

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.

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ActionAid submission to the Nuffield Council on Bioethics consultation on 'New Approaches to Biofuels'

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Preamble

ActionAid welcomes this opportunity to input into the Nuffield Council on Bioethics consultation on 'New Approaches to Biofuels'. We have restricted our submission to those questions where ActionAid has most expertise.

ActionAid is an international development agency whose aim is to fight poverty worldwide. Formed in 1972, we work with local partners to fight poverty and injustice in 42 countries worldwide. We help the most vulnerable people fight for and gain their rights to food, land, water, shelter, work, education, healthcare and a voice in the decisions that affect their lives.

35 years of experience in child sponsorship has rooted ActionAid firmly in the world's poorest communities. Over 80% of our staff are from poor countries and we are the only international development organisation to be run from one - our head office is in Johannesburg.

ActionAid believes that food, water, shelter and education are not just basic needs, they are human rights. We also know that poverty affects women first. Women also have the greatest potential to end it. The lack of control that women have over their own lives is a huge global injustice, and keeps whole communities locked into poverty. This and the lack of rights to food, land, water, shelter and education are fundamental barriers to ending poverty. We therefore work with people in poor communities and decision-makers at all levels to make sure their rights are met.

Question 1

What is your view on society moving towards greater use of biofuels?

ActionAid's view is that industrial biofuels are bad for people and the planet. Increasing industrial biofuel use will (as outlined in our report Meals per Gallon):¹

- Increase global food prices and hunger
- Have localised impacts such as the displacement of people and increased food insecurity
- Make climate change and hunger worse

There will also be other negative environmental and development impacts, such as loss of habitats and biodiversity, water availability and soil fertility.

Overall, society has rushed towards increasing industrial biofuels without a full understanding of the externalities related to biofuels. Current and future biofuel feed stocks must be assessed thoroughly using full life cycle analysis (LCA) before policy goals are set. An LCA must include:

- All GHG emissions including direct and indirect land use change, fertilizer use and indirect effects
- All land use implications and impacts on people, food, biodiversity and habitats
- Other indirect impacts such as rising food prices
- All other resource implications including impacts on soil and water

Society must ensure that the mistakes of 1st generation biofuels are not repeated for future generation biofuels.

ActionAid is supportive of sustainable biofuels. In contrast to industrial biofuels these are, for example, produced sustainably, do not compete with food, maximise greenhouse gas savings and bring benefits to local communities.

Question 2

What are the most important ethical challenges raised by the prospect of future generation biofuels?

The most important ethical issues are much the same as those surrounding the current generation of biofuels. These include impacts on:

- People, particularly on the poor, farmers, workers and women
- Climate change
- Land use and food availability
- Biodiversity and habitats
- Other resource issues such as soils and water

Question 3

Do you regard yourself as well informed about biofuels? Where do you get your information from?

ActionAid in general is well informed about biofuels. Our information is collected from the communities that we work with on the ground, from official publications, other NGOs, industry and scientific journals.

Question 4

Which factors are going to be the most important in driving the development of biofuels in the future? To what policy concerns should priority be given? What advantages not mentioned here could and should future biofuel production aim to deliver?

¹ See ActionAid, 2010. Meals per Gallon: The Impact of Industrial Biofuels on People and Global Hunger. http://www.actionaid.org.uk/102157/biofuelling_hunger.html

The main rationale for biofuels in the future is much the same as it is today – policy makers believe that they are a means of achieving greater energy security, combating climate change and promoting rural development and job opportunities. There is strong evidence that biofuels are not currently delivering these things. For example, US ethanol often requires more energy inputs than it produces in new energy, undermining the energy security argument. All biofuel policies should be set using actual evidence that biofuels do in fact deliver the objectives being sought.

Drivers in the development of biofuels

Various drivers will push forward these policies, the most important being blending mandates (targets) and subsidies.

Targets will continue to drive both the development of current biofuel production and consumption and future biofuels. By 2022, the US requires that over half the target of 36 billion gallons of biofuels will be from advanced generation.

There is no guarantee that future generation biofuels will be commercially viable or economic. Current estimates suggest that future generation biofuels, including cellulosic biomass are much more expensive than 1st generation. Subsidies will continue to be instrumental in the development of all biofuels, but that is true whether they are produced sustainably or unsustainably.

