

# ePURE Contribution to the UN FAO HLPE Consultation on the zerodraft of the Report: Biofuels and Food Security

ePURE represents the interests of European renewable ethanol producers to the European Institutions, industry stakeholders, the media, academia and the general public. Based in Brussels, ePURE represents 53 member companies throughout 17 member states, accounting for about 90% of the installed renewable ethanol production capacity in Europe.

## **Summary of our response**

The European Renewable Ethanol Association (ePURE) welcomes the opportunity to participate in the consultation exercise to support the HLPE report "Biofuels and Food Security". ePURE is extremely disappointed by the content of the draft report, believes that is not in compliance with what was requested to be carried out and is unnecessarily negatively biased against biofuels.

In October 2011 the UN Committee on World Food Security (CFS) recommended a "review of biofuels policies – where applicable and if necessary – <u>according to balanced science-based assessments</u> of the opportunities and challenges that they may represent for food security so that biofuels can be produced where it is socially, economically and environmentally feasible to do so" (emphasis added by ePURE).

To support this, the HLPE's mission is to "conduct a <u>science-based</u> comparative literature <u>analysis</u> taking into consideration the work produced by the FAO and Global Bioenergy Partnership (GBEP) of the positive and negative effects of biofuels on food security" (underscoring by ePURE). We believe that that HLPE have failed to meet this standard in the current draft report.

In the report, the authors state that: "The central concern of this report is to analyze the implications for food security of global and national biofuels markets...through an evaluation both at the aggregate level of macro data and through field research carried out in different regions and localities". The authors' objectives are, therefore, completely inconsistent with the mandate of the HLPE. Within the report there is no science-based comparative literature analysis of the positive and negative effects of biofuels on food security, which is considered the mission of the HLPE. We therefore believe that the report is its current form is insufficient and in urgent need of revision.

Specifically, the HLPE fails to complete its mission in several respects:

- 1) It <u>does not conduct a science-based</u> comparative literature analysis.
- 2) The HLPE <u>fails to provide any methodology</u> used to perform the literature review, which is standard scientific practice. The report therefore cannot be qualified as a literature review, not even a balanced investigation of the available science. There is no justification given for the (types of) literature that has been included or omitted.
- 3) The report <u>serves to support a pre-determined view</u> that a) the world is currently not producing enough food, and that b) biofuels are exacerbating hunger by driving up food prices and causing problems in developing countries. Readily available studies on positive effects of biofuels on food security are not presented, or considered, even when provided by the FAO itself. There is evidence to suggest that the outcomes of this report were already predetermined.

- 4) In the report there are numerous <u>unsubstantiated claims</u>, not scientifically referenced, conjecturable and highly hypothetical. Some of the studies or material referred to are not scientifically peer-reviewed.
- 5) The report uses <u>data that is incorrect</u> and omits key areas of research, such as research on the positive food price impacts of biofuels co-products. Sometimes irrelevant information is included.

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In the following we provide some examples that support the criticisms that we bring to the report. This list is by no means exhaustive but serves to exemplify the incoherence, multiple factual errors, strong bias and lack of scientific rigor that the report suffers from.

#### **General comments**

The fact that this paper only looks at biofuels is quite alarmingly, considering that biofuels are only responsible for 3% of global cereals demand: meaning that the markets(s) for 97% of global cereals demand are simply ignored. This creates a narrow, incomplete view that, instead of adding value to the debate about food security, singles out biofuels for special attention. Debates about food security must be more holistic if real solutions to hunger and food security are to be found. There is no assessment about the relationship between agricultural trade flows and access to food or on the role of governments, and governance structures.

Within the report there seems to be a general confusion about the differences between food prices and commodity prices, the two are very separate issues and this is not sufficiently developed within the report.

The paper ignores the multi-product nature of biofuels production, promotes a zero-sum attitude to biofuels feedstocks as being either "food" or "fuel", and fails to significantly factor in the mitigating impacts of co-products on prices of, for example, animal feed.

