Vetrii's



EDITORIAL

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FROM PLATE TO PLOUGH: IN THE SHADE OF SOLAR TREES

Context:

➤ The recent statement of our Finance Minister about transforming Annadata (farmer) into an Urjadata (producer of solar power) in her maiden Budget speech.

Introduction:

- ➤ Agriculture sector accounts for 18 per cent of India's GDP and provides employment to 50 per cent of the workforce of the country.
- The Gross Value Added by agriculture, forestry and fishing is estimated at Rs 17.67 trillion (US\$ 274.23 billion) in FY18.
- ▶ India's soul resides in its villages. However, huge distress has hit the Agricultural sector due to environmental impacts, policy paralysis, debt trap etc.
- ➤ This has led to large amount of farmer suicides across the country particularly in the Deccan plateau.
- ▶ In this response government has set up Ashok Dalwai Committee- for active balanced regional development and to get rid of the ongoing farm distress by 2022.

Statistics Related to Farmers Income in India:

- >> The average monthly income of the Indian farm household was estimated to be about
- ▶ Rs.6,426 by the Situation Assessment Survey of Agricultural Households.
- ➤ This included net receipts from cultivation, farming of animals, non-farm business and income from wages.
- ➤ During the same period, the average monthly consumption expenditure per agricultural household was Rs 6223.
- ▶ Farmers are mostly dependent on loans and the NSSO survey revealed that half of the farm households were neck-deep in debt.
- ➤ As per the Agriculture Census 2010-11, 67.10% of India's total farmers are marginal farmers (below 1 h.a.) followed by small farmers (1-2 h.a.) at 17.91%.
- ▶ Indian agriculture is dominant by marginal farmers who have small holdings. So, raising productivity of this group is most important, if farmers income has to be doubled.

Steps to Augment Farmer's Income:

- Recently, two interesting things happened that can help Indian farmers to a large extent in augmenting their incomes.
- ▶ First, the Union Finance Minister in the budget speech has suggested the transformation of Annadata (farmer) into an Urjadata (producer of solar power).
- Second, in Parliament, the government admitted that the existing set of policies cannot double farmers' real incomes by 2022.
- So, it is of the general opinion that the government will not able to achieve even half of the target with the existing set of policies.
- ▶ So, in order to make the dream of doubling the farmers' income by 2022 to come true, the remaining four years require real incomes of farmers to grow by 13-15 per cent per annum.
- ➤ The government has also set up a committee under the chairmanship of Ashok Dalwai to inquire and give recommendations on the above issue.

Ashok Dalwai Committee:

- ➤ The Committee clarified real incomes will need to be doubled over seven years (over a base income of 2015-16), which requires a growth rate of 10.4 per cent per year.
- ➤ The Committee submitted its final report in September 2018. It comprises of 14 volumes (almost 3,000 pages) and 619 recommendations.
- These volumes contain a wealth of information, but it is doubtful that any government can implement 619 recommendations even in five years.
- ➤ So, it is better to bring in a summary of 14 volumes in 20-25 pages, and prioritise just five to 10 recommendations from a laundry list of 619, so that it is feasible for the government to implement it.

Shortcomings of Existing Model of Augumenting Farmer's Income:

- ➤ The current government has set a target of producing 100 GW of solar power by 2022. It wants the country to be one of the frontrunners in the International Solar Alliance for clean energy.
- So far, the model that has been adopted to develop solar power is inviting bids from large business players.
- ▶ Numerous multi-national companies and huge business men have entered the field following the bidding process.
- They involve in setting up of large solar panels in farmers land and obtain solar power as one of their strategy.

- ➤ Some of them, who entered early into power purchase agreements (PPA) with state governments, had to burn their hands when the costs came down and state governments forced them to revise the costs of PPA downwards, upsetting their economic calculations.
- But this model of generating solar power was not very inclusive. The land is locked for solar panels for almost 25 years, and the benefits goes only to a few investors.
- ➤ The alternative model is to help farmers produce solar power on their lands, making annadata an urjadata.

Annadata Becoming an Urjadata:

➤ The recent statement of Finance Minister on doubling farmer's income is the idea of making the annadata an urjadata. This model will be much more inclusive and can help augment their incomes significantly. The two variants of this are:

1. Replacing all pump sets with solar pumps

One, replace all pump-sets, especially diesel ones, with solar pumps and the excess power generated through solar panels can be purchased by state governments at a price that gives the farmer a good margin over his cost of producing solar power.

2. Growing solar trees

- Second, encourage farmers to grow "solar trees" on their lands at a height of about 10-12 feet in a manner that enough sunlight keeps coming to plants below.
- Under this variant, the farmer can keep growing two irrigated crops as he has been doing, but the solar tree generates a lot of excess power that can be purchased by the state government.
- The power generated under the second variant is multiple times more than under the first variant, and therefore the income augmentation can also be several times more than under the first variant.
- ➤ A global survey by ICRIER had found that this method is being practised in many countries from Japan to China to Germany, and India is ripe for this.
- ➤ The problem is of mobilising enough capital to install these solar trees. In one acre you can have 500 solar trees in such a manner that even tractors can move through those and farmers can keep growing their normal two crops.
- ▶ It does not impact their productivity as there is ample sunlight coming from the sides for photosynthesis. The second pre-condition is that the state should be ready to do the power purchase agreement.

Model Implementation in Delhi:

➤ The Delhi government is planning to implement it in Delhi's agri-belt as a demonstration plot and has also announced a policy to that effect.

- ➤ As per their calculations, 500 trees can be put on an acre of farmer's land; the investment in solar panels (trees) will be done by other business people.
- ➤ The only thing that the farmer has to assure is that for 25 years he will not convert his land to other uses.
- ➤ The economic calculations suggest that farmers can be given Rs one lakh/acre per annum as net income, with a six per cent increase every year for the next 25 years.
- This can easily double their income. He does not have to mobilise capital for solar panels.
 That is done by other business, who also make profit in the process.



Conclusion:

- ➤ Since the power consumption per hectare (as shown in the graph) in Indian agriculture is very low and the above model holds great promise for several poorer states.
- ▶ But the ongoing tariff war and the imposition of safeguards duty on solar panels is becoming a growing challenge.
- ▶ Innovative Financing measures such as clean energy fund, generation-based incentive linked loan repayment and green bonds could give a financial boost to the successful implementation of this model.
- ➤ Reform in the Agriculture sector is most instrumental to effectively improve the lives of the farmers, to improve their lives and to bring economic stability by giving them a sense of security and hope.
- ▶ However, they have to effectively planned and implemented at various levels with multifaceted approach to achieve the desirable and feasible target.

Source: Indian Express