

**High Stakes in a Complex Game:
A Snapshot of the Climate Change Negotiating Positions
of Major Developing Country Emitters**
Jan von der Goltz**Abstract**

Developing countries with large greenhouse gas emissions play a decisive role in negotiating a post-Kyoto climate agreement. No effective program to reduce global emissions is possible without their support. At the same time, developing countries face a delicate task in balancing their growing responsibility for a livable climate with the pursuit of continued economic development. This article discusses the negotiating positions major developing country emitters are taking on core issues. Among the most vital unsettled questions are burden sharing between developed and developing countries, the role of the market in the international climate architecture, as well as implementation arrangements. An annex discusses current mitigation policies of major developing country emitters, and argues that developing countries are already taking meaningful action to limit the growth of their greenhouse gas emissions.

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Foreword

This paper is an output of a CGD project called Second Track to Copenhagen (STC). The objective of the project is to explore the potential for getting to yes on a climate change agreement, particularly between the major rich-country and major developing-country emitters—and to do so by engaging influential former officials, business leaders, academics, and think tank analysts, especially in the developing world, in an informal "second track" discussion of the issues.

This second-track project complements other work on climate change and development such as Carbon Monitoring for Action ([CARMA](#)) and Forest Monitoring for Action ([FORMA](#)) by CGD senior fellow [David Wheeler](#) on a range of economic and information issues critical to minimizing the risks and costs to developing countries and the world's poor and near-poor of climate change. Such work has become a priority of the Center as those risks and costs have become more clear and compelling.

The paper provides a thorough and thoughtful survey of the current negotiating positions of such key countries as Brazil, China, India, Indonesia, Korea, Mexico, and South Africa as of August 2009. Readers concerned and interested in the fate of the Copenhagen discussions will be dismayed and heartened, depending on the issue. To the extent the negotiating positions are just that, they may of course change; our website will provide periodic updates.

I hope this paper contributes in a small way to advancing the discourse, in the short and long term, on this critical issue.

Nancy Birdsall
President
Center for Global Development

High Stakes in a Complex Game

A Snapshot of the Climate Change Negotiating Positions
of Major Developing Country Emitters

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Abstract. Developing countries with large greenhouse gas emissions play a decisive role in negotiating a post-Kyoto climate agreement. No effective program to reduce global emissions is possible without their support. At the same time, developing countries face a delicate task in balancing their growing responsibility for a livable climate with the pursuit of continued economic development. This article discusses the negotiating positions major developing country emitters are taking on core issues. Among the most vital unsettled questions are burden sharing between developed and developing countries, the role of the market in the international climate architecture, as well as implementation arrangements. An annex discusses current mitigation policies of major developing country emitters, and argues that developing countries are already taking meaningful action to limit the growth of their greenhouse gas emissions.

Introduction

Not much time remains until the Copenhagen meeting in December. Yet, many essential questions remain unresolved, and the schedule for formal and informal preparatory meetings over the next months is tight. It is generally expected that, as was the case with the Kyoto Protocol (KP), a deal will not be struck until the last minute.

All major emitters among developing countries¹ have put forth detailed negotiating positions (as have the EU, Japan, and the United States). This essay describes and discusses their views as they have been expressed publicly, without seeking to predict which elements of a position may be more negotiable than others. On each major issue, the essay first points out areas of agreement, then analyzes key open questions.

International negotiations — state of play

Among the major developing country emitters, Brazil, China, and India have set out positions that are similar in many aspects, and could fairly be characterized as quite maximal. South Africa's is perhaps somewhat less aggressive in its emphasis on developed country action and financing. Mexico and Korea (who, together with Switzerland, form a separate negotiating bloc, the Environmental Integrity Group) have articulated positions that strike more of a balance between what other developing countries have proposed, and where developed countries are aiming. Indonesia's proposals often share common ground with Mexico's and Korea's. It may well be that the approach of these three countries will yield elements for an eventual compromise. The group of Least Developed Countries (LDCs) has so far remained aligned with major developing country emitters throughout the negotiations, although their interests may be quite distinct.

Developing countries overall seek a tight long-term emission reduction goal, and expect steep and binding cuts from developed countries, including in the medium term. They reject taking on binding commitments in the first post-2012 commitment period (which is expected to last until 2020), although some will consider taking on soft caps or efficiency targets, and charting a way to binding commitments in the future. Strong financial and technological support for adaptation, as

¹ In the climate negotiations, Parties generally refer to the group of countries included in Annex I of the UN Framework Convention on Climate Change as 'developed' countries. Annex I countries include all OECD members with the exception of Korea and Mexico, as well as other high-income countries and most transition economies. By implication, 'developing countries' are Parties to the Convention not included in Annex I. This essay follows this terminology, using 'developed countries' and 'Annex I countries' interchangeably, unless it intends to draw a specific distinction between, e.g., countries in different income groups.

well as for voluntary mitigation action, is generally seen as a key requirement of any equitable deal. There is limited appetite for internationally managed measurement, reporting and verification (MRV) of mitigation actions undertaken by developing countries, and international standards for nationally implemented MRV, perhaps with international verification, appear to be more palatable. Major emitters sharply disagree on whether Annex I countries may offset their emissions by buying carbon credits issued for emission reductions in developing countries. Some insist that financing for developing-country abatement projects be instead additional to full domestic compliance with developed-country targets. As for the management of funding flows and technology transfer, some countries have voiced a strong preference for public funds, to be provided by assessed contributions from industrialized countries, and managed under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC). Others would prefer to rely more on market mechanisms.

Key issues in negotiations

(1) Long-term global goal

Parties agree on the need for an ambitious but achievable long-term goal that would be supported by science and subject to review as new scientific insights become available, in particular after the Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment Report (AR5). Many expect it to be 'aspirational' in nature, i.e., not fully backed up by binding commitments. The target year is uniformly seen to be 2050. (FCCC/AWG/LCA/2009/4.II: 4)

There is an emerging consensus for targeting an expected mean global temperature rise of no more than 2°C. This goal was at least weakly endorsed by the July 2009 Major Economies summit in L'Aquila, Italy: the summit declaration "recognize[s] the scientific view that the increase in global average temperature above pre-industrial levels ought not to exceed 2 degrees C," although it does not formally adopt it as a target. (Major Economies Forum, 2009: 2)

For years, it was argued that this target could equivalently be expressed as a steady-state greenhouse gas (GHG) concentration of about 450ppm CO₂-equivalent (CO₂e), halving emissions by 2050 relative to their 1990 level, 20Gt CO₂e emissions p.a. in equilibrium, or convergence by 2050 to 2t CO₂e per capita and year. (Stern, 2008) Since publication of the IPCC's Fourth Assessment Report (AR4) in 2007, new research has suggested that emission levels in the 20Gt range may translate into higher steady-state concentrations, and that a steady-state concentration of 450ppm is expected to translate into higher warming. (Forest et al., 2008; Sokolov et al., 2009)

The IPCC's AR4 held that reaching a goal of 450ppm would likely require emission reductions by industrialized countries of 80-95% of their 1990 levels by 2050, and 25-40% by 2020. The G8 at their July 2009 reaffirmed their "support [for] a goal of developed countries reducing emissions of greenhouse gases in aggregate by 80% or more by 2050 compared to 1990 or more recent years." (Group of Eight, 2009: 19) Hence, if a base year of 1990 were ultimately to be chosen, this long-term goal would reach the lower end of the range of emission reductions consistent with a pathway to 450ppm.

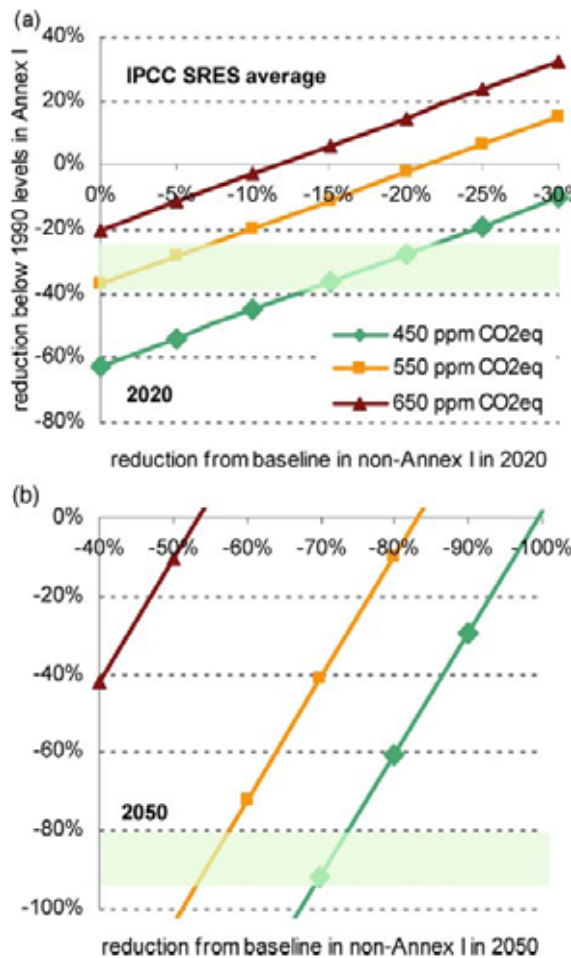
Given emission reductions of at least 80% in developed countries, the IPCC argued that reaching 450ppm would in addition require developing countries to achieve a "substantial deviation from baseline emissions" by 2020. (Metz et al. 2007: 776) This has most commonly been quantified as a 15-30 percent reduction below business as usual (BAU). (FCCC/AWGLCA/2009/4.II: 6) Fig. 2 from den Elze and Hoehne 2008 (below) illustrates the trade-off between developed country efforts to reduce their emissions below the 1990 level, and developing country efforts to reduce their emissions below projected BAU growth.

The 450ppm goal underlies South Africa's emissions scenario exercise (Government of South Africa 2008: 3), and was also suggested by Indonesia. (FCCC/AWG/LCA/2009/MISC.4: 117) The African group's negotiating text speaks of "at least halving global emissions relative to historical levels by mid-century, underpinned by ambitious mid-term targets." (FCCC/AWGLCA/2009/MISC.1: 11) The Mexican national climate change strategy proposed a higher stable concentration of 550ppm, but this target is not among the options in the current UNFCCC negotiating text. (Government of Mexico 2007: 14) Some countries, and especially the Alliance of Small Island States (AOSIS) have cautioned that the 450ppm goal would lead to excessively risky levels of warming, and have called for a much lower stabilization level of "well below 350ppm CO₂e." (Government of Barbados, 2009: 4) Some have suggested that the environmental effectiveness of the climate regime could be enhanced by agreeing not only a target level, but also a mechanism for automatic updating as new scientific information becomes available. Thus, Brazil proposes that "initially, [the long-term goal] could be set at 2°C and updated according to progress in scientific knowledge." (FCCC/AWGLCA/2009/MISC.1: 17)

Negotiating dynamics around medium-term emission reduction commitments by the United States and other major developing countries will be key in whether the long-term goal can be backed up with commitments. Indeed, it is notable that neither India nor China have endorsed a long-term target. The Chinese submissions to the April 2009 UNFCCC climate talks cautioned that "only with [a medium-term developed-country target] being clearly determined is it

meaningful to talk about any long-term goals for emission reduction.”
 (FCCC/AWGLCA/2009/MISC.1: 19; for India’s position, see
 FCCC/AWGLCA/2008/MISC.5/Add.1: 34) At the L’Aquila talks, it was reportedly the
 unwillingness of developed countries to define their 2020 commitments that vitiated developing-
 country commitments for 2050. (Baker, 2009) This dilemma may simply reflect the fact that,
 since emission reductions are a public good, Parties see an advantage in being the last to commit,
 so that any resolution requires a comprehensive package deal. Yet, there is a risk that
 coordination failure could set the world on an emission abatement path that would be both more
 risky and more costly. A conceivable adverse outcome could, for example, involve bottom-up
 commitments through domestic legislation only from developed countries, with poorly specified
 developing country actions, and weak financing provisions.

Fig. 2 The trade-off in reductions in 2020 (a) and 2050 (b), in Annex I and non-Annex I countries as a group, for three concentration stabilisation levels. The numbers represent the averaged outcome over separate calculations for each of the six IPCC SRES baselines (IPCC SRES average). The figure also depicts the reduction ranges for Annex I countries for 450 ppm CO₂-eq as reported in IPCC Box 13.7



Source: den Elzen and Hoehne, 2008.

(2) Developed-country medium-term commitments

There is convergence on some aspects of developed-country commitments, including their legally binding nature. Most regard 2020 as the most likely timeframe for a medium-term commitment. There may be a review around 2015–2017, both of progress toward the target and of its appropriateness in the light of new scientific information. Developing countries fear that the use of global sectoral emission standards in defining mitigation commitments (such as, for instance, in the steel, aluminum or cement industry) could foster protectionism, and strongly oppose it. A typical intervention by Indonesia warns that sectoral agreements “shall not lead to any new commitment for Developing Countries nor shall be used as a ... disguised restriction of access ... into international trading.” (FCCC/AWGLCA/2009/MISC.4: 121)

Major open questions relate to (i) the level of developed country commitments, and (ii) to how comparability between commitments by individual countries can be ensured.

(i) Level of developed country commitments. Developed countries generally insist that they cannot commit to emission reduction targets as long as rules for the use of offsets are not defined. Carbon credits from land use and land use change and forestry (LULUCF) are regarded as particularly essential. Developing countries, on the other hand, press for commitments to be made first. Analytically, quantitative commitments and the rules attaching to them of course codetermine the impact of any agreement. Hence, sequencing may be above all a question of trust: developed countries may fear making commitments under unclear rules; developing countries may fear making concessions on forest carbon credits, a core negotiating chip, before developed countries have made commitments. A comprehensive deal may be needed to break the deadlock. [This paper discusses offsets below, in section (7).]

Developing countries have long expressed that they expect actions by Annex I countries to be consistent with the IPCC’s recommended path to a 450ppm stabilization level. In the aggregate, this implies a 25-40% reduction below 1990 levels by 2020. Some key developing countries have recently hardened their stance on what would constitute sufficient emissions reductions by developed countries. The current draft amendment to the Kyoto Protocol proposed by a group of countries comprising Brazil, China, India, Indonesia, South Africa, as well as many other African countries envisages that developed countries “shall reduce their aggregate ... emissions ... by at least 40 per cent below 1990 levels in 2020,” and further suggests that “individual quantified emission reductions commitment ... [are determined] by applying the principle of historical responsibility, from 1850 to 2005.” (FCCC/KP/CMP/2009/7: 5) This, however, may be a politically difficult outcome to negotiate – it envisages, for instance, U.S. reductions of 26%

below 1990 values by 2020, as opposed to the ca. 3% foreseen in the Waxman-Markey bill recently passed by the U.S. House of Representatives.²

Among major developed-country emitters, the EU's position references aggregate developed country reductions of 30% below 1990 by 2020. (FCCC/KP/CMP/2009/2: 5) This stands out as the most ambitious goal. By way of contrast, many observers were disappointed when Japan published an un-ambitious target of reducing its own emissions by a mere 8% below 1990 levels. (Tabuchi, 2009) With respect to the Obama administration's climate proposal and pending legislation in the U.S. Congress, it is notable that the projected long-term cut in emissions by about 80% of the 2005 value by 2050 may be just deep enough to be consistent with the 450ppm target, if other developed countries cut emissions more steeply. Yet, the Waxman-Markey medium-term goal of emission cuts of 17% of the 2005 levels by 2020 is equivalent to a mere 3% reduction below 1990 levels, and hence suggests an abatement path that would be likely to overshoot the 450 ppm stabilization level by a substantial margin. This weak commitment has been unhelpful in building trust among developing countries in the developed world's willingness to do its fair share in emission reductions.

(ii) Comparability of commitments. Since the United States has not ratified the Kyoto Protocol, and accession is not being discussed, a vigorous debate has emerged about how to define comparability between the commitments of KP Parties and non-Parties. All major emitters among developing countries agree in expecting commitments from all developed countries to be economy-wide, quantifiable, and legally binding, as well as subject to MRV procedures that are consistent with the standards set forth for Kyoto Protocol Parties.

The African Group and South Africa call for comparability of targets and results, in terms of tCO₂e of emission reductions. South Africa proposes that there be an assessment of comparability by an UNFCCC technical body, with findings reported to the UNFCCC's governing body, the Conference of the Parties (COP), and with consequences for non-compliance, "such as monetary penalties to be paid in the Adaptation Fund." (FCCC/AWGLCA/2009/MISC.4.II: 96) China has specified that it expects comparability in terms of policies, and that targets must be the "same in nature – quantified and legally binding," as well as approximately similar in magnitude. (FCCC/AWGLCA/2009/MISC.4: 64) Brazil expects commitments from non-Parties to be comparable to "the level of mitigation ambition and legal rigor of the Kyoto Protocol." (FCCC/AWGLCA/2009/MISC.4: 54)

² Obtained using the World Resource Institute's CAIT yearly data on total GHG emissions excluding from land-use change, <http://cait.wri.org/cait.php?page=yearly>.

