The further development and expansion of bio-energy will affect food security. It is feared that the financial stimulation for the cultivation of biofuel crops will lead to a competition of "land for biofuel" with "land for food". This in its turn will have an influence on the price of raw material. This already appears to be the case for corn: in 2006 and the first months of 2007, the price was higher than previous years. Price increases have also occurred for sugar, rapeseed oil, palm oil and soybean.
The trade of raw material, both import and export, will be harmed.

Scientific research concluded that up to 30 % of the demand of fuel could come from biological sources, without influencing food production. Therefore a switch to more efficient biofuel sources is necessary: by-products from food production or crops such as willow, jatropha, ...

The energy yield for coleseed for example is 1,3 whereas for willow wood (with utilization of the produced heat) this is 5,6[1]. The Belgian government calculated that if the present level of fossil fuel consumption should be replaced by biofuels, three times the total surface used for food production would be needed.
Jatropha isn't a well known biofuel, like corn or sugar cane, but when it comes to producing biodiesel, Jatropha may have the highest energy payback of any biofuel. Moreover, unlike corn or sugar cane, Jatropha is a perennial, yielding oil seed for decades after planting, and it can grow without irrigation in arid conditions where corn and sugar cane could never thrive. Over half of the land in Africa is considered suitable for Jatropha cultivation. If only 2% of that land was used to cultivate Jatropha, it would yield as much oil per year as U.S. oil companies expect - best case - to remove from Alaska's north slope over the next 20 years. And after 20 years, these fields of Jatropha would still be producing oil, whereas the Alaskan oil fields would be dry.

The biofuel crops that are generally promoted in Europe – beetroots, wheat and coleseed – have a low yield (energy yield per ha). This means that the demand for arable land will rise. Not only will this translate in higher prices for other raw material but also in the usage of the few nature reserves left in Europe.
A recent study published in Science stated that the amount of fossil fuels needed to produce bio-ethanol from beets is almost as high as the energy yield from bioethanol. Most biofuel crops demand a lot of water, which is becoming a scare resource. An increased use of fertilisers and pesticides can also be expected.

Micro-algae are being considered as an alternative biofuel source. Unlike corn or other biofuels, algae can be harvested daily and can produce 100 times more oil per ha than conventional crops. However, this is a water-intensive process.

It is also feared that biodiversity will suffer from biofuel crops. Power stations produce electricity using for example palm oil in order to obtain a green power label. For the production of palm oil vast areas of tropical rainforest are cut down in Malaysia and Indonesia. The use of palm oil as biofuel ousts its use as a food product. A higher demand as biofuel means a higher price for palm oil as a food product. Also the value of farmland rises, which leads to a higher risk of tropical rainforest being cut down.
An example is Brazil. Since the 1970's the Brazilian government has promoted sugar cane as a source of bio-ethanol. The huge demand for sugar cane has lead to large scale and almost

[1] Advies duurzaamheidsaspecten bio-energie, MiNa-raad 28/05/205

fully automatic plantations run by rich industrial farmers while more and more small farmers life in poverty.
Further, the recently published Stern Review[2] states that deforestation accounts for 18 % of the total emission of greenhouse gasses.

Key factors to be considered when selecting crops for biofuel production include economic viability, suitability for different biofuel applications, yield for hectare, input requirements, yield increase potential, crop versatility, drought and pest resistance potential, competing uses, price volatility, opportunity costs,…

[2] Stern Review Report on the Economics of Climate Change, 2006, www.hmtreasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm