Chapter 5

# Recognising and Rewarding Co-benefits in the Post-2012 Climate Regime: Implications for Developing Asia

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**Eric Zusman**

## 5.1 Introduction

For the past three years, IGES has convened a series of multi-stakeholder consultations on the post-2012 climate change regime with a view toward better understanding Asian aspirations for the future regime and reconciling competing visions over the regime's post-2012 architecture. The consultations produced several noteworthy messages, but none appears more likely to shape impending negotiations than developing Asia's frequently reiterated opposition to binding emission targets on the grounds that hard targets will divert resources from poverty alleviation, energy security, and other development priorities (Pan 2004, Srivastava 2006).[1]

*By enabling developing countries to secure developmental benefits as they mitigate greenhouse gases, bottom-up proposals have the potential to countenance concerns over post-2012 targets and timetables.*

Given developing Asia's growing contribution to global warming, this opposition might lead some to view the prospects of crafting an effective post-2012 regime with pessimism. This chapter will view these prospects differently. Rather than assuming that the mitigation of greenhouse gases (GHG) is incompatible with sustainable development, the chapter focuses on a series of bottom-up proposals that generate what are aptly termed co-benefits (Byrne et al. 1998, Davidson et al. 2001, Munasinghe 2001). By enabling developing countries to secure developmental benefits as they mitigate GHG, these proposals have the potential to countenance concerns over post-2012 targets and timetables and thereby narrow divergent perspectives on a new climate framework (Baumert 1999).

Yet, as will be demonstrated in the chapter, this potential comes with conditions; it turns on how bottom-up proposals operationalise the recognition and rewarding of co-benefits (Halsnæs and Shukla 2007). In particular, this chapter will argue that researchers, policymakers, and climate negotiators would be well advised to consider the following:

- Researchers - standardising "rapid analytical methods" to evaluate the sustainable development contribution of pledged policies (to be verified by an international body with more rigorous primary valuation tools);
- Policymakers - conducting an assessment that prioritises integrated policies that stand to benefit the most from a regime-related tax on pledged policies;
- Climate negotiators - gradually scaling-up institutional reforms with a view toward minimising monitoring and enforcement costs.

For reasons that will soon become apparent, developing Asia is particularly well suited for piloting these recommendations.

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1. For instance, one of our participants, suggesting that developing countries should not be burdened with emissions targets, noted that "the Berlin Mandate, *which has not been rescinded*, provides only for Annex I parties to take up legally binding GHG abatement commitments." This position is also defended on the grounds that the developing world is not historically responsible for much of the world's current emissions and continues to have significantly lower per capita emissions.

This chapter begins by explaining why co-benefits could help reconcile tensions over the post-Kyoto architecture. It then explores the reasons that the current regime and its Clean Development Mechanism (CDM) have thus far failed to capitalise on this opportunity. It follows with an examination of the strengths and weaknesses of post-2012 proposals that nominally address these shortcomings. It concludes by relating results of an IGES questionnaire on co-benefits in the post-2012 regime to the above suggestions for moving forward.

## 5.2 Developing Asia and the Post-2012 Climate Change Regime

Developing Asia is home to nearly half the world's population, two of the world's fastest growing economies (China and India), and emission sources that account for approximately 27% of the world's GHG (IEA 2007). At the same time, much of developing Asia lives on less than two dollars per day (620 million people), lacks access to affordable electricity (most evident in South and Southeast Asia), and struggles to attain the Millennium Development Goals (MDGs) (Table 5.1). Thus, while developing Asia's contribution to global warming makes its participation in the post-2012 climate regime imperative, the region's economic deprivation makes defining the nature of that participation challenging (IGES 2006).

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**Table 5.1 Percentage of the population living on less than one or two dollars a day in select Asian countries**

| | Percentage living on less than $1/ day | Percentage living on less than $2/ day | Year data reported |
|---|---|---|---|
| Bangladesh | 10 | 38 | 2000 |
| Cambodia | 27 | 54 | 2004 |
| China | 10 | 35 | 2004 |
| India | 34 | 80 | 2004 |
| Indonesia | 1 | 16 | 2002 |
| Malaysia | 0 | 4 | 1995 |
| Nepal | 5 | 27 | 2004 |
| Pakistan | 3 | 26 | 2002 |
| Philippines | 3 | 16 | 2003 |
| Sri Lanka | 1 | 12 | 2002 |

Source: World Bank 2007.

Other considerations factor substantially into this challenge. These include the long held impression that developing Asia's lack of input into the current climate regime has resulted in a framework that does not adequately reflect regional interests.[2] They extend further to the frequently heard criticism that the regime's reliance on emission targets and timetables overlooks linkages between GHG mitigation and developmental concerns that are of greater importance to developing Asia's policymakers (Kok and de Coninck 2004, European Environment Agency 2004, IGES 2006). The neglect of these linkages would be more discouraging if not for a third set of factors that may help transform the above challenges into opportunities.

In developing Asia, policymakers have adopted numerous policies and measures that are simultaneously good for the climate and development. These efforts range from

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2. Based on a questionnaire and personal interviews with policymakers in Asia in 2005 and 2006, IGES found that Asian countries, in general, failed to convey their national developmental concerns during international climate discussions. This failure may be attributable to various factors, such as rapid turnover of climate change staff, limited capacity to understand the implications of climate change on sustainable development, and diversion of attention to more immediate national development priorities.

ambitious energy intensity targets and renewable energy standards (China, India, Thailand, Philippines) to sustainable transportation initiatives and fuel efficiency standards (China, India, Indonesia, Philippines) to community-based forestry management and avoided deforestation programmes (Cambodia, India, Indonesia, Lao PDR, Nepal, Pakistan, Philippines, Thailand). While the intent and scope of these efforts varies greatly, in an important respect they share much in common: they can *potentially* generate co-benefits. (See Table 5.2 for a list of co-benefits in different sectors; and Table 5.3 for a list of selected policies and measures that are likely to generate co-benefits in Asia).[3]

**Table 5.2 Examples of typical co-benefits in various sectors**

| Sectors | Co-benefits |
|---|---|
| **Forestry Management/ Avoided Deforestation/ Agriculture** | • National/ local air quality improvement<br>• Land conservation and preservation<br>• Rural development<br>• Employment generation<br>• Flood control/ soil erosion control<br>• Preservation of ecosystem services<br>• Reduced non-point water pollution |
| **Energy** | • National/ local air quality improvement<br>• Energy security (affordability/ accessibility/ availability)<br>• Technology transfer<br>• Employment generation |
| **Transportation** | • National/ local air quality improvement<br>• Energy security (affordability/ accessibility/ availability)<br>• Congestion reduction<br>• Neighbourhood separation from traffic<br>• Noise pollution reduction<br>• Technology transfer<br>• Employment generation |
| **Waste Management** | • National/ local air quality improvement<br>• Employment generation<br>• Energy savings (reduced production and material costs)<br>• Land beautification/ reduced open dumping<br>• Reduction in waste disposal/ collection costs |

## 5.3 Reconciling Competing Preferences over the Post-2012 Regime: Co-Benefits

*Much of the attention is attributable to the growing awareness that developmental co-benefits could help reconcile a fundamental tension over the future regime's architecture.*

Co-benefits, defined as the additional and locally desirable developmental benefits of climate actions (or the GHG mitigation benefits of development actions), have received considerable attention in Asia. Some of the attention is traceable to disputes over the term's definition;[4] as suggested above and indicated in Box 5.1, co-benefits have been treated variously as the climate benefits of developmental actions and the developmental benefits of climate actions (Hiraishi 2007, Ellis 2007).[5] Much of the attention, however, is attributable to the growing awareness that developmental co-benefits could help reconcile a fundamental tension over the future regime's architecture. At the risk of oversimplification, this tension stems from a desire to extend emission targets and timetables to developing Asia and the countervailing concern that doing so would constrain the region's development.[6]

3. There is growing support for the kind of integrated planning that generates co-benefits outside Asia. Examples include the marketing of ethanol in Brazil; the promotion of agro-forestry in Senegal; the construction of hydropower projects in South Africa.
4. See Castillo et al. 2007 for a useful discussion of different definitions of co-benefits.
5. Ellis 2007, discussing the co-benefits of CDM projects, perceptively notes that co-benefits can be direct and indirect; be felt at the company-specific, local, and national level; and be enjoyed by project developers and/or local communities and/or multiple levels of government. In this paper, I am primarily interested in developmental co-benefits—the developmental benefits of climate actions.
6. This is an admittedly overly simplified version of competing preferences. Participants in our consultations framed the competing preferences as a strategic game wherein industrialized countries are trying to pass on an economic burden, to gain a competitive advantage in the energy sector and minimise transfers of technologies; and developing countries attempt to avoid a process that leads to uncompensated GHG constraints, prefers per capita limits (with an emphasis on equity), seek to realise a competitive advantage in CDM, and to acquire resources needed for adaptation.

**Table 5.3 Selected policies and measures (PAMs) with *potential* to generate co-benefits in various Asian countries**

| Country/ PAMs | Year | Brief Summary of Contents |
|---|---|---|
| **China** | | |
| Renewable Energy Law | 2006 | Aims to increase use of renewable energy, employing a variety of financial and regulatory incentives |
| Energy Conservation Law | 1998 | Aims to promote energy conservation and efficiency |
| The 11th Five Year Plan (Energy related targets) | 2006 | Aims to improve energy efficiency by 20% between 2005-2010; and ensure 10% of electric power capacity comes from renewable energy by 2010 |
| Cleaner Production Promotion Law | 2002 | Encourages cleaner production research and development, technologies, and processes |
| Air Pollution Control Law | 2000 | Requires shutting down of mines with high sulphur coal; phasing out of inefficient industrial equipment; creating total emission control standards |
| Fuel Economy Standards | 2004 | Sets in place EURO IV standards by 2010 (Beijing started to phase in EURO IV standards in 2008) |
| **India** | | |
| The Prevention and Control of Air Pollution Act | 1988 | Empowers central board to set ambient air standards; central and state boards enforce the standards |
| The Motor Vehicle Act | 1988 | Sets rules, standards and procedures concerning the regulation of motor vehicles and their use |
| Fuel Efficiency Standards | 2007 | Sets standards by 2010 (major cities to achieve those targets prior to 2010) |
| Energy Efficiency Act | 2001 | Establishes institutional arrangements and a regulatory mechanism to promote energy efficiency |
| Renewable Energy Targets | 2004 | Aims to provide 10% of new electric power capacity from renewables by 2012 |
| The Electricity Act | 2003 | Liberalises operation and maintenance of power generating stations to increase rural access to power |
| The Forest Conservation Act | 1988/ 1990s | Forbids the use or degradation of forest land for any 'non-forest-purposes,' or the clearing of forest land for any purpose other than reforestation (violations punishable by imprisonment) |
| Forest Policy [Joint Forest Management (1990s)] | 1988/ 1990s | Recognised rights of forest dwellers; includes provisions to strengthen popular involvement in conservation and biodiversity preservation |
| **Indonesia** | | |
| Electricity Bill (Law no. 20/2002) | 2002-2004 | Privatised electricity sector; defines social and environmental responsibilities of power producers, such as requiring percentages of renewable energy used and provided to the poor |
| Blue Sky Program (Program Langit Biru) | 1992 | Designed to improve urban air quality through expansion of public transport and levies; includes incentives for stationery source abatement |
| Basic Forest Law (Ministerial Decree SK 31) | 2001 | Allows communities to set up cooperatives and secure 25-year leases to forests (subject to government approval of the forest's local management plans) |
| **Pakistan** | | |
| National Conservation Strategy | 1992 | Intends to conserve natural resources, sustainable development and improved efficiency in the use and management of resources, covering 14 priority areas (including energy efficiency and renewables) |
| National Clean Air Act | 2005 | Aims to control vehicular emissions, pollution from industry and indoor air pollution in rural areas |
| National Forest Policy | 2001/ 2004 | Installs new participatory processes and empowers local forest management institutions |
| **Philippines** | | |
| Philippines Strategy for Sustainable Development (PSSD) | 1989 | Integrates environmental considerations into economic decision-making and promotes ten additional sustainable development goals |
| Clean Air Act | 1999 | Relies heavily on the polluter pays principle and other market-based instruments to curb air pollution |
| Renewable Energy Targets | 2004 | Aims to double renewable energy by 2013 |
| The National Forest Policy | 1986 | Aims to ensure the adequate supply of industrial timber and fuel wood; provision of livelihood for upland communities; and restoration and maintenance of a stable, functional and wholesome environment |
| Community-Based Forest Management (CBFM) Program | 1995, 1996 | Empowers people's organisations to manage one-third of state forestlands |
| **Thailand** | | |
| The Enhancement and Conservation of Environmental Quality Act | 1992 | Includes enabling statutes for a series of media-specific environmental measures |
| 10th National Social and Economic Development Plan | 2007 | Emphasises a sufficiency economy, decentralisation, forest conservation (at 30% of total area), and community involvement in decision making |
| Energy Conservation and Promotion Act | 1993 | Promotes energy efficiency and conservation in factories, large buildings, machinery, equipment and processes, and establishes a fund for the promotion of energy efficiency |
| Renewable Energy Targets | 2004 | Aims to have 8% of primary energy generated from renewable energy by 2011 (excluding traditional biomass) |
| Community Forest Bill/ Decentralisation Act | 1999 | Recognises the legal status of communities in Thailand's National Forest Reserves; proposes the establishment of community forests by rural communities to manage forest areas |

Sources: World Rainforest Movement 2002, Emtage 2004, Sikor 2006, USAID 2007, WRI 2008.