Priority policy concerns for the future

Current volume (energy content) based biofuel targets, including in the EU, need to be scrapped. If targets are to be retained, volume targets need to be replaced by renewable targets based on GHG emission reductions. To that end, future generation biofuels need to be assessed in terms of their overall impact on all GHG emissions as part of life cycle analyses.

Energy security must be seen in a global context; many developing countries are energy insecure and many people suffer energy poverty. The developed world should not be using developing nations as a means of securing feed stocks for their own energy whilst undermining the prospects of energy security within poorer nations. Developed nations should be supporting poorer nations to secure their own renewable energy supplies.

Wherever possible, local consumption of biofuels should be matched with sustainable local production. Less reliance on imports will help achieve greater energy security. The supply chain will be much shorter and claims of sustainability more easily verifiable.

The focus on biofuels, in part, also distracts us from more sustainable ways of combating climate change. It is ActionAid's contention that, because of competing land uses, particularly for food, the production of many liquid biofuels, even on a sustainable basis, will not be on a large scale. To tackle climate change, other options need to be prioritized. For example, greater use of waste streams, by-products and residues to produce liquid or gaseous biofuels but always assuming that the use of waste/by-products/residues contributes to reducing GHG emissions as part of a wider LCA, see below²; or greater use of renewable electricity powering electric vehicles which is more efficient in turning energy into movement.

But ultimately a more sustainable society must place greater focus on reducing transport fuel and energy consumption through more fuel efficient cars, increased public transport and other more sustainable forms of transport (ie cycling), more efficient driving such as reducing speed limits and so on.

Question 5

² As with all wastes/by-products/residues, the primary focus should be on avoidance before (in order of preference) reduce, reuse, recycling, processing, waste-to-energy, incineration/landfill and disposal (see http://www.geocycle.us/holcimweb/gc/GEOCYCLE_US/uploads/Waste-Hierarchy-rev.-web1.gif)

Which of the new approaches to biofuels will be most successful in generating GHG emission savings? How should these be encouraged? Are there any reasons why these new approaches should NOT be encouraged?

This is too early to determine. There is considerable doubt whether even many 1st generation biofuels will save any GHG emissions compared to the fossil fuels they are replacing. With regards future generation, the same issues - such as land use change, fertilizer application and indirect effects - will apply. In terms of production, cellulosic ethanol contains a third less starch and sugars compared to corn and more fossil energy inputs are required to release these tightly bound starches and sugars: "About 170% more energy (oil and gas) is required to produce ethanol from cellulosic biomass than the ethanol produced."³ All these issues need to be analysed through an LCA.

Only recently the Renewable Fuels Agency (RFA) in the UK published reports on the GHG balance for biofuels made from waste/by-products/residues. It found that tallow and molasses may actually increase GHG emissions when compared to its fossil fuel equivalent because of indirect effects (ie competition with current uses). For tallow, much is already used as heating oil and in cosmetics. Diverting the feed stock into biofuels may require greater use of fossil fuels in heating appliances and palm oil in cosmetics. What the RFA study reveals is that even some biofuels that are often deemed more sustainable do not necessarily generate GHG savings.⁴

The same issues may arise with agricultural and forestry residues for future generation biofuels. In many developing countries, many of these residues are already used in one form or another – to generate heat and power, cooking fuel, fertilizer, as animal fodder and so on.⁵ In developed nations, forestry residues are also used extensively in the panel industry while crop residues are often left to increase soil fertility.

All these issues, including competition with current uses, need to be subject to comprehensive LCAs and that this must be conducted 'feedstock-by-feedstock'. Only then should some approaches be encouraged.

Questions 13 and 14

Are new approaches to biofuels likely to raise problems related to land use? If yes, how? If not, how do new approaches avoid these issues? What differences are there between the developed world and developing countries with regards to the potentially problematic effects of future generation biofuel production on land use?

If land is required to grow any biofuel, issues to do with land use will probably arise. Much of the growing of future generation biofuels in developed nations (ie dedicated energy crops such as grasses and trees) may need to be established either on existing cropland (with indirect land use change implications) or on other habitats such as grasslands (with direct land use change implications). Scientists are forecasting that: "An expanded global cellulosic bioenergy program ... predicts that indirect land use will be responsible for substantially more carbon loss (up to twice as much) than direct land use."⁶

As with current biofuel production, land in developing countries will be sought for future generation crops. Direct land use change could have significant impacts on carbon rich habitats or on land that is currently growing food or could be used to grow food. These are the same countries where most population growth will take place. The debate surrounding 'land for food' 'versus' 'land for fuel' will be most relevant in these areas. ActionAid is already seeing this with the growing of jatropha (which some people classify as a 2nd generation biofuel because it is not-edible).

