



# Global Renewable Fuels Alliance

## **Mitigating Climate Change in the Global Transport Sector: Seizing the Biofuels Opportunity at the COP15 in Copenhagen**

***Submitted By: The Global Renewable Fuels Alliance (GRFA)  
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### ***I. Summary***

The Global Renewable Fuels Alliance is pleased to present the following position paper in relation to the COP15 of the United Nations Framework Convention on Climate Change Conference in Copenhagen. It is the GRFA's belief that this Summit provides an historic opportunity for the world to work together to recognize the environmental importance of biofuels and begin to develop strategies to ensure that biofuels will play an even greater role in meeting global climate change objectives.

The Global Renewable Fuels Alliance (GRFA) is an international federation representing more than 65% of the world's renewable fuels production from 44 different countries. The GRFA's mission is to promote the expanded use of renewable fuels throughout the world through the advocacy of sound public policy and responsible research. By developing new technologies and best practices, GRFA members are committed to producing renewable fuels with the smallest possible ecological footprint.

In summary, it is the GRFA's position that:

1. Existing biofuels technologies can and must play a significant role in reducing harmful global greenhouse gas (GHG) emissions from the transportation sector while improving energy security over the next 10-20 years.
2. With the support and coordination of governments and international bodies, continued evolution in biofuels technologies, including the use of cellulosic and algae feedstocks, will yield significant increases in biofuel production volumes and provide even greater GHG emission reductions.
3. The environmental footprint of all biofuels will continue to shrink while that of fossil fuel increases as reserves become increasingly difficult and costly to extract.

## **II. Context**

Climate change is among the most crucial and urgent global challenges facing the world today. According to the International Panel on Climate Change (IPCC), the Earth's average temperature rose by 0.74 °C from 1906 to 2005. The effects of this global warming have become evident – with heat waves and violent storms increasing, oceans rising, and ice at the world's poles and mountains beginning to melt.

The IPCC's most recent Assessment Report concludes that the average temperature will continue to rise, but that the severity of its consequences depend on how quickly and effectively emissions of GHGs can be restricted and, over time, reduced.

By many accounts, the COP15 Climate Change Conference in Copenhagen is the world's final window of opportunity to work together toward a meaningful accord to deliver results that will mitigate catastrophic and irreversible damage in the future.

The International Energy Agency (IEA) predicts that if no current change in government policy is assumed, rising consumption of fossil fuels will double the concentration of GHGs in the atmosphere by the end of this century, leading to an eventual global temperature increase of up to 6°C. In the absence of change, global energy-related CO<sub>2</sub> emissions are projected to rise from 28 gigatonnes (Gt) in 2006 to 41 Gt in 2030, an increase of 45%.<sup>1</sup>

Transportation is currently responsible for 25% of the world's GHG emissions and this share is rising.<sup>2</sup> Clearly, any credible GHG reduction plan must include objectives for reducing CO<sub>2</sub> from the transportation sector as it is the sector where emissions continue to grow.

It is the GRFA's position that existing biofuels technologies can and will play a significant role in reducing harmful global GHG emissions from the transportation sector while improving energy security over the next 10-20 years. We believe that in order to succeed in developing the clean energy economy of tomorrow, countries and international bodies must together work toward the development of next generation technologies that will increase both the volume of biofuels production and the reduction in GHG emissions from the transportation sector. We believe that international bodies must work with individual countries to develop ambitious, practical and sustainable biofuel programs that address their energy needs while being mindful of their resource limitations.

The need for countries around the world to work together toward an ambitious but sustainable move towards biofuels is essential and provides incredible promise and opportunity for the future. The reasons for this are clear:

- First, future energy demand continues to be unsustainable. Approximately three-quarters of the projected increase in oil demand worldwide come from the

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<sup>1</sup> International Energy Agency World Energy Outlook 2008 Fact Sheet: Implications for Climate Change

<sup>2</sup> Biofuels for Transportation: Global Potential and Implications for Sustainable Agriculture and Energy in the 21<sup>st</sup> Century, Worldwatch Institute, June 2006

transport sector.<sup>3</sup> In a world of diminishing supply of crude oil, biofuels represent the most viable alternative to fossil fuels capable of reducing GHG emissions with immediate effect.

- Second, the threat of climate change is growing. Biofuels can and will play an important role in mitigating the effects of global warming relative to petroleum-based fuels and represent at present the single biggest opportunity to reduce emissions from the transportation sector globally.
- Third, developing nations have an incredible opportunity before them with the adoption of biofuels-friendly policies to reduce emissions while reducing their crippling reliance on imported crude oil or refined products.

