

Contents

Moving toward Nagoya: The IYB, COP10 and next steps for Biodiversity	1
The political economy of the international ABS regime negotiations: Options and synergies with relevant IPR instruments and processes	4
Project Rescue: Protecting traditional knowledge and Biodiversity in Panama	7
The EU's Renewable Energy Directive: Are the sustainability criteria for biofuels consistent with WTO obligations?	8
Horticulture production and biodiversity in Uganda: Benefits and risks associated with export growth strategies	10
Expanding the use of energy efficient goods through trade: Opportunities and obstacles	12
WTO update: Environmental goods talks focus on climate	14
ICTSD Update	15
Events & Resources	16

Moving toward Nagoya: The IYB, COP10 and next steps for biodiversity

By Brooks Shaffer

In 2002, the year 2010 was declared to be the International Year of Biodiversity (IYB) by the United Nations General Assembly, and the world committed itself to arresting the decline of biodiversity by 2010.

It didn't work.

Why does biodiversity continue to decline, why does it matter, and what can be done to reverse it?

Up through Copenhagen, negotiations for a new climate change regime have consistently grabbed the attention of the international community, pushing other important environmental issues, such as the alarming rate of biodiversity loss, to the shadows. However, in 2010, as the bones of Copenhagen are being picked over in preparation for the next UNFCCC COP in Mexico, issues surrounding biodiversity are coming back into the lime-light and increasingly taking centre stage. Given the accelerating rate of biodiversity loss around the globe, exacerbated by the impacts of climate change and the ever-increasing extent and intensity of human demands on the biosphere, this re-engagement with biodiversity comes not before time.

The International Year of Biodiversity

This renewed awareness of biodiversity and the urgent need to take action that will halt its decline is at least in part due to the declaration by the United Nations General Assembly that 2010 be the 'International Year for Biodiversity' (IYB). As a part of this year, countless initiatives are being organised throughout world. Their aim is to raise awareness of the importance of biodiversity, to highlight that it continues to shrink, to celebrate novel solutions being carried out for its conservation and sustainable use, and to encourage organisa-

tions, institutions, companies and individuals to take direct action to reduce the constant loss of biological diversity worldwide. Already in the first six months, hundreds of IYB events have been organised around the world, from Shanghai to Nairobi, from Cartagena to New York, with the 65th United Nations General Assembly being held in September. The IYB will culminate with the 10th Conference of the Parties to Convention on Biological Diversity (CBD COP10), in Nagoya, Japan, from 18 to 29 October, 2010.

The year 2010 will be a historic one for the Convention on Biological Diversity (CBD) as well. It is the year that Parties to the CBD report on the target they agreed to in 2002: to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level. EU countries agreed to an even more ambitious target - to halt biodiversity loss by 2010. Throughout the year, scientists are also reporting on a global trend in biodiversity.

What is biodiversity?

The United Nations Convention on Biological Diversity defines biodiversity as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems"

It can be considered to provide value to humanity in four ways:

Provisioning - providing timber, fish, etc

Regulating - disposing of pollutants, regulating rainfall

Cultural - sacred sites, tourism, enjoyment of countryside

Supporting - maintaining soils and plant growth



What is the CBD?

The Convention on Biological Diversity, or CBD, is the international environmental convention for the conservation and sustainable use of biodiversity. It is an international legally binding treaty that was first opened for signature at the Earth Summit in Rio de Janeiro in 1992, and entered into force in 1993. The primary objectives of the CBD are:

- 1) Conservation of biological diversity;
- 2) Sustainable use of its components; and
- 3) Fair and equitable sharing of benefits arising from genetic resources.

It currently has 193 signatory parties (192 countries and the European Union). The United States has signed, but not ratified the treaty.

Why it matters

Together with climate change, biodiversity is the most critical global environmental threat facing our planet. Several authoritative reports confirm that biodiversity is under severe threat, with losses occurring at up to 1000 times the normal rate.¹ In the same way that a 2 degree rise in global temperature above pre-industrial levels would lead to catastrophic climate change, so the loss of biodiversity beyond certain limits would have far-reaching consequences for the functioning of the planet. These specific limits are still being defined but the scientific community is clear on the fact that the current rate of biodiversity loss puts the future well being of people around the world at risk. The fact is that we are eroding at unprecedented rates the very natural capital on which we are and will be dependent for our future prosperity.

2010 Biodiversity Targets

Although the IYB is meant as a year to celebrate biodiversity, there will be little to celebrate at the COP 10 of the CBD, at least in terms of meeting the biodiversity conservation targets set for 2010. Despite some ecosystem-specific, country-level successes, the 2010 biodiversity target has not been met at a global level. Each of the more than 190 country parties to the CBD failed to meet their 2010 targets for conserving biodiversity, and according to the third edition of the Global Biodiversity Outlook (GBO-3), released by the CBD in May, high levels of extinction and habitat loss are projected to continue throughout the 21st century.

Most 2010 reports on biodiversity have been negative. As the flagship publication of the CBD, GBO-3 was one of the most awaited biodiversity reports of 2010. The report concluded that in addition to the general 2010 biodiversity target, none of the 21 specific subsidiary targets - such as curbing the rate of habitat loss and degradation, protecting at least 10 percent of the Earth's ecological regions, controlling the spread of invasive species, and making sure that international trade does not take any species towards extinction - are being met either, at least not on a global basis.

The GBO-3 report further states that some ecosystems may soon reach "tipping points" where they rapidly become less useful to humanity. Such tipping points could include rapid dieback of forest, algal takeover of watercourses affecting access to clean water and mass coral reef death, killing off fish habitat. "The news is not good," said Ahmed Djogla, executive secretary of the CBD. "We continue to lose biodiversity at

a rate never before seen in history - extinction rates may be up to 1,000 times higher than the historical background rate."

Bill Jackson, deputy director general of the International Union for Conservation of Nature (IUCN), which maintains the Red List of endangered species, highlights that "Twenty-one percent of all known mammals, 30 percent of all known amphibians, 12 percent of all known birds (and)... 27 percent of reef-building corals assessed... are threatened with extinction." He follows with a comparison to the financial crisis: "If the world made equivalent losses in share prices, there would be a rapid response and widespread panic."

Key issues

So why is this crisis of biodiversity loss not generating a greater response? What has led to the collective failures in achieving these 2010 targets? Why half way through the International Year of Biodiversity is biodiversity loss still escaping mass public scrutiny and vigorous policy responses?

One argument is that biodiversity loss has not been successfully conveyed as a critical issue to the public at large. During her speech at the 6th Trondheim Conference on Biodiversity in February, Angela Cropper, Deputy Executive Director of UNEP, suggested to focus the meeting on what lessons can be learned from the collective failures in achieving the 2010 targets, with failures to persuade the public and decision makers of the importance of biodiversity being one of the key contributing factors.

What emerged is, in part, a question of language - that the term biodiversity and the concept of biodiversity loss is a much more difficult concept to communicate than climate change or global warming. The latter focuses on a specific negative change, of melting polar ice caps and rising sea levels, while the former describes a loss, not of something specific, but of the variety of life. In our culture, we have tended to associate variety with choice, which can lead one to question: can we do without certain species? Rare is often perceived in our society as better than common. According to Paul Evans, a UK environmental writer, "It's hard to care for abstract ideas of diversity, when our impulse is to love this particular fern, this bird, this seal."

So should the term 'biodiversity' be replaced? The UK's Department for Environment, Food, and Rural Affairs, in 2007, conducted a public education survey on attitudes towards various ecological buzzwords. Nearly all respondents struggled to define biodiversity, and when it was explained to them, they couldn't actually associate it with nature. The report concludes that many people cannot relate to biodiversity. But does that mean that the term biodiversity should no longer be used? One option is to retain the term biodiversity because it encapsulates larger threats to ecosystems, but complement its use with specific examples of what is being lost, and the broader risks they entail, using a language that is specifically geared to the audience.

Another key issue is the question of quantification, and the difficulty of quantifying biodiversity. As Pavan Sukhdev, leader of the TEEB study, points out, we cannot value what we do not measure. Unlike climate change, where analysts measure carbon and carbon equivalents, there is not yet a measureable unit of account for biodiversity. Conservationists have long tried to address how to quantify biodiversity, but given that it can be seen as encompassing the entire and irreducible complexity of life, this is no easy task. Finding a solution to it, though, could help clarify the relationship between nature loss and economic harm, and transform bio-

¹ "Growing within limits," Netherlands Environmental Assessment Agency, October 2009; "Millennium Ecosystem Assessment," 2005; "IUCN Red List," November 2009.

diversity loss from the figurative into something tangible for policy makers, business leaders, and consumers alike.

A final key issue is the biodiversity funding gap. Although threats facing biodiversity are clearly escalating, the available budget specifically allocated biodiversity conservation is limited and not nearly sufficient to halt the loss of biodiversity. In the United States, for example, less than 0.8 percent of total bilateral aid is spent on biodiversity.¹

Although there are some regional initiatives, most biodiversity funding currently comes directly from countries. The CBD has a funding mechanism (the Global Environment Facility) that receives funds from developed country members and helps developing countries fulfil the objectives of the CBD, but this funding is limited in scale and scope and much more is needed in order to have an impact on mitigating biodiversity loss. Given the current economic climate and national belt-tightening, the CBD is looking into ways to engage and generate new and additional funding from the private sector.