Some Parties' submissions for the June UNFCCC meetings reflect concern that developed countries may want to make commitments through domestic legislation exclusively, rather than through an international treaty. Thus, Brazil believes that the Bali Action Plan underlying the current negotiations "does not allow for a bottom-up approach, by which each developed country would select the nature of commitments it wishes to adopt." (FCCC/AWGLCA/2009/MISC.4: 54) In a similar vein, South Africa foresees that an agreement would allow for developed countries to use domestic emission trading in meeting their treaty commitments, but cautions that "domestic cap-and-trade legislation shall not in itself constitute a commitment under the Convention or its instruments." (FCCC/AWGLCA/2009/MISC.4.II: 96) Such fears appear well-founded: by way of defining developed-country commitments, the U.S. negotiating text for the upcoming UNFCCC informal consultations simply notes that, for each developed country, an appendix to the agreement "includes quantitative emissions reductions/removals in the 2020/[] timeframe, in conformity with domestic law." (FCCC/AWGLCA/2009/MISC.4.II: 107)

In essence, the issue amounts to a further effort by developing countries to insist upon the distinction between the nature of their commitments as voluntary and non-binding, and developed country commitments as mandatory and binding. This distinction has long been seen as being under assault from developed country demands that advanced developing countries take on binding commitments, or agree to a "graduation process" with binding obligations down the road. Conversely, Brazil and South Africa may now worry that developed countries, and in particular the United States, may want to change the nature of their own commitments to something more akin to those taken on by developing countries.

(3) Developing country actions

Developing countries uniformly stress the primacy of development and poverty reduction over mitigation action. Without prejudice to the importance of these goals, however, developing countries have committed in the Bali Action Plan to implementing 'nationally appropriate mitigation actions' (NAMAs), and most major emitters have begun taking meaningful steps in this direction. [See Annex A for a summary of official policies.] Providing financial and technical support for NAMAs is seen as a moral obligation of developed countries, as well as their treaty commitment under the UNFCCC. Thus, developing countries view the quid pro quo between them and developed countries not as, 'action for action,' but as 'action for action plus support'.

NAMAs are conceived of as country-driven plans for emission abatement that put actions in the context of the overriding goal of growth and development. Many agree with the African Group when it imagines that any funding and support mechanism would “strengthen developing country capacity to ensure ... involvement during the stages of identification, definition and implementation” of mitigation actions that receive international support.

(FCCC/AWGLCA/2009/MISC.4: 13)

At the present stage of the negotiations, most Parties conceive of NAMAs in a broad way.

Various suggestions for eligible actions have included the following:

- (a) “Sustainable development policies and measures, nation- or sector-wide mitigation programs, as well as activities and projects (e.g. clean development mechanism-type activities);
- (b) Low-carbon development plans and strategies;
- (c) National sector-based mitigation actions and standards;
- (d) Actions under para. 1 (b) (iii) (REDD-plus);
- (e) Technology deployment programs;
- (f) Relevant standards, laws, regulations and targets at a national or sectoral level;
- (g) Cap-and-trade schemes.” (FCCC/AWGLCA/2009/4.II: 11)

There is consensus that the UNFCCC should establish a registry to record planned NAMAs and ensure recognition of current actions to reduce emissions. The registry may also play a role in securing funding for NAMAs, but opinions differ on what this role might be.

The concept of NAMAs has been helpful in consolidating the idea that in lieu of mandatory quantitative commitments, developing countries may demonstrate strategic planning for measureable and verifiable mitigation action. Yet, the concept will be meaningful only once certain elements have been defined: (i) what will be the legal and substantive nature of developing country commitments; (ii) which MRV procedures will be required for NAMAs; and how would NAMAs be funded (the question of funding is discussed below, under [7]).

(i) The nature of developing country commitments. Many developing countries have consistently argued in favor of defining each policy they undertake separately in terms of its impact in reducing BAU emission growth, and against imposing a cap (however generous) on economy-wide emissions, based on a BAU projection. Both approaches can reflect a real mitigation effort. Yet, the difference is significant: under a cap, maximum absolute emissions at any point are

fixed; under a program-based approach, they are not. From the point of view of developing countries, rejecting caps reduces uncertainty, given that any BAU estimate is highly sensitive to baseline scenario assumptions, and it is hence not easy to predict how much of a constraint pre-set caps would impose on development in practice. Conversely, from the point of view of environmental effectiveness, abandoning caps increases uncertainty. Major emitters are keenly aware that what separates developed-country Parties to the KP from developing-country Parties is precisely their binding commitment to reduce overall emissions. By implication, the question as to whether NAMAs ought to be economy wide, mandatory and/or binding goes to the core matter of whether this simple division will be revisited, perhaps in a gradual process over time.

Developed countries favor such a process. The United States, for instance, suggests in its recent negotiating text that “developing-country Parties whose national circumstances reflect greater responsibility or capability,” should submit NAMAs “in the 2020/[] timeframe that are quantified (e.g., reduction from business-as-usual),” as well as, crucially, specify a date by which developing country Parties will take on binding quantitative commitments equivalent in nature to those made by developed countries. (FCCC/AWGLCA/2009/MISC.4.II: 107) Japan suggests that developing countries “which have a substantial contribution to the global emissions of greenhouse gases and have appropriate response capabilities” are obliged to set economy-wide or sectoral intensity targets. (FCCC/KP/CMP/2009/11: 8) The EU hopes for stronger commitments from “OECD members and candidates for membership thereof” – which would include Korea, Mexico, and Turkey as OECD members, official candidates like Chile, as well countries with ‘enhanced engagement, with a view to possible membership,’ namely Brazil, China, India, Indonesia and South Africa. (FCCC/AWGLCA/2009/MISC.4: 83)

Brazil, China, and India explicitly oppose any reclassification of developing countries with higher emissions and higher capacity into a separate group, including through a ‘graduation’ process, and are averse to the idea of taking on binding caps. The exact language of their positions may reflect subtle differences. Brazil simply refers to the need to “maintain the difference, both in intensity and legal nature, between the contributions of developed and developing countries.” (FCCC/AWGLCA/2009/MISC.1: 17) India references the Bali Action Plan, and argues that NAMAs “are clearly differentiated from the commitments or actions required of developed countries,” and that, in particular, “emission limitation objectives are excluded in the case of developing countries.” (FCCC/AWGLCA/2008/MISC.5/Add.2: 155) China insists that “the form of specific [mitigation] actions shall be subject to the determination of each developing country, taking into account its respective capacities and specific national circumstances,” thus stressing

the importance of a voluntary process, rather than limiting the nature of commitments in the outcome. (FCCC/AWGLCA/2009/MISC.4: 64) South Africa similarly rejects a formal reclassification, but has shown flexibility in considering different types of commitments. Binding commitments from major developing country emitters would likely be in the interest of least-developed countries, especially those at high risk of climate impacts. Still, the most recent African group negotiating text speaks of a “firewall” between developed and developing country commitments. (FCCC/AWGLCA/2009/MISC.4.II: 12)

In stark contrast, Mexico’s national climate action plan argues that “the current division between ‘Annex 1’ and ‘non-Annex 1’ countries has to move towards a more realistic differentiation” through a multi-stage process where binding commitments would follow as “the final phase of a step by step process.” (Government of Mexico, 2007: 13)

Korea, Mexico, Indonesia and South Africa have focused on several plausible compromise options. While they stress the voluntary and country-driven nature of NAMAs, Korea, Mexico and Indonesia would consider no-lose targets for the economy as a whole. (Where a country agrees to a no-lose target, or ‘soft cap,’ it is eligible for issuing emission credits if it succeeds in reducing its emissions below the target, but does not face penalties if it does not succeed in doing so.) The LDC group’s negotiating text similarly insists that “developing countries wishing to participate in implementation of NAMAs will have to determine/establish their reference point (business as usual),” hence opening the door to hard or soft economy-wide commitments. (FCCC/AWGLCA/2009/MISC.4.II: 7) South Africa discusses “no-lose sectoral crediting baselines.” (FCCC/AWGLCA/2009/MISC.4.II: 97)

(ii) *Measurement, reporting and verification (MRV)*. In facilitating an effective contribution from major developing country emitters, MRV arrangements matter no less than the nature of NAMAs. Economy-wide caps with weak MRV may be ineffective, while strong MRV may render even relatively soft commitments effective through accountability and financial incentives.

