

**UNIVERSIDADE DE BRASÍLIA**  
**INSTITUTO DE RELAÇÕES INTERNACIONAIS**  
**X CURSO DE ESPECIALIZAÇÃO EM RELAÇÕES INTERNACIONAIS**

**FORMAÇÃO DO REGIME INTERNACIONAL**  
**DE MUDANÇA GLOBAL DO CLIMA PÓS-2012**

**O DIÁLOGO GLOBE G8+5 SOBRE MUDANÇA DO CLIMA**  
**E A POSIÇÃO OFICIAL BRASILEIRA**

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Monografia apresentada ao Programa de Pós-Graduação em Relações Internacionais da Universidade de Brasília, como requisito parcial para a obtenção do título de especialista em relações internacionais.

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**BRASÍLIA, 6 DE ABRIL DE 2009**

*Para Vítor e Helena.*

## RESUMO

As mudanças climáticas são o maior desafio a ser enfrentado pela Humanidade neste século XXI. A extensão, a gravidade e a urgência do fenômeno estão a demandar da comunidade internacional solução imediata e eficaz. O Brasil tem participado ativamente das negociações do regime internacional sobre o tema, em várias esferas. Uma delas é o Diálogo G8+5 sobre Mudança do Clima, promovido pela *Globe International*. Entre 2006 e 2008, a entidade realizou cinco Fóruns de Legisladores, que produziram relatórios e recomendações políticas aos líderes do G8. O propósito desta monografia é comparar as conclusões desses trabalhos com a posição oficial defendida pelo Brasil nas negociações formais nas Nações Unidas. A hipótese que procuramos confirmar é a de que esses dois parâmetros convergem em seus aspectos fundamentais.

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## INTRODUÇÃO

Estão em curso as tratativas internacionais sobre o regime de mudança global do clima para o segundo período de compromisso do Protocolo de Quioto. Neste trabalho, procuramos analisar a participação organizada de parlamentares dos países do G8 e das cinco maiores economias emergentes do mundo nessas negociações. Tal participação ocorre no âmbito do Diálogo G8+5 sobre Mudança do Clima, organizado pela *Globe International*. Nosso objetivo central é comparar os resultados dessa iniciativa com a posição oficial defendida pelo Brasil no processo formal de negociação nas Nações Unidas. A hipótese que procuramos confirmar é a de que esses dois parâmetros convergem em seus aspectos fundamentais.

Nesse contexto, cabe averiguar a legitimidade e o papel da *Globe International* nas negociações internacionais do regime de mudança do clima. Nesse ponto, a hipótese que buscamos verificar é a de que, em virtude da sua composição, a entidade constitui um importante grupo de pressão nas negociações sobre o tema. No entanto, acreditamos que o documento *Globe Pós-2012* não apresenta inovações decisivas para o enfrentamento da questão.

Além disso, é preciso avaliar a composição e o mandato da delegação brasileira nos fóruns promovidos pela entidade, a fim de apreciar o potencial poder vinculante das suas decisões em relação ao parlamento brasileiro. A hipótese que tentamos confirmar é a de que, em que pese a comitiva brasileira ser composta por representantes de várias correntes políticas, o grupo não dispõe da legitimidade necessária para determinar o posicionamento do Congresso Nacional no que tange ao regime internacional de mudança global do clima.

O método utilizado para a condução da pesquisa tem por base a consulta a fontes primárias e secundárias de informação, além da experiência pessoal do autor no assessoramento da delegação brasileira em reuniões promovidas pela *Globe International*. Como fontes primárias, consultamos os relatórios produzidos pelo Diálogo *Globe G8+5* sobre Mudança do Clima<sup>1</sup> e submetidos aos líderes do G8. Como fontes secundárias,

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<sup>1</sup> Como resultado dos trabalhos da *Globe International*, foram produzidos documentos sobre a estrutura do acordo pós-2012 sobre mudança global do clima, biocombustíveis, desmatamento ilegal, eficiência energética, tecnologia, mecanismos de mercado e adaptação.

procedemos a uma revisão bibliográfica de artigos científicos pertinentes e pesquisamos sítios na internet de diversas instituições envolvidas.

As alterações climáticas constituem o maior desafio a ser enfrentado pela humanidade neste século XXI. Mais que um problema a ser resolvido no futuro, elas são uma realidade presente e seus efeitos já começam a se fazer sentir. Ao longo do século XX, as temperaturas médias globais subiram 0,7 °C. Especialistas estimam que, se nada for feito, esse aumento pode superar os 6 °C ao final do século XXI. O nível dos mares pode subir até 0,59 m, em decorrência do derretimento das geleiras e da dilatação volumétrica da água, com reflexos negativos sobre as populações de zonas costeiras. Inúmeras outras conseqüências podem advir das mudanças no clima, como modificação do regime pluviométrico, savanização de florestas úmidas, deslocamento de culturas agrícolas e de pessoas, proliferação de doenças tropicais, entre outros (IPCC, 2007a).

Constata-se que o aquecimento global vem ocorrendo segundo um ritmo cada vez mais acelerado: o aumento de temperatura nos últimos cinquenta anos é quase o dobro do registrado nos últimos cem anos. Segundo estudos mais recentes, a causa fundamental da elevação das temperaturas são as atividades humanas, especialmente após o advento da era industrial. A emissão dos gases de efeito estufa (GEE), como dióxido de carbono e metano, decorre basicamente do consumo de combustíveis fósseis, das mudanças de uso do solo – desmatamentos e queimadas, do mau gerenciamento do lixo e de práticas inadequadas dos setores agrícola e industrial (IPCC,2007a).

Evidências científicas demonstram, portanto, que a mudança do clima – e suas conseqüências mais lembradas, o aquecimento global e a elevação do nível dos mares – é inequívoca e decorre da ação do homem.

Tendo em vista que tanto as causas como os efeitos das mudanças climáticas afetam, em maior ou menor grau, a todos os povos do mundo, a solução para o problema passa, necessariamente, pela conjunção dos esforços de todos os países. Os desenvolvidos, responsáveis pela maior parte das emissões históricas de GEE, são chamados a liderar o processo de corte das emissões de gases poluentes. Países em desenvolvimento, ainda que, para atingir seus objetivos sociais e de crescimento econômico, venham a aumentar suas emissões com tempo, devem evitar o padrão predatório de desenvolvimento adotado pelos países hoje já desenvolvidos.



Situação particular enfrentam as maiores economias emergentes do mundo: África do Sul, Brasil, China, Índia e México. Se, por um lado, não podem ser considerados desenvolvidos no sentido usual do termo, tampouco integram o grupo dos países menos desenvolvidos. Esses Estados respondem por parcela reduzida das emissões históricas de GEE. Entretanto, a China e o Brasil, por exemplo, ocupam o segundo e o quarto lugares entre os maiores emissores desses gases, em termos correntes<sup>2 3</sup>. Em função disso, os países desenvolvidos buscam, em iniciativas como o G8+5, maior compromisso dos países emergentes com o controle de emissões de GEE. A atual crise econômica fez com que se intensificassem as pressões para a imposição de metas obrigatórias a esses países.

O reconhecimento das diferentes contribuições históricas dos diversos países está consolidado no princípio das responsabilidades comuns, porém diferenciadas, consagrado na Convenção-Quadro das Nações Unidas sobre Mudança do Clima (CQNUMC), de 1992, e materializado na atribuição de metas obrigatórias de redução de emissões apenas para os países do Anexo I do Protocolo de Quioto, de 1997.

Após vários anos de indefinição, esse Protocolo entrou em vigor em 2005, noventa dias depois da ratificação pela Rússia. Ao longo do primeiro período de compromisso, que teve início em 2008 e se estende até 2012, as emissões devem sofrer uma redução média de 5% em relação ao ano de 1990. No entanto, os países desenvolvidos não vêm cumprindo as metas estabelecidas. Além disso, foram obtidos avanços pífios na transferência de tecnologia e no aporte de recursos financeiros novos e adicionais para os países em desenvolvimento, mecanismos também consagrados na CQNUMC.

Nesse cenário pouco animador, transcorrem as negociações internacionais para a conformação de um novo regime internacional de enfrentamento das mudanças do clima, a ter vigência após 2012. Durante a 13ª Conferência das Partes (COP-13), realizada em Bali, na Indonésia, em dezembro de 2007, foi estabelecido um “mapa do caminho” (*roadmap*). O objetivo da comunidade internacional é definir um novo arranjo até o final de 2009, quando da realização da COP-15, em Copenhague, na Dinamarca. Tanto o período de dois anos para a celebração do novo acordo, como o intervalo de tempo de três anos para as

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<sup>2</sup> Fonte: Relatório de Desenvolvimento Humano 2007. Disponível em <http://www.pnud.org.br/rdh/>. (acesso em 5 de abril de 2009).

<sup>3</sup> Recentemente, a China ultrapassou os EUA e ocupa o posto de maior emissor mundial de GEE, em termos correntes, conforme amplamente noticiado pela imprensa. Vide, por exemplo, <http://noticias.terra.com.br/ciencia/interna/0,,OI1699999-EI8278.00.html>.

devidas ratificações são considerado demasiado curtos por especialistas (RICUPERO, 2008, pp. 52-53).

Os países integrantes do G8 uniram-se às maiores economias emergentes em um fórum paralelo e complementar às negociações conduzidas no âmbito da Organização das Nações Unidas (ONU). Em 2005, reunidos em Gleneagles, Reino Unido, o G8 lançou o Diálogo sobre Mudança do Clima, Energia Limpa e Desenvolvimento Sustentável. Além dos países do G8 e de países como África do Sul, Brasil, China, Índia e México, os encontros do grupo contaram com a participação de representantes do Banco Mundial, da Agência Internacional de Energia e de bancos regionais de desenvolvimento, entre outros.

Parlamentares dos países participantes se reuniram à iniciativa por meio da *Globe International*. Por solicitação do governo britânico, a entidade reuniu parlamentares dos países do G8 e das cinco maiores economias emergentes (África do Sul, Brasil, China, Índia e México) e criou o Diálogo G8+5 sobre Mudança do Clima. Juntos, os treze países são responsáveis por mais de 70% das emissões anuais de GEE em todo o mundo (PNUD, 2007)..

Embora composta por agentes públicos, a *Globe International* não se configura como um ator estatal nas relações internacionais. Tomando como exemplo o caso brasileiro, compete privativamente ao presidente da República o exercício da política externa e a celebração de tratados (Constituição Federal, art. 84, VII). Ao Congresso Nacional cabe a competência de apreciar, *a posteriori*, esses tratados, referendando-os, ou não, por completo (Constituição Federal, art. 84, VIII). Além disso, a participação de alguns legisladores, ainda que escolhidos entre Deputados Federais e Senadores, não pode ser considerada uma atuação do Congresso Nacional. Se este, como colegiado, não tem competência constitucional para exercer política externa, menos ainda uma delegação de parlamentares a quem não foi atribuída a capacidade de o representar oficialmente.

Entre 2006 e 2008, a *Globe International* realizou cinco fóruns de legisladores, sempre em antecipação às reuniões formais do G8. Dessas reuniões, surgiram recomendações políticas, submetidas aos líderes do G8 durante a Cúpula de Toyako, no Japão, em julho de 2008. O principal documento, intitulado *Combating Climate Change: An International Cooperation Framework Beyond 2012*, pretende consolidar as opiniões consensuais dos legisladores participantes a respeito da estrutura desejável para o acordo

pós-2012 de combate às mudanças do clima. Além deste, foram produzidos relatórios sobre os seguintes temas: biocombustíveis, desmatamento ilegal, eficiência energética, tecnologia, mecanismos de mercado e adaptação.

O presente trabalho, conforme já dito, tem por objetivo avaliar em que medida a posição de consenso alcançada pelos legisladores participantes da iniciativa da *Globe International*, que teve a participação de parlamentares brasileiros, converge com a posição oficial que o governo brasileiro defende nas negociações internacionais formais sobre o regime de mudança global do clima. Para tanto, está subdividido em três capítulos, além desta introdução e das conclusões.

No Capítulo 1, pretende-se traçar um panorama a respeito das mudanças globais do clima, suas causas e conseqüências, além de aspectos econômicos a elas associados. Com esse intuito, serão apresentadas as conclusões do Quarto Relatório de Avaliação do Painel Intergovernamental sobre Mudanças Climáticas (IPCC), divulgado em 2007, e do Relatório Stern, intitulado *The Economics of Climate Change*, de 2006. Ainda neste capítulo, são abordados os acordos multilaterais internacionais que procuram disciplinar a questão – CQNUMC e Protocolo de Quito –, bem como o atual estágio das negociações para o segundo período de compromisso do Protocolo. Por fim, são delineados os contornos teóricos relativos à participação de atores não-estatais na conformação de regimes ambientais internacionais.

Uma breve reconstituição histórica das negociações no âmbito do G8 e da *Globe International* é tentada no Capítulo 2. Nesse tópico são introduzidos o Diálogo Gleneagles G8 sobre Mudança do Clima, Energia Limpa e Desenvolvimento Sustentável e o Diálogo Globe G8+5 sobre Mudança do Clima. Na esfera deste último, são apresentadas as conclusões dos cinco fóruns de legisladores promovidos pela entidade em Bruxelas, Washington, Berlim, Brasília e Tóquio. Apesar de os princípios gerais já estarem estabelecidos desde o primeiro encontro, percebe-se um claro processo de especificação e detalhamento das propostas no transcorrer das reuniões. Em seguida, é feito um brevíssimo relato da participação brasileira nesses fóruns.

Um objetivo do Capítulo 3 é detalhar as conclusões e recomendações políticas contidas nos relatórios produzidos pelos legisladores no âmbito do processo conduzido pela *Globe International*. Os documentos foram subdivididos em duas grandes classes:

aqueles que foram submetidos à apreciação política dos participantes – referentes ao acordo pós-2012, aos biocombustíveis e ao desmatamento ilegal; e aqueles produzidos por grupos de trabalho e, portanto, não negociados por todos os parlamentares participantes.

Outro objetivo deste capítulo é apresentar a posição oficial do governo brasileiro nas negociações sobre o regime internacional de enfrentamento das mudanças globais do clima. Para tanto, valemo-nos de artigo recente do Embaixador Everton Vieira Vargas, diplomata com vasta experiência em negociações ambientais internacionais e, na época, Subsecretário-Geral Político I do Ministério das Relações Exteriores do Brasil, a quem está subordinado o Departamento de Meio Ambiente e Temas Especiais, representante brasileiro nas tratativas internacionais afetas ao tema.

