | -0.53 |
| HARYANA | -1.08 | -0.51 | RAJASTHAN | -0.56 | 0.64 |
| GOA | 0.24 | 0.36 | TAMILNADU | -1.44 | -0.53 |
| DELHI | -0.15 | -0.63 | TRIPURA | 0.05 | -0.95 |
| TELANGANA | 1.52 | 0.88 | UTTAR PRADESH | -0.51 | -0.25 |
| HIMACHAL PRADESH | -0.80 | -0.69 | WEST BENGAL | 0.11 | 0.10 |
| J & K | -0.57 | -0.28 | ANDAMAN & NICOBAR | 1.00 | -0.20 |
| KARNATAKA | -0.57 | -0.24 | SIKKIM | 1.33 | 0.30 |
| KERALA | -1.30 | -1.61 | JHARKHAND | 0.54 | 0.05 |
| MADHYA PRADESH | -0.42 | 0.63 | UTTARAKHAND | -0.50 | 0.16 |
| MAHARASHTRA | 0.67 | 0.59 | CHHATHISGARH | 0.89 | 0.05 |

The above table shows that **severely dry** condition over Meghalaya; **moderately dry** condition over Haryana, Kerala, Tamilnadu; **mildly wet** condition over Andhra Pradesh, Arunachal Pradesh, Assam, Maharashtra, Mizoram, Odisha, Tripura, West Bengal, Jharkhand, Chhattisgarh, Goa; **moderately wet** condition over Bihar, Andaman & Nicobar Island, Sikkim; **Severely wet** condition over Telangana and **mildly dry** condition prevailed over rest of the states in the month of September 2016.

Rainfall situation for the cumulative period June to September 2016 indicates **extremely dry** condition over Meghalaya; **severely dry** condition over Kerala; **moderately dry** condition over Manipur, Nagaland, Lakshadweep; **mildly wet** condition over Andhra Pradesh, Madhya Pradesh, Maharashtra, Rajasthan, West Bengal, Sikkim, Jharkhand, Uttarakhand, Chhattisgarh, Goa, Telangana and **mildly dry** condition prevailed over rest of the states.

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