



BirdLife International response to the consultation on the review of EU biofuels directive, April – July 2006

Introduction

1. BirdLife International welcomes the opportunity to respond to this consultation and contribute to the revision of the Biofuels Directive.
2. Climate change and the alarming rate of biodiversity decline worldwide are the most critical environmental challenges society faces today. As a result, policy should strive to deliver for both where possible and, as a minimum, tackling one must not unnecessarily exacerbate the other. We believe biofuels could therefore play an important but limited role in reducing EU greenhouse gas (GHG) emissions from transport, and that this role will be secondary to increasing vehicle efficiency and reducing demand. The use of biofuels is inevitably limited as there is already considerable demand for land, and the use of land to produce biofuels may carry a significant opportunity cost as it competes with the use of that land for producing food, other forms of bioenergy and non-food crops, and for conservation.
3. Our support for even this limited role is contingent on biofuels delivering significant and quantified GHG savings and meeting minimum sustainability standards that ensure unacceptable damage to biodiversity and the environment is not caused. In this response we suggest that an EU-wide certification scheme that can be linked to any public policy objective is the best way to address these concerns. Certification can be used to both set minimum sustainability standards and to calculate and guarantee the GHG savings for biofuels based on a life-cycle analysis tool.
4. We believe it is critical that sustainability, guaranteed by certification, is put at the heart of the Biofuels Directive, alongside any efforts to promote biofuels and the benefits they can generate, and that the industry's credibility will be dependent on this. We recommend that this system is developed by the Commission urgently and that a stakeholder platform is established to provide expert advice and to secure buy-in for this approach from all those involved.
5. Certification will not be able to guarantee the sustainability of biofuels alone, particularly as it will not affect biofuels that do not benefit from public support in some way in the EU and neither can it address the knock-on affects of using land for biofuel production. For this reason we recommend that a Strategic Environmental Assessment is

made of EU policy on biofuels, including the Biofuels Directive, before any new targets are set for biofuel use. This assessment should guide future biofuels policy and look at what can be sustainably produced, where and how, and assess the impacts of current biofuels policy.

Question 1.1:

Is the objective of promoting biofuels still valid?

6. We recognise that promoting biofuels is driven by three policy goals: to reduce greenhouse gas emissions from transport, to improve security of supply and to contribute to rural development. However, biofuels do not necessarily deliver on any of these fronts. With regards to GHG emissions and energy security in particular, there is huge variability in what biofuels deliver and in some cases their impact will be negligible, or even worse. Promoting biofuels themselves therefore offers no guarantee that EU policy objectives will be met. Instead, we believe that the beneficial outcomes should be targeted specifically, so that it is the GHG emissions cuts and job creation for example, that are promoted. Promoting a certain technology or industry should be always seen as a tool, not as an aim.
7. Promotion itself should be led by targets and these targets should relate to the public benefits promotion is aimed at delivering. Biofuels, therefore, should have targets relating to the quantity of GHG emissions savings, the increase in security of supply, and the contribution to rural development that they make. Monitoring and reporting should be established so that performance can be assessed against these targets.
8. Most evidence suggests that biofuels cannot currently cost-effectively make a significant contribution to reducing GHG emissions¹, and that the use of biomass for heat and power generation, particularly in combined heat and power plants, yields greater GHG savings per hectare of land and at a lower cost. Most studies also indicate that the use of waste and residues delivers greater savings than purpose grown crops. Finally, most studies agree that second generation fuels promise much greater GHG savings than current, first generation fuels. These facts should be reflected in the public resources that are put behind the promotion of biofuels.
9. While security of supply is a valid objective for the promotion of biofuels, we do not believe it has been considered and presented clearly. Biofuel production is dependent on natural gas for fertiliser production and there are many other fossil fuel inputs in the life-cycle of a biofuel. If security of supply is a genuine objective then biofuels policy must put more emphasis on reducing these inputs to maximise security gains. The most effective way we can enhance security of supply is to reduce demand for fossil fuels.

¹ COMCAWE, EUCAR, JRC (2006) Well to wheel report

10. We believe that the central aim of biofuel policy in Europe should be GHG emissions reduction and reduced use of fossil fuels due to the unprecedented urgency and scale of the climate change challenge.