³ Pimental, D., 2010. http://www.commentvisions.com/month/march/2010/visions_from

⁴ RFA, 2010. The indirect effects of 'wastes'. Renewable Fuels Agency. <http://www.renewablefuelsagency.gov.uk/reportsandpublications/indirecteffectsofwastes.cfm>

⁵ IEA, 2010. Sustainable Production of Second Generation Biofuels. International Energy Agency. www.iea.org/papers/2009/biofuels_exec_summary.pdf

⁶ Melillo, J. M. et al, 2009. Indirect Emissions from Biofuels: How Important? <http://science-mag.aaas.org/cgi/content/abstract/326/5958/1397>

Jatropha has been sold as a miracle biofuel. One of its supposed advantages is that it can be grown on 'so called' marginal land, would not compete with food and not be grown in carbon rich habitats. Jatropha, it is claimed, can also be grown in semi-arid areas, on poor soils with limited water use. It will therefore provide livelihoods and promote development in rural areas.

Most of the evidence to date suggests that this is too good to be true. For a start, companies would like the crop to be grown on fertile land with the requisite amounts of water to bring higher yields and returns. But this would put it into direct competition with land that could, and often is, used to grow food. In Tanzania, jatropha is being targeted at areas with good rainfall and fertile soils. In Sahel areas of Senegal, jatropha will only survive with irrigation; it's a similar story in Swaziland, which is suffering from persistent drought.⁷

Indirect land use displacement (ie the displacement of arable crops due to an expanded future generation biofuel programme) may also mean expanded crop production in developing countries.

Question 15

Should iLUC be considered when evaluating the GHG emissions savings of new approaches to biofuels, and if so, how?

Yes. Dedicated energy crops can displace the current land use elsewhere. Similarly, the use of residues can cause iLUC when the current use – ie fodder or fuel wood – is replaced by crops that are grown on additional land elsewhere.

But the focus should not be exclusively on iLUC. All land use issues (direct and indirect) – and the full life cycle of each feedstock - need to be considered.

Questions 17 and 18

Are new approaches to biofuels likely to raise problems related to food security? If yes, how? If not, how do new approaches avoid these issues? What differences are there between the developed world and developing countries with regards to the potentially problematic effects of future generation biofuel production on food security?

There is an expectation that non-food crops will be less likely to raise problems with food issues. But food security, particularly in developing countries, is tied closely with land use as described above. Future generation biofuels are likely to compete with land for food production. If land is fertile enough (often through irrigation) to grow biofuels, it is often fertile enough to grow food. As we have said elsewhere in this consultation, decisions about supporting biofuels must be based on scientific evidence, not supposition.

Questions 19 and 20

Are new approaches to biofuels likely to raise problems related to rights of farmers and workers? If yes, how? If not, how do new approaches avoid or benefit these issues? What differences are there between the developed world and developing countries with regard to the effects of the production of future generation biofuels on the rights of farmers and workers?

With regards biofuels, issues related to rights extend beyond those of farmers and workers; women's rights, the right to food and water and others must also be considered. At the centre of the biofuel debate are land rights where communities have customary use of the land but without security of tenure. This is particularly true of women who may be using the land for a variety of uses.

Dedicated future generation energy crops could follow the current trend in terms of a 'land grab'. Even where consent to use land for biofuels has been sought and given (after often cursory consultation), it is little more than a subtle form of land dispossession. Communities are invariably fed the positives of

⁷ FoE, 2009. Jatropha: Wonder Crop ? Experience from Swaziland. Friends of the Earth Europe, Brussels.

biofuels (high yields, prices and prompt returns), and offered compensation and promises by the company in the form of jobs, incomes, schools etc. But some of these may never materialise. At the same time, local authorities often allocate land to companies without any consultation with affected communities at all.

Rights in developing countries are less well protected and ActionAid is working within many of these countries to address these issues, for example to enshrine rights within a national legal framework. But it is important that where sustainable future generation biofuel production is to be established, this includes the free, prior and informed consent of affected communities, with adequate consultation and compensation where appropriate and that all workers enjoy decent standards of work as defined by the ILO.