

BIOFUEL GOVERNANCE AND INTERNATIONAL LEGAL PRINCIPLES: IS IT EQUITABLE AND SUSTAINABLE?

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The explosive demand for biofuels has resulted in large-scale global responses to meet this need at commercial rates. This response has been triggered not so much by the market as by policy approaches adopted by developed and developing countries. This article argues that the biofuel challenge can be seen as a legal problem, because current efforts at governance are not legitimate, transparent or equitable. This article argues that these ad hoc policy approaches in different parts of the world amount to a weak governance framework, with controversial impacts on food and forestry and that this framework is not in line with the principles of the Rio Declaration on Environment and Development or other emerging principles of law. As long as there are no consensual open negotiations about how bioenergy should be governed globally, there will be no countervailing powers to represent the weaker interests in society, whether those of Southern governments, poor displaced farmers, people with reduced access to food and water or environmentalists.

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I INTRODUCTION

The rapid emergence of biofuels has become one of the most significant issues in the areas of global energy and agriculture in recent years.¹ The

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production of these fuels has become an integral part of agriculture worldwide,² and their use as a replacement for fossil fuels is also moving into the mainstream as a result of increasing market demands and supportive government policies. Nevertheless, biofuels represent a serious concern for environmentalists, rural communities, farm workers, and the food-insecure. As much as biofuels can help address climate, energy and rural development issues, they also have many impacts and pose many risks in terms of land use, deforestation, water consumption, eviction and displacement of small farmers, and effects on food prices and food security. These are outcomes to which developing countries are particularly vulnerable, as the geography of deforestation, food insecurity, and human rights violations demonstrates. Meanwhile, most of the market demand for biofuels and many of the policies promoting large-scale biofuel operations in the South have come from developed countries, leading to the emergence of new North–South issues.

This current situation calls for articulated, multilateral governance efforts on the biofuel industry. The coexistence of international market and political forces driving the worldwide expansion of biofuel; its rapid and cumulative local impacts; its increasing effects of global magnitude, such as on climate and food prices; and its clear North–South imbalances demand more than ad hoc policies and bilateral negotiations; a structured and legitimate multilateral governance framework seems necessary.

Building on that premise, this article analyses how current international biofuel governance aligns with the principles of the *Rio Declaration on Environment and Development* ('*Rio Declaration*')³ and with emerging good

¹ The term 'biofuel' is sometimes used to characterise all biological sources of energy, including traditional ones such as fuel-wood and animal dung. However, the term more often describes specifically the modern liquid fuels used in transportation as a fossil fuel replacement. These consist basically of ethanol, an alcohol conventionally extracted from starch- or sugar-rich plants, which can replace or be added to gasoline, and biodiesel, a fuel extracted mainly from vegetable oils, which can replace or be mixed with mineral diesel. They have mostly been produced from crops such as maize, sugar cane, and sugar beet (ethanol), and soybean, rapeseed, and oil palm (biodiesel). Their combined global production did not exceed 4.4 billion litres in 1980. That number has now escalated to about 80 billion litres per year, an approximately twenty-fold increase: Lian Pin Koh and Jaboury Ghazoul, 'Biofuels, Biodiversity, and People: Understanding the Conflicts and Finding Opportunities' (2008) 141 *Biological Conservation* 2450, 2451; Sybille de La Hamaide, 'Licht Sees Crisis Slowing 2009 World Ethanol Growth', *Reuters Newsfeed*, 4 November 2008.

² For example, 50 per cent of Brazilian sugarcane production and 25 per cent of US maize production is now dedicated to biofuel manufacturing: Secretaria de Produção e Agroenergia, Ministério da Agricultura, Pecuária e Abastecimento ('MAPA'), Brazil, *Balanco Nacional da Cana-de-Açúcar e Agroenergia* (MAPA Report, 2007) 5, 10–19 <http://www.agencia.cnptia.embrapa.br/Repositorio/Balanco_nacional_cana_mapa_000fjk9d96102wyiv80sq98yqq70oxym.pdf>; Steven Mufson, 'Siphoning Off Corn to Fuel Our Cars: As Farmers Feed Ethanol Plants, a Costly Link Is Forged between Food and Oil', *The Washington Post* (Washington DC, US) 30 April 2008, A01.

³ *Report of the United Nations Conference on Environment and Development*, UN Doc A/CONF.151/26/Rev.1 (Vol I) (12 August 1992) annex 1 (*Rio Declaration on Environment and Development*) ('*Rio Declaration*'). The Rio Principles consist of the 27 principles from the *Rio Declaration*, agreed upon during the UN Conference on Environment and Development, in Rio de Janeiro, 1992. They are the latest international legal principles in the field of environment and development.

governance principles.⁴ This article clarifies the relevance of these two sets of principles for the specific case of biofuel and, after examining the current context, suggests how they could be further incorporated into international biofuel governance. To this end, the article draws from a broad review of policies and literature in the area, as well as from the examination of the *Rio Declaration* and of the good governance principles. Part II introduces the different dimensions of the biofuel issue, the principles of the *Rio Declaration*, and the principles of good governance, and integrates them into a framework for examining the performance of biofuel governance. Part III analyses biofuel governance at its current stage. It discusses the rise of biofuels in national agendas, identifies the main state actors at the international level, and examines the existing and emerging initiatives for multilateral governance of the sector. Part IV applies the framework built in Part II to present international biofuel governance. It first analyses how the current context has matched with the principles, and then examines what changes must occur if those principles are to be effectively followed.

II THE RELEVANCE OF THE RIO PRINCIPLES AND GOOD GOVERNANCE FOR BIOFUELS

Biofuel governance is a complex process, involving a number of different issues. As a crosscutting industry, biofuels touch on matters as varied as climate change, deforestation, food security, land use and ownership, and labour standards. This poses great challenges to governance, as each of these areas is already complex in and of itself. As such, weak or ineffective governance of biofuel can lead to negative outcomes in all of these areas, meaning that attention to equity and sustainability principles are all the more important. This Part begins by exploring the different dimensions of the biofuel issue. It then presents the *Rio Declaration* principles, identifying and discussing those most relevant to this case and introduces the good governance principles. Finally, it integrates these two sets into a framework for biofuel governance assessment.

A *The Dimensions of the Biofuel Issue*

Expanded biofuel production has a vast number of implications, which can be either positive or negative, depending on how this expansion occurs.⁵ One of the most discussed issues is that of the overall impact of biofuel production on the atmosphere, especially given that a major driver of biofuel production is precisely the need to mitigate climate change. In principle, biofuels are 'carbon-neutral' because the greenhouse gases they emit during combustion are what they had absorbed during plant growth.⁶ However, in reality, a life-cycle

⁴ The principles of good governance are emerging principles of law which are increasingly advocated worldwide as requirements for governance at various levels. They have been promoted by multilateral organisations such as the UN, as well as by donor institutions such as the World Bank.

⁵ See, eg, United Nations Environment Programme ('UNEP'), *A Growing Debate: Bioenergy in the 21st Century* (UNEP Issues Paper, 2008) <<http://www.unep.fr/energy/bioenergy/documents/pdf/IssuePaper.pdf>>.

