Agrofuels and the Myth of the Marginal Lands

A briefing by

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Logged peat forest ("Marginal land") in Indonesia. Photo: Rita Sastrawan

MARGINAL, IDLE, DEGRADED, UNDER-UTLISED, SLEEPING, WASTELANDS AND ABANDONED CROPLANDS: all of these are different terms for what is being promoted as the "solution" to the impacts of growing crops for agrofuels.

Partly in order to respond to accusations that agrofuels (also known as biofuels) compete with food production, some policy makers have proposed that agrofuel crops should be planted on land that is considered marginal or idle. We are told that there are millions of hectares of such land around the world, especially in Africa, which are of no importance for biodiversity or carbon sequestration, and which play no role in food production or, presumably, in guaranteeing people's livelihoods. Some propose that planting "marginal lands" with agrofuels could be extremely positive, providing income for local communities and supplying an alternative to fossil fuels to the market. It has even been suggested that there should be incentives provided for using so-called marginal land, such as licences to emit more CO2.

There is a widely held assumption that developing countries have vast tracts of wasteland, waiting for someone to put them to good use. But a closer look at these "marginal" lands tells a different story. In most cases, lands defined as "marginal", "wasteland" or "idle" are vital for the livelihoods of small-scale farmers, pastoralists, women and indigenous peoples. What governments or corporations often call "marginal" lands are in fact lands that have been under communal or traditional customary use for generations, and are not privately owned, or under intensive agricultural production. The lives of the peoples living on these lands are all too often ignored.

Communities that use these biodiversity-rich lands for food, income, grazing and medicine do not appreciate the denial of their existence. Nor do they always agree that the conversion of their lands for agrofuel production will bring "development" benefits. Many of these communities would prefer to continue to live as farmers, pastoralists or hunter-gatherers, than to be evicted and banished from their lands, on the elusive promise of meagre compensation or a few seasonal and poorly-paid jobs on agrofuel plantations.

The evidence suggests that there really are very few genuinely "marginal" lands, or at least none that conform to the abandoned, empty and useless land of our imagination. Agrofuel policy based on "marginal lands" needs a serious rethink.

"MARGINAL LANDS" IN AGROFUEL POLICY

The UK's Gallagher Review[1] maintains that indirect negative impacts from agrofuels can be avoided by growing them on marginal land. "Biofuel production must target idle and marginal land and use of wastes and residues." This follows similar recommendations by the Royal Society, whose report "Sustainable Biofuels: prospects and challenges"[2] also calls for policy decisions… to increasingly shift that cultivation to low biodiversity value marginal land or abandoned land."

Even the widely reported study by Fargione et al[3], which shows that all current agrofuels accrue a "carbon debt" of decades or centuries nonetheless concludes: "Degraded and abandoned agricultural lands could be used to grow native perennials for biofuel production, which could spare the destruction of native ecosystems and reduce GHG emissions."

Terms such as "marginal lands" have entered not just the scientific but the wider political debate on agrofuels. The author of the Biofuels Law in the Philippines, Senator Zuburi, for example, promoted "biofuel crops on marginal land" at the 2008 World Biofuels Conference[4]. The Indian government supports the conversion of up to 14 million hectares of so-called "wastelands" to jatropha for biodiesel. Mozambique's president, Armando Guebuza, has called for agrofuels to be grown on "marginal" land so as not to compete with food.[5]

In the EU, the report on the Draft Renewable Energy Directive by the Rapporteur of the Committee for Industry, Research and Energy, Claude Turmes, calls for a definition of "idle, degraded or marginal land" which is seen as suitable for producing bioenergy, including agrofuel feedstock. Both the RSPO principles and criteria, and the draft guidance by the Roundtable for Sustainable Biofuels support the use of "marginal, degraded or previously cleared land."

WHERE ARE THE MARGINAL LANDS?

Where are these "marginal" lands to be found and how large are they? A 2006 study by David Tilman et al estimates a high bioenergy potential from low-input cultivation of biodiverse, native perennial grasses[6]. This, the authors suggests, could become a feedstock for 'carbon negative' second generation agrofuels. They did no research on how much 'marginal land' was available. Instead, they relied on earlier estimates by different authors of how much 'abandoned cropland' was available – at least 500 million hectares, they, and other authors, claim.

