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Caught in the Net:
How “net-zero emissions” will delay real climate action and drive land grabs.

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Summary:

United Nations (UN) climate negotiations must urgently and equitably address climate change, and lead to rapid cuts in emissions of greenhouse gases if our planet is to have any hope of stabilising global temperatures. Growing talk among politicians, business leaders, and even some NGOs of achieving "net-zero emissions" could therefore sound promising. But while "**net-zero emissions**" may sound similar to "**zero emissions**", the two concepts actually mean very different things, with entirely different consequences.

Adding "net" to a goal of "zero emissions" may prove to be a trap that delays real climate action, and which could drive devastating land grabs and hunger through the large-scale use of land, biofuels and biomass to absorb rising carbon dioxide emissions. Instead of requiring real emissions cuts, "net" counting could allow for business-as-usual greenhouse gas emissions, offset by massive-scale mitigation through the land sector.

The Intergovernmental Panel on Climate Change (IPCC), outlines scenarios requiring between 500 million and 6 billion hectares of land in order to implement this dangerous offsetting approach. Developing countries are likely to be the target of this new focus on land use for mitigation.

Many vulnerable communities in the South have already lost their land and seen their food security undermined in the expanding drive for biofuel production. Climate negotiations must learn the lessons of the biofuel land grab, and avoid any so-called climate solutions that threaten the very communities that the UNFCCC is supposed to help. Land rights and food sovereignty must not be sacrificed in the name of climate change mitigation.

As the world looks to forge a new way forward on combatting climate change, the rights of indigenous peoples, women and smallholder farmers must be protected. Climate negotiations must therefore **avoid the trap of "net-zero."**

FRONT COVER
MEMBERS OF THE K'QUINICH COMMUNITY IN GUATEMALA LOOK OVER TO THE LAND FROM WHICH THEY WERE EVICTED TO MAKE WAY FOR SUGAR PLANTATIONS TO PRODUCE BIOFUELS.

PHOTO: DANIELAE VOLPE/ ACTIONAID

Net-Zero Emissions: business-as-usual + land-grab technologies?

It is widely expected that a new global climate framework, the successor to the Kyoto Protocol, will be agreed to in Paris at the COP21 climate negotiations in December 2015. The necessity of protecting global food production is one of the key reasons why UN negotiations on climate change were set up in the first place. Farmers around the world are already experiencing the disrupting impacts of climate change on food production.

Strong decisions are urgently needed at COP21 to dramatically cut greenhouse gas emissions, so as to have a chance of staying below an average global temperature rise of 1.5°C, and to enable vulnerable countries to adapt to and deal with the impact

of rising temperatures, unpredictable weather and extreme events. Considering the devastation already experienced by millions of vulnerable communities around the world at current temperature increases, we can afford to go no higher.

Such action will require difficult but necessary transformative steps to ensure massive emission cuts, structural shifts, lower energy use and consumption patterns, improved efficiency, and a significant switch to more sustainable energy sources. All this must be done in a manner that is fair and equitable, and provides support to poorer countries and communities that are historically less responsible for causing climate change.

But proposals by some parties to include a goal of "net-zero emissions" in the new climate agreement have been met by many civil society groups with alarm instead of acclaim.[1]

They voice concerns that **adding "net" to the language of "zero emissions" is likely to delay or undermine real action, while driving land grabs that target the world's most vulnerable, and further threaten food security.**

Instead of requiring the necessary real action to cut emissions, "net-zero" approaches can ultimately allow greenhouse gases to continue to rise (business-as-usual) above the targeted level, while turning to unproven Negative Emissions Technologies (NET) on a large scale to remove CO2 from the atmosphere. This is known as the "overshoot" strategy.

This risky strategy is likely to lead to the expansion of biofuels, BECCS (bioenergy with carbon capture and storage), biochar, and other similar technologies. These approaches would require vast areas of land for carbon sequestration, and could fuel huge land grabs in Africa, Asia and Latin America.