The analysis of the impacts of US biofuels policy on corn prices is not adequate or sophisticated enough and it does not explain why the removal of the VEETC (the main policy support for biofuels) in the US has not led to lower corn prices.

However, there are some elements of the report that we do agree with. In developing countries, bioenergy projects should provide immediate benefits to local smallholders and rural dwellers, therefore bioenergy use should be prioritised for local consumption in developing nations. CleanStar Mozambique is a local project that is harnessing the benefits of domestically produced ethanol, as a clean, renewable and environmentally friendly fuel, to provide access to energy and health benefits for rural people. More projects such as this need to be supported, while governance systems need to be improved in developing countries to prevent land grabs by foreign companies.

# Methodology

The report reads more like an opinion piece, criticising biofuels, instead of what it should be: a value-free expert opinion on the impact of biofuel production on soft commodities and food prices. The whole narrative of the report is skewed towards attacking biofuel, reflecting an underlying bias. There is not a single paragraph, or consideration given, that describes the real positive effects of biofuel on the feed/food sector.

The report lacks a sound methodology, or any transparent methodology for that matter, and uses unreliable data, in some instances from anti-biofuels interest groups, which has never been peer-reviewed or tested independently. Often the report makes claims that are not substantiated by any evidence. For instance, the report blames biofuels for land grabs in developing countries, but yet the report does not submit any evidence on the biofuel volumes traded between the main biofuel markets (Brazil, USA and the EU) and the countries where land grabs are proposed to have taken place.

The Introduction of the HLPE report states that "[f]ood security will be analyzed in light of the four components comprising the FAO definition, adopted by the HLPE, namely: access **whose principal determinant is the ratio price of food/income**, availability **which is associated with the resources for food production** . . . stability . . . and use" [emphases added by ePURE]. The report then proceeds to ignore these four criteria in their entirety. For example, the vulnerable community most often cited is "sub-Saharan Africa", yet there is no discussion of food prices and incomes in that region.

Regarding the mandate of the project, the project team that drafted this report apparently lost sight of what they were supposed to do. The report is neither science-based nor balanced, and is not a literature review. The report serves to only criticise biofuels and does not reflect in any possible way on whether biofuel can provide opportunities and/or the positive effects of biofuels on food security. This approach is out of step with the UN FAO's own position.

As recently as May 2011 the UNFAO said that investment in biofuels could actually help to improve food security in rural economies by creating jobs and boosting incomes. Heiner Thofern, head of the FAO Bioenergy and Food Security Project, said that if "done properly and when appropriate, bio-energy development offers a chance to drive investment and jobs into areas that are literally starving for them." In 2011, the FAO released the study, "Making Integrated Food-Energy Systems work for People and Climate", which stated that "investment in bioenergy could spark much-needed investment in agricultural and transport infrastructure in rural areas and, by creating jobs and boosting household incomes, could alleviate poverty and food security." It concludes inter-alia that "there is great potential for the co-production of food and fuel using existing methods and technologies."

In the report the only reference that is made to the possible positive effects of biofuels on food security is that "they (biofuels) open up the possibility for new sources of income and employment, and provide alternative sources of energy for rural communities and for rural and urban food preparation". While this is true, the authors completely ignore the biofuels production yields substantial volumes of valuable, protein-rich animal feed that goes into the food chain. In 2012 the UN FAO published a major report (over 500 pages long) titled "Biofuels Co-Products as Livestock Feed: Opportunities and Challenges", which outlined the positive effects of biofuels co-products on food security, and this report is completely ignored by the HLPE.

The paper fundamentally ignores the multi-product nature of biofuels production, promotes a zero-sum attitude to biofuels feedstocks as being either "food" or "fuel", and fails to significantly factor in the mitigating impacts of co-products on prices of, for example, animal feed.

## Anti-biofuels agenda?

The report offers no literature review or balanced investigation of the available science, but rather uses evidence, often not peer-reviewed, to support a pre-determined view that biofuels policies are driving up

<sup>&</sup>lt;sup>1</sup> New tool for weighing pros and cons of bioenergy, UN FAO (2011).