The term "marginal land" appears to have been merged with the "abandoned cropland" concept, which lies at the heart of many of the "bioenergy feasibility studies" that provide the "scientific basis" for governments' biofuel policies. Many of those, in turn, rely on earlier crude estimates of how much land could be made available, not for biofuels but for "carbon sinks", including tree plantations – which is where the 500 million hectare figure originates. They look at "abandoned cropland" which includes large areas of land where tropical forests were destroyed for plantations and cattle ranching and where soil degradation and water depletion now make agriculture difficult. As Goeren Berndes, who has reviewed 17 bioenergy feasibility studies remarks: "Land reported to be degraded is often the base of subsistence for the rural population."[7]

One example of how estimates for "abandoned cropland" useable for bioenergy are derived is a 2008 study by Christopher Field et al[8], who suggests that 386 million hectares of such land exist. Any land believed to have been used as cropland at any time since 1700, and which satellite images don't show as being "cropland" today is classed as "abandoned" unless it is currently forested or part of urban settlements. There has been no critical review to assess whether such satellite-based mapping ignores small-scale mixed farming by communities, but it is clear that other community uses, including the use of land for pasture, are ignored when "abandoned cropland" is defined.

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[1]) "The Gallagher Review of the indirect effects of biofuel production", Renewable Fuels Agency, July 2008
[2] "Sustainable biofuels: prospects and challenges", Royal Society, 14th January 2008
[3] "Land clearing and the biofuel carbon debt", Joseph Fargione et al, Science, 29th February 2008, DOI: 10.1126/science.1152747
[4] 4) See www.gmanews.tv/story/95762/Plant-biofuel-crops-in-marginal-land---Zubiri
[5] See http://allafrica.com/stories/200802191141.html)
[6] "Carbon-Negative Biofuels from Low-Input High-Diversity Grassland Biomass", David Tilman et al, Science, 8th December 2006, DOI: 10.1126/science.1133306
[7] "The contribution of biomass in the future global energy supply: a review of 17 studies", Goeran Berndes et al, 1st July 2003, Biomass and Bioenergy 25 (2003) 1 – 28
[8] "Biomass energy: the scale of the potential resource", Christopher B Field et al, February 2008, Trends in Ecology and Evolution Vol.23 No.2

This omission goes to the heart of all studies that proclaim that large areas of land are available for biofuel production, or can be made available, including studies that rely not just on today's but on projected future "abandoned cropland", land which can be "freed" for biomass plantations. With most such studies, vast areas of land in Africa, Latin America and Asia are defined as "under-utilised", in particular pasture lands.

Case study: What does "marginal land" mean in Indonesia?

According to the Indonesian government, there are three types of land not used for agriculture: marginal land, critical land and sleeping land.

In Indonesia, "**Marginal"** land is considered to be unproductive land with high acidity. Indonesian marginal land therefore includes swampland, wetlands and peat forests, as well as dry land on acidic soil, such as mountain areas or the Eastern islands which have conditions similar to Australia.

"**Critical"** land is land that has been ecologically degraded as a result of intensive agricultural practices, and which is no longer suitable for farming. These degraded lands were once important for maintaining food security in the country, and priority should be given to improving food security for example through better paddy field irrigation.

"Sleeping" land is temporarily uncultivated land, but critical for Indigenous communities that practice shifting cultivation and hunting.

According to Marianne Klute of Watch Indonesia, "If politicians speak about marginal land, maybe the Indonesian government will understand this as a green light to open more peat forests. To recommend agrofuel production on critical lands would be irresponsible, especially when the lands are needed for food production. And to recommend sleeping land for agrofuel production would be an irresponsible call for the eviction of shifting farmers, hunters and indigenous peoples."

> **"If politicians speak about marginal land, maybe the Indonesian government will understand this as a green light to open more peat forests." - Watch Indonesia.**

FORGOTTEN PEOPLE – PASTORALISTS, SMALLHOLDERS, INDIGENOUS PEOPLES AND WOMEN

Before considering what should be grown on marginal land, we need to define "marginal". Land that might appear to be "marginal" to one person may be a vital resource to another. Although to the outsider, it may look idle or underused, it often provides food, fuel, medicine and building materials to local communities worldwide. It may be collective or common land used by such communities for generations, even though they have no formal title to it. Its fragility can mean that they use it on the basis of long rotations, only returning to cultivate plots after leaving them to regenerate for several years. Such land may be sacred to local communities and can also be vital to protecting water sources.