**Box 5.1 Defining co-benefits**

The IPCC has defined co-benefits as "the benefits from policy options implemented for various reasons at the same time—including climate change mitigation—acknowledging that most policies resulting in GHG mitigation also have other, at least equally important, rationales" (IPCC 2007). This definition is useful for three reasons. First, it helps to get around much of the debate over whether, by treating developmental benefits as co-benefits, the term privileges the climate agenda over the developmental agenda. Second, rather than focusing on the intent of policies that deliver co-benefits, it recognises that policies that are explicitly designed to mitigate GHG and explicitly designed to pursue developmental objectives can generate developmental or climate co-benefits. Third, it does not limit co-benefits to improvements in local air quality and improvements in public health; co-benefits can range from enhanced energy security to reduced incidences of traffic accidents to induced technology transfer.

A post-2012 regime that effectively recognised developing countries for policies and measures that delivered developmental co-benefits and then rewarded countries for achieving those benefits promises to ease this tension. However, as is often the case with promising ideas, their value derives from realising, not articulating that promise. More concretely, operationalising this idea will require specifying which institutional arrangements will be employed to recognise co-benefits and which incentive structures will be established to reward countries for the delivery of said benefits. At a minimum, post-2012 proposals must address the four questions that are featured in Box 5.2 and will be referred to throughout the chapter.[7]

**Box 5.2 Recognising and rewarding co-benefits**

| | |
|---|---|
| **Recognising** | 1. Which institution(s) should be responsible for monitoring the delivery of co-benefits?<br>2. Which institution(s) should be responsible for measuring co-benefits? |
| **Rewarding** | 1. What kind of institutional changes would be needed to reward co-benefits—i.e. a sustainable development crediting mechanism, the refinement of an existing rating system for pledged policies?<br>2. What kind of incentives would produce the most significant improvements in the implementation of policies that deliver co-benefits? |

Unfortunately, designing a set of institutional arrangements and incentive structures that respond to these questions presents yet another challenge. This challenge arises, in part, from the fact that "existing international frameworks and agreements are not designed to promote integration between different policy areas and (existing) institutional structures often complicate such integration" (Kok 2006). Therefore, before assessing how effectively post-2012 proposals respond to the above four questions, it is important to re-examine how effectively the current climate change regime has promoted sustainable development.[8]

*Upon initial inspection, a re-assessment of how effectively the current climate regime has contributed to sustainable development appears unwarranted. A closer examination, however, reveals the regime's reliance on developmental rhetoric.*

## 5.4 Sustainable Development in the Current Climate Regime

Upon initial inspection, a re-assessment of how effectively the current climate regime has contributed to sustainable development appears unwarranted. As demonstrated in Table

7. It has been suggested that a fifth question should be which institution should facilitate the recognition of co-benefits and ensure that are reflected in climate actions.
8. I am interested in evaluating the current regime and post-2012 proposals in terms of their *effectiveness* in promoting sustainable development in the developing world. There are other criteria that I could use for these purposes, including equity, efficiency and participation. In the latter half of the chapter, I suggest that there might be trade-off between effectiveness and efficiency, as added layers of bureaucracy might run counter to the goal of promoting development.

5.4, the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol, and various decisions of the Conference of the Parties (COP) to the UNFCCC contain numerous references to sustainable development. A careful examination of these passages, however, reveals that they offer what comes closer to hortatory prescriptions than genuine incentives for development. During our consultations, similar concerns were raised about the regime's reliance on developmental rhetoric.

**Table 5.4 Sustainable development and the current climate change regime**

| | |
|---|---|
| FCCC preamble | …responses to climate change should be coordinated with ***social and economic development in an integrated manner***… |
| FCCC art. 2 | Such a level should be achieved within a time frame sufficient…to enable economic **development to proceed in a sustainable manner**. |
| FCCC art. 3.4 | The Parties have a right to, and should, promote ***sustainable development***. |
| FCCC art. 4.7 | …take…into account that ***economic and social development and poverty eradication*** are the first and overriding priorities of…developing country. |
| Kyoto art. 10 | All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, and continuing to advance the implementation of these commitments in order to achieve ***sustainable development***… |
| CP 2 decision 10 | …to emphasise the importance of the link between climate change and ***sustainable development***, request that non-Annex 1 Parties should seek to include programmes relating to ***sustainable development*** in their national communications. |
| CP 7 decision 1 | …addressing the many challenges of climate change will make a contribution to achieving ***sustainable development***… |
| CP 7 decision 5 | … so as to…ensure that adaptation actions are environmentally sound and will produce real benefits in support of ***sustainable development***… |
| CP 8 decision 1 | …in order to respond to the challenges faced now and in the future, climate change and its adverse effects should be addressed while meeting the requirements of ***sustainable development***… |
| CP 10 decision 1 | Insists that action relating to adaptation follow an assessment and evaluation process… so as to prevent maladaptation and to ensure that adaptation actions are environmentally sound and will produce real benefits in support of ***sustainable development*** |
| CP 11 decision 1 | Resolves to engage in a dialogue that includes…advancing development goals in a ***sustainable way***… |
| CP 13 decision 1 | Nationally appropriate mitigation actions by developing country Parties in the context of ***sustainable development***, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner; |

Yet, while the lack of incentives in the current climate regime was discussed at our consultations, much of the attention was focused on the mechanism in the regime that comes closest to offering genuine incentives for development, the CDM[9]. Article 12.2 of the Kyoto Protocol states the CDM is designed "to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention" (Kyoto Protocol, Article 12.2). In contrast to the rhetoric-heavy passages in table 5.4, however, the CDM could generate funding needed to reach this goal. If buyers of certified emissions reductions (CER) were motivated to support projects with significant developmental benefits, the CDM would go a long way to mobilising the resources required to address development needs. Although it is arguably too early to evaluate the CDM on this score, the consensus at our consultations (and in the literature) was that the mechanism has thus far fallen short of expectations (Pearson 2004, Olsen 2007).[10]