Core questions on MRV concern, firstly, whether MRV shall apply to whether developing countries undertake the *actions* they committed to, or to the *impact* of those actions. Secondly, there is dissent around whether MRV would be carried out by national authorities or an international body, and whether according to national or internationally agreed standards. Most developing countries argue that different regimes should apply to actions that receive international support and those that do not, and it seems likely that compromise might be possible along those lines. The idea of linking monitoring of NAMAs and monitoring of the support they receive in a single MRV instrument has attracted much attention.

China envisages MRV to be carried out nationally according to UNFCCC guidelines, and to address actions, not impacts. (FCCC/AWGLCA/2009/MISC.4: 64) Brazil suggests that monitoring and reporting would be undertaken nationally, with UNFCCC verification. MRV would pertain to the “result of the proposed action, nationally measured in terms of direct emission reductions. This result is not based on the definition of hypothetical emission baselines.” The implication appears to be that reductions would be measured against a distinct counterfactual for each action, rather than against a soft cap. (FCCC/AWGLCA/2009/MISC.4: 55)

Korea, South Africa, and the African Group have made proposals that argue for different MRV rules for different types of NAMAs. Thus, South Africa envisages three tiers of MRV: (1) NAMAs that receive support through international public funding would be subject to MRV under international guidelines to be defined by the COP; (2) NAMAs that generate tradable carbon credits would be subject to MRV by COP-accredited parties, also working under international guidelines (as is currently the case with Clean Development Mechanism (CDM) projects under the Kyoto Protocol); and (3) self-financed NAMAs would require only reporting in national communications. (FCCC/AWGLCA/2009/MISC.4: 98; for Korea, see FCCC/AWGLCA/2009/MISC.1: 70) Quite similarly, India views MRV as a contractual obligation arising only for those NAMAs that receive international support. For these, it would allow MRV modalities to be negotiated between UNFCCC and the host country. (FCCC/AWGLCA/2008/Misc.5/Add.2: 156)

Mexico suggests international review of all NAMAs – “pledge and review.” (Government of Mexico 2007: 14) For NAMAs receiving international support (through Mexico’s proposed ‘Green Fund’), it focuses on ascertaining total emissions at the national level, and believes that it is “necessary to adopt baselines derived from periodic emissions inventories with strict methodologies such as those used for National Communications under the Convention,” with the advantage that “this reference to baselines abates transaction costs and overcomes the need of much stricter additionality tests of CDM projects derived from their offsetting nature.” (FCCC/AWGLCA/2008/MISC.2: 43) This raises the important question whether, in order to ensure that global emissions are on track toward the agreed target, it is necessary to more frequently measure national emissions in developing countries. Currently, most developing countries measure total emission levels infrequently. The EU calls for “more frequent” emission inventories, and Japan and the United States suggest that major emitters among developing countries should report annually, as developed countries currently do. (FCCC/AWGLCA/2009/MISC.4: 109, 131; FCCC/AWGLCA/2009/MISC.4.II: 108) South

Africa supports a requirement for developing countries to submit emission inventories every other year. (FCCC/AWGLCA/2009/MISC.4: 98)

(4) Land use, land-use change and forestry (LULUCF)

Parties universally recognize the importance of forests in reducing emissions. Many believe that a support mechanism flexible enough to respond to different country capacities requires the use of several funding instruments. Important open questions relate (i) to whether developed countries may use carbon credits from reduced deforestation and forest degradation (REDD) as offsets, and hence, what the role of market funding would be; (ii) to the setting of baselines, and (iii) to MRV.

(i) Offsets from REDD activities. Brazil and China have strongly emphasized the need for industrialized countries to make emission reduction commitments that are additional to any action on REDD. Indeed, China expresses determination that “the treatment of LULUCF should not lead to the creation of loopholes for Annex 1 Parties to achieve their emission reduction commitments by simply doing ‘magic’ paper work.” (FCCC/KP/AWG/2009/MISC.5: 34; on Brazil, see FCCC/KP/AWG/2009/MISC.5: 27) Both countries insist that an agreement on REDD be only concluded after new industrialized country commitments have been hammered out.

On the other hand, Korea has explicitly noted that “carbon credit for REDD+ could be a good example for crediting NAMAs.” (FCCC/KP/AWG/2009/MISC.3: 78) The African Group also considers the carbon market a source (among others) of funding for REDD.

(FCCC/AWGLCA/2009/MISC.4: 13) Indonesia considers that markets “may offer the best means to provide financial incentives at the scale required” for effective REDD action, as long as such funding is flanked by resources for capacity building and market readiness.

(FCCC/AWGLCA/2009/MISC.4: 120) Similarly, the Coalition for Rainforest Nations, supports a phased approach.³ Countries engaging in REDD activities would fall into three categories: those receiving initial capacity building and market readiness support from ODA and public funds; those building market institutions and engaging in permit trading for demonstration, with support from public funds; and those fully participating in a market mechanism.

(FCCC/AWGLCA/2009/MISC.1.Add.4: 5)

India has brought forward another compromise suggestion (compatible with a phased approach). Funding would be made available through market mechanisms for *flows* of emission reductions,

³ Belize, CAR, Costa Rica, Dominican Republic, DRC, Ecuador, Equatorial Guinea, Honduras, Ghana, Guyana, Kenya, Madagascar, Nepal, Nicaragua, Panama, Papua New Guinea, Singapore, Solomon Islands, Tanzania, Thailand, Uganda, Vanuatu and Viet Nam.

such as reduced deforestation, while public funding would support the maintenance of carbon *stocks*, for instance, through enhanced forest management. (FCCC/AWGLCA/2009/MISC.4: 113) Mexico has echoed this idea. (FCCC/AWGLCA/2009/MISC.4/Add.1: 3) This approach may help avoid the inequity inherent in making funding dependent on expected deforestation only, and thereby disadvantaging countries that historically have a strong record in conservation.

(ii) *Baselines for REDD*. Allocating funding for REDD activities requires establishing a baseline against which to benchmark observed deforestation and forest degradation. Three types of schemes have emerged. Brazil proposes using historical national deforestation rates as a benchmark. (FCCC/SBSTA/2007/MISC.2: 23) Others, like the Coalition for Rainforest Nations, suggest adjusting such historical deforestation benchmarks for each country by a factor reflecting the income level of the country, as well as its forest area. (FCCC/AWGLCA/2008/MISC.5: 22) Advocates of this approach argue that it would reward countries that have maintained high forest cover, and grant low-income countries additional funds to limit deforestation. Thirdly, some developed countries have argued for projecting deforestation with a more complex model, since, as the EU puts it, the “reference emission level may need modification to reflect causal understanding of socio-economic factors that determine the rate of deforestation or forest degradation, rather than simply being set equal to the historical rate.” (FCCC/AWGLCA/2008/MISC.5/Add.1: 20)

(iii) *MRV for REDD*. In terms of MRV, the main issue (other than the choice of a baseline) remains whether and how the risk of leakage would be addressed, i.e., whether countries would be eligible for credit for successful conservation or reforestation in designated areas, or whether the national net change in forest cover would be the only allowable measure of success. Most Parties favor national-level crediting. National performance measures pose significant administrative challenges to developing countries. Yet, it seems ineffective to grant credit in the presence of leakage (although it may be desirable to temporarily accommodate projects at the subnational level where no sufficient national monitoring and enforcement capacity exists). A possible solution for cost-effective and dependable deforestation monitoring in large areas may lie in combining remote sensing data with periodic on-the-ground verification. Using satellite data allows for frequent updates at modest cost, while in situ verification ensures reliability.⁴

⁴ The Center for Global Development’s Forest Monitoring for Action (FORMA) project provides proof of concept for a monitoring tool in the public domain: <http://www.cgdev.org/content/article/detail/1422370/>.