Question 3.1

Looking towards 2010, is the present European system of indicative targets and support for biofuels appropriate or does it need to be changed?

11. The current target system is based on a percentage share of the transport fuel market, a figure that is increasing rapidly and that does not reflect the actual policy objectives behind the Biofuels Directive. We believe that targets should relate directly to emissions savings and reduction of fossil fuel use.
12. Indicative targets mean that there is flexibility for Member States to pursue their own strategy that is most relevant to their own situation. A more binding target may have adverse impact by forcing Member States to use their biomass resources inappropriately or to increase imports, thus potentially exporting this problem. Biomass potential varies enormously between Member States and sustainability issues are very different across Europe. In some countries it may simply not make sense to use limited resources for biofuel production when the same emissions savings may be delivered more efficiently through, for example, a combination of a number of different routes such as greater emphasis on efficiency and demand management, the extensification of production and the use of biomass resources for heat and power. Flexibility in EU targets and policy for biofuels is therefore key and we strongly object to the principle of binding targets for biofuel use for individual Member States or the EU as a whole.

Question 4.1

Should there be a system – for example, a system of certificates - to ensure that biofuels have been made from raw materials whose cultivation meets minimum environmental standards?

If so,

- **What should be addressed in the standards?**
- **How should the system work? Are there good models to draw on?**
- **Should the biofuels directive be amended so that only biofuels which comply with environmental sustainability standards count towards its targets?**

Question 4.2

Should a wider system of certificates be introduced, indicating the greenhouse gas and/or security of supply impact of each type of biofuel? If so,

- **How should this certification system work?**
- **How should the greenhouse gas and/or security of supply benefits of different biofuels be measured?**
- **Should biofuels with good greenhouse gas and/or security of supply performance be rewarded within biofuel support systems for biofuels? If yes, how?**

Question 4.3

Should there be a scheme to reward second-generation biofuels (made with processes that can accept a wider range of biomass) ¹⁶ within biofuel support systems?

13. We believe that a certification system to ensure that biofuels meet minimum environmental standards and deliver significant and quantified GHG emissions savings is imperative. Below we explain why and outline possible ways in which this might be implemented. However, we believe that the design of this system requires a full stakeholder engagement process that goes beyond this written consultation exercise. For certification to be successful, it needs to draw upon the expertise of all stakeholders involved and include them from the beginning in order to earn buy-in. We therefore call upon the Commission to commit to certification and initiate an expert stakeholder group to design it urgently.
14. Creating a strong, mandatory and comprehensive certification scheme for all biofuels receiving public support of any kind is the key to ensuring that biofuels deliver results on GHG emission reduction while not undermining sustainability through causing unacceptable harm to biodiversity and the wider environment. The risks are such that without this system biofuels risk controversy and ultimately public rejection.
15. Certification should, as a minimum, include the life-cycle GHG balance and the sustainability of the cultivation phase in terms of impacts on biodiversity, water quality and use, soil quality and erosion and pollution.
16. The GHG balance of a particular biofuel pathway can be calculated through a 'carbon calculator' that takes in production related data from the life-cycle of the biofuel to calculate a value for the GHG emission reduction in CO₂ equivalent per volume unit. Where data is absent average figures can be used. With some further research work, this can be technically possible in the near future, as demonstrated in work done by the LowCVP stakeholder group on behalf of the UK Government, and under the Kyoto Protocol's Clean Development Mechanism. This system would enable the quantification of GHGs saved through biofuel production and use, and would allow public support to target GHG savings specifically. In the case of an Obligation, for example, only certified biofuels would count towards the Obligation and eligibility could be restricted to those fuels that offer life-cycle emissions savings over single or multiple threshold values, or it

could be in direct proportion to the emission savings compared to traditional fossil fuel equivalents.