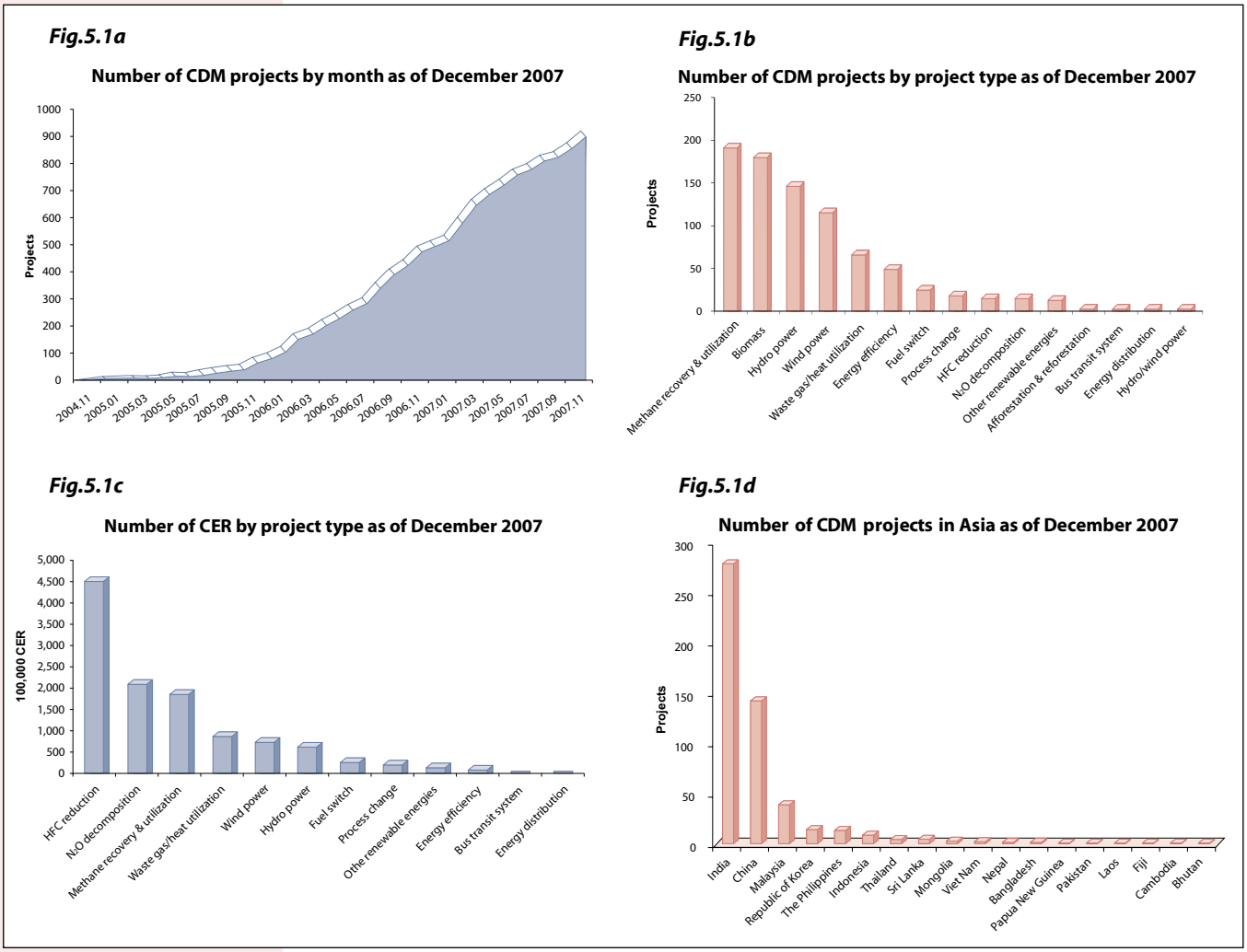
*The vast majority of CER (and therefore investment funds) go to projects with few developmental benefits such as HFC-23 or $N_2O$ destruction.*

The data in Figure 5.1 help illustrate this shortfall. Since the entry into force of the Kyoto protocol in February 2005, there has been a dramatic increase in CDM projects. The number of projects with significant developmental benefits, moreover, has been generally well represented. Biomass, hydropower, and wind power projects are the second, third and fourth most numerous projects. The data also indicates that the vast majority of CER (and therefore investment funds) go to projects with few developmental benefits such as HFC-23 or $N_2O$ destruction. In addition, the majority of projects are

9. This section benefited greatly from the presentations made by and discussions with Kazuhisa Koakutsu regarding the CDM.
10. Based on a review of 200 studies on the CDM, Olsen concludes that it has not "significantly contributed to sustainable development."

located in developing countries with comparatively few developmental needs. China, Brazil, and India account for 74% of the CER and are home to slightly more than two-thirds of the projects.[11]

**Figure 5.1 Trends in the CDM**




Source: IGES CDM Project Database, http://www.iges.or.jp/en/cdm/report.html.

It furthermore merits underlining that a reason that the CDM has underachieved is the institutional rules governing the project approval process. These rules enable host countries to use a variety of metrics to determine what constitutes "sustainable development." For many developing countries, which have an interest in getting projects approved first and considering their developmental implications later, this determination has reduced to "no harmful impacts" as opposed to more rigorous evaluative criteria (Cosbey et al. 2005). A related reason for the shortfall is that projects with low developmental benefits bring high volumes of CER—again, HFC-23 or $N_2O$ destruction projects fit this characterisation. Hence, investors have an incentive to finance projects with fewer sustainable development benefits (IGES 2006).

*It should nevertheless be noted that some countries and organisations have taken progressive steps to address the CDM's deficiencies.*

It should nevertheless be noted that some countries and organisations have taken progressive steps to address these deficiencies. China, for instance, levies a 65% tax on

11. Some argue that this regional imbalance will be rectified when and if wealthier developing countries take on emission reduction targets.

HFC projects, a 30% tax on $N_2O$ projects, and a 2% tax on the remainder of projects that is subsequently channelled into a sustainable development fund.[12] The World Bank has established a Community Development Carbon Fund (CDCF) to finance smaller CDM projects in poor rural communities that, without such a vehicle, would not attract resources from international investors (projects supported by CDCF pay a premium of 0.5 to 1 USD for CER achieved from these development friendly projects) (World Bank 2006).[13] The Philippines, Thailand, India, and Indonesia have established methods for measuring the developmental contribution of projects prior to their approval (IGES 2006). And, as featured in Box 5.3, the International Institute for Sustainable Development (IISD), the CDM Gold Standard, and the UNEP Risø centre (COSI tool) have devised tools and techniques to gauge the quality of CDM projects, which could potentially be scaled-up and adjusted to country-specific needs. (Cosbey et al. 2005, Olsen and Fenhann 2006, CDM Gold Standard 2007).[14]

**Box 5.3 The IISD Developmental Dividend, CDM Gold Standard and UNEP Risø Centre Carbon Offset Sustainability Indicator (COSI) Tool**

The **Developmental Dividend** is a research programme that the IISD initiated in 2005 to assess the benefits of climate actions "beyond those strictly related to climate change." The ultimate goal of the programme is to increase the quantity of quality CDM projects. Part of achieving that goal is building an evaluative framework to assess the developmental dividend from these projects. The framework is based on an international advisory group's weighting of standard social, environmental, and economic criteria. The framework then uses quantitative and qualitative data from CDM project design documents (PDDs) to arrive at developmental dividend scores for categories of CDM projects. These scores are intended chiefly for the international policy community to assess the developmental benefits of CDM projects, but they also can be employed domestically by designated national authorities (DNA).