⁶ Koh and Ghazoul, above n 1, 2452.

analysis can show very different results, for much (fossil) energy may be spent during the cultivation and processing of the fuel, for example, in the form of fertilisers, machinery, and refining.⁷ In addition, a consideration of the land-use changes resulting from biofuel production is of crucial importance in calculating its greenhouse gas account balance. Two studies in 2008 demonstrated that, if biofuel agriculture is established at the expense of natural areas rich in carbon stocks (either in the soil or as vegetation, such as forests), a massive amount of greenhouse gas is released into the atmosphere, which creates a so-called 'carbon debt' for biofuels.⁸ Those potentially huge upfront emissions are likely to be much greater than the emissions savings obtained from fossil fuel replacement.⁹ The issue becomes particularly complex because such replacement will not always happen directly. More often, biofuel production displaces some other farming activity, such as cattle-ranching, which is then pushed into forests and savannahs. This phenomenon, known as 'indirect land-use change', has been one of the most serious biofuel issues from a climate and ecosystems conservation perspective.¹⁰

From an equity perspective, a major issue has been the land evictions caused by large-scale agricultural expansion and the resulting displacement of small farmers, rural communities and indigenous peoples. Because communal and traditional land rights are often not recognised or properly enforced, much social conflict has occurred due to the new thrust that biofuels are giving to large-scale

⁷ Exceptions exist, such as some sugarcane-ethanol production systems which utilise locally-generated energy from bagasse (the remains of crushed cane) and even feed surplus energy into the grid, but this is not the case generally. This already indicates that some biofuels may be preferable to others and that biofuel policies must therefore be selective. See José Goldemberg, Suani Teixeira Coelho and Patricia Guardabassi, 'The Sustainability of Ethanol Production from Sugarcane' (2008) 36 *Energy Policy* 2086, 2087.

⁸ See Joseph Fargione et al, 'Land Clearing and the Biofuel Carbon Debt' (2008) 319 *Science* 1235, 1236; Timothy Searchinger et al, 'Use of US Croplands for Biofuels Increases Greenhouse Gases through Emissions from Land-Use Change' 319 *Science* 1238.

⁹ According to Fargione et al, on average, 134 additional tons of carbon dioxide-equivalent would be emitted per hectare if maize production replaces central grasslands in the US. The ethanol derived from that maize grain would take 93 years to achieve any net benefit in terms of emissions reductions. An oil palm plantation taking over peatland rainforest in Southeast Asia would emit even more because of the carbon stock both in the forest and in the peat soil. There would be 453 additional tons of CO₂-e per hectare on average, and the 'carbon debt' would take more than four centuries to be paid. See Fargione et al, above n 8, 1237.

¹⁰ Authors have suggested that much of the deforestation triggered by biofuel production happens indirectly. Sawyer and Nepstad et al have argued that, as such, the expanding sugarcane production in Brazil has posed serious risks to the Amazon rainforest and to the Cerrado (wooded savannah rich in biodiversity in the central lands of Brazil), even if that cultivation does not replace these biomes directly. As sugarcane producers acquire lands from cattle ranchers in the southeast of the country, the latter are displaced and settle in the North and Centre-West regions, opening up new areas and advancing deforestation: Donald Sawyer, 'Climate Change, Biofuels and Eco-Social Impacts in the Brazilian Amazon and Cerrado' (2008) 363 *Philosophical Transactions of the Royal Society B: Biological Sciences* 1747, 1750; Daniel C Nepstad et al, 'Interactions among Amazon Land Use, Forests and Climate: Prospects for a Near-Term Forest Tipping Point' (2008) 363 *Philosophical Transactions of the Royal Society B: Biological Sciences* 1737, 1739.

agriculture.¹¹ Even when the acquisition of land takes place legally, one must still remember that it further concentrates land ownership and excludes small farmers from agriculture, especially in developing regions of the world that are already marked by great inequality.¹²

Once biofuel production is established, other issues arise. Most biofuel production currently relies on the same model of chemical-intensive monocultures used for food and animal feed production. Large-scale cultivation under this system, therefore, raises the same sustainability concerns related to soil degradation, pesticide run-offs and biodiversity erosion.¹³ As with other industrial monoculture systems, labour standards are also often an issue in biofuel agriculture. Especially in the global South, large-scale biofuel agriculture has been widely promoted as a way to generate jobs in labour-intensive cultivation and harvesting.¹⁴ While this has indeed absorbed many displaced farmers, working conditions are often insecure or even analogous to slavery.¹⁵ Lack of proper implementation of work standards, such as those of the International Labour Organization, therefore remains a problem in biofuel production.

¹¹ Jean Ziegler, Special Rapporteur on the Right to Food for the UN between 2000 and 2008, noted in his special report to the UN General Assembly that large-scale biofuel expansion has caused much rural violence and upheaval in Asia, Africa and Latin America. See *The Right to Food: Note by the Secretary General*, UN GAOR, 62nd sess, Agenda Item 72(b), UN Doc A/62/289 (22 August 2007). In Brazil, studies have shown that evictions, displacement and conflict have happened throughout the country following the expansion of large-scale biofuel agriculture. Indigenous peoples, in particular, have experienced various sorts of pressures, ranging from direct threats and violence from landowners and their militia to political manoeuvring to prevent the legal demarcation of indigenous lands: Antonio Biondi, Mauricio Monteiro and Verena Glass, *O Brasil dos Agrocombustíveis: Impactos das Lavouras sobre a Terra, o Meio e a Sociedade — Cana-de-açúcar* (Centro de Monitoramento de Agrocombustíveis ONG Repórter Brasil Report, January 2009) 16–17, 26–9 <http://www.reporterbrasil.org.br/documentos/o_brasil_dos_agrocombustiveis_v3.pdf>.

¹² Lorenzo Cotula, Nat Dyer and Sonja Vermeulen, *Fuelling Exclusion? The Biofuels Boom and Poor People's Access to Land* (Food and Agricultural Organization ('FAO') and International Institute for Environment and Development Report, 2008) 24.

¹³ David Tilman et al, 'Agricultural Sustainability and Intensive Production Practices' (2002) 418 *Nature* 671.

¹⁴ See, eg, John A Mathews, 'Biofuels: What a Biopact between North and South Could Achieve' (2007) 35 *Energy Policy* 3550.

¹⁵ Degrading labour conditions in the agricultural sector in the developing world have already been a serious concern for some time. Thousands of deaths and injuries are estimated to happen each year due to overwork, unprotected exposure to hazardous chemicals, and a lack of security equipment in general. In biofuel agriculture specifically, oil palm plantations in Malaysia and Indonesia and sugarcane plantations in Brazil have been the subjects of the most study. In the first case, it has been reported that workers (especially women) are often victims of harassment, abuse, threats, violence, and even exposure to pesticides forbidden in much of the rest of the world, such as 'paraquat'. In Brazil, thousands of migrant workers travel each year to manually harvest sugarcane plantations under a productivity-based payment system that provides great incentive to overwork. Unprotected exposure to hazardous chemicals, lack of sufficient work equipment and even lack of access to clean water and proper housing installations are frequent. In many cases the workers are also bound by indebtedness and deprived of their labour rights, which, according to the International Labour Organization, characterises modern slave labour: World Rainforest Movement, 'Indonesia: Harsh Conditions for Women Workers in Oil Palm Plantations' (2008) 134 *WRM Bulletin* <<http://www.wrm.org.uy/bulletin/134/Indonesia.html>>; Biondi, Monteiro and Glass, above n 11, 13–15, 33–4, 50–1.