Nas conclusões, procedemos a um cotejo, para avaliar a medida da consonância entre os documentos produzidos pela *Globe International* e a posição oficial brasileira. Percebemos que o teor dos documentos produzidos pelos parlamentares corresponde à posição oficial brasileira em seus pontos fundamentais. Com isso, acreditamos que as propostas brasileiras ganham ainda mais força na comunidade internacional, uma vez que angariaram o apoio de legisladores do G8 e das cinco maiores economias emergentes do mundo.

## 1. MUDANÇAS CLIMÁTICAS E PARTICIPAÇÃO DE ATORES NÃO-ESTATAIS NA CONFORMAÇÃO DE REGIMES AMBIENTAIS INTERNACIONAIS

Neste capítulo, procuramos apresentar um quadro geral sobre as mudanças globais do clima, suas causas e conseqüências, além de aspectos econômicos a elas associados. Para tanto, faremos a exposição das conclusões do Quarto Relatório de Avaliação do IPCC, divulgado em 2007, e do Relatório Stern, intitulado *The Economics of Climate Change*, de 2006. Serão também abordados os textos dos acordos multilaterais internacionais que procuram disciplinar a questão – CQNUMC e Protocolo de Quito –, bem como o atual estágio das negociações para o período pós-2012. Por fim, serão delineados os contornos teóricos relativos à participação de atores não-estatais na conformação de regimes ambientais internacionais, tendo em vista situar a participação da *Globe International* no contexto das negociações internacionais.

### 1.1. Mudanças climáticas: diagnóstico, perspectivas e soluções

#### 1.1.1. Mudanças climáticas ou mudança do clima?

Preliminarmente, é necessário esclarecer a distinção entre as expressões “mudanças climáticas” e “mudanças do clima”, freqüentemente utilizadas como sinônimas. De acordo com a CQNUMC, “mudança do clima significa uma alteração do clima que possa ser direta ou indiretamente atribuída à atividade humana, que altere a composição da atmosfera mundial e que se some àquela provocada pela variabilidade climática natural observada ao longo de períodos comparáveis” (ONU, 1992, p. 5). Para o IPCC, a expressão “mudanças climáticas” refere-se a qualquer mudança no clima ocorrida ao longo do tempo, quer se deva à variabilidade natural, quer seja decorrente da atividade humana (IPCC, 2007a, p. 3).

A distinção fundamental reside, portanto, na natureza das causas da alteração das condições do clima: “mudanças climáticas” refere-se a alterações naturais e às provocadas pela ação humana, ao passo que mudanças do clima dizem respeito apenas àquelas determinadas, direta ou indiretamente, pelo homem, desconsiderada, portanto, a variabilidade natural<sup>4</sup>.

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<sup>4</sup> Basicamente, as variações na radiação solar são a causa natural que altera o equilíbrio do sistema climático. Entre as causas antrópicas para essa alteração figuram as mudanças nas concentrações de gases de efeito

### *1.1.2. Causas e conseqüências das mudanças climáticas*

No período de doze anos entre 1995 e 2006, onze deles estão entre os mais quentes desde 1850, quando se iniciou o registro da temperatura da superfície global. A tendência linear de aquecimento ao longo dos últimos 50 anos é quase o dobro da dos últimos 100 anos; ou seja, o aquecimento global é inequívoco e vem ocorrendo segundo um ritmo cada vez mais acelerado. Além do aumento das temperaturas médias globais do ar e dos oceanos, verifica-se o derretimento generalizado de neve e gelo e a elevação do nível médio global do mar (IPCC, 2007a, p. 8).

Segundo o Quarto Relatório de Avaliação do IPCC, o efeito estufa constitui um fenômeno natural pelo qual parcela da energia solar que incide sobre o Planeta é retida pela atmosfera, o que possibilita a manutenção das condições necessárias à vida. Esse processo, no entanto, vem se intensificando perigosamente, devido a modificações na composição da atmosfera causadas por atividades humanas (IPCC, 2007a, p. 15). As modificações advêm do acúmulo de GEE<sup>5</sup> desde o início da era industrial, decorrente da queima de combustíveis fósseis, da remoção da cobertura vegetal, da decomposição do lixo e de práticas inadequadas na agricultura e na indústria<sup>6</sup>.

O Painel avalia que a temperatura média global aumentará entre 1,1°C (limite inferior do cenário mais otimista) e 6,4°C (limite superior do cenário mais pessimista). Em decorrência do aquecimento, o nível dos oceanos poderá subir de 0,18m (limite inferior do cenário mais otimista) a 0,59m (limite superior do cenário mais pessimista). Estima-se que, devida às emissões já realizadas até hoje, ocorreria ainda um aquecimento adicional de 0,6°C ao longo do século XXI. (IPCC, 2007a, p. 19).

O aquecimento global terá reflexos em setores e sistemas diversos, como, por exemplo, os recursos hídricos – inclusive geração de energia –, os ecossistemas, as florestas, a produção de alimentos, os sistemas costeiros, a indústria, as populações humanas e a saúde. Para a América Latina, projeta-se a savanização da Amazônia e o

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estufa e de aerossóis na atmosfera e as modificações das propriedades da superfície terrestre (IPCC, 2007a, p. 6).

<sup>5</sup> Além do Dióxido de Carbono (CO<sub>2</sub>), o Protocolo de Quioto relaciona como gases de efeito estufa o metano (CH<sub>4</sub>), o Óxido Nitroso (N<sub>2</sub>O), os Hidrofluorcarbonos (HFC), os Perfluorcarbonos (PFC) e o Hexafluoreto de Enxofre (SF<sub>6</sub>) (ONU, 1997, p. 23).

<sup>6</sup> De acordo com o documento “Mudança do Clima 2007: a Base das Ciências Físicas”, publicado em fevereiro de 2007 pelo IPCC, “os aumentos globais da concentração de dióxido de carbono se devem principalmente ao uso de combustíveis fósseis e à mudança no uso da terra. Já os aumentos da concentração de metano e óxido nitroso são devidos principalmente à agricultura” (IPCC, 2007a, p. 3).

aumento da aridez das regiões semi-áridas. Esse processo traz o risco de “perda significativa de biodiversidade”, em função da extinção de espécies. “Nas áreas mais secas [da América Latina], prevê-se que a mudança do clima acarrete a salinização e a desertificação de terras agrícolas” (IPCC, 2007b, p. 14).

Nesse cenário, os países em desenvolvimento são mais vulneráveis à mudança do clima, em função de que (i) os efeitos das mudanças climáticas serão mais intensos no hemisfério sul, onde se concentram as nações menos desenvolvidas e (ii) eles têm menor capacidade – tecnológica e financeira, por exemplo – de adaptação.

Mudanças nos padrões de consumo e a adoção de boas práticas gerenciais podem contribuir para a mitigação das mudanças climáticas em diversos setores. As emissões de GEE podem, no curto e no médio prazos – até 2030, ser estabilizadas ou mesmo reduzidas, mediante melhorias na matriz energética tanto de países desenvolvidos como em desenvolvimento; aumento da eficiência energética; adoção de boas práticas na agropecuária e no setor florestal; gerenciamento adequado dos resíduos sólidos, entre outras ações (IPCC, 2007c).

### *1.1.3. Aspectos econômicos relacionados às mudanças do clima*

À medida que aumenta o grau de certeza das pesquisas científicas a respeito das consequências das mudanças climáticas, melhora a precisão das análises econômicas nelas baseadas. Aplicando um complexo modelo integrado de avaliação, Stern (2006a, p. 10) conclui que “o custo total nos próximos dois séculos das mudanças climáticas associadas às emissões com o cenário BAU [*business-as-usual*] implica impactos e riscos que são equivalentes a uma redução média do consumo *per capita* global de, no mínimo, 5%, agora e para sempre”.

O modelo, no entanto, não considera importantes aspectos, como os impactos indiretos das mudanças climáticas no meio ambiente e na saúde, a incidência de cadeias amplificadoras dos efeitos das alterações do clima e a maior intensidade desses efeitos nos países menos desenvolvidos. “A conjugação desses fatores adicionais aumentaria o custo total das mudanças climáticas do cenário de inação BAU para um valor equivalente a uma redução da ordem de 20% no consumo *per capita*, atualmente e no futuro” (STERN, 2006a, p. 11).

Os resultados da simulação indicam que os custos de mitigação são significativamente menores que os custos de adaptação. Além disso, quanto mais cedo forem implementadas ações de mitigação das emissões de GEE, menores serão os custos, tanto dessas medidas, como das de adaptação. “Nesse sentido, a mitigação é um investimento altamente produtivo” (STERN, 2006a, p. 11). Para Stern, crescimento econômico e redução de emissões não constituem alternativas excludentes. Esse falso *tradeoff* pode ser superado por meio da progressiva – embora urgente – descarbonização das economias dos países desenvolvidos e da promoção do crescimento dos países menos desenvolvidos com base em atividades pouco intensivas em carbono (STERN, 2006a, pp. 11-12).

O aumento de temperatura na Terra tende a gerar modificações na geografia física, induzindo mudanças na geografia humana do planeta, ou seja, em onde e como as pessoas vivem. Num cenário de estabilização da concentração de GEE entre 500 e 550 ppm<sup>7</sup> em 2050, o que significaria um aumento suportável de 2 °C em relação aos níveis pré-industriais, Stern conclui:

a estabilização dos gases de efeito estufa a níveis de concentração entre 500 e 550 ppm custará, em média, até 2050, cerca de 1% do PIB anual global. Isso é significativo, mas totalmente compatível com o crescimento e desenvolvimento continuados, ao contrário das mudanças climáticas incontroladas, que acabarão por ameaçar significativamente o crescimento (STERN, 2006a, p. 14).

O Relatório Stern (STERN, 2006b) apresenta as seguintes conclusões: ainda há tempo para se evitar os piores efeitos das mudanças climáticas, mas é preciso adotar medidas firmes hoje; as mudanças climáticas podem ter impactos muito severos sobre o crescimento e o desenvolvimento; os custos da estabilização climática são significativos, mas gerenciáveis; atrasos seriam perigosos e elevariam sobremaneira os custos associados; todos os países devem enfrentar as mudanças climáticas, e isso não limitará, necessariamente, as aspirações de crescimento tanto dos países ricos, como dos menos desenvolvidos; há várias alternativas disponíveis para reduzir as emissões de GEE, mas são necessárias políticas fortes para que elas sejam adotadas; as mudanças climáticas demandam ação internacional, baseada no entendimento compartilhado de metas de longo prazo e acordos sobre estruturas normativas para a ação, que deverão contemplar: (i)

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<sup>7</sup> Partes por milhão (ppm) é uma unidade de medida para a razão entre o número de moléculas de GEE e o número total de moléculas de ar seco. Uma concentração de 300 ppm, por exemplo, significa que há 300 moléculas de um GEE por milhão de moléculas de ar seco.



comércio de emissões, (ii) cooperação tecnológica, (iii) redução do desmatamento e (iv) adaptação.

O Relatório Stern constitui a tentativa mais bem-sucedida de avaliar economicamente os efeitos das mudanças climáticas. Suas conclusões tiveram forte impacto na comunidade internacional a partir de 2006. A publicação do Quarto Relatório de Avaliação do IPCC, em 2007, reforçou as preocupações de governos e da sociedade civil organizada em relação à necessidade de aprofundamento dos instrumentos que conformam o regime internacional de mudança global do clima: a CQNUMC e o Protocolo de Quioto.

## **1.2. Convenção-Quadro das Nações Unidas sobre Mudança do Clima e Protocolo de Quioto**

As mudanças do clima são alvo de preocupação da comunidade internacional desde a década de 1980. Na época, a ONU apoiou a criação do IPCC, painel de cientistas de várias especialidades e nacionalidades para procurar definir o estado da arte das pesquisas sobre o fenômeno, em escala mundial.

O regime internacional de mudança climática, assim como os regimes internacionais sobre o meio ambiente, tende a ser construído com forte embasamento científico, seguindo a lógica de que a ciência poderia oferecer soluções técnicas necessárias para esses problemas, tanto no que se refere aos danos já causados, quanto ao que concerne a questões de ordem econômica e financeira, uma vez que grande parte dos processos industriais está diretamente ligada à degradação do meio ambiente e ao desenvolvimento econômico (SIMÕES *et. al.*, 2006, pp. 321 - 322).

A CQNUMC e o Protocolo de Quioto são os dois principais tratados que disciplinam as iniciativas para conter a mudança do clima. Além desses dois textos principais, a Agenda 21, documento internacional de recomendações e metas adotado durante a CNUMAD, em 1992, embora não-vinculativo, traçou importante plano de ação para a promoção do desenvolvimento sustentável.

### *1.2.1.. Convenção-Quadro das Nações Unidas sobre Mudança do Clima (CQNUMC)*

De acordo com Lago (2007), a CQNUMC

é provavelmente o documento internacional mais debatido nos últimos anos, não só pela polêmica que se verificou, desde o início das negociações, por motivos de profundas divergências Norte-Sul – e,

também, entre os países desenvolvidos –, mas, sobretudo, pelo impasse a respeito da entrada em vigor do Protocolo adotado na 3ª Reunião das Partes da Convenção, em Quioto, em 1997, que persistiu até novembro de 2004, quando a Rússia ratificou o Protocolo e permitiu sua entrada em vigor em fevereiro de 2005 (LAGO, 2007, p. 73).

Entre outras questões, as incertezas científicas introduziram significativas complicações no processo negociador da CQNUMC. O fator que provocou mais dificuldades foi o custo das medidas que permitiriam desacelerar as mudanças do clima, dividindo os países em três grupos: “os países em desenvolvimento, que esperavam recursos financeiros novos e adicionais e transferência de tecnologia, para tomar as medidas que exigem maiores recursos”; os países ricos, principalmente da Comunidade Européia, “que já haviam progredido na diminuição de emissões e cujos gastos para atingir as primeiras metas sugeridas não pareciam proibitivos”; e outros países ricos, em especial os Estados Unidos da América (EUA) e países produtores de petróleo, “que não viam como possível atingir as metas sugeridas sem sacrifícios econômicos excessivos”. A solução possível foi não mencionar qualquer meta específica de redução de emissões de GEE no texto da CQNUMC. Isso possibilitou que os EUA assinassem a Convenção<sup>8</sup>, mas gerou um impasse que ressurgiu com toda força durante as negociações do Protocolo de Quioto (LAGO, 2007, pp. 73-74).

A CQNUMC consubstancia o acordo político possível na ocasião em que foi debatida. As intensas dificuldades de negociação se refletiram em um texto impreciso e superficial. A Convenção tem como objetivo alcançar “a estabilização das concentrações de gases de efeito estufa na atmosfera num nível que impeça uma interferência antrópica perigosa no sistema climático” (ONU, 1992, p. 6). A estabilização deverá ser alcançada, de acordo com a Convenção, em prazo que permita aos ecossistemas adaptarem-se naturalmente à mudança do clima, que assegure que a produção de alimentos não seja ameaçada e que permita a continuidade de desenvolvimento econômico sustentável.