Next steps for biodiversity

The news for biodiversity is not all dire. Despite the ongoing decline of biodiversity and the global failure to meet biodiversity targets, national biodiversity strategies and action plans have now been implemented in over 170 countries. The Global Environment Facility (GEF), a Washington-based environment and development funding institution, has just completed its fifth replenishment of US\$4.2 billion to address global environmental issues over the next four years. Roughly 1/3 of this will go toward biodiversity-specific projects. This official funding for biodiversity conservation will likely be supplemented by new and innovative financial mechanisms that are currently being considered under the CBD.

One such mechanism, championed by Geneva-based environmental organisation Earthmind, is the Green Development Mechanism (GDM). Analogous to the Kyoto Protocol's well-known Clean Development Mechanism, a GDM would help to fill the current biodiversity funding gap by mobilising private sector financing to mitigate biodiversity loss, much as the CDM has done to mitigate climate change. By establishing a standard and accrediting process to certify the supply of biodiversity-protected areas and by facilitating a functional market, a GDM would enable the sale of GDM-certified biodiversity conservation to willing buyers, including businesses and consumers.

With regards to quantifying biodiversity, there are not yet any solutions, though fresh calculations and more precise evaluations of the value of nature to global and national economies have been coming to light as a result of a project called TEEB - The Economics of Ecosystems and Biodiversity. TEEB's interim report, published in 2008, caused some stir when it calculated the annual loss of forests at US\$2-5 trillion, dwarfing the costs of the recent banking crisis.² TEEB will produce its final synthesis report during the IYB in time for the COP10 in Nagoya. This final report should sharpen international attention on the economic losses resulting from the degradation and destruction of the natural world and its goods and services. It will prove a useful tool to improve understanding and impact and increase recognition of the interconnection between economics and biodiversity; the economic invisibility of environmental costs and benefits being one of the main drivers of biodiversity loss.

Most recently, governments have given a green light to the formation of a science-policy panel to help bridge the gulf

between scientific research and the urgent political action needed to halt biodiversity loss. This Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES), it is modelled after the Intergovernmental Panel on Climate Change (IPCC), which many credit with helping to catapult climate change to the forefront of the global agenda. If approved by the UN General Assembly in New York in September, the creation of IPBES would be a critical step forward for biodiversity.

Achim Steiner, Executive Director of the UN Environmental Programme (UNEP) called it a "historic agreement," stating "the dream of many scientists in both developed and developing countries has been made a reality." Mr. Steiner's views were echoed by Dr. Bob Watson, chief scientific adviser to the UK's environment department, who called the creation of IPBES "absolutely critical... to address global biodiversity loss... raise global understanding of the threats we face... and empower government to make policies to counter them, based on solid and integral scientific evidence."

What will happen in Nagoya?

The tenth meeting of the Conference of the Parties to the CBD will be held in Nagoya, Japan, from 18 - 29 October 2010. On the Agenda are the strategic plan for 2010-2020, the definition of post- 2010 targets, and negotiations to potentially conclude an International Regime on Access and Benefit-sharing (ABS).

The latter provides the greatest reason for optimism at COP 10 as it has the potential to create a long-awaited protocol on ABS under the CBD, which could effectively combat biopiracy and lead to new, and equitable revenue flows for conservation and sustainable use of biodiversity. Much of these flows could also go to economically poor, biodiversity-rich developing countries. Governments have been making important strides on the negotiations throughout the year and there is rising optimism that after 18 years, this third pillar of the CBD can finally be met and strengthened.

Innovative financial mechanisms for global biodiversity conservation are also a top priority for COP 10, as some countries and environmental organisations, frustrated with nearly 20 years of waiting for promised funds, are pressing for alternative sources of funding for biodiversity conservation.

A role for trade?

In light of the challenges currently facing biodiversity, what role can the trade community play? Success in mitigating biodiversity loss in the next decades lie at least partly on the importance of integrating biodiversity into broader policies and strategies, such as those of the international trade community. In this context, the trade community could ensure that trade is conducted in such a way that takes into account the drivers of biodiversity loss, and attempts to reduce them. For example, one such driver is the spread of invasive alien species, for which "increased world trade has been a key indirect driver," according to the GBO-3 report. The four other main drivers are climate change, pollution, habitat change and overexploitation. The trade community could thus also redouble its efforts to address perverse subsidies in the fisheries sector that lead to overexploitation of fish stocks.

Will COP10 and the global failure to meet the 2010 biodiversity targets serve as a wake-up call for society to re-acknowledge the urgent need to halt human induced loss of biodiversity? The challenge remains before us.

Brooks Shaffer is a Junior Associate at Earthmind.

¹ <http://oecd.org/dac/stats/crs>

² TEEB Interim Report", May 2008; "TEEB for Policy-Makers", November 2009.

The political economy of the international ABS regime negotiations:

Options and synergies with relevant IPR instruments and processes

By Jorge Cabrera Medaglia

It is generally recognised - particularly by developing countries - that it has not yet been possible to fully achieve the third objective of the Convention on Biological Diversity (CBD): the fair and equitable sharing of benefits arising from the use of biological diversity, specifically genetic resources.

Although the perception of limited benefit sharing may explain the motivation behind the initiative to create an International Regime (IR) on Access and Benefit Sharing (ABS), there is still a lack of comprehensive studies that describe the fundamental factors hindering the effective achievement of the third objective of the CBD. These factors need to be addressed by the IR.

In this regard, the current negotiations on the IR focus on the following three factors:

First, the limited nature of the economic and non-economic benefits that appear to have been derived from different bioprospecting projects and, in general, from the application of ABS frameworks, has led to substantial frustration for the actors involved.

Second, there have been cases of illegal access, misappropriation or “biopiracy” that have occurred in countries and communities, especially in Africa, Asia and Latin America. These cases have been difficult to address with cost-effective legal solutions within the framework of national ABS legislation or in the context of industrial property law.

Third, although the CBD requires the Parties to take measures to ensure fair and equitable benefit sharing, it has mostly been developing countries that have issued regulations on ABS. Thus, the nations where agricultural, biotechnological and pharmaceutical companies have their headquarters - mostly developed countries - have not put in place corresponding regulations that would ensure benefit sharing, and as a result compliance with their legally binding international obligations.

The absence or limited presence of so-called “user country measures” has been criticised as one of the causes of high transaction costs and the highly controlling nature of current access laws. The need for “user country measures” has been stressed by those who have noted the transboundary nature of ABS in trade relations as well as the inadequacy of local regulations to effectively monitor samples or information on genetic resources, once they have left the country that provided them. In this context, it is clear that the ABS provisions in the countries of origin are markedly

inadequate for creating an ABS system that is functional and consistent at the international level.

The ABS protocol and the WTO

Discussions on the relationship between the CBD and the WTO provisions have addressed a range of issues, leading to the presentation of several proposals. However, the current debate has focused on choosing the best approach to ensure mutual supportiveness between TRIPS and the CBD. The most prominent discussions surround the relationship between the CBD and intellectual property rights (IPRs), specifically with reference to the WTO’s Agreement on Trade-Related Aspects of Intellectual Property Rights.

The current debate has focused on which of these two strategies would be the most effective: (i) establishing of a disclosure of origin in patent applications or (ii) alternative approaches, including contractual based systems or databases of genetic resources and TK.

The other issues connecting the WTO and the CBD’s potential IR include technology transfer (TT), the applicability of the WTO investment provisions to the ABS activities, the relationships between the principle of non-discrimination, and ABS legislation and practices, among others.

TRIPS Agreement

Since the entry into force of the WTO’s Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), there have been calls, mainly by developing countries, to explore the relationship between the CBD and IPRs.

One of the first measures suggested to achieve mutual supportiveness between the CBD and TRIPS was the disclosure of the origin of genetic resources or associated TK in IPRs applications, particularly in patents. It has been suggested, mostly by developing countries, that TRIPS should be amended to require that patent applicants disclose, as a condition to patentability, one or more of the following: the source and origin of any genetic material used in a claimed invention, and/or any related TK used in the invention; evidence of prior informed consent from the competent authority in the country of origin of the genetic material; and evidence of fair and equitable benefit sharing. Proponents of disclosure requirements argue that this stipulation would help to support compliance with the CBD provisions on access to genetic resources and benefit sharing. Opponents have responded that such a modification is not necessary for the implementation of the CBD requirements, given that

they should be implemented through corresponding contracts at the national level; they also argue that TRIPS is not the appropriate instrument to regulate ABS.

ABS timeline

May 2000 - *Ad Hoc* Open Ended Working Group on ABS (WG-ABS) established at COP 5 of the CBD in Nairobi, Kenya

February 2002 - Group of Like-Minded Mega-diverse Countries (LMMC) formed, expressing the need for an international regime addressing ABS

April 2002 - Bonn Guidelines on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits approved at COP 6 of the CBD in The Hague, The Netherlands

August 2002 - Johannesburg Plan of Implementation agrees to the establishment of an IR to promote and safeguard fair and equitable benefit sharing

October 2002 - LMMC meet in Cusco, Peru and reiterate their call for the development of an international regime on ABS

February 2004 - The CBD COP 7 formally launch a process for the WG-ABS to negotiate an international ABS regime

March 2006 - The WG-ABS is asked to complete its work on the international regime for ABS no later than 2010 at the CBD COP 8 in Curitiba, Brazil (traditional knowledge is incorporated as a key component of the IR)

May 2008 - The CBD COP 9 extends the mandate of the WG-ABS and instructs it to finalise the negotiation of the IR before COP 10 in 2010

April 2009 - WG-ABS meet in Paris, France to focus on the objective and scope of the IR as well as the components of the IR related to compliance, benefit sharing and access

November 2009 - WG-ABS meet in Montreal, Canada to address operative text on all components of the regime and discuss its legal nature (adopts the heavily bracketed Montreal Annex)

March 2010 - The WG-ABS gather in Cali, Colombia for their 9th meeting in order to discuss the draft protocol for ABS (draft is accepted by the Parties as a basis for further negotiations)

July 2010 - WG-ABS continues suspended 9th meeting in Montreal, Canada in order to finalise the text of the draft protocol

The WTO and disclosure/certificate of origin

In the draft text of the CBD's protocol on ABS, there is the requirement that the origin of a genetic resource be disclosed. One possible approach for providing disclosure of origin is utilising a certificate of origin or a certificate of compliance which however, has broader objectives and goals than just providing the disclosure of origin.