The most controversial impact of large-scale biofuel production, however, is still the pressure it places on food production and food prices (and, therefore, on global food security). Agriculture-based biofuels generally have to compete for land and water, and almost all of them are currently still produced from crops that would otherwise be used for food or feed.¹⁶ Although not all price fluctuations in such crops should be attributed to biofuels, it is clear that they tend to increase agricultural commodity prices through increased demand.¹⁷ The resulting increased prices of staple foods, such as maize, further reduce the access to food, especially in countries which are net food importers, such as many countries in sub-Saharan Africa.¹⁸ While many countries have started to expand biofuel production from exotic non-food crops, such as *Jatropha curcas*, these carry the risk that they may easily become invasive species.¹⁹ The International Union for Conservation of Nature ('IUCN') has argued that the lack of attention to this matter has been a major threat to both livelihoods and the environment — once again, particularly in developing countries such as those in Africa.²⁰

These are issues which have emerged from biofuel cultivation as it stands today. Many expectations have been put on the next generation of biofuels, which may rely on different agricultural production systems or possibly not at all on agriculture, such as ethanol extracted from wood or grass cellulose and biodiesel produced from algae.²¹ There is no universally-accepted definition for determining which biofuels belong to which 'generation', but it is normally agreed that conventional production from food crops are first-generation biofuels, and newer fuel production techniques and genetically-engineered crops are promoted as second-, third- or even fourth-generation (even if, to date, not even second-generation biofuels have become commercially available). In reality, these alternative technologies are still under development and are surrounded by much uncertainty regarding when they might become commercially available, whether they will be cost-competitive, and what impact

¹⁶ C Ford Runge and Benjamin Senauer, 'How Biofuels Could Starve the Poor' (2007) 86 *Foreign Affairs* 41, 42.

¹⁷ Organisation for Economic Co-operation and Development ('OECD') and FAO, *OECD-FAO Agricultural Outlook 2008-2017* (2008) 37, 40, 53.

¹⁸ Runge and Senauer, above n 16, 49-50.

¹⁹ Raghu et al have argued that the non-food crops used for biofuel production have frequently been selected for traits — such as rapid growth, endurance to little water availability, and resistance to pests and unknown diseases — which, paradoxically, have allowed them to easily become invasive species. These are all much-praised traits of *Jatropha* and of grass species being considered for biofuel production: S Raghu et al, 'Adding Biofuels to the Invasive Species Fire?' (2006) 313 *Science* 1742; Wouter M J Achten et al, '*Jatropha* Bio-Diesel Production and Use' (2008) 32 *Biomass and Bioenergy* 1063.

²⁰ IUCN, *Guidelines on Biofuels and Invasive Species: Draft for Comment* (2009) 3-5, available from <http://cms.iucn.org/about/work/initiatives/energy_welcome>.

²¹ See, eg, Puneet Dwivedi, Janaki R R Alavalapati and Pankaj Lal, 'Cellulosic Ethanol Production in the United States: Conversion Technologies, Current Production Status, Economics, and Emerging Developments' (2009) 13 *Energy for Sustainable Development* 174; Yusuf Chisti, 'Biodiesel from Microalgae' (2007) 25 *Biotechnology Advances* 294.

they might have.²² Meanwhile, countries all over the world have put forth biofuel agendas aimed at expanding current conventional production. Biofuels are expected to become even more of an issue in the coming years, and therefore even more in need of sustainability principles and legal instruments to govern their development.

B *The Rio Principles*

The *Rio Declaration* is an important legal instrument for fostering international action on sustainable development. It is the most recent worldwide legal agreement on environment and development, constituting the basis of international law in this field. This Part highlights the most relevant among its 27 principles and the requirements that they place on biofuel production.

The *Rio Declaration* requires that all activities, including biofuel production, occur in harmony with environmental preservation. Unsustainable patterns of production shall be phased out, eliminated, and replaced by methods that conserve natural resources and ecosystems integrity for the use of present and future generations. This is supported most explicitly by Principles 3, 4, 8 and 15.²³

The *Rio Declaration* also demands that biofuel production contributes effectively to addressing inequality and meets the needs of the poor, who shall be given special priority. The disadvantaged position of some populations and of developing countries must not be exploited by others; their needs and vulnerability should not expose them to more environmental or human health threats. This is mandated by Principles 5, 6 and 14.²⁴

The *Rio Declaration* also sets principles for how the process of production and development should be governed. It calls for cooperation among people and states at the international level, with a special commitment on the part of developed countries. Sustainability issues should be regulated with a clear policy framework through open negotiations and in a consensus-oriented fashion instead of through unilateral action. The process should be transparent, participative, and it should involve accountability mechanisms. These are the requirements of Principles 7, 10, 12, 13 and 27.²⁵

The various requirements imposed on production processes and their governance²⁶ can be summarised as falling into three categories: those demanding biophysical sustainability; those asking for equity and poverty issues to be addressed and given priority; and those that set requirements for how governance should be conducted. Let us now see how these find consonance with the *good governance* principles.

²² Cf Robert Edwards et al, *Biofuels in the European Context: Facts and Uncertainties* (European Commission Joint Research Centre Report, March 2008) 7; Helena Paul and Almuth Ernsting, *Second Generation Biofuels: An Unproven Future Technology with Unknown Risks* (Biofuelwatch Report, 2007) <http://www.biofuelwatch.org.uk/inf_paper_2g-bfs.pdf>.

²³ Above n 3. For the full text of Principles mentioned in this article, see Appendix.

²⁴ *Ibid.*

²⁵ *Ibid.*

²⁶ Although the *Rio Declaration* does not use 'governance' in its lexicon, it places clear requirements on how decision- and rule-making processes (and, therefore, governance) should occur.

C *The Principles of Good Governance*

The concept of governance has become of major value in law, the social sciences, political science and international relations. At the international level, the idea of *global governance* has gained much relevance in recent years, and, within that, the more specific concept of *global environmental governance*. Despite the common usage of these terms, there is much variation in how they are understood. Biermann and Pattberg have noted that authors may treat them quite differently, sometimes analytically highlighting non-hierarchical decision-making with the inclusion of non-state actors, or sometimes as a call for a political program capable of addressing global environmental issues and the impacts of a globalised economy.²⁷ Without aiming to explore the whole debate over the exact meaning of global governance, what must be recognised is that steering, policy creation and decision-making now frequently involve multiple state and non-state actors, as well as multilateral organisations, in much more complex actor arrangements than traditional, state-centred, hierarchical government.²⁸ Bearing this in mind, this article adopts a simple understanding of governance as adopted by the UN, as the process of decision-making and elaboration and implementation of formal and informal rules, by states, non-state actors or any combination of the two.²⁹

The need to assess and prescribe for these emergent modes of multi-actor steering led to the concept of good governance, which attempts to establish normative principles for how decisions and rules should be made and implemented. Much debate also surrounds this term, yet the most common principles seem to be those established by the United Nations Development Programme ('UNDP'), which in 1997 suggested nine core principles (which eventually became eight):

- 1 *Participation* requires that actors, particularly the most vulnerable, be informed, organised, and have their concerns voiced in decision-making processes, either directly or indirectly through legitimate representatives.
- 2 *Rule of law* demands that a fair legal framework exist to regulate and enforce impartially the rights of the parties involved, particularly human rights and those of minorities.
- 3 *Transparency* means that information is freely available and directly accessible, in easy and understandable language, to the parties involved and particularly to those who will be most affected by the decisions taken.
- 4 The principle of *responsiveness* stipulates that institutions and processes shall serve the stakeholders' needs, and within a reasonable time-frame.