(5) Support for adaptation

There is a high level of consensus on the need for new and additional funding for adaptation in developing countries. Parties also share an understanding that the range of activities covered should be broad and should encompass the preparation of adaptation plans, risk management, technology transfer, and capacity building, as well as help in economic diversification. Some priority areas are generally recognized, namely monitoring/forecasting/early warning, resilience in the agriculture sector, insurance, and coastal-zone management. (FCCC/AWGLCA/2009/4: 8) There is consensus that funding envelopes should favor least developed countries, small island developing states, and African states at risk of drought and floods. Agreement also extends to giving a lead coordinating role to the UNFCCC.

Important items still on the agenda concern the source and amount of adaptation funding. India has suggested dedicating “at least several tens of billions of US\$ per year” to adaptation, as opposed to “several hundred billion US\$ per year” in support of emission reductions in developing countries. (FCCC/AWGLCA/2009/MISC.1: 41) South Africa argues, along with the African group, that “by 2020, the scale of financial flows to support adaptation in developing countries must be at least \$67bn p.a.” (FCCC/AWGLCA/2009/4: 12) China simply refers to the need for funds to be sufficient to cover the comprehensive range of adaptation actions foreseen, including “resilience through economic diversification,” a category where needs arguably may be hard to bound. (FCCC/AWGLCA/2009/MISC.4: 65)

In principle, developing countries expect assistance to cover the full cost of stand-alone adaptation activities and the incremental cost of activities integrated with general development planning. Still, a common understanding has yet to emerge on how, in practice, one ought to separate the adaptation benefits of a project from co-benefits for development. As a result of this conceptual challenge, MRV for adaptation threatens to be difficult in technical terms. In terms of MRV modalities, it is generally expected that MRV of actions as well as of support will closely follow the Kyoto Protocol requirements, with measuring and reporting procedures following international guidelines, and with UNFCCC verification. Importantly, the LDCs “support MRV for adaptation in order to ensure mutual accountability, especially given experiences under [existing adaptation programs], where there has been very little accountability in the agency support provided, leading to very slow progress since the inception of the [adaptation] program almost a decade ago.” (FCCC/AWGLCA/2009/MISC.4.II: 6) China concurs, suggesting that MRV cover support and technology transfer granted and their sufficiency in reaching the stated goals, as well as the use of resources and the adaptation impact of projects.

(FCCC/AWGLCA/2009/MISC.4: 66) Adaptation projects may hence offer a particular opportunity to demonstrate a development partnership of mutual accountability.

(6) Technology development and transfer

Agreement in principle exists on the importance of boosting technology development, transfer, and deployment. Yet, little is settled in terms of modalities. It is not hard to see scope for positive action, e.g., in joint research projects that would yield jointly owned intellectual property. The question remains whether these activities can reach the scale that will be needed, in particular, to avoid technological lock-in and boost energy efficiency in fast growing countries.

The climate change plans brought forward by the major developing country emitters represent a significant step forward in moving toward concrete action on technology transfer. In earlier negotiations, industrialized countries cited the lack of detailed information on developing country mitigation plans and technology needs as a major obstacle to cooperation. (CIEL, 2008) By way of contrast, current plans clearly outline compelling priorities for technology needs, on the basis of immediate opportunities for reducing emission growth.

Proposals for technology transfer revolve around a draft structure put forward by China and the G-77. It envisages a Multilateral Technology Acquisition Fund, managed by a new subsidiary body to be established under the UNFCCC. This body would plan, coordinate, fund, and monitor technology transfer, based on the technology needs specified in each NAMA. The fund would be raised from developed-country public resources. Still, China stresses that the goal is “linking public finance with [the] carbon market, capital market and technology market, and leveraging larger amounts of private finance by [a] smaller amount of public finance.” The fund’s instruments would include subsidies, patent licensing, loan guarantees, direct equity investment, etc. It would cover the incremental cost of deployment and diffusion (as benchmarked against agreed sector/technology baseline cost), as well as the full cost of R&D and demonstration, and capacity building. (FCCC/AWGLCA/2009/MISC.4: 67)

In terms of addressing issues related to intellectual property rights (IPR), China had earlier proposed a menu of actions, including compulsory licensing, joint R&D/joint ownership, and pooling of IPR from publicly financed R&D in the public domain. In addition, it suggested incentives for differentiated pricing for developing countries. (FCCC/AWGLCA/2009/MISC.1: 23) China’s most recent negotiating text contains less specific language on changing IPR to enhance technology transfer. LDCs have stressed that “while the major developing countries have

capacity to adapt technologies, the LDCs and others will simply use these technologies as Black Boxes and therefore issues of intellectual property rights are of less significance,” and affordable access is paramount. (FCCC/AWGLCA/2009/MISC.4.II: 7)

India’s views on technology transfer mirror China’s closely. India favors establishing an Executive Board of Technology under the COP to oversee a technology fund with the assistance of a secretariat. Full funding would be granted for R&D and deployment of *adaptation* technology, as well as for R&D and demonstration of *mitigation* technologies. The technology fund would cover the incremental cost for the “creation of manufacturing facilities” for clean technology through compulsory licensing or funding for patent cost, conversion of old production facilities, early retirement of capital, personnel retraining, etc. The fund could pursue these goals by guaranteeing FDI, financing capacity building, leveraging venture capital for new technologies, or supporting joint development by several Parties. MRV would be carried out on the speed and depth of technology transfer. (FCCC/AWGLCA/2009/MISC.4: 115)

Finally, Mexico envisages diverting part of Parties’ contributions to its proposed Green Fund into a Clean Technology Fund. The fund’s objective is somewhat more narrowly conceived of than in the G-77 and China’s vision. It would support technology development, demonstration and dissemination, yet, with a focus on “technologies that are close to acquiring commercial status and that even in the short term, would allow beneficiary countries to reorient their development towards a lower carbon economy.” (FCCC/AWGLCA/2008/MISC.2: 44)

(7) Funding global action

Providing sufficient funds for reducing emission growth in developing countries is among the biggest unsettled issues on the agenda. Industrialized countries will most likely take on binding caps, and developing countries most likely will not. The key question for mitigation funding is then who pays for abatement in developing countries (the implementing country, or developed countries – whether through public funds or private carbon market transactions), and who receives credit for the reduction in emissions (the implementing country, or the one that pays).

Three scenarios (and mixtures between them) are possible. Firstly, (1) NAMAs could receive public funding from developed countries, with emission reductions credited to the implementing country. Alternatively, the system could expand the use of market mechanisms beyond the CDM process. With this option, (2a) NAMAs could receive (partial) public funding from developed countries, and reductions could be (partially) credited to the financing country as offsets; and/or

(2b) NAMAs could generate certified offsets which could be sold in the private carbon market. In terms of burden sharing, the two latter mechanisms are *a priori* equivalent, since the market buyers would be private entities from developed countries that purchase credits to meet their domestic cap requirements. It would of course also be possible for (3) NAMAs to be funded by developing countries, who then retain the credits.

Adaptation and mitigation funding involve different considerations and tradeoffs. Adaptation presents a tradeoff between equity and willingness to pay in developed countries. It hence resembles traditional aid negotiations, although the ethical obligation on developed countries to provide funds is particularly compelling in the context of climate change, since the ability to assist meets responsibility for damage inflicted. The EU's, Japan's and the United States' current negotiating texts are quite forthcoming on adaptation funding.

By way of contrast, in mitigation funding, important effectiveness and efficiency questions are also at play. One may find it appealing on principle for developed countries to conduct most emission abatement domestically, and technology development may be fostered by vigorous domestic action. Yet, action may be more cost-efficient, and technology transfer may be deeper, if there is a market element to international action. Furthermore, many studies illustrate how little excess capacity there exists in mitigation opportunities in the near term, and hence, how little room for error the global community has in implementation. (McKinsey, 2009) The implication may be that flexibility mechanisms are indispensable not just in terms of economic efficiency, but indeed in terms of environmental effectiveness.

The relative role in financing NAMAs of market mechanisms, public funds from industrialized countries, and developing countries' own resources will be a key negotiation issue. The Parties agreed in Poznan to retain the CDM mechanism, so there is no doubt that some market mechanism will still be in place under the new regime. Yet, the volume of the CDM is small compared to emission reduction needs, and the important question remains whether the market will be scaled up, through offset credits generated by NAMAs, or through some other version of programmatic and policy-based CDM.

Open questions hence remain as to (i) the scale and modalities of public funding from developed countries, and (ii) the use of offsets in meeting developed country commitments, and the role of private carbon markets.

(i) Scale and modalities of public funding. Some developing countries have specified what amount of public financing from developed country they would consider appropriate.

