

FOREWORD

In our fight for a global cleaner environment, the Dutch Ministry of Environment invests in various ways to achieve GHG emission reductions within the framework of sustainable development. Local production and utilization of biofuel such as derived from the Jatropha plant can be contributing to achieving these goals through enhancing income in agriculture, the provision of energy, and positive environmental impact. Jatropha seeds can be converted into energy carriers such as oil or biodiesel, electricity and biogas. It can assist in rural production, transforming raw agricultural products to added value marketable products, energy generation for irrigation and conserving land from erosion. As such, Jatropha displays a wide potential of applications. In this handbook however, the focus is on the energy uses of Jatropha.

Drivers for increased use of biofuels such as Jatropha, are local employment, energy security and climate change mitigation. The Jatropha plant increases above ground and underground biomass and hence fixes CO₂ as carbon. At the same time the Jatropha nuts can be used for biofuel production, thereby reducing the need for fossil fuels. An additional positive effect is that Jatropha can be used in a local renewable energy system that allows local small holders to generate income on energy, rather than having no other option than to pay for fossil fuels. Although Jatropha cannot solve all problems related to energy in developing countries, it is likely to be one of the most promising biofuel crops, that would also contribute to sustainable agriculture and improved livelihoods.

Although agricultural production in most developing countries can be intensified (more output per ha) by a factor 2 to 4 using proven technology, this has not happened due to inadequate agricultural policies in many countries as well as disappointing investment levels in agriculture. For local use Jatropha can be well combined with agricultural production, where improved food production combined with Jatropha can generate more output on a hectare basis, as a badly managed food crop alone. Jatropha emerged as a highly interesting biofuel some 15 years ago and expectations were high. Over the last years, many studies from Jatropha plantations give us a better idea on what the plant can yield under which conditions.

This book aims to provide the reader with useful information to appraise Jatropha as a biofuel in the realm of biofuels. It covers all aspects (technical, organizational, financial) from Jatropha planting to conversion to electricity or biodiesel.

This book is dedicated to the late professor Kees Daey Ouwens, who established the FACT Foundation, and in who's honor I have created the Daey Ouwens Fund. He was a pioneer in this field, has explored ways to practically make a difference by using locally produced biofuels based on careful research with respect to local circumstances. It is with this approach in mind that I wish you well with making a difference.

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke extending to the right.

Dr. Jacqueline Cramer,
Minister for the Environment
of the Netherlands