²⁷ See Frank Biermann and Philipp Pattberg, 'Global Environmental Governance: Taking Stock, Moving Forward' (2008) 33 *Annual Review of Environment and Resources* 277, 279.

²⁸ *Ibid* 280.

²⁹ United Nations Economic and Social Commission for Asia and the Pacific ('UNESCAP'), *What Is Good Governance?* (2009) <<http://www.unescap.org/pdd/prs/ProjectActivities/Ongoing/gg/governance.asp>>.

- 5 *Consensus orientation* asks for decisions to be taken after consideration of the many existing viewpoints on a certain matter, through mediation and balancing of the different interests, and based on a consensus of what is best for society as a whole in the long term.
- 6 *Equity and inclusiveness* require that no group be excluded from society or from opportunities to maintain and improve their well-being.
- 7 *Effectiveness and efficiency* demand that resources are used in the best way possible to meet the present and future needs of society, with the protection of the environment.
- 8 Finally, the principle of *accountability*, which builds on *transparency* and the *rule of the law*, requires that state and private actors, as well as civil society organisations, be accountable to those affected by their decisions and actions.

These are now widely advocated throughout the UN system and other multilateral organisations.³⁰ Even if they are not strictly international law, these are emerging legal principles which have been embraced by a number of international institutions, including the World Bank, which now includes good governance principles as part of its lending policy.³¹

Given that biofuel expansion has taken place so fast, has involved a number of different (and often conflicting) actors and viewpoints, and has created effects of such magnitude at the local level through to the global level, the analysis of how that development has been steered from the perspective of these principles seems extremely valuable. This can shed light on where biofuel governance has been deficient and on what could (or should) be improved. In order to build a framework for this analysis, the next Part considers the overlap between good governance and Rio Principles, showing their synergies and core elements.

D *A Framework for Assessing Biofuel Governance*

Based on the Rio Principles and on the good governance principles, a comprehensive assessment framework can be built to examine biofuel governance. Table 1 integrates the two sets of principles and identifies their general requirements for both the production and the governance of biofuel.

In the following Parts, this article examines the current state of international biofuel governance and subsequently applies this framework, analysing existing biofuel governance briefly from the perspective of each of these elements.

³⁰ UNDP, *Governance for Sustainable Development* (1997) <<http://mirror.undp.org/magnet/policy>>.

³¹ See World Bank, *Governance and Anti-Corruption* (2009) <<http://www.worldbank.org/wbi/governance>>.

Table 1: Assessment Framework for Biofuel Production and Governance Requirements

Requirement	Issue	Dimension	Legal Principles RP: Rio Principles GGP: Good Governance Principles
Efficiency Best use of the resources available	Biophysically Sustainable Production	Production	GGP 7
Biophysical Sustainability No negative impacts on ecosystem integrity (for example, air, water, soil, biodiversity, climate)			RP 3; RP 4; RP 8; RP 15; GGP 7
Effectiveness and Fairness It helps to meet people's needs, prioritising poverty eradication, and does not exploit power or other vulnerabilities of countries or populations	Equity		RP 5; RP 6; RP 14; GGP 7
Responsiveness It responds to the needs and interests of all, giving priority to the populations and countries who are most in need		RP 5; RP 6; GGP 4	
Inclusiveness and Participation Due involvement of all concerned stakeholders, especially those who will be most affected by decisions		RP 10; GGP 1; GGP 6	
Accountability Liability and compensation mechanisms are present to hold actors accountable for their decisions and actions	Legitimacy and Legality	Governance	RP 13; GGP 8
Cooperation and Consensus Orientation Multiple views are on board, interests are balanced, and decisions are taken through cooperation and consensus			RP 7; RP 12; RP 27; GGP 5
Transparency Accessible and understandable information for actors; a decision-making process open to observation and scrutiny			RP 10; GGP 3
Rule of Law There exists a clear and structured legal framework, which is internally consistent and enforceable			RP 27; GGP 2

III THE CURRENT STATE OF INTERNATIONAL BIOFUEL GOVERNANCE

Along with their explosive growth in production, biofuels have also gained much attention in policymaking and political agendas. In fact, these two trends have been largely coupled. The worldwide expansion of biofuels has been far from purely market-driven; rather, it has largely been a product of incentive policies and government economic and political support.³² The following Parts show that, despite such political effort, regulation to ensure biofuel sustainability remains scarce. Part A discusses the rise of biofuels in national agendas ('supranational' in the case of the European Union) to identify the key actors at the global level and clarify their positions. Then, Part B examines the emerging initiatives of multilateral biofuel governance on the sector and discusses the most relevant examples.

A *Agendas on Biofuel and the Key International Players*

Biofuel, in the form of modern liquid fuels, is already a decades-old policy item, dating, for example, as far back as 1931 in the case of Brazil.³³ The need to adopt climate change mitigation strategies, coupled with renewed energy security concerns and the interests of the agricultural sector, has recently boosted biofuel policymaking to the top of government agendas. As most observers agree, despite the growth of the private sector in the field, the expansion of biofuels worldwide has been primarily state-driven.³⁴ Mandatory biofuel-blending policies and economic incentives (such as tax breaks and direct subsidies) have not only incentivised production and reduced its costs but also created great market demand for these fuels.³⁵ Leading roles can be attributed to Brazil, the United States, and the EU in the advancement of these supportive policies internationally.

The US and Brazil together account for about three-quarters of all biofuel production in the world.³⁶ Recently they have been expanding not only their own production but also engaging with other countries through research and development ('R&D') cooperation agreements, trade agreements, and pro-biofuel partnerships.³⁷ Most notable among their bilateral negotiations is an R&D agreement, the *Memorandum of Understanding between the United States*

³² See FAO, *State of Food and Agriculture 2008: Biofuels: Prospects, Risks and Opportunities* (FAO State of Food and Agriculture Report, 2008) 6–8 ('*Prospects, Risks and Opportunities*').

³³ Petrobras, Brazil, *Biocombustíveis: 50 Perguntas e Respostas sobre este Novo Mercado* (30 September 2007) 3–4 <http://www2.petrobras.com.br/petrobras/portugues/pdf/Cartilha_Biocombustiveis.pdf>.

³⁴ FAO, *Prospects, Risks and Opportunities*, above n 32, 9.

³⁵ *Ibid.*

³⁶ Alan M Wright, *Brazil–US Biofuels Cooperation: One Year Later* (Brazil Institute Special Report, June 2008) 2.