India speaks of "...assessed contributions equal to at least 0.5% of the GDP of the Annex I Parties" for the UNFCCC financial mechanism. Among developed countries, with the exception of transition economies, each individual country "shall contribute 1 percent of its GDP." (FCCC/AWGLCA/2009/MISC.4: 109-110). South Africa and the African group envisage that "a 2020 target for the scale of financial flows to support mitigation in developing countries is set at \$200bn by 2020 (0.5% of GDP of Annex II Parties)." (FCCC/AWGLCA/2009/MISC.4: 13) China suggests that "developed country Parties shall make assessed contributions by a percentage of annual GDP, e.g. 0.5-1%, in addition to the existing ODA." (FCCC/AWGLCA/2009/MISC.4: 68)

Many developing countries argue that mitigation support funds are not voluntary relief granted by industrialized countries but dues owed to developing countries in exchange for their likely reaching lower historical per-capita emission levels than developed countries. Brazil, China and India have hence expressed a strong preference for raising funds through assessed contributions. Indeed, Brazil argues that global carbon taxes and other "proposals to divide the burden of financing are unacceptable." (FCCC/AWGLCA/2009/MISC.1: 17) India further stresses the need to distinguish between ODA and funding in support of mitigation and adaptation. It argues that funding "needs to be adequate and predictable ... and hence cannot be voluntary." (FCCC/AWGLCA/2009/MISC.4: 110)

(ii) The use of offsets by developed countries. Among key emitters, China is adamant that "the emission reduction credits generated from NAMAs ... shall not be used by developed country Parties to offset their quantified emission reduction targets." (FCCC/AWGLCA/2009/MISC.4: 66) China points out that the IPCC-recommended emission range for Annex I countries "does not take into account ... the use of international offset mechanisms," so that the use of offsets might lead to under-reaching. (FCCC/KP/AWG/2009/MISC.3: 28) In effect, this stance implies that developed countries would be obliged to finance NAMAs without receiving credits. Private entities could still buy credits from project-based CDM, but the market mechanism would not be vigorously expanded. China considers that the "private sector approach and market-based mechanism can only play a complementary role" to public funding. It argues that the profit motive and the market's "weakness in providing public goods" limit its effectiveness in fostering emission reductions, thus repudiating the consideration that pricing in emission externalities might alter the market's ability to provide the public good of a livable climate. (FCCC/AWGLCA/2009/MISC.4: 68)

India has stressed the mandatory nature of public funding and argues that the implementation of NAMAs would be “contingent upon the receipt of the enabling finance and technology requirements,” (FCCC/AWGLCA/2009/MISC.1: 42) in the form of “interest-free, non-repayable transfers.” (Government of India, 2009b: 4) India allows for the continued use of the CDM but does not foresee that NAMAs would generate tradable credits. Brazil has articulated a similar position. (FCCC/AWGLCA/2009/MISC.4: 55)

At the opposite end of the spectrum, Mexico and Korea have come out strongly in support of reforming and expanding market mechanisms to complement public funding. They see NAMAs as a key vehicle in this undertaking. Korea argues that “public financing from developed countries would not be sufficient to support all NAMAs of developing countries.” (FCCC/KP/AWG/2009/MISC.3: 78) It proposes that the COP “[decide] to set up a crediting mechanism ... in which carbon credits for the verifiable emission reductions from the NAMAs of the developing country Parties ... can be issued in order to assist them in achieving sustainable development and contributing to the global efforts to combat climate change.” (FCCC/AWGLCA/2009/MISC.4.II: 79)

Mexico has sketched out a similar position in its National Strategy, and the idea of NAMA credits is strongly consistent with its domestic cap and trade policy. It argues that “reductions resulting from ... NAMAs could either be a contribution of the [implementing] country to the global mitigation effort, or be used in a crediting mechanism of the carbon market in exchange for additional caps for Annex I Parties.” (FCCC/KP/AWG/2009/MISC.3: 74) Its Green Fund proposal is meant to increase international action and hence calls for any emission reductions supported by the Fund to be additional to commitments for domestic emission reductions. Yet, it also envisages that, once the Fund is firmly established, Parties could explore the possibility that the Fund could issue carbon credits for activities it finances, and sell these to private entities. (FCCC/AWGLCA/2008/2008/MISC.2: 44)

Indonesia and South Africa also see a role for an expanded use of market mechanisms. Indonesia considers public funding a “major source” of investment, but believes that additional significant market resources will be required. Congruently, it argues that developed country emission abatement “should be undertaken mostly by domestic actions,” but suggests that developing country NAMAs could generate carbon credits where a country emits less than it is permitted to under a soft cap. (FCCC/AWGLCA/2009/MISC.4: 119) South Africa and the African group call for the use of “new and innovative sources of public and private sector finance,” yet, “with the major source of funding coming from the public sector.” (FCCC/AWGLCA/2009/MISC.4: 14)

Korea has floated the possibility that a proportion of carbon credits generated could be “permanently retired from the global carbon market.” (FCCC/KP/AWG/2009/MISC.3: 79) Mexico similarly considers that, if carbon credits were to be sold for action financed by its Green Fund, these credits would be “subject to discount rules ... to ensure the environmental integrity of the scheme.” In addition to maintaining environmental effectiveness, introducing discount factors might also preserve a stronger incentive for developed countries to lower emissions domestically: from a developed country perspective, applying a discount factor is equivalent to raising the price of offsets relative to the price of domestic emission abatement. With similar goals in mind, a number of other Parties have suggested limiting the share of a developed country’s emission reduction commitments that could be fulfilled through offset purchases – perhaps to as little as 10%. (FCCC/AWGLCA/2009/INF.1: 80)

The views expressed by Indonesia, Korea and Mexico and (perhaps) South Africa are not incompatible with the U.S. position, which stresses awareness of “the need for a dramatic increase in the flow of resources available to developing countries to catalyze both mitigation and adaptation actions,” but also believes that “resources will need to flow from a wide variety of sources,” and argues that “the private sector is expected to be a much larger source of funding than the public sector.” (FCCC/AWGLCA/2009/MISC.4.II: 109) Similarly, the current EU proposal for the KP amendment envisages a mix of market and public funds in supporting developing-country action. It foresees a sectoral crediting mechanism, in which developing countries set no-lose sectoral emission targets, and are eligible for certified tradable credits if their emissions are below the target. Credit trading would also include “units created under mandatory emissions trading systems in [developing] countries,” such as Mexico’s cap and trade scheme. (FCCC/KP/CMP/2009/2: 13; for Japan’s position, see FCCC/KP/CMP/2009/11: 14)

Disagreement over the use of offsets may be driven by genuine worries among developing countries that developed countries are not taking on sufficiently deep emission reduction commitments. In light of the relatively low emission cuts proposed by the United States and some other developed countries, this is a legitimate concern. In addition, major developing emitters may be concerned that selling today’s emission credits generated from comparatively cheap mitigation action may leave them facing higher marginal cost in meeting commitments they may have to take on themselves post-2020. (Observers have called this the ‘low hanging fruit’ problem’ of mitigation.) Yet, it may be in the interest of many developing countries, and LDCs in particular, to seek a compromise that would allow for a broader use of offsets in exchange for higher than expected developed country commitments – a trade-off that Indonesia and Mexico,

for instance, have suggested. Such a compromise might help promote core interest of LDCs, namely reducing future climate change impacts, preserving scarce international funds for adaptation expenses, and attracting investment for NAMAs.

(8) Institutional arrangements

Much work remains to be done in designing an institutional architecture to support action on climate change. Key areas of contention include (i) the governance of climate-related funds and carbon markets, as well as (ii) funding eligibility criteria and access modalities.

(i) The role of markets and multilateral funds. In essence, developing-country proposals for the institutional architecture either call for a UNFCCC-managed system of large public funds, or envisage a more decentralized market architecture with a smaller role for public funds.