The goal of the certificate is to prevent or minimise problems generated by the existence of two different jurisdictions for

ABS arrangements—that of the place where the material is collected and that of the place where research and development activities are carried out. The existence of an internationally recognised document would make it possible to check the legality of access at the place where the activity (patent, product approval, etc.) generates value, and to discover the subsequent use of the resources and corresponding benefit sharing.

The certificate can contribute to the monitoring and traceability of genetic resources. It could be required in patent applications in order to provide evidence of compliance with national legislation on ABS, including prior informed consent and benefit sharing. Through this requirement, the certificate would support the disclosure of origin requirement. However, the inclusion and discussion of disclosure requirements, and the use of the certificate in patent applications, have both been contentious issues during the IR negotiations.

The certificate could be a document attached to the transfers/export (international trade) of genetic resources. Therefore, it also should be analysed in the context of the relevant rules of the WTO regarding non-discrimination, as well as the appropriate measures contained in the Agreement on Technical Barriers to Trade (TBT), which governs the elaboration and use of technical regulations, standards and conformity assessment procedures in ways that do not create unnecessary obstacles to international trade.

The disclosure of origin requirement could be integrated into the CBD's IR or into the WTO structure as a legally binding amendment to the TRIPS agreement. The advantage of incorporating it into the CBD's IR is that the IR could promote more clarity on the meaning and implications of prior informed consent (PIC) and benefit-sharing requirements. One disadvantage of this scenario is that the US, a relevant IP country, is not a Party to the CBD and therefore is not subject to the conditions of the IR. The other disadvantage is that the disclosure requirements of the CBD could be difficult to integrate into the existing IP system.

The advantage of the scenario where disclosure requirements are incorporated into the TRIPS agreement of the WTO is that the amendment would promote wider integration of the disclosure of origin in the IP system (and in the national laws), while also encouraging actors to implement the instrument on a broad level.

The ABS protocol and the International Union for the Protection of New Varieties of Plants (UPOV)

The purpose of the International Convention for the Protection of New Varieties of Plants (UPOV) is “to ensure that the members of the Union acknowledge the achievement of breeders of new varieties of plants, by granting to them an intellectual property right, on the basis of a set of clearly defined principles.” Thus, the Convention provides a *sui generis* form of intellectual protection specifically adapted to the process of plant breeding and developed with the aim of encouraging breeders to develop new varieties of plants.

The Convention offers protection to the breeder, in the form of a “breeder's right,” if his plant variety satisfies certain conditions. The scope of the breeder's right is, however, limited by two important exceptions: (i) the “breeder's exemption,” which allows the use of the propagating material of the protected plant, without prior authorisation, for the purpose of breeding other varieties; and (ii) the “farmers’

privilege,” which seeks to safeguard the common practice of farmers saving their own seed for the purpose of re-sowing.

The International Union for the Protection of New Varieties of Plants is of the opinion that the CBD and the UPOV Convention should be mutually supportive, and that the IR on ABS should not undermine this compatibility. The legislation on access to genetic material under the CBD and the legislation dealing with plant breeder's rights under UPOV pursue different objectives, have different scopes of application and require a different administrative structure to monitor their implementation. Therefore, it is considered appropriate to include them in different legislation, although such legislation should theoretically be compatible and mutually supportive.

The main issue between UPOV and the CBD's IR relates to the disclosure of origin requirement. Despite the lack of a disclosure of origin requirement in the UPOV Convention, some authors claim that a disclosure of origin requirement in the CBD's IR on ABS does not necessarily conflict with UPOV basic rules. However, because the IR negotiations outcome regarding disclosure will be contained in a legally binding instrument, a potential inconsistency between the two agreements would arise. Such an approach to fulfilling the CBD's disclosure of origin requirement could be a disincentive for UPOV Members to become Parties to the IR.

To resolve this conflict, one option would be to amend the UPOV Convention to include a disclosure of origin condition for the protection of PBR; however, there has been no indication that UPOV members have suggested such a process. Another option is to exclude PBR applications from the disclosure provisions or to create a different and special system, taking into account both the legal and technical implications of such system in cases involving plant varieties.

The ABS protocol and the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge, and Folklore (IGC)

The World Intellectual Property Organisation (WIPO) General Assembly established the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) in October 2000 as a forum for debate and dialogue on the relationship between intellectual property (IP), traditional knowledge (TK), genetic resources and traditional cultural expressions. One of the topics the Committee continues to consider is the disclosure of origin in patent applications and the protection of TK.

The Draft Provisions under the IGC for the protection of TK could potentially provide the normative substance and content of the international outcome on the protection of TK. The Draft Provisions on TK protection embody both the policy objectives and core principles of this goal, and could be the basis for a proposed international instrument, in line with the IGC's current mandate. The Draft is in full harmony with the CBD, while covering a wider scope of TK issues.

If the IGC were to be a legally binding instrument, there would not be conflict with the IR process. Any binding outcome of the IR would, in principle, support and be complementary to the IGC efforts. Close co-operation between the IGC and the CBD is necessary, now more than ever, in order to ensure mutual support and avoid overlap between the two.

If the IGC and the IR both lead to the development of binding instruments, the potential overlap could duplicate some of the legal obligations. To avoid this, the IR could incorporate general provisions for the protection of TK. For example, the IR could include the role of customary law in the protection of TK; procedures for obtaining PIC from local communities and indigenous peoples; and measures that support the PIC of indigenous peoples and local communities. Specifically, the regime could consider the acquisition of TK without having obtained PIC as an act of misappropriation. Meanwhile, the WIPO IGC could focus its work on more detailed provisions for TK protection, e.g. those found in the current Draft Provisions.

However, this option presents several disadvantages, including the following: the uncertainty about the potential outcome expected (i.e. regarding both the outcome's content and nature) at WIPO; the different Membership in both forums; and finally, the risk to the CBD of loopholes that would arise by focusing only on general conditions and leaving details of the negotiation to the WIPO process.

The IR could also benefit from the extensive information and resources developed at the IGC, in both the TK and genetic resources fields. The IGC's technical input could help in the implementation of the IR outcome. Therefore, the IR could recognise the relevance of these instruments to the IR content (e.g. for disclosure of origin purposes; for TK protection and for capacity building, etc.) and decide to use these technical inputs and tools, as appropriate.

The IGC work could also facilitate the implementation of the disclosure provisions or alternative measures to address issues related to the relationships between IP and genetic resources, if the work is included in the IR negotiations. Some delegations and stakeholders have noted that WIPO has the appropriate expertise to address IP issues related to the IR negotiations.

Conclusions

There is plenty of space to strengthen mutual supportiveness between the IR on ABS and the processes and instruments of the WTO, WIPO and UPOV. In principle, the IR Protocol could co-exist in harmony with the other treaties or processes. There is a need for compatibility between multiple regimes with very different objectives, approaches and values, all demanding and claiming legal protection.

The effective implementation of the IR will require the input and collaboration from a range of organisations and forums to ensure that all cross-sectoral issues are given due consideration and effect. Therefore, it is important to foster closer co-operation and coordination between the CBD's IR negotiations and the processes of the WTO, WIPO and UPOV in order to better capitalise on the potential synergies between the prospective international regime on ABS and the IP system.

To access the full issue paper that this article is based on, visit <http://ictsd.org/i/publications/79851/>.

Jorge Cabrera Medaglia is a legal adviser for the National Biodiversity Institute (INBio), Lead Counsel on Biodiversity Law for the Centre for International Sustainable Development Law (Montreal) and an international consultant in the areas of intellectual property and biodiversity, biotechnology and biosafety, and access to genetic resources and benefit sharing.

Project Rescue:

Protecting traditional knowledge and Biodiversity in Panama

By Yahelys Arenas

Panama is advantageously located at the intersection of Central and South America, with access to both the Pacific and Atlantic Oceans. The tropical country boasts rich and complex biodiversity, which is ideal for conservation and bio-prospecting initiatives. According to research by conservation organisations, Panama has one of the highest levels of regional plant diversity in the world, consisting of approximately 10,444 species. Panama is also home to a diverse range of fauna, including 972 species of birds, 255 species of mammals, 229 species of reptiles (including five species of sea turtles), and 197 species of recorded amphibians.

Panama views biodiversity as a fundamental part of the country's daily life and an essential element of the many services that secure human needs such as food, medicine, raw materials, and water quality. Additionally, Panama's biodiversity provides the economic foundation for its thriving eco-tourism industry. Lastly, many peasant and indigenous communities' traditions, ways of life and income are inextricably linked to Panama's rich biodiversity.

Biodiversity-based laws

The Convention on Biological Diversity (CBD) has been written into law and implemented by various governmental institutions in the Republic of Panama since 1995. In addition, the congress representing indigenous peoples in Panama has directly participated in implementing the mission of the CBD. In this way Panama has worked to achieve the principal goals of the CBD: the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising from the use of genetic resources.