Já nos *consideranda*, a Convenção reconhece que

a maior parcela das emissões globais, históricas e atuais, de gases de efeito estufa é originária dos países desenvolvidos, que as emissões *per capita* dos países em desenvolvimento ainda são relativamente baixas e que a parcela de emissões globais originárias dos países em

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<sup>8</sup> Durante a CNUMAD, a Convenção foi assinada por chefes de Estado e outras autoridades de 154 países e da Comunidade Européia, entrando em vigor em 21 de março de 1994. O Brasil assinou a Convenção durante a CNUMAD, em 4 de junho de 1992, e a ratificou em 28 de fevereiro de 1994.

desenvolvimento crescerá para que eles possam satisfazer suas necessidades sociais e de desenvolvimento (ONU, 1992, p. 3).

Com base nessa constatação, ficou estabelecido o fundamental *princípio das responsabilidades comuns, porém diferenciadas*. Em decorrência dele, todas as Partes têm a responsabilidade de proteger o sistema climático em benefício das gerações presentes e futuras, e, com base na equidade, “as Partes países desenvolvidos devem tomar a iniciativa no combate à mudança do clima e dos seus efeitos” (ONU, 1992, pp. 6-7). Posteriormente, a densificação desse princípio permitiu a atribuição, somente aos países desenvolvidos do Anexo I, de metas específicas de redução de emissões de GEE no âmbito do Protocolo de Quioto.

Além dos princípios do *direito ao desenvolvimento sustentável* e da *cooperação internacional*, a Convenção também reconhece o *princípio da precaução*, ao estipular que “quando surgirem ameaças de danos sérios ou irreversíveis, a falta de plena certeza científica não deve ser usada como razão para postergar essas medidas, levando em conta que as políticas e medidas adotadas para enfrentar a mudança do clima devem ser eficazes em função dos custos, de modo a assegurar benefícios mundiais ao menor custo possível” (ONU, 1992, p. 7).

A Convenção estabeleceu um compromisso geral de redução da emissão de GEE pelos países desenvolvidos e demais integrantes do Anexo I. Esses países comprometeram-se a adotar políticas nacionais e medidas correspondentes para mitigar a mudança do clima, limitando suas emissões antrópicas de GEE e protegendo e aumentando seus sumidouros e reservatórios desses gases. Isso seria suficiente, segundo o texto do tratado, para demonstrar que os países desenvolvidos estariam “tomando a iniciativa no que se refere a modificar as tendências de mais longo prazo das emissões antrópicas” (ONU, 1992, p. 9).

### *1.2.2. Protocolo de Quioto*

Em 1995, em Berlim, foi realizada a COP-1, encarregada de efetuar a revisão dos compromissos dos países desenvolvidos. As Partes concluíram que o compromisso estipulado, de as suas emissões de GEE voltarem aos níveis de 1990 até o ano 2000, era insuficiente para se atingir o objetivo de longo prazo da Convenção. Adotou-se, então, o Mandato de Berlim, para a elaboração do esboço de um acordo mais taxativo (ONU, 1992, p. 2).

Em dezembro de 1997, a COP-3 aprovou o Protocolo de Quioto, tratado que estabelece compromissos e metas concretas obrigatórias de redução das emissões de GEE para os países desenvolvidos. O Protocolo estabelece que eles têm a obrigação de reduzir suas emissões em pelo menos 5% em relação aos níveis de 1990, para o primeiro período de compromisso, entre 2008 e 2012 (ONU, 1997, p. 6). As metas estabelecidas constituem, mais uma vez, o acordo possível naquela ocasião, embora sejam tímidas e claramente insuficientes para a solução do problema. Apesar disso, representou um importante passo na direção da redução das emissões de GEE.

O Protocolo estabeleceu três mecanismos de flexibilização para implementação das obrigações pelos países com metas de redução, que lhes permitem patrocinar parte da obrigação de diminuição das emissões fora de seu território: Mecanismo de Desenvolvimento Limpo (MDL), Implementação Conjunta e Comércio de Emissões (ONU, 1997). Tais instrumentos foram criticados por atenderem majoritariamente aos interesses dos países desenvolvidos e de alguns países em desenvolvimento, como Brasil, China e Índia.

O Protocolo de Quioto não rendeu muitos frutos, pois seus fundamentos têm caráter mais político que técnicos ou econômicos. Desde 1997, avançaram os conhecimentos científicos, aprofundaram-se as preocupações da sociedade civil com as mudanças climáticas, retrocedeu o impulso idealista verificado no início da década de 1990, recrudescer a abordagem realista das questões internacionais a partir dos atentados terroristas de 11 de setembro de 2001 nos EUA e, desde 2008, o mundo se vê mergulhado na mais profunda crise econômica em 80 anos. É nesse cenário que transcorrem as negociações para o segundo período de compromisso do Protocolo, com vigência para o período pós-2012.

### **1.3. Negociações para o segundo período de compromisso do Protocolo de Quioto – o Pós-2012**

Está em curso o processo de negociação para o segundo período de compromisso do Protocolo de Quioto, pós-2012. Na COP-11, em Montreal, em 2005, as tratativas foram definidas, por iniciativa brasileira, segundo dois eixos principais: o trilho da CQNUMC, para os países em desenvolvimento, e o trilho do Protocolo de Quioto, para os países desenvolvidos do Anexo I da Convenção. A COP-13, em Bali, em 2007, destinou-se à

elaboração do que se convencionou denominar “mapa do caminho” (*roadmap*) a ser percorrido até que os novos compromissos sejam firmados. A idéia é alcançar um acordo até a realização da COP-15, em Copenhague, em 2009, a fim de que haja tempo suficiente para os países ratificarem o seu comprometimento com os novos objetivos.

No que se refere ao trilha da CQNUMC, o principal elemento do mapa do caminho é o Plano de Ação de Bali, que transforma o diálogo sobre cooperação de longo prazo para a plena implementação da Convenção, criado na COP-11, em Montreal, numa negociação que abarca os países em desenvolvimento e os EUA. “Seu primeiro desafio, conforme reza o documento aprovado, será o de lograr a ‘*shared vision for long-term cooperative action*’, uma visão comum da ação cooperativa em longo prazo, ‘incluindo uma meta global de reduções de emissão de longo prazo’” (RICUPERO, 2008, p. 55). Uma vez que os norte-americanos resistem fortemente a assumir metas no âmbito do Protocolo de Quioto, constituiu um importante progresso da COP-13 aproximar aquele país das negociações internacionais pelo trilha da Convenção.

Tendo em vista que, segundo o discurso dos países em desenvolvimento, seu principal objetivo é e deve continuar a ser a erradicação da fome e da pobreza, definiu-se que eles não devem assumir metas numéricas específicas e obrigatórias de redução das emissões de GEE, mas conduzir ações de mitigação nacionalmente apropriadas no contexto do desenvolvimento sustentável, apoiadas e possibilitadas por transferência de tecnologia, financiamento e capacitação, de maneira mensurável, reportável e verificável. Além disso, devem ser aprofundados – embora jamais tenham se efetivado satisfatoriamente – os mecanismos previstos na CQNUMC, em especial a cooperação técnica internacional, o aporte de recursos financeiros e a transferência de tecnologia.

Já no trilha do Protocolo de Quioto, iniciaram-se negociações para o estabelecimento de novas metas – mais ambiciosas – de emissões dos países do Anexo I. Como resultado de Bali, “as emissões globais terão de atingir seu pico dentro de dez a 15 anos e, a partir de então, declinar até chegar, em 2050, a patamar bem abaixo da metade dos níveis de 2000. Para isso, os desenvolvidos devem, até 2020, diminuir as emissões entre 25% e 40% abaixo dos níveis de 1990” (RICUPERO, 2008, p. 55). O grande desafio que se coloca para a comunidade internacional é fazer valer essas metas mais ambiciosas, uma vez que, mesmo tímidos e insuficientes, os objetivos do Protocolo de Quioto jamais se concretizaram.

Para Vargas (2008), “o Plano de Ação de Bali foi uma dupla vitória: trouxe os Estados Unidos formalmente às negociações sobre o futuro do regime e consolidou politicamente o compromisso dos países em desenvolvimento com atividades de mitigação”. Segundo o Embaixador,

Em Bali, o Brasil atuou para fortalecer o regime sob a Convenção-Quadro e o Protocolo de Quioto, diante de tentativas de solapar os instrumentos legais e abrir processos negociadores novos e/ou paralelos. Ao início da Conferência, alguns aventaram até estabelecer um mandato amplo para a revisão total do arcabouço jurídico existente – retrocesso institucional e jurídico incompatível com a urgência do problema da mudança do clima e inaceitável para o Brasil. Delegações dos países desenvolvidos adotaram atitudes restritivas que contribuíram para impasses negociadores em áreas sensíveis como desmatamento, tecnologia e obrigações de informação de países em desenvolvimento, os quais foram, entretanto, superados.

Desde a CNUMAD, em 1992, verifica-se a participação, na criação de regimes ambientais internacionais, cada vez mais intensa de organizações da sociedade civil organizada. Nas atuais negociações não é diferente. Grande número de organizações não-governamentais se fizeram presentes em eventos paralelos durante a COP-13. A participação de atores não-estatais é um fenômeno crescente na arena política internacional, em especial na temática ambiental.

#### **1.4. Participação de Atores Não-Estatais na Conformação de Regimes Ambientais Internacionais**

O Estado nacional continua a ser o a principal instituição organizadora do espaço social, o ator mais importante na formulação das normas positivas do direito internacional público em geral e, em particular, ambiental. A realização de conferências e a formulação de convenções e tratados ocorrem sob a égide de organismos multilaterais interestatais, em especial os integrantes do sistema ONU. Ainda que essas organizações possam se comportar, em muitos casos, como atores relativamente independentes, elas configuram um espaço privilegiado de debates, onde os Estados-Parte buscam a realização de seus interesses.

No entanto, de acordo com Barros-Platiau (2004, p. 3) “a participação política internacional tem aumentado consideravelmente, com uma diversidade de atores nunca antes conhecida”. Além disso, segundo a autora, vários fatores propiciam a atuação internacional de indivíduos e grupos organizados, tais como o crescente aprofundamento

da interação entre a ordem jurídica internacional e as nacionais (*linkage politics*), a diversificação de objetos do direito internacional e a formação de uma “vontade geral” que emerge em domínios como a defesa dos direitos humanos e do meio ambiente (BARROS-PLATIAU, 2004, pp. 3-4).

Ainda que não tenham sua legitimidade reconhecida no direito internacional público, ou seja, ainda que se apresentem como atores internacionais sem personalidade jurídica chancelada pelos Estados, os atores não-estatais “competem diretamente com os Estados por recursos de poder”. Eles conquistaram importantes espaços no debate internacional, em várias arenas em que o processo decisório permitiu a participação ampliada. Além disso, legitimam a ação coletiva internacional constituindo, portanto, elementos essenciais no debate acadêmico sobre governança, embora, paradoxalmente, tenham sua legitimidade contestada (BARROS-PLATIAU, 2006, pp. 209-210).

Para Barros-Platiau (2006, p. 209), “atores não-estatais são todas as entidades cujas ações transfronteiriças afetam a distribuição de recursos e a definição de valores em escala planetária, seja por *pathways* institucionais ou não”. Somente uma definição com essa amplitude consegue abarcar um grupo de atores totalmente heterogêneo, com interesses difusos e até mesmo divergentes e que apresentam estratégias de participação diversas, que vão do enfrentamento à cooperação com os Estados nacionais (BARROS-PLATIAU, 2006, p. 211). Contudo, tal conceito apresenta a desvantagem de alcançar também os atores que “podem ameaçar/prejudicar a ordem pública e a moral, como as organizações criminosas ou empresas privadas, haja vista que eles não têm nenhuma obrigação com a população em geral” (BARROS-PLATIAU, 2006, p. 210).

Em que pesem as dificuldades teóricas de se conceituar os atores não-estatais, fato é que “a sociedade civil global<sup>9</sup> tem se organizado rapidamente para influenciar decisões multilaterais contemporâneas” (BARROS-PLATIAU, 2004, p. 3). Essa organização ocorre em resposta à gradual incapacidade do Estado de prover segurança, bem-estar e estabilidade econômica aos seus cidadãos (BARROS-PLATIAU, 2006, p. 210). Com muito maiores capilaridade e mobilidade que os Estados soberanos, os atores não-estatais vêm preencher as lacunas por aqueles deixadas, desempenhando as funções de produção e

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<sup>9</sup> Na definição de Paul Wapner, entende-se por sociedade civil global “tudo que se encontra entre as esferas pública e individual, ou seja, o que há abaixo do Estado e acima do indivíduo” (BARROS-PLATIAU, 2004, p. 5). Essa definição ressalta o papel dos atores não-estatais cada vez mais independentes da influência dos Estados.

difusão de informações, denúncia de abusos e omissões das autoridades públicas e condução de programas e projetos, em cooperação ou não com as autoridades estatais (BARROS-PLATIAU, 2006, pp. 218-219).

Esses atores não-estatais declaram-se representantes da sociedade civil, ostentando grande capacidade de mobilização em nome de valores éticos amplos, nos campos religioso, jurídico, antiglobalização, anti-guerra e do desenvolvimentismo, entre outros (BARROS-PLATIAU, 2006, p. 213). Para a autora,

a sociedade civil global não foi construída por ninguém, ela se auto-proclamou para contestar a ordem estabelecida. Ela é composta por grupos que formam coalizões mais ou menos estáveis, ou redes, para entrarem na cena política. O objetivo desses atores é principalmente o de criar um espaço público autônomo em relação aos Estados, ou aos atores poderosos, para realizarem seus objetivos específicos de defesa de interesses comuns, como a proteção ambiental (Barros-Platiau, 2004, pp. 5-6).

Desse modo, por trás “do conceito de sociedade civil global existe um projeto de participação pública; por isso tal sociedade exerce crescente influência na produção de normas internacionais” (BARROS-PLATIAU, 2004, p. 6). Em razão disso, os atores não-estatais são imprescindíveis para a construção da governança<sup>10</sup> ambiental internacional e qualquer processo decisório que os exclua pode ser considerado antidemocrático (BARROS-PLATIAU, 2006, p. 220).

O raciocínio que avoca para os atores não-estatais a capacidade de legitimar a ação política democrática não está livre de questionamentos. Tendo em vista que os Estados são representados na arena internacional por seus legítimos mandatários, porque a participação de atores não-estatais – que por vezes apresentam valores contraditórios e motivações questionáveis – torna as instâncias decisórias internacionais mais democráticas (BARROS-PLATIAU, 2006, p. 217)?