The G-77 and China have brought forward a detailed proposal on governance and institutions. It rests on two principles: supremacy of the COP as the main governing body, the reliance on public funds. The scheme would set up separate new funds, namely an “Adaptation Fund, Mitigation Fund, Multilateral Technology Acquisition Fund, and Capacity Building Fund,” as well as perhaps a Venture Capital Fund and a Climate Insurance Fund. All of these would be under the authority and guidance of the COP, and managed by a Board with geographically balanced representation. They would operate with the support of a secretariat, a scientific advisory panel and a monitoring and evaluation panel, as well as a trustee. (FCCC/AWGLCA/2009/MISC.4: 68)

The African Group’s and India’s proposals are similar in spirit. India calls for “a multilateral governance structure that is sufficiently responsive to the perspectives of the developing country Parties.” (FCCC/AWGLCA/2009/MISC.1: 41) China and India insist that developed countries may meet funding commitments only through contributions to funds overseen by the UNFCCC, not through contributions to other multilateral institutions or through bilateral agreements. Indeed, India argues that there is “no scope for *unilateral* determination by the assesses [developed countries] of which developing country Parties may be funded, or the extent of funding required.” (FCCC/AWGLCA/2009/MISC.1: 41)

As discussed above, Mexico and Korea take more market-oriented approaches. To boost international action above and beyond domestic commitments, Mexico envisages a Green Fund under the “general guidance” of the COP. Yet, it stresses that it wishes to avoid “the creation of a new bureaucratic organization or and additional administrative burden” and hence suggests that “the COP will decide upon an existing multilateral institution that has global and financial

experience in the field, for administering the Fund.” (FCCC/AWGLCA/2008/MISC.2: 45) In addition, Mexico “favors ... the intensive use of market mechanisms to foster mitigation activities in a sustained manner and to reduce, globally, the costs of compliance” and calls for bold action in expanding the CDM. (Government of Mexico, 2007: 15)

Korea proposes setting up a mechanism to issue emission credits for NAMA programs, which would then be traded globally. Oversight and certification would be managed either by a new body set up by the COP or by the CDM Executive Board. Korea’s most recent submission suggests that Parties should at Copenhagen simply agree on the principle of issuing credits for NAMAs, and define at the COP meeting in 2010 what would be the eligibility criteria for NAMAs to receive support, the MRV modalities, and the *modus operandi* for the crediting mechanism. (FCCC/AWGLCA/2009/MISC.4.II: 78) Earlier, Korea had suggested that “the rules to operationalize NAMA credits could build on existing CDM rules and criteria.” (FCCC/AWGLCA/2008/MISC.2: 45)

(ii) *Funding eligibility criteria.* South Africa has proposed a mechanism for how NAMAs could be matched with funding. First, developing countries would register an indicative plan, including emission abatement estimates. This would then be evaluated by a UNFCCC Technical Panel. A certification from the Panel that the impact estimates are technically sound would trigger a mechanism to match the proposal with appropriate support. NAMAs would then be implemented by the individual countries, with capacity building support, and eventual MRV of both actions taken and support provided. (FCCC/AWGLCA/2009/MISC.4.II: 97) The proposal powerfully illustrates the idea that NAMAs should be largely country-driven and subject only to quality control – much like projects are handled under the current direct-access provision for the Adaptation Fund. A key question that is not addressed in the proposal is whether support would be as requested (and then perhaps limited by national funding envelopes) or commensurate with emission impacts (implying a cost-efficient allocation of funds).

Mexico raises this question in its plan for a Green Fund. It suggests that “to avoid imbalances,” there ought to be a ceiling on funding for any given country of perhaps 15% of the Fund’s volume. It further puts forth the idea that “resources could be allocated in the first instance as a function of the funding given to a unit of emission reduction,” i.e., with a view to minimizing the cost of global emission reductions. (FCCC/AWGLCA/2008/MISC.2: 44) This conforms to the EU’s position. (FCCC/AWGLCA/2009/MISC.4: 85)

A path-breaking decision of the Poznan COP was to allow developing countries direct access to the Adaptation Fund. Under this provision, designated bodies in developing countries that meet

certain fiduciary requirements can directly submit projects to the Fund for approval, and then oversee implementation (subject to independent evaluation at project termination). Developing countries hence can choose whether or not they wish to rely on third parties, such as the World Bank or UNEP, for project preparation and implementation. In this respect, as well as in the developing countries' insistence that support commitments from developed countries be subject to MRV and carry penalties for non-compliance, the nature of funding for climate change action breaks the traditional aid paradigm and poses interesting challenges and opportunities for a new type of partnership. Some proposals aim to further pursue this development. Thus, the LDC group calls for "simplifying [access] modalities to funds for adaptation, such as revising the co-financing requirements for LDCs and direct budget support." (FCCC/AWGLCA/2009/MISC.4.II: 6) India appears to take the direct access idea one step further when it suggests that the boards of the various funds, "with approval of the COP, may authorize the national entities of developing country Parties as designated by such Parties, to approve activities, projects, programs for funding, subject to the guidelines and procedures approved by the COP." (FCCC/AWGLCA/2009/MISC.4: 111)

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Annex A – National mitigation plans in major emitters among developing countries

Most current and presumed future major emitters of greenhouse gases among developing countries have published detailed climate change strategies, including the BRICS⁵ countries, Indonesia and Mexico. South Korea has proposed a long-term energy strategy and recently, a green investment strategy.

All strategies reflect solid adaptation planning, with measures envisaged revolving chiefly around capacity building, but in most cases also comprising sectoral resilience programs in agriculture and coastal sectors, as well as insurance.

Mexico's and South Africa's strategies stand apart in being the only ones to chart in detail a trajectory for economy-wide emissions through peak levels to long-term stabilization levels. Mexico has already committed to reducing its emissions to 50% of 2002 levels by 2050, and aims to establish a cap and trade scheme by 2012. South Africa plans for its emissions to peak by 2020-2025, and to decline after 2030-2035. South Korea has committed to defining a similar target by summer 2009.

If implemented effectively, all of these plans have the potential of achieving a “substantial deviation” of emissions growth below BAU, as called for in the IPCC's AR4, and committed to in the Bali Action Plan. What is not clear is,

- (i) whether the envisaged emissions cuts would be sufficient to allow for a long-term global stabilization trajectory at sufficiently low concentrations;
- (ii) whether there is administrative and technical capacity to implement plans as planned; and
- (iii) whether the goals are fiscally and politically viable in the face of macroeconomic turbulence.

⁵ In the UNFCCC categorization, Russia is an Annex I developed country Party, and an economy in transition (non-Annex II). As such, it has quantitative mitigation commitments, and reports on its emissions and policies to the UNFCCC COP. Still, Russia has often been criticized for being passive in its mitigation policies, and has long been viewed as having stayed on the sidelines of the climate negotiations. Yet, a doctrinal shift discussed by Russia's cabinet of ministers in April 2009 appears to have ushered in a more active engagement in the Copenhagen process. (Climate Strategies, 2009; IISD 12/411) On 13 July 2009, President Medvedev announced that Russia would reduce its emissions to 50% of 1990 levels by 2050, less than the 80% reduction envisaged by other industrialized nations.

Brazil

By far the largest share of emissions from Brazil results from deforestation. Hence, it is compelling that a program to restore forest cover and reduce deforestation represents the cornerstone of Brazil's 2008 National Plan on Climate Change. National forest policy has succeeded in reducing by 40% the area deforested annually over 2005-2009, and Brazil aims to further reduce the rate in two stages, to about 30% of the original rate by 2017. The carbon mitigation potential of the initiative is 0.4Gt CO₂ of avoided emissions over 2006-2017 as compared to BAU deforestation, a large contribution to global abatement efforts. (Government of Brazil, 2008: 14) Smaller mitigation benefits are projected for energy efficiency programs (a 10% decrease in electricity use below BAU by 2030) and a bold initiative to further develop Brazil's landmark biofuels program, with a projected expansion of bioethanol use by 11% p.a. through 2017. (11ff) Both policies may yield important R&D externalities, in particular in the development of second-generation biofuels, and in the use of sugarcane bagasse for cogeneration (which is expected to provide an impressive 11% of electricity by 2030).

Brazil is a strong proponent of the 'polluter pays' principle, and regards per capita emissions in the historical aggregate as an appropriate metric. However, the country presents its own historical emissions net of the effect of LULUCF, which must be regarded as a less than transparent accounting practice.

China

The PRC's 2007 National Climate Change Program reflects genuine worry about the possible impact of climate change on China. Changes to the water cycle receive attention, and particular concern is felt about extreme weather events, which are thought to develop "immense impacts on the socio-economic development and people's living." (Government of China, 2007: 6) The Program recognizes the near-doubling of China's emissions over the past two decades, but also highlights the 50% drop in emissions intensity of production over the period 1990-2004 (partly driven by sectoral shifts, but also by significant process efficiency improvements). Importantly, the discussion of the coal-dependency of China's economy is lucid, and there is a sense of urgency in avoiding the technological lock-in over the coming years.

