Rain Deficit and Water Stress

Why in news?

Reportedly, nearly 40% of the country is facing an acute paucity of pre-monsoon rain, causing severe water distress in scorching heat.

How is the rain deficit scenario?

- Though summer droughts are very common, the extent and intensity of aridity witnessed this year are rare.
- The rain deficit has been as high as 48% in the southern peninsula, especially Tamil Nadu and coastal Karnataka.
- It is nearly 30% in western India, notably Gujarat and large parts of Maharashtra, and 17% and 12% in the Central and north-east region respectively.
- Shortfalls of 70 to 80% have also been reported from some places.
- The overall countrywide average rainfall between March and May, 2019 remained 23% below normal.

What do monsoon forecasts suggest?

- The rain deficit conditions across the country are a matter of grave concern.
- But the redeeming factor is that the onset of the monsoon is round the corner.
- The rain during the 4-month monsoon season (June to September) is anticipated to be well spread out.
- It is also expected to be quantitatively normal or somewhat below normal.
- The India Meteorological Department (IMD) forecast has suggested rainfall to be likely around 96% of the long-period average (LPA).
- On the other hand, private weather forecaster Skymet has put it at 91%.

What is the concern though?

- The problem is that both IMD and Skymet have forecast that the monsoon would be sluggish/slow to begin with.
- The reason cited for this is the existence of El Nino (warming up of the Pacific Ocean), which often impairs the monsoon performance.
- Also, IMD and Skymet differ on the progression of El Nino.
- The IMD expects El Nino conditions to turn neutral in the second half of the

rainy season.
- But Skymet reckons it to last the whole season, even if in a weaker form.
- So clearly, there is a possible delay in relief from the current water crisis in some areas.

What is a favourable factor yet?

- Of the three main facets of drought (meteorological, hydrological, agricultural), the present conditions conform chiefly to the meteorological drought (rainfall inadequacy).

Drought Type	Impact
Meteorological	Below-average rain or snowfall (precipitation)
Hydrological	Lack of precipitation decreases streamflow, lake/reservoir and ground water levels
Agricultural	Lack of soil moisture/ground water that affects crops/livestock
Socioeconomic	Food/water supply does not meet demands due to lack of water
Ecological	Lack of precipitation impacts native plant/animal species

- Only in some areas, aridity has accentuated to cause hydrological drought, reflected in exhaustion of the surface and groundwater resources.
- The overall hydrological profile of the country is still positive.
- The total water stock in 91 major reservoirs monitored by the Central Water Commission is around 14% above the last year's corresponding level.
- It is 3% higher than the long-period average (May, 2019 data).
- Agricultural drought has, by and large, been averted as the rabi crops have mostly been harvested and the kharif ones are yet to be planted.

What is the way forward?

- An enduring solution to the recurring water crisis largely lies in drought-proofing the vulnerable areas.
- In-situ conservation of rainwater should be a key priority in this regard.
- The need is to construct rainwater-harvesting structures at the field, village and watershed levels.
- Either digging ponds or putting up check dams at suitable sites on the

natural water drainage routes should be taken up.

- This is a time-tested water management practice that has helped people survive even in the chronically arid areas.
- Piecemeal measures as isolated water conservation works under the rural employment programmes can, at best, offer only limited gains.
- So what is needed is a broad-based planning, keeping in view the whole watershed, transgressing village, district or even state boundaries.

Source: Business Standard