³⁷ *Ibid.* 5.

and Brazil to Advance Cooperation on Biofuels.³⁸ Its main objective is the international expansion of the biofuel sector, particularly in the Western hemisphere, through promoting investments and technology transfer on biofuels in ‘third countries’ and by working to standardise technical specifications in order to facilitate trade. Brazil, in particular, has also engaged extensively in bilateral negotiations with other developing countries, aimed at establishing broad South–South cooperation on bioenergy. Clear examples are the recent formation of the Brazil–Indonesia Consultative Committee on Biofuels³⁹ and the creation of an African division of its state-owned Brazilian Agricultural Research Corporation (‘EMBRAPA’) in Ghana, an overseas branch mainly dedicated to biofuel promotion.⁴⁰ Notably, these have all been processes led by agribusiness and industry players, whose views on biofuel generally differ quite substantially from those of civil society actors.⁴¹

The EU has also played a very significant role, particularly as a major consumer market and a net biofuel importer.⁴² As a result, it has also become a leader in the creation of regulation and sustainability policies on the sector. In

³⁸ US–Brazil (signed and entered into force 9 March 2007) (‘MOU’). The MOU has the aims of sharing biofuel technology between the two countries; facilitating the implementation of biofuel industries in third countries (see Recital II); and advancing biofuels globally through the creation of technical standards and establishment of multilateral partnerships. Since then, Brazil and the US have effectively spread (sometimes under the auspices of the Organization of American States) bioenergy technology and production to many third countries, most notably in the Caribbean, such as Haiti, El Salvador and the Dominican Republic. Since November 2008, the US–Brazil cooperation started to operate in West Africa as well, engaging in joint biofuel promotion in Senegal and Guinea-Bissau: Clare Ribando Seelke and Peter J Meyer, *Brazil–US Relations* (Congressional Research Service Report, 3 June 2009) 1–2, 12–13.

³⁹ The Brazil–Indonesia Consultative Committee on Biofuels was formed in March 2007 after the two countries signed a memorandum for technical cooperation in order to promote their biofuel agribusinesses. Mainly, Brazil is to provide its extensive experience with ethanol to Indonesia, who intends to escalate production from sugar cane and cassava crops: ‘Indonesia and Brazil Sign Agreement to Cooperate on Biofuels’, *Biopact* (Belgium) 16 March 2007 <<http://news.mongabay.com/bioenergy/2007/03/indonesia-and-brazil-sign-agreement-to.html>>; MAPA, ‘Guedes Fecha Acordo de Etanol com a Indonésia’ (Press Release, 15 March 2007).

⁴⁰ Diplomats from 18 African embassies convened in Brasília in 2007 to hear of this new division of EMBRAPA in Ghana, which became operational in 2008. Its main objective is to transfer technology and expertise on ethanol to accelerate the adoption of biofuels in Africa, with investments from the Brazilian Government and its private sector: ‘Brazil in Africa: South–South Cooperation on Bioenergy Speeding Up’, *Biopact* (Belgium) 13 March 2007 <<http://news.mongabay.com/bioenergy/2007/03/brazil-in-africa-south-south.html>>.

⁴¹ Most civil society actors (and even UN agencies) have been critical of this rapid, government-led biofuel expansion. Civil organisations have generally accused such promotion of being profit-driven and lacking sufficient attention to its environmental and socioeconomic impacts. On how the industry has led those bilateral negotiations, see Wright, above n 36. For some views of Northern and Southern civil society organisations on biofuel, respectively, see Friends of the Earth Europe, *Sustainability as a Smokescreen: The Inadequacy of Certifying Fuels and Feeds* (Friends of the Earth Europe Report, April 2008); World Rainforest Movement, ‘Biofuels: A Serious Threat Masked in Green’ (2006) 112 *WRM Bulletin* <<http://www.wrm.org.uy/bulletin/112/viewpoint.html#masked>>. For UN criticism on the current policy promotion of biofuels, see FAO, *Prospects, Risks and Opportunities*, above n 32, 88–94.

⁴² EU biofuel consumption demands far exceed its domestic production. By 2020, if there is no significant contribution of new technologies to increase European production, more than half of the biofuels consumed will be effectively imported, either directly or indirectly (that is, European food production is diverted for biofuel manufacturing and, in turn, food imports increase): see Edwards et al, above n 22, 7.

December 2008, when the European Parliament approved a mandatory target of 10 per cent of renewable fuels in its transport sector by 2020, it also included a number of sustainability criteria which must be followed.⁴³ Clearly, this target creates major further incentives for biofuel production worldwide, although the effectiveness of its sustainability criteria has been the object of much controversy.⁴⁴ The key concern for this discussion, however, is the relevance of the policy to international biofuel governance: these criteria, which apply as much to European producers as to non-member countries exporting into the EU, are an evident attempt to unilaterally apply European-made sustainability standards on biofuel production worldwide.⁴⁵

All these incentives, through bilateral negotiations and the creation of foreign market demand, have indeed led to the international expansion of biofuels. For instance, several African countries have set aside large tracts of land for biofuel production, mainly aimed at export markets. Critics suggest, however, that such initiatives have benefited mostly large agribusinesses operating in Africa, whose economies of scale allow them to engage in such large operations while most smallholders, who make up the vast majority of agriculturalists on the continent, are either excluded or, often, evicted and displaced from their lands.⁴⁶

Quite clearly, the national and supranational biofuel agendas and bilateral agreements have been so far dedicated more to promoting biofuel agro-industry than to controlling its expansion or to addressing its impacts. Changes in production practices to deal with these environmental and socioeconomic concerns have also fallen short. On the contrary, the expansion of production in Brazil, the US, the EU and most other countries is proceeding 'business as usual' — as large-scale operations, using the same crops and production processes that have received so much criticism from environmentalists, NGOs,

⁴³ See European Parliament, *Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the Promotion and Use of Energy from Renewable Sources and Amending and Subsequently Repealing Directives 2001/77/EC and 2003/30/EC* [2009] OJ L 140/16, art 17.

⁴⁴ It is worth observing that most renewable sources, such as wind, solar, and hydro energy generate *power*, which cannot be easily used to replace *liquid* transportation fuels. That would require major technological changes in vehicles which are not expected to become widely available within the time frame stipulated by the European Parliament (that is, by 2020). As such, it is likely that the largest share of that 10 per cent target will have to be met using biofuels.

⁴⁵ European Parliament, above n 43, art 17(1). This is particularly relevant to the global South, from where much of that biofuel is increasingly imported. The EU is already a major importer of Brazilian ethanol, and the established Africa–EU Partnership on Energy also renders exporters from that continent subject to the European standards. This agreement for cooperation between the African Union and the EU include, *inter alia*, incentives for biofuel production in African countries, largely for European consumption markets. See Africa–EU Strategic Partnership, *Africa–EU Partnership on Energy* (2009) <http://africa-eu-partnership.org/partnerships/items/energy_en.htm>; Michael Charles, *EU–Africa Energy Partnership: Implications for Biofuel Use* (European Foresight Monitoring Network Brief No 149, July 2008).

