



Development & Transition

ISSUE

18

Published by the United Nations Development Programme

November 2011



© Still pictures

- 2 Editorial note
- 3 The political economy of sustainable development
- 8 A new approach to carbon accounting?
- 14 Carbon finance: Opportunities versus reality
- 19 Croatia: 'Going green with Gašpar'
- 22 The 'Green Bridge' for Rio and beyond
- 25 Biofuels and food prices

www.developmentandtransition.net

Sustainability and equity

Sustainability and equity

Ben Slay



You are invited to comment
on the articles in this issue at
www.developmentandtransition.net

Development models based on consumerism and the perpetual exploitation of fossil fuels and biodiversity are placing growing burdens on the planet's carrying capacity. The common property resource represented by the earth's capacity to absorb greenhouse gas emissions is being depleted at an unsustainable rate; significant pressures are also apparent on global fisheries, clean water supplies, and other ecosystem services.

The 18th issue of UNDP's *Development and Transition* regional research bulletin examines these issues, in the context of environmental sustainability and equity, in the transition and developing economies of Europe and Central Asia.

Balázs Horváth opens the issue by describing the economic policy package needed to better align national development paths with environmental sustainability.

Ben Slay follows by taking up the question of whether national contributions to climate change should be measured as greenhouse gases emitted by the countries in which they are produced, or should they be 'charged against' the countries in which the goods and services that generate these emissions are consumed.

Although the Europe and Central Asian region is one of the world's most carbon-intensive, it has not benefitted nearly as much from carbon finance as might be expected. John O'Brien explains why this has been the case, and suggests some possible post-2012 scenarios for global carbon markets.

Louisa Vinton adds a description of how the Croatian government, with support from UNDP, has been able to reduce the country's environmental footprint.

On the threshold of the "Rio+20" conference, questions of low-carbon development and green growth are increasingly dividing developed and developing countries. Emilia Wahlström explores whether the 'Green Bridge' initiative championed by Kazakhstan can provide some common ground.

Assemgul Kaliyeva describes the barriers to the growth of the biofuels industry in the region, as well as some of the implications of using agricultural commodities for fuel rather than food.

Executive Editor: Ben Slay
Managing Editor: Peter Serenyi
Assistant Editor: Zuzana Aschenbrennerova



UNDP Bratislava Regional Centre

Grosslingova 35, Bratislava 81109
Slovakia



Tel: +421 2 59337 111
Fax: +421 2 59337 450
<http://europeandcis.undp.org>

Development and Transition is published by the United Nations Development Programme. The analysis and policy recommendations expressed here do not necessarily reflect the views of UNDP, its Executive Board, or United Nations Member States.

The political economy of sustainable development

Balázs Horváth



Overview

Many countries'—and the world's—development path is not at present consistent with long-term sustainability. Failures of governments and markets, and weaknesses in civil society contribute to this outcome. A critical mass of consistent changes in policies, institutions, regulation, and incentives is needed to address these failures. While we may not yet be at a stage where all the elements can come together, experience from past crises suggests that a steadily eroding situation can create a tipping point, followed by a dominant coalition for change. This article seeks to lay out the main elements of a policy package that can be of use at that stage.

Governments need to reverse unsustainable policies (such as massive fossil fuel subsidies), put in place improved institutions, and better regulate where markets fail. Governments also need to retreat from areas where markets or civil society work best. At the macro level, these changes need to build—or reverse the depletion of—physical, social, and natural capital, while adhering to current and future budget and social constraints. And they need to be complemented by micro-level and sectoral policies that effectively address social and environmental tensions.

Such a policy mix does not need to be perfect, but it does need to change incentives sufficiently to tip the balance towards sustainability in billions of individual decisions made about current and future consumption, production, and investment. Perfect

Water meters installed by UNDP help promote efficiency by conserving resources.

© UNDP Armenia

global coordination is not required, but minimal compatibility in the patchwork of national policies is needed. As many of the elements to address the overall challenge are currently available, a 'wedge-by-wedge' approach, in aggregate adding up to the necessary critical mass of policies, can be employed.

The global context

Development is sustainable if it meets the needs of the present without compromising the ability of future generations to meet their needs. This requires

not depleting the human capital, knowledge capital, natural capital or physical capital that is available to society over time.¹

Sustainable development can be conceptualized in terms of economic, social and environmental pillars. Implicit in this definition is the requirement to avoid imposing large risks onto subsequent generations. The transition towards sustainable development involves green growth: high environmental-footprint sectors shrinking and low-footprint sectors growing in relative terms, and likely in absolute terms as well.

The three pillars are not competing agendas; each is equally important. They are interconnected, with synergies and trade-offs (including inter-temporal ones). These overlaps also produce some of the most interesting areas for UNDP work, notably human development, inclusive and green growth, green jobs, the poverty-environment nexus. All these need to be considered when formulating policies. Finally, these processes are inherently nonlinear, adding further elements of complexity: tipping points can occur when social, economic or environmental tensions reach critical levels—individually, or in combination.

Economic policies for sustainable development

There is no single policy decision that can ensure sustainable development. Rather, a new, balanced policy mix is needed, with elements that may be individually insufficient, but deliver jointly. Such a policy mix would reflect the need for cost-effectiveness and the complementary roles of government, market, and civil society. It would reflect the increasingly porous borders between government and private, domestic and international domains, and the growing importance of global public goods.² The resilience of the policy mix can be enhanced by favouring strategies that work over a larger set of contingencies, building in redundancy, and assigning a larger weight to stocks of human, natural and physical capital that can act as a cushion when needed.

A joint focus on reducing the failures of the market and government implies that the best course of action is often to discontinue distorting interventions, to ensure a smooth functioning of the market where it works best, and to support the participation of civil society, in addition to well enforced laws and regulations, to strengthen social inclusion and cohesion, and help 'keep all players honest'. The challenge lies in attaining such a policy mix.

Identifying areas where the market works best and where it fails, the extent of these failures, and the costs of intervention, is key to designing sustainable development policies. Areas in which policy should sharply reduce government actions include fossil fuel subsidies; red tape that limits the creation of legitimate businesses paying taxes and decent wages; and maintaining rules that facilitate government corruption. Conversely, government interventions should be stepped up where their net benefits can be large: getting the price signals right (Box 1), regulating monopolies, addressing externalities, providing public goods, and alleviating information asymmetries. They should also support the development of civil society.

1 Arrow, Kenneth, Partha Dasgupta, Lawrence Goulder, Gretchen Daily, Paul Ehrlich, Geoffrey Heal, Simon Levin, Karl-Göran Mäler, Stephen Schneider, David Starrett, and Brian Walker. 2004. "Are We Consuming Too Much?", *Journal of Economic Perspectives*, 18(3): 147–172.

2 For an excellent overview of the resulting fiscal challenges, see I. Kaul and P. Conceicao, eds., *The New Public Finance—Responding to Global Challenges*, UNDP, 2006.

Box 1 Fossil fuel pricing: The elephant in the room

Fossil fuel prices fail to reflect their full social costs, owing to government subsidies and the externalities stemming from their use. As a result, they transmit hugely biased economic signals. The effect of carbon-heavy production and consumption patterns arising from these two sources is massive. A recent OECD-World Bank study estimated that total direct fossil fuel subsidies in 37 surveyed economies (covering some 95 percent of the world's subsidized fossil fuel consumption) amounted to \$312 billion, with a weighted-average fossil fuel subsidy for final consumers of 22 percent. A Global Subsidies Initiative study estimated worldwide fossil-fuel production subsidies at around \$100 billion per year.³

Appropriate price signals are the single most effective instrument for fundamentally altering day-to-day consumption, production and investment decisions of billions of people and businesses. This requires the elimination of subsidies plus either (i) a "sin tax" directly imposed on CO₂ emission to equalize energy prices at a higher level in all countries; or (ii) if a carbon trading platform with global reach is available, charging for a restricted amount of global carbon credits that would be traded. These changes would need to be phased in to avoid a sudden shock, but should be introduced quickly, in order to ensure early impact. That path needs to be pre-announced, to provide predictability over the investment horizon—critical for shaping the mix of energy supply and demand.

Reflecting the global nature of the problem, higher prices for fossil fuels will not have the desired impact unless the change is globally coordinated, monitored, and reliably enforced to lend the new regime credibility. Producers and users must agree on their relative shares of fossil fuel rents, which re-pricing would massively affect (freezing the existing shares for some time would be a feasible way to start).

Rapid diffusion of best available technologies for lowering net CO₂ emissions is critical for success. The improved relative competitive position of renewables and of energy-saving technologies induced by higher fossil fuel prices will act in this direction. Importantly, this could also go some way towards helping developing countries 'leapfrog' over the carbon-heavy paths that developed countries have traveled.

When price and regulatory signals are broadly correct, market forces can provide much of the momentum needed for sustainable development. However, like all forms of development, this will involve winners and losers. Civil society can help alleviate the negative social impact, set the agenda and raise awareness about the need for change, and add to the momentum. Government can contribute transfers to compensate losers—even across borders—to create and maintain political coalitions needed to support stable regional and global equilibria. Fortunately, the necessary policy changes can create the budget revenues to cover the additional costs of such transfers, in the form of fuel taxes or from the allocation of pollution permits under cap-and-trade systems.

Markets can deliver good results, but they can also fail. Governments need to address such failures in areas where they can markedly improve on outcomes at an acceptable cost. But governments can also fail in important aspects. Thus, some government activities need to be curtailed while others need to be expanded or improved. In terms of sustainability, key examples of government failure include:

- massive, highly distortive fossil fuel subsidies (including tax advantages and rules that reduce effective energy prices paid by final users);
- excessive red tape and high payroll taxes that deter formal private sector employment or investment;
- misalignments between the (often short-term) time horizon for policy makers and the longer-term net benefits associated with sustainable development policies;

- weak capacity to govern and regulate, lack of transparency and broad participation, especially at the local level; and
- weak (or weakly enforced) legislation and regulation with insufficient or uncertain reach (including unequal access to the law).

As seen from this list, fiscal policy—especially its tax, subsidy, and social protection components—must play a critical role in shifting toward a sustainable growth path. It needs to complement market signals for fostering innovation and redirecting investment and consumption toward a resource efficient economic and environmental model. The redistribution of revenues from fossil fuel taxes or cap-and-trade quota allocations can:

³ See *The Scope of Fossil-fuel Subsidies in 2009 and a Roadmap for Phasing Out Fossil-fuel Subsidies*, IEA-OECD-World Bank joint report, Seoul, November 2010; and *Defining Fossil-Fuel Subsidies for the G-20: Which Approach is Best?*, International Institute for Sustainable Development, Geneva, 2010.