To this end, a number of countries including Canada, the United States, Brazil, Australia, Japan, China, India and the European Union have taken progressive steps to establish ambitious but realistic binding targets for biofuels in the transportation sector. Such targets help set the pace of required transformations in technology and infrastructure and set the stage for policy responses to support the required change.

The GRFA will continue to work at the international level to encourage biofuels friendly policies, and wherever appropriate, binding targets, in order to improve global energy security and reduce the transportation sector's carbon footprint.

### ***III. Supporting the Case for Biofuels***

#### **1. Oil is running out while future energy demands are increasing.**

The IEA has painted an alarming picture of the world's future energy needs.<sup>4</sup>

Assuming no new government policies beyond those already adopted by mid-2008, the IEA forecasts that world primary energy demand will expand by 45% by 2030, with fossil fuels accounting for 80% of the world's primary energy mix. Almost all of the increase in energy production to 2030 occurs in non-OECD countries, with China and India accounting for more than half of the incremental energy demand alone.

Approximately three-quarters of the projected increase in oil demand worldwide comes from the transportation sector, the sector least responsive in the short-term to price changes. Despite continuing improvements in vehicle fuel efficiency, the sheer growth of the car fleet, from an estimated 650 million in 2005 to some 1.4 billion by 2030, is expected to continue to increase total oil use for transport purposes.

In order to meet this demand growth and an offset decline in crude production, the IEA estimates that the world will need an additional 64 million barrels per day (mb/d) of gross oil capacity to be installed between 2007 and 2030 — six times the current capacity of Saudi Arabia. The prospect of finding this new capacity will be increasingly difficult and costly to extract as we go deeper and further off shore to find new reserves.

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<sup>3</sup> International Energy Agency – World Energy Outlook 2008

<sup>4</sup> Statistics in this section taken from International Energy Agency – World Energy Outlook 2008

The projected demand will substantially increase reliance on imported oil and gas for OECD and Asian economies, which enhances the risk of supply disruptions and accompanying price spikes. In addition, political instability in a number of oil producing regions will exacerbate this untenable situation.

In a world of diminishing supply of crude oil and accompanying volatile fuel prices, major economies are increasingly relying on biofuels as part of their strategies to improve energy security and mitigate climate change. The GRFA believes immediate action is needed to grow global biofuels production further in order to provide increased energy security and reduce the world's dependence on crude oil and fuel imports.

## **2. The renewable fuels industry is growing and making a huge contribution to the global economy.**

According to the World Bank, the global ethanol industry alone employs approximately 800,000 to one million people. Over the past five years alone, it is estimated that the biofuel industry has invested more than \$25 billion into the economies of Europe, the United States, Canada and several other countries.

Over the past several years, the biofuels industry has grown rapidly to satisfy the growing demand for cleaner, more sustainable transportation fuels. Driven by progressive policies adopted by several countries, ethanol production has increased from approximately 10 billion litres in 2000 to approximately 75 billion litres globally in 2008 according to the OECD.

It is estimated that in 2009, the world will have produced 80 billion litres of ethanol, replacing the need for 1.9 million barrels per day of crude oil.

Estimates of the future global potential for biofuels vary. One recent study concluded that by 2050, biomass could theoretically supply 65% of the world's current energy consumption, with sub-Saharan Africa, the Caribbean and Latin America accounting for roughly half of this global potential.<sup>5</sup> Similarly, the Food and Agriculture Organization (FAO) of the United Nations recently predicted that biofuels could provide 25% of the world's energy needs over the next 15-20 years.<sup>6</sup>

## **3. Greenhouse gas reductions from biofuels are substantial and improving relative to petroleum-based fuels.**

With respect to climate change and the move to a lower carbon economy, there can be little question that biofuels provide a highly effective component of any serious GHG reduction strategy. As stated by the Global Bioenergy Partnership, established to implement the commitments taken by the G8 in the 2005 Gleneagles Plan of Action to support biomass and biofuels deployment:

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<sup>5</sup> Edward Smeets et al., "A quick scan of global bio-energy potentials to 2050," Copernicus Institute, Mar. 2004.

<sup>6</sup> "FAO sees major shift to bioenergy," FAO news release, Apr. 25, 2006

*“...energy derived from biomass to produce power, heat, and fuels for transport, has the potential to significantly reduce life-cycle GHG emissions when compared to fossil fuels – and at costs which could well become lower than various other GHG reduction options”.<sup>7</sup>*

Very simply, ethanol and biodiesel can and will play an important role in reducing GHGs and the carbon footprint of transportation fuels around the globe.

The IEA recently commissioned a life cycle assessment (LCA) study to consider the entire life cycle energy balance of biofuels from “cradle to grave”. Of particular note, the study found that GHG reductions from ethanol production will more than double between 1995 and the projected level in 2015<sup>8</sup>.

Similarly, the latest modeling from Natural Resources Canada (NRCan) has shown that not only is the carbon footprint of grain ethanol shrinking, it will continue to shrink well into the next decade. The GHGeniusModel created by NRCan, a full lifecycle model which takes into account energy embedded in the co-products from the production process, predicts a 60 percent reduction in GHGs from conventional grain ethanol by 2015.

Building on the success of the grain ethanol industry, the first cellulosic ethanol plants are now under construction using a variety of biomass non-edible feedstocks to produce the next generation of ethanol. These “advanced biofuels” or “2<sup>nd</sup> generation biofuels” as they are commonly called include the potential for even greater and verifiable declines in GHG emissions and hold much promise for the future, especially as the carbon footprint of conventional gasoline increases. According to the U.S. Department of Energy’s Argonne National Laboratory, ethanol produced from cellulosic feedstocks promises to reduce GHGs by more than 80 percent compared to gasoline.

The GRFA believes that the promise that this new development brings for further carbon reductions will catapult the ethanol industry forward as the single biggest opportunity to reduce emissions from the transportation sector globally.

While the footprint of biofuels continues to shrink, rising global consumption of fossil fuels continues to drive up GHG emissions and global temperatures. It is the GRFA’s position that biofuels, combined with increased fuel and transport efficiency, remain the only immediately available and viable alternative to fossil fuels capable of reducing GHG emissions significantly and with immediate effect. Furthermore, the rapid development of new technologies will make existing ethanol production as well as next generation biofuels increasingly beneficial to global energy, economic and environmental goals.

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<sup>7</sup> Global Bioenergy Partnership “A Review of the Current State of Bioenergy in G8 +5 Countries”, 2008

<sup>8</sup> An Examination of the Potential for Improving Carbon/Energy Balance of Bioethanol – A Report to the IEA Bioenergy Task 39, February 2009

#### **4. Biofuels represent an opportunity for developing nations.**

Biomass is much more democratically distributed around the world than oil. For countries with abundant arable land, the biofuels industry represents a massive opportunity to become producers of fuel as opposed to importers of crude.

Today, 38 of the 47 poorest countries on earth are net importers of crude oil, with 25 of those countries importing all of their crude requirements.<sup>9</sup>

When crude prices rise even slightly, the impact on the economies of developing countries is devastating. The crude oil price increases in 2008 wiped out all the debt relief commitments made to developing countries over the past decade and future crude oil price increases will permanently impair most developing countries from reaching their full potential.

The good news is that many of these countries have substantial agricultural bases and some of the best natural conditions to create sustainable biofuels production. In addition to corn, crops such as sugar cane, cassava, jatropha and native grasses are feedstocks that hold enormous potential for many poor countries. In Tanzania, for example, only 1 to 2% of arable land could provide 100% of current fuel needs.<sup>10</sup>

Considering the World Bank's estimate that biofuels require about 100 times more workers per unit of energy produced than the fossil fuel industry, the potential for job creation in these countries is also significant. In short, biofuels can have a significant positive impact on reducing poverty in many regions.

The GRFA is disappointed that the World Bank remains on the sidelines when it comes to investing in sustainable projects in developing countries and continues to have a "non-policy" when it comes to supporting biofuels projects. Several potential projects have emerged in African nations looking to attract investment; however, access to scarce capital has stalled many of these projects. This, despite the overwhelming potential to develop sustainable industries and reduce crippling reliance on imported crude oil.

Developing local biofuels strategies, not just for transport needs, tailored to the unique characteristics of developing nations can and should be done in a sustainable way. With the right strategies and assistance from bodies such as the United Nations and the World Bank, the GRFA believes that biofuels represent an enormous opportunity to promote growth and increased prosperity in many of the world's poorest countries.