⁴⁶ Cotula, Dyer and Vermeulen, above n 12, 35–7.

indigenous peoples and representatives of peasant farmers and small landholders.⁴⁷

B *Multilateral Biofuel Governance Today*

At the international level, biofuel regulation still does not depend on a legal framework or any binding or non-binding multilateral agreement that addresses its environmental and socioeconomic effects. Yet international governance on the subject is emerging quickly, in three main ways. First, multilateral organisations, whose mandates overlap with the biofuel area, have tried to address the issue and, to an extent, concert international action on it. Second, countries and non-state actors have joined together in a number of newly-created partnerships dealing with bioenergy. Third, multiple actors, particularly industry players, have established and participated in roundtables to discuss biofuel issues and to agree on voluntary standards for production.

Among the international organisations dedicating attention to biofuel, the International Energy Agency ('IEA') of the OECD,⁴⁸ the FAO, the UNEP and the interagency mechanism UN-Energy have been the most outspoken. They have performed several studies in the area and given recommendations for sustainable biofuel development.⁴⁹ However, they have not yet engaged directly in the creation of international agreements or legal instruments on biofuels. Their position has been mainly one of providing research assistance and of advocating for the liberalisation of biofuel trade. In the case of the UN agencies, they have also asked for the end of current biofuel promotion policies, so that market forces can operate freely and without any artificial demands, selecting biofuels a priori over alternative strategies.⁵⁰

A similar 'assistance' role has been played by the newly-established partnerships on bioenergy, whose focus have been mainly on cooperating to commodify biofuels, promote their trade, and advance their worldwide adoption. In 2005, the Group of 8+5 launched the Global Bioenergy Partnership ('GBEP') with the objective of promoting the 'continued development and commercialisation of renewable energy' and of supporting 'wider, cost-effective, biomass and biofuels deployment, particularly in developing countries where biomass is prevalent'.⁵¹ Later on, in 2007, the International Biofuel Forum

⁴⁷ Although not every representative of those groups is critical of large-scale biofuel production as currently practiced, this has been the position of the majority of them. To a lesser extent, branches of the UN such as the FAO and UNEP have also been critical of the large government support provided to conventionally-produced biofuels: see UNEP, *A Growing Debate*, above n 5; FAO, *Prospects, Risks and Opportunities*, above n 32, 8–9.

⁴⁸ The OECD is the organisation that comprises the so-called global North, or developed countries. For a full list of member countries, see OECD, *Ratification of the Convention on the OECD: OECD Member Countries* (2009), available from <<http://www.oecd.org>>.

⁴⁹ See, eg, UNEP, *A Growing Debate*, above n 5; FAO, *Prospects, Risks and Opportunities*, above n 32, 88–93.

⁵⁰ See, eg, UNEP, *A Growing Debate*, above n 5, 4; FAO, *Prospects, Risks and Opportunities*, above n 32, 92–3.

⁵¹ The G8+5 group of countries include Canada, France, Germany, Italy, Japan, Russia, United Kingdom and the US, plus Brazil, China, India, Mexico and South Africa. Countries from this group make up the core of the GBEP. See GBEP, *About the Partnership* (2009) <<http://www.globalbioenergy.org/aboutgbep/en>>.

(‘IBF’) was also established, again with the aim of advancing biofuel production and promoting its global commodification and trade.⁵²

While those partnerships have had the clear objective of *promoting* biofuels, roundtables have been more oriented towards *assessing* their impacts and creating sustainable production standards. Largely inspired by previous initiatives in the forestry sector, they have aimed particularly at developing voluntary certification mechanisms which could attest to the sustainability of biofuels according to established criteria. Some examples have been the Round Table on Responsible Soy, the Roundtable on Sustainable Palm Oil, and most notably the Roundtable on Sustainable Biofuels (‘RSB’), which is wider and intended to be applicable to various crops. Whilst the former two are mainly agribusiness initiatives, the RSB involves a larger number of non-profit actors.⁵³ Yet, even the RSB is still very much dominated by industry and Northern voices. As an illustration, its steering committee consists of 21 representatives of organisations and of different sectors of society, but only five of these represent developing country institutions. Three of those are large industry groups, and only two represent civil society organisations.⁵⁴

These are the institutions in place to govern biofuels internationally. Arguably, they are still very limited in their scope, representation and effectiveness. For one, they are clearly more focused on promoting biofuels than on regulating their production or addressing their wider impacts. These initiatives have been to a large extent an addition to the biofuel promotion done by governments individually and through bilateral negotiations. Cooperation has been mostly restricted to research, technological development, commodification of biofuels, and market promotion — an agenda that reflects very much the interests of large-scale biofuel producers (and of their clients), but not so much those of the other sectors of society. Sustainability regulation in this agenda remains limited to the voluntary certification initiatives, which have yet to prove their effectiveness.⁵⁵ Meanwhile, any enforceable rules at the international level remain limited to the EU unilateral requirements, built without any consultation or agreement with non-member countries.

⁵² IBF is a joint project of Brazil, China, India, South Africa, the US, and the European Commission: UN Department of Public Information, ‘Press Conference Launching International Biofuels Forum’ (Press Briefing, 2 March 2007) <http://www.un.org/News/briefings/docs/2007/070302_Biofuels.doc.htm>.

⁵³ A list of the members of the RSB’s steering board and their affiliations may be found at Roundtable on Sustainable Biofuels, *Roundtable on Biofuels Steering Board* (2009) <<http://cgse.epfl.ch/Jahia/site/cgse/op/edit/lang/en/pid/67476>>. Cf Round Table on Responsible Soy Association, *RTRS Members* (2009) <<http://www.responsiblesoy.org/members.php>>; Roundtable on Sustainable Palm Oil, *Members of RSPO* (2009) <http://www.rspo.org/Members_of_RSPO.aspx>.

⁵⁴ Those large Southern industry players include, for instance, Brazil’s state-owned oil and energy company, Petrobras, and the Brazilian sugarcane producers union (‘UNICA’). For the complete membership, see Roundtable on Sustainable Biofuels, *Join the RSB Governance Structure* (2009) <<http://cgse.epfl.ch/page77270.html>>.

⁵⁵ Forestry certification schemes have previously represented a key governance initiative from the private sector. However, they have proven to be a very limited tool to halt deforestation, which continues unabated. Issues of imbalanced governance favouring the North have also been highlighted. For a detailed examination of this, see Klaus Dingwerth, ‘North–South Parity in Global Governance: The Affirmative Procedures of the Forest Stewardship Council’ (2008) 14 *Global Governance* 53.

Arguably, much of this is due to skewed representation within those institutions, of both views and actors. As seen with the RSB membership and the prominence of the IEA and G8+5 initiatives, industry players and Northern actors make up the clear majority of those involved. When Southern voices are present, it is often through the large energy and agribusiness sectors (sometimes accompanied by supportive government ministries), adopting a profit-oriented view and interested in large-scale biofuel expansion. Clearly, they have held a market-liberal agenda, whereby legal requirements regulating biofuel impacts have not yet surfaced. At the same time, the socio-environmental concerns discussed do not go as far as to take on board alternative views on biofuels, such as those of civil society actors who say we should refrain from current large-scale biofuel production and give preference to small-scale, locally-oriented production, or even those who say that biofuels are not the best solution.⁵⁶ In practice, biofuel's virtues are taken for granted, its qualities are praised, and it is not really presented as one option among many or measured against other renewable energies or alternative strategies to mitigate climate change, improve energy security, or promote rural development.