Specifically, Panama has created a series of laws to regulate, protect and establish the necessary mechanisms to meet the commitments to the CBD. These laws range from the General Environmental Law (1998), to the Crimes Against the Environment Act (2005), to the formation of the Panama Marine Corridor (2005).

Overall, Panama has a strong legal framework that protects biodiversity, genetic resources and traditional knowledge related to intellectual property. This framework continues to progress with the aim of covering or protecting all areas of interest. Specifically, Panama has taken actions to encourage the protection of traditional knowledge with sui generis measures. On 26 June 2000, the State established Act 20 to address the collective rights of indigenous peoples in Panama.

Panama as a model

Panama's initiative in providing a legal framework to protect traditional knowledge can serve as an example for other countries. It is Panama's hope that other countries will implement laws with similar objectives in order to more comprehensively address the subject of traditional knowledge. The protection of indigenous and local peoples' traditional knowledge is a sensitive issue. This knowledge reflects and builds cultural values and identity, and its preservation cre-

ates a sense of belonging and security. When commercial interests are placed above the rights of indigenous peoples, the value of traditional knowledge is lost and cultural autonomy and collective rights are undermined.

Using the sui generis measures of Act 20, special registers were created to protect the intellectual property of eight indigenous groups in Panama. These registers were created to address the vulnerability of certain products with regard to commercialisation. Examples include, Mola, which forms part of the traditional costume of Kuna women (held by the Kuna indigenous group); Krade or Chaquira, a traditional form of beaded necklace (held by the Ngobe and Buglé indigenous groups); and Bakuro Neo and Pawau, a form of traditional wood carving (held by the Embera and Wounaan indigenous groups).

Establishing an intellectual property register in Panama can be a lengthy process. At first, indigenous groups are often hesitant to establish a register because they do not fully understand its function or importance. Often it requires a series of workshops, conversations, talks, and other interventions to demonstrate the advantages. Because a register represents a collective right, the members of the community and their congress are consulted in an open process. These initial consultative processes can be remarkably slow, given that indigenous communities are often difficult to access and distant from each other. However, once a register is agreed upon, the establishment of the Act itself can progress quickly.

Project Rescue

From 2006 through 2008, the Department of Collective Rights and Folklore Expressions developed a program known nationally as Project Rescue. The program was initiated by the State to promote Act 20 and to encourage collective rights records. The main objective of the project is to promote registers, strengthen all related areas, and resolve some of the main needs of indigenous peoples and local communities.

For three years, the project conducted intensive work with indigenous and local communities, undertaking training, workshops, events, meetings, exchanges and other activities aimed at safeguarding the intangible heritage of local cultures. Project Rescue also implemented a successful program that provided technical support for cultivating the natural fibres used in the production of handicrafts and other items imbued with cultural meaning.

This program yielded excellent results in many local and indigenous communities across Panama and these communities now serve as models that can be replicated in other places. Currently there are five ongoing projects that aim to record and register traditional knowledge. These registers are very important for indigenous people who learn to value and effectively protect their traditional knowledge. Additionally, these groups learn an integral approach to preserve the natural environment and the biological diversity on which their enterprises depend.

The rich biodiversity that surrounds these communities is the basis of their valuable traditional knowledge and this knowledge is, in turn, the basis of their economic development.

Sharing benefits

In Panamanian law, Acts 2 and 20 address an issue of the utmost importance: the distribution of benefits from the use of biodiversity. In the case of access to genetic and biological resources of Panama, the National Environmental Authority through its new Unit for Access to Genetic Resources (UNARGEN, by its Spanish acronym), created a system that makes it mandatory to request permission to access these resources. A given applicant must sign a Framework Agreement, which requires formal documentation (publications, patents or other intellectual property rights instruments) of the resource's origin within Panama and of the inalienable rights of the State regarding the allocated resource. Additionally, the agreement requires formal documentation regarding how the benefits of access to the resource will be shared. This usually results in a series of contracts that protect the resource from over-exploitation, equitably distribute the resource, and consider social justice for local and indigenous communities living in the area where the resource was found.

In the same sense, Act 20 requires that the licensed use of a registered collective trademark include royalties and payment of an initial amount or some form of immediate direct compensation to indigenous peoples and a percentage of sales arising from the contract. It also includes the obligation of the licensee to report periodically on their progress in

research, manufacturing, commercialisation, and other developments to the holders of the rights. But so far, Panama has not finalised any contract or license to use registered collective trademark as collective rights.

Issues related to intellectual property have been making progress in Panama. In 2007, the new Penal Code of Panama went into effect and among the reforms that were made in the chapter on crimes against intellectual property rights, a section on crimes against the collective rights of indigenous peoples and their traditional knowledge was included. Those who violate the registered collective rights of indigenous peoples can now be sentenced to four to six years imprisonment.

In summary, Project Rescue helped identify and solve some of the problems that indigenous and peasant communities face in regard to traditional knowledge. The project achieved reciprocity from the indigenous peoples, acceptance in their communities, and support and mass participation for their activities. State-level institutions linked to the issues of intellectual property are currently working in coordination with Project Rescue to develop a comprehensive approach to address all issues related to genetic resources, biodiversity, expressions of folklore, and cultural heritage. Although not all goals were achieved and there is still a lot to be done, Panama considers itself a part of the process of change.

Yahelys Arenas is an official at the Panamanian Department of Collective Rights and Folklore under the Ministry of Commerce and Industry.

The EU's Renewable Energy Directive:

Are the sustainability criteria for biofuels consistent with WTO obligations?

By Andreas Lendle and Malorie Schaus

As the EU moves towards implementing its new mandate on the use of biofuels, questions regarding their sustainability criteria - and whether these are compatible with WTO rules - remain.

The European Union has set itself a goal of sourcing 20 percent of its energy needs from renewable sources by 2020 - up from 8.5 percent in 2005. This target is laid out in detail in the 2009 *Renewable Energy Directive* (RED, 2009/28/EC). While the overall target of 20 percent is to be met only on an EU-wide average, with each Member given country-specific goals, each country is obliged to bring the share of renewables used for transport to 10 percent by 2020. This requires a significant increase in the use of biofuel. Several EU member countries already have policies in place to promote the use of biofuels, but the RED will make such policies mandatory for all members. A share of 10 percent is very ambitious and will require a substantial increase in the production and imports of biofuel.

Are biofuels sustainable?

Biofuels have spurred controversy in recent years, in particular because of their possible effects on food prices and ambig-

uous environmental benefits. The production of biofuels can lead to detrimental effects on biodiverse land, and to similar or higher levels of overall greenhouse gas emissions as those associated with fossil fuel use, if, for example, land with high carbon stocks is cleared and then used for biofuel production.

To address these concerns, the RED includes "sustainability criteria" that have to be met in order for any biofuel to be counted towards the 10 percent goal or be eligible for any incentives put in place to reach that goal. Such incentives are mainly excise tax reductions or mandatory blending requirements. Biofuels not meeting these criteria can still be imported and used, but are unlikely to be marketable given that biofuel prices are well above fossil fuel prices and therefore not competitive without incentives.

The sustainability criteria fall under two main categories: Greenhouse gas (GHG) emissions and land-use criteria.

Ensuring sufficient GHG reductions

The GHG emission criterion sets a minimum level for the amount of CO₂ or equivalent emissions caused by the use of biofuels, including emissions during production, processing and transport, but also emissions caused by land-use change (i.e. if land with high carbon stocks is cleared for the production of biofuels). These emissions are then compared to emissions from the use of fossil fuel, which results in a “saving rate” for biofuels. A range of biofuels have saving rates of well below 50 percent, meaning that they cause more than half of the emissions of fossil fuel use. This may be surprising, given that emissions from burning biofuels are essentially equivalent to the CO₂ stored in biomass and thereby “CO₂-neutral”, but planting and processing of biomass can be energy-intensive. The RED sets minimum levels for this saving rate, starting at 35 percent and increasing to 50 percent in 2017 and 60 percent in 2018, with some exceptions for existing processing facilities. Thus, by 2020 only biofuel with a 50-60 percent saving rate can be used.

Safeguarding environmental services and values

A second criterion relates to the land used for the production of the biofuel feed stock. Raw materials may not be obtained from certain types of land, including land protected for nature conservation purposes, highly biodiverse grassland or land with high carbon stocks. The criterion refers, inter alia, to land that was wetland, peatland or forested area in January 2008, but no longer at the time of production. This means that raw materials produced on land cleared from rainforest *before* 2008 could be used for biofuel production, but any land cleared since then and in particular since the RED enters into force would not be eligible.

The RED also refers to the possible social impact of biofuel production and introduces a monitoring mechanism to detect impact in source countries, e.g. a possible effect on food prices. However, there are no social criteria that a specific biofuel producer would have to meet.

Are the criteria disguised protectionism?

These criteria apply to both EU-produced and imported biofuels, but have been criticised as constituting “green protectionism” in support of European farmers, keeping out foreign competitors by setting biased sustainability standards.¹ In particular, some have argued that these criteria are not compatible with the EU’s obligation under the WTO law.² According to Mitchell and Tran the RED would be in violation of GATT Article III (“National Treatment”), which essentially obliges WTO members not to discriminate between *like* imported and domestically produced items, and would most probably not be justifiable under GATT Art. XX (Exceptions).

The compatibility of the criteria with WTO rules

The authors have conducted an in-depth legal analysis of the WTO-consistency of the RED and come to a different conclusion, namely that the RED is most likely to be seen as consistent with WTO obligations, even though some elements of it

may indeed violate Art. III. These could be justified under Art. XX, which provides for exceptions, e.g. for environmental reasons. A different treatment of products that are considered *like* - such as biofuel made of palm oil for which rainforest was cleared in Malaysia and European rapeseed oil - is not necessarily incompatible with WTO law as long as there is no *de facto* origin-based discrimination.