#### ***IV. Emerging Issues and Debate***

While the biofuels industry has grown globally, so have attacks against biofuels intensified over the past number of years. Much of the discussion is based on past performance of biofuels technologies and, therefore, is not representative of current or future developments in the industry. It is crucial that these arguments are addressed

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<sup>9</sup> Biofuels for Transportation: Global Potential and Implications for Sustainable Agriculture and Energy in the 21<sup>st</sup> Century, Worldwatch Institute, June 2006

<sup>10</sup> Biofuels for Transport – Part of a Sustainable Future? Summary and Conclusions from the IEA Bioenergy ExCo61 Workshop, 2008.

head on in order to avoid a loss of momentum in terms of the growth of industry and accompanying benefits discussed in the previous section.

The debate with respect to the net benefit of biofuels reached a crescendo in 2008 driven by a commodity bubble that sent crude oil prices skyrocketing and commodity prices to all time highs.

While much of the discussion at the time was driven by competing agendas associated with emerging U.S. Energy Policy that threatened petroleum markets, it did provoke one positive outcome: a demand for clarity. As a consequence, numerous science-based studies were conducted by organizations such as the IEA that reinforce the persuasive economic and environmental benefits that flow from biofuels.

## **1. Sustainability and Energy Balance**

The GRFA and the biofuels industry have welcomed the debate around sustainability. As an industry that can be scientifically demonstrated to achieve substantial carbon advantages over traditional fossil fuels producers, the sustainability discussion is one that is seen as a means of dispelling myths and clarifying public claims.

Broadly speaking, sustainability is defined as “the capacity to endure”. As discussed earlier, the world simply cannot endure its current reliance on crude oil when future energy demands are increasing, oil reserves are running out, and the environmental footprint of the industry continues to grow. According to Nobuo Tanaka, Executive Director of the IEA:

*“Current global trends in energy supply and consumption are patently unsustainable — environmentally, economically, socially — they can and must be altered. Rising imports of oil and gas into OECD regions and developing Asia, together with the growing concentration of production in a small number of countries, would increase our susceptibility to supply disruptions and sharp price hikes. At the same time, greenhouse gas emissions would be driven up inexorably, putting the world on track for an eventual global temperature increase of up to 6°C.”<sup>11</sup>*

With respect to biofuels, the debate around sustainability initially centered on energy balance – that is, energy that is produced relative to the energy required to produce it. Critics rightly point out that in the industry’s infancy twenty or thirty years ago, a positive energy balance was not always achieved. However, scientific advances in feedstock production, the manufacture of agricultural fertilizers and chemicals, and biofuels production processes have given the industry a clear advantage on the issue of energy balance as compared to petroleum-based fossil fuels.

As conventional oil is depleted and exploration in unconventional sources such as tar sands, shale and the deep sea is expanded, the oil industry will continue to become less efficient. For example, it is estimated that the emissions to produce one barrel of oil from

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<sup>11</sup> “New Energy Realities – WEO Calls for Global Economic Revolution Despite Economic Crisis”, International Energy Agency News Release, November 12 2008

Canada's tar sands (the world's largest unconventional reserves) are on average three times higher than the emissions from conventional oil<sup>12</sup>, leading many to argue that extracting oil from the Canadian tar sands is resulting in a negative energy balance.

The IEA came to a similar conclusion in a study released in February 2009, concluding that the energy balance of gasoline will continue to decline as more synthetic crude oil is incorporated into the refining slate<sup>13</sup>. At the same time, the IEA found that ethanol's energy balance will continue to improve as efficiency gains are made both with feedstock production and ethanol manufacturing.

The industry recognizes the importance of promoting sustainable practices in global agriculture and in the generation and development of biomass feedstocks for next generation biofuels. However, the evidence is clear today that the energy balance for ethanol and biodiesel has been improving consistently over the past two decades while it is becoming increasingly energy intensive and inefficient to find and extract crude oil.

## **2. Indirect Land Use Change (ILUC)**

The biofuels industry supports the promotion of sustainable practices. Furthermore, the industry has consistently worked to reduce the environmental footprint of biofuels production over the past twenty-five years and recent IEA data has confirmed this shrinking footprint. However, the industry rejects outright any attempt to impose unproven and suspect theories such as Indirect Land Use Change (ILUC) on biofuels producers.

In 2007, the *US Energy Independence and Security Act* was passed mandating 15 billion gallons of grain ethanol to be used annually in the United States by 2015. The *Act* directed the government to develop a life cycle analysis for biofuels, including GHG "emissions related to direct and indirect land use changes". As a result, the notion of land use changes – and particularly indirect land use change -- has become the subject of a vigorous debate.