Energy efficiency improvements in buildings can help alleviate pressure on budgets.

© UNDP Armenia

- reduce distortive taxes on labour to bolster green employment;
- provide temporary and rapidly declining subsidies to assist 'brown' producers in adjusting and help environmentally friendly technologies to more rapidly reach sufficient scale;
- provide targeted support for poor households to offset the adverse income effect of higher energy costs and thus enhance social sustainability;
- cover additional costs of enhancing regulatory capacity; and
- transfer resources across regions, sectors, and even countries to stabilize coalitions in support of sustainability.⁴

The need to drastically lower the global eco-footprint over the coming decades makes green growth an

increasingly important component of competitiveness. Countries and enterprises that position themselves to benefit from future declines in carbon-heavy technologies and consumption, and from the coming surge in green technologies and sectors, will be increasingly competitive. Transparent, stable, 'green procurement' rules that strengthen the role of sustainability criteria in public investment decisions would point in the same direction.

Macroeconomic policies for sustainable development need to go hand-in-hand with micro-level, sectoral and regional policies. These typically focus on the supply side of economic activity, while cross-sectoral policies also include policies acting on the demand side: consumption, investment, net exports. This is an area where economic and environmental policies overlap; and through their impact on income inequality and the level and mix of employment, they can also have powerful social implications.

Important micro-level contributions to sustainability can come from local community-based collective action in the management of common property resources, when these do not possess substantial elements of monopoly or externalities over large areas. Examples include a lake with significant fish stock in it, forests with useful herbs and wildlife, rivers that can feed irrigation systems. Optimal solutions in this case can come from coordinated local action organized by civil society. As markets and governments are often unable to ensure the sustainable management of common property resources, civil society has a critically important role to play in such instances.

To minimize the global costs associated with a transition to sustainable development, policy actions should be taken where reductions in carbon emissions can occur at minimum cost. Because national level optimization does not necessarily lead to this outcome, climate change mitigation policies should not be restricted by national borders. In addition to underpinning emissions permit trading across (as well as within) national borders, this argument speaks against country-specific carbon taxes

⁴ Such transfers already exist (in the form of ODA, and the newly established climate funds).

that place carbon pricing decisions in the hands of governments without principles to determine their levels. Moreover, the level of carbon taxes cannot be frequently changed at the country level, especially not in an internationally coordinated manner. In contrast, setting aggregate emissions levels is easier, and with an effective and well-governed global trading system, the global price can adjust frequently, reflecting demand for such permits.

Sustainable development strategies are also available to the poorest countries, but they need support to 'leapfrog' to markedly higher development stages, bypassing carbon-intensive phases traversed by countries that have developed earlier. In fact, while carbon-intensive development may appear to be feasible for individual countries, in the aggregate it is not. Thus, 'leapfrogging' is necessary—and in the interest of developed countries as well.

This raises the question of revamping the structure and flow of international aid towards enhancing sustainability, particularly in terms of rapid and massive technology transfers. The additional resources accruing to governments in developed countries, stemming from reductions in waste, and from incomes collected from pollution taxes and emissions permits, can help finance these transfers. However, these transfers should not counteract emerging 'green' behavior driven by market forces responding to corrected price signals.

The regional dimension

The developing and transition economies of Europe and Central Asia bring some important lessons to the global debate. Two stand out in particular.

First, the region's transition experience has been associated with substantial changes in relative prices and incomes, as well as rapidly increasing inequality. No other major region in the world has seen such a rapid surge in inequality in incomes and wealth in the past two decades. With the global shift toward climate change mitigation and adaptation shaping up as a similarly fundamental challenge to these countries' development paths, there is a need for policies that do not further increase inequalities.

Second, the developing and transition economies of Europe and Central Asia are the only major region that has seen a large absolute decline in carbon emissions in the past two decades. The EBRD's special report on climate change highlights the 28 percent fall in carbon emissions in these countries during 1990-2008, even as GDP rose by 22 percent. While an extremely wasteful starting position certainly explains some of this improvement, large changes in energy prices coupled with a sharp reduction in non-price energy subsidies explain more. That said, the region still includes several countries with extremely high energy intensities, notably Uzbekistan, Kazakhstan, and Russia. Given the continued predominant role of fossil fuels, this translates into very high emissions of carbon dioxide equivalents per dollar of GDP.

UNDP has implemented extensive and successful community-based projects in the region—notably Ukraine, Tajikistan, Kyrgyzstan, Armenia, just to name a few. These projects have focused inter alia on energy efficiency improvements in schools, kindergartens,

health facilities and other public buildings. They have helped alleviate pressures on local budgets, allowing the premises to operate through cold or very hot periods, while creating new employment opportunities in the process. While the effect may appear small at the national level, they are very important locally. Moreover, as this programming is now being scaled up in number of these countries, a meaningful aggregate impact is now emerging, in terms of development that promotes equality, quality of life and increases sustainability.

Balázs Horváth is the leader of UNDP's poverty reduction practice for the Europe and Central Asian region.



New, well-insulated windows help to keep the heat inside.

© UNDP Armenia

A new approach to carbon accounting?

PAGE 8

Ben Slay



A factory billowing smoke in Estonia. The Baltic states will never be large carbon producers or consumers in absolute terms.

© Curt Carnemark/World Bank

Overview

Much of the attention currently surrounding the global climate change negotiations focuses on whether mandatory reductions in greenhouse gas emissions¹ will be accepted by all major carbon-generating countries. However, recent research has posed more prosaic but potentially fundamental questions of whether national contributions to climate change are measured correctly. Should these be measured as greenhouse gases emitted by the countries in which they are produced—as is legally the case under the Kyoto Protocol and the UN Framework Convention on Climate Change (UNFCCC)? Or should they be ‘charged against’ the countries in which the goods and services that generate these emissions are consumed?

This issue was highlighted earlier in May 2011 by a new study² that sought to measure the ‘consumption’ of greenhouse gas emissions (or rather, of the planet’s increasingly overtaxed ability to absorb these gases without causing significant climate change) by examining ‘virtual carbon trade’ flows. The authors estimated the carbon content of the import and export of goods and services for 95 countries—including some two dozen transition and developing economies from Europe and Central Asia—for the 1990–2008 period. Such estimates allow a country’s carbon consumption to be defined as the difference between the tons of greenhouse gases it emits (‘carbon production’), as

¹ In this paper, the terms ‘carbon’ and ‘greenhouse gases’ are used interchangeably, as synonyms for the carbon dioxide equivalents by which these gases are commonly measured.

² Peters et al., ‘Growth in emission transfers via international trade from 1990 to 2008’, *Proceedings of the [US] National Academy of Sciences*, 2011, available at <http://www.pnas.org/content/108/21/8903.full.pdf+html>.

recorded in official national communications to the UNFCCC, and the carbon content of its exports and imports.

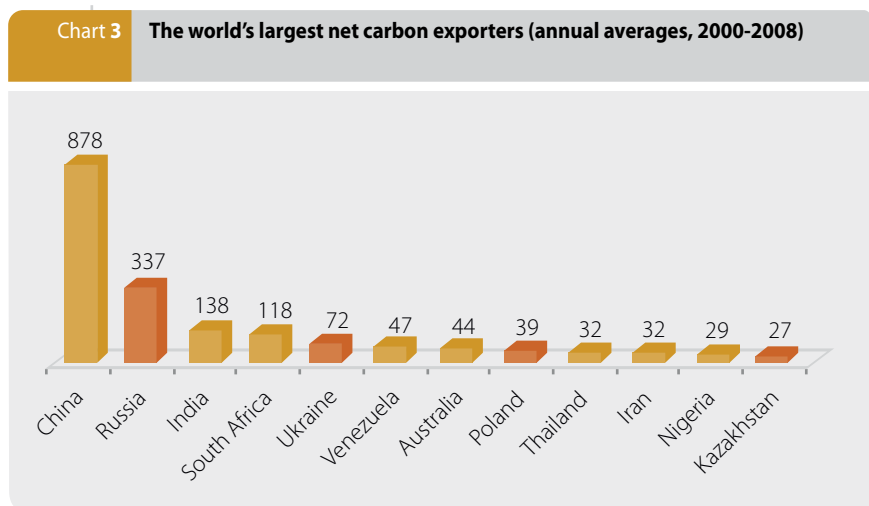
This study gives new impetus to questions like the following: *If a share of Country A's greenhouse gas emissions can be accounted for by exports that are destined for consumption in Country B, shouldn't these emissions be ascribed to Country B?*

Such questions are not an arcane academic concern. One blogger has argued that, when the emissions data are recalculated in terms of national carbon consumption rather than production, they show 'a massive transfer of carbon from the poor world to the rich world'.³ According to this argument, 'the rich world has been 'offshoring' or 'outsourcing' its emissions' to developing countries—exploiting a loophole in the Kyoto framework to reduce reported emissions by surreptitiously exporting them to poorer countries.

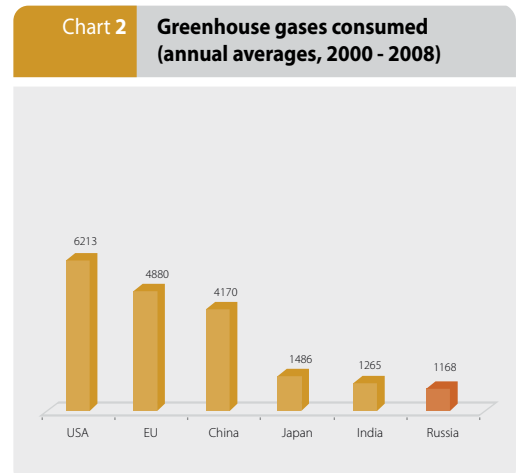
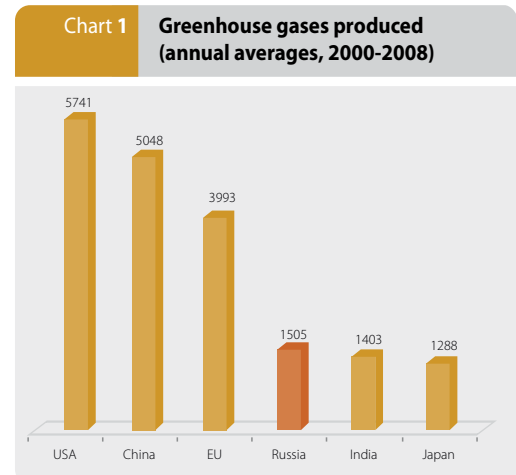
Do such arguments, in fact, stand up? Is the rich world 'gaming' the Kyoto system and frustrating global efforts to reduce greenhouse gas emissions? Should this shortfall be addressed in the international climate change negotiations? Where do the transition and developing economies of Europe and Central Asia stand in light of these arguments?

