

This response was submitted to the consultation held by the Nuffield Council on Bioethics on *New approaches to biofuels* between December 2009 and March 2010. The views expressed are solely those of the respondent(s) and not those of the Council.

Dr Joachim Spangenberg, Sustainable Europe Research Institute, Germany e.V.

#### **QUESTIONS ANSWERED:**

##### **Question 1**

###### **ANSWER:**

I am worried, for two reasons. On the one hand, the currently developing patterns (subsidised agricultural biofuel production) are socially and environmentally damaging. On the other hand, existing potentials are not used, making the pattern double unsustainable. If it develops into fixed institutional and economic structures, lasting damage will be done

##### **Question 2**

###### **ANSWER:**

- a lock-in of high input agriculture at the expense of the environment, - relevant land use in a time of increasing food shortages (in particular by land grabs in Africa & climate change) - strengthening the illusion that the fossil energy system could be sustained

##### **Question 3**

###### **ANSWER:**

Yes. Media, scientific literature, own research work

##### **Question 4**

###### **ANSWER:**

drivers: - interests of the agriindustry, new subsidies dressed in green, - PR of the fossil fuel based industries (energy, motoring, chemicals etc.) to avoid deep-cutting structural change concerns: - international food security - uncontrolled spread of GMOs - neglect of the potentials of soil carbon fixation due to a lock-in on biofuels advantages: - waste recycling (all organic waste, fat, etc, but more energy efficient than biofuels would be electricity and heat generation - secure income and jobs (but the average labour force of biofuels is the lowest among different land use options)

##### **Question 5**

###### **ANSWER:**

- as long as N<sub>2</sub>O emissions are not prevented, all biofuel production is increasing the greenhouse effect. 2nd generation biofuels are no exception as long as the same intensive producing systems are used.

##### **Question 6**

###### **ANSWER:**

- globally, none. the production potential of even the most optimistic (but realistic) forecasts is less than the increase of gasoline consumption as expected by the IEA. - locally, all kinds of small to medium scale conversion technologies based on using waste biomass (although the nutrient balances might cause problems in the case of waste wood)

##### **Question 7**

###### **ANSWER:**

- all kinds of intensive agriculture/forestry production systems need to be carefully assessed. As a rule of

thum, they develop either at the expense of food production potentials (including currently not used areas), or destroy biodiversity (if directly or indirectly affecting pristine land) - for second generation systems, for physiological reasons it is an illusion to grow biomass on barren soil without irrigation and fertilisation (1 kg of wood requires about 300 l water) - GMOs cannot overcome these limitations - opportunities are to be expected from waste biomass processing on a local or regional scale, but more for biogas and combined heat & electricity generation than for biofuels

#### **Question 8**

##### **ANSWER:**

commercial use: large scale forestry plantations and central processing sustainable use: local waste material use (according to the EEA currently the highest potential in the EU, as compared with agroforestry)

#### **Question 9**

##### **ANSWER:**

No. As the problems are caused by the production system, all kinds of biotechnology are only of limited relevance (despite claims for the opposite, but promises of air-borne nitrogen supply and improved photosynthesis have a record of more than 20 years of failures<sup>9</sup>)

#### **Question 10**

##### **ANSWER:**

- FOR SMALL TO MEDIUM SCALE APPLICATION; THE MOST IMPORTANT IPR ISSUE IS TO MAKE ALL PATENTS FREELY AVAILABLE ON A GLOBAL SCALE

#### **Question 11**

##### **ANSWER:**

The obsession with improving plants, the lack of adaptation research to local conditions worldwide

#### **Question 12**

##### **ANSWER:**

focus as described above, involve 3rd World farmers in planning

#### **Question 13**

##### **ANSWER:**

- Yes. - There is no single plant suitable for biofuel production growing on land that could not possibly also be used for food production, with similarly specialised plants providing edible products. Unused land is an important food production reserve for the growing world population and the decreasing yields due to climate change

#### **Question 14**

##### **ANSWER:**

environmental governance and corruption play into the hands of export oriented biodiversity destruction globally. Biofuels integrate the food and the energy market, leading to volatility of food prices and undermining the achievements of decades of development policy (according to the UN). They make European cars and African peasants to competitors in a market where purchasing power determines the

results. Cars pay more than hungry Africans

**Question 15**

**ANSWER:**

They must be considered for any impact assessment which is more than mere window dressing (and, by the way, the same holds true for the social impacts). However, there is no convincing method available so far. Consequently, every initiative for biofuel promotion today, without such assessments, is more than a flagrant breach of the precautionary principle. From what we know, it is a greenhouse gas emission increasing initiative for the benefit of the business involved, and to calm public concerns.

**Question 16**

**ANSWER:**

small and medium scale, and based on waste processing, the environmental security would be greatly enhanced

**Question 17**

**ANSWER:**

Of course, see my answers above.

**Question 18**

**ANSWER:**

Converting food or even traditional biofuel plantations in 3rd World countries causes a massive loss of jobs and destroys livelihoods, enforces migration (secondary effects) and undermines food security. In Asian and African countries affected by "land grabbing" it destroys traditional agricultural systems and ruins the fragile environmental balance.

**Question 19**

**ANSWER:**

The change from autonomous farmers to contract workers of the biofuel industry with multi-annual contracts will change rural communities, see also the position of the farm workers trade unions.

**Question 20**

**ANSWER:**

**Question 21**

**ANSWER:**

- for waste processing in Europe, I could imagine PPP or - as far as waste is a tradable good - private investment. In 3rd World countries, the low purchasing power makes it unattractive for business - here public sector support (plus maybe microcredit initiatives) seem more effective and thus appropriate.

**Question 22**

**ANSWER:**

- The WTO and its neglect of production process quality (social and environmental) - The so far unmet promises for financial transfers to the South - The overwhelming neglect of solid carbon fixation as

compared to the carbon cycling by biofuels

**Question 23**

**ANSWER:**

mixed policy instruments: waste policy, financial incentives, public campaigns, to promote sustainable use. Bans, cancelling subsidies and biofuel quota, import restrictions, to stop unsustainable biomass use.

**Question 24**

**ANSWER:**

Yes. Consider biofuels as a detracting from an urgently needed turnaround in our use of hydrocarbons, delaying responses and deepening the resulting crisis. Regarding the potentials, take the HANPP (human appropriation of net primary production) into account: it cannot be increased significantly above current levels without severe impacts on biodiversity. Biodiversity as such is heavily impacted by biofuel production, an issue underestimated in this questionnaire. Overall, the questionnaire leaves the impression that its authors have already taken a firm stance pro biofuels, in contrast to many researchers (see the recent debate in Nature) and to most of the business people using biomass (i.e. those not receiving biofuel subsidies).