The Program proposes a number of significant initiatives in the energy and industrial sector – many revolving around process improvements and the use of cleaner technologies. Among the largest near-term initiatives to be undertaken by 2010 count an expansion of hydropower,

including the Three Gorges Dam (with an estimated mitigation potential of 0.125Gt CO₂ p.a.), the use of supercritical coal and co-generation coal plants (0.03Gt CO₂ p.a.), and a suite of large efficiency programs (0.09Gt CO₂ p.a.). Three yet more ambitious policies, for which no mitigation potential was specified, include a reduction in the energy intensity of GDP by 20% over 2005-2020, with undoubtedly large potential savings (the Center for American Progress (2009) estimates an annual reduction potential of 1Gt CO₂ p.a. by 2010), ramping up the share of renewables in energy generation to 10% by 2010, and the gradual introduction of a pricing mechanism for energy that “reflects scarcity, market demand and supply, and cost for pollution control.” (31)

Since the introduction of the Program, a steady flow of press reports has indicated that implementation is proceeding apace, with significant investments and administrative pressure. In several sectors, notably clean energy, efforts appear to have raced ahead of the planned pace.

India

The Government of India’s 2008 National Action Plan on Climate Change demonstrates concern about India’s vulnerability, given that its “economy [is] closely tied to its natural resource base and climate-sensitive sectors”. (Government of India 2008: 1) Still, it recognizes that “India has a wider spectrum of choice precisely because it is at an early stage of development,” thus highlighting both the possibilities of technology leap-frogging and the perils of lock-in. India believes that equity in mitigation implies equal per capita shares of the global atmospheric commons. Hence, “India is determined that its per capita greenhouse gas emissions will at no point exceed that of developed countries.” (2) This stance is consistent in principle with global convergence of emissions levels at ca. 2t CO₂e p.c., as is required in order to avoid warming in excess of 2°C. Implementing it effectively would likely have to imply India remaining significantly below developing country emissions to avoid overshooting.

India’s Action Plan articulates a detailed and ambitious R&D agenda for green technologies. Energy efficiency projects in industry and buildings offer major mitigation potential, with projected sectoral emissions reductions by 2030 of 16% and 30-40% below BAU, respectively. (19, 23) The Action Plan reports on steps toward implementing these measures, including mandatory emissions audits in some industries, and a voluntary building efficiency code. It discusses options for ambitious future policies, including carbon taxes as well as emission intensity targets for large enterprises with a market for tradable permits.

Mitigation plans in power generation are ambitious, but an early expansion of coal plants is set to dwarf projects on other sources of energy. Wider use of (ultra-) supercritical coal and IGCC technology is acknowledged as paramount. (37f) Solar co-generation is expected to make a significant contribution in heating and cooling applications, (22) and a recent draft for the National Solar Mission initiative foresees installing 20GW of solar electricity generation capacity by 2020, with early mandates for deployment to achieve scale and lower cost. (Government of India, 2009a: 5) Nuclear energy is projected to take off at large scale in the long-run, after ca. 2030. (38) India has pledged to expand forest cover from 23% of its area to 33%.

Indonesia

Indonesia's 2007 National Action Plan Addressing Climate Change reflects concerns about the country's vulnerability to the effects of global warming. As an archipelagic state, Indonesia has long coast lines prone to flooding, erosion, and salt water intrusion into the water cycle. The Action Plan also stresses that past aggressive exploitation of natural resources through logging, mining, land degradation and uncontrolled urban growth has put strains on the resilience of natural systems and increased vulnerability. While Indonesia "is not yet obligated to reduce its GHG emissions" under the UNFCCC, it believes that "it is necessary to conduct mitigation in [the] energy sector and LULUCF," its two main sources of CO₂ emissions, during the upcoming post-2012 commitment phase. (Government of Indonesia, 2007: 37f)

The Action Plan pledges to rehabilitate 67% of degraded forest by 2025, with immediate steps during the 2007-2012 period. (51) The sequestration potential of the initiative in 2025 is estimated at 0.77 Gt CO₂ p.a., a large contribution to global mitigation efforts. (85) Expansion and improved management of protected forests is expected to extend to 40m ha of forest, with a total sequestration volume of 58 Gt CO₂. In the energy sector, Indonesia intends to move away from its fossil fuel dependency. A 2006 Presidential executive order sets a target of 15% of power generation from renewables by 2025, as compared to 5% in 2007. (Government of Indonesia 2006: Art. 2.2) It foresees phasing out fossil fuel subsidies in principle, but does not impose a timetable beyond earlier cuts. (Art. 5) The Action Plan envisages a target emission reduction below BAU in the energy sector of 30% in 2025 and 50% in 2050. (88ff)

Mexico

In 2008, Mexico made history by becoming the first developing country to establish a national long-term emissions goal, pledging a reduction to 50% of the 2002 level by 2050. It intends to implement this goal through an emissions cap with a domestic carbon market after 2012.

(Government of Mexico 2007: 9)

In terms of current policy priorities for emissions reduction, the 2007 National Strategy on Climate Change focuses on energy generation and LULUCF. In the energy sector, a suite of relatively small-scale projects aims, *inter alia*, to promote conservation, replace oil-fired power plants with gas-fired ones, expand the use of co-generation, and bring about 7GW of renewable power capacity on line, each for emissions reductions of ca. 0.02-0.025Gt CO₂. (4) In the LULUCF area, Mexico plans to implement a number of large near-term projects. With a mix of forest management, protection and incentive programs, the National Strategy hopes to sequester a cumulative 13-23Gt CO₂. (6)

South Africa

Policy development in South Africa has benefited from a thorough national planning exercise yielding a menu of long-term mitigation scenarios. In 2008, South Africa resolved to chart a long-term emissions trajectory that would see emissions peak by 2020-2025, and start falling by 2030-2035. (Government of South Africa 2009: 17) Among developing country strategies, South Africa's 2009 National Climate Change Response Policy reflects perhaps the most acute awareness of the country's responsibility. Characteristically, it notes that without mitigation, South Africa's BAU emission trajectory "would create serious problems for South Africa as a global citizen." (14)

To date, South Africa has resolved to implement a suite of actions with net-negative cost. This includes an energy efficiency strategy, and a shift "away from coal-fired electricity, with renewables, nuclear and cleaner coal each providing 27% of electricity generated by 2050." (Government of South Africa, 2007: 14) The program is estimated to reduce emissions by 0.2Gt CO₂e p.a. on average through 2050. A vision statement for a broader strategy to be published in 2010 foresees "increasing the price on carbon through an escalating CO₂ tax, or an alternative market mechanism." (Government of South Africa, 2009b: 2) It envisions a wide range of policies, from rising fuel standards to feed-in tariffs for renewable power. Perhaps most intriguingly, the government envisages vigorous development of carbon capture and storage,

including through a policy of “not approving new coal fired power stations without carbon capture readiness.” (Government of South Africa, 2009b: 3)

Based on its modeling exercise, South Africa expects average mitigation costs per ton of CO₂e of no more than ca. \$5, quite a low cost by global standards. (Government of South Africa, 2007: 15) South Africa projects GDP and labor market effects of mitigation initiatives to be moderate. For the aggressive ‘Scale Up’ suite of policies, it finds “a positive impact on GDP initially, with a 1% increase in 2015. Employment broadly follows the GDP increase, with a 1% improvement in 2015.” Long-term welfare impacts are an adverse -1%, although the cost is expected to be progressively distributed. (Government of South Africa, 2007: 17)

South Korea

Korea’s 2008 National Basic Energy Plan for the period up to 2030 sets some considerable intermediate goals. The plan calls for energy intensity to decline by almost half by 2030 (0.341 to 0.185 tons of oil equivalent (toe) per 1000\$ GDP). The share of renewables in power generation is planned to multiply (2.4% to 11%), while the share of nuclear is expected to nearly double (14.9% to 27.8%). (Government of Korea 2008: 5) Together with consumer-level conservation, Korea estimates that these shifts in energy generation will result in lowering energy consumption by 46% below BAU by 2030. (6) Korea plans to bring several policy tools to bear in pursuing these goals, including: in the industrial sector, financing for green energy technologies and clean processes, and a certification and transaction process for industry emission credits; support for new transport technologies; an expansion of energy efficient building requirements; and substantial investments in R&D, including nuclear safety. In addition to these actions, Korea intends to test a cap and trade system in 2011, and is preparing to announce an emission cap for 2020. (Yoon, 2009; Cho, 2009)