Virtual carbon trade and transition

While none of the countries of this region other than Russia are large producers or consumers of greenhouse gases (Charts 1 and 2), the carbon trade data indicate that four of the world's 12 largest net carbon exporters during 2000-2008 were transition economies (Chart 3). In addition to Russia, these were Ukraine, Poland, and Kazakhstan. According to this study, Azerbaijan, Bulgaria, the Czech Republic, and Romania were also net carbon exporters during this time. (If they had been included in this study, Uzbekistan and Turkmenistan would have been likely to be classified as net carbon exporters, for



In million tons of CO₂ equivalent. Source: Peters et al.



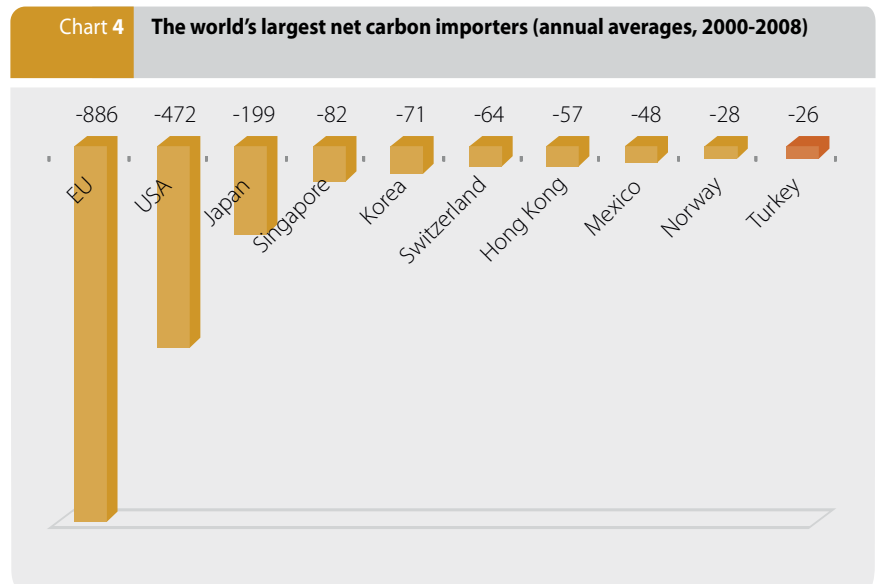
In million tons of CO₂ equivalent. Source: Peters et al.⁴

3 Duncan Clark, 'New data on imports and exports turns map of carbon emission on its head', *The Guardian*, 3 May 2011, <http://www.guardian.co.uk/environment/datablog/2011/apr/28/carbon-emissions-imports-exports-trade/print>.

4 The data on which this analysis is based is available at <https://spreadsheets.google.com/spreadsheet/pub?hl=en&hl=en&key=0AonYZs4MzlZbdEFUSFhxTWFMTev2Rmk1Z3d3dFmOEE&output=html>.

reasons explained below.⁵) Likewise, Turkey was the only country from this region to be classified among the world's ten largest net carbon importers during this period (Chart 4).

While China appears as the world's largest net carbon exporter by far, these data indicate that the transition and developing economies of Europe and Central Asia accounted for about half of the world's non-Chinese net carbon exports during 2000-2008. This suggests that proposals to change the metrics underpinning the Kyoto Protocol could be of interest to the countries of the region.



In million tons of CO₂ equivalent. Source: Peters et al.

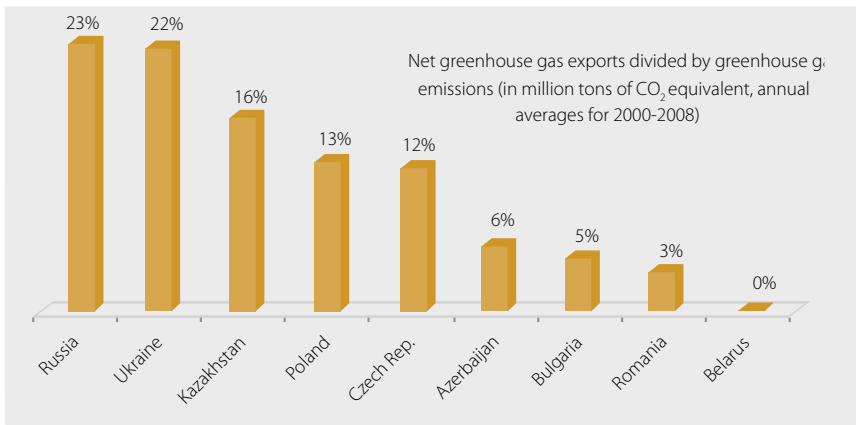
Relative carbon production, consumption, and trade

Aggregate measures of carbon emissions, consumption, and trade are influenced by the overall size of the economy in question. Because it has the region's largest GDP, Russia is likely to be among the region's leaders in terms of carbon production, consumption, and trade—irrespective of how these are measured. Likewise, the small open economies of the former Soviet Union (e.g., Armenia, Georgia, Kyrgyzstan), Southeast Europe (e.g., Albania, Croatia), or the new member states of the European Union (e.g., Slovenia, the Baltic states) will never appear as large carbon producers or consumers, or virtual carbon traders, in absolute terms.

But which of these countries are in fact net carbon consumers or producers? And how large are net carbon imports or exports for these countries, relative to their size? Answers to these questions could be important for understanding which countries could gain or lose the most (relatively speaking) from prospective changes in the accounting rules for greenhouse gases.

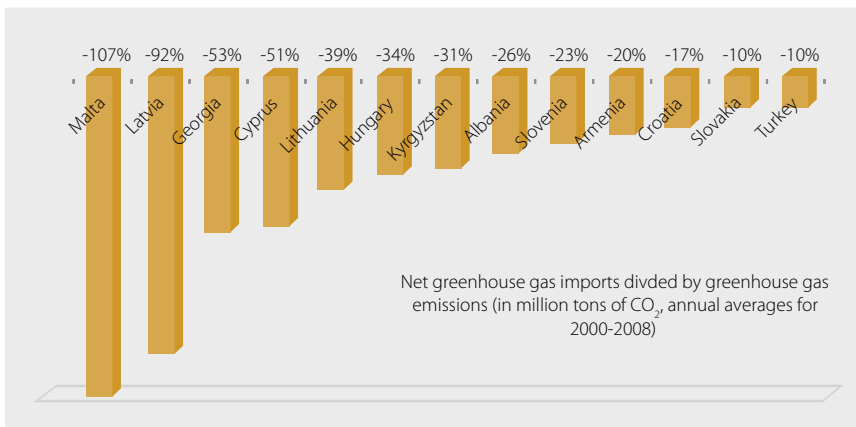
⁵ In addition to Turkmenistan and Uzbekistan, economies not covered in this study include Bosnia and Herzegovina, Kosovo, the Former Yugoslav Republic of Macedonia, Moldova, Montenegro, Serbia, and Tajikistan.

Chart 5 The region's largest net carbon exporters, in relative terms



UNDP calculations, based on data in Peters et al.

Chart 6 The region's largest net carbon importers, in relative terms



UNDP calculations, based on data in Peters et al.

The data presented in charts 5 and 6, which show different countries' net carbon exports (imports) divided by their overall carbon emissions, show that—relative to the overall amount of greenhouse gases emitted—Ukraine was almost as large a net carbon exporter as Russia, during 2000-2008 (Chart 5). The ratio of net greenhouse gas exports to emissions was likewise above 10 percent for Kazakhstan, Poland, and the Czech Republic. Should the indicators used to measure greenhouse gases reflect carbon consumption as well as production, these countries would presumably benefit, in the form of lower carbon reduction targets. A smaller share of the climate change mitigation burden would fall on these countries than might otherwise be the case.

By contrast, carbon imports during 2000-2008 were much larger, in relative terms, for many of the region's small open economies. On average, Malta imported more carbon than it emitted during 2000-2008; Latvia was close behind with a 92 percent ratio of greenhouse gas imports to emissions. Low- and lower-middle income countries of the former Soviet Union (Armenia, Georgia, Kyrgyzstan)—countries which, like the small new EU member states, are also net energy importers—likewise registered very high ratios of carbon imports to emissions. The EU accession and pre-accession countries included in this study (Albania, Croatia, and Turkey) were also net carbon importers, but relatively speaking, of smaller size. Should future metrics place a greater emphasis on carbon consumption, these countries could potentially face higher carbon reduction targets, and would therefore have to shoulder a greater share of the global mitigation burden.

Who's gaming who?

Which countries benefit the most from the current production-based greenhouse gas metrics? Which countries would benefit from measuring carbon consumption, as well as (or rather than) emissions? Definitive answers to such questions are elusive, in part because they contain subjective elements, in part because of data uncertainties. Nonetheless, a review of the data and analysis presented above suggest some initial conclusions.

Data issues. Questions about the accuracy of the carbon content of imports and exports have been associated with this 'virtual carbon trade flows' literature since its inception; the study that has generated the data discussed here is no exception. A key issue is the sectoral breadth of these measures, which tend to emphasize the carbon content of manufactures as opposed to other tradable goods and services. The authors of this study admit, for example, that 'We focus on CO₂ emissions from fossil-fuel combustion, cement production, and gas flaring because of the absence of detailed time-series data on land-use change and other greenhouse gas emissions with the necessary detail'⁶ As long as it is easier to measure the emission

6 Peters et al., p. 2.

of greenhouse gases than to estimate the carbon content of trade flows, emissions seem destined to remain the dominant climate change indicator.