Essentially, ILUC is an unproven theory that claims that growing crops for biofuels production displaces other crops, which are then allegedly grown in other parts of the world, leading to deforestation and a subsequent increase in GHG emissions.

In February 2008, the concept of ILUC received significant attention when *Science* magazine published a controversial study claiming that carbon emissions related to ILUC made corn-based ethanol more carbon intensive than gasoline – a claim that does not stand up to rigorous scrutiny. The study, authored by a lawyer with no scientific background, argued that the land diverted for increased corn production used for ethanol would lead to sharp decreases in American grain exports, which in turn would lead to increased land cultivation elsewhere releasing the carbon stored in that particular region.

The study was problematic on a number of fronts. For example, calculations of carbon release were based on trends recorded in the 1990s and the efficiencies of future ethanol plants and improvements in biomass yields were not considered. Furthermore,

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<sup>12</sup> "Oil Sands Forever, the environmental implications of Canada's oil sands rush", Dan Woynilliwic, November 2005.

<sup>13</sup> An Examination of the Potential for Improving Carbon/Energy Balance of Bioethanol – A Report to the IEA Bioenergy Task 39, February 2009

increases in GHG emissions from extracting non-conventional oil were not taken into account. These flaws in the methodology of the study alone raise serious issues with the so-called Science Magazine ILUC claims.

Furthermore, historical data indicate that increased U.S. ethanol demand has not been a significant driver of land use change. Increased crop productivity has primarily provided the growth in production necessary to meet heightened demand. Moving forward, more pronounced gains in productivity promise to mitigate the need for large amounts of new agricultural lands. A recent study commissioned by the US Renewable Fuels Association suggests that the land required to produce 15 billion gallons of grain ethanol in the US in 2015 will amount to less than 1% of world cropland.<sup>14</sup> More to the point, the so-called dramatic drop in exports has not materialized and U.S. exports of corn increased in 2008. This was achieved in large part because the same hectare of land that once produced an average of 75 bushels of corn per year in the 1960's now produces on average over 160 bushels per year. In many cases, it is common to find yields exceeding 200 bushels per acre.

The debate over the causes and effects of land use change has serious implications for the future of the global biofuels industry as carbon accounting becomes increasingly important to identify the best solutions for climate change. This is especially true as both the US and the EU are deliberating over requirements to address ILUC effects in regulations governing biofuels.

Due to the highly uncertain and unproven nature of indirect land use change analysis, the European Union decided to commission a report on ILUC before considering this theoretical approach into the law. This report needs to be finished before the end of 2009 and determine whether or not the science has delivered a satisfactory understanding on the level of indirect land use change emissions from biofuels. The US Environmental Protection Agency is expected to issue rules governing its renewable fuels standard on December 1 of this year. In Canada, the Federal Government has rejected the ILUC theory and will not adopt it into future calculations of emission reductions from biofuels.

It is the GRFA's position that the current state of land use change theory is inconclusive and no consensus exists on how best to analyze the potential indirect land use impacts of expanding biofuels production. It is critical that the debate is grounded in reliable data, sound science and transparent analysis.

Further, the GRFA feels it is mandatory that the standards for such measurements be the same for biofuels and conventional oil and gasoline in order to ensure a level playing field. It is unfathomable to impose ILUC impacts on biofuels without applying the same convention and analyses to crude oil, especially as the environmental footprint of the petroleum industry continues to grow while the biofuels footprint continues to shrink.

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<sup>14</sup> Analysis of the Proposed Rulemaking for the Expansion of the U.S. Renewable Fuel Standard, Informa Economics, September 2009

### **3. Food and Fuel**

The “food vs. fuel” debate took on a life of its own in the summer of 2008 when food prices and oil prices were tracking at record highs. Many were quick to point to the growth in ethanol and biofuels production as the root of the problem, claiming that ethanol takes corn from the world’s hungry in order to put it in gas tanks of the world’s rich. This argument was made despite the fact that wheat and rice, two food grains that saw the most volatile markets, are rarely used in the production of biofuels.

Since then, global ethanol production has grown while corn and grain prices have fallen drastically, which has thrown into question the merits of the food vs. fuel debate. At the same time, numerous studies have demonstrated that the price of oil continues to have the greatest impact on consumer food prices.

According to the UN FAO, food prices “track” oil prices. Oil is integral to virtually every phase of food production from processing to packaging to transportation, and higher oil prices increase food prices all along the food chain. When oil prices peaked, so did the cost of transporting food. In fact, a recent analysis by the US Government Accountability Office (GAO) concluded that the largest US food aid organization spent 65% of its annual budget on transportation costs alone. The FAO concluded in June 2009 at the Committee on Commodity Problems that, “no conclusions about the links between biofuels expansion and food security can be made.”