The **Gold Standard** was initially conceived in 2002 by the World Wildlife Fund (WWF) with support from South*South*North and Helio International. It offers an "independent best practice benchmark" for investors willing to pay a premium for quality low-risk CDM projects. To earn gold standard certification, projects must meet standard CDM project approval requirements and pass through three additional approval screens. Credits must be earned from renewable energy or energy efficiency projects; projects must adhere to stringent additionality guidelines; and projects must comply with sustainability requirements that include two local stakeholder consultations, conformance with sustainability indicators, and, in some cases, an environmental impact assessment (EIA). There are currently 11 registered gold standard CDM projects, eight of which are located in Asia.

In 2006, the United Nations Environmental Programme (UNEP) Risø centre began work on the **Carbon Offsets with Sustainability Indicators (COSI) tool**. The impetus for the COSI tool was the absence of a single unified set of sustainable development assessment standards and procedural guidelines for evaluating CDM projects. The tool, which is currently under development, will be constructed from a package of sustainable development criteria, assessment methodologies, and procedural guidelines.

*While the CDM has thus far failed to promote sustainable development, there have been several noteworthy attempts to compensate for the mechanism's shortcomings.*

In sum, while the CDM has thus far failed to promote sustainable development, there have been several noteworthy attempts to compensate for the mechanism's shortcomings. More central to this chapter's main argument, the most promising efforts

12. The use of the sustainable development fund has been a point of contention between China's National Development and Reform Commission (NDRC) and Ministry of Finance (MoF). Despite the fact that the NDRC is in charge of China's climate change issues, the MoF has been given jurisdiction over spending decisions.
13. Not all international organisations have been so proactive. Participants in our consultations noted that considerable attention has been paid to additionality of carbon benefits, not developmental benefits, in projects supported by international financial mechanisms such as the Global Environmental Facility (GEF).
14. These efforts have enjoyed support from some developed countries (especially in Scandinavia) that have demonstrated an interest in ensuring the environmental integrity of their investments.

have been aimed at reforming the institutional rules for measuring sustainability and restructuring incentives to achieve these newly defined goals. It is therefore important to consider the design of institutional rules in proposals for the post-2012 regime.

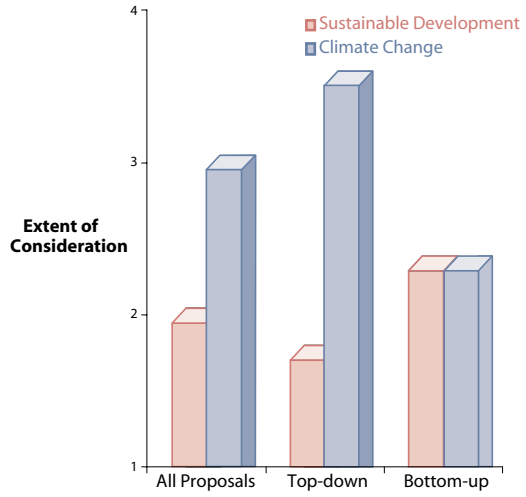
## 5.5 Sustainable Development and Post-2012 Proposals

While many participants at our consultations faulted the CDM for the regime's disappointing performance in promoting sustainable development, some were more willing to withhold judgment, suggesting that the mechanism is just beginning to gain traction and may be revised in the future to make it more development-friendly. Others maintained that even a revised CDM must be scaled up to the sectoral or programmatic level if it is to have its intended effects on development. Yet others, joining together the sentiments highlighted above, remarked that, especially for large emitters, there must be a concerted effort to go beyond the CDM and restructure the post-2012 regime itself.

***Bottom-up proposals enable countries to pledge policies and measures that both sustain development and mitigate GHG.***

Fortunately, there are no shortages of post-2012 proposals advanced with this end in mind. The vast majority of these proposals can be categorised as bottom-up as opposed to top-down proposals. The primary distinction between the two categories is that, rather than establishing aggregate emission targets and allocating emissions commitments to individual countries, bottom-up proposals enable countries to pledge policies and measures (PAMs) that both sustain development and mitigate GHG—that is, measures that generate developmental co-benefits. Figure 5.2, which presents the results of an IGES evaluation of the attention given to "developmental" and "climate" concerns in twenty post-2012 climate regime proposals, shows that, on average, bottom-up proposals place a greater emphasis on development than their top-down counterparts (IGES 2006).[15]

**Figure 5.2 The extent of consideration given to climate and development concerns in post-2012 proposals**




In 2006, IGES conducted an independent assessment of "the extent of consideration" given to climate change and development in twenty post-2012 climate change proposals. Proposals were coded on a four point scale, with one indicating "no consideration" and four indicating "significant consideration."[16] Half of the selected proposals were top-down proposals and half were bottom-up proposals. Figure 5.2 illustrates the average level of consideration given to climate and development for all of the proposals and each type of proposal. The figure demonstrates that, on average, top-down proposals place a greater emphasis on climate than development, while bottom-up proposals give climate and development equal weight.

Source: IGES 2006

15. It is important to point out that some top-down proposals have a strong developmental orientation. For instance, the Brazilian proposal would base emissions targets on historical responsibility for climate change and establish a Clean Development Fund for developing countries.
16. The rating scheme was based upon the number of indicators in the proposal that referred to "development." Proposals with one indicator were scored as giving "low consideration," while those with two indicators were scored as giving "some consideration" and those with three or more were scored as giving "significant consideration." The scheme is obviously subjective, but it is meant to provide a sense of how much each proposal could meet important criteria.

Bottom-up proposals have several other noteworthy strengths (Carraro 2006).[17] First, by allowing countries to pledge their own policies, they can account for unique national circumstances (South Africa 2006). Second, by recognising that developmental policies can generate reductions in carbon, they can stem the criticism often levelled at developing countries for a perceived unwillingness to take climate actions (Associated Press 2007).[18] Third, by stressing the integration between different policy objectives, they can enhance coordination between government agencies that might otherwise have conflicting organisational priorities and operational mandates (Kok 2006).