A second data issue concerns the fact that virtual carbon trade balances are heavily influenced by trade balances overall. For economies like China and Russia which typically report very large trade surpluses (i.e., overall exports significantly exceed imports), it is hard to imagine how the imports of carbon-intensive goods could be larger than the exports of such goods. Likewise, for carbon-importing economies like Georgia or Kyrgyzstan whose overall imports are much greater than their exports, it is difficult to imagine how the exports of carbon-intensive goods could be larger than the imports of such goods.

'Outsourcing' is not the whole story. Divergences between the production and consumption of carbon can not be ascribed solely to the 'outsourcing' of carbon-intensive production from developed to developing economies. Outsourcing may account for China's large carbon exports, due to rapid growth in China's production of carbon-intensive goods which are exported to developed countries. To the extent that this production used to occur in developed countries (as opposed to other developing economies) and then migrated to China, the 'outsourcing' story holds water.

However, Russia's, Ukraine's, and Kazakhstan's relatively large carbon exports are clearly driven by a different logic—that of the export of carbon-intensive energy

(oil and gas), metallurgical, chemical, and other energy-intensive primary products. These exports largely reflect these countries' natural resource endowments, rather than a 'leakage' of carbon-intensive manufacturing away from developed economies. Because they are richly endowed in the hydrocarbons that dominate their commodity composition of trade (like their Caspian basin neighbours Kazakhstan and Azerbaijan), Turkmenistan and Uzbekistan seem likely to be significant net carbon exporters (relatively speaking) as well.

Carbon-intensive activities are 'supposed' to migrate from developed to developing economies. The current global climate governance framework explicitly encourages the migration of carbon-intensive industries from developed to developing economies. Because China, India, Brazil, and other G77 countries are considered to be developing economies that can not bear the burdens of mitigation as well as developed economies, their obligations to reduce greenhouse gas emissions are less demanding than those facing wealthier countries.⁷ When carbon-intensive production migrates from a developed country to a developing one, greenhouse gas emissions fall in the former and rise in the latter. So does GDP, employment, tax revenues, and other benefits associated with economic activity (carbon-intensive or otherwise). While advocates of more rapid reductions in greenhouse gas emissions may find this approach problematic, it is not without its internal logic.

This suggests that the 'outsourcing' criticism can be answered by what might be called 'carbon dumping' counter-arguments, which are analogous to developed country concerns about 'environmental' or 'social dumping' by developing countries. Unemployed European workers in carbon-intensive sectors who blame job losses on 'unfair competition' from the developing countries that do not have to play by 'green' rules may regard themselves as victims of environmental double standards. Similar 'unfair competition' concerns are apparent in US unwillingness to ratify the Kyoto Protocol.⁸

Net carbon exporters are also larger carbon consumers. The 'outsourcing' argument implies that net carbon exporting countries are doing the dirty work for carbon importers, who should be dissuaded from permitting such 'carbon leakage.'

The virtual carbon trade data from the developing and transition economies suggest a different story, however. As the data in Charts 7 and 8 show, carbon exporting countries tend to have the larger carbon footprint (measured as carbon consumption). The reason for this almost certainly lies in the fact that the carbon exporting countries in this region are large exporters of carbon-intensive energy, metallurgical, and chemical products. They tend to have carbon consumption levels per dollar of GDP that are 50-100 percent above those of carbon-importing countries in the region—which, as a rule, are net importers of energy and many primary products.⁹

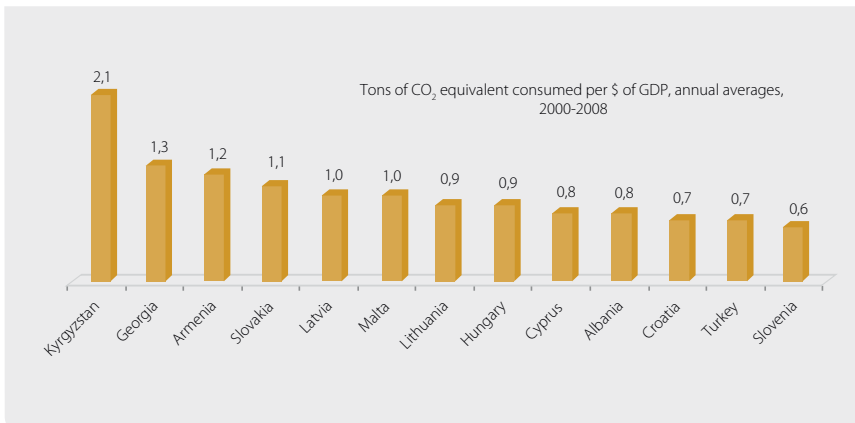
With a few exceptions (e.g., Kyrgyzstan), the net carbon- and energy-importing countries in the region have had to come to terms with higher domestic energy prices to cover the costs of energy imports, production, and supply. By contrast, the net carbon- and energy-exporting countries are more likely to permit domestic energy prices to lag behind world energy prices, in order to subsidize domestic energy consumption. Lower levels of energy efficiency result. However the social dimensions of such policies are viewed, as a framework for conserving energy and promoting climate change mitigation, they clearly leave something to be

7 Prior to the 2009 Copenhagen accord, developing economies did not face international obligations to reduce greenhouse gas emissions. On the other hand, developing economies may participate in the clean development mechanism and benefit from other forms of carbon finance, as well as introduce nationally appropriate mitigation actions. Many developing countries have included mitigation targets in national legislation

8 In 2008, UNFCCC data indicate that China was responsible for 23 percent of global greenhouse gas emissions; India was responsible for another 6 percent. As robust economic growth in these countries has since continued while the developed economies fell into recession in 2009, these two countries together may now account for a third of global carbon emissions.

9 New EU member states like Poland and the Czech Republic, which have permitted domestic energy prices to rise to European levels but are nonetheless net carbon exporters, are exceptions to this argument. This is apparent in their low ratios of greenhouse gas emissions to GDP (Figure 8).

Chart 7 Net carbon importers have smaller carbon footprints



sible adoption of carbon consumption-based climate change metrics could be counter-productive.

Conclusion

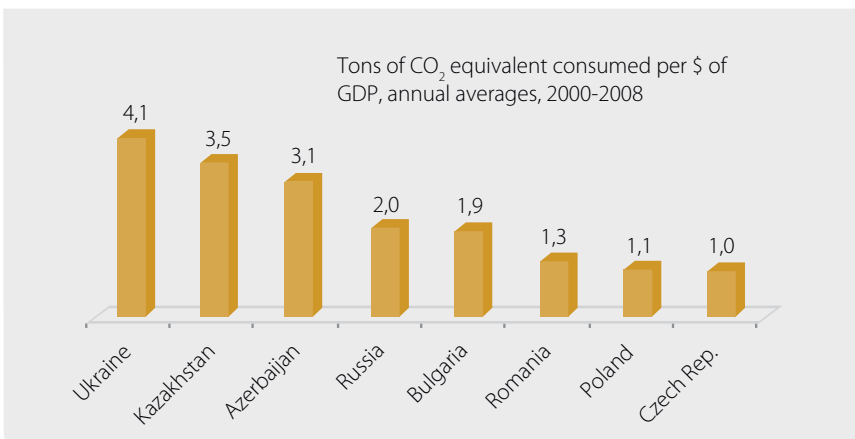
Carbon production, not consumption, seems likely to remain the basic metric on which the global climate governance framework will rely for the foreseeable future. In addition to facing important data and methodological challenges, more heavy reliance on consumption-based carbon metrics could reward countries for inefficient energy use and reduce incentives to adopt climate change mitigating technologies.

Rather than accusing those developed countries (in Europe) that have significantly reduced their greenhouse emissions (per dollar of GDP) of fobbing their carbon off on the developing world, emphasis should instead be placed on helping developing economies achieve similar reductions—without imperiling their longer-term development prospects.

Ben Slay is Senior Economist, UNDP Regional Bureau for Europe and CIS.

The author is grateful to Bryan Schell for research assistance, and to Balázs Horváth, Daniela Stoycheva, and Gabriela Fischerova for helpful comments.

Chart 8 Net carbon exporters have larger carbon consumption



UNDP calculations, based on the carbon data in Peters et al., and on the GDP data (calculated at market exchange rates) presented in the IMF's April 2011 World Economic Outlook.

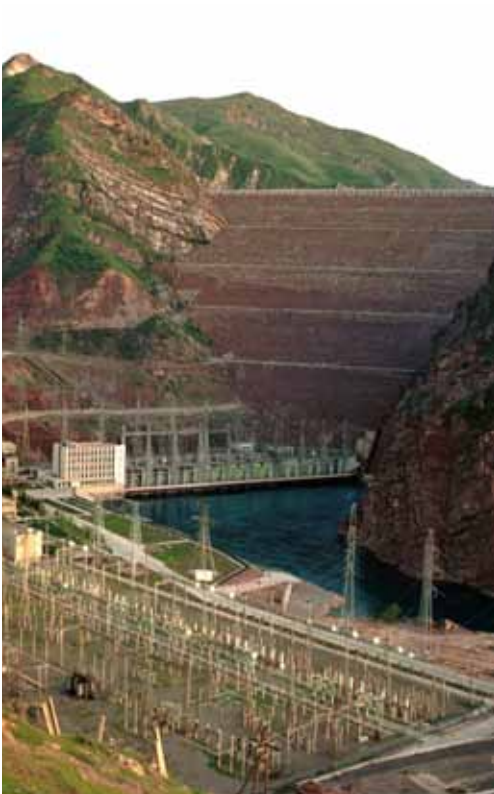
desired. While there is nothing about being a net carbon exporter that forces countries to adopt policies that encourage energy inefficiency, their correlation with carbon exporting status does not appear to be coincidental.

As explained above, the possible adoption of climate change metrics that place a greater emphasis on carbon consumption (as opposed to emission) would have the effect of making it easier for energy-inefficient carbon exporters to meet relevant carbon reduction targets. More energy-efficient carbon importers would likewise find it more difficult to meet relevant carbon reduction targets. In terms of promoting energy efficiency and encouraging global reductions in greenhouse gases at the lowest possible cost, the pos-

Carbon finance: Opportunities versus reality

PAGE 14

John O'Brien



With the exception of big hydropower plants, countries in Europe and Central Asia make only limited use of renewable energy sources.