<sup>&</sup>lt;sup>2</sup> Making Integrated Food-Energy Systems work for People and Climate, UN FAO (2010).

food prices and causing problems in 3<sup>rd</sup> countries.

Bold statements such as "as a consequence (of biofuels mandates), land in many countries, which may have neither domestic targets/mandates nor large transport fuel demands, has also become the object of biofuels investments" are massive generalisations and are not supported by corroborating evidence, such as biofuels trade data or empirical evidence.

An example of the clearly anti-biofuels trend running though the report is in section 4.1.2 where the authors discuss the differences between photovoltaic technology and photosynthesis and conclude that biofuels will not 100% replace oil use, due to land and feedstock constraints. Firstly, this section is entirely irrelevant to "a review of the literature relating to food security and biofuels" and seems more like a political manifesto in support of electric vehicles. Secondly, most industry observers recognize that there is no silver bullet for replacing oil use in transport and that future measures will need to include a mix of 1G biofuels, 2G biofuels, 3G biofuels, along with energy efficiency measures (driving less), vehicle efficiency (better engines) measures, electrification of transport modes, and the introduction of hybrid vehicles.

We believe that the report naively over-exaggerates the role of biofuels in food prices and food security. For example, the report claims that biofuels policies are the predominant factor in food price rises since 2004 – but it does not offer evidence to qualify this assessment. A 2010 World Bank report "Placing the 2006/08 Commodity Price Boom into Perspective", which dispelled the myth that biofuels had caused the commodity price spikes, has been completely ignored. Other key studies, which showed that biofuels had little effects of food prices, that were omitted include: Prof. Dr. Harald von Witzke (2011), "Impact of Bioenergy on food price is overestimated", Hearing in the German Bundestag" and Joint Research Council, European Commission (2011), "Analysis of Agricultural Commodity Price Volatility".

Expressions and rhetoric contained within this report unveil an underlying assumption of the authors: that the world does not currently produce enough food. For example, the paper makes the claim that food production needs to be increased, but does not detail why. This assumption is simply wrong, is not corroborated by evidence and, in fact, evidence from the UN itself contradicts it. The UN FAO has said that globally there is enough food produced to sustain 12 billion people. It is well understood, that global food production far exceeds our needs today; however hunger is still a global challenge but there are other ways to combat this problem. Singling out biofuels is taking the easy option and ignores the much harder global policy, and also lifestyle, choices.

A 2011 report by the UN FAO "Global Food Losses and Food Waste" revealed that the world wastes 33% of food produced for human consumption each year, enough to sustain billions of people. The scale of food waste worldwide is unacceptably high. One quarter of the 1.3 billion tonnes of food that is wasted is enough to feed all the hungry people in the world, according to the FAO<sup>3</sup>. The study says that reducing losses in developing countries could have an "immediate and significant" impact on livelihoods and food security.

The HLPE report ignores the real problems in the food sector:

- Chronic levels of food waste: In 2013 a report<sup>4</sup> by the Institution of Mechanical Engineers revealed that 50% of global food production is wasted. Additionally, in 2012 the European Parliament revealed that 50% of food is wasted in Europe<sup>5</sup>.
- Lack of investment in agriculture, particularly in the areas of research and yield growth.
- Lack of proper distribution of food.

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<sup>&</sup>lt;sup>3</sup> The Conundrum of Food Waste, New York Times (January 2013).

 $<sup>^4</sup>$  Global Food: Waste Not, Want Not, Institution of Mechanical Engineers (2013).

<sup>&</sup>lt;sup>5</sup> European Parliament Resolution (January 2012).

- Dramatically changing eating habits, with many people in Asia shifting towards meat diets that increase pressure on the agricultural system.