17. Establishing incentives for higher GHG savings as opposed to biofuels in general would encourage and support all fuels and production methods that offer superior GHG savings and would be the most efficient way of encouraging second-generation biofuels. Certification would also allow carbon optimal management, i.e. management designed to maximise the emissions savings through efficient use of energy inputs, to be encouraged and incentivised. This requires, among other things, achieving the optimal balance between fertiliser input and yield, as fertiliser use is usually the single largest contributor to greenhouse gas emissions in the life-cycle of a biofuel, aside from land-use change in some cases (see below).
18. It is critical that the GHG calculation considers the full life-cycle of each biofuel and that this includes previous land-use, agricultural inputs, transport and processing. Previous land-use is particularly important as when grasslands or forests are converted to biofuel production GHG emissions are so high as to negate any benefit arising from the biofuel for a considerable amount of time. An EU-funded study² concluded that planting biofuel crops on grassland in Europe would not pay off in GHG terms for a number of decades. This is likely to be much worse in the case of forest being displaced by biofuel crops, with deforestation already responsible for one quarter of global emissions.
19. Minimum environmental standards are needed as part of a certification scheme to ensure that in meeting the primary objective of reducing greenhouse gases, sustainability is not undermined by unnecessary damage to the wider environment. These standards should be designed to safeguard biofuel development from adversely impacting upon biodiversity, soil and water. Certification and thus eligibility for public support should be conditional on meeting the standards, sending a clear message to investors that the EU is concerned with supporting only sustainably produced fuels. Some of the standards that would need to be included are:
 - The protection of important habitats from conversion into bioenergy production, including, for example, high nature value set-aside, semi-natural grasslands, peat bogs, savannahs and rainforests.
 - Ensuring appropriate scale and spatial distribution of bioenergy crops to avoid damaging monocultures and consequent loss in landscape heterogeneity.
20. The detrimental, irreversible and global nature of the impacts of clearing natural habitats for biofuel production will have on GHG emissions and biodiversity means that no biofuel produced on land cleared after a defined cut-off date should be eligible for certification under any circumstances. The Kyoto Protocol CDM assumes a cut-off date

² COMCAWE, EUCAR, JRC (2006) Well to tank report

of land deforested after 1990, using this date therefore has precedence in international law.

21. The inclusion and implementation of environmental standards into a certification scheme could be facilitated by drawing upon existing accreditation schemes such as the Roundtable for Sustainable Palm Oil, the Rainforest Alliance, the Roundtable for Responsible Soy and the Better Sugar cane Initiative, EuropGep, Assured Combinable Crops, etc. This should be done in full consultation with both domestic and non-EU stakeholders. Eligible schemes would have to be benchmarked against each other to ensure they are comparable and gaps in the standards would have to be filled where they are found.
22. Certification should apply equally to biofuels that are produced in the EU and those that are imported. Indeed, it is the potential environmental impacts of biofuel production in tropical countries that makes certification all the more imperative.
23. Within the EU, safeguards should aim to ensure that the development of the biofuels sector does not lead to further intensification of European agriculture. Intensification over recent decades, driven by the CAP, has been the principal driver of biodiversity loss across the EU³. The EU is committed to reversing this decline by 2010 as part its Gothenburg commitments, and it is critical that a drive behind biofuels does not result in further intensification, thus endangering the EU's chance of reaching this target.
24. The consultation document suggests that cross-compliance already helps ensure agricultural sustainability, and this is a comment that we have heard on a number of occasions from the Commission. Independent analysis suggests that the current cross compliance system does not provide a sufficient safeguard⁴, and it seems clear that even if it is properly implemented, cross compliance would not be sufficient to ensure the sustainable production of biofuels. Cross compliance does not, for example, cover GHG emissions, fertiliser use outside Nitrate Vulnerable Zones, and the use of pesticides. Nor does it cover the key biodiversity concerns surrounding energy crops, namely the replacement of high biodiversity value land-uses with low-value ones and landscape level effects of block cropping around processing plants. Novel energy crops that are likely candidates for second-generation fuels are also not considered by cross-compliance rules.
25. The UK has recently introduced a Renewable Transport Fuel Obligation, requiring fuel suppliers to replace 5% of the fuel they sell with biofuels. Suppliers will also be required to report on the GHG savings achieved using a provided 'carbon calculator' and the sustainability of their fuels. The UK Government has announced that they intend to