Além disso, o valor democracia e as regras do jogo democrático são impostos pelos países desenvolvidos ao resto do mundo, inclusive com o auxílio de atores não-estatais. O interesse dos Estados desenvolvidos na consolidação da governança global contribuiu para a legitimação de certos atores não-estatais, em função da grande relevância de sua atuação internacional (BARROS-PLATIAU, 2006, pp. 221-222).

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<sup>10</sup> O conceito de governança representa a ampliação da participação dos atores não-estatais no processo decisório internacional e pretende comprovar que é possível governar sem governo, construir legitimidades sem a democracia representativa e resolver conflitos sem a força da hegemonia (BARROS-PLATIAU, 2006, pp. 220-221).



Assim, os [atores não-estatais] são usados como instrumentos de pressão contra os Estados menos democráticos ou mais soberanistas, como se os [atores não-estatais] fossem representantes legítimos da opinião pública destes Estados, mas que não têm seus interesses representados justamente porque falta participação democrática no debate. Conseqüentemente, não apenas os [atores não-estatais] são considerados como atores legítimos nas questões ambientais, mas também são atores de *commitment and compliance* para os Estados (assumir compromissos internacionais e cumpri-los). Em suma, os [atores não-estatais] contribuem para o constrangimento dos Estados que não participam dos debates sobre governança ambiental.

Neste sentido, os [atores não-estatais] são atores centrais da governança ambiental internacional, porque contribuem de maneira definitiva para a sua consolidação, como numa profecia *self-fulfilling*, no qual um reforça a importância do outro. Todavia, se por um lado a participação de [atores não-estatais] reforça a utilidade do conceito de governança, por outro lado, isto não significa que uma participação ampliada de atores sem legitimidade reconhecida no processo decisório internacional contribui para a realização de objetivos de democracia, erradicação da pobreza no mundo e desenvolvimento sustentável (BARROS-PLATIAU, 2006, p. 222).

Mesmo admitindo, com base nas constatações acima, que os atores não-estatais são sujeitos *de facto* do direito internacional público, com capacidade de desempenhar funções específicas (BARROS-PLATIAU, 2006, p. 211), pouco se tem avançado no reconhecimento da sua personalidade jurídica internacional (BARROS-PLATIAU, 2006, p. 215). Essa paralisação decorre de uma série de fatores relacionados ao seu funcionamento e à sua representatividade: a grande maioria dispõe apenas de estatutos nacionais, inexistindo um estatuto internacional; há uma grande assimetria entre esses atores, podendo implicar a influência de poucas organizações sobre as demais; existe uma sobre-representação do hemisfério norte no universo dos atores não-estatais credenciados no Conselho Econômico e Social da ONU (ECOSOC) (BARROS-PLATIAU, 2006, p. 213).

De acordo com Slaughter (2004, *apud* BARROS-PLATIAU, 2006, p. 221) “o grande desafio está em como tornar os atores não-estatais mais *accountable* sem que sejam submetidos a autoridades centralizadoras que os podariam”. Ou seja, impõe-se a necessidade de se buscarem mecanismos de transparência para a prestação de contas à sociedade. Nesse sentido, verifica-se a gradual profissionalização dos atores não-estatais e a tendência à formação de redes transnacionais, bem como uma maior participação em reuniões formais com apoio da ONU.

A par da tendência à legitimação dos atores não-estatais, a realidade é que

o papel desses atores é muito mais de criação de valores e de consenso do que de normas internacionais. Na verdade, eles criam uma atmosfera de “valores

globalizados” face à qual os Estados não podem recuar, como por exemplo a punição dos culpados por grandes catástrofes ecológicas, genocídios e guerras nessa última década (BARROS-PLATIAU, 2004, p. 12).

(...) Enfim, o que existe, na verdade, é apenas uma participação naquilo que Alexandre Kiss chama de “primeira etapa” da construção do direito internacional: a percepção da necessidade de regulação e a convergência de valores comuns que tornam essa regulação desejável e em seguida aceitável (BARROS-PLATIAU, 2004, p. 13).

## 2. O DIÁLOGO GLENEAGLES, A *GLOBE INTERNATIONAL* E A PARTICIPAÇÃO BRASILEIRA<sup>11</sup>

Este capítulo pretende realizar uma breve reconstituição histórica dos debates a respeito do regime internacional de mudança do clima no âmbito do G8 – no contexto do Diálogo Gleneagles G8 sobre Mudança do Clima, Energia Limpa e Desenvolvimento Sustentável – e da *Globe International* – em conformidade com o Diálogo Globe G8+5 sobre Mudança do Clima. Na esfera deste último, são apresentadas as conclusões dos cinco fóruns de legisladores promovidos pela entidade entre 2006 e 2008. Apesar de os princípios gerais já estarem estabelecidos desde o primeiro encontro, percebe-se um claro processo de especificação e detalhamento das propostas no transcorrer das reuniões. Por fim, é feito um brevíssimo relato da participação brasileira.

### 2.1. Diálogo Gleneagles sobre Mudança do Clima, Energia Limpa e Desenvolvimento Sustentável

Em 2005, sob a presidência do Reino Unido, o G8 lançou o Diálogo sobre Mudança do Clima, Energia Limpa e Desenvolvimento Sustentável. Concebido para ser um fórum amplo e informal, teve como objetivo reforçar e complementar o processo negociador formal sobre mudança do clima, conduzido no âmbito das Nações Unidas. A partir do Plano de Ação de Gleneagles<sup>12</sup> (Anexo I), adotado pelos integrantes do G8, foram realizadas quatro reuniões ministeriais. Desde a primeira, entre outubro e novembro de 2005 em Londres, Reino Unido, o grupo foi ampliado para englobar também outros países – como África do Sul, Brasil, China, Índia e México, entre outros.

Os encontros ministeriais reúnem as autoridades responsáveis pelas áreas de energia e de meio ambiente de cada um dos países participantes. Além de Londres, foram realizadas reuniões ministeriais em: Monterrey, México (outubro de 2006), Berlim,

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<sup>11</sup> O conteúdo deste capítulo foi extraído de diversos sítios na internet:

[www.globeinternational.org](http://www.globeinternational.org)

[www.complusalliance.org](http://www.complusalliance.org)

[www.pewclimate.org](http://www.pewclimate.org)

[www.fco.gov.uk](http://www.fco.gov.uk)

[www.g8italia2009.it](http://www.g8italia2009.it)

<http://en.g8russia.ru/>

<http://www.mofa.go.jp/policy/economy/summit/2008/index.html>

<http://www.g-8.de/Webs/G8/EN/Homepage/home.html>

[www.canadainternational.gc.ca/g8/summit-sommet/2005/index.aspx?menu\\_id=12&menu=L](http://www.canadainternational.gc.ca/g8/summit-sommet/2005/index.aspx?menu_id=12&menu=L).

<sup>12</sup> Disponível em:

[http://collections.europarchive.org/tna/20080205132101/www.fco.gov.uk/Files/kfile/PostG8\\_Gleneagles\\_CCChangePlanofAction.pdf](http://collections.europarchive.org/tna/20080205132101/www.fco.gov.uk/Files/kfile/PostG8_Gleneagles_CCChangePlanofAction.pdf) (acesso em 23 de março de 2009).

Alemanha (setembro de 2007); e Chiba, Japão (março de 2008)<sup>13</sup> (ver Anexo IV). Além das autoridades governamentais, têm assento nos encontros a Agência Internacional de Energia (IEA), o Banco Mundial (BIRD), bancos regionais de desenvolvimento, o Secretariado da CQNUMC, o IPCC, o Programa das Nações Unidas para o Meio Ambiente (PNUMA), representantes do setor produtivo, organizações não-governamentais e, a partir de 2006, a *Globe International*.

A par uma série de propostas relacionadas a eficiência energética, consumo responsável de energia, diversificação da matriz energética, promoção de redes de pesquisa e desenvolvimento, financiamento das energias limpas e combate ao desmatamento ilegal, o Plano de Ação de Gleneagles dedica toda uma seção especificamente à mudança do clima. De acordo com o documento, o G8 reconhece que todos os países necessitam desenvolver capacidade científica que lhes permita integrar fatores climáticos, ambientais, de saúde, econômicos e sociais às respectivas estratégias de desenvolvimento. Além disso, o plano preocupa-se não apenas com a mitigação das emissões de GEE, mas também com a adaptação aos efeitos das mudanças do clima.

O objetivo desse Diálogo consiste em fomentar debates complementares aos desenvolvidos sob a égide da CQNUMC e do Protocolo de Quioto, no sentido de buscar, assim como aqueles documentos, a estabilização da concentração de GEE na atmosfera em níveis que previnam alterações climáticas perigosas. Para tanto, pretende tratar paralelamente os desafios impostos pela mudança do clima, pela promoção de energias limpas e pelo desenvolvimento sustentável em escala global. Outra finalidade do fórum parece ser a de fazer com que os países em desenvolvimento assumam compromissos mais específicos – inclusive metas de redução de emissões – na formulação do acordo político para o enfrentamento das mudanças do clima no segundo período de compromisso do Protocolo de Quioto.

Ainda em 2005, a presidência do G8 solicitou que a *Globe International* reunisse legisladores do G8 e das cinco maiores economias emergentes (África do Sul, Brasil, China, Índia e México), para discutir e apresentar sugestões que deveriam ser consideradas quando da formulação do regime de mudança do clima para o período pós-2012. Juntos, os

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<sup>13</sup> Relatórios destas reuniões estão disponíveis em: [http://www.mofa.go.jp/POLICY/economy/summit/2008/doc/pdf/0708\\_05\\_en.pdf](http://www.mofa.go.jp/POLICY/economy/summit/2008/doc/pdf/0708_05_en.pdf) (acesso em 26 de março de 2009).

treze países são responsáveis por cerca de 70% das emissões anuais de GEE no mundo (PNUD, 2007).

## **2.2. A *Globe International* e o Diálogo G8+5 sobre Mudança do Clima**

Originalmente formada por parlamentares do Congresso dos EUA e dos Parlamentos Europeu, Japonês e Russo, a Organização Global de Legisladores para um Meio Ambiente Equilibrado (*Globe International*), fundada em 1989, constitui um grupo interparlamentar internacional, formado tanto quanto possível por legisladores dos mais significativos matizes ideológicos no âmbito doméstico de cada país. A entidade é dedicada a buscar respostas suprapartidárias para os desafios ambientais globais, no intuito de propiciar a formulação de políticas públicas negociadas.

O foco inicial da atuação da organização foi a incorporação de aspectos ambientais relacionados com o comércio na agenda do Acordo Geral de Tarifas e Comércio (GATT) e, posteriormente, da Organização Mundial do Comércio (OMC). Desde 1992, por ocasião da CNUMAD, a *Globe International* tem demonstrado preocupação com as emissões de dióxido de carbono (CO<sub>2</sub>) pelos países industrializados, defendendo incentivos fiscais e programas de eficiência energética. Hoje, a entidade atua em temas ligados a segurança climática e energética, ecossistemas e mudança no uso da terra, além de crescimento econômico e populacional.

No que se refere à mudança do clima, o propósito da organização é possibilitar negociações entre lideranças parlamentares dos países integrantes do G8+5, não apenas em âmbito global, mas também a partir de diálogos regionais assistidos por expoentes empresariais e especialistas internacionais. Com particular interesse no papel das instituições financeiras internacionais, a *Globe International* pretende enfatizar a progressiva liderança do G8+5 tanto quanto as negociações conduzidas na esfera das Nações Unidas.

A *Globe International* desenvolve suas atividades em paralelo – e sempre em antecipação – aos encontros do G8, reunindo os legisladores fora do processo formal de negociações daquele grupo. O objetivo é garantir condições para que os parlamentares possam alargar as fronteiras do que pode ser alcançado politicamente, a fim de pressionar os líderes do bloco a assumirem compromissos e metas mais ambiciosos. Além disso,

espera-se que os parlamentares possam desempenhar um papel crítico junto aos respectivos governos nacionais, no sentido de fiscalizar o cumprimento dos compromissos assumidos na esfera internacional.

Já em 2006, a entidade criou o Diálogo G8+5 sobre Mudança do Clima e passou a tomar assento nas reuniões ministeriais do Diálogo Gleneagles. No mesmo ano, a *Globe International* organizou o primeiro Fórum G8+5 de Legisladores, em Bruxelas, Bélgica, preparatório para a Cúpula de São Petesburgo do G8, que se realizaria em julho de 2006, na Rússia. A declaração adotada ao final dos trabalhos<sup>14</sup> (Anexo II) foi submetida aos líderes do G8.

Estudos do Banco Mundial citados no documento indicam que, nos próximos 25 anos, serão necessários investimentos de US\$ 300 bilhões para satisfazer a demanda de energia nos países em desenvolvimento e nas economias em transição. O relatório defende que tais investimentos sejam canalizados para incrementar a segurança climática e energética assim como para o cumprimento das metas de desenvolvimento, segundo um paradigma econômico pouco intensivo em carbono.

Os parlamentares defendem que a ação para o enfrentamento da mudança do clima é urgente e advogam que a segurança energética é intrinsecamente relacionada com a segurança climática. Para eles, a garantia desses dois aspectos passa pela diversificação da matriz energética e pela implementação de programas de melhoria da eficiência energética. A declaração concita os líderes do G8 a manter esses dois temas no topo das preocupações mundiais e a desenvolverem um regime que promova a aceleração da mudança da economia mundial para um padrão pouco intensivo em carbono.

Em 2007, a *Globe International* lançou o Diálogo G8 sobre Desmatamento Ilegal e, em fevereiro do mesmo ano, realizou o segundo Fórum de Legisladores do Diálogo G8+5 sobre Mudança do Clima, em Washington, EUA, preparatório para a Cúpula de Heilingendamm do G8, que ocorreria em junho de 2007, na Alemanha. O Fórum aconteceu sob os efeitos imediatos da publicação do Relatório Stern e do sumário para formuladores

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<sup>14</sup> Disponível em: [http://www.globeinternational.org/docs/content/GLOBE%20BROCHURE\\_260207\\_Optimized.pdf](http://www.globeinternational.org/docs/content/GLOBE%20BROCHURE_260207_Optimized.pdf) (acesso em 23 de março de 2009).

de políticas do grupo de trabalho 1 do IPCC. Participaram do evento cerca de 100 parlamentares, que adotaram a Declaração de Washington<sup>15</sup> (Anexo III).