In the report it is stated (page 4) that "the relation between biofuels and food security is strongly influenced by the choice of feedstock and land-use". In the EU, ethanol is produced from cereals and sugar. In 2012 EU bioethanol production used about 6,5 million tonnes (net) of cereals, representing some 0,24% of global grain supply and 2% of EU cereals supplies. 51% of EU cereals supplies goes towards feeding animals. In addition, around 3,5 million tonnes of out-of-quota sugar was used for the production of bioethanol in Europe. Out-of-quota sugar does, by definition, not compete with the food sector as EU prohibits it to be sold for food use. It is impossible that such low volumes could impact on structural commodity and/or food prices. In terms of land-use these crops require 1.4 mHa of land, less than 1% (0,76%) of EU agricultural land. That is far less than the 7 mHa of land than can no longer be used if the new common agricultural policy rules on set-aside become reality. It is also insignificant compared to all the land that is needed outside the EU to feed Europeans (38 mHa) which is the direct result of free trade agreements.

The HLPE report is incorrect regarding the amount of land used to grow biofuel feedstocks. Current global land use for biofuels is minimal, using about 3% of total global arable land area. There are currently massive amounts of unused, underproductive or marginal land available that could be used for biofuel production without compromising food production. A 2011 study by the University of Illinois found that there is an additional 320 – 702 million hectares of global land available for sustainable biofuels production. This is "an area that would produce 26% to 56% of the world's current liquid fuel consumption."

Some argue that if the land and crops used for biofuels production would not be used for biofuels then more people could be fed. This is unfortunately a misconception and a poor understanding of how the EU's modern CAP functions. Farmers in the EU no longer produce for virtual markets; markets need to be real. If there is no market, then there is no production. Land will stay idle if no crops can be grown that can be sold for a profit. For example, replacing soy-imports by for example lupine, to increase the EU's own protein production, is economically not feasible due to free trade arrangements. The only solution would be to subsidize growing lupine, but this would go counter to what the EU has abolished a number of years back.

## **Unsubstantiated claims and assumptions**

Within the report there are also many examples of the use of ambiguous words such as "probably" and "could". For example, on page 31-32 the authors speculate that "the growing Chinese demand for soybean imports would probably have created some pressure on crop prices even without biofuel growth". "Probably" is not a scientific or factual terminology, and the inclusion of such is inherent to the lack of robust evidence that is presented within this report to support the claims of the authors, with a lot of these claims not scientifically referenced.

#### These include:

 Frequently in the report it is claimed that corn prices are linked to oil prices, while this is not sufficiently proven or corroborated.

<sup>&</sup>lt;sup>6</sup> All EU data from 24 January 2013 EU cereals balance.

<sup>&</sup>lt;sup>7</sup> University of Illinois at Urbana–Champaign, Department of Civil and Environmental Engineering, Land Availability for Biofuel Production, 2011.