The RED applies equally to imported and EU biofuels and a detailed assessment of the GHG saving criterion shows that there are in fact a wide range of EU biofuels that will not meet this criterion, in particular once it has reached the 50-60 percent level. Rapeseed oil, which most of the EU’s biofuel is made of, only has an average saving rate of 45 percent. On the other hand, a wide range of foreign-produced biofuels do meet the criterion. Therefore, the RED does not generally treat foreign biofuels worse than domestic biofuels, even though specific types of biofuel are given less favorable treatment than others based on how they were produced.

In contrast, the land-use criteria seem to be set in a way that does provide for a *de facto* discrimination of foreign-produced biofuels. Land ineligible under the RED for biomass production for biofuel does exist in the EU - such as wetlands, continuously forested areas or peatland. However, the criteria will mainly constrain foreign biofuel, such as palm oil producers in Malaysia and Indonesia. However, we believe that the land-use criteria could be defended under GATT Art. XX, which provides an exception for measures *necessary to protect human, animal or plant life or health or relating to the conservation of exhaustible natural resources, as long as such measures are not an arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade*. Arguably, the land-use criteria are important criteria to ensure that biofuel production does not lead to detrimental environmental effects. They are also directly linked to the main aim of the RED, namely to reduce GHG emissions, and they do not appear to be set in an “arbitrary” or “discriminatory” manner. The GHG saving criteria could similarly be justified under GATT Art. XX in case they were seen as violating GATT Art. III.

Concluding remarks

Legal arguments aside, it would not be very logical for the EU to put in place a policy that obliges member states to ensure a significant increase in biofuel use for the purpose - among others - of protecting the environment, without being able to ensure that the policy actually does help the environment. The use of biofuels that may be even more harmful to the environment than fossil fuels obviously makes little sense, and even less so if one considers that consumers pay more for biofuels than for fossil fuels. However, even with the sustainability criteria, there is no guarantee that the EU’s biofuel policy is effective in reducing GHG emissions. The so-called “indirect land-use change” (ILUC) is one possible detrimental effect. Although the land used for biofuel “made for EU” may be “sustainable,” the increased biofuel demand from the EU could still lead to more destruction of rainforest elsewhere, and biofuel produced on such land shipped to other destinations. Additional sustainability criteria to prevent ILUC may be added to the RED at a later stage, but it is doubtful whether ILUC can be effectively tackled. Such criteria may

¹ Erixon F., *Green Protectionism in the European Union: How Europe’s Biofuels Policy and the Renewable Energy Directive Violate WTO Commitments*, ECIPE Occasional Paper, No. 1/2009.

² Mitchell A. and Tran Ch., *The Consistency of the EU Renewable Energy Directive with the WTO Agreements*, Georgetown Law School Faculty Working Paper, 2009.

also be more difficult to defend in the WTO, depending on how they are defined.

The *efficiency* of using biofuels to reduce GHG emissions is yet another issue. Even if the use of biofuels actually leads to a reduction of GHG emissions, the question arises whether it does so at a reasonable cost. Biofuels are more expensive than fossil fuel, harming consumers (through blending requirements that increase fuel costs) and / or governments (due to reduced income from taxes). The overall cost for CO₂ emission reduction through the use of biofuels currently produced in the EU has been estimated by the IISD¹ to be

¹ IISD (2007). Biofuels - at what cost? Government support for ethanol and biodiesel in the European Union. Available at: http://www.globalsubsidies.org/files/assets/Subsidies_to_biofuels_in_the_EU_final.pdf

around 600 - 4400 €/t and is thus multiple times higher than prices for other measures to reduce CO₂ emissions.

Biofuels have a tremendous potential in the long-run, in particular once more efficient types of biofuels can be produced on a commercial basis. The use of current first-generation biofuels could, however, have negative implications for the environment or for food production and is very costly. The EU may be better off rethinking its ambitions with regard to such biofuels, despite the fact that the sustainability criteria do not appear to violate WTO obligations.

Andreas Lendle and Malorie Schaus are students at the Graduate Institute in Geneva, Switzerland. They have produced an in-depth legal analysis of the WTO compatibility of the EU RED within the context of their "Trade Law Clinic" project for ICTSD.

Horticulture production and biodiversity in Uganda:

Benefits and risks associated with export growth strategies

By Francis Ogwal, Madina Guloba and Vera Weick

Exports in the Ugandan horticulture sector have grown substantially over the last decades. There is still room for further growth - especially in the fresh fruit and vegetables sub sector - but a study examining potential impacts on biodiversity suggests that more attention should be paid to the overall effects of land use change. Although entailing additional costs, focusing on growth within the organics segment - in which Uganda already has a strong track record, especially in terms of involving smallholders - may yield higher rewards. Overall, there should be a greater focus on resource efficiency, innovation and training.

In Uganda, fresh fruit and vegetables (FFV) and cut flowers are non-traditional exports. Since the 1980s, following the government's export-led growth strategy outlined in the National Trade Policy, production has intensified and exports have grown steadily. This has resulted in significant structural changes in Uganda's export sector. Non-traditional exports, such as fish and fish products, floriculture, horticulture, spices, hides and skins and honey have grown to become more important than traditional exports such as coffee, cotton, tobacco and tea. The former contributed 73.2 percent to the country's export earnings in 2009 (up from 14 percent in 1990).

The horticulture exports from Uganda

Horticulture is one of the fastest growing sectors in Uganda and is listed as a strategic export in the Uganda Strategic Exports Programme. The sector employs a large number of people and horticulture exports are worth US\$35 million per year. Uganda is currently the second largest producer of FFV in sub-Saharan Africa, after Nigeria, producing about 1.1 million tonnes per year. In 2004, Uganda's fruit and vegetable production was equivalent to about one percent of the world's total production. For cut flowers, Uganda was third in the list of exporters to the EU in 2005, with two percent of total exports to the EU, behind Kenya (40 percent) and Ecuador (six percent). The monetary value of both FFV and cut flowers has been increasing steadily since 2003.

By virtue of its membership in the Africa, Caribbean and Pacific (ACP) group of countries, traditional trade preferences with the EU have allowed Uganda to successfully exploit markets in Europe in particular. With the negotiation of Economic Part-

nership Agreements (EPAs) between the EU and ACP countries, these trade preferences are being revised and phased out, to make trading relations compatible with World Trade Organization rules. As a consequence, trade in agricultural products and the agricultural sector as a whole in ACP countries is likely to undergo further structural changes.

Horticulture trade and biodiversity

In this context, the National Environment Management Authority (NEMA) in Uganda, in collaboration with the Economic Policy Research Centre (EPRC), examined the economic, social and environmental impacts of three potential scenarios for Uganda's export-oriented production of FFV and cut flowers. These included: (1) maintaining the current terms of trade with the EU; (2) expanding the contribution of trade to Uganda's economy to equal the leading countries in the region, such as Kenya and Ethiopia; and (3) matching the country's most recent best export performance to the EU.

This study was done as part of series of six country studies, including Cameroon, Jamaica, Madagascar, Mauritius, Papua New Guinea and Uganda, supported by the UN Environment Programme (UNEP) that analysed the implications of changes in agricultural trade policies on biodiversity. The studies, undertaken between 2006 and 2009, involved an extensive stakeholder consultation process and resulted in the development of national action plans to implement selected recommendations to enhance the sustainable use and conservation of biodiversity.

The FFV and cut flowers sub-sectors have significant linkages with Uganda's biodiversity resources, both directly through the volume of commodity exports and indirectly through changes in land use, water and energy use and the application of agrochemicals.

Uganda has a wealth of natural ecosystems and one of the highest levels of biodiversity in Africa because of its location in the zone where the East African savannah and the West African rain forests overlap. The major natural ecosystems in Uganda are: forests, woodlands, grasslands, wetlands, and open water. Over the last decades, Uganda has lost natural resources at an alarming rate. With increasing populations, demand for resources is continuously increasing and fragile ecosystems including forests, wetlands, and mountainous areas are being increasingly encroached upon.

Expanding trade - impacts

Against this background, the assessment of export growth scenarios for the horticulture sector has shown that Uganda is competitive enough to make substantial gains in trade with the EU, potentially resulting in benefits with respect to employment, higher wages and improved welfare. This presents an important opportunity when considering that over 40 percent of current production of FFV is undertaken by smallholders, and that the population in Uganda is growing at a rate of 3.3 percent per year (among the highest in the world).

However, the study also clearly points to the potential impacts on natural resources and biodiversity associated with the use of additional inputs, including water, energy, fertilisers and land, which would accompany this expansion. The conversion of large areas of land to commercial cultivation of FFV, may take place at the expense of forests and wetlands. In addition, land use patterns that support soil nutrient cycles may be abandoned as commercialisation gains ground. Both aspects are likely to add to the negative trends of forest decline and biodiversity loss. With over 80 percent of the population relying on the country's natural resource base - including biodiversity - for their livelihoods, this scenario could have significant negative socio-economic implications in the long-run.

The potential expansion of commercial estates also raises concerns over the amount of water needed to allow for increased production and over the pollution of fresh water systems. This issue becomes delicate in particular in situations where high levels of abstraction and pollution potentially could affect water quantity and quality available for local communities. In the case of cut flowers, the study specifically points to the risk of excessive water abstraction, and competition for the use of wetlands both for the purposes of water sources and for their roles in naturally treating effluents. Another important threat identified in the study - with direct implications for communities engaged in agriculture near flower farms - is the potential impact of agro-chemical on pollinators. Following the assessment, further research in this area was initiated to generate additional information specifically on pollinator bees.

