Chapter 12
Two First Generation Biofuel (Biodiesel, Bioethanol) and Sustainability: Some Other Realities for India and Trade Patterns

ABSTRACT

In developing countries like India, two first generation biofuels have been mostly discussed within the policy discourse. These are biodiesel and bioethanol. However, production of these two fuels can impact the economic, social and environmental domains of sustainability in different ways. Globally, bioethanol trade is also happening that is creating income generation for the exporting countries and generating dependence on alternative fuels for the importing countries. For the importing countries, it also implies a reduction in the fossil fuel import bills thereby raising some fiscal savings. Therefore, the trade pattern of first generation biofuel affects the economic segment of sustainability for the exporting and importing countries. Moreover, environmental standards are also being imposed on biodiesel and bioethanol trade within the international trade regime under the parlance of World Trade Organization. At the same time, domestic production of first generation biofuels in countries like India also might impact the economic, social and environmental domains of sustainability. The chapter is a reality check on these issues posing the reader towards more questions to explore in future.

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INTRODUCTION

The Indian economy faces the challenge of increasing demand of energy for meeting its economic growth. India ranks sixth in the world in terms of energy as shown by the comparative graph depicted in Figure 1.

As evident from the graph above, (International Energy Agency, 2005), India has a per capita energy consumption of 482, in comparison to USA of 8159 and the world average of 1671 Kgs of oil equivalent per capita (Fouis-Jean, 2001). On the supply side, indigenous production of commercial energy in India, increased at an annual average growth rate of about 5.3% between 1980 - 2000. The major energy supply of energy has primarily come from coal. But the share of oil and gas in the country’s primary energy production has increased from 17% in 1970/71 to about 28% in 1999/20001. On account of production constraints, it is predicted that the coal availability is likely to be well below demand in future. The Working Group on Coal and Lignite for the Tenth Five-Year Plan gives a supply estimate of 400 MT against a demand of 453 MT (million tonnes) by 2006/07. Figure 2 highlights the increasing reliance on imports for meeting the demand for coal and oil in India.

The pattern has stayed similar even at 2013, (TERI Energy Data Directory & Yearbook [TEDDY], 2005-06) and India’s oil import dependence is expected to increase (TERI Energy Data Directory & Yearbook [TEDDY], 2005-06) and the greatest increase in the energy demand occurs in the transportation sector, where more than 90%2 of the demand is met by crude oil. In 2003-04, India was 70%3 import