Negative Emission Technologies (NET): Biofuels, BECCS and Biochar

- **Biofuel** mandates for biodiesel and bioethanol in OECD countries and Brazil have already created an inflexible and growing demand for biofuel crops such as maize, sugar, soybeans, palm oil and jatropha. This also increases demand for agricultural inputs, and pressure on fertile lands has driven escalating land acquisitions around the world, particularly in developing countries. Many of these acquisitions have lacked transparency and have undermined the land rights and food sovereignty of impacted communities. Furthermore, the process of growing, harvesting and processing biofuels is rarely carbon neutral. Using fertiliser, transporting crops, and expanding agricultural land all create emissions that must be counted.

- **Bioenergy** with carbon capture and storage (BECCS) involves the growing of biomass (often turned into wood pellets), which is then burned to produce

1 ActionAid, FoE et al (2015) *What's Wrong with Net-Zero Emissions in 2050* http://climate-justice.info/wp-content/uploads/2015/02/NET-Zero-brief-Indesign1.pdf

energy. The CO2 emitted in the burning phase is piped away and buried deep underground using still unproven Carbon Capture and Storage (CCS) technologies. However, the IPCC acknowledged that there are serious questions about the technological feasibility of these strategies.[2] None have been tried at the scale required, and the ability of CCS to guarantee the long-term containment of CO2 is still uncertain. Furthermore, the amount of land required to implement BECCS on a significant scale is likely to bring it in conflict with other necessary demands on land.

- **Biochar** is made from turning biomass into charcoal, which its proponents claim is a more stable form of carbon that is less likely to biodegrade or release CO2. Trees and other plant material such as crop residues can be used to draw carbon out of the air, which is then burned at high temperatures in a low oxygen environment to produce charcoal. Those who propose this approach as a large-scale climate solution claim that adding large volumes of biochar to soils could sequester up to 12% of global GHG emissions. However these same proponents have also admitted that nearly 1 *billion* hectares of land could be required to grow and burn enough biomass to achieve this goal.[3] Critics of this approach point out that this would fuel major land acquisitions for large plantations of fast-growing trees, that there is not enough land available to grow sufficient biomass to burn on this scale, and that the CO2 benefits and the long-term stability of biochar are also highly questionable.[4]

The use of any or all of these approaches as strategies for climate change mitigation will involve a huge scaling-up of biomass production, requiring vast areas of land. They will inevitably conflict with food production and communities' land rights.

In its Fifth Assessment Report (AR5), the Intergovernmental Panel on Climate Change (IPCC) reviewed many different mitigation strategies in an attempt to identify scenarios that would keep post-industrial temperature change at under 2°C. Unfortunately, most scenarios that limited emissions to 450 or 500-550 ppm CO2 equivalent (the level proposed as most likely, or more likely than not, to keep the temperature change below 2°C) estimate that **between 500 million and 6 billion hectares of land would be required to stabilise global temperatures at these levels.**[5, 6] To put this into context, **global crop production currently covers 1.5 billion hectares of land**. 6 billion hectares is equivalent to twice the size of Africa.

2 IPCC, Climate Change (2014) *Mitigation of Climate Change*, Summary for Policy Makers, pg 12. http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_summary-for-policymakers.pdf

3 Nature Communications 1, doi: 10.1038/ncomms1053, Dominic Woolf et al *Sustainable biochar to mitigate global climate change*

4 African Biodiversity Network (2010) *Biochar Land Grabbing, the Impacts on Africa* http://www.biofuelwatch.org.uk/docs/biochar_africa_briefing2.pdf

5 IPCC, Climate Change (2014) *Mitigation of Climate Change, Summary for Policy Makers*, pg 12. http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_summary-for-policymakers.pdf

6 IPCC (2014) *Fifth Assessment Report, Working Group III*, Chapter 6, pg 446

Although these “net-zero” emissions scenarios are wildly unfeasible, they are likely to create competition for land on a scale that the world has never seen before.

“NET-ZERO EMISSIONS” LANGUAGE COULD DELAY REAL ACTION ON CLIMATE CHANGE BY ALLOWING POLLUTION TO CONTINUE BUSINESS-AS-USUAL.