The Gallagher Review appears to believe that "idle and marginal lands" are synonymous with grasslands. However, few grasslands are genuinely idle. Particularly in Africa, there are large areas of land used by cattle herders or pastoralists, who may follow the rains and fresh grass across huge areas. External observers often consider that the lives of such people could be improved if they were settled in one place and provided with the means to grow crops. However those people have the right to continue their way of life, which they have evolved over many generations and which may be the only way to use fragile grasslands. So-called marginal land is also important for biodiversity, and may act as a reservoir for endangered or useful species.

Jonathan Davies, global co-ordinator of the World Initiative for Sustainable Pastoralism, based in Nairobi, Kenya, comments: "These marginal lands do not exist on the scale people think. In Africa, most of the lands in question are actively managed by pastoralists, hunter-gatherers and sometimes dryland farmers. That is not to say that bioenergy does not have have a place on the African continent. But given the current cavalier approach to land appropriation, or the disregard of the land rights of rural inhabitants in many countries, it is inevitable that agrofuel production will be done by large investors at the expense of local communities."

If agrofuel developments go ahead on marginal lands as planned, the affected communities are likely to lose their land and not benefit from the changes being introduced. Instead they will be confined to smaller land areas or forced to move to still more fragile regions, a familiar pattern from past experience. At the same time, the land acquisitions are likely to undermine customary institutions and traditional ecological knowledge and practices that ensure sustainable land management. This will lead to biodiversity loss, not only in planted areas, but in the wider landscape. This has already happened in Africa, especially when land has been either converted for cereal crop production, put into private ranches, or annexed to make conservation areas.

> "There may be wastelands lying around waiting to be put under the plough, but I doubt that they are very extensive."
> - World Initiative for Sustainable Pastoralism

Case Study: West Kalimantan in Indonesia

Icin, an indigenous Dayak in West Kalimantan, looks over a patchwork-like landscape of deforested, degraded land, secondary forest and oil palm plantations. "This has been our land. We have lost it already twice. First, some twenty years ago, logging companies started to clear cut our forests."

Only about 25% of the then logged area has been converted into an oil palm plantation, which is owned by the state. The communities in Sanggau district survived on the remaining forests, but also on the deforested land through shifting cultivation; they plan rice and maize during the first two years, and rubber and fruit trees in between. After the second year, the young rubber gardens are allowed to rest. To date, to satisfy the global demand for energy, the state palm oil company PTPN XIII plans to expand its plantation area onto the not yet planted larger part of its concession land, which is considered to be unproductive, sleeping land.

"Eight years ago, we lost even more of our land to a private palm oil company. At night, bulldozers destroyed our rubber gardens and even our rice fields. Since then, most of the remaining primary forest has been logged," says Icin, while looking over the bare land as far as the mountains.

After the year 2000, logging increased on a previously unseen scale. The timber is sold to Malaysia, and today, two thirds of West Kalimantan is in the hand of palm oil companies. The Ganda Group, with close connections to the Wilmar Group, has established a plantation on Icin's former rubber garden. But most of the once traditionally used community forest is left degraded and eroded. Driven into poverty without the forests, the communities manage to cultivate the eroded soil.

"What will happen to us?" asks Icin. "The government has ambitious plans for new large-scale plantations." He points at a map of the proposed Sinar Mas plantations, on supposedly unproductive "sleeping" land. "Actually there should be seven villages marked in this area. But they are not mentioned. Does this mean, for the outside world we do not exist anymore?"

> "There should be seven villages marked in this area. But they are not mentioned. Does this mean, for the outside world we do not exist any more?" – Indigenous Dayak, West Kalimantan, Indonesia.

West Kaliamantan, Indonesia: a man sits on the "sleeping" land that was once his rubber garden, taken by the Ganda Group for palm oil plantations. Photo: Marianne Klute

The UN Food and Agriculture Organisation (FAO) have also highlighted the negative impact that large-scale agrofuel production will have on women in rural areas. According to their 2008 report[9], marginal lands provide key subsistence functions to the rural poor and are frequently farmed by women. Sometimes it is the only land that women can access, because in many part of the world, women still have no property or inheritance rights. They may be allowed to use land that is exhausted and abandoned to grow food for their families. For them it can make the difference between life and death in hard years because they know where to gather food from it. Those who use such land may well be fully aware of how fragile it is, but able to use it without degrading it.

It is no coincidence that the livelihoods of communities who do not practice intensive agriculture and in particular of pastoralists and women are being ignored in the debate. While deforestation for agrofuels is seen as something to be avoided, the conversion of pasture lands and non-intensively farmed lands in the south is regarded as essential and desirable if bioenergy is to replace a significant amount of fossil fuels in industrial societies. The "marginal lands" concept appears to be just another popular term for this wider strategy of rural displacement and the industrialisation of global agriculture.

