1.2 GLOBAL SURVEY OF BIO-ETHANOL PRODUCTION

Bio-ethanol is an alcohol made by fermentation, mostly from carbohydrates or starch crops such as corn, sugarcane, or sweet sorghum. In 2010, worldwide bio-fuel production reached 105 billion liters, moving up 17% from 2009, and bio-fuels has been recorded to provide 2.7% of the world's fuels for road transport. Global ethanol fuel production reached 86 billion liters in 2010, with the United States and Brazil as the world's top producers, accounting together for 90% of global production.[8]

However, the use of bio-ethanol as fuel has led various social, economic, environmental and technical conflicts, which include: the effect of moderating oil prices, the "food vs fuel" debate, poverty reduction potential, carbon emissions levels, sustainable bio-fuel production, deforestation and soil erosion, loss of biodiversity, impact on water resources, the possible modifications necessary to run the engine on bio-fuel, as well as energy balance and efficiency. However, the numerous advantages of bio-ethanol over fossil fuels have made its use almost inevitable. The major advantage being that bio-ethanol is produced from a renewable resource i.e. crops and not from a finite resource. Also, its use leads to drastic decline in greenhouse gas emissions.[9]