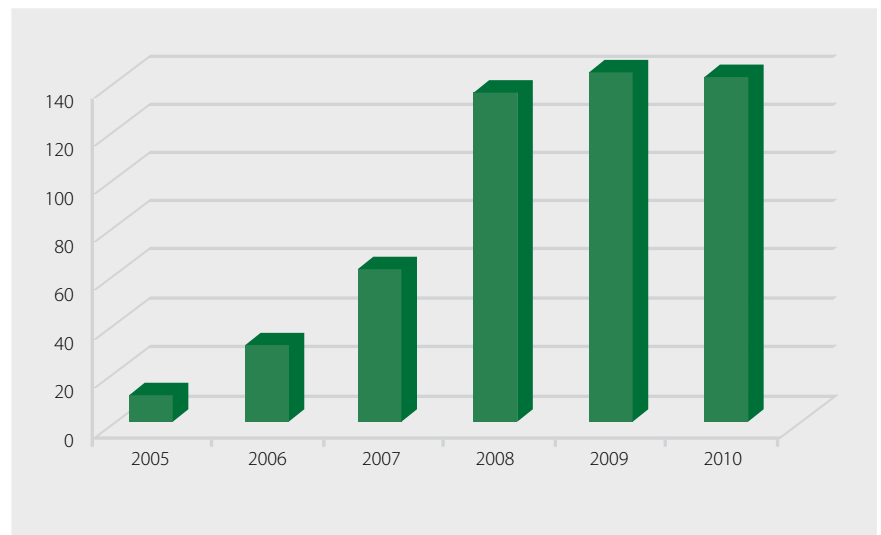
© World Bank/Gennadiy Ratushenko

Global carbon market: The basics

As part of the 2001 Marrakech Accords within the framework of the Kyoto Protocol, the international carbon market seeks to stimulate investment in emissions reduction projects (renewable energy, energy efficiency, methane capture from landfills and coal mines, destruction of industrial gases etc.). Funds generated from the sale of carbon credits are to create the additional incentives needed to allow projects that would otherwise not be commercially viable to go ahead ('additionality'). In theory, the cap-and-trade element of carbon finance allows for greenhouse gas emissions to be reduced at a lower cost than would be the case if direct administrative measures were used to force emissions reductions.

The Kyoto Protocol, which was signed in Japan in 1997 and entered into force in 2004 (with ratification by the Russian Federation), provides for three such carbon trading mechanisms:

Chart 1 Growth in the international carbon market (2005-2010, in \$ billion)



Source: *State and Trends of the Carbon Market 2011*, World Bank.

- **The Clean Development Mechanism (CDM):** Under this project-based mechanism, emissions are reduced in developing countries, and are recorded in certified emission reductions (CERs);
- **Joint Implementation (JI):** Under this project-based mechanism, emissions are reduced in developed countries, and are recorded as emission reduction units (ERUs). The JI is the main mechanism for carbon finance projects in Europe and Central Asia; and

Table 1 Joint Implementation projects in Europe and Central Asia (as of 31 August 2011)

Country	Numbers of projects validated			Comments
	Track 1 ¹	Track 2	Total	
Russia	25	112	137	Designated national authority approval procedures only in place since late 2010.
Ukraine	49	47	96	Regional leader, with the most JI projects approved.
Czech Rep.	58	1	59	In EU ETS. Very limited potential.
Bulgaria	26	12	38	In EU ETS. Very limited potential.
Romania	14	5	19	In EU ETS. Very limited potential.
Poland	17	7	24	In EU ETS. Very limited potential.
Estonia	12	3	15	In EU ETS. Very limited potential.
Hungary	11	2	13	In EU ETS. Very limited potential.
Lithuania	0	16	16	In EU ETS. Very limited potential.
Slovakia	0	1	1	In EU ETS. Very limited potential.

- **International emissions trading (IET):** Permit-based trading of assigned amount units (AAUs) between countries.

CDM and JI projects have to prove additionality under international regulatory scrutiny, in order to be registered with, and awarded carbon credits (CERs or ERUs), by the CDM Executive Board or JI Supervisory Committee, respectively.

The global carbon market has expanded from humble beginnings in 2002 to some \$142 billion in carbon credit trading annually. Chart 1 shows this rapid growth—as well as its stagnation over the past two years. The European Union's Emissions Trading System (EU ETS) is the largest single source of demand for CERs and ERUs.

Despite its impressive growth, the global carbon market faces an uncertain future after 2012. The Kyoto Protocol's first commitment period (for binding greenhouse gas emissions reductions) ends next year, and questions about future arrangements for carbon trading have not yet been definitively resolved. Moreover, the Europe and Central Asia region, which is one of the world's most energy intensive, has not benefitted nearly as much from the carbon market as might be expected. This article explains why this has been the case, and suggests some possible post-2012 scenarios for the carbon market. Most of the validated climate change projects to date in the region are JI projects. As Table 1 shows, only 400 of these had been approved as of 31 August 2011. By contrast, there are over 5000 registered CDM projects globally.

Understanding financial markets is key to understanding the evolution of international carbon markets. Prior to the EU ETS's first phase,² the only major buyers of carbon credits

were the Dutch Government's ERUPT programme and the World Bank Prototype Carbon Fund. Commercial banks perceived the market as too small and risky. After 2005, once investments in CDM and JI projects became possible under the ETS, bank participation increased substantially. However, their business model emphasizes trading in CERs and ERUs as financial instruments, rather than providing longer-term investment finance for projects that reduce greenhouse gas emissions. Commercial banks tend to provide carbon markets with liquidity rather than large amounts of additional debt or equity capital; they typically do not provide the 'additional' funding needed to make climate change mitigation projects commercially viable. In part for

1 Track 1 projects are those in which the determination of eligibility to receive emission reduction units, and of project monitoring and verification, are solely subject to national rules and approvals of the host country. Track 2 projects require an additional second approval of the Joint Implementation Supervisory Committee (JISC) and must follow the JISC rules concerning monitoring and verification in addition to the national approval. Track 2 projects have higher transaction costs than Track 1 projects.

2 The ETS's first pilot phase ran from 2005 until 2008. Its second phase runs until 2012.

this reason, the CDM and JI mechanisms continue to play only small roles in financing renewable energy or energy efficiency projects.

More investment, or more bureaucracy?

The international climate negotiations during the past two years have seen the emergence of a number of new ideas and proposed financial instruments, which would encourage much greater post-2012 investment in emission reduction projects. These ideas, which are still at a conceptual stage and are only partly defined (none are yet fully operational), include:

- **NAMAs.** Developed countries have much stronger incentives to reduce greenhouse gas emissions under the Kyoto Protocol than do developing countries. However, nationally appropriate mitigation actions (NAMAs) may be undertaken by developing countries on a voluntary basis, when the appropriate technology, financing, and institutional capacity is in

place. Approved NAMA projects must be validated by the central NAMA registry. While NAMAs hold great progress for accelerating climate change mitigation, much remains to be done in order to develop standards and baselines and for their monitoring, reporting, and verification.

- **PoA.** By bundling together similar CDM projects into a single project managed by a coordinating entity, a programme of activities (PoA, or 'CDM plus') can reduce transactions costs, particularly those associated with project documentation. Lower transactions costs could make otherwise infeasible projects commercially viable.
- **REDD.** Reduced Emissions from Deforestation and Forest Degradation allows forestry projects to earn carbon credits, which should reduce the amount of deforestation and forest degradation happening globally. As deforestation and forest degradation account for about a quarter of total greenhouse gas emissions, measures to improve forestry projects' access to carbon finance could accelerate climate change mitigation.
- **The GCF.** The Green Climate Fund was accepted at the international negotiations in Cancun in late 2010, as part of the \$100 billion per annum that was agreed as necessary to address the mitigation and adaptation needs of developing countries. While the World Bank is charged with managing the GCF on an interim basis, the exact operational modalities are yet to be worked out.

Table 2 National and regional emissions trading schemes (as of 31 August 2011)

Country/region	Scheme	Status	Comments
European Union	EU Emissions Trading System (ETS)	Operational	Operational since 2005. Phase III will start in 2013, with aviation included.
New Zealand	New Zealand ETS	Operational	Operational since 2008. Will continue from 2013 with an increasing cap on the price of credits (currently circa \$20).
USA	None currently	Under discussion	An ETS for California is to be introduced in 2012. A national ETS could be introduced later.
Japan	None currently	Under discussion	A domestic ETS could be introduced in 2013.
Korea	None currently	Under discussion	A domestic ETS could be introduced from 2013-2015.
Australia	None currently	Under discussion	A \$23 per-ton carbon tax will be introduced in July 2012; this should be expanded into a national ETS.
China	None currently	Under discussion	A domestic ETS may be piloted in 2013, possibly leading to a full scale national ETS from 2015.

It is too early to ascertain the impact of these new mechanisms; predicting the carbon market's future is no easy task. It is clear, however, that carbon markets are becoming ever more complex and confusing—even for those who have been working in them for many years. In addition, the plethora of new national emissions trading schemes that are now under consideration in the United States, Japan, Korea, Australia, and China could create multiple regional carbon markets, rather than a single global carbon market. Table 2 summarizes some of the new national and regional emissions trading frameworks that are currently under discussion.

Carbon projects in Europe and Central Asia: The promise . . .

Because the economies of the former Soviet republics are among the world's most carbon-intensive, the potential demand for energy efficiency and renewable energy investments in this region is very high. The region is characterized by high fossil fuel consumption (especially per dollar of GDP produced), limited use of renewables (other than big hydro), and limited application of energy efficiency technologies (due mainly to household energy prices that are held below cost-recovery levels—a legacy of the pre-transition era). Energy bills can absorb as much 20 percent of low-income household expenditures, approximately double the shares found in the EU. The building stock in most countries is likewise 2-3 times more energy inefficient than in the EU. Despite nearly universal electricity grid connection, millions of households continue to heat with wood. Few countries have green tariffs or other such mechanisms to promote renewable energy, and those that are in place do not always work properly.

. . . and the reality

These facts suggest that the carbon market should play an important role in financing emissions reduction projects in the region. However, this has not been the case. Instead, 95 percent of the 2500 registered CDM projects are in the Asia-Pacific and Latin America regions. Only 212 JI projects from Europe and Central Asia had reached the validation stage as of late 2011.

Four factors are responsible for the region's modest progress in attracting carbon finance:

High transactions costs. A typical CDM or JI project takes over two years to be registered and has transaction costs of over \$200,000. There are significant costs involved in proving project additionality, getting it validated and registered, and then in the verification of emission reductions. For energy efficiency projects, the vast majority of which are small (less than \$100,000) and produce relatively modest emission reductions (a few thousand tons of CO₂ annually), these high transactions costs can make projects commercially infeasible. As a result, less than 10 percent of all registered CDM and JI projects are in energy efficiency. This is particularly an issue for JI projects, which comprise the vast bulk of climate change mitigation projects pursued in the region.