[9] "Gender and Equity Issues in Liquid Biofuels Production – Minimising the Risks to Maximise the Opportunities." Andrea Rossi and Yianna Lambrou, FAO, April 2008.

"Gender inequalities are likely to become more marked, and women's vulnerability to hunger exacerbated," Yianna Lambrou, co-author of FAO report on Women and Biofuels

Case study: Chaco forests, Argentina

As international soya prices have continued to rise, soya production has spread beyond the traditional agricultural lands to the so-called "marginal lands" in the North of the country.

Peasants cultivating food crops, and indigenous communities struggling for the right to the land on which they depend to survive, have been the victims. This is one of the most biodiverse parts of the country.

The indigenous Wichi community near Embarcación in Salta province, are currently resisting the deforestation for soya monocultures in the Chaco dry forests. Soya producers have also evicted the indigenous Guaraní community, Jase Endy Guasu in El Talar, Jujuy province, from their lands.

A violent land conflict that started with soya, is set to continue with plans from some sections of government for the extension of agrofuel developments using jatropha.

Indigenous Guaraní community from Jujuy province, Argentina, protesting their eviction due to soya expansion. Photo: Guaraní Community Jase Endy Guasu/ CAPOMA

LAND-USE CHANGE MEANS CLIMATE CHANGE

There has been discussion of the increased emissions caused by changes in land use, for example when forests are cleared for crop production. Less often mentioned however are the local and regional shifts in climate that may be caused by such changes. Research by the International Livestock Research Institute (ILRI) and Michigan State University (MSU) shows that in East Africa, changing from grazing to crop production would alter climate, making some areas wetter and some drier, with more extreme floods and droughts[10]. In many parts of the world, people are already suffering local climate change caused by changes in land use in addition to general increases in emissions.

AGROFUELS ON "MARGINAL LANDS" IN THE US AND EUROPE

Across the US and EU, millions of hectares of previously set aside land are being put under monocultures, following pressure from the agroenergy lobby and high commodity prices, which agrofuels have helped to push up.

In the US, the Conservation Reserve Program (CRP) is being eroded fast and its future is under threat as the ethanol and agribusiness industry lobby for farmers to be allowed to opt out of the programme early without penalty. The CRP subsidises farmers for taking land out of production and planting grass, shrub and tree cover. It

[10] "The Effects of Climate and Land Use Changes on Climate and Agricultural Systems in Kenya", CLIP (ILRI, MSU), June 2008

is specifically targeted at lands with "marginal productivity", at high risk of soil erosion as well as "environmentally sensitive." The CRP is widely thought to be the most successful environmental programme in the US for protecting biodiversity, reducing soil erosion, protecting freshwater, and providing natural flood control. According to US government figures, it prevents 408 million tonnes of soil erosion a year and every year nearly 21 million tonnes of carbon are sequestered by CRP land.[11] 40% of commercial beehives depend on the CRP, as do large numbers of plant and animal species, such as wildfowl and grassland birds[12].

In 2006, 15.9 million hectares were included in the CRP, about 10% of US cropland. Since then, nearly 2 million hectares have been put under cultivation and it is expected that 4.4 million hectares will be ploughed up in the next three years. According to a report by one conservation organisation, the predicted reduction in the CRP in just three states will release as much carbon as putting 15 million new cars on the road[13]. A peer-reviewed study published in 2008 suggests that converting land that has been under the CRP for 15 years to corn for ethanol incurs a "carbon debt" which it would take 48 years to repay. [14]

In the EU, the 10% of cropland that had been set aside since the 1990s is rapidly being turned into intensive monocultures, also following lobbying by the agrofuel industry and high commodity prices. Since set asides were scrapped in autumn 2007, 1.5 million hectares have been put under the plough. A German conservation NGO, Deutsche Umwelthilfe, has warned: "We are witnessing unprecedented species loss on German farmlands. Especially bird species such as whinchat, corn bunting, grey partridge and woodlark, but also the skylark are affected." The DUH report stresses that land with marginal soil and productivity, which is now taken back into production, tends to have particularly high biodiversity. According to BirdLife International, "what we are seeing is a big drive towards intensification which will put huge strains on the environment. One of the most important issues will be water quality. We are already facing very severe ground water and river pollution problems in Europe's most heavily cultivated regions."[15] The impacts on soil and soil carbon (i.e. climate) are likely to be similarly adverse as those of conversion of CRP land, especially for land set aside continuously for several years.