Staking out a sustainable part for the future

While concerns over land conversion encompass all other environmental threats, the study clearly brings out that additional use of water and energy would need to go hand in hand with significant improvements in productivity and resource efficiency to allow for an expansion that is sustainable in the long run.

The study also clearly points to the huge potential of linking the expansion of the horticulture sector with an increase in the share of organic horticulture products. Uganda already has the largest number of smallholder farmers engaged in

organic agriculture in Africa and a relatively high level of its farm land area under organic cultivation. Organic agriculture in Uganda has grown in value from US\$7.7 million in 2005 to US\$22.5 million in 2008. Building on this competitive edge, organic production of FFV would allow for an expansion of the sector at lower environmental cost, with additional benefits resulting from increased price premiums and improved market access associated with organics.

This opportunity, however, comes with its own set of institutional challenges that need to be addressed. The challenges include costly certifications schemes that smallholder farmers may not be able to afford, the insufficient development of exporter and producer associations and - related to this - insufficient capacity to produce desired quantities, as well as a considerable degree of informality in the current market operations.

As a possible way forward, the study suggests that future trade policy in the sector should adopt a cautious approach with regard to the floriculture industry, while promoting aggressive growth for FFV. Aggressive growth in the flower industry would require high levels of external inputs, which are expensive and may have adverse impacts on the environment, particularly biodiversity. These environmental concerns are compounded by the fact that there are very few less-polluting inputs available to substitute for those that are already in use in the flower industry. Therefore, the potential for mitigation is low. For FFV, the focus should be on aggressive growth in the sector, given that Uganda is already among the leading producers in the world with a competitive edge in organic agricultural production.

To realise the full benefits of this strategy, there should be a focus on:

- Increasing productivity and resource efficiency for water, energy, and fertilisers through innovation, appropriate technology development (such as drip irrigation, hydroponics and improved seeds) and transfer and access to capital;
- Supporting all producers (smallholders and large operations) to export horticultural products through training, institutionalising operations, offering trade concessions and improving access to inputs;
- Encouraging companies exporting horticultural goods to invest in social responsibility and restoration of degraded ecosystems;
- Supporting local community initiatives that promote biodiversity conservation; and
- Conducting research to identify costs and benefits of certification and effects of pollution on ecosystem services, particularly with respect to the potential impact of floriculture on pollinators.

For further information on the study from Uganda and the 5 other countries, please see:

<http://www.unep.ch/etb/initiatives/BiodivCountry-Projects.php>

Francis Ogwal is a Natural Resources Management Specialist (Biodiversity and Rangelands) at the National Environment Management Authority, Madina Guloba is a Research Fellows at the Economic Policy Research Centre and Vera Weick is a Programme Officer for the Trade and Biodiversity Initiative at the United Nations Environment Programme

Expanding the use of energy efficient goods through trade:

Opportunities and obstacles

By Rod Janssen

Climate change is an overarching concern, increasingly involving all countries - whether they are large energy consumers or not. One of the most cost-effective ways of reducing greenhouse gas emissions is through improved energy efficiency. From an international trade perspective, common standards are gaining ground, facilitating trade flows.

The International Energy Agency's recent World Energy Outlook projects that energy efficiency could contribute as much as 65 percent of greenhouse gas (GHG) emissions reductions in 2020. Decreasing the need for imported energy products would also improve energy security, another major energy policy objective. This objective is particularly important for major energy importing countries such as Japan and the US. It is also important for many developing countries, where the cost of energy imports can have a crippling effect on their balance of payments and on their economies as a whole.

The connection between energy efficiency, climate change and trade policy is currently being assessed. There is a need to accelerate the penetration of energy efficient products throughout the world in order to meet climate change targets. Trade-related policies can make a difference and one area under review is the role of the harmonisation of regulatory instruments. However, it is important to assess what harmonisation means for many developing countries that do not have the capacity to or have not given priority to developing the capacity - needed in standards development and implementation. This article tries to shed some light on what is happening, and what could be happening.

Energy use keeps on growing

The demand for energy services is growing at a fast pace in all regions. People want the latest appliances, communications equipment, electronic games and gadgets in their homes and offices. Every day new technologies - set to improve comfort, health and welfare - are coming to market. Businesses want to thrive and grow. These developments require the use of energy, much of which is carbon based. Improving energy efficiency stands out as an attractive policy option in this context.

Improving energy efficiency requires a comprehensive, long-term policy approach. Countries and regions are increasingly using targeted energy efficiency policies to promote and accelerate the deployment of more energy-efficient technologies. A high percentage of products for which energy-efficient options are being developed are internationally traded.

Energy-efficiency policies: MEPS and labelling

There are two main types of policies that promote energy efficient products, and which are relevant to trade discussions. Minimum energy performance standards (MEPS) are policy instruments that stipulate the minimum efficiency levels or the maximum energy-use levels acceptable for products sold in a particular country. Usually, MEPS are

mandatory. Australia, Canada, China, the EU, Japan, New Zealand and the US all employ MEPS for a wide range of energy-using equipment. India has none at this point but is developing some. Many countries and regions have been tightening their performance standards in recent years.

Second, there is product labelling at the point of sale. Labelling is mainly for domestic products, including appliances and cars. There are *comparative labels and endorsement labels*. Comparative labels show the energy efficiency of a particular model relative to similar models on the market. Endorsement labels identify the best-performing models within an appliance category, making it easier for consumers to differentiate products. Canada has had a comparison-labelling programme since 1978. Other countries with comparison labels include Australia, China, the EU, the European Free Trade Association (EFTA), Japan, New Zealand and others. The leading endorsement label is the ENERGY STAR label. It is administered by the US Environment Protection Agency, but also used in Australia, Canada, the EU, the EFTA, Japan, New Zealand, Switzerland and Taiwan, and becoming increasingly global.

Results to date

The use of MEPS and labels are showing solid results. For example:

- Between 1993 and 2005 the average energy consumption of refrigerators in Australia dropped 40 percent;
- Between 1980 and 2001, the average energy consumption of refrigerators and freezers in the US dropped 60 percent. Following the introduction of MEPS in 1993, and a revision in 2001, the energy consumption dropped 20 percent each time; and
- Between 1989 and 2001, the energy consumption of refrigerators and freezers in the UK dropped 20-25 percent. Labels were introduced in 1995 and MEPS in 1999.

The potential for even larger savings is high. For example, the UNDP calculates that electricity demand could be reduced by 6 percent in Russia, and studies show that Pakistan could save 20 percent of its projected energy demand over the next 25 years.

Some caution is needed, however, because of the tendency to buy larger and larger products. Thus, energy efficiency gains are offset by the sheer size of the demand. This size increase holds for refrigerators, televisions and cars, to name but a few.

The trade dimension

Our appliances and energy-using products come from all corners of the globe. In only five years, exports of household appliances have grown 250 percent. Growth has been even more significant in the area of information and communication technologies.

Meanwhile, the centre of gravity with regard to manufacture has significantly shifted towards Asia, where labour costs are low. China in particular has benefited: Its exports of refrigerators reached 14 million units in 2005. This represented 46 percent of world production. The trend is even more dramatic for air conditioners. Its exports of air conditioner went from 240,000 units to 68 million units in fifteen years.

Standards development and harmonisation

Harmonisation in the area of energy efficiency is taking place through many avenues, at the global, regional and national levels. In some cases - such as the EU and a federal country like Canada such - harmonisation initiatives were undertaken to improve the workings of the internal market.

Examples include the ENERGY STAR endorsement label, which has gradually spread from the US to other countries. The Asia-Pacific Economic Co-operation (APEC) has initiated a large programme for compact fluorescent lights. Often such initiatives are carried out to improve the quality of new products, allowing them to gain market share away at the expense of inefficient models.

Countries decide themselves on their minimum energy performance requirements based on their domestic policy concerns, and rightly so. However, a lack of attention to efficiency may be due to relatively undeveloped energy policy.

Effective programmes, such as ENERGY STAR, have common test procedures to measure performance, providing a common measurement system. International organisations like the International Energy Agency and non-profit organisations such as The Collaborative Labelling and Standards Program in the US have been effective in promoting harmonisation efforts regionally and worldwide. The EU's efforts in this regard are increasingly shared with many neighbouring countries.

Trade implications of harmonisation

The harmonisation of standards can have many benefits. Consumers in all end-use sectors want access to new technologies, and consumers want them to be as energy-efficient as possible. Entire economies need them for a variety of energy, environmental and economic development reasons. This is true in the developed world and in developing countries alike.

One OECD report stresses the need to "either standardise or harmonise product descriptions and energy-performance metrics or to develop algorithms that would allow simple conversion from one set of requirements to another without necessitating retesting."¹ Much progress has been made on this, significantly facilitating international trade in energy efficient goods.

There are international rules to be considered with regard to tradable goods. Many, if not most energy efficient tech-

nologies can be considered environmental goods, due to their climate change mitigating effect.

Standards and labelling are covered by the WTO. The Agreement on Technical Barriers to Trade (TBT) deals with mandatory technical regulations as well as with voluntary standards. There are also certain rules of the General Agreement on Tariffs and Trade that can have some relevance.

There appears little concern about overstepping WTO obligations. Programmes such as Eco-design or ENERGY STAR place the same obligations on domestic manufacturers and distributors as they do on importers. There is no intention of discrimination. The driving force is meeting stricter and stricter energy efficiency targets that are designed for both energy policy and climate change objectives.