The IPCC has thus warned that “mitigation efforts could undermine action on the right to promote sustainable development, and on the achievement of poverty eradication and equity.”[7]

Business-as-usual benefits

“Net-zero” thinking lets countries and companies carry on burning coal for electricity, or fracking for oil and gas, based on the assumption that the emissions those activities create will be removed from the atmosphere later. The fossil fuel industry has billions of dollars at stake in the climate negotiations. Regulating their industry and reducing the use of fossil fuels would certainly cut into their considerable profit margin. It should not be surprising, then, that the industry has expressed an interest in carbon removal strategies such as BECCS. By relying on removal technology instead of cutting emissions, the fossil fuel industry can continue business-as-usual. The industry is also interested in the captured carbon, as by pumping the captured CO2 into abandoned oil wells, previously un-retrievable oil can be accessed, thus further increasing fossil fuel extraction, burning and profits.

7 IPCC, Climate Change (2014) *Mitigation of Climate Change, Summary for Policy Makers*, pg 5. http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_summary-for-policymakers.pdf

Many stakeholders and observers now agree that carbon offsetting has failed to address climate change. There are numerous reasons for this, such as weak global ambition for climate action, a global surplus of available carbon credits, plummeting prices for carbon, creation of perverse incentives, and a lack of offsetting projects that are truly additional (i.e. most offset projects would have happened anyway even without the funds provided from the sale of the offset credit). However, these problems can be seen in the overall context of allowing countries and industries to continue polluting and avoiding taking action to reduce their own emissions.[8]

Even though net-zero technologies are scientifically dubious and socially unfeasible, the concept encourages governments and industries to avoid taking the real, necessary and urgent action that the planet needs in this time of climate crisis.

Learning the lessons of the biofuel land grab

The growth of global biofuel production in recent years can provide key insights into the impacts of larger land-based mitigation strategies. Biofuel projects are the second-most important driver of large-scale land acquisitions,[9] and the World Bank has identified "demand for biofuel feedstock as a reflection of policies and targets in key consuming countries" as one of the main drivers of the global expansion of cultivated area.[10]

Sugarcane in Bagamoyo, Tanzania

Around 1,300 farmers in Bagamoyo district in Tanzania, growing multiple crops for local consumption, are being displaced to make way for a massive sugarcane plantation, without giving their free, prior and informed consent. Although the company has conducted consultations with affected villagers, many people have not been offered the choice of whether to be resettled or not, and have not been given crucial information about the irreversible effects the project may have on their livelihoods and their rights to food and land.[1]

Lack of transparency from the company, EcoEnergy, has also been a serious problem, as it has not published key information about the tax holidays it will benefit from. Meanwhile, misleading information about government ownership in the project has also been published.

1 ActionAid (2015) *Stop EcoEnergy's Land Grab in Bagamoyo, Tanzania* http://www.actionaid.org/publications/take-action-stop-ecoenergys-land-grab

8 http://www.carbontradewatch.org/issues/carbon-offsets.html

9 Land Matrix (2014) *Land Matrix Newsletter October 2014*, Land Matrix

10 World Bank (2011) *Rising Global Interest in Farmland*, World Bank: Washington, DC

Jatropha in Malindi, Kenya

In October 2009, communities in the Kenyan coastal region of Malindi discovered that their county council was leasing 50,000 hectares of community trust land to Kenya Jatropha Energy Ltd, an Italian-owned company specialising in the production of biofuels. The council was to receive €100,000 (or €2 per hectare) in annual revenue for a 33-year lease of the land. The project would have required the eviction of around 20,000 people, as well as destruction of the Dakatcha forest, home to rare bird and tree species.

Local communities had not been consulted, however, and had not given their consent to this plan. They went to court, filing a case to demand an immediate stop to the project, while a petition gathered tens of thousands of signatures in Kenya and abroad. In September 2010, the Kenyan government asked the county council to develop a multiple land-use plan that would conserve all forested areas, and the company to provide concrete evidence of the economic, social and environmental impacts of the proposed project.