JATROPHA DREAMS

One crop that is often cited as ideal for growing on marginal land in developing countries, ie: poor soils with little water, is the oilseed bush *Jatropha curcas*. There are plans to grow this crop in Africa, Asia and South America. However, there is no experience of growing jatropha on a large scale and little is known about it, except that, although it may survive drought and poor soil, it is unlikely to produce a worthwhile crop under such conditions. Millions are being promised jobs, but there is real uncertainty about the viability of this crop.

Rajgopal of the University of California, Berkeley[16], indicates that yields from jatropha vary greatly, depending on soil fertility and water. Plant Research International found that "any claims of low nutrient requirements, low water use, low labour inputs, the non-existence of competition with food production, and tolerance to pests and diseases are definitely not true in combination with high oil yield production[17]."

Fuels from Agriculture in Commercial Technology (FACT), an information centre based in the Netherlands, go as far as to warn against large scale plantations in Jatropha, for at least 4 or 5 years, until sufficient experimental data is available to prevent bad investments. "At this stage, it is important to distinguish between 'reality', 'promises' and 'dangerous extrapolations,'[18] they warn. Their information suggests that optimal oil production from jatropha requires significant annual rainfall of up to 1000-1500 mm/hectare – amounts that fall well outside what is usually considered "marginal land."

The evidence suggests that many agrofuel investors know this already, and are choosing to develop their jatropha plantations on well-watered, fertile lands, and not "marginal" lands at all.

[11] "Estimating Water Quality, Air Quality and Soil Carbon Benefits of the Conservation Reserve Program", FAPRI, College of Agriculture, Food and Natural Resources, January 2007, www.fsa.usda.gov/Internet/FSA_File/606586_hr.pdf
[12] . Environmental Defense Fund factsheet, 2008, www.nativeecosystems.org/documents/CRPFactSheet
[13] "Carbon, Conservation Reserve Program and Native Prairie", Ducks Unlimited, April 2008,
[14] 4. "Land Clearing and the Biofuel Carbon Debt", Joseph Fargione et al, February 2008, Science, DOI: 10.1126/science.1152747
[15] http://news.bbc.co.uk/1/hi/world/europe/7538102.stm
[16] "Rethinking Current Strategies for Biofuel Production in India" Deepak Rajagopal, University of California, Berkeley, 2007
[17] Expert Meeting on Jatropha, Brussels, Dr R.E.E.Jongschaap, December 07
[18] Position paper on Jatropha curcas, FACT, June 2007

Case Study: Wolaita, Ethiopia

Wolaita, in the Southern part of Ethiopia, is now the focus of new agrofuel developments. According to local NGO Eco Yeshemachoch Mahiber, Sun Biofuels, a UK company, has taken 3000 hectares of communal pastureland for a jatropha plantation. Global Energy Ethiopia is growing castor beans on 2350 hectares through out-grower contracts with smallholder farmers.

The Ethiopian government and the companies have declared that production of agrofuel feedstock will only take place on marginal, waste or unproductive land. But this contrasts sharply with local testimonies. According to farmers in the area, the developments are actually taking place on the most fertile grazing and communal land, and on the most fertile agricultural land.

The area is one of the most densely populated in the country. There are between 360 and 700 people living per square kilometre. As a result of this intense competition for land, the area is food insecure. Around 39% of the population in the areas targeted by the developments depend on emergency food assistance, or the Food for Work programme.

Against this background, agrofuel production has replaced critical and desperately-needed land for food production and grazing. Thus, combined with the devastating food crisis, food prices in the area have increased as much as five times the amount compared to last year.

The companies claim that the earnings from agrofuel production will improve livelihoods in the community. But the farmers claim that the companies have so far failed to pay according to their earlier promises, and have so far not even allowed the farmers to see a copy of their contract agreements.

With decreased food production and rising food prices, the community is clearly more food insecure than ever, and is facing severe food shortages, exacerbated by agrofuel production on this supposedly "unproductive" land.

AGROFUEL LAND GRABBING

In their 2007 report "Agrofuels in Africa: the impact on land, food and forests"[19] the African Biodiversity Network (ABN) found that cases of "land grabbing" (where large areas of communal land are privatised) had accelerated with the new influx of agrofuel developments. A report by a Ghanaian NGO, "Biofuel land grabbing in Northern Ghana"[20] further emphasised the extent and apparent ease with which agrofuel investors are able to take African communal land from rural communities.