If countries do not keep up with the harmonisation process and implement their own range of energy efficiency policies, these may become trade barriers. The standards and labelling programs, however, are designed to transform the market to more energy-efficient, climate-friendly products in order to meet energy and climate change objectives (many of which are global obligations). With the right policy approach, those barriers can be overcome.

Developing country issues

Few developing countries have standards and labels for traded energy-efficient products. Fortunately, many of the largest developing countries, in particular, Brazil, China and India, are moving more and more in this direction. Brazil and China have had active programs for years. Several developing countries are participating in regional harmonisation efforts. Developing countries are increasingly involved in harmonisation of standards as they pertain to the International Standards Organization (ISO). The ISO, in part through bilateral support from organisations such as the Swedish Standards Institute, are increasing their efforts to promote harmonisation in developing countries.

There are two main reasons for developing countries to develop standards and labelling programs for energy efficiency. First, dumping of inefficient products must be avoided, and this is only possible if all countries have policies in place to allow in appropriate products. This is a concern for all countries, developing and developed. Second, equipment that can improve energy efficiency of the economy (e.g. efficient motors, management control systems, efficient windows) can be encouraged and supported by the introduction of appropriate technical standards.

Therefore, developing countries should take energy efficiency strategies seriously, making them a major component of both energy and climate change policies. Without the policy framework, little progress will occur.

In conclusion, the energy, environment and trade communities are all struggling with how to ensure that more energy-efficient products are used. The subject is complex, and all too often the three communities have not worked enough together. Now is the opportunity.

¹ Ron Steenblik, Scott Vaughan, Paul Waide, *Can Energy-Efficient Electrical Appliances be considered "Environmental Goods"?* OECD Trade and Environment Paper No. 2006-04, OECD, Paris, 2006, p. 6.

Rod Janssen is an independent energy and environment consultant

WTO update:

Environmental goods talks focus on climate

By Joachim Monkelbaan

The WTO's negotiations to open up trade in environmental goods and services saw solid progress during the latest special session of the Committee on Trade and Environment (CTE-SS), held on 30 June and 1 July 2010 in Geneva. Under the Doha mandate, Members are seeking ways to cut tariffs on products and services that help improve the state of the environment; among these, climate friendly goods have drawn particular attention.

Progress was stimulated by a new proposal from Qatar that identified specific tariff lines for environmental goods, a submission by Singapore that also identified environmental products, a communication from Brazil on biofuels, and a joint proposal from Argentina and Brazil on special and differential treatment for developing countries. Climate-friendly goods - specifically those related to energy efficiency - continued to be at the heart of the various proposals.

Members appeared to be responding to the Chair's request that they identify products of trade interest; several delegates stressed that this generated a positive atmosphere in the negotiations. Some delegates noted that there had been less progress on the most contentious issues - namely whether to use a list approach, a project approach, a request-offer system, or an integrated approach to identify environmental goods and services for liberalisation. Others, however, contend that such negotiations are too time consuming and would be better tackled after delegates have determined a specific basket of goods.

How tackle special and differential treatment?

The submissions by Brazil, Argentina, Singapore, and Qatar were a continuation of contributions from countries like Korea and Taiwan that are outside the 'Friends of Environmental Goods' group. The 'Friends' group comprises Canada, the EU, Japan, Korea, New Zealand, Norway, Switzerland, Taiwan and the US.

The joint proposal from Brazil and Argentina on special and differential treatment (TN/TE/W/76) attracted a fair amount of attention. The WTO agreements include certain provisions that accord developing countries special rights and privileges that are often referred to as "special and differential treatment" (or S&DT). The provisions generally allow the global trade body's poorer members greater flexibility in cutting their tariffs and subsidies. Exactly how this special treatment should be structured, however, is a matter of ongoing debate.

The Brazil-Argentina submission did not propose specifically how much smaller the tariff cuts should be for developing countries compared to developed countries. It did, however, outline a guideline that would offer developing countries longer implementation periods for the liberalisation of goods and services, although it did not precisely indicate how much longer the implementation periods for developing countries should be.

The Brazil-Argentina proposal also contained a clause that would require developed countries to provide importers of their products with information about any subsidies they had provided to developers, suppliers and traders of environmental goods before they could qualify for any reduction or elimination of tariffs.

Identifying environmental goods of interest

Singapore submitted a list of 35 environmental products in seven categories: waste management, air pollution control, noise pollution control, wastewater treatment, environmental monitoring, analysis and analysis equipment, renewable products and energy sources, and energy-efficient products. The list was based on Singapore's own trade data analysis - an approach that could be useful for determining the impacts of EGS liberalisation and that could help ease market-access concerns.

Saudi Arabia clarified that it would put carbon capture and storage (CCS) into its own category, separate from air pollution control, renewable energy, waste management and water treatment and environmental technologies. Saudi Arabia also added standards (conformity assessment, certification and labelling) and intellectual property rights to its list of non-tariff barriers.

Less polluting fuels: environmental?

Brazil and Qatar made submissions on fuels (natural gas and biofuels) that are supposed to be cleaner than crude oil and coal.

Qatar's submission contained a list of gas to liquids (GTL), natural gas, CCS, gas flaring and fuel cell products. This submission complemented Qatar's 2003 proposal (TN/TE/W/19) and identified energy sources that are "relatively cleaner" than crude oil and goods that can be used to make fossil fuel production more sustainable (both in terms of carbon dioxide and sulphur, nitrogen and other particulate emissions).

In line with Qatar's submission, Brazil's proposal praised the climatic benefits of biofuels relative to traditional fossil fuels. Brazil also raised the issue of energy security through the use of biofuels. Thus, Brazil called for biofuels to be recognised as relevant goods for liberalisation under the EGS negotiations.

All submissions stated that they were without prejudice to the submitters' positions on the specific items that would be included in any final coverage of environmental goods. Thus, the submitting members retained the right to add, withdraw, or revise items in their submission or make appropriate proposals on other items. Looking ahead, members are expected to continue to revise different lists of environmental goods for liberalisation.

Joachim Monkelbaan is a Global Platform Programme Officer at the International Centre for Trade and Sustainable Development (ICTSD).

ICTSD update:

Environmental goods talks focus on climate

Participants at a recent meeting organised by ICTSD and UNEP asked questions about how best to create value and improve development opportunities through trade in the fisheries sector, while safeguarding a severely threatened resource. The limits of the fisheries themselves, and the need to manage them sustainably, were acknowledged. Yet, issues of entrenched interests are difficult to overcome, adjustment may be painful, and equity concerns should play centre stage in the debate, according to some of the participants.

ICTSD and the United Nations Environment Programme (UNEP) jointly organised a meeting on fisheries, trade, and development in Geneva on 16 June 2010. The event brought together a wide range of stakeholders from a number of diplomatic missions, civil society, international organisations, and academia. Speakers were carefully selected to provide not only an overview of the state of play of global marine fisheries and current management issues, but also to provide insight into the economics of fisheries, the policy prospects for moving forward, and the various facets of fisheries trade. The commentators - all trade negotiators from key countries involved in the fisheries rules negotiations at the WTO - helped ground the discussion by sharing their countries' perspectives and experiences in a frank and open exchange.

The objective of the meeting was to discuss fisheries from a trade and development perspective, focusing not only on subsidy rules but also on other related aspects of trade, with a strong focus on the impact on least developed countries (LDCs), small and vulnerable economies (SVEs), and small island developing states (SIDS). It also sought to explore new options that may be beneficial in the context of fisheries and development, such as aquaculture and the use of targeted aid for trade in this sector. The need to ensure the sustainability of the resource - the fisheries themselves - was at the core of the meeting.

The individual sessions focused on the 'Fish Crisis: Background, Scale, Responses'; 'Crafting Subsidy Rules that Promote Sustainable Development'; 'Facilitating Developing Country Export Opportunities'; 'Sustainable Aquaculture Trade'; and 'Optimising the Use of Development Finance for Trade'. In terms of the fish crises, the main problems are derived from pollution, overfishing, climate change, and invasive species. Solutions involve a radical rethink of current management practices, including by cutting subsidies. In addition, the UNEP Green Economy Report proposes a rechanneling of some of the billions of dollars today going into fisheries subsidies into managing the resource itself, as this will more than pay itself back in the medium and long term. Currently, fisheries is one of the most inefficiently managed resources in the world.

Participants then went on to discuss the current state of play in the fisheries subsidy negotiations at the WTO, looking specifically at the challenges faced by developing countries, and how to account for the diverse situations faced by small-scale fishers, and small and vulnerable economies. Some participants warned that not only how much fish is caught should be considered - but also who catches it, and the equity and development implications of that. In addition, they highlighted some of the practical challenges of implementing management schemes, especially with regard to cross-border resources, or where small-scale fishers lack capacity.

With regard to market access, participants provided examples of how challenging sanitary regulations can be to fulfil, as well as other requirements, such as those related to Rules of Origin. Segueing into the session on sustainable aquaculture, participants discussed the pros and cons of various labelling schemes set to ensure that the fish sold comes from sustainable sources. They recognised that while they can help create value, they can also add yet another layer of complexity and expense for exporters to comply with - and not all developing country exporters will be in a position to do so. Finally, participants discussed the role of Aid for Trade in this regard, and whether targeted Aid for Trade could help developing countries overcome barriers and more successfully add value to their exports in the fish sector. They noted an inherent tension between aims to cut subsidies in this area in order to curb overfishing, and aims to help promote export capacity through Aid for Trade. As such, the measures would have to be carefully designed so as to help maintain the resource base while simultaneously helping to improve development and livelihoods.

