Subsequently, the Prime Minister also stressed upon the importance of infrastructure and creating jobs in a cleaner environment. Subsequently, the operation of SBI’s first experiment flight took off from Delhi to other parts of India, with a combination of 25 per cent jet fuel blended with 75 per cent biodiesel produced by the government-owned corporation.

All said and done, the overall scenario is not too promising. The limitation of the bandwidth of hilly and mountainous areas to three per cent only. While India has a potential for renewable energy, its development is constrained by obstacles such as the lack of access to infrastructure and the need for investment in a cleaner environment.

There are several factors behind India’s dismal performance. Since neither the market size nor the competitive advantage is present, India has not been able to exploit the potential of its large population and vast landmass. However, with the government’s emphasis on infrastructure and job creation, India has the potential to become a significant player in the global energy sector.

First, the state has to act as a facilitator for the development of the biofuel sector and provide incentives to support the producers of biofuels. Second, it has to act as a regulator, defining rules of the game, ensuring adequate incentives for all stakeholders to remain long-term players as needed for the proper functioning of the market.

Third, it has to act as a strong buyer to not only produce the commodity but also create examples and demonstrations for others. It also requires development of efficient institutions and communication among various agents to incentivise the farmers and other stakeholders. Nevertheless, these tasks are delicate and time-consuming. To be commercially viable, the development of the biodiesel sector hinges on how effectively the state performs these tasks and, thus, helps overcome the main constraints, as discussed above. Given the state of progress in this sector, it seems that the state has performed poorly in fulfilling these commitments.

The unique aspect of India’s biofuel programme is the use of under-utilised and degraded land to cultivate feedstock for biofuel. Although there are several sources of feedstock for biofuel, such as tree-based oils (TBOs), edible vegetable oil, animal fat and algae, the Indian government has emphasised on TBOs in its biodiesel programme of 2003, and selected jatropha as the predominant plant variety.

Subsequent efforts by the Indian government have allowed the producers to choose any TBOs that will not affect future crop production. TBOs are planned to be cultivated in the wastelands, fallows, degraded lands, roadsides and across railway tracks, along forested areas, and as fencing in farmlands.

It appears that there is no need to worry about the stagnation of the jatropha cultivation as a current issue. The vegetable oils are being used by farmers for grazing animals or for collecting fuel oils or for minor crops. Bringing government and commercial land into plantation should ensure that the TBOs’ livelihood is not affected, and if so, alternative mechanisms should be developed to satisfy their needs. Of course, it would be appropriate to involve them as one of the stakeholders.

There are instances of Joint Forest Management Programmes where local land users were not selected as members but those with influence in the Parshant family became members. In case of small farmers who are already using their wasteland for some income generation, diverting it for plantation purpose may not provide higher income for the future and current level of earning for initial three years. Rural Landscapes Employment Guarantee Programme (RLEG) is a good initiative, in this direction for current earnings.

To raise confidence and ensure future income of the farmer, the government needs to demonstrate the yield is one of the major constraints in biodiesel production. Further research and development for new and high-yielding plant varieties are the most important tasks for the government not only because of their substantial potential but also because of their higher income expectation. The state has made several arrangements for R&D and field trials involving almost all major research institutes and universities of the country for the development of jatropha plantations.

Based on these initial experiences with jatropha and the infrastructure created, researches should be extended to other TBOs focusing on developing locally grown jatropha.

In other words, it is high time to broaden the biodiesel programme to include every possible TBO with an emphasis on using and developing local varieties. The newly approved biofuel policy has taken a right step in this direction. Efficient institutions capable of linking TBOs to the demonstration of plants to farmers, disseminating the right kind of information about planting practices, risk and returns as well as designing the right kind of incentives are very much essential for the success of the biodiesel programme.

Finally, multiplicity of value chain organisations need to evolve to foster in biodiesel production. The state is involved either as a part of the value chain or as a catalyst for its formation, or both. In a number of these value chain organisations, there exists a problem of incentive alignment. Thus, the biofuel ecosystem needs to mature before India can garner the fruits of biofuel sector.

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