***Bottom-up proposals have several noteworthy strengths: they can account for unique national circumstances; stem criticism for perceived inaction; and enhance inter-agency coordination.***

Yet, and this is a critical qualifier, bottom-up proposals have as many weaknesses as strengths. First, the very notion of "development" is relative to a country's stage of development, leading to possible disputes over how the concept is defined and measured. Second, the ability of these proposals to achieve developmental goals rests precariously on the assumption that an "intrinsic drive" (Pan 2006) to develop will overcome obstacles that typically undermine regulatory initiatives in the developing world (Janicke and Weidner 1997, Desai 1998, see also Pearce 2000 for a discussion related to co-benefits). Third, bottom-up proposals move closer to a fragmented institutional framework wherein the pledging of nationally unique policies and measures will drive up international monitoring and enforcement costs (Bradley et al. 2005).[19]

The above weaknesses—the definition of development, barriers to implementation, and increased enforcement costs—can, to a certain degree, be managed. However, the success with which they are managed depends upon how particular proposals "turn the conceptual link between sustainable development and climate change into a workable approach" (Winkler et al. 2005). More specifically, it hinges on the institutional arrangements used to measure co-benefits and the incentives to implement pledged policies—or how particular proposals respond to the four aforementioned questions in Box 5.2. The post-2012 proposal that addresses these questions most explicitly is known as Sustainable Development Policies and Measures (SD-PAMs).

***Bottom-up proposals have as many weaknesses as strengths: they can generate conflicts over the definition of development; assume policies will be implemented effectively; and increase monitoring and enforcement costs.***

### *5.5.1 Sustainable development policies and measures (SD-PAMs)*

SD- PAMs (formalised as the South Africa proposal in 2006) drew a considerable amount of interest during our consultations, yet even those expressing this interest were not intimately familiar with the design elements that turned the proposal into "a workable approach." When asked about these functional features, the typical response was that SD-PAMs was "important and needs to be studied further." Since these operational details are integral to assessing how successfully SD-PAMs could handle the weaknesses associated with bottom-up proposals, they are highlighted in the following description of the proposal's envisioned implementation and the step-by-step diagram in Figure 5.3.

SD-PAMs would be operationalised through a nine-step process. The process would begin with developing countries outlining their developmental objectives and identifying policies and measures that could meet these objectives in a more sustainable

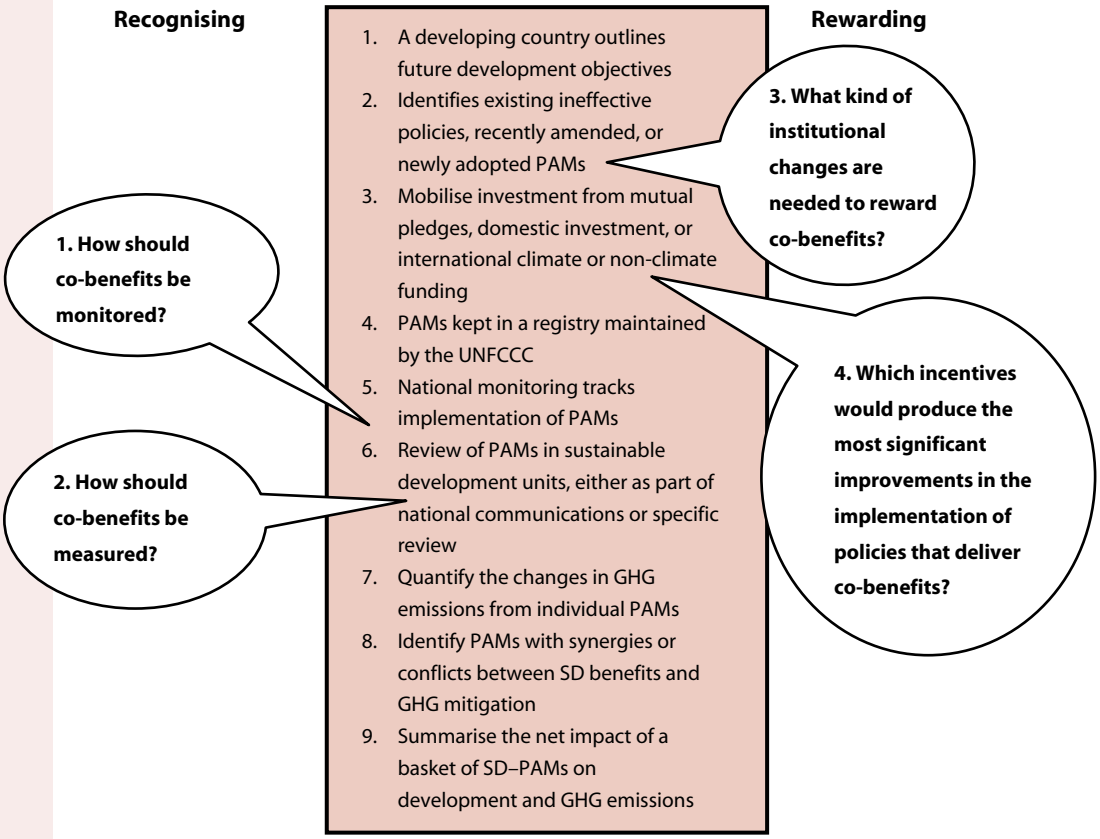
17. Carraro suggests that a bottom-up regional approach is also the most politically feasible approach, given diverse priorities and interests.
18. The United States cites the lack of exemptions from emissions targets for non-Annex 1 countries as one of the chief reasons for not ratifying the Kyoto protocol. This criticism increased after the Netherlands Environmental Assessment Agency published findings suggesting that China had surpassed the United States as the world's top emitter of carbon dioxide.
19. This is most evident in the United Nations Convention on Combating Desertification that has a decentralised national action plan structure but has struggled with a wide range of practical implementation issues. See Stringer et al. 2006.

manner.[20] Where possible, sustainable development indicators (Winkler et al. 2005) or key performance indicators (South Africa 2006) would be used to assess developmental benefits, while standard UNFCCC reporting methods would be used to measure changes in GHG. Only SD-PAMs that delivered developmental benefits and mitigated GHG—measures where synergies as opposed to conflicts existed between the two goals—would become eligible for the next phase of the process.

*In SD-PAMs, the amount of GHG mitigated, not the developmental benefits generated, would determine the level of funding.*

In this next phase, a basket of SD-PAMs would be reported to the UNFCCC through the current regime's national communications or, if this channel proved too contentious, an alternative reporting mechanism. The UNFCCC would maintain a registry of SD-PAMs and host countries would monitor the implementation of pledged policies. Funding for the SD-PAMs would come chiefly from developed countries through the sale of CER in a scaled-up sectoral CDM or joint bi/multilateral pledges. The amount of GHG mitigated, not the developmental benefits generated, would determine the level of funding; however, an unspecified sum of resources could flow from the GEF as well as related UNFCCC and the Kyoto Protocol funds[21] (Baumert and Winkler 2005).

