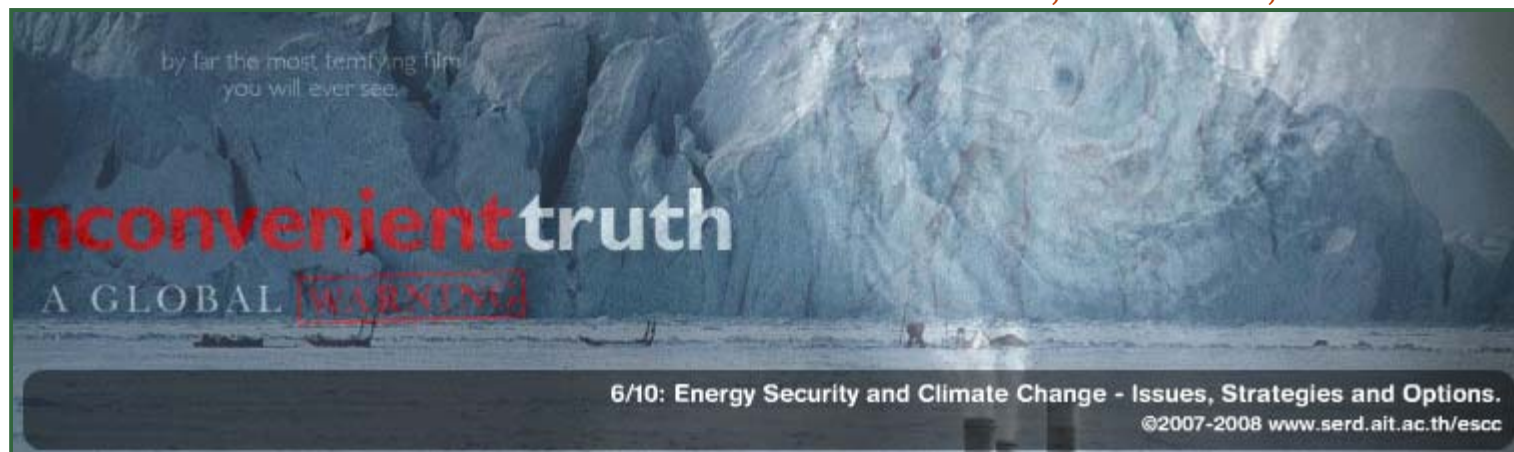


ENERGY SECURITY AND CLIMATE CHANGE

ISSUES, STRATEGIES, AND OPTIONS

6-8 August 2008
Bangkok, Thailand



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1. Title: GHG reduction potential of biofuels in Asia: Issues and policy implications
2. Authors: Prabhakar SVRK, Mark Elders
3. Abstract: Biofuels have attracted significant interest because of their potential to reduce GHG emissions, but the extent to which they can actually do so has not been clearly determined. Nevertheless, many countries in the region have either started producing or have plans to produce bioethanol and biodiesel, and have set long term targets for them to replace considerable amounts of fossil fuels. These policies mainly motivated by a desire to enhance energy security and promote rural development, as GHG emissions reduction is not a high priority for many Asian countries. The current paper addresses the question of whether the biofuel promotion strategies of the countries in the region are likely to achieve GHG reductions. In order to do this, it will analyze existing life cycle analysis (LCA) studies, mainly conducted outside of Asia and comparing the parameters with conditions in the Asian region in order to determine how the results obtained for Asia would differ from the results obtained outside of Asia. In Asia, biofuels are produced from a wide variety of feedstocks, including some that are also cultivated in western countries, such as corn and spent cooking oil, but also several that are not, such as sugarcane, palm oil, jatropha, cassava, and coconut. Most the LCA studies were conducted based on conditions in western countries, where biofuel production is based on agricultural production practices that are typically characterized by the high input use efficiency and high productivity of agricultural crops. Many of these studies also assume best management practices. There are very few LCA studies carried out in the Asian context. However, the relevant conditions are different in Asian region, for example in terms of input use efficiency and productivity. Since fertilizer, water and energy input use efficiency and crop productivity are important determinants of GHG emissions and net energy values of biofuels, we argue that, there is a possibility that the countries in the region may not be able to achieve the GHG reduction potential of biofuels reported in the literature. Inputs such as water, fertilizers, energy and labour would have to be managed more carefully than it has been done in the region if countries want to achieve the full potential of biofuels, not only GHG emissions reduction but also energy security, economic development, in a cost effective manner. The current level of energy efficiency in agriculture (unit amount of energy used to produce unit amount of output) in the region is still below world standards. In addition, fertilizer use, which has been one of the important contributors to GHG emissions in biofuel production, would have to be strictly managed. Policy options those promote high input use efficiency would have to be put in place. Any certification system to be put in place should consider the amount of inputs used and their efficiency to produce biofuels. There is a need to promote thorough life cycle analysis of all important feedstocks in the region covering all agro-ecological zones in the region to arrive at realistic estimates of GHG reduction potential of biofuels.
4. Main topic: Biofuels

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