The affected communities are rarely consulted in these processes, let alone compensated for their forced evictions.

Speculation in land is now on the increase. Emergent Asset Management, based in the UK, has just launched its African Agricultural Land Fund, inviting investors to participate in "the growing Sub-Saharan agricultural sector." Commercial interests may even be using agrofuels as a means to take over large areas of land. Once they control it, they may decide to keep it for other purposes, such as logging, mining or even tourism. They may hope to benefit from the forest funds that some believe will be established under a new climate agreement, or from projects under the "Clean Development Mechanism." Whatever happens, once the relationship of local people with their land is broken, it is very difficult to re-establish. Hundreds of thousands of people are forced each year to move to city slums, where they are no longer able to produce food but have to find the means to buy it.

DEVELOPMENT BENEFITS FROM AGROFUELS?

An argument frequently heard in favour of agrofuel developments on marginal land, is that it will bring development benefits to the rural poor.

The ABN, in its August 2008 letter to EU MEPs[21], regarding the proposed 10% EU biofuel target, wrote:

> ***"We strongly challenge the myth that there is plenty of free land, going spare, in Africa. Farmers, pastoralists and indigenous peoples use these so-called "marginal" territories, but their existence and rights are often not recognised by their own governments. 70% of Africa's land is still communally owned. This makes us particularly vulnerable to biofuel developments that seek to privatise land and remove communities from their source of livelihood.***

[19] "Agrofuels in Africa: the impact on land, food and forests", African Biodiversity Network, July 2007
[20] "Biofuel Land Grabbing in Northern Ghana", RAINS/ABN, April 2008
[21] "Renewable Energy Directive must not promote unsustainable biofuels", African Biodiversity Network, August 2008

"We challenge the myth that large-scale biofuel production will bring economic development benefits to Africans. We should not allow the promise of a few poorly paid, seasonal labour jobs to push farmers off their land, displace food production, and cut down forests. Judging from biofuel developments in Africa so far, biofuels will lead to large-scale evictions of farmers and indigenous peoples, huge "land grabs", rising food prices, deforestation, threat to conservation areas, poverty and debt for small scale farmers, and the most fertile, well-watered land changing from food to fuel production.

"With food prices rising dramatically, and the rural poor in Africa the hardest hit, we must not further sacrifice our food security in order to keep European cars on the road."

Few communities are finding that the changes brought by large-scale agrofuel developments bring genuine improvements to their livelihoods. All too often, the reality is quite different to the rosy picture of jobs and income for all. When agrofuel plantations bring eviction from their agriculture and grazing lands, destruction of the trees they use for food and medicine, and limited poorly paid labour jobs on the land they once called their own, they find that not all "development" is for their benefit.

CONCLUSION

It is claimed that growing agrofuels on marginal lands will bring development benefits to Southern countries, while avoiding the negative impacts on forests, food security, climate change and land rights, brought about by agrofuels so far. But a closer look finds that growing on "marginal" lands will not avoid these problems, but exacerbate them.

Much of the discussion about "marginal" lands has ignored the presence of pastoralists, indigenous peoples, small scale farmers and women on these lands, and failed to understand that intensive agriculture/monoculture is not the only form of land use.

Promoting agrofuel development on "marginal" lands will further disenfranchise rural communities. The loss of livelihoods and food security experienced by affected communities undermines claims that agrofuels can bring development benefits.

The turning of grasslands and set-aside lands over to agrofuel production will release far more carbon emissions than can be saved through growing fossil fuel alternatives. Changing the landscape ecology will accelerate local climate change, and further increase pressure on local communities.

The potential for marginal dry lands to produce agrofuels on a commercial scale is far from certain. Many companies therefore prefer to move into forested, fertile and well-watered territories, even as they pledge to use only "marginal" lands. In most affected countries, the willingness or capacity of governments to ensure that land rights, critical ecosystems and food security are protected, is woefully inadequate. The drive for agrofuels will therefore accelerate land grabbing at the expense of local communities.

Dangerous assumptions have been made about the extent of "marginal" lands and how they are to be defined. New studies are needed to determine who lives on these "marginal" lands, and where, and to what extent genuine wastelands are available.

Very little land is truly "marginal". Land that is "marginal" to one person may be a vital resource to another.

The myth of the marginal lands should not be used to justify harmful agrofuel developments.