**Figure 5.3 Nine steps to implementing SD-PAMs**




### *5.5.2 Other bottom-up proposals*

Before evaluating the extent to which SD-PAMs addressed the aforementioned weaknesses, it warrants underlining that other proposals draw upon the approach. A sectoral CDM, for instance, would enable developing countries to earn CER for

20. These could be either existing policies or policies that are not fully implemented.
21. These funds include the Least Developed Country (LDC) fund, the Special Climate Change (SCC) fund and the Adaptation fund.

emission reductions from pledged sectoral policies that meet host country's sustainable development criteria. A sectoral CDM would also encourage cross-subsidisation between "sectoral policies with high climate and low developmental benefits" and "sectoral policies with low climate and high developmental benefits" (Samaniego and Figueres 2005, Ellis 2006). The South-North Dialogue, another proposal that draws upon the SD-PAM approach, divides countries into six groups based upon "responsibility," "capacity," and "mitigation potential" indicators, and then requires different categories of countries to pledge SD-PAMs. The poorest countries would be offered full funding to implement voluntarily pledged policies; less generous funding arrangements would be accorded to wealthier developing countries for mandatory pledges (Ott et al. 2004).

Finally, there are some proposals that require that countries implement measures that generate co-benefits, but do not draw directly on the SD-PAMs approach. These include the Development Rights proposal, which would oblige all countries to implement "no regrets" measures and require developing countries to expend resources otherwise reserved for climate change on human development (Athanasiou et al. 2006).

**Table 5.5 Recognising and rewarding co-benefits in selected proposals on post-2012 climate regime**

| Proposal / Four Questions | SD-PAMs | Sectoral CDM | Global Development Rights | South-North Dialogue |
|---|---|---|---|---|
| 1. Which institution(s) monitors co-benefits? | Host country monitors; UNFCCC maintains registry of SD-PAMs | *Not Specified* | *Not Specified* | *Not Specified* |
| 2. Which institution(s) measures co-benefits? | Host country reports/ monitors PAMs with SD indicators | Host countries determine SD criteria for pledged policies | All countries take "no regrets" measures; rigorously defining "no regrets" will be a challenge | *Not Specified* |
| 3. Which institution(s) reward co-benefits? | Funding from sectoral CDM, GEF, regime funds | Funding from sectoral CDM, with possible cross-subsidisation | Countries below development threshold fund "human development" at a level indexed to an obligation indicator | LDCs receive full financing for SD-PAMs; Co-financing or no financing for wealthier DCs |
| 4. What incentives produce the largest improvements in policies that deliver co-benefits? | Synergistic policies qualify for funding | *Not Specified* | *Not Specified* | *Not Specified* |

***None of the reviewed proposals details the operational rules needed to recognise and reward co-benefits as explicitly as SD-PAMs.***

As highlighted in Table 5.5, none of the reviewed proposals details the operational rules needed to recognise and reward co-benefits as explicitly as SD-PAMs. This is, in part, because these proposals are designed to remedy other weaknesses in the current regime—for instance, modifying the commitment levels for different countries.[22] It is also, in part, because outlining a proposal's overarching objectives is easier than specifying the steps needed to achieve stated goals. Yet, as the current regime's reliance on developmental rhetoric attests, there are pitfalls to allowing aspirational ends to overshadow operational means.

***As the current regime's reliance on developmental rhetoric attests, there are pitfalls to allowing aspirational ends to overshadow operational means.***

22. It should be underlined that these additional proposals are often designed to meet other needs, such as scaling up the CDM (sectoral CDM).

*Under SD-PAMs, it is clear that funding would come from CER and other regime related funds. It is unclear, however, whether implicitly indexing funding to the GHG mitigation potential of pledged policies would help realise the developmental contribution of those policies.*

While SD-PAMs averts similar pitfalls, in so doing it exemplifies other limitations associated with bottom-up proposals. Under SD-PAMs, for instance, it is clear that developing countries can pledge "synergistic" policies that are measured in "sustainable development units." It is, however, unclear whether such criteria would be demonstrably different from the problematic "no harmful impacts" criteria some countries have adopted for CDM projects. Under SD-PAMs, to cite another example, it is clear that funding would come from CER and other regime related funds. It is unclear, however, whether implicitly indexing funding to the GHG mitigation potential of pledged policies would help realise the developmental contribution of those policies, especially in cases that climate benefits are significantly less than developmental benefits.

## 5.6 Three Familiar Themes: Responses to an IGES Questionnaire

To determine how these limitations might be addressed, a questionnaire was distributed to scholars and policymakers familiar with co-benefits and post-2012 issues (Appendix D). The survey contained both general questions about the current regime and specific inquiries about co-benefits and post-2012 proposals. One respondent was reluctant to answer the questionnaire because its definition of co-benefits—the additional and locally desirable benefits of climate actions—privileged climate over developmental issues. The other respondents (the response rate was 48.5%) provided revealing insights into the measurement of developmental benefits, the incentives to overcome barriers, and the operational costs that would accompany institutional reforms. The insights into these three familiar themes (the three weaknesses associated with bottom-up proposals) are summarised in turn below, beginning with measurement issues.

Most respondents indicated that developing countries should be allowed to measure and monitor their own developmental benefits. Some respondents, however, suggested that responsibilities should be shared between international, national, and local level stakeholders. Yet other respondents maintained that, while national governments and the UNFCCC should divide these responsibilities, standardising the metrics and methods for evaluating co-benefits was more critical than assigning responsibilities for their measurement. Procedural uniformity was stressed as the best way to move beyond useful albeit ambiguous "sustainable development indicators" and arrive at metrics that could be estimated domestically, verified internationally, and thereby rewarded credibly (Hardi and Zdan 1997, Bell and Morse 1999, Parris and Kates 2003).

As for rewarding co-benefits, the majority of respondents indicated that earmarking regime-related financing and training for well-specified developmental needs as opposed to broadly defined sustainable development funds or comparably broad technical assistance and capacity building was the most promising route to enhancing policy implementation. Rather than accomplishing this task by formally linking integrated policies to a newly created market of sustainable development credits, respondents felt that the aforementioned standardisation of sustainability criteria would help raise the profile of integrated policies and, in turn, strengthen the linkages to mechanisms within (a scaled-up CDM and regime-related funds) and outside (voluntary carbon market, multilateral carbon funds, domestic sustainable development funds) the post-2012 regime.

