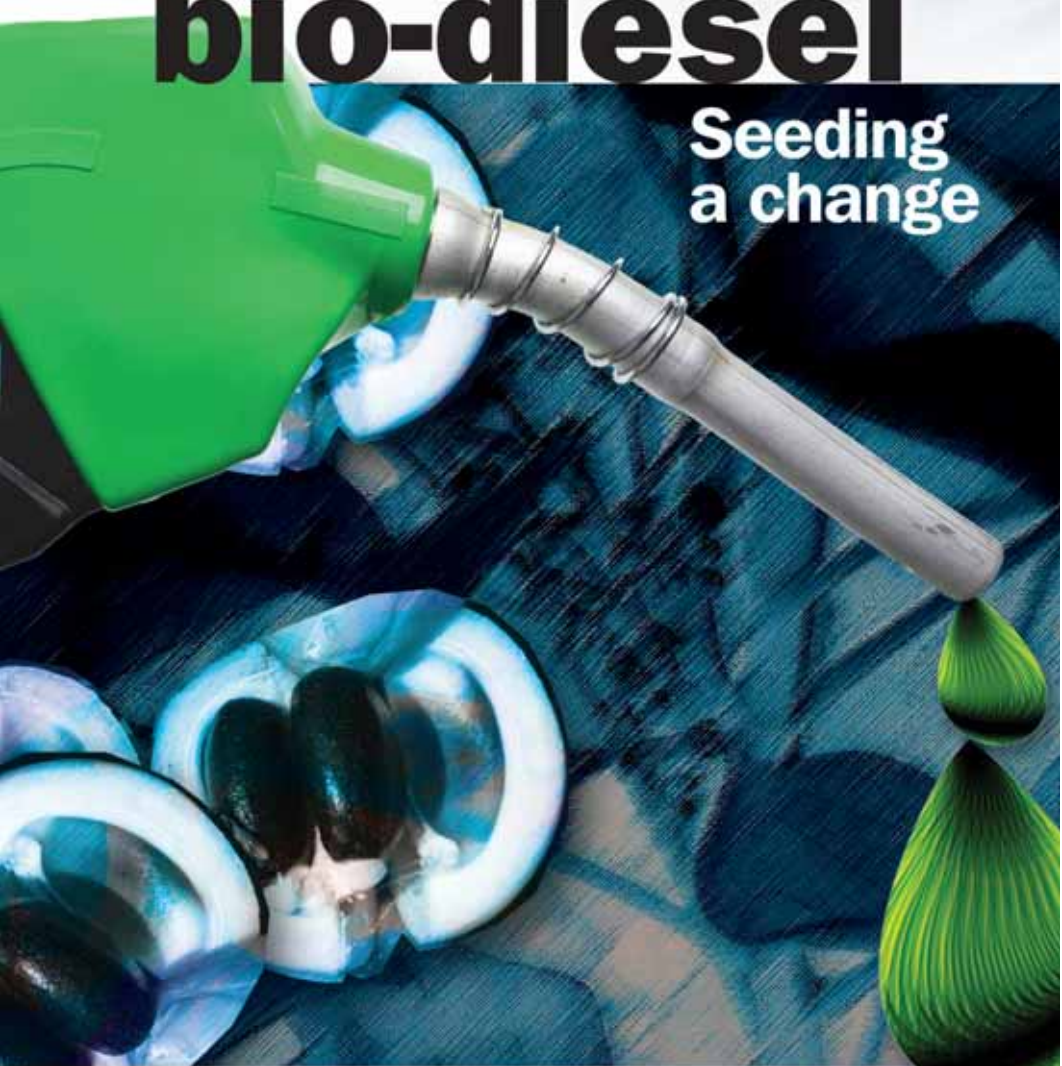


Production and technology of bio-diesel

Seeding
a change



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Foreword

Bio-diesel and the current practices for producing it are receiving worldwide attention, and much more so in view of the global food crisis that has resulted in sharp increase in prices all over the world. There are now questions being asked whether current efforts to divert the output of several crops from food to production of fuels are really in the interest of society. Particularly prominent examples of practices receiving widespread criticism are the US programme for producing ethanol from corn and the diversion of palm oil to produce liquid fuels in South East Asia in particular, which in some cases is leading to large-scale clearing of forest cover.

As a concept, the development of bio-diesel solutions has unexceptionable merit. Oil prices are at record levels today and the world urgently needs alternatives that would not only bring about greater energy security on a global basis, but also help to reduce the greenhouse gas emissions, which have resulted in climate change on an unprecedented scale. The argument for producing substitutes like bio-diesel is not only based on physical scarcity of fossil fuels. The fact is that this scarcity has major economic fallout such as skyrocketing fossil fuel prices and their implications for economic growth and the well being of the poorest communities in the world. As has often been said, the Stone Age did not end because there were no stones. This happened essentially because better substitutes became available over a period of time, which reduced the value of stones for all the applications in which they were used earlier. Similarly, while there is the danger of the world running

out of petroleum, the development of substitutes would help in enhancing energy security because there would otherwise be the danger of unusual increase in the price of fossil fuels, which could disrupt the existing pattern of producing and using goods and services in different parts of the world.

Apart from energy considerations, the progress in the field of biofuels has also been brought about by growing concerns on climate change and the need to develop production and distribution cycles of fuels, which minimize emissions of greenhouse gases. Biofuels, if managed on a sustainable basis, could theoretically lead to very low emissions of greenhouse gases in the entire production cycle. There would, of course, be co-benefits in the nature of local opportunities for employment generation, since production of biofuels can generate labour-intensive production opportunities, which would help to generate employment in the process of production, refining, and distribution of these fuels. Another major benefit from biofuels is that solutions can be developed with respect to poor quality land, which would ameliorate soil quality over a period of time. In India, for instance, there is an extensive area of wasteland, which can provide substantial benefits to communities located in and around these areas through the cultivation of crops that are meant specifically for bio-diesel production. If the right choices are made, local benefits from biofuels can be substantial.

This book covers a range of important topics related to the production and use of bio-diesel. It surveys, first, the scene and provides an assessment of the current status. It then discusses production of raw materials for bio-diesel and the technologies related to their use with a detailed economic and financial analysis. Additionally, the book assesses the limitations and gaps in the manner in which programmes are being pursued both in respect of technology policy and legal aspects as well as market failures. The conclusion

section is particularly important in bringing together the analysis presented in previous chapters.

Overall, therefore, at a time when there is a heightened interest in biofuels production and use, this volume provides rich and practically relevant knowledge, which would help to carry forward the debate on the subject in the right direction. It would also hopefully create a base for policies and actions to provide biofuels options that are truly sustainable.



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