For further information on the meeting, and to access the presentations, visit <http://ictsd.org/i/events/dialogues/75670/>

Bridges Trade BioRes Review

Published by:

The International Centre for Trade and Sustainable Development

Chief Executive:
Ricardo Meléndez-Ortiz

Editors: Andrew Aziz
and Malena Sell
Address: 7 Chemin de Balexert
1219 Geneva, Switzerland
Tel: (41-22) 917-8492
Fax: (41-22) 917-8093
Email: aaziz@ictsd.ch
Web: www.ictsd.net

Additional support provided
by Stephanie Dashiell.

This publication is made possible through the financial contribution of the Government of the United Kingdom (DFID) and the Dutch Ministry of Foreign affairs (DGIS).

The opinions expressed in the signed contributions to the BioRes Review are the authors' and do not necessarily reflect the views of ICTSD. Manuscripts offered for publication are expected to respect good journalistic practice and be compatible with our mission. Guidelines for contributors are available on request.

Material from the BioRes Review can be used in other publications with full academic citation.

ISSN 1996-9198

EVENTS

ICTSD Events

1 September, Geneva, Switzerland. ROUNDTABLE SERIES: COMPETITIVENESS AND CARBON LEAKAGE. Organised by ICTSD.

2 September, Geneva, Switzerland. ROUNDTABLE SERIES: AGRICULTURE, CLIMATE CHANGE AND TRADE. Organised by ICTSD.

Other Events

9-10 August, Phnom Penh, Cambodia. INTERNATIONAL CONFERENCE ON MANAGING FOREST RESOURCES FOR MULTIPLE ECOSYSTEM SERVICES UNDER ROBUST AND FRAGILE ENVIRONMENTS. Organised by the Risk Analysis Research Center (RARC), the Institute of Statistical Mathematics (ISM) Graduate School of Applied Informatics (GSAI), and University of Hyogo FORMATH Research Group.

11-13 August, Panama City, Panama. LATIN AMERICAN AND CARIBBEAN INDIGENOUS AND LOCAL COMMUNITY CAPACITY-BUILDING WORKSHOP ON THE CBD, INCLUDING ISSUES RELEVANT TO ARTICLE 8(j), TRADITIONAL KNOWLEDGE AND ABS. Organised by the CBD.

15-27 August, Joensuu, Finland. UNEP COURSE ON MULTILATERAL ENVIRONMENTAL AGREEMENTS. Organised by University of Eastern Finland (UEF) and the United Nations Environment Programme (UNEP).

16-20 August, Fortaleza, Brazil. SECOND INTERNATIONAL CONFERENCE ON CLIMATE, SUSTAINABILITY, AND DEVELOPMENT IN SEMI-ARID REGIONS - ICID 2010. Organised by ICID.

18-20 August, London, UK. ECOHEALTH 2010. Organised by the London School for Hygiene and Tropical Medicine.

22-25 August, Oldenburg and Bremen, Germany. 11th BIENNIAL CONFERENCE OF THE INTERNATIONAL SOCIETY OF ECOLOGICAL ECONOMICS: ADVANCING SUSTAINABILITY IN A TIME OF CRISIS. Organised by the Economic Society for Ecological Economics.

23-27 August, Geneva, Switzerland. JOINT MEETING OF EXPERTS ON THE REGULATIONS ANNEXED TO THE EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS. Organised by UNECE.

31 August - 3 September, Oaxaca, Mexico. WORKSHOP ON FOREST GOVERNANCE, DECENTRALISATION AND REDD IN LATIN AMERICA. Organised by Center for International Forestry Research (CIFOR) and the UN Forum on Forests (UNFF).

2-3 September, Santiago (Region Metropolitana), Chile. SEMINAR ON THE VULNERABILITY OF INTERNATIONAL TRADE TO THE CARBON FOOTPRINT. Organised by UN Economic Commission for Latin America and the Caribbean (ECLAC).

15-17 September, Geneva, Switzerland. WTO PUBLIC FORUM. Organised by the WTO.

20-24 September, Nairobi, Kenya. GLOBAL EXPERT WORKSHOP ON BIODIVERSITY BENEFITS OF REDD IN DEVELOPING COUNTRIES. Organised by the CBD.

11-15 October, Nagoya, Japan. FIFTH MEETING OF THE CONFERENCE OF THE PARTIES SERVING AS THE MEETING OF THE PARTIES TO THE CARTEGENA PROTOCOL ON BIOSAFETY (COP-MOP 5). Organised by the CBD.

13-15 October, Geneva, Switzerland. REGIONAL MEETING ON MDG INDICATORS. Organised by UNECE.

18-29 October, Nagoya Japan. CONVENTION ON BIOLOGICAL DIVERSITY TENTH CONFERENCE OF THE PARTIES (CBD COP 10). Organised by the CBD.

29 November - 10 December, Cancún, México. 16TH CONFERENCE OF THE PARTIES (COP 16)/6TH CONFERENCE OF THE PARTIES SERVING AS THE MEETING OF THE PARTIES TO THE KYOTO PROTOCOL (CMP 6). Organised by the UNFCCC.

RESOURCES

ICTSD Resources

BRAZIL'S PRACTICAL EXPERIENCE WITH ACCESS AND BENEFIT SHARING AND THE PROTECTION OF TRADITIONAL KNOWLEDGE. By Eduardo Velez. ICTSD Biodiversity Programme. July 2010. <http://ictsd.org/i/publications/79880/>

DISCLOSURE OF ORIGIN AND LEGAL PROVENANCE: THE EXPERIENCE AND IMPLEMENTATION PROCESS IN SOUTH AMERICA. By Manuel Ruiz Muller. ICTSD Biodiversity Programme. July 2010. <http://ictsd.org/i/publications/79866/>

THINKING OUTSIDE THE BOX: INNOVATIVE OPTIONS FOR AN OPERATIONAL REGIME ON ACCESS AND BENEFIT SHARING. By Manuel Ruiz Muller. ICTSD Biodiversity Programme. July 2010. <http://ictsd.org/i/publications/79872/>

THE DISCLOSURE OF ORIGIN REQUIREMENT IN CENTRAL AMERICA: LEGAL TEXTS, PRACTICAL EXPERIENCE AND IMPLEMENTATION CHALLENGES. By Jorge Cabrera Medaglia. ICTSD Biodiversity Programme. July 2010. <http://ictsd.org/i/publications/79858/>

THE POLITICAL ECONOMY OF THE INTERNATIONAL ABS REGIME NEGOTIATIONS: OPTIONS AND SYNERGIES WITH RELEVANT IPR INSTRUMENTS AND PROCESSES. By Jorge Cabrera Medaglia. ICTSD Biodiversity Programme. July 2010. <http://ictsd.org/i/publications/79872/>

DEPLOYING ENERGY-EFFICIENT AND RENEWABLE ENERGY TECHNOLOGIES IN RESIDENTIAL AND COMMERCIAL BUILDINGS. By Rene Vossenaar and Veena Jha. ICTSD Series on Environmental Goods and Services, Issue Paper No. 11. July 2010. <http://ictsd.org/i/publications/79573/>

TRADE, ECONOMIC VULNERABILITY, RESILIENCE AND THE IMPLICATIONS OF CLIMATE CHANGE IN SMALL ISLAND AND LITTORAL DEVELOPING ECONOMIES. By Robert Read. ICTSD Series on Trade-Supported Strategies for Sustainable Development. Issue Paper No. 12. July 2010. <http://ictsd.org/i/publications/79330/>

Other Resources

THE ECONOMICS OF ECOSYSTEMS AND BIODIVERSITY (TEEB) STUDY FOR BUSINESS. By BSR, Earthmind, GRI, PwC, IUCN, UNEP, and WBCSD. (July 2010). www.teebweb.org.

ILLEGAL LOGGING AND RELATED TRADE. By Sam Lawson, Chatham House (July 2010). www.chathamhouse.org.uk.

ALIGNING CLIMATE AND DEVELOPMENT AGENDAS IN THE MEKONG REGION: OPTIONS FOR REGIONAL COLLABORATION BETWEEN VIETNAM, CAMBODIA AND LAOS. By Heike Baumüller, Energy, Environment and Resource Governance (July 2010). www.rightsandresources.org.

UNEP POLICY SERIES ON ECOSYSTEM MANAGEMENT: INTEGRATED SOLUTIONS FOR BIODIVERSITY CLIMATE CHANGE AND POVERTY. By UNEP (July 2010). www.unep.org

BIODIVERSITY BAROMETER REPORT 2010. By the Union for Ethical BioTrade and IPSOS (July 2010). ethicalbiotrade.org.

MANUAL FOR SOCIAL IMPACT ASSESSMENT OF LAND-BASED CARBON PROJECTS, Version 1.0. By Forest Trends, the Climate, Community and Biodiversity Alliance (CCBA), Rainforest Alliance and Fauna & Flora International (FFI). www.forest-trends.org.

DOES THE OPPORTUNITY COST APPROACH INDICATE THE REAL COST OF REDD+?: RIGHTS AND REALITIES OF PAYING FOR REDD+. By Hans Gregersen, Hosny El Lakany, Alain Karsenty, and Andy White, Rights and Resources Initiative (July 2010). www.rightsandresources.org.

SUSTAINABLE DEVELOPMENT IN PRACTICE: LESSONS LEARNED FROM AMAZONAS. By Virgilio Viana, IIED (June 2010). www.iied.org.