The hesitation to link rewards to developmental benefits arguably stems from concerns over enforcement and monitoring costs, the third theme that stood out in

the responses to the questionnaire. Though questions did not focus on these costs specifically, respondents referred to them on multiple occasions in multiple contexts. Several respondents, for instance, wondered whether the gains from establishing new sustainable development credits would offset the costs of administering a parallel crediting mechanism. Some respondents worried that formally recognising co-benefits would create baseline, additionality, and double counting issues of a far greater complexity than experienced with the current CDM (CDM Executive Board 2005, IGES 2006). Yet other respondents questioned if additional co-benefit architecture might increase the administrative burden on the UNFCCC and, more importantly, host country climate and development agencies.

## 5.7 Recommendations for Moving Forward: Implications for Asia

This chapter began with the observation that developing Asia's participation in the post-2012 regime is both imperative and challenging (from the perspective of practicality, affordability and measurability). Bottom-up proposals hold the greatest promise to meet this challenge, though their success rests on how they recognise and reward co-benefits. SD-PAMs outlines how this could be achieved more explicitly than other post-2012 proposals; it could nonetheless be enhanced with standardised criteria to evaluate the sustainability of pledged policies, well-defined linkages between climate regime-related resources and domestic developmental needs, and due consideration of the administrative costs of implementing recommended reforms. The chapter ends where it began, making these general recommendations applicable to developing Asia.

(a) *Recommendations for Researchers*

A first step forward is standardising metrics to evaluate the sustainability of pledged policies. Harmonising and scaling-up techniques such as IISD's developmental dividend, CDM Gold Standard and the UNEP COSI tool would reduce confusion from multiple estimation techniques and be consisent with the recent emphasis in the Bali Action Plan on "national mitigation actions supported by financing, and capacity-building, in a *measurable, reportable, and verifiable manner* (UNFCCC 2007)." Streamlining chosen estimation procedures, especially for policymakers confronting data, time and budget constraints, would dramatically increase the selected tools' utility (ADB 1996). It should nevertheless be noted that this will be challenging, for the quantification of developmental benefits promises to be technically complex and politically controversial.

***A first step forward is standardising metrics to evaluate the contribution of pledged policies and measures to sustainability.***

To make the challenge more manageable, the World Bank, the Asian Development Bank (ADB) and organisations providing Official Development Assistance (ODA) (such as the Japan International Cooperation Agency) should support these efforts, since the development community has accrued significant experience with project-based environmental impact assessments. A uniform intuitive method for evaluating developmental impacts would also prove helpful in recently launched clean energy investment frameworks by the World Bank and ADB. ("Investment Framework for Clean Energy and Development" and "Asia Pacific Fund for Energy Efficiency") (World Bank 2006, ADB 2006). These efforts, however, need to gain support of researchers outside the development community, since much of the co-benefit scholarship has thus far been devoted to generating sizable co-benefit estimates that have not had a commensurately sizable impact on policy decisions in Asia (IGES 2007).

In seeking to enhance these impacts, researchers should concentrate on devising rapid analytical methods—"'a practical and quick' evaluation of the potential magnitude or range of potential impact values based on readily observable measures" (Asian Development Bank 1996). In so doing, their ultimate aim should be constructing a set of tools that national and local policymakers can use to provide a preliminary scoping of the expected health, welfare, and environmental benefits of a common set of integrated policies (demand and supply side energy efficiency policies; renewable energy standards; fuel efficiency and emissions standards; and avoided deforestation programmes). They should then consider equipping a certifying body in the UNFCCC or an alternative international organisation with primary valuation techniques to provide a more rigorous evaluation of initially scoped benefits (Smith and Haigler 2007).

***Policymakers in developing Asia should prioritise integrated policies that stand to benefit the most from climate regime-related financial and technical support.***

(b) *Recommendations for Policymakers*

While researchers focus on standardising rapid analytical methods and primary valuation techniques, policymakers in developing Asia should consider conducting an assessment of developmental policies that would, in addition to incorporating initially scoped developmental estimates, prioritise integrated actions that stand to benefit the most from climate regime-related financial and technical support. China, for instance, recently released its First National Climate Change Action Programme, which compiles many of the country's energy efficiency, energy conservation, and deforestation targets from other high-profile policy documents (National Development and Reform Commission 2007). Such a comprehensive plan might serve as a useful blueprint for other developing countries in Asia, since an annotated listing of integrated policies and measures would ensure that opportunties to benefit from regime-related training, technnology and targeted investments do not go overlooked and thereby unrealised. Bilateral and multi-lateral ODA may also be used to preferentially support integrated policies and measures identified in such plans.

An overarching national plan, though arguably necessary, will nonetheless be insufficient to guarantee that the co-benefits of integrated policies are captured. Returning again to the case of China, many of the proposed energy efficiency targets in the First National Climate Change Action Programme have thus far proven difficult to achieve (Holdren 2007). In prioritising policies, then, policymakers must not only be creative in identifying integrated policies but vigilant in identifying where regime-related investments could and could not be used to support the implementation of integrated mitigation strategies. This determination will, of course, vary across countries and sectors depending upon a host of barriers, including but not limited to institutional capacity, inter-agency coordination, and vested interests that may undermine the use of external resources.

***Climate negotiators should consider establishing a tax or other fiscal measures on CER earned from policies with high climate and low developmental benefits.***

To help overcome these barriers and strengthen incentives for the enhanced implementation of integrated policies, climate negotiators should consider establishing a tax or other fiscal measures on CER earned from policies with high climate and low developmental benefits. The chosen mechanism would be similar to the tax that China currently levies on CDM projects, but it would also be distinct in that it would be overseen and administered by the same UNFCCC organisation or alternative body that reviewed initially scoped co-benefits. The number of members on this body, regional representation, and decision-making rules is apt to be controversial, yet best efforts should be made to ensure that allocation of resources be indexed, within reasonable confidence intervals, to the co-benefits of pledged policies where there is shortage of climate benefits.[23]

23. In some of these cases, multi-lateral and bi-lateral aid can be used to support high development/ low-carbon policies.

*(c) Recommendations for Climate Negotiators*

Lastly, so that monitoring and enforcement costs can be minimised, these standardising and incentive-based reforms should be piloted regionally. Since developing Asia is both a signicant contributor to, and is projected to suffer significantly from, climate change, few regions could offer the opportunities and lessons learned from using standardised streamlined techniques that were linked to regime-related support. Climate negotiators should therefore consider gradually scaling proposed bottom-up reforms in a step-wise manner, beginning with voluntary pledges, the experimental use of simplified standardised tools, and the identification of linkages to priotorised integrated policies. During this process, climate negotiators should pay close attention to the costs of administering reforms prior to introducing mandatory pledges, codifying standardised sustainability metrics, and institutionalising linkages to prioritised policies.

***Climate negotiators should pay close attention to the costs of administering reforms prior to introducing mandatory pledges, codifying standardised sustainability metrics, and institutionalising linkages to prioritised policies.***

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