EU accession. When ten transition economies (the Czech Republic, Poland, Hungary, Slovakia, Slovenia, Estonia, Latvia, Lithuania, Bulgaria, and Romania) entered the European Union in 2004 and 2007, they also joined the EU Emissions Trading Scheme. CDM and JI projects in these countries can only be developed for areas that do not come under the

ETS—which covers over 10,000 point sources that are responsible for the bulk of the EU's greenhouse gas emissions.

Russia and Kyoto: A match made in heaven . . .

or not? In principle, the region's largest economy combined with relatively high levels of greenhouse gas emissions per dollar of GDP creates tremendous potential for Russia to benefit from carbon finance. The International Energy Agency estimates that, under the Kyoto Protocol, Russia has a surplus of some 3 billion tons of CO₂ equivalent during 2008-2012, worth some €30 billion. This sum could be monetized either by the sale of AAUs or by JI projects. The reality has been different, however. Six years elapsed between Russia's 2004 ratification of the Kyoto Protocol and the approval of the country's first JI projects. While over 100 JI projects have been prepared in Russia, only 18 have thus far been approved. These would reduce emissions by only 30 tons of CO₂ equivalent, which would have a market value of approximately €300 million—one percent of the anticipated total. It is safe to say that incentives to invest in energy efficiency and renewables technologies in Russia have not really been influenced by the international carbon market. In light of this, it is perhaps not surprising

that Russia is currently opposing a second commitment period (for binding emissions reductions) under the Kyoto Protocol.

Establishing designated national authorities (DNAs) has taken longer than expected. The DNAs that approve mitigation projects and monitor emissions reductions at the national level are at the heart of the Kyoto institutional framework. As the Russian example shows, establishing DNAs and getting them to work well has often taken much longer in this region than elsewhere. Moreover, even after DNAs have been established, awareness about them has in some countries been quite limited. By contrast, the Chinese government not only moved quickly to put in place an effective DNA: it also mobilized the participation of Chinese companies in the carbon market. As a result, there are currently over 2000 registered CDM projects in China. (This has given rise to the humorous observation by some commentators that CDM stands for 'China Development Mechanism'.)

The uncertain future: Prospects for the post-2012 carbon market

The past decade has seen a large gap between the potential for carbon finance in Europe and Central Asia and the reality. What are the prospects for the future?

They are closely linked to the future of the carbon market—which, as of late 2011, looks quite uncertain. This is due to the lack of clarity about the future of the Kyoto Protocol during the second commitment period, and of the CDM and JI mechanisms. Most developing countries are unwilling to discuss the future of these mechanisms in isolation from discussions on the future of the Kyoto Protocol as a whole. Some countries want a second commitment period and the Kyoto Protocol's continuation; others want a second commitment period followed by a new overarching global climate change agreement. These uncertainties imply that the large gap between the potential and the reality of carbon finance in the region could, regrettably, last for some years. On the other hand, the opportunities that could be offered by new carbon finance mechanisms, and by government policies promoting renewable energy and energy efficiency technologies, should provide important long-term support. The challenge for policy makers (including negotiators) in the international climate negotiations is to turn the vision of a fully functioning, fungible, transparent, and effective international carbon market into a reality. Once that happens, the opportunities for successful new investments in emission reduction projects in the Europe and CIS region are enormous.

John O'Brien is UNDP Europe and CIS regional technical advisor for energy and environment.

Croatia: 'Going green with Gašpar'

Louisa Vinton



The city of Sisak agreed to serve as a pilot site. In two years, 24 demonstration projects cut energy consumption by 13 percent and saved the city budget \$220,000 per year. The Sisak pilot also eliminated 780 tons of CO₂ emissions in 2010.

© Gordana G. Gerber

Early in 2011 the energy efficiency team in Croatia's Ministry of Justice was alarmed at abnormally high rates of water use recorded at Lepoglava Prison, the country's largest penitentiary. This alert prompted a probe of the underground pipes, some of which date back to when the facility was a monastery under Austro-Hungarian rule. A huge leak was located and fixed at a cost of just \$4,000. The resulting savings: \$225,000 per year. Without the vigilant monitoring and quick diagnosis provided by the energy efficiency programme run by the United Nations Development Programme (UNDP), this loss would have gone unnoticed.

The Lepoglava Prison story is just one example of the massive savings that UNDP's energy-efficiency programme is generating all across Croatia's public sector. After six years of operation, the programme has reduced public spending by \$18 million per year – annual savings well in excess of the total cost of the programme. At the same time, the programme has cut greenhouse gas emissions by 12 percent in the 5,900 public-sector buildings where it works, thereby reducing Croatia's annual CO₂ emissions by 63,000 tons, or 0.2 percent per year. What is more, these reductions have been achieved mainly through simple behavioral changes and other low-cost measures. Savings are set to grow exponentially as capital investments stimulated by the programme come on stream.

Both the national scope and the technical sophistication of the UNDP programme are unusual. Launched in 2005 with a \$4 million grant from the Global Environment Facility (GEF), the programme set out to remove barriers to energy efficient practices and technologies in Croatia. As with many countries emerging from state socialism, Croatia's energy use remains highly wasteful: 135 kilograms of oil equivalent are needed to produce \$1,000 of GDP—well above the European average. The programme was originally meant to encourage use of low-energy compact fluorescent light bulbs (CFLs), but by the time the project was approved, the CFL market was already flourishing. So the project focus shifted to promoting energy efficiency in public-sector buildings.

This was because buildings are one of the biggest contributors to climate change. But the idea was also that energy efficiency would not catch hold unless the government itself set a good example. Before haranguing the public, it was thought, the government should deliver its own results. Hence the name—'Put your own house in order'—assigned to one of the main project components. This covered buildings owned by ministries and central agencies, while a second, similar component focused on facilities owned by Croatia's 20 counties and 127 cities. In both cases, the baseline was simple but daunting: at the project start, no measures or policies existed to monitor or manage, much less reduce, energy use at any level of the Croatian public sector.

Winning political commitment to the project was thus a crucial first step. This time-consuming process owed its success to a combination of efforts. First, the city of Sisak—Croatia's ninth-largest city, with a population of 50,000 and a legacy of polluting industries and lingering war damage agreed to serve as a pilot site. Over two years, 24 demonstration projects in Sisak buildings cut energy consumption by 13 percent and saved the city budget \$220,000 per year. The Sisak pilot also eliminated 780 tons of CO₂ emissions in 2010.

This initial success piqued the interest of officials in other towns. The project transformed this interest into public commitments by encouraging city mayors and county prefects to sign a 'Energy Charter' in which they pledged to implement systematic energy management in the facilities under their jurisdiction. Within eight months, all 127 mayors and all 20 county prefects had signed on to the Charter, which is now on prominent display in virtually every city hall in Croatia. Following this lead at the local level, 15 of 16 government ministries made the same vow.

At the same time, the project embarked on an ambitious public information campaign about the need to reduce energy consumption and by providing helpful tips and tools. This campaign centered on an animated character, Gašpar Energetić (whose name plays on the Croatian word for 'saver'), who helps his big-spending neighbour Trošimir save money by turning off the lights and using efficient appliances. Gašpar also dispenses advice from his own Facebook page, which has almost 5,000 friends and counting. And Gašpar stars in a short film aimed at children, *Think of Tomorrow*, which has been distributed in 500,000 copies in major newspapers and is also shown during educational 'school hours' led by the project team.

One of the most recent of these saw the country's popular President, Ivo Josipović, join seventh-graders at the Marin Getaldić School in Dubrovnik in a vigorous question-and-answer session on climate change. The President was even called to the blackboard to explain what his office is doing to save energy.

To complement these efforts, a network of information centers was set up to give citizens hands-on information and advice on energy efficient technologies for residential houses. These reflect a unique partnership: counties and towns provide the space and staff, while private-sector producers of energy-efficient construction materials and appliances donate demonstration equipment and advice. There are six of these centers in all. The newest one, in Zadar, also houses a Solar Education Center, which provides training in solar technologies and graduated its first class of certified assemblers of solar water heaters in June 2011. In this way, the programme is also working to create 'green jobs.' The project has also erected scores of informational displays to date, 98 of these info-points have been established in 43 towns and 12 counties. In addition, in partnership with the city of Osijek, an energy efficiency info-center has been set up in a passive solar house to showcase the potential for low-energy residential construction. Such efforts have driven a steady increase in public knowledge.

Building public support was just the beginning, however. The programme first tackled its main target, public-sector buildings, by using 'energy audits' to identify weaknesses that could be addressed through modest capital investments. When the project started, energy auditing was an infant industry, with just six entities on the market. Between 2006 and 2010 the UNDP project conducted 1,069 energy audits covering 2.5 million square meters in 1,346 buildings. This stimulus helped build an industry that is now mature and thriving, numbering 17 companies and more than 150 energy-audit experts. In addition, the UNDP energy audits stimulated energy-efficiency investment

projects worth \$30 million, a figure that underlines the potential not only for budget savings but for future 'green job' creation in a country struggling with an unemployment rate of almost 20 percent.

But the real heart of the programme is the Energy Management Information System (EMIS), a national system that enables the real-time monitoring and management of energy consumption in public-sector buildings. (Since huge amounts of energy are used to pump water in public buildings, and large amounts of water often go to waste, the system also measures water usage.) EMIS is a web-based software that is both comprehensive and easy to use, and is available to all Croatian public-sector institutions free of charge. Since data from EMIS are readily accessible and comparable, the system makes energy usage more transparent and thus also helps to fight misuse of resources. At first, data on energy usage were collected and entered into the system by hand, but the programme has begun to install 'smart metering' equipment that registers usage remotely and automatically.

To ensure sustainability, energy and water monitoring and management are vested in the hands of teams of civil servants. In six years, 10,000 Croatian civil servants have benefited from specialized energy-efficiency training provided by the programme, and UNDP is now working to ensure that 'energy manager' is recognized as a standard public-sector position.