³ Donald, Green & Heath (2000) *Agricultural intensification and the collapse of Europe's farmland bird populations*. Proc. R. Soc. Lond. B. 268, 25-29

⁴ IEEP (2005) *The development and implementation of cross compliance in the EU 15: an analysis*, A Report for the RSPB by the Institute for European Environmental Policy (IEEP); Martin Farmer & Vicki Swales

develop this into a scheme that would tie the incentive of receiving a certificate with the quantity of GHG saved. Much of the background work to this and to certification of biofuels in general has been conducted by the Low Carbon Vehicle Partnership, a UK Government supported stakeholder group. We believe that this work is of a high quality and recommend that it informs the development of certification in the EU⁵.

26. Learnings from other accreditation schemes such as FSC suggest that the certification system should be based on an independent and professional auditing system that employs independent consultants for the auditing work itself. Direct link between auditors and certified companies should be avoided; this can be ensured through a systemised rotation of auditors paid through an independent body.
27. Any certification system will have to be designed in order to survive potential WTO challenge⁶. To do this some key principles should be adhered to:
 - The objective of the policy should be clearly stated i.e. promoting sustainable biofuels in order to address climate change without further loss of biodiversity. It should be clearly linked to the EU commitments under the Kyoto Protocol and the CBD;
 - Standards have to be set in a way that is clearly not discriminatory toward non EU production;
 - The EU should consult with producing countries before setting the standards, possibly try to negotiate agreed standards and offer technical assistance and financial aid to farmers in developing countries to adapt their production methods in order to comply with the standards.
28. No new targets should be set and no new public incentives should be authorised before a Strategic Environmental Assessment of the European biofuels policy has been carried out and before a certification system is put in place. As a precautionary measure, we strongly recommend a moratorium on the conversion of set-aside to biofuel production and on oil palm for biofuel imports until the safeguards system is in place.

Question 5.1

Should the EU continue acting in favour of biofuels after 2010?

29. As described in Question 1, we do not believe that acting in favour of biofuels is a legitimate end in itself. GHG emissions reduction should be the objective and this should be supported by indicative targets once a certification system is in place.

⁵ LowCVP reports are available from <http://www.lowcvp.org.uk/resources/reportsstudies/>

⁶ DLA Piper (in preparation) *Compatibility of biofuels assurance schemes with international trade law*. Report prepared for RSPB/EN

Monitoring of the environmental and GHG impacts must also be in place to inform any decision on future support for biofuels.

Question 5.2

If the EU is to continue acting in favour of biofuels after 2010, should this action include or exclude the definition of a quantified target for biofuels?

30. Any target should be formulated in terms of the quantity of GHG emissions abated and thus the reduction in fossil fuel used. Targets should not be binding and Member State flexibility should be retained so that they can set a biofuels policy appropriate to their unique situation given their particular environmental and strategic considerations. The level of any target should be set according to what can be produced sustainably, and should not be an arbitrary percentage of transport fuel used in the EU, this figure is increasing and may place unacceptable pressure on land resources.
31. If a binding target is to be set then it should be a percentage reduction of GHG in the transport sector as opposed to a biofuels inclusion target. This would allow Member States to choose an appropriate path to achieving this target using a combination of demand management, efficiency, biofuels and other low carbon fuels.

Question 5.3

Should EU action include the following measures (which could be pursued without defining a quantified target):

a) support for research, development and dissemination of good practice?

32. The EU has a clear role in supporting the technical development of biofuels, but it is imperative that this support is aimed at delivering fuels and production pathways that deliver the best GHG savings and at techniques for the sustainable production of biofuels.
33. The development of certification for biofuels will depend on the availability of a user-friendly and sufficiently accurate, EU harmonised 'carbon calculator'. We believe that this could only be developed by the Commission and at the EU level and that this would be a logical extension of the synthesis work that DG Research has already done on life-cycle analysis
34. The research programme should also prioritise the development of good practise and of win-wins for biofuel production and biodiversity, such as the production of bioethanol from reedbeds and grass cuttings from extensive meadows. Both of these are high natural value habitats, yield high quantities of biomass but are threatened with abandonment in many parts of Europe.

b) Continued Community financial support for the supply of biofuels and their feedstocks?