The effectiveness of international biofuel governance in addressing the impact of increased biofuel production has been extremely limited so far, partially because, as seen, restraining biofuel expansion or initiating major changes in its production structure is not really on the agenda. Large-scale biofuel production progresses at full speed and with increased state support. Calls for greater equity and sustainability regulation are yet to be heeded, and alternative views, such as those of small farmers and Southern NGOs, have yet to be taken on board. As the next section will analyse, the current situation seems far removed from the inclusive, consensus-oriented negotiations and the rule of law prescribed by the principles of the *Rio Declaration* or of good governance.

IV RIO AND GOOD GOVERNANCE PRINCIPLES APPLIED TO INTERNATIONAL BIOFUEL GOVERNANCE

The *Rio Declaration* and the good governance principles offer a broad basis for governance in the fields of environment and development. While biofuel is one such field whose potential impact is of alarming breadth and magnitude, particularly for developing countries, biofuel governance has been limited in several ways. This Part first analyses how the current governance of the sector aligns with those guiding principles; then, it discusses how the process could be improved if the principles were effectively followed.

A *Testing the Current Biofuel Governance against the Rio and Good Governance Principles*

The principles agreed on in the 1992 *Rio Declaration* and the good governance principles require commitment with nine main elements: rule of law; transparency; cooperation and consensus orientation; accountability; inclusiveness and participation; responsiveness; effectiveness and fairness;

⁵⁶ Those partnerships have instead addressed sustainability by promoting technological development and improvement of production processes in order to make large-scale biofuel production environmentally friendlier and more 'competitive'. See, eg, GBEP, above n 51.

biophysical sustainability; and efficiency. This Part examines, in turn, how each of them has been present (or not) in current international biofuel governance.

The principle of the rule of law demands that a clear legal framework of rules exists to coordinate action, address issues, and enforce regulation on a certain area. This clearly is not the case in international biofuel governance, which remains scattered among ad hoc initiatives and bilateral negotiations. The interests of biofuel agro-industry expansion have prevailed over the need to regulate its activity and address its widespread impacts. The creation of a multilateral legal framework would be an essential step in the application of the other governance principles.

Transparency requires the clear diffusion of and easy access to information relevant to decision-making, as well as for the process itself to be open to scrutiny. In international biofuel governance, negotiations have been largely held between private businesses, and information is not always available. Lack of transparency has also been a problem for the major biofuel sustainability regulations currently in place, the EU criteria, which are based on controversial figures from privately-conducted studies that had not been made public by the time the resolution was approved.⁵⁷ When the rule of law is absent and transparency is questionable, the principle of accountability is also undermined.

Those very EU standards also go strikingly against the ideal of cooperation and consensus as principles for the resolution of environmental and developmental conflicts. The unilateral elaboration and adoption of those standards as a legal instrument contradicts Principle 12 of the *Rio Declaration* to its core.

Naturally, consensus implies that multiple actors have been consulted and brought on board to participate in the decision-making process, which has clearly not been the norm in current biofuel governance. Consensus requires that differing views be balanced in an open forum, and that different interests are measured against each other, giving particular attention to those who will be most affected by the decisions taken. As biofuel discussions at the international level have been dominated by the interests of energy industries and agribusinesses in expanding biofuel production, alternative views have been systematically excluded from the major forums. Such conduct violates both the principles of cooperation and consensus and of inclusiveness and participation.

As it currently stands, international biofuel governance has yet to respond to the needs of the majority, and has responded even less to the poorest segments of society — who should have been given special priority, as required by Principles 5 and 6 of the *Rio Declaration*. Although some in these poorer sectors may have benefited from the jobs created by large-scale biofuel enterprises, there are even

⁵⁷ Those controversial figures refer mainly to the greenhouse gas emissions savings assumed to be obtained from different types of biofuels, in comparison to fossil fuels. The EU standards set a minimum percentage of savings that a biofuel must achieve in order to be acceptable. However, different studies have so far obtained varied results, and distinct methodologies can be applied. To solve the problem, the EU performed its own studies and presented its findings but did not promptly publicise its methodology or study details. The results caused much controversy, varying quite significantly from other previous findings and obtaining surprisingly positive numbers for those biofuels domestically produced in the EU. The validity of the figures aside, the lack of transparency in the process was glaring. See Leigh Phillips, 'European Biofuels Win Last-Minute Reprieve', *EUobserver*, 29 October 2008 <<http://euobserver.com/9/27013>>.

larger numbers of small farmers who are currently being displaced, labourers working under degrading standards whose needs are not being respected, and food-insecure populations whose reduced access to food owes partially to the effects of biofuel expansion. As such, a lack of responsiveness has also been an issue in international biofuel governance.

This lack of responsiveness consequently compromises the effectiveness and fairness of the biofuel sector. It has not met the needs of the poor, who have, in fact, suffered the most harm from the current expansion. This violates Principles 5, 6 and 14 most directly, especially when production systems that are dangerous to human health and to the environment are encouraged for the developing world under the argument that they create jobs or exploit untapped agricultural potentials.⁵⁸

Finally, as a result of the production methods adopted, environmental integrity has been threatened and damaged in many ways, without the central problems being effectively addressed. The insistence on unsustainable methods, with effects that range from deforestation to climate change, offends the very spirit of the *Rio Declaration*, most notably Principles 3, 4, 8 and 15.

Current methods, if considered as much in economic terms as in their socio-environmental dimensions, also score poorly with regards to efficiency. Even in terms of socioeconomic benefits such as the number of jobs created, smaller enterprises — which have so far received very little consideration — seem to achieve much better results.⁵⁹

B *Embracing the Principles: Improving Biofuel Governance and Addressing North–South Inequity*

If international biofuel governance is to effectively follow the *Rio Declaration* and the good governance principles, a number of changes are required. First, the multiple existing views on biofuel need to be taken on board and receive due consideration. That includes bringing in the perspectives of Southern NGOs, rural communities, and of all those others whose voices have been and continue to be marginalised, and whose views on biofuel differ quite significantly from the mainstream agenda of large-scale production. Their interests have been more frequently in the utilisation of biofuels in small-scale enterprises to meet local needs,⁶⁰ or even in a moratorium on crop-based biofuel

⁵⁸ The North–South question arises from the current situation, in which the North has led international biofuel governance while the South has experienced most of the expansion in production. The issues involved in this include, for example, the broad promotion of *Jatropha curcas* in developing countries by Northern actors in a spirit of experimentation (as discussed above); the degrading labour conditions to which Southern workers are exposed; and the utilisation in developing countries of pesticides and other substances forbidden in the North, among others, while most incentives given to the South are for biofuel to be produced as an export commodity to meet consumption demands in the North. See Almuth Ernsting, ‘Agrofuels in Asia: Fuelling Poverty, Conflict, Deforestation and Climate Change’ (2007) *Seedling* 25; World Rainforest Movement, ‘Biofuels: A Serious Threat’, above n 41.

⁵⁹ See Camila Moreno and Lucia S Ortiz, *Construindo a Soberania Energética e Alimentar: Experiências Autônomas de Produção de Combustíveis Renováveis na Agricultura Familiar e de Enfrentamento do Agronegócio da Energia* (Núcleo Amigos da Terra Report, December 2007).