The reach of the system is impressive. More than 5,900 separate facilities (2,400 under ministries and 3,500 in cities and counties) have been hooked into EMIS, with the programme aiming to reach 7,000 buildings by the end of 2011. In square-meter terms, as confirmed by a GEF evaluation in May 2011, 52 percent of all public-sector buildings in Croatia are now covered by the energy-efficiency programme. The scope and systematic nature of energy and water monitoring make possible the sort of dramatic success seen at Lepoglava Prison.

With cities, counties, and ministries reaping big savings that can be devoted to urgent needs in health, education, and welfare, it's no surprise that the UNDP project has acquired the status of an official government programme. As of June 2011, the project runs entirely on government funding—which has survived the budget cuts mandated during Croatia's prolonged recession. The government has now committed to fund the programme until 2013, to ensure a smooth transfer of EMIS and other parts of the programme to national institutions. In all, the Government contribution will exceed \$16 million, more than four times the initial GEF grant.

There are other indicators of success. An independent GEF evaluation conducted in May 2011 hailed the achievements of the project as 'unique', not only compared to other Southeast European countries but also against the best performers in energy efficiency among European Union (EU) member states. The project, it said, 'introduced and established energy efficiency as a policy priority and practical tool for effective housekeeping in the whole public sector in the country'. The results and impact were

rated as 'more than highly satisfactory', the highest category.

Croatia's achievements in 'putting its own house in order' have set a course towards the tighter energy-efficiency standards expected within the EU, which the country will join on 1 July 2013. They have also set an example that other countries are eager to emulate. The project has already been replicated, at government request, in neighboring Montenegro, and a similar programme is being prepared for Bosnia and Herzegovina and parts of Serbia. Expertise developed in the project has also been sought in countries as diverse as Belarus and Tajikistan. To meet this demand, a new concept is now on the drawing board: the creation of an international 'knowledge hub' on energy efficiency in Croatia.

Louisa Vinton is the United Nations Resident Coordinator in Croatia.

The 'Green Bridge' for Rio and beyond

PAGE 22

Emilia Wahlström



Kazakhstan – one of the world's largest carbon emitters in relative terms - is trying to position itself as a green growth leader through the Astana Green Bridge initiative. Will these solar panels help to lower its carbon footprint?

© UNDP Kazakhstan

On the threshold of the 'Rio+20' UN conference on sustainable development (in June 2012), the sustainable development concept is being transformed into a discussion on the need to move to low-carbon development and green growth. But what does this really mean? What is the role of transition economies in helping to bring it about? This essay asks whether the 'Green Bridge' initiative championed by Kazakhstan at the UNESCAP and UNECE environmental conferences of 2010 and 2011 could provide the answer to these questions.

Rio+20—How far did we get in 20 years?

The 1992 Earth Summit in Rio de Janeiro demonstrated the need to integrate social development and economic progress with environmental protection. This summit popularized the concept of sustainable development and posed it as a global need, applicable for all nations and communities. The 1992 Summit also contributed to the development of a new international policy discourse, in which a large group of international and regional organizations, as well as non-governmental individual and group actors, interact and consider alternative policy options.

Twenty years later, the objective is to renew political commitment to sustainable development, to assess progress to date and the implementation of the outcomes of the intervening sustainable development summits, and to address new and emerging challenges. Two main themes will be discussed in June 2012: the 'green economy' in the context of sustainable development and poverty eradication; and the institutional framework for sustainable development. While there is no unique definition of the term green economy, it focuses primarily on the intersection between environment and economy, recognizing that achieving sustainability rests almost entirely on getting the economy right – and underlining that synergies between the two will eventually prevail over tradeoffs. Although the last two decades have seen economic growth and some success in attaining the

Millennium Development Goals, the overall development agenda has been fragmented. The economic pillar continues to receive priority, with social and environmental matters accorded less attention. Rio+20 offers the chance to take stock of what has happened in the last 20 years, and get sustainable development, and the planet, back on track.

'Green growth': Old wine in new bottles, or something genuinely worth considering?

The approach to Rio+20 is marked by major and controversial issues. While many developed countries are focusing on the green economy, the developing world (with the G77 and China in the lead) is concerned that such a focus will lead to an over-emphasis on environmental issues driven by those countries that can 'afford to be green'. Fears that an undue focus on the environmental pillar will lead to unfair restrictions in finance, trade, and aid are also present. Many developing countries are concerned that a new, greener economic model could, in effect, be a step backwards from what has already been agreed upon. What is being done to constructively address these concerns?

Kazakhstan, a rapidly developing middle-income country, sits firmly in the heart of Eurasia. As such it has the privilege of belonging to two regional UN groupings—the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and United Nations Economic Commission for Europe (UNECE). The government of Kazakhstan has sought to use its Eurasian location to position itself in the international arena, inter alia by hosting in Astana ESCAP's sixth ministerial conference on environment and development in Asia and the Pacific in September 2010, and UNECE's seventh 'Environment for Europe' ministerial conference in September 2011.

By hosting these two conferences, the government has sought to position Kazakhstan as a 'green growth' leader, particularly in terms of serving as a bridge between environmental discourse in Europe and Asia. Particularly interesting, and perhaps controversial, is the fact that this is coming from one of the world's largest carbon-emitters (approximately 18 metric tons of CO₂ per capita).

With international support, Kazakhstan in 2009 started to elaborate the concept of green growth, which was later developed into the Astana Green Bridge initiative. This initiative, which is based on consultations among international organizations, NGOs, and representatives of governments and the private sector, seeks to provide a platform for dialog and cooperation in the run-up to Rio+20. It also seeks to strengthen integration between Europe, Asia, and the Pacific regions. After being introduced at the UNESCAP and UNECE conferences in 2010 and 2011, the initiative is to be presented by the President of Kazakhstan in Rio in June 2012.

The Astana Green Bridge initiative promotes green growth, low-carbon development, climate change, biodiversity, sustainable urban development, eco-efficient use of natural resources and investments in ecosystem services, environmental safety, and other topics. It emphasizes the importance of mitigation and adaptation to environmental changes, together with the need to eliminate (where possible) environmental damage where it has already occurred. Through technical support and technology transfer, capacity building and financial support from the European region, the initiative will help developing countries

in Asia to move faster toward a green economy. European countries are expected to benefit not only from reduced pressures on the global environmental commons, but also from better access to Asian markets for green goods, services, and technologies. In this way the Green Bridge can provide concrete solutions to real world problems of sustainable development, solutions that span the 'north-south' divide. The initiative is expected to complement existing institutions by working primarily as a practical collaboration tool for cross-border private and public sector investments into green economy.

A green bridge to where?

Like many other green growth strategies, the Green Bridge initiative raises the question of whether greening economic growth is enough. Critics note that we can never achieve sustainable development simply through investments, technology transfer, and innovative market mechanisms. Some sceptics argue that green growth is still growth, which the planet can no longer accommodate. Even if stable institutional arrangements for financing ecosystem services are put in place, we are still depleting the planet's non-renewable resources and polluting the environment. Skeptics likewise point out that green economy concepts are supported by investment bankers and other representatives of global markets who are responsible for a lot of the brown water that has gone under the bridge. Packaging economic growth in a green wrapper is not the same as fully taking environmental issues into account. Not all pollution and unsustainable resource use issues can be addressed via economic mechanisms and technologies.

Other critics argue that the root causes of poverty, inequality, and oppression are not addressed by the green economy concept. The social pillar of sustainable development seems to get very little attention from the governments forming the green economy agenda. The fact that the Agenda 21 process seems to have been forgotten is seen by some observers as confirmation of the social pillar's marginalization. The argument that sustainable development requires decentralizing decision-making to communities ('think global, act local') is not as prominent as it



Can Kazakhstan be a bridge between the Europe and Asia-Pacific regions?

© Peretz Partensky / Langton Labs

once was. While civil society has been involved in the articulation of the Green Bridge programme, the community development angle is certainly not very pronounced in its documents.

Conclusions

The Green Bridge initiative shows that the government of Kazakhstan is attempting to reconcile rapid economic development with environmental sustainability, and that it is eager to mediate the competing

interests of developing and developed nations. It also shows that even countries with large carbon footprints can rally to the cause of sustainable development. Kazakhstan therefore expects the Green Bridge to become a practical tool for cooperation leading up to Rio+20, and beyond. It anticipates both the European and Asian regions to benefit from the initiative.

However, critics suggest that we already have enough mechanisms promoting sustainable development—and what we really need is more action. Perhaps simplifying the institutional framework for sustainable development, rather than adding yet another layer to it, would be conducive to more action. One could also ask where Latin America and Africa fit in, and whether they will be able, or willing, to join the Green Bridge initiative at Rio+20.

So while it is clear that the Green Bridge builds on the principles of sustainable development, it is less clear whether it is precisely the type of mechanism we need. While today we may lay the foundation for a green bridge, we have to be clear on what the bridge should look like, who will cross it, and what kind of future is waiting at the other side.¹

What do you think? Ahead of Rio+20, is a green economy the answer we are looking for, or are we fooling ourselves and forgetting what sustainable development is all about? Is the Green Bridge part of the solution, or does it merely complicate the puzzle?

Leave your comment on developmentandtransition.net.

Emilia Wahlström works for UNDP-Kazakhstan.

¹ For more on these issues, see United Nations Department of Economic and Social Affairs, *Transition to a Green Economy: Benefits, Challenges and Risks from a Sustainable Development Perspective*, UNDESA DSD, UNEP, UNCTAD; and Segger, M.-C., Khalfan, A., and Nakjavani, S., 'Weaving the Rules for Our Common Future: Principles, Practices and Prospects for International Sustainable Development Law', Centre for International Sustainable Development Law, Montreal, 2002; and <http://www.guardian.co.uk/environment/2011/mar/31/rio-20-earth-summit>.

Biofuels and food prices



Biofuels: The promise

Concerns about the depletion of fossil fuels, energy price volatility, and other factors have in recent years led many countries to take a closer look at renewable energy, including biofuels. Countries in North and South America and in Europe have significantly increased the share of biofuels in their total energy balances. For example, in 2010 the share of biofuels in the total energy balance in the US and the EU reached around 4 percent, while the share of biofuels in Brazil peaked at close to 25 percent.

In comparison with these regions, the biofuels industry in the transition economies of Europe and Central Asia is in its infancy. In most countries, biofuels constitute less than one percent of the national energy balance. However, this region has great biofuels potential, especially in grain producing countries like Belarus, Hungary, Kazakhstan, Russia, Serbia, and Ukraine. Biofuels' prospects in these countries are mainly determined by climatic and geographic conditions, by economic and political interests, and by limited grain storage capacity (which makes biofuels more attractive because they can be stored more easily than grains).