- 2. <u>Page 3:</u> "Biofuels cause poverty to the extent they force the poor to pay more for their food and less for other necessities and that turns on price increases" where is the evidence for this? There is no supporting evidence provided that shows that biofuels cause poverty. It is an assumption.
- 3. <u>Page 6:</u> "This has made EU policy, and biofuels more globally, highly sensitive to positions adopted within the scientific community and civil society." What is the source for this causality? There is no source provided.
- 4. Page 7: "From a feedstock perspective this involves a shift from cereals to oil crops where Europe is traditionally in deficit, and the promotion of oil crop expansion involving much direct land use change (DLUC)." Most of the rape seed for energy was grown on set aside land. Again there is no source to this statement.
- 5. Page 18: "Table 2. GHG Emission reductions of select biofuels compared to gasoline and diesel excluding land use change impacts." The EU law Directive 2009/28 included direct emission savings per biofuel pathway, moreover indicating the emission of fossil fuel (which is lacking in this table). Why are these data not used as reference? How is it possible to achieve an emission saving over 100%?
- 6. On Page 19 (2.3.1): there is no literature reference included, despite several claims being made, and likewise on page 20, 2.4. there are also no literature references.
- 7. Page 21: Chapter 3 starts with the statement that "A wide variety of papers have found that biofuels have increased crop prices and played a major role in triggering price increases but have disagreed about the magnitude and have less often directly addressed impacts on malnutrition." Unfortunately the authors do not list this wide variety of papers; they also fail to acknowledge that not everyone shares that view. Again, if this were to be a balanced review of the evidence, reference would have been made to, for example, this paper: Policy Research Working Paper 5371, Placing the 2006/08 Commodity Price Boom into Perspective by John Baffes and Tassos Haniotis, The World Bank, Development Prospects Group, July 2010. This section completely disregards the distinction between commodity prices and food prices.
- 8. Page 21: "The second section evaluates the dominant role of biofuels in the recent (we need to assume that this is 2012-ePURE) agricultural commodity price increases." In this second section there is absolutely no reference made to the extensive research done by the US Environmental Protection Agency, who ran multiple scenarios to measure the effect of the RFS waiver on corn prices. It was found that the corn price effects of a waiver of the RFS mandate would be so dramatically low that agreeing to a waiver would be mere politics of symbolism. The fact that the word "dominant" is already used before the evaluation has been completed, or the outcome known, highlights that this report contains an inherent bias and that outcomes of analysis are already pre-determined and "fait accompli".
- 9. Page 22 last §: "In truth, we do not know what percentage of reductions in consumption the food insecure experience when crops are diverted to biofuels and prices rise. Yet these very rough figures provide reason to believe the effect is substantial and could be extremely substantial." Such a statement admits and displays to the complete lack of robustness of this report.
- 10. <u>Page 23 1<sup>st</sup> §:</u> "We can therefore estimate that biofuels probably have had a meaningful effect on hunger and have the capacity to have much larger consequences if biofuel production continues to rise."). The words "estimate", "probably" and "if" render this sentence unreliable. There is again no supporting evidence provided to support the statement.
- 11. Page 23: "In the first place, with the rise of oil prices, it has been economically feasible for ethanol manufacturers to bid up the price of maize". Why would an ethanol manufacturer do this? It is totally out of step with reality. The author clearly does not realise that higher feedstock prices mean higher production costs for ethanol producer, something which producers clearly do not want
- 12. <u>Page 23:</u> "The simplest reason to believe that biofuels have driven large increases in grain prices is that it has made economic sense for biofuel producers to drive up grain prices dramatically". This is

- a value-assumption and a decision not arrived to by facts. For instance, this is not true considering that ethanol producers are, as much as any other sector, negatively affected by higher prices, with many examples of production facilities mothballing during times of high commodity prices. Historical evidence shows that during times of high commodity prices ethanol production slackens. This is not considered by the report.
- 13. <a href="Page 24">Page 24</a>: Ethanol prices are not set by petrol prices. In the EU, the price of the ethanol is determined by the low-cost producers (either Brazilian producers or US producers). But what happens in the EU ethanol industry seems to be irrelevant for commodity prices because EU ethanol production is not mentioned at all in chapter 3. We then can only conclude that EU production has no adverse impacts on food prices.
- 14. Page 25: "Any effort to explain why ethanol would have an effect on crop prices other than the doubling and tripling which we have identified (sic), has to start by offering a cogent explanation of why ethanol producers would not have bid up the price of ethanol (sic) near to these amounts as oil prices rose." So first, it is assumed/claimed (and certainly not proven) that ethanol manufacturers drive up the corn price deliberately and then it needs to be proven by others that this has not happened. This is a bizarre way of reasoning: there is an accusation without proof and then the accused needs to submit the proof that the accusation is not correct. It seems that it has escaped the authors that several US ethanol producers went bust or had to stop producing because of high corn prices.
- 15. Page 25: "The price increase implies that supply has not been keeping up with demand, which has allowed farmers to charge prices above the costs of production". Yes, of course farmers will charge higher prices about the cost of production, it is called profit and it is the basis of the agricultural economy. Failure do to so would mean increased poverty and debt for farmers. One of the major problems in the developing world is that rural farmers have subsistence existences and do not get enough farm income. This statement typifies the ignorance contained within this report of the role of farmers as biofuels feedstock and food producers. Farmers produce for markets in order to sustain their lively hood.
- 16. Page 32: "By comparison, the increase in biofuel production since 2004 has commandeered roughly 22.7 million hectares of additional, similarly high yielding lands." We can only assume that this number has nothing to do with Europe. After all, many years rape seed production for biodiesel was grown on set-aside (idle) land and according to the FAO the EU yearly takes 0.5 mha of arable land out of production. In 2012 EU ethanol production used a maximum of 1,4 mHa of agricultural land, representing 0,76% of EU agricultural land, equivalent to the size of Northern Ireland.