While the case can be made that expanded ethanol production is a minor factor in increased spending on food, additional food spending increases are more than offset by savings resulting from the inclusion of more ethanol in the global gasoline supply. Were it not for the increasing production of world biofuels producers, oil consumption would expand by 1 million barrels per day according to the IEA, which would further drive up prices. Furthermore, a June 2008 Merrill Lynch report concluded that retail gasoline prices would be \$21/barrel higher, on average, without incremental biofuels supply.<sup>15</sup>

In light of this, the GRFA maintains that as governments and world bodies consider policy solutions to address rising food prices, biofuels must be seen as an important part of the solution to reduce the world’s dependence on oil and keep oil prices in check.

### **4. Access to Land and the Need for Transparency**

The growth in demand ethanol and biodiesel will continue to expand in the coming years as the environmental and economic benefits of biofuels are increasingly acknowledged and countries look to biofuels as a way of reducing their dangerous reliance on imported crude oil. While the GRFA is pleased by these developments, a particular area of concern is the issue of access to land and biomass in producer countries, particularly in poor and developing nations.

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<sup>15</sup> Merrill Lynch “Global Energy Weekly” June 6, 2008

As stated earlier, biofuels can be extremely beneficial in providing a much-needed economic boost in developing countries with surplus arable land by decreasing reliance on crude imports and providing long-term employment and skills development. However, these benefits depend on security of land tenure and an appropriate rule of law free of corruption.

There have been issues raised recently associated with a number of high profile “land deals.” In many instances these “deals” are related to resource extraction, water supply, and direct agricultural potential, however some are directly related to the enormous potential for biofuels that many developing countries possess. This issue is increasingly being documented in Africa (i.e. Tanzania and Mozambique), Latin America (i.e. Columbia and Brazil) and Asia (i.e. India, Indonesia, Papua New Guinea) where biofuels production is expanding.<sup>16</sup>

Where biofuels potential is the driving force behind any “land deals,” the GRFA believes that land access in developing countries requires significant policy attention. We believe that industry, international bodies, governments and NGOs must work together to ensure that these deals result in a net benefit to the host country. In that regard, the GRFA is calling for a number of policy measures associated with these land including;

- Transparency in long-term land deals
- The rule of law must be protected
- Investments in local agriculture capacity must be a priority
- Local employment is a priority
- Sustainability principles are adhered to in the generation of biomass

## ***V. The Path Forward – A Call to Action***

Biofuels alone will not generate the necessary GHG reductions in the world’s transportation sector. The expansion of the biofuels industry must occur within the context of a less polluting and more efficient transportation sector utilizing the latest technologies in vehicle fuel economy and public transportation. Having said that, it is imperative that biofuels play a major role in achieving meaningful and timely GHG reductions in the transport sector over the coming decades.

As stated earlier, the GRFA believes that with the support of governments and international bodies, biofuel production could increase exponentially and simultaneously help in the effort to mitigate the onslaught of climate change.

In order for biofuels to play a meaningful role in climate change strategies the GRFA respectfully proposes the following path forward:

1. The GRFA is calling on all governments to adopt biofuels friendly policies in the transport sector, and wherever appropriate, binding targets, in order to encourage the move away from the world’s dangerous addiction to oil.

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<sup>16</sup> Fuelling Exclusion? The Biofuels Boom and Poor People’s Access to Land, Lorenzo Cotula, Nat Dyer & Sonja Vermeulen, Published by IIED and FAO, 2008

2. The GRFA is calling on all governments, international bodies and academia, to take into account the increasing efficiency of global biofuels production in developing policies as opposed to relying on out-of-date data and outdated arguments.
3. The GRFA continues to call on the World Bank, the United Nations and other international bodies to increase investment in the agricultural sector of developing nations and to support expanded biofuels production in these regions.
4. The GRFA calls on industry, international bodies, governments and NGOs to work together to safeguard local interests by ensuring transparency in long-term land deals in developing countries.
5. The GRFA calls on all governments to base an indirect land use change (ILUC) policy on transparent and unequivocal scientific evidence only. That science is not there yet.
6. The biofuels industry calls for the accelerated commercialization of first and second-generation biofuels technologies by adopting aggressive R&D tax policies that encourage the direct investment in these new technologies.