A year later, in September 2011, the government banned the growing of jatropha in the coastal region, stressing that the Italian company had failed to "provide any scientific evidence that the development of jatropha was going to be sustainable and economically profitable for the country and communities."[1]

1 ActionAid (2014) *The Great Land Heist* http://www.actionaid.org/publications/great-land-heist

The expansion of large-scale biofuel plantations has caused major deforestation and carbon losses from cultivation of peat lands, while marginalised local communities have lost access to land, grazing grounds and forest resources.[11] The research group GRAIN lists **293 reported land grabs around the world between 2002 and 2012 – covering 17 million hectares – where the stated intention of the investors is the production of biofuels.**[12, 13]

Biofuel expansion has undermined food security in other ways as well. Creating a demand for feedstocks, and increasing competition for other agricultural inputs such as water and fertilisers have contributed to unstable and increasing food costs. Biofuel expansion was one of the factors that triggered food price spikes in 2007-08 and 2012. For developing countries that are food importers, the increase in food prices was particularly burdensome. Between trade years 2005-06 and 2010-11, developing countries paid an additional $6.6 billion dollars to import food because of corn ethanol expansion in the United States.[14]

11 HLPE (2011) *Land tenure and international investments in agriculture*, a report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, HLPE: Rome

12 GRAIN (2013) *Land grabbing for biofuels must stop*, GRAIN 21 February 2013, GRAIN: Girona

13 ActionAid (2015) *Act on It: 4 Key Steps to Prevent Land Grabs*

14 ActionAid USA (2012) *"Fueling the Food Crisis: The Cost to Developing Countries of US Corn Ethanol Expansion.*", pg 3.

HENZANANI MERAKINI IS A FARMER LIVING IN KENYA'S DAKATCHA WOODLAND. HER HOUSE AND FARMLAND IS LOCATED ON LAND THAT WAS EARMARKED FOR A BIOFUEL PLANTATION.

PHOTO: CHRIS COXON/ ACTIONAID

A group of intergovernmental organisations including the UN Food and Agriculture Organisation (FAO), the International Fund for Agricultural Development (IFAD), the World Bank and the World Trade Organisation later called on G20 governments to end all policies supporting biofuel production and consumption.[15]

Although they have been introduced as a "renewable energy", **biofuels are not living up to their promise of reducing greenhouse gas emissions**. Biofuel policies have generated greater demand for agricultural land, while valuable carbon sinks and fragile ecosystems such as forests, peatlands and grasslands are also being converted to crop fields. This results in a loss of biodiversity and substantial increases in greenhouse gas emissions from ploughing soil and removing vegetation.[16, 17]

Biofuels demonstrate how demand for an energy crop can increase the pressure on the most fertile land and valuable water resources, and undermine the food security of poor food producers in developing countries. If the new global climate agreement pushes negative emissions technologies forward, it could drive more land grabs such as those described above, but on a much larger scale.

15 FAO, IFAD, IMF, OECD, UNCTAD, WFP, the World Bank, the WTO, IFPRI and the UN HLTF (2011) *Price Volatility in Food and Agricultural Markets: Policy Responses*, FAO: Rome.

16 Transport and Environment (2013), *Drivers and impacts of Europe's biofuels policy*, Transport and Environment: Brussels

17 ActionAid (2015) *Act on It: 4 Key Steps to Prevent Land Grabs*

Conclusions & Recommendations:

The “net-zero emissions” approach will put the burden for addressing climate change on the countries and communities who have done the least to cause the problem, shifting the climate burden to the South. The land rights and food sovereignty of small-holder farmers, indigenous peoples and local communities, particularly in developing countries, will be threatened by the large-scale use of land for mitigation that will conflict with food production and ecosystems.

The need to ensure food security in the face of climate change is one of the key reasons that the UNFCCC was created in the first place. Therefore new global climate agreement must not undermine the planet’s farmers, food security, and the ability to adapt.

Real mitigation action can and must take place through strong emission cuts at source. We cannot allow real progress on climate change to get caught in the trap of “net-zero emissions.”

- The new UN climate agreement must call for ambitious and equitable climate action, and sharp cuts in greenhouse gas emissions. Rich countries need to cut emissions domestically, and support developing countries to adopt greener pathways. These mitigation strategies must not negatively impact on adaptation, land rights and the right to food of indigenous peoples, farmers and local communities.

- Countries and civil society organisations must oppose and delete language on “net-zero emissions” from UNFCCC text.

- Language protecting food security must be included in the preamble, the overall objectives, and in the sections on adaptation and mitigation.

- Emissions from the land sector must be treated under targets that are separate from fossil fuel emissions. This can help to address deforestation and loopholes in the forest sector, while dis-incentivising the massive use of land-based negative emissions technologies to offset industrial emissions.

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