### Fact check of the report

- 1. Page 1 (and throughout): "CSOs increasing role in policy (re)formulation is particularly evident in the decision to reduce the participation of first generation biofuels from ten to five per cent in the EU renewable fuels mandate."......" We consider (sic) also analyze recent major changes which have occurred with regard to targets and mandates focusing particularly on the EU Directive which limits biofuels blending to half the original target and effectively establishes existing levels as a ceiling for first generation biofuels". Throughout the report there is a misrepresentation of EU biofuels policy, portraying the 5% cap on crop-based biofuels as agreed EU policy. The 5% cap is part of a proposal for a draft law, it is not decided or agreed policy.
- 2. <u>Page 2:</u> "Second generation biofuels use non-edible crops or the non-edible parts of food crops which require the use of lignocellulose technology". HVO or BTL do not involved lignocellulose technology but are considered 2G biofuels.
- 3. <u>Page 6:</u> "The principal driver in the EU was the fulfillment of commitments to the Kyoto targets (European Directive, 2003)." This is not correct. The 2003 Directive was an energy Directive not an

- environmental one. There were stipulated at least 3 objectives: a) diversification of energy supply, b) new outlets for the agricultural sector, c) decarbonising transport.
- 4. <u>Page 6:</u> "In the EU, a biofuels policy had to give priority to biodiesel..." This is not written in the EU Renewable Energy Directive, there is no such stipulation.
- 5. <u>Page 7:</u> The EU has no renewable fuels directive. There is a renewable energy directive, and that does not mandate any use of biofuels; the entire 10% obligation could theoretically come from electric vehicles, biogas or any other renewable sources that displace fossil fuel in the transport sector.
- 6. Page 7: "From a feedstock perspective this involves a shift from cereals to oil crops where Europe is traditionally in deficit, and the promotion of oil crop expansion involving much direct land use change (DLUC)." Most of the rape seed for energy was grown on set aside land. Again there is no source to this statement.
- 7. Page 7: "the EU becomes structurally dependent on imports, either of biofuels, or feedstock, to meet its targets. This is true for ethanol imported first from Brazil and later from the US," What is the source for this? The EU has both enough ethanol and biodiesel production and is not dependent on imports. For both biofuels, the EU has sufficient production capacity in place to supply the market: ethanol has currently 9 billion liters capacity for a market that is not even 5 billion now while there is 20 million tonnes of installed production capacity of biodiesel for a market that is just over 8 million tonnes. If imports from Brazil and the USA take place then it has more to do with the economics of trade (arbitrage yes or no).
- 8. Page 7: "By 2020, the EU would be importing annually some 15.9 billion liters equivalent (Bowyer, 2010, German & Schoneveld, 2011). The EU biofuels policy, therefore, implies also the creation of an increasingly global market and the involvement of developing country agricultures". The text does not specify if this is biodiesel and/or ethanol. In any case, for ethanol hardly any 3<sup>rd</sup> countries are able to compete with the prices of Brazil and/or US ethanol, even they had to pay no imports duties. Ethanol is a product like anything else and traders will always attempt to purchase at the cheapest possible price. Due to higher production costs many 3<sup>Rd</sup> countries cannot produce ethanol at a competitive enough price to rival Brazil and/or the US.
- 9. <u>Page 7:</u> Figure 1. Net trade streams of wood pellets, biodiesel, and ethanol, 2011. The trade streams are incorrect: a) there were no bioethanol (that is, ethanol for fuel use) imports from Russia, Ukraine, Africa or Pakistan. Most of the imports came from the USA and a small volume from Brazil (Eurostat data).
- 10. <u>Page 7:</u> "a 5.75% mandatory target fixed for 2010." This was a voluntary target, not mandatory target. Directive 2009/28 for the first time introduced a mandatory target of 10% renewable energy by 2020.
- 11. Page 16: "While biofuels could technically make significant contributions to the global energy supply, their market potential is likely to be more limited due to the amount of feedstocks that can be economically produced and harvested as well as their costs relative to those of liquid fossil fuels (Carriquiry, Du, and Timilsina 2011)." The authors are selective in their choice of literature. Both Bloomberg and WWF published reports demonstrating that it is possible to replace around half of global gasoline consumption by 2030 through sustainable biofuels: Bloomberg New Energy Finance (2012), "Moving towards a next generation ethanol economy". Furthermore, a report by WWF (2011), "Energy vision 100% renewable energy by 2050" states that biofuels will meet 50% of global transport fuel by 2050. Additionally, a report by the Öko-Institut (2011) "The Vision Scenario for the European Union" said that biofuels could meet 80% of EU fuel needs by 2050. In 2011 the European Commission's Expert Group on Future Transport Fuels also published a report which claimed that biofuels in particular have the potential to replace Europe's addiction to fossil fuel energy and make transport sustainable by 2050.
- 12. <u>Page 17</u>: Figure 2. Biofuel production cost (\$/Gj) from various feedstocks. These figures are not correct because they do not factor in co-products. If indeed the production costs are as depicted in