The first bioethanol¹ plant in the former Soviet republics was constructed in northern Kazakhstan in 2006. The government viewed the "Biokhim" plant (annual production capacity of 57,000 tons) as a breakthrough project, which was supported by a \$60 million loan issued by the Development Bank of Kazakhstan. Construction of a bioethanol

Belarus and Ukraine have responded to national energy security concerns by promoting the cultivation of colza for biodiesel production.

© Emmaunelhammel

¹ Chemically, ethanol and bioethanol are indistinguishable. The only difference is that ethanol can be extracted as a by-product from a chemical reaction with ethylene and other petroleum or non-renewable products, while the production of bioethanol does not involve chemical reactions with petroleum products.

plant in southern Russia began soon after; completion is expected by the end of 2011. In addition, in Russia there are some 140 alcohol producing plants, which can be retrofitted for bioethanol production. Belarus and Ukraine have responded to national energy security concerns by promoting the rapid expansion of colza and sugarcane cultivation for biodiesel production, and by retooling alcohol producing plants (three in Belarus, 42 in Ukraine).

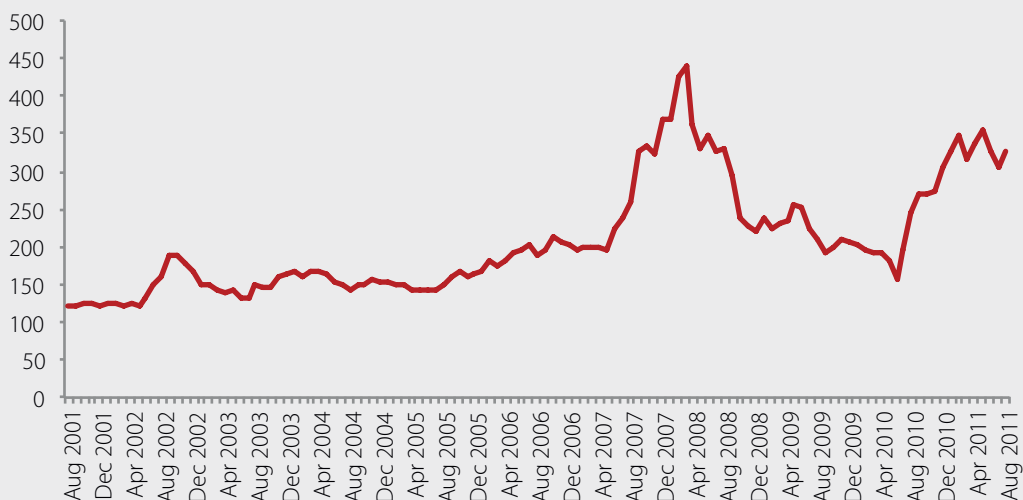
Biofuels: The barriers

Despite its potential, the biofuels industry in these countries faces a number of obstacles. While some of these are common to biofuels everywhere, a number are specific to the region.

Regulatory barriers and protectionism. Customs codes in Kazakhstan and Russia do not distinguish between spirits and bioethanol; heavy excise duties (around \$1/liter in 2008-2010) are imposed on both. This makes export-oriented production of bioethanol unprofitable. (For example, because bioethanol produced by "Biokhim" faced high excise duties in Russia, sales were confined to Kazakhstan's small domestic market). While the 2010 creation of the EurasEC customs union by Belarus, Kazakhstan, and Russia offers some hope in this respect, the reclassification of bioethanol tariffs has not yet been taken up. Ukraine, on the other hand, has introduced an excise-free regime for all kinds of biofuels, for the 2009-2014 period.

Subsidies for domestic companies in importing countries are a second serious obstacle for biofuels produced (for export) in transition economies. In Ukraine, where

Figure 1 International grain prices in nominal USD (2001 - 2011)



plants producing biodiesel from colza are not working at full capacity, colza exports to European countries (especially Germany) are growing rapidly, thanks to colza sales to European biofuel companies whose production is subsidized by the government or the EU. Such protectionism pushes transition economies into the role of providing primary commodity inputs (e.g., grain, sugarcane, colza) rather than producing and exporting refined biofuels.

The food-fuel trade-off and rising production costs. Increasing competition between crops that can serve as inputs for producing either food or fuels, and rising prices for agricultural raw materials (especially grain), also pose risks to the sector's development prospects. The dramatic rise in grain prices from \$100 to \$300 per ton in 2008 (Figure 1) jeopardized the existence of the region's nascent bioethanol industry. In Kazakhstan, these soaring prices contributed to the bankruptcy of the vaunted "Biokhim" project, which was the only domestic producer of bioethanol. Moreover, many political figures in the country blamed bioethanol producers for this spike in food prices. In March 2011, the government responded by authorizing the imposition of export quotas on commodities used in bioethanol production, in case of threats to food security.

In 2008 and 2010, in light of poor harvests and rising food prices, the Kazakhstani and Russian governments introduced bans on grain exports, which helped to reduce the pressure on domestic food prices. These bans suggest that governments of these countries view the production of biofuels from grain surpluses (even from a third-class grain) as a luxury. At present, the Kazakhstani and Russian governments have turned their attention to second generation biofuels (produced from waste materials like straw, wood chips, etc.).

The social dimension

High and rising food prices are a serious problem for poor households in the region. This is especially the case in countries like Kyrgyzstan and Tajikistan, which are dependent on grain imports from Kazakhstan and Russia. Since poor households tend to spend more of their income on food, bioethanol production has the potential to harm the poor not only in Kazakhstan and Russia, but also in neighbouring countries.

Several international organizations have studied the magnitude and implications of rising food prices. The multi-agency report 'Price volatility in food and agricultural markets' found that, after four decades of mainly declining or flat trends, food prices increased by 64 percent (in real terms) during 2002-2008. The World Bank 'Food Price Watch' found that food prices during 2010-2011 regained their 2008 peak. These and other studies stress that rising food prices cannot be ascribed solely to biofuels. Market "fundamentals"—economic growth, weather-related stocks and production costs—as well as market speculation, have also put upward pressures on food prices in recent years.

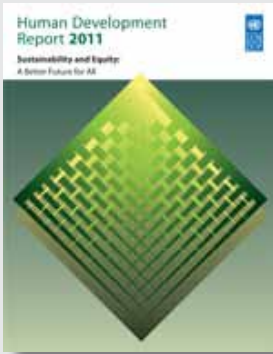
Despite their potential for biofuels production, the transition economies of Europe and Central Asia—like other countries—face trade-offs between food and energy security, equity, and environmental sustainability. The choices and tensions they represent seem

likely to remain on the front burner for years to come.

Assemgul Kalieyva, MA, Brandeis University, Massachusetts, USA

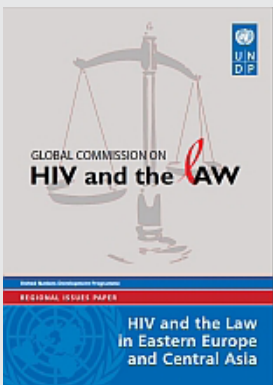


Publications



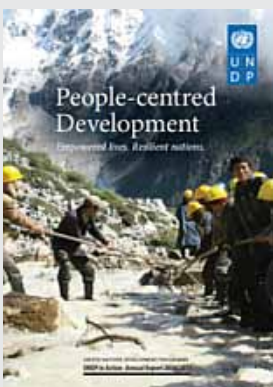
2011 UNDP HUMAN DEVELOPMENT REPORT – SUSTAINABILITY AND EQUITY: A BETTER FUTURE FOR ALL

The 2011 Human Development Report argues that the urgent global challenges of sustainability and equity must be addressed together. The report identifies policies on the national and global level that could spur mutually reinforcing progress towards these interlinked goals. Bold action is needed on both fronts, the Report contends, if the recent human development progress for most of the world's poor majority is to be sustained, for the benefit of future generations as well as for those living today.



HIV AND THE LAW IN EASTERN EUROPE AND CENTRAL ASIA

This report covers issues related to HIV and law in Eastern Europe and Central Asia. Many laws, policies and practices in the region are significant barriers to an effective and human rights-based response. In many instances punitive and coercive laws reinforce and perpetuate stigma and discrimination. This document illustrates common challenges, provides specific examples of (dis)empowering legal environments, and proposes possible solutions and good practices.



UNDP IN ACTION 2010/2011: PEOPLE-CENTRED DEVELOPMENT

This report takes stock of achievements made in 2010/2011 and provides momentum for meeting future demands. On the ground in 177 countries and territories worldwide, UNDP continues to assist governments in empowering their citizens through projects and programmes that make a difference in people's lives, allowing for informed choices, and building the groundwork towards more resilient nations.

Upcoming Events

The 6th World Water Forum: Time for solutions

The 6th World Water Forum - Time for Solutions – will take place in Marseille, France from 12 until 17 March 2012. Discussions and workshops at the conference will address global water issues and show how the international community can contribute to addressing global water issues - from access to water and sanitation, to climate change and food safety. To find out more, please visit http://www.worldwaterforum6.org/no_cache/en/worldwaterforum6

South-East European Conference: Save the Planet - Waste Management, Recycling, Environment

The Conference 'Save the Planet' is a communication platform for professionals from South-East Europe involved in environment, waste management and recycling spheres, which will be held in Sofia, Bulgaria from 25 until 30 March 2012. The program will include sessions and discussions on current industry challenges and technical developments. For further information, please visit <http://www.eco.viaexpo.com/en/conference>

Rio+20: UN Conference on sustainable development

The United Nations Conference on Sustainable Development will take place in Rio de Janeiro, Brazil, from 4 until 6 June 2012. It is a historic opportunity to define pathways to a safer, more equitable, cleaner, greener and more prosperous world for all. Solutions for many sustainable development problems, including challenges related to cities, energy, water, food and ecosystems will be discussed by participants from governments, the private sector, NGOs and other stakeholders. For further details, please visit <http://www.uncsd2012.org/rio20/index.php?menu=14>

The next issue of *Development and Transition* (19) will focus on:

Roma in Central and Eastern Europe (April 2012)

The editors welcome contributions.

If you wish to submit an article, please follow the guidelines at www.developmentandtransition.net.