35. The long history of the Common Agricultural Policy (CAP) has showed the danger of production subsidies. They tend to distort markets, drive ecological destruction, lock farmers into obsolete production and create surpluses that do not have market demand.
36. We therefore believe that policy support for bioenergy should be demand based, with the aim of building a thriving energy market that rewards low carbon fuels. This means that the focus should be on providing incentives for renewable, sustainable technologies, through grants and differential taxation. Supply based support, such as direct subsidies for energy crop production, should not be used. Our experience with the CAP has shown that the use of similar subsidies for food production has had a detrimental impact on biodiversity and the wider environment, and that building a supply base without securing a market is an ineffective long-term strategy for the development of a self-sustaining industry. The energy crop premium is essentially a coupled payment of this type, and its introduction and use is against the principle of the 2003 CAP reform.

e) A campaign to inform consumers of the benefits of biofuels?

37. Until a robust system is in place to ensure that biofuels are really delivering GHG reduction and are not causing biodiversity loss, a campaign may be misleading and potentially damaging to the public image of biofuels. We are not currently certain of the GHG benefits of biofuels and the EU has no safeguards in place to prevent damage to biodiversity and the wider environment. A campaign focusing on the benefits would therefore be misleading at best, propaganda at worst. A campaign to promote efficient vehicles to European consumers would deliver far greater benefits in terms of GHG emissions and energy demand.

Question 5.4

If the EU is to define a quantified target for biofuels after 2010, what should it be? What year(s) should it relate to - 2015? 2020? both?

Question 5.5

If the EU is to define a quantified target for biofuels after 2010, should this be expressed

- **market share (as in the present directive)?**
 - **greenhouse gas savings from biofuel use?**
 - **reduced oil consumption from biofuel use?**
 - **reduced fossil fuel consumption from biofuel use?**
38. The target should be expressed in GHG savings, but it should remain flexible as to whether this is met through biofuels use, the use of other low carbon fuels, efficiency and demand management.

Question 6.1

Do you have any comments on the following issues, listed in the biofuels directive for inclusion in the Commission's progress report:

b) the economic aspects and the environmental impact of further increasing the share of biofuels and other renewable fuels?

c) the life-cycle perspective of biofuels and other renewable fuels [and] possible measures for the further promotion of those fuels that are climate and environmentally friendly, and that have the potential of becoming competitive and cost-efficient

d) the sustainability of crops used for the production of biofuels, particularly land use, degree of intensity of cultivation, crop rotation and use of pesticides?

e) the assessment of the use of biofuels and other renewable fuels with respect to their differentiating effects on climate change and their impact on CO₂ emissions reduction?

f) further more long-term options concerning energy efficiency measures in transport?

The scale of the problem

39. Biofuels require considerable land for feedstock supply. The Commission sponsored report *Biofuels in the European Union- A vision for 2030 and beyond* states that 4-13% of agricultural land would be required to meet the target set in Directive 2003/30/EC. This would translate to a requirement of 17-57% of agricultural land needed to meet the report's suggested target of 25% of Europe's road transport needs. Another Commission sponsored study⁷ found that to meet the EU's target of 5.75% replacement of fossil fuels with biofuels would require 14-27% of agricultural land in the EU-25 if it was domestically produced. The volumes required for the biodiesel target specifically are so large that 192% of 2005 EU oilseed production would be needed - or 14% of the foreseen world production in 2012. These numbers are highly variable among studies and depend on many assumptions, although it is clear that they could be reduced with more efficient second-generation biofuels. There is no doubt, however, that meeting even the current indicative Biofuels Directive target will require considerable changes in land use within the EU and in countries that will supply the EU market.

40. There are a number of competing demands on land: food production, non-food crop production other than for biofuels, and nature conservation. All of these have important social, environmental and economic values that amount to a significant opportunity cost that is usually not considered in the main studies currently available. Furthermore, and critically from an environmental perspective, the land-use implications of the EU pursuing high biofuel targets would not be constrained to Europe. Unmanaged

⁷ EUCAR/JRC/CONCAWE (2006) *Well-to-Wheels analysis of future automotive fuels and powertrains in the European context*.

increases in imports of biofuels and biofuel feedstocks threatens global biodiversity and climate change through the loss of tropical habitats both to biofuel production and to food production if the EU food supply is reduced as a result of domestic production.