⁶⁰ See, eg, *ibid.*

production, at least until further sustainability studies are conducted.⁶¹ In order to be fully representative of all sectors of society, even views against biofuels must be taken on board. Following the Rio Principles would indicate a commitment to sustainable development, not to biofuel as the solution of choice. The desirability of biofuels would not be taken as a premise, for they are just one renewable energy option among many, which can lead (perhaps even more efficiently) to climate change mitigation and energy security. Likewise, the utilisation of biofuels to promote rural development would also be measured against alternative strategies to reach that goal.

The representation of those 'weaker' interests in society (for those actors who wield less economic and political power) depends largely on the application of the principle of the rule of law, so that powerful actors are not allowed to dominate the agenda or the governance process. This would require a structured legal framework for international biofuel governance, with equitable representation of interests, transparent decision-making and built-in mechanisms to ensure accountability.

Such a framework would be of major importance in ensuring that decisions are made through cooperation and consensus and not unilaterally. This would be especially beneficial for developing countries with small domestic markets that produce mainly for export, as they are the most vulnerable to the mercy of foreign requirements. As of today, for example, an African country such as Senegal, producing biofuel encouraged by the EU–Africa energy partnership and aiming at that consumer market, has to abide by European standards on which Senegal did not and does not have any say.⁶² A fair multilateral policy framework would allow those less powerful actors, who have much at stake, to be duly active in the governance process.

Accordance with the Rio Principles and good governance principles would still require the evaluation of various different needs which can be met through biofuels. Currently, production systems consist almost exclusively of large privately-owned properties where the poor benefit only from the creation of agro-industrial jobs. But the principles, which say we should prioritise the needs of those who are most disadvantaged, demand that we assess more carefully the alternative of using biofuels to promote local energy security or serve regional demands. Experience has also shown that much better results (in terms of poverty mitigation and equity promotion) are achieved through autonomous enterprises, where the decision-making and the value-adding stages of production are in the hands of rural workers (such as in cooperatives).⁶³

Because most biofuel expansion is taking place in the South, that hemisphere has much more at stake, for both its environment and its people. Therefore, the embracement of the Rio and good governance principles in biofuel governance is of major significance to North–South equity. Yet, it must be observed that there are glaring inequity issues inside developing countries themselves, and that their

⁶¹ See, eg, Friends of the Earth Europe, above n 41, 7.

⁶² See Hilaire Avril, 'Energy: Africa Will Have to Feed EU's Artificial Biofuels Demand', *Inter Press Service Newsfeed*, 19 April 2009 <<http://ipsnews.net/news.asp?idnews=46552>>.

⁶³ For arguments on this point, see UN-Energy, *Sustainable Bioenergy: A Framework for Decision Makers* (UN-Energy Report, 2007). For examples of experiences corroborating this, see, eg, Tilman Altenburg et al, *Biodiesel in India: Value Chain Organization and Policy Options for Rural Development* (German Development Institute Report, 2009).

representation at the international level is often biased. Developing countries have been historically dominated by elite groups such as large landowners, who amass much of those countries' wealth while being surrounded by poverty. Those elites often succeed in exerting political influence much more efficiently than the poor, and it is not rare that, in environmental matters, their short-term profit interests prevail over equity or sustainability concerns.⁶⁴ Such is arguably the case in international biofuel governance, where the agendas of developing countries have reflected much more the interests of agribusinesses and industries than those of the marginalised majorities. Thus, it is not sufficient to ensure a North–South balance in international negotiations; full compliance with the Rio and good governance principles requires also that the poorer and most affected peoples be duly represented and prioritised in biofuel governance and development.

V CONCLUSIONS

When facing problems of the dimensions of global climate change and energy insecurity, decision-makers may quickly adopt innovative solutions offered by technology, especially when those solutions enjoy strong political support. However, experience has shown that much thought should precede such decisions, as new and perhaps more complex issues may arise as a result of those decisions.

This has arguably occurred in the case of biofuel. They rose incredibly fast as an economic sector and as a top item on political agendas, but now face tremendous controversy. The issues that have emerged with their rapid, large-scale expansion range from their still debatable benefits, to their part in climate change, to their impacts on food prices and food security. Because both the driving forces and the consequences of this large-scale expansion are too large to be tackled by individual agents, a multilateral governance effort for the sector is needed.

An analysis of current international biofuel governance in light of the Rio Principles and the good governance principles indicates that much improvement is needed. To date, that governance has been mostly limited to ad hoc policy decisions and bilateral negotiations between countries. The existing multilateral initiatives focus clearly on the promotion of international biofuel trade rather than on sustainability regulation. Meanwhile, the latter has mainly taken the form of voluntary certification schemes and unilateral policy initiatives such as the EU biofuel production standards. These have not only lacked transparency, but are also a weak replacement for a structured multilateral legal framework as demanded by the principle of the rule of law.

Current biofuel governance has also fallen short of the other principles, most notably on equity aspects and on effectiveness in addressing the emerging sustainability issues. The representation of views, interests and actors in present initiatives has been visibly biased in favour of the North and large industries and agribusinesses of the South. As such, the ones who are most in need of development opportunities and those who are most affected by biofuel expansion have played very little or no role in its governance.

⁶⁴ See generally Raymond L Bryant and Sinéad Bailey, *Third World Political Ecology* (1997).

In order to embrace the Rio Principles and the good governance principles in international biofuel governance, a wide revision of such governance is necessary. There must be an open forum for consensual negotiation of a legal framework on biofuels. Alternative views, especially ones so far neglected, such as those of small farmers and Southern NGOs, need to be taken on board and discussed. The virtues of biofuel should not be taken a priori; they should be measured against other options to mitigate climate change, improve energy security or develop rural areas, for the commitment of the *Rio Declaration* is not to specific technology but to sustainable development. And finally, if the goals of promoting North–South equity and eradicating poverty are to be taken seriously, production strategies which are more inclusive of the poor, such as small-scale enterprises, need to receive much more attention.

Efforts in these directions would also be of great benefit to the further advancement of international law on sustainable development. The controversies of biofuels have, to a large extent, created a valuable opportunity to rethink our energy and agricultural production systems. Many of the issues raised here are not limited to the bioenergy sphere, and therefore are likely to be applicable to other sectors that may also fail to comply with the principles discussed.

In the spirit of the *Rio Declaration*, efforts to reconcile environment and development must be broad and large. That may require deeper changes than some actors are willing to concede, especially the powerful ones who profit from current conditions. Thus, the rule of law is a necessity when governing for sustainable development. Biofuel has shown what happens when that is absent, and they thus provide us with a unique opportunity for reflection and change.

VI APPENDIX:
RELEVANT PRINCIPLES OF THE *RIO DECLARATION*

Principle 3

The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

Principle 4

In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.

Principle 5

All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.

Principle 6

The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries.

Principle 7

States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

Principle 8

To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.

Principle 10

Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and

participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

Principle 12

States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus.

Principle 13

States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.

Principle 14

States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health.

Principle 15

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Principle 27

States and people shall cooperate in good faith and in a spirit of partnership in the fulfilment of the principles embodied in this *Declaration* and in the further development of international law in the field of sustainable development.