Na declaração, os integrantes argumentam que o enfrentamento das mudanças do clima deve levar em consideração as diferentes condições dos países desenvolvidos, em desenvolvimento e dos mais pobres, reconhecendo a necessidade de crescimento econômico e acesso à energia, para aliviar a pobreza. Por outro lado, lembram que este é um assunto de interesse mundial e que, embora os países mais ricos devam liderar o processo, existe a obrigação de todos agirem, de acordo com suas capacidades e suas responsabilidades históricas.

A fim de promover o cumprimento da meta de estabilizar, no longo prazo, a concentração dos GEE na atmosfera entre 450 e 550 ppm de CO<sub>2</sub> equivalente, os parlamentares sugerem alguns elementos-chave para a conformação do regime pós-2012 de combate às mudanças do clima:

- a. Objetivos de longo prazo para países desenvolvidos;
- b. Objetivos apropriados para economias em desenvolvimento;
- c. Incentivo a medidas de redução do desmatamento;
- d. Incentivo a políticas e ações de desenvolvimento sustentável em países em desenvolvimento;
- e. Programas com foco em construção de capacidades, acesso a tecnologia e incentivos financeiros – para ajudar os países em desenvolvimento a investirem em tecnologias mais eficientes e menos intensivas em carbono;
- f. Para os países em desenvolvimento mais vulneráveis, melhora do acesso a dados climáticos, pesquisa cooperativa em tecnologias-chave para adaptação em agricultura e saúde, conferindo prioridade à prevenção de desastres e incremento da resiliência à variabilidade climática.<sup>16</sup>

Em junho do mesmo ano, a *Globe International* realizou o terceiro Fórum de Legisladores do Diálogo G8+5 sobre Mudança do Clima, em Berlim, Alemanha, anteriormente, mas em período quase simultâneo, à Cúpula de Heilingendamm. Os trabalhos contaram também com os subsídios fornecidos pelos sumários para formuladores

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<sup>15</sup> Disponível em: [http://www.globeinternational.org/docs/content/washington\\_statement.pdf](http://www.globeinternational.org/docs/content/washington_statement.pdf) (acesso em 25 de março de 2009).

<sup>16</sup>

- a. Long-term targets for developed countries;
- b. Appropriate targets for developing economies;
- c. Incentives for measures to reduce deforestation;
- d. Incentives for sustainable development policies and measures in developing countries;
- e. Programs focusing on capacity building, access to technology and financial incentives – to help developing countries invest in more efficient and low carbon technologies;
- f. For the most vulnerable developing countries, increased access to climate data, cooperative research on key technologies for adaptation in agriculture and health, giving priority to disaster prevention and improved resilience to climate variability.

de políticas dos grupos de trabalho 2 e 3 do IPCC. A Declaração de Berlim<sup>17</sup> (Anexo IV) enfatizou temas como mercado de carbono; tecnologia, especialmente captura e armazenamento de carbono, eficiência energética e energias renováveis; adaptação; florestas; e a estrutura do acordo pós-2012. A elaboração de tal acordo deveria, segundo o documento, ser capitaneada pelo G8 e contemplar cinco elementos-chave:

- i) Meta de estabilização de longo prazo;
- ii) Promoção de um mercado global de carbono;
- iii) Maior apoio à pesquisa, desenvolvimento, disseminação e transferência de tecnologia;
- iv) Maior apoio à adaptação, particularmente em países em desenvolvimento;
- v) Medidas para redução do desmatamento.<sup>18</sup>

Paralelamente ao evento, foi realizado o primeiro Fórum do G8 e dos países em desenvolvimento do Diálogo sobre Desmatamento Ilegal. Em outubro de 2007, o presidente da *Globe International* apresentou o documento pós-2012 durante o Diálogo Ministerial Gleneagles G20, em Berlim.

O quarto Fórum de Legisladores do Diálogo G8+5 sobre Mudança do Clima teve lugar em Brasília, em fevereiro de 2008, preparatório para a Cúpula de Toyako do G8, que ocorreria em julho, no Japão. Foram atingidas declarações consensuais sobre biocombustíveis<sup>19</sup> (Anexo VI) e sobre desmatamento ilegal<sup>20</sup> (Anexo VII). Além disso, foram endossados quatro relatórios finais de grupos de trabalho sobre adaptação<sup>21</sup> (Anexo VIII), mecanismos de mercado<sup>22</sup> (Anexo IX), eficiência energética<sup>23</sup> (Anexo X) e tecnologia<sup>24</sup> (Anexo XI).

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<sup>17</sup> Disponível em: <http://www.globeinternational.org/content.php?id=2:8:0:515:30> (acesso em 26 de março de 2009).

<sup>18</sup>

- i) a long-term stabilisation goal;
- ii) promotion of a global carbon market;
- iii) increased support for technology research, development, deployment and transfer;
- iv) increased support for adaptation, particularly in developing countries;
- v) measures to reduce deforestation.

<sup>19</sup> Disponível em: [http://www.globeinternational.org/docs/content/biofuels\\_paper\\_final-0.doc](http://www.globeinternational.org/docs/content/biofuels_paper_final-0.doc) (acesso em 26 de março de 2009).

<sup>20</sup> Disponível em: [http://www.globeinternational.org/docs/content/illegal\\_logging\\_final.doc](http://www.globeinternational.org/docs/content/illegal_logging_final.doc) (acesso em 26 de março de 2009).

<sup>21</sup> Disponível em: [http://www.globeinternational.org/docs/content/adapatation\\_final.doc](http://www.globeinternational.org/docs/content/adapatation_final.doc) (acesso em 26 de março de 2009).

<sup>22</sup> Disponível em: [http://www.globeinternational.org/docs/content/market\\_final.doc](http://www.globeinternational.org/docs/content/market_final.doc) (acesso em 26 de março de 2009).

<sup>23</sup> Disponível em: [http://www.globeinternational.org/docs/content/efficiency\\_final.doc](http://www.globeinternational.org/docs/content/efficiency_final.doc) (acesso em 26 de março de 2009).

<sup>24</sup> Disponível em: [http://www.globeinternational.org/docs/content/technology\\_final.doc](http://www.globeinternational.org/docs/content/technology_final.doc) (acesso em 26 de março de 2009).



O quinto e último Fórum de Legisladores do Diálogo G8+5 sobre Mudança do Clima ocorreu em Tóquio, de 28 a 29 de junho de 2008, alguns dias antes da Cúpula de Toyako do G8. Na ocasião, foram submetidos ao G8 os documentos referentes a desmatamento ilegal e ao acordo pós-2012<sup>25</sup> (Anexo XII), com a participação dos chefes das delegações de todos os países do G8+5. Os resultados deste Fórum consistem em uma série de documentos, que serão apresentados no Capítulo 3.

Durante o Fórum de Tóquio, foi acordado que a *Globe International* criaria três comissões permanentes, com a participação de legisladores dos países do G8+5. As comissões tratariam dos seguintes temas: segurança climática e energética; mudança de uso do solo e ecossistemas; e crescimento econômico e populacional.

### **2.3. Comissões Permanentes da *Globe International***

No geral, essas comissões pretendem possibilitar continuidade no desenvolvimento de políticas, a partir de subsídios de especialistas internacionais e expoentes empresariais. A Comissão Internacional sobre Segurança Climática e Energética, em particular, tenciona prover informações para a formulação de políticas nacionais e regionais e, além disso, atuar como interface entre o desenvolvimento de políticas e a aplicação prática dessas políticas. Por fim, ela buscará testar politicamente a formulação e a implementação de recomendações específicas – regulatórias e políticas – para parlamentos e governos.

A Comissão terá os seguintes objetivos específicos:

- Pós 2012: identificar gargalos políticos e econômicos, em âmbito internacional e nacional, e sugerir soluções embasadas por análises econômicas robustas elaboradas pelas Fundações McKinsey e Climate Works;
- Conduzir o exame do papel das instituições financeiras internacionais no curto, médio e longo prazos;
- Desenvolver uma linha de trabalho relacionada às prioridades em mudança do clima e energia para a Cúpula 2009 do G8, na Itália;
- Aprofundar as discussões público-privadas sobre políticas-chave de mitigação, tais como captura e armazenamento de carbono (CCS), eficiência de edifícios, renováveis e abordagens setoriais;
- Preparar os legisladores para o processo de ratificação do acordo de Copenhague.<sup>26</sup>

<sup>25</sup> Disponível em: [http://www.globeinternational.org/docs/content/globe\\_post2012\\_paper\\_tokyo\\_final.doc](http://www.globeinternational.org/docs/content/globe_post2012_paper_tokyo_final.doc) (acesso em 26 de março de 2009).

<sup>26</sup> \* Post-2012: identifying key political and economic hurdles on an international and national basis and suggesting solutions, underpinned by robust economic analysis from McKinsey and the Climate Works Foundation.

## 2.4. Participação brasileira no Diálogo G8+5 sobre Mudança do Clima

A *Globe International* solicitou aos Presidentes e Primeiros-Ministros dos países integrantes do G8+5 a nomeação de um parlamentar que chefiasse a respectiva delegação e representasse seus interesses durante as reuniões do Diálogo G8+5 sobre Mudança do Clima e na subsequente apresentação formal das recomendações do grupo, durante a cúpula do G8, ocorrida em julho de 2008, em Tóquio, Japão. O Presidente Luiz Inácio Lula da Silva indicou para a função Serys Slhessarenko, Senadora pelo PT do Mato Grosso.

Embora não tenham participado todos de todas as reuniões, também integraram as comitivas brasileiras nos encontros de Washington, Berlim, Brasília e Tóquio os Deputados Federais Antônio Palocci (PT/SP) e Augusto Carvalho (PPS/DF), além dos Senadores Cícero Lucena (PSDB/PB) e Renato Casagrande (PSB/ES). Compõem a delegação brasileira representantes de partidos tanto da base do governo, como de oposição. Isso corresponde à pretensão declarada da *Globe International* de promover o debate com as correntes políticas mais relevantes de cada país, independentemente da coloração partidária.

Entre os legisladores brasileiros figuravam três integrantes da Comissão Mista Especial criada em 2007, no âmbito do Congresso Nacional, para tratar do tema mudanças climáticas: Deputado Federal Augusto Carvalho (PPS/DF) e os Senadores Cícero Lucena (PSDB/PB) e Renato Casagrande (PSB/ES). Este último atuou como relator da comissão. Trata-se, portanto, de uma representação qualificada no assunto, a qual, no período de 2007 e 2008, dialogou com vários setores nacionais envolvidos, da academia aos ministérios de meio ambiente, ciência e tecnologia e relações exteriores, passando por comunidades locais, entidades empresariais e sociedade civil organizada.

Contudo, as declarações e recomendações adotadas pelos parlamentares durante os fóruns não vinculam os Parlamentos dos diversos países. O consenso alcançado é submetido aos líderes do G8, com o intuito de demonstrar-lhes o acordo político possível a

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\* Conduct an examination of the short, medium and long term role of International Financial Institutions (IFIs).

\* Developing a work strand relating to the climate change and energy related priorities for the Italian G8 Summit in 2009.

\* Deepening the public-private discussions on key mitigation technologies such as Carbon Capture and Storage (CCS), buildings efficiency, renewables and sectoral approaches.

\* Preparing legislators for the ratification process of a Copenhagen agreement.

partir de negociações entre representantes eleitos pelos povos. No plano doméstico, a atuação dos parlamentares consiste na possibilidade de que eles venham a defender, no exercício de suas funções legislativas, o entendimento consensual atingido.

Além disso, o contato entre representantes dos países responsáveis por cerca de 70% das emissões de GEE promove a circulação de informações e possibilita a qualificação do debate sobre mudanças do clima nos parlamentos nacionais. Com base nisso, os parlamentares estariam aptos a desempenhar um papel crítico perante os governos nacionais, no sentido de fiscalizar o cumprimento dos compromissos assumidos na esfera internacional.

### **3. AS RECOMENDAÇÕES DA *GLOBE INTERNATIONAL* AO G8 E A POSIÇÃO OFICIAL BRASILEIRA**

Neste capítulo, procuramos apresentar o teor dos documentos produzidos pela *Globe International*. São expostas as conclusões e recomendações dos principais relatórios elaborados no contexto do Diálogo G8+5 sobre Mudança do Clima. Em seguida, buscamos expor a posição oficial defendida pelo Brasil durante as negociações formais no âmbito das Nações Unidas. Essas duas vertentes serão comparadas nas conclusões deste trabalho.

#### **3.1. As Recomendações da *Globe International* ao G8**

Vários documentos resultaram dos fóruns de legisladores promovidos pela *Globe International*. Esses relatórios, na forma de recomendações políticas, foram submetidos aos líderes do G8 em julho de 2008, durante a cúpula de Toyako, no Japão. Os temas tratados dizem respeito à estrutura do acordo pós-2012 de enfrentamento das mudanças do clima e de assuntos como biocombustíveis, desmatamento ilegal, eficiência energética, mecanismos de mercado, tecnologia e adaptação. Nesta sessão, buscamos apresentar o teor dos documentos gerados.

No Item 3.1.1, são apresentados os três documentos submetidos à apreciação dos legisladores do G8+5 sendo, portanto, textos politicamente negociados: estrutura do acordo pós-2012, biocombustíveis e desmatamento ilegal. Em seguida, no Item 3.1.2 são apresentados os relatórios dos grupos de trabalho sobre eficiência energética, mecanismos de mercado, tecnologia e adaptação.

##### *3.1.1. Documentos submetidos a negociações políticas*

O relatório referente à estrutura do acordo pós-2012 foi discutido ao longo dos cinco fóruns realizados entre 2006 e 2008. A intenção dos organizadores foi a de alcançar consensos políticos em torno dos principais aspectos que, na opinião dos parlamentares participantes, deveriam constar no acordo internacional para o segundo período de compromisso do Protocolo de Quioto.

As recomendações relativas a biocombustíveis foram elaboradas por um grupo de trabalho formado por representantes de todos os países envolvidos e submetidas à

apreciação de todos os participantes durante o Fórum de Legisladores de Brasília, em fevereiro de 2007.

O mesmo ocorreu com o documento sobre desmatamento ilegal, produzido por um colegiado específico, o Diálogo G8 sobre Desmatamento Ilegal. As recomendações referentes a esse tema também foram apreciadas em Brasília, quando fóruns das duas iniciativas ocorreram paralelamente.

### 3.1.1.1. Estrutura do Acordo Pós-2012 (Globe, 2008a)<sup>27</sup>

A contribuição dos legisladores participantes do Diálogo G8+5 sobre Mudança do Clima para a estrutura do acordo pós-2012 está consubstanciada no relatório *Combating Climate Change: An International Cooperation Framework Beyond 2012*. O documento está organizado em quatro sessões: princípios, possíveis elementos, outros processos internacionais e próximos passos.

