PM-KUSUM Scheme

What is the issue?

- The Ministry of New and Renewable Energy (MNRE) recently rolled out a massive solar-pump programme called the PM-KUSUM scheme.
- Here is an overview of the implications of the scheme and the necessary changes to be made.

What is the scheme about?

- The Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM) scheme has a target to set up 25,750 megawatts (MW) solar capacity by 2022 to power irrigation pumps.
- The approved scheme comprises of three components:

i. setting up of 10,000 MW of decentralised ground / stilt-mounted grid-connected solar or other renewable energy based power plants
ii. installation of 17.5 lakh standalone solar agriculture pumps
iii. solarisation of 10 lakh grid-connected solar agriculture pumps

- It comes with central financial support of close to Rs 34,000 crore.

What will be the incremental change?

- 25,750 MW solar capacity can power about 11.5 million 3 HP (horsepower) pumps or 7 million 5 HP pumps.
- [At present, nearly 30 million irrigation pumps are estimated to be operating in India.
- Of this, 21 million are electric and 9 million are diesel-based.]
- The KUSUM scheme can potentially convert one-third to one-fourth of all irrigation pumps into solar-powered pumps in a short period of 3 years.
- This rapid transition is possible as the scheme makes buying pumps extremely affordable for medium-sized and large farmers.
- It comes with 30% subsidy from the central and state government each, and there is a provision to take bank loans for 30% of the cost.
- So, farmers have to shell out only 10% of the cost to buy solar pumps.

What are the benefits?

- The scheme is good to increase farmers' income in the short term.

- As solar power is cheaper than diesel off-grid, solar pumps will reduce the cost of irrigation significantly.
- The effect is substantial in states like Bihar where farmers largely use diesel pumps.
- This will allow farmers to grow more crops (even the water-intensive ones), at a lower cost of cultivation, thereby increasing income.
- In Punjab, electric pumps dominate and the power subsidy to the agricultural sector is about Rs. 7000 crore annually.
- So, solarisation of agriculture feeders will reduce the subsidy burden significantly.
- Farmers' income will also be augmented by selling electricity from solar plants on to the discoms.
- The most important part of the solar pump is that the solar cycle matches the irrigation cycle.
- So, farmers will get assured irrigation for at least 6 hours during day time, and they do not have to remain awake at night to irrigate their farms.
- [As grid supply is more assured at night in most states.]

What is the need for caution?

- Agriculture in India has become increasingly dependent on groundwater for irrigation.
- Nearly 90% of India's total groundwater draft is used to irrigate 70% of the country's total irrigated land.
- This has helped increase productivity and farmer income.
- However, it has also led to massive overexploitation of aquifers.
- Both the quality and quantity of groundwater are depleting at an alarming rate, and the condition of aquifers has reached a crisis point.
- The problem of overexploitation of groundwater is driven by the availability of subsidised (often, free power for irrigation).
- This creates little incentives to use power or water efficiently.
- States like Punjab, Haryana, TN, etc, with very low tariffs for agriculture, have the highest share of semi-critical, critical and overexploited aquifers.
- This is unsustainable in every aspect, including the long-term future of farmers and food security of the country.
- In this context, there is an inbuilt cost factor in diesel pumps, due to the cost of diesel, that restricts wasteful use of water.
- Replacing these with the far cheaper off-grid solar pumps, with no running expenses, has a high possibility of overuse, leading to groundwater depletion.

What are the shortfalls in KUSUM scheme?

- In the above context, the KUSUM scheme has also not provided any provision to utilise surplus power from off-grid pumps to light rural homes and businesses.
- In the case of solarisation of agriculture feeders, the subsidy burden for states is also likely to reduce significantly.
- So state governments have even less incentive to increase agriculture tariff to conserve water and hence, gross overexploitation of groundwater is likely to continue.
- Overall, the KUSUM scheme fails to promote efficient irrigation and incorporate explicit and strict measures against groundwater exploitation.
- The scheme only explores the possibility of its convergence with state-level schemes for promoting the micro-irrigation systems and energy-efficient pumps.
- It does not mandate the same.

What does this call for?

- The current practice of overexploitation of groundwater for irrigation has to be changed, with high priority.
- If this is not done, the World Bank predicts that around 60% of the aquifers in India will be in a critical state by 2032.
- Large-scale deployment of solar pumps, without a comprehensive plan to monitor and control water usage, is likely to make this prediction a reality.
- The KUSUM scheme will thus have to be redesigned and positioned as a water and agricultural scheme, and not merely as a renewable-energy scheme.

How can this be done?

- The central government could push massive irrigation reforms in states through the KUSUM scheme.
- It should only be extended to states willing to take strong measures to improve irrigation efficiency and control exploitation of groundwater.
- Secondly, it must mandate micro-irrigation for solar pump beneficiaries.
- Groundwater extraction must be closely monitored and strict mandates on pump size and bore-well depth must be set.
- Supporting low water-intensive crops in water-scare regions, too, is crucial.
- Deployment of off-grid solar pumps must be restricted to areas where the grid has not reached and groundwater is abundant.
- Even in groundwater-abundant areas, off-grid solar pumps must be used for rural electrification.
- Otherwise, it should be developed into community-based water sale models to maximise utilisation and reduce water wastage.

- Solarisation of rural feeders should be accompanied by a gradual increase in electricity tariffs.
- This is crucial to control groundwater exploitation and reduce the burden of agricultural subsidy.

Source: Financial Express