Water Management - Agriculture

What is the issue?

- A one-week delay in Indian monsoon has showed the extent of water crisis in the country in recent days.
- The events call for a better water management policy in India, especially in terms of agriculture.

How is India's water use?

- India has only 4% of global freshwater resources.
- But, it has to address the needs of about 18% of global population.
- As per Central Water Commission, 78% of the total freshwater resources available in the country was being used for irrigation in 2010.
- This is likely to be reduced to 68% by 2050.
- For domestic use, it was just 6% in 2010, and is likely to go up to 9.5% by 2050.
- So, by far, agriculture will remain the biggest user of water to produce enough food, feed and fibre in the foreseeable future.
- Therefore, improving water supplies and efficiency in water use in this sector is essential to improve the overall situation on water.

How unregulated is groundwater use?

- **Share** - Of the total of about 198 million hectares of India's gross cropped area, roughly half is irrigated.
- The major source of this irrigation is groundwater (63%); canals account for 24%, tanks 2%, and all other sources about 11%.
- So, groundwater bears the real burden of irrigating Indian agriculture, driven by private investments from farmers.
- **Policy** - The policy of cheap or free power supplies for irrigation has led to an almost anarchic situation in the use of groundwater.
- Power subsidies to agriculture cost the exchequer roughly Rs. 70,000 crores each year.
- Eventually, this leads to unregulated depletion of groundwater.
- **Concerns** - Overall, about 1,592 blocks in 256 districts are either critical or overexploited in this regard.
- In places like Punjab, water table has been going down by almost a metre a

year for almost two decades.
- Almost 80% of the blocks in Punjab are overexploited or critical.

What role does crop choice play?

- Paddy and sugarcane, both water-guzzling crops, take away almost 60% of India's irrigation water.
- One kilo of rice produced in Punjab requires almost 5,000 litres of water for irrigation.
- One kilo of sugar in, say Maharashtra, requires about 2,300 litres of water.
- Estimates vary on how much water the plant really consumes, how much evaporates, and how much percolates back into groundwater.
- But traditionally, say a hundred years back, eastern Uttar Pradesh and Bihar used to be the sugarcane hub.
- On the other hand, rice was grown largely in eastern and southern India, where rainfall was high and water plentiful.
- All that has changed now with new technology and populist policies like free power.

What is the way forward?

- **Political will** - No political party wants to touch rationalisation of power pricing for agriculture.
- Technological solutions, like drip, sprinklers, etc, cannot make much progress either due to policy shortfalls.
- Israel has perhaps the best water technologies and management systems.
- Ranging from drips to desalinisation to recycling (87%) of urban waste water, Israel has much for agriculture.
- But implementing these on ground in India needs much political will.
- **Pricing** - For the above technologies to make its potential progress, pricing has to be regulated.
- One way out is to give farmers monetary rewards for saving water and power.
- **Crops** - There could be income support on per hectare basis (say, Rs. 15,000/ha) for less water-guzzling crops.
- E.g. maize or soyabean in Punjab during kharif season
- This would save power subsidy and, more importantly, precious groundwater.
- At least one million hectares of paddy cultivation needs to shift away from the Punjab-Haryana belt to eastern India.
- Eastern India can develop better procurement facilities for PDS system for paddy.
- Procurement from Punjab-Haryana needs to be discouraged/curtailed.

- Similarly, sugarcane needs to be contained in Maharashtra and Karnataka belt and expanded in UP/Bihar belt.
- With new Co238 varieties that give recovery rates of more than 10.5%, sugarcane can be developed for ethanol from this belt.

Source: Financial Express