Preliminarmente, entretanto, é apresentado o pressuposto básico do trabalho:

É um pressuposto fundamental deste documento que o mundo pode e deve manter o desenvolvimento econômico e estabilizar a concentração de gases de efeito estufa em um nível que previna mudanças climáticas perigosas, informado por ciência vigorosa; e que esses objetivos gêmeos podem e devem ser alcançados por meio de compromissos e ações para aumentar a produtividade do carbono – a quantidade de riqueza produzida por tonelada de CO<sub>2</sub> equivalente emitida – que reconheça o princípio das responsabilidades comuns, porém diferenciadas (Globe, 2008a, p.2).<sup>28</sup>

#### a. Princípios

Entre os princípios abordados está o das *responsabilidades comuns, porém diferenciadas*. Segundo o relatório, todos os países do G8+5 devem esforçar-se para enfrentar as mudanças do clima. Os países desenvolvidos devem reduzir as suas emissões de GEE em termos absolutos, ao passo que os demais precisam agir para controlá-las, no contexto do desenvolvimento sustentável.

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<sup>27</sup> Disponível em: [http://www.globeinternational.org/docs/content/globe\\_post2012\\_paper\\_tokyo\\_final.doc](http://www.globeinternational.org/docs/content/globe_post2012_paper_tokyo_final.doc) (acesso em 26 de março de 2009). Vide Anexo XII.

<sup>28</sup> It is a Clause Paramount of this document that the world can and must maintain human economic development and stabilise atmospheric greenhouse gases at a level that avoids dangerous climate change, informed by robust science; and that these twin objectives can and must be achieved through commitments or actions to increase carbon productivity – the amount of wealth produced per tonne of CO<sub>2</sub> equivalent emitted – that recognise the principle of common but differentiated responsibilities.

O segundo princípio é o da *equidade*, de acordo com o qual o acordo pós-2012 só será possível se cada país envolvido o considere justo e equitativo, em relação tanto ao público interno como à comunidade internacional. Os parlamentares acreditam que “o acordo pós-2012 deve considerar emissões correntes, históricas e *per capita* de gases de efeito estufa, e as circunstâncias econômicas diferenciadoras dos países desenvolvidos e em desenvolvimento”.(Globe, 2008a, p.2)<sup>29</sup>

Conforme o princípio da *flexibilidade*, o acordo pós-2012 deve acomodar diferentes estratégias e circunstâncias nacionais. Com isso, os legisladores reconhecem que, com base em suas características e condições particulares, países em diferentes estágios de desenvolvimento poderão adotar diferentes estratégias para fazer frente aos desafios impostos pelas mudanças climáticas. A estrutura do acordo pós-2012 não pode, na opinião dos parlamentares, ser rígida ao ponto inviabilizar soluções locais para o problema global.

Outro princípio reconhece a *urgência* com que deve ser tratado o assunto, de modo a aumentar a resiliência aos efeitos das mudanças climáticas e alcançar a imediata redução das emissões de GEE, além de desenvolver e disseminar tecnologias revolucionárias para reduzir ainda mais essas emissões no futuro.

Pelo princípio do *desenvolvimento sustentável*, não deve haver incompatibilidade entre os objetivos de desenvolvimento – inclusive os Objetivos do Milênio – e as ações de enfrentamento das mudanças climáticas. Conforme o Relatório Brundtland (CMMAD, 1988), desenvolvimento sustentável é aquele que atende às necessidades presentes sem comprometer a possibilidade de que as gerações futuras satisfaçam as suas próprias. Segundo Sachs (2008), para ser sustentável, o desenvolvimento precisa ser socialmente incluyente, ecologicamente sustentável e economicamente sustentado.

No mesmo sentido, os legisladores preconizam a harmonização entre o desenvolvimento econômico, a redução da pobreza e a mudança dos padrões de produção e consumo, para conciliar crescimento econômico e proteção ambiental. Por fim, o documento reafirma a necessidade de transferência de recursos financeiros e de tecnologia dos países desenvolvidos para os em desenvolvimento, no intuito de ajudar os últimos a atingir os objetivos da CQNUMC.

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<sup>29</sup> “A post-2012 framework must recognize current, historical and *per capita* emissions of greenhouse gases, and the differing economic circumstances of developed and developing countries”.

Além disso, o trabalho reconhece que, em decorrência das emissões históricas de GEE, as conseqüências das alterações do clima já se fazem sentir, com especial intensidade sobre os países mais pobres, menos aptos a suportá-las. Em função disso, impõe-se a necessidade urgente de estabelecer mecanismos para a *adaptação* – sexto e último princípio – a tais efeitos. Para os legisladores, a adaptação aos efeitos das mudanças climáticas deve ser tratada com a mesma prioridade que a mitigação das emissões.

#### b. Possíveis elementos do acordo pós-2012

Com base nos princípios apresentados acima, o relatório apresenta uma série de medidas que devem ser consideradas na elaboração do acordo pós-2012. Em primeiro lugar, defende-se a necessidade de reafirmar o compromisso com o objetivo maior da CQNUMC, qual seja, o da *estabilização climática de longo prazo*. Tal meta deve ser atingida num horizonte temporal que permita a proteção dos ecossistemas, da biodiversidade, da produção de alimentos e do desenvolvimento econômico e que confira a todos os segmentos da sociedade confiança suficiente para migrarem para um modelo econômico menos intensivo em carbono.

Os legisladores do G8+5 defendem uma redução de pelo menos 50% das emissões até 2050, em relação ao nível registrado em 1990. A eventual falta de consenso em torno dessa necessidade, no entanto, não deve servir de pretexto para que os países desenvolvidos deixem de cortar suas emissões, ou para que os em desenvolvimento deixem de agir segundo o paradigma do desenvolvimento sustentável.

Mais uma vez, o documento assevera a importância das ações de *adaptação*, detalhadas nas recomendações do grupo de trabalho sobre o tema, que serão apresentadas no Item 3.1.2.4 deste trabalho. Os autores do documento acreditam que o modo mais eficiente de estimular investimentos – públicos e privados – em pesquisa, desenvolvimento e disseminação de tecnologias pouco intensivas em carbono consiste na adoção de políticas que confirmem valor de mercado às emissões de GEE no longo prazo. Para tanto, seria necessário criar um *mercado internacional de carbono*, a partir da junção de iniciativas bem-sucedidas já em curso, como o *European Union Emission Trading Scheme* (EU-ETS) e os mercados em operação dos EUA e na Austrália. Outras possíveis soluções, no plano doméstico, são a taxação direta das emissões ou a adoção de metas obrigatórias para determinados setores, como transportes e construção.

Reconhecendo que, embora a responsabilidade pela ação seja comum a todos, o regime de enfrentamento das mudanças do clima deve levar em conta os diferentes estágios de desenvolvimento e as responsabilidades históricas dos países, o relatório defende compromissos obrigatórios para os países desenvolvidos e ações de mitigação no contexto do desenvolvimento sustentável para os países em desenvolvimento.

Metas ambiciosas devem ser estabelecidas para os países desenvolvidos: redução entre 25% e 40% das emissões até 2020, em referência a 1990; até 2050 essa redução deve ficar entre 60% e 80%, também em relação a 1990 (Globe, 2008a, p. 4). Estes países devem prover ajuda financeira e transferência de tecnologia – de modo mensurável, reportável e verificável – aos países em desenvolvimento, para auxiliar nos esforços destes para a mitigação e a adaptação às mudanças climáticas. As contribuições dos países em desenvolvimento devem incluir ações de mitigação adequadas às capacidades de cada Estado, segundo o paradigma do desenvolvimento sustentável. Tais ações incluiriam, entre outras, redução do desmatamento, fortalecimento de sumidouros de carbono e políticas de desenvolvimento sustentável. Todos esses compromissos deveriam ser automaticamente renovados anualmente, e ratificados apenas formalmente a cada cinco anos.

No que diz respeito à pesquisa e desenvolvimento, os legisladores do G8+5 consideram que deveria constar, no acordo pós-2012:

- Prover incentivos para, pelo menos, dobrar o apoio financeiro à pesquisa e desenvolvimento;
- Criar um novo fundo de tecnologia, para apoiar a disseminação de tecnologias existentes, incluindo renováveis e construção de capacidades no mundo em desenvolvimento, com respeito a direitos de propriedade intelectual;
- Promover transferência de tecnologia via mecanismos de mercado, como o Mecanismo de Desenvolvimento Limpo;
- Apoiar o desenvolvimento e a disseminação de novas tecnologias, incluindo captura e armazenamento de carbono (CCS), para reduzir as emissões associadas à queima de combustíveis fósseis;
- Promover cooperação internacional em tecnologias de eficiência energética, aquisições públicas, construções, produtos e equipamentos. (Globe, 2008a, p. ).<sup>30</sup>

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<sup>30</sup> \* provide incentives to at least double global financial support for Research and Development;

\* create a **new technology fund** to support deployment of existing technologies, including renewables, and capacity building in the developing world, respecting Intellectual Property Rights;

\* promote technology transfer via market mechanisms such as the Clean Development Mechanism;

\* support the development and deployment of new technologies, including carbon capture and storage (CCS), to reduce the emissions associated with burning fossil fuels;



Além disso, considera-se importante promover a participação, na formação do acordo pós-2012, de setores específicos cujas emissões atravessam fronteiras nacionais, tais como a aviação e as navegações internacionais. Por fim, o documento prevê estratégias para a redução do desmatamento, inclusive com mecanismos de pagamento pela manutenção de florestas, comumente denominada, no Brasil, de desmatamento evitado. As conclusões do Diálogo sobre Desmatamento Ilegal serão apresentadas no Item 3.1.1.3 deste trabalho.

#### c. Outros processos internacionais

De acordo com o relatório, “onde quer que promova o apoio ao acordo pós-2012, as mudanças climáticas devem ser consideradas como fator em outros processos internacionais, segundo os princípios da CQNUMC” (Globe,2008a, p. 5)<sup>31</sup>. O documento adotado pelos legisladores do G8+5 defende, assim, uma abordagem transversal do tema das mudanças climáticas, no contexto de outros regimes internacionais. A medida tem por objetivo incorporar definitivamente o assunto às discussões de outros aspectos da política internacional. O que se pretende é aplicar os princípios e determinações da CQNUMC a, por exemplo, criação e aplicação de regras de comércio internacional, formulação e implementação de estratégias de desenvolvimento e condução das instituições financeiras internacionais.

#### d. Próximos passos

Na última sessão, o relatório Globe Pós-2012 defende ser essencial que os legisladores das maiores economias promovam “a urgência e seriedade do tema; a estrutura política necessária de combate às mudanças climáticas, como delineada neste documento, e o nível de ambição a ele associado, de modo a atingir o objetivo final da CQNUMC: evitar mudanças climáticas perigosas” (Globe, 2008a, p. 6)<sup>32</sup>.

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\* promote increased international cooperation on energy efficiency technologies, public procurement, buildings, products and appliances.

<sup>31</sup> “Where it can be supportive of a post-2012 framework, climate change should be considered as a factor in other international processes within the principles of the UNFCCC”.

<sup>32</sup> “... the urgency and seriousness of the issue; the political framework needed to combat climate change, as outlined in this paper; and the level of ambition that must be associated with this framework in order to meet the ultimate objective of the UNFCCC – to avoid dangerous climate change”.

### 3.1.1.2. Biocombustíveis (Globe, 2008b)<sup>33</sup>

Já na introdução do relatório do grupo de trabalho sobre biocombustíveis são apresentadas as premissas que orientam as recomendações aos líderes do G8:

Globalmente, biocombustíveis e biomassa podem desempenhar um importante papel tanto no desenvolvimento agrícola como nas políticas energéticas, enquanto contribui para a mitigação das mudanças climáticas e para a segurança energética nacional. De fato, no longo prazo, agricultura irá tornar-se cada vez mais multifuncional com ênfase na co-produção de alimentos, energia e outros serviços. Entrementes, biocombustíveis e biomassa estão entre as opções tecnicamente mais viáveis para reduzir as emissões de gases de efeito estufa. Além disso, podem prover uma oportunidade de fomentar crescimento em muitos dos países mais pobres do mundo. De modo aos biocombustíveis desempenharem um importante papel na redução dos gases de efeito estufa, eles devem ser produzidos de forma economicamente eficiente e de maneira a não solapar o desenvolvimento sustentável (Globe, 2008b, p. 1)<sup>34</sup>.

De acordo com o grupo de trabalho, sistemas de certificação confiáveis, consistentes e independentes, referidos a padrões internacionais devem ser estabelecidos para garantir o caráter sustentável da produção de biocombustíveis. Para ser assim considerada, a produção deve atender aos seguintes critérios de sustentabilidade socioambiental:

- (i) a redução das emissões de GEE devem ser significativas em relação àquelas derivadas da utilização combustíveis fósseis, considerado todo o ciclo de vida do produto, desde o cultivo das variedades vegetais adequadas até o consumo do combustível, inclusive no que se refere a eventuais efeitos indiretos;
- (ii) o cultivo das variedades vegetais empregadas na produção não deve ocorrer onde acarrete perda significativa de biodiversidade ou em terras com elevado estoque de carbono, tais como charcos e terras alagadas, ou áreas de florestas há muito consolidadas;

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<sup>33</sup> Disponível em: [http://www.globeinternational.org/docs/content/biofuels\\_paper.final-0.doc](http://www.globeinternational.org/docs/content/biofuels_paper.final-0.doc) (acesso em 26 de março de 2009). Vide Anexo VI.

<sup>34</sup> “Globally, biofuels and biomass could play an important role both in agricultural development and energy policy, while contributing to climate change mitigation and national energy security. Indeed, over the long-term, agriculture will become increasingly multifunctional with emphasis placed on the co-production of food, energy and other services. In the meantime biofuels and biomass are amongst the more technically viable options to reduce greenhouse gas emissions. In addition, they can provide an opportunity to enhance growth in many of the world’s poorest countries. In order for biofuels to play an important role in the reduction of greenhouse gases, they must be produced in both an economically efficient manner and in a way that does not undermine sustainable development”.

- (iii) os impactos da mudança de uso do solo para a produção de biocombustíveis devem ser considerados;
- (iv) os recursos hídricos devem ser preservados tanto no aspecto da quantidade como da qualidade;
- (v) devem ser avaliados os reflexos da produção de biocombustíveis sobre a sustentabilidade social, incluindo os impactos sobre as mulheres, as comunidades indígenas e outros grupos menos privilegiados socialmente.

Os legisladores trataram do impacto da produção de biocombustíveis sobre os preços das *commodities* alimentares e, pelo deslocamento da produção de alimentos, sobre a segurança alimentar, particularmente em países em desenvolvimento. Esses problemas deverão ser minimizados com o desenvolvimento de tecnologias que possibilitem a produção de biocombustíveis desde variedades vegetais não-alimentares.