the figure then we would see investments in sugarcane or sugar beet processing plants and not, as is the case in reality, investment in cereal processing plants. This is because production costs also depends on co-product revenues. The figure is suggesting a reality that is simply not there. The source document for Fig 2 on P17 is not listed in the Reference List. Same for Table 1, WWI 2007. Table 2 makes no attempt to describe the GHG saving of the biofuels that are actually used, and ignores the requirement for minimum thresholds in both US and EU legislation (EU threshold 60% GHG saving from 2018). Such savings and thresholds have to be met after accounting for any direct land use change effects.

13. Page 18: "The estimates are also highly variable and sensitive to the assumptions used in the LCA. A particularly important assumption is the treatment of land use and land use change including both direct and indirect (Searchinger et al., 2008)." Indeed in LCA, as well as econometric modeling, the assumptions made are to a large extent designing the output. The quoted work on ILUC was highly criticized by many scientists and over time it has become clear that the 'calculated' ILUC related emissions were heavily over-estimated. To comply with the intention to have a balanced report all of the research on biofuel LCAs and models to estimate ILUC emissions should be reviewed. That one of this report's authors should reference their own work on ILUC, considering the contested nature of such, considerably undermines the credibility and impartiality of this report.

#### **Final Remarks**

To summarise, we believe that the HLPE report: a) does not achieve its fundamental objective of undertaking a science-based literature review (of the negative and positive influences of biofuels on food security); b) lacks a transparent methodology and justification for the evidence that has been used; c) displays an inherent bias on behalf of the authors; d) displays a lack of scientific robustness, containing numerous unsubstantiated claims and assumptions; and e) contains a litany of factually incorrect statements. We, therefore, believe that the report is not can be improved substantially.

In order to improve on this first draft an independent review of the work must be carried out, in line with the HLPE's own procedures. Such a peer-review must be conducted by external experts that are independent of the HLPE project team.

As a result, we believe that it is immature for the HLPE to recommend policy recommendations at this stage, based on the contents of the HLPE draft report.

Finally, we ask the HLPE project team to take note of a recent report by the Institute for European Environment Policy "EU Biofuels Use and Agricultural Commodity Prices: A Review of the Evidence Base (2012). The report says:

"The vulnerability of consumers across the world to food price increases differs markedly between countries and across households, depending inter alia on income levels, household composition, and on the household status as net consumers or producers of agricultural and food stuffs. We are not aware of studies that use multi-household models, which would produce a better understanding of the impacts of enhanced biofuel use on different population groups and allowing more solid estimates of the welfare impacts of biofuel policy. This gap should be closed in order to provide decision makers with a more complete evidence base feeding into the political review processes ongoing in 2012."

IEEP (2012).