Impacts inside the EU

41. The overall impact of large-scale bioenergy crop production on biodiversity will depend largely on the crops in question, the land-use type they replace and the scale and distribution that they are grown to.

New bioenergy crops

42. While current biofuel technology relies on conventional crops, the large scale cultivation of new crops that may become viable feedstocks for second generation biofuels, including woody crops and perennial grasses, represents a considerable ecological shift from conventional farmland habitats.
43. This shift will present opportunities as well as risks for biodiversity. Where bioenergy crops are grown on intensively managed farmland, for example, some research evidence suggests overall bird species diversity and breeding density in the local area may be either little affected or increased as a result⁸.
44. One of the principle candidates for the production of woody biomass, willow short rotation coppice (SRC), has been found in some cases to host a higher density and variety of bird species than is usually seen on arable land or improved grasslands. Types of bird species depend on the age of the plantation. Young crops attract birds that prefer open landscapes, including a number of species that are of medium or high conservation concern such as the lapwing, skylark, meadow pipit and corn bunting. Mature plantations generally host more common species that are currently of low to medium conservation concern, such as the pheasant, robin and blackbird. SRC plantations also support higher invertebrate populations than conventional crop types and as input requirements are low, there is the potential for diverse plant communities to be supported. These results come almost entirely from studies of relatively small pre-commercial SRC plantations; larger commercial plantations may have different advantages and disadvantages. Concerns also exist about the impact on water tables and thus on wetlands in areas that suffer from water scarcity.
45. Little is known of the potential impact that perennial grasses, such as Miscanthus, canary grass and switchgrass, could have in Europe. They are unlikely to provide seed food, and are not suitable habitats for open ground species. However, they may prove suitable habitats for species characteristic of reed beds and dense herbaceous vegetation

⁸Sage, R.B. & Robertson, P.A. (1996). *Factors affecting songbird communities using new short rotation coppice habitats in spring*. Bird Study 43: 201-213; Christian et al. (1998) *Bird and mammal diversity on woody biomass plantations in North America*. Biomass & Bioenergy 14: 395-402.

or scrub, e.g. reed warbler and reed bunting. Plantations are likely to host a diversity of invertebrates unless widespread cultivation leads to pests problems and results in increased pesticide use.

Previous land use

46. Growing for biofuels may change land-use decisions and thus have considerable impacts. The most significant impacts will result from putting land that is important for wildlife, erosion control and water quality into production for biofuels. Any subsequent loss of high wildlife value habitats such as wetlands, wet meadows, extensively managed semi-natural grassland and scrub would have negative impacts on a number of bird species and other components of farmland biodiversity.
47. The most immediate threat posed to biodiversity is the loss of set-aside to bioenergy crops. An EU supported study⁹ forecasts that the entire area of EU set aside would be required for energy crops to meet the EU target of 5.75% substitution of conventional petrol with ethanol. This is of particular concern, as set-aside land is known to provide important feeding and nesting resources for many farmland bird species that are otherwise in severe decline across Europe¹⁰. In the breeding season, set-aside holds relatively high densities of many bird species, compared to other arable land-use types¹¹ and provides important nesting opportunities for species of high conservation concern. The French population of little bustard, for example, is critically dependant on sympathetically managed set aside, while 80% of the linnet population in the East Anglia area of the UK winters on set-aside, compared to only 1% on winter cereals¹². Research conducted by BirdLife Austria suggests set-aside to be the single most important factor determining the density of wintering raptors, the diversity of farmland birds and the densities of several threatened or declining species such as the great bustard or grey partridge. Though set-aside does not originally have an environmental objective, it now represents a lifeline for many species and the large-scale conversion to energy crops would jeopardise the EU's chance of achieving the Gothenburg target of halting biodiversity decline in Europe. Agri-environment, a policy mechanism that is part of the Rural Development Regulation and allows countries to pay farmers to

⁹ EUCAR/JRC/CONCAWE (2006) *Well-to-Wheels analysis of future automotive fuels and powertrains in the European context*.

¹⁰ Evans et al. (1997) *Set-aside: conservation by accident...and design?* RSPB Conservation Review 11: 59-66. Sandy, UK: RSPB; Donald et al. (2001) *Habitat use and diet of skylarks *Alauda arvensis* wintering on lowland farmland in southern Britain*. Journal of Applied Ecology 38: 536-547; Donald et al. (2001) *Factors affecting the territory distribution of Skylarks *Alauda arvensis* breeding on lowland farmland*. Bird Study 48: 271-278; Stoat & Parish (2001) *Crops grown on set-aside land bring wild birds back to the fields - Monitoring is under way, and results so far are promising*. Nature 414: 687-687.

¹¹ Henderson, I.G., Cooper, J., Fuller, R.J. & Vickery, J.A. (2000a). *The relative abundance of birds on set-aside and neighbouring fields in summer*. Journal of Applied Ecology 37: 335-347; Henderson, I.G., Vickery, J.A. & Fuller, R.J. (2000b). *Summer bird abundance and distribution on set-aside fields on intensive arable farms in England*. Ecography 23: 50-59.

¹² Wilson, JD, Taylor, R, and Muirhead, LB (1996) *Field use by farmland birds in winter: an analysis of field type preferences using re-sampling methods*. Bird Study 43: 320-332

implement methods that are beneficial to the environment, has the capacity to deliver the benefits currently associated with set-aside, but its capacity to do so has been limited by the availability of funds and poor design at the Member State level.

48. The expansion of energy crop cultivation is currently being put forward in Spain and Portugal as a reason for further expanding the irrigation network at the expense of semi-natural steppes and long fallow-dry cereal systems that are among the most biodiversity rich and endangered habitats in Europe.
49. An expansion of oilseed rape cultivation in Germany has been observed to lead to the decline of fodder crops such as clover and alfalfa¹³ which provide key habitats to declining species such as the Red Kite and Ortolan bunting. Similarly it has been observed in Germany that the construction of a biogas plant often leads to a steep increase in maize cultivation in the surrounding area, again leading to the loss of wildlife habitat provided by less intensive crops.
50. In Finland, oilseed rape is being promoted as a feedstock for biofuels. Only spring-sown oilseed rape is suitable to the Finnish climate and spring-sown crops have been found¹⁴ to have the most detrimental effect on wildlife and the highest contribution to water pollution relative to other crops, particularly in the more productive south of the country. Agri-environment schemes are in place to discourage this but a push for biofuels may make this less effective.
51. Poorly sited short rotation coppice could lead to the destruction of high wildlife value farmland such as wet meadows, dry grasslands and wetlands. It could also lead to unsustainable water use in water stressed regions, lowering water tables and threatening natural wetlands.

Scale and spatial distribution of bioenergy crops

52. As with all crops, the scale and spatial distribution of energy crops will greatly determine their impact on birds and the wider environment. Current infrastructure and policy strongly suggests concentration of production. Economies of scale, transport costs and other practical factors encourage crops to be grown (or imported) in close proximity to where they are processed, as is seen in the sugar industry. This is likely to result in significant simplification of the landscape in terms of habitats and vegetation structure as large uniform areas of bioenergy crop are produced in the area surrounding the processing facility. It is likely that such a spatial arrangement of bioenergy crops will have a negative impact on biodiversity.

Impacts outside the EU

¹³ NABU/BirdLife Germany

¹⁴ Pitkänen, M., Tiainen, J., (Eds.). (2001) *Biodiversity of agricultural landscapes in Finland*. BirdLife Finland Conservation Series No 3, Helsinki.

53. A biofuel market in the EU will necessarily mean importing biofuels and feedstocks from abroad. This might be less true of biomass for heat and power as woody feedstocks are costly to transport.
54. The principal non-EU feedstocks for biofuels are palm oil for biodiesel and sugar cane for bioethanol. Soy could be used for biofuels in the future. These crops are all predominantly grown in the tropics and their expansion is one of the primary drivers in the decline of global biodiversity. Sugar cane, palm oil and soy are produced in huge, highly intensive monocultures that have very little biodiversity value and continue to expand at the expense of globally important natural habitats.
55. The establishment of oil palm plantations is a major driver of lowland forest loss in Indonesia and Malaysia¹⁵, one of the most important and threatened biodiversity “hot spots” in the world, which support unique and vulnerable species. Research has shown that intensive stands of single species oil palms support little biodiversity and fragment hitherto continuous lowland forests. Future oil palm expansion is likely to be focused in the Wallacea and Sundaland ecological regions that hold one of the highest concentrations of threatened birds as well as large and endangered mammals such as the Bornean and Sumatran orang-utan, the critically endangered Javan and Sumatran rhinos, the Asian elephant and the Sumatran tiger. Palm oil plantation expansion is already thought to be responsible for the loss of 1.2Mha of tropical forests in Malaysia and 2.05Mha in Indonesia.
56. The Brazilian drive in the 1970s to switch from petrol to bio ethanol through the development of a massive domestic sugar cane to alcohol industry (the pro-alcohol programme) has contributed to the deforestation that has played a key role in the destruction of the biodiversity rich Atlantic forest biome. Current estimates for surviving intact forest in this area range from 2 to 10% of its original land area. This demonstrates the danger of biofuels placing additional demand for crops, accelerating the destruction of globally important habitats. A further significant expansion of demand might lead to further sugar cane expansion into the Cerrado areas and to the displacement of ranching and other activities into the agriculture frontier.
57. Soy is not currently a major biofuel feedstock but it is set to become one in the near future. Soy expansion is the principal driving force behind the destruction of the Brazilian Cerrado¹⁶, a savannah-like habitat that is home to 160,000 plant and animal species and the fourth highest level of bird diversity in the world, as well as the conversion of natural grasslands and forests in Paraguay, Bolivia and Argentina and deforestation in the southern fringe of the Amazon rainforest. In Brazil alone, soy is already expanding at a rate of 1.7 million hectares per year, increased demand from biofuels could accelerate this further.

¹⁵ BirdLife International (2003), WWF (2005), Conservation International, FoE (2004).

¹⁶ WWF: Forest Conversion News (2004)

58. As well as threatening biodiversity, the destruction of natural and semi-natural habitats such as forests and grasslands emits huge quantities of greenhouse gases. Calculations suggest that the greenhouse gas payback time for ploughing grassland for biofuels will be 17 to 100+ years and much more in the case of rainforests or peatlands. Land-use change, particularly in the tropics, is already responsible for approximately 1/5 of global emissions.
59. The expansion of plantations into natural ecosystems in developing countries also poses severe problems from a development and human rights point of view. Plantation expansion, for example, often results in the eviction of native populations and small holders. On the other hand, biofuels production does not necessarily need to be in conflict with sustainable development. Better use of waste can bring increased economic benefits without putting pressure on natural ecosystems. Small-scale biofuel production, particularly for supplying local markets, can contribute to income improvement in rural areas as well as lower energy costs. The EU has a responsibility to ensure developing countries are supported in their efforts to develop a truly sustainable bioenergy sector that can contribute to their economic and social development without causing large scale environmental harm. Imports to the EU of sustainably produced biofuels can also play a positive role, through, for example, providing an outlet to sugar producing countries damaged by the recent reform of the CAP sugar regime.

Prospects for sustainable production

60. Various voluntary approaches are currently trying to address the issue of sustainable production of tropical commodities. The most relevant in our case are the Round Table on Sustainable Palm Oil <http://www.sustainable-palmoil.org/>, The Round Table on Responsible Soy <http://www.responsiblesoy.org/> and the Better Sugar cane Initiative http://www.panda.org/about_wwf/what_we_do/policy/agriculture_environment/index/our_solutions/better_sugarcane_initiative/index.cfm . These are voluntary schemes and cannot alone replace the need of a mandatory certification system to ensure the sustainability of biofuels enjoying EU support. However, they do provide a basis for developing the system.