Do ponto de vista comercial, defende-se a valoração econômica de todos os insumos da cadeia de produção de biocombustíveis – tais como solo e água – e a redução das barreiras ao comércio internacional existentes, no intuito de estimular a produção em países que tenham vantagens comparativas para tanto. Devem ser promovidos investimentos em pesquisa para o desenvolvimento de biocombustíveis de gerações mais avançadas, de modo a, por exemplo, possibilitar a produção desde variedades vegetais que não compitam com a produção de alimentos.

Por fim, os legisladores salientam a necessidade de introduzir argumentos baseados em evidências no debate sobre a sustentabilidade dos biocombustíveis, debate esse travado na mídia normalmente de modo polarizado e parcial.

### 3.1.1.3. Desmatamento Ilegal (Globe, 2008c)<sup>35</sup>

O desaparecimento de importantes depósitos mundiais de carbono por meio de desmatamentos é responsável por cerca de 20% das emissões de GEE no mundo. A preservação das florestas é componente fundamental da mitigação das alterações climáticas. Além de serem uma reserva de carbono, as florestas apresentam grande biodiversidade e constituem fonte de alimentos, renda e combustível para os povos que nela habitam. Assim, “o desafio para a cooperação internacional é encontrar formas de

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<sup>35</sup> Disponível em: [http://www.globeinternational.org/docs/content/illegal\\_logging\\_final.doc](http://www.globeinternational.org/docs/content/illegal_logging_final.doc) (acesso em 26 de março de 2009). Vide Anexo VII.

desencadear o triplo benefício para a mitigação climática, pessoas e biodiversidade que poderia ser gerada através da conservação das florestas” (PNUD, 2007, p.159). O tema tem especial importância para o Brasil, pois o país detém grandes extensões de florestas tropicais, com o desmatamento respondendo por cerca de 75% das emissões nacionais de GEE a cada ano (MCT, 200 ).

O relatório da *Globe International* com as recomendações sobre este tema foi elaborado em conjunto pelo Diálogo G8 sobre Desmatamento Ilegal e pelo Diálogo G8+5 sobre Mudança do Clima. De acordo com os legisladores, a importância do setor florestal foi reconhecida na COP-13, em Bali, na Indonésia, como de fundamental importância para o enfrentamento das mudanças climáticas. Nesse contexto, ainda mais importante é combater o desmatamento ilegal e o comércio internacional de madeira oriunda de regiões onde ocorre essa prática.

Os autores expõem o desafio nos seguintes termos:

Desmatamentos e degradação das florestas tropicais continuam a ser significativos problemas econômicos, ambientais e sociais. O desmatamento ilegal priva governos, comunidades locais e empreendimentos florestais comerciais de importantes rendimentos presentes e futuros, enquanto a perda e a degradação de florestas contribuem de modo substancial para as mudanças climáticas, a erosão dos solos e a perda de serviços ambientais e de biodiversidade. O desafio é reembolsar o valor apropriado da floresta aos povos dessas regiões e manter o seu papel vital dos sistemas planetários de suporte à vida (Globe, 2008c, p. 2)<sup>36</sup>.

Com o intuito de conferir maior governança e transparência ao setor florestal tanto em âmbito internacional como doméstico, o relatório apresenta, entre outras, as seguintes recomendações aos líderes do G8:

- (i) criação de um sistema internacional de reconhecimento e estímulo a esquemas domésticos de licenciamento da atividade madeireira legal, nos países produtores;

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<sup>36</sup> “Tropical deforestation and degradation continue to be significant economic, environmental and social problems. Illegal logging denies governments, local communities and commercial forest enterprises of important present and future revenues, while forest loss and degradation contributes significantly to climate change, soil erosion and loss of ecosystem services and biodiversity. The challenge is to return the proper value of the forest to the people of the forest regions and to maintain their vital role in the life support system, of the planet.”

- (ii) reforço, pelos países consumidores, das legislações nacionais adotadas pelos países produtores, no sentido de inibir o desmatamento ilegal por meio do combate ao consumo de produtos obtidos de maneira irregular;
- (iii) formação de mecanismos de proteção do mercado de produtos florestais obtidos de maneira legal, a fim de tornar a atividade legalizada economicamente atrativa;
- (iv) adoção de medidas que diminuam o risco dos investimentos no setor florestal em países em desenvolvimento, de modo a aumentar a competitividade da atividade legalizada em relação às práticas ilegais;
- (v) estabelecimento de mecanismos pontuais de promoção da sustentabilidade florestal, como a remuneração pela prestação de serviços ambientais.

### *3.1.2. Relatórios dos Grupos de Trabalho*

Os relatórios finais dos grupos de trabalho sobre eficiência energética, mecanismos de mercado, tecnologia e adaptação foram apresentados aos parlamentares do G8+5 durante o Quarto Fórum de Legisladores do Diálogo G8+5 sobre Mudança do Clima, realizado em Brasília, Brasil, em fevereiro de 2008. Diferentemente dos documentos apresentados no Item 3.1.1, estes não foram submetidos a negociações políticas entre os legisladores participantes dos encontros.

#### *3.1.2.1 Eficiência Energética (Globe, 2008d)<sup>37</sup>*

Conforme os autores do relatório do grupo de trabalho sobre eficiência energética,

Medidas para aumentar a eficiência energética são, de longe, o modo mais efetivo do ponto de vista econômico para, simultaneamente, melhorar a segurança energética, reduzir as emissões de carbono, aumentar a competitividade e estimular o desenvolvimento de tecnologias e produtos de ponta em eficiência energética.(...) Um acordo internacional sobre eficiência energética, liderado pelas maiores economias do mundo, deve, portanto, ser um elemento essencial, de baixo custo, das estratégias de combate à mudança climática (Globe, 2008d, p. 3)<sup>38</sup>.

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<sup>37</sup> Disponível em: <http://www.globeinternational.org/docs/content/efficiency.final.doc> (acesso em 26 de março de 2009). Vide Anexo X.

<sup>38</sup> “Measures to increase energy efficiency are by far the most cost effective way to simultaneously improve energy security, reduce carbon emissions, increase competitiveness and stimulate the development of cutting edge energy efficient technologies and products. (...) A global agreement

O documento indica doze áreas prioritárias para um programa abrangente e consistente de promoção da eficiência energética nos setores residencial, comercial, industrial e de transportes. Entre essas áreas prioritárias figuram a criação de novos mecanismos de financiamento dos investimentos em eficiência energética; o aprimoramento da consciência pública a respeito da importância do tema; e o estímulo à cooperação internacional para a eficiência energética.

### 3.1.2.2. Mecanismos de Mercado (Globe, 2008e)<sup>39</sup>

Para os autores do relatório deste grupo de trabalho, o objetivo geral dos mecanismos de mercado é garantir que consumidores e empresários sejam recompensados ao optarem por produtos, processos produtivos e serviços pouco intensivos em carbono. Para tanto, o carbono deve ser precificado em nível adequado em todo o ciclo econômico. Dentre as recomendações do documento, merecem destaque as necessidades de:

- remoção de distorções no mercado doméstico de energia e de estruturas tarifárias não comerciais, além de garantir que tal mercado seja competitivo e atraente para o investimentos privados;
- fixação de metas de longo prazo para a redução de emissões de GEE, de modo a permitir ao setor privado escolher o melhor modo de atingi-las, inclusive mediante investimentos em tecnologias pouco intensivas em carbono;
- regulação do mercado de carbono com base em princípios, e não mais com base em regras, modelo que se mostrou ineficaz no caso do MDL e do EU-ETS;
- criação de um novo e independente órgão regulatório para o mercado internacional de carbono, de modo a conferir estabilidade e previsibilidade ao regime regulatório aplicável às transações referentes ao carbono;
- aumento dos recursos internacionais alocados ao desenvolvimento de tecnologias pouco intensivas em carbono;
- desenvolvimento de capacidades, por meio de educação e treinamento, para operar e manter tecnologias pouco intensivas em carbono, especialmente nos países em desenvolvimento;

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on energy efficiency, led by the world's major economies must, therefore, be an essential, low cost element of the strategy to combat climate change.”

<sup>39</sup> Disponível em: <http://www.globeinternational.org/docs/content/market.final.doc> (acesso em 26 de março de 2009). Vide Anexo IX.

- liderança dos governos dos países do G8+5 na criação de demanda por produtos e serviços pouco intensivos em carbono.

### 3.1.2.3. Tecnologia (Globe, 2008f)<sup>40</sup>

O relatório do grupo de trabalho sobre tecnologia parte do pressuposto, demonstrado por estudos da IEA, de que a redução das emissões de GEE passa pelo vigoroso desenvolvimento e disseminação de tecnologias limpas e eficientes. Essas providências demandarão elevados investimentos e forte vontade política. Entretanto, estudos científicos evidenciam a urgência dessas medidas, tanto para cortar as emissões dos países desenvolvidos como para evitar que os países em desenvolvimento sigam o mesmo caminho poluente nas suas estratégias de desenvolvimento.

Além disso,

Fazer frente às enormes necessidades energéticas e de tecnologia para uma economia pouco intensiva em carbono depende de marcos regulatórios coerentes, apoiados por mecanismos de mercado. Legisladores devem alcançar o correto equilíbrio entre regulação e incentivo, que levará, o quanto antes, ao desenvolvimento e à difusão comercial das tecnologias que serão necessárias.

Difusão de tecnologias é frequentemente o estágio mais difícil, especialmente nas etapas iniciais de comercialização. Empresas e consumidores necessitam igualmente de mercados e regimes regulatórios previsíveis para terem confiança e poderem tomar suas decisões de investimento. Uma combinação de regulação e mecanismos de suporte claros serão necessários tanto em países desenvolvidos como em países em desenvolvimento, combinada com vigorosa construção de capacidades nos últimos (Globe, 2008f, p. 2)<sup>41</sup>.

As recomendações do grupo de trabalho são, entre outras:

- Criação de incentivos public-privados que levem a, no mínimo, dobrar a capacidade global de apoio à pesquisa e desenvolvimento tecnológico;
- Criação de um fundo de tecnologias limpas, na ordem de US\$ 25 a 50 bilhões por ano, para apoiar a disseminação de tecnologiaspouco

<sup>40</sup> Disponível em: [http://www.globeinternational.org/docs/content/technology\\_final\\_doc](http://www.globeinternational.org/docs/content/technology_final_doc) (acesso em 26 de março de 2009). Vide Anexo XI.

<sup>41</sup> Meeting the huge energy and technology needs for a low carbon economy will critically depend on coherent regulatory frameworks, supported by market mechanisms. Legislators need to get the right balance of regulations and incentives that can drive early commercial development and diffusion of the technologies that will be needed.

Diffusion of technology is most often the most difficult stage, especially in the early stages of commercialisation. Companies and consumers alike need predictable regulatory regimes and markets to have the confidence to make their investment decisions. A combination of clear regulation and support mechanisms will be needed in both developed and developing countries, combined with vigorous capacity building in the latter.

intensivas em carbono, com prioridade para investimentos em eficiência energética, renováveis e CCS, além da construção de capacidades nos países em desenvolvimento;

- Promoção de acordos globais de eficiência energética, para aumentar a cooperação internacional sobre padrões de eficiência em produtos e combustíveis;
- Promoção uma política estruturante para o uso responsável de biocombustíveis, baseada em critérios econômicos e de sustentabilidade, que conforme metas ambiciosas de redução de GEE, reconhecendo as vantagens comparativas dos países tropicais e subtropicais;
- Aumento do apoio ao desenvolvimento e à disseminação de novas tecnologias, tais como captura e armazenamento de carbono (CCS), para reduzir as emissões associadas à queima de combustíveis fósseis, e tratar aspectos dos Direitos de Propriedade Intelectual (IPR) de modo equitativo; (Globe, 2008f, p. 4)<sup>42</sup>.

#### 3.1.2.4. Adaptação (Globe, 2008g)<sup>43</sup>

O grupo de trabalho sobre adaptação reconhece, preliminarmente, que os esforços de enfrentamento da mudança do clima têm se concentrado predominantemente na mitigação das emissões de GEE. Contudo, parte das conseqüências das alterações climáticas é inevitável e algumas já se fazem sentir. Embora os impactos do fenômeno sejam globais, eles serão particularmente graves nos países em desenvolvimento, mais vulneráveis e menos aptos a enfrentarem o problema. Se, por um lado, a mitigação é uma questão a ser tratada globalmente, a adaptação é um tema eminentemente local.

Nas economias particularmente sensíveis a variabilidades climáticas, podem exacerbar-se instabilidade política, pela deterioração de sistemas sociais; intensificação de fluxos migratórios do campo para as cidades e mesmo transfronteiriços. O deslocamento desses refugiados ambientais provocará maior pressão sobre os recursos naturais escassos, podendo levar inclusive a conflitos armados. Para os autores do relatório, “ação adequada

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<sup>42</sup> \* Creation of public-private incentives that lead to at least a **doubling** of global financial support for **technology R & D**

\* Creation of a clean **technology fund, in the order of USD 25-50 billion per annum**, to support deployment of low-carbon technologies with priority given to investments in energy efficiency, renewables and CCS and capacity building in developing countries

\* Promotion of **global energy efficiency agreements**, to increase international cooperation on product and fuel efficiency standards

\* Promotion of a policy framework for the **responsible use of biofuels, based on economic and sustainability criteria** that sets an ambitious target for GHG savings, recognising the comparative advantage of tropical and sub-tropical countries

\* Increased support for the **development and deployment of new technologies, such as carbon capture and storage (CCS)**, to reduce the emissions associated with burning fossil fuels, and address Intellectual Property Rights (IPR) issues in an equitable manner

<sup>43</sup> Disponível em: [http://www.globeinternational.org/docs/content/adapatation\\_final.doc](http://www.globeinternational.org/docs/content/adapatation_final.doc) (acesso em 26 de março de 2009). Vide Anexo VIII.



para encaminhar adaptação em países em desenvolvimento só serão possíveis se os países industrializados estiverem preparados para consignar recursos adicionais substanciais”(Globe, 2008g, p. 2)<sup>44</sup>. Desse modo, dados os elevados custos estimados da adaptação no mundo em desenvolvimento, substanciais recursos novos e adicionais devem ser consignados por todos os países industrializados para auxiliar a adaptação no mundo em desenvolvimento”(Globe, 2008g, p.4)<sup>45</sup>.

Nesse contexto, as recomendações dos autores concentram-se em cinco grandes áreas: princípios gerais; financiamento da adaptação nos países em desenvolvimento; seguro climático, tanto para fazer frente às despesas decorrentes de eventuais perdas, como para contribuir para os esforços de redução do risco das atividades; integração da adaptação nas estratégias de ajuda ao desenvolvimento; e construção de capacidades na esfera local, onde ocorrem os efeitos agudos das mudanças do clima.

### 3.1. A Posição Oficial Brasileira

Segundo Vargas (2008)<sup>46</sup>, para o Brasil, “[a] coluna vertebral do regime internacional sobre a mudança do clima é o princípio das responsabilidades comuns, porém diferenciadas e respectivas capacidades dos Estados, consagrado no art. 3º da Convenção [Quadro das Nações Unidas sobre Mudança do Clima]” (VARGAS, 2008). Segundo a interpretação brasileira desse princípio, todos são responsáveis pelo enfrentamento das alterações climáticas, pois causas e conseqüências do fenômeno são comuns a todos os países. Os poucos Estados desenvolvidos, no entanto, são e continuarão a ser responsáveis pela grande maioria das emissões históricas de GEE.

Segundo os dados disponíveis, a temperatura média global, em 2005, mostrou-se 0,7°C superior à de 1850. Desse aumento, 0,6°C foi gerado pelos países desenvolvidos. Projeções para 2010 indicam que a parcela relativa de responsabilidade dos países desenvolvidos pelo aquecimento global acumulado será de 82%, enquanto a dos países em desenvolvimento será de 18% (VARGAS, 2008).

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<sup>44</sup> “(...) adequate action to address adaptation in developing countries will only be possible if industrialized countries are prepared to commit substantial additional resources”.

<sup>45</sup> “Given the high estimated costs of adaptation in the developing world, **substantial new and additional resources should be committed by all industrialized countries** to assist adaptation in the developing world”.

<sup>46</sup> Na época, o Embaixador Everton Vieira Vargas, que possui longa experiência em negociações ambientais internacionais, ocupava o cargo de Subsecretário-Geral Político I do Ministério das Relações Exteriores, a quem está subordinada a Departamento de Meio Ambiente e Temas Especiais, representante brasileiro responsável pela condução das negociações do regime internacional de enfrentamento das mudanças do clima.

O Brasil defende que o esforço dos países em desenvolvimento deve ser compatível com suas necessidades sociais e de desenvolvimento. O regime internacional de enfrentamento do problema não pode ser configurado de modo a limitar o crescimento desses países. Isso apenas congelaria “as assimetrias econômicas, sociais e políticas que distorcem a ordem internacional e comprometem a própria segurança internacional, além de contribuir para prolongar a fome e a miséria nos países em desenvolvimento” (VARGAS, 2008).

As medidas tomadas pelos países desenvolvidos no campo da mitigação podem se mostrar inadequadas às condições dos países em desenvolvimento. Além disso, o fato de que estes serão os mais afetados pelas mudanças climáticas ressalta a importância, para eles, das ações de adaptação.

O Brasil critica o não cumprimento dos compromissos formais de transferência de tecnologia e provisão de recursos financeiros novos e adicionais assumidos na Convenção pelos países desenvolvidos. A implantação de padrões sustentáveis de produção e consumo esbarra em barreiras tarifárias e não-tarifárias nos mercados dos países ricos. Além de ignorarem esses compromissos, os países desenvolvidos descumprem as metas que lhes foram impostas pelo Protocolo de Quioto.

Países como EUA, Japão, Canadá, Austrália, Noruega, Portugal e Espanha apresentam níveis de emissões muito superiores ao previsto naquele tratado. De acordo com Vargas (2008), “a velocidade da inovação tecnológica e a agilidade dos mecanismos de transferência de tecnologia são inversamente proporcionais à aceleração da transformação econômica e à gravidade das necessidades dos países em desenvolvimento”.

É importante lembrar que, de acordo com o artigo 4.7 da CQNUMC,

O grau de efetivo cumprimento dos compromissos assumidos sob esta Convenção das Partes países em desenvolvimento dependerá do cumprimento efetivo dos compromissos assumidos sob esta Convenção pelas Partes países desenvolvidos, no que se refere a recursos financeiros e transferência de tecnologia, e levará plenamente em conta o fato de que o desenvolvimento econômico e social e a erradicação da pobreza são as prioridades primordiais e absolutas das Partes países em desenvolvimento (ONU, 1992).

No entanto, tal transferência de tecnologias não vem ocorrendo conforme apregoadado pela Convenção. Em audiência pública da Comissão Mista Especial do Congresso

Nacional sobre Mudanças Climáticas, destinada a discutir a eventual imposição ao Brasil de metas obrigatórias para o segundo período de compromisso do Protocolo de Quioto (pós-2012), os convidados afirmaram que, “no atual estágio, os países desenvolvidos não têm contribuído como deveriam para ajudar os países em desenvolvimento, especialmente no que concerne à transferência de tecnologia” (Brasil, 2008, pp. 210-211). Participaram da reunião Thelma Krug, então Secretária de Mudanças Climáticas e Qualidade Ambiental do Ministério do Meio Ambiente (MMA), Sérgio Serra, na época Embaixador Extraordinário para Mudança do Clima e José Dominguez Miguez, então Coordenador-Geral de Mudanças do Clima do Ministério de Ciência e Tecnologia (MCT).

A composição da matriz energética, o programa federal de combate ao desmatamento e a crescente aplicação de biocombustíveis são importantes iniciativas voluntárias de redução das emissões de GEE no Brasil. O país, no entanto, enxerga com cautela a inclusão de ações de conservação de florestas como passíveis de ser elegíveis como projetos de MDL. Isso “enfraqueceria o regime da Convenção e abalaria a integridade do Protocolo de Quioto”, até porque tais ações não contribuem para a mitigação da mudança do clima.

Por outro lado, o país considera justa a “retribuição pelo serviço ambiental prestado pelas florestas na manutenção do sistema climático”. Para tanto, o Brasil apóia a “redução das emissões derivadas do desmatamento nos países em desenvolvimento”, a partir da adoção de medidas de controle dos vetores do desmatamento com vistas ao combate ao desflorestamento. Nesse contexto, os países desenvolvidos são chamados a mobilizar recursos para auxiliar em tais iniciativas.

Conforme o Embaixador Everton Vargas, o país rechaça a idéia muito difundida, inclusive na sociedade brasileira, de que países como Brasil, China e Índia devam assumir metas específicas obrigatórias de redução de emissões. Na realidade das negociações, contudo, essa proposta sequer é apresentada, tendo em vista o princípio das responsabilidades comuns, porém diferenciadas. O que existe é a defesa por países tanto desenvolvidos como em desenvolvimento de critérios para controlar as emissões nestes últimos, tais como políticas e medidas específicas.

Para o Brasil, apenas a ONU, como única entidade intergovernamental com participação universal, tem a legitimidade necessária para conduzir o processo de

negociação referente ao regime internacional de enfrentamento das mudanças do clima. Isso não exclui a possibilidade de o país participar de discussões travadas em outros fóruns, como os que reúnem os maiores emissores mundiais de GEE (G8+5, ou a Reunião das Grandes Economias) ou os países em desenvolvimento (G77+China). No entanto, Vargas (2008) alerta para o fato de que “a concertação com os países em desenvolvimento não se faz às custas do diálogo estreito e intenso com países desenvolvidos”.

Para o Embaixador,

Como país em desenvolvimento, pelos avanços conquistados em setores como energias renováveis, pesquisa agrícola, tecnologia de exploração de petróleo e pelo fato de ter sob sua soberania a maior floresta tropical e a maior parcela da biodiversidade do planeta, o Brasil só tem a ganhar no diálogo com todos os atores da negociação. Igualmente importante tem sido o diálogo com a sociedade civil: o Brasil é um dos poucos países que incorporam nas suas delegações membros da sociedade civil com amplo acesso às discussões para formulação das posições bem como ao processo negociador.

## CONCLUSÕES

No âmbito das Nações Unidas, as negociações ocorrem, atualmente, segundo duas grandes linhas: pelo trilho do Protocolo de Quioto, em que são buscadas metas mais ambiciosas de redução de emissões de GEE para os países do Anexo I; e pelo trilho da CQNUMC, em que são cobradas dos demais Estados ações de mitigação nacionalmente apropriadas no contexto do desenvolvimento sustentável, apoiadas e possibilitadas por tecnologia, financiamento e capacitação, de modo mensurável, reportável e verificável.

Complementar e paralelamente às negociações na ONU, o G8 tomou a iniciativa de se reunir com as maiores economias emergentes para debater soluções para o aquecimento global. Em 2005, o grupo lançou o Diálogo Gleneagles sobre Mudança do Clima, Energia Limpa e Desenvolvimento Sustentável. A medida teve como objetivo debater as providências necessárias para o combate às alterações climáticas desde a perspectiva dos países responsáveis por mais de 70% das emissões anuais de GEE no mundo. Mais do que a formação de um fórum interestatal, a intenção foi a de agregar às posições desses atores a visão do Banco Mundial, da Agência Internacional de Energia e de bancos regionais de desenvolvimento, além do secretariado da CQNUMC, do IPCC e do PNUMA.

Legisladores dos países do G8 e das cinco maiores economias emergentes foram chamados a se juntar ao esforço por meio da *Globe International*, que, embora composta por agentes públicos, atuou em todo o processo como um ator não-estatal. A convite do governo britânico, a entidade reuniu parlamentares do G8 e de África do Sul, Brasil, China, Índia e México. Além disso, estendeu o debate para o setor produtivo, convidando grandes empresas a também participarem. Em 2006, a partir dessa iniciativa, criava-se o Diálogo Globe G8+5 sobre Mudança do Clima.

A delegação brasileira foi composta por cinco parlamentares de várias correntes políticas. Entre eles figuravam três integrantes da Comissão Mista Especial criada em 2007, no âmbito do Congresso Nacional, para tratar do tema mudanças climáticas: Deputado Federal Augusto Carvalho (PPS/DF) e os Senadores Cícero Lucena (PSDB/PB) e Renato Casagrande (PSB/ES). Este último atuou como relator da comissão. Trata-se, portanto, de uma representação qualificada no assunto, a qual, no período de 2007 e 2008, dialogou com vários setores nacionais envolvidos, da academia aos ministérios de meio

ambiente, ciência e tecnologia e relações exteriores, passando por comunidades locais, entidades empresariais e sociedade civil organizada.

O propósito principal deste trabalho foi comparar o teor dos documentos produzidos pelos parlamentares no âmbito do Diálogo Globe sobre Mudança do Clima com a posição oficial defendida pelo Brasil nas negociações formais na esfera da ONU.

A defesa intransigente do Brasil em relação ao princípio das responsabilidades comuns, porém diferenciadas foi, como vimos, contemplada nos documentos da *Globe International*. Para a entidade, a estabilização das concentrações de GEE na atmosfera deve ser atingida por meio de compromissos e ações que respeitem este princípio. Os parlamentares afirmam que, na conformação do regime de enfrentamento das alterações climáticas, devem ser consideradas as emissões correntes e as históricas, medidas tanto em termos absolutos como *per capita*.

A organização defende ainda que não existe incompatibilidade entre o desenvolvimento econômico e a estabilização climática. O que se deve buscar é reduzir as emissões absolutas de GEE pelos países desenvolvidos, por meio da adoção de metas mais ambiciosas no âmbito do Protocolo de Quioto, e evitar que os países em desenvolvimento, ao longo do seu processo de crescimento, incorram no mesmo modelo predatório e poluente adotado pelos países hoje desenvolvidos. Essa posição está em harmonia com a defendida pelo Brasil, de que a promoção da segurança climática não deve impor limites ao desenvolvimento dos países menos desenvolvidos. É necessário conciliar o controle e redução de emissões de GEE com o desenvolvimento econômico e a redução da pobreza, por meio de mudanças dos padrões de produção e consumo.

Além de defender, como o Brasil, a urgência e a necessidade de flexibilidade na formação do regime de enfrentamento das mudanças globais do clima, a *Globe International* também salienta a importância das ações de adaptação, por meio, inclusive, da transferência de tecnologia e de recursos financeiros aos países em desenvolvimento, aqueles que sofrerão mais agudamente os efeitos do fenômeno.

Os documentos da *Globe International* reafirmam a necessidade de os países desenvolvidos proverem ajuda financeira e transferência de tecnologia – de modo mensurável, reportável e verificável – aos países em desenvolvimento, para auxiliar nos esforços de mitigação e de adaptação nestes países. A preocupação dos legisladores vai ao

encontro das ressalvas brasileiras de que a transferência de tecnologia e o aporte de recursos financeiros novos e adicionais dos países desenvolvidos para os países em desenvolvimento não têm ocorrido de modo satisfatório, em que pese estarem previstos na CQNUMC desde 1992.

No que se refere às políticas de combate ao desmatamento, a *Globe International* recomenda a criação de mecanismos de pagamento pela manutenção de florestas. Como visto, o Brasil é contrário ao pagamento pela simples conservação de florestas. O país entende que tal instrumento só deve ser usado nos casos em que se reduz a devastação florestal por meio de ações mensuráveis, reportáveis e verificáveis de combate aos vetores do desmatamento. Até porque o simples domínio de florestas não contribui para a redução das emissões de GEE. Os parlamentares, por outro lado, previram o pagamento por serviços ambientais prestados, proposição que conta com o expresse apoio brasileiro.

Conforme ressaltado por Vargas (2008), propostas de imposição de metas obrigatórias específicas aos países em desenvolvimento não são sequer apresentadas em negociações internacionais. Não foi diferente no âmbito do Diálogo G8+5 da *Globe International*. Não há, nos documentos elaborados pelos parlamentares, qualquer alusão a propostas nesse sentido.

A finalidade do Diálogo Globe G8+5 sobre Mudança do Clima era de facilitar o debate entre autoridades parlamentares nacionais sem as amarras dos processos formais de negociação internacional. O objetivo básico era o de permitir aos legisladores alargarem as fronteiras do que pode ser alcançado politicamente, a fim de pressionar os líderes do bloco a assumirem compromissos e metas mais ambiciosos.

Entretanto, percebe-se, da análise conjunta da posição oficial brasileira e dos documentos resultantes dos fóruns de legisladores promovidos pela *Globe International*, que esses dois parâmetros convergem. Como resultado prático disso, temos que as teses defendidas pelos negociadores oficiais brasileiros foram, em seus pontos fundamentais, corroboradas pelos legisladores dos países do G8+5. Daí decorre a conclusão de que esse fato deve fortalecer a posição brasileira nas negociações formais no âmbito das Nações Unidas.

A *Globe International* atuou como um ator não-estatal com acesso direto e privilegiado aos líderes das maiores economias do mundo. Em virtude de sua composição,

tanto quanto possível suprapartidária, a entidade constitui um importante grupo de pressão nas negociações sobre o tema. No entanto, os documentos elaborados pelos parlamentares não apresentam inovações decisivas para o enfrentamento da questão. