Proposed Small-Scale CDM Methodology NM051 – Production of biodiesel and/or plant oil without changes in land use Comments by Biofuelwatch and Corporate Watch

Please find below our detailed comments on this proposed methodology and on the related proposed CDM project in Uruguay. Our main concerns about the proposed methodology relate to the fact that nitrous oxide emissions are ignored and that leakage, which could very well result in significant additional greenhouse gas emissions, is not addressed. Additional concerns about the relevant project proposal relate to additionality, and impacts on biodiversity, soils, water and human health.

N2O emissions being ignored:

Nitrous oxide emissions from oilseed plantations are so significant that, according to a study by Paul Crutzen et al[i], they result in some types of biodiesel being associated with greater overall greenhouse gas emissions than the fossil fuels which they replace – without counting any CO2 emissions associated with growing and refining vegetable oil. Rapeseed biodiesel, for example, was found to have up to 70% greater greenhouse gas emissions than mineral diesel. The study did not look at soya. However, as bio-geochemist Franz Conen commented on the article: "All N in the harvested fuel has to be replaced in some form by the same amount of reactive N, of which 3-5% will eventually be emitted as N2O…Whether this occurs in the form of mineral fertiliser or through biological N fixation, say by a crop of soy-beans, makes no difference in terms of subsequent N2O emissions."[ii]

Although the older figures for combined direct and indirect N2O emissions from soils contained in the IPCC's 2006 Greenhouse Gas Inventory Guidelines is more conservative, the guidelines nonetheless emphasise that N2O emissions must be accounted for. The fact that legume monoculture emit N2O is undisputed. Moreover, despite nitrogen fixation by legumes, nitrogen fertilisers are nonetheless applied on soya plantations in South America.

Furthermore, there is some evidence that no-till farming methods, which are widely used for soya in Uruguay, increase N2O emissions compared to conventional tillage.[iii]

Leakage being ignored:

The draft methodology ignores leakage in all cases where oilseed use by project accounts for less than 10 % of oilseeds of the same type produced or imported by the country and where oilseeds are supplied from the market or from existing farms in the country. There does not appear to be any reason why the 10% limit would rule out indirect impacts, nor in fact why supplies through 'the market' should not come from oilseeds directly produced at the expense of carbon rich ecosystems. In the case of Uruguay, 10% of current soya production amounts to 65,000 hectares. As a peer-reviewed article by Joseph Fargione et al states: "Biofuel production can displace crops or pasture from current agricultural lands, indirectly causing greenhouse gas release via conversion of native habitat to cropland elsewhere." [iv] The conversion of carbon rich ecosystems to produce biofuel crops such as soyabean releases between 17 and 420 times more CO2 than the annual reductions caused by the replacement of fossil fuel use.[v]

We believe that 'net deforestation', as defined under the CDM, is not a tool for assessing whether or not substantial greenhouse gas emissions from land use change will occur.

Firstly, under the FAO and CDM definition, the loss of primary and other natural forests is ignored provided the area lost is matched by monoculture tree plantations. However, tree plantations, such as the eucalyptus and pine plantations in Uruguay, store far less carbon than natural forests and furthermore, they are

regularly clearcut and are highly vulnerable to fire, drought and infestations because they lack resilience due to a lack of biodiversity.

Secondly, leakage could very well involve deforestation in another country.

Thirdly, the proposed methodology would ignore indirect and potentially direct destruction of other biodiverse and carbon rich ecosystems, such as peatlands, wetlands and grasslands and the greenhouse gas emissions resulting from it. Furthermore, displacement of pasture can result in significant increased emissions from livestock kept in feedlots.

The following indirect impacts are particularly relevant to the project in Uruguay

Soya expansion in Uruguay directly leads to the conversion of grasslands for pasture (including extensive grazing) and to an increase in feedlots. It also displaces traditional crops such as wheat, sorghum and sunflower.[vi] The conversion of grasslands, including ones previously used for extensive pasture, to cropland results in significant carbon emissions as well as biodiversity losses. According to the IPCC's greenhouse gas inventory guidelines 2006, grasslands in warm temperate regions hold around 6.48 tonnes per hectare. By comparison, carbon on cropland after one year of land conversion (which requires ploughing the soil) in this region is around 2.1 tonnes per hectare – a very significant loss. It has been shown that in the La Plata basin, the expansion of crop-land over the past 25 years has "reduced soil carbon (C) by about 30%, at loss rates of 28 million metric tons (MMT) of C per year".[vii]

Increased methane and nitrous oxide emissions due to a switch from often extensive cattle rearing on grasslands to feedlots are another significant indirect impact of soya expansion in Uruguay. According to the report "The Long Shadow of Livestock", published by the UN Food and Agriculture Organisation, "Methane released from animal manure may total 18 million tonnes per year. This occurs mostly when manure is managed in liquid form, such as in lagoons or holding tanks…Manure deposited on fields or pastures, or otherwise handled in dry form, does not produce significant amounts of methane".[viii] According to the same FAO report, 3.69 million tonnes of N2O are emitted as a result of manure management worldwide. Given that the shift from grazing to feedlots which is responsible for significantly increased methane and N2O emissions is clearly linked to soya expansion in Uruguay, ignoring those additional emissions does not appear to be justified.

Additionality:

We believe that the additionality test is not satisfied in the case of the Biogran-Copagran biodiesel project. The two refineries are already operating prior to any CDM funding; the refinery in Ombúes de Lavalle opened in early 2008, the refinery in Young in 2009 and according to the company there are no problems with finding a market for the biodiesel. See for example www.elpais.com.uy/09/04/11/pecono_410149.asp and http://www.eltelegrafo.com/index.php?seccion=locales&fechaedicion=2009-12-20#23609. According to media reports, Copagran raised money for biodiesel refining from various national investors, amongst them the head of the Uruguayan Stock Exchange, Angel Urraburu (www.biodisol.com/biocombustibles/invierten-en-otra-planta-de-biodiesel/).

Impacts on biodiversity:

Soya plantations and in particular GM no-till soya, are associated with large-scale pesticide use with disastrous consequences for biodiversity. According to environmental management specialist Juan Carlos Corona, 6,000 tonnes of 300 different types of agro-chemicals were applied to cropland in Uruguay in 2008.

The most commonly used is glyphosate which is known to kill not only wild plants but also animals, including frogs. Large-scale animal deaths have been reported around plantations in Uruguay, including soya plantations.[ix]

The displacement of Uruguay's Campos grasslands used for pasture with soya monoculture, which is being accelerated by biodiesel expansion in Uruguay, poses a major threat to biodiversity. According to a report by IUCN: Pampas and Campos have a conspicuous and unique biodiversity, with thousands of species of vascular plants, including more than 550 different grass species... The community of grassland birds that make use of the southern cone grassland biome is highly diverse and abundant. There are several threatened species, and the main reason of this decline is habitat loss."[x]

Other impacts:

Large-scale and indiscriminate use of agro-toxins inevitably causes serious soil and water pollution.

An Argentinean study based on glyphosate impacts on amphibians links glyphosate to serious birth defects.[xi] Similar conclusions have been reached by other studies.[xii] In Paraguay, community studies around soya plantations showed that 78% of families interviewed suffered from a health problem which appeared to be linked to agro-toxins, 63% suffered constant ill health and many families had left their homes because of water pollution. Respiratory and digestive problems, headaches, miscarriages and birth defects were common.[xiii]

Those impacts clearly relate to the question of 'sustainable development'which should be considered under CDM rules.

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[i] N2O release from agro-biofuel production negates global warming reduction by replacing fossil fuels, Paul Crutzen et al, Atmos. Chem. Phys. Discuss., 7, 11191–11205, 2007

[ii] http://www.cosis.net/copernicus/EGU/acpd/7/S4216/acpd-7-S4216.pdf

[iii] Dinitrogen and N_2O emissions in arable soils : Effect of tillage, N source and soil moisture, Liu Xuejun J, Soil biology &Biochemistry, Vol. 39, 2007

[iv] Land Clearing and the Biofuel Carbon Debt, Joseph Fargione et al, Science, 29th February 2008

[v] Land Clearing and the Biofuel Carbon Debt, Joseph Fargione et al, Science, 29th February 2008

[vi] http://americas.irc-online.org/am/5355

[vii] Land use change in the Rio de la Plata Basin, Esteban Jobbagy, et al, Inter-American Institute for Global change Research, 2010. http://iaibr1.iai.int/cgi-bin/SCI_Projects_Dynamic_Pages/CRN2/Factsheets/CRN2_31.pdf

[viii] Steinfeld, Henning. & Food and Agriculture Organization of the United Nations & Livestock, Environment and Development Initiative 2006 Livestock's long shadow : environmental issues and options

[ix] http://ipsnews.net/news.asp?idnews=50792

[x] Temperate Grasslands of South America, IUCN, 2008, http://cmsdata.iucn.org/downloads/pastizales_templados_de_sudamerica.pdf

[xi] Carrasco, A.E. 2009. Efecto del glifosato en el desarrollo embrionario de Xenopus laevis (Teratogénesis y glifosato). Laboratorio Embriología Molecular Informe preliminary)

[xii] References provided by Javiera Rulli at http://km.fao.org/fileadmin/user_upload/fsn/docs/FSN_Peer_Assist_No1.pdf

[xiii] Refugees of the Agro-Export Model, BASE investigaciones socials, http://lasojamata.iskra.net/files/RefugeesAgroexport_summary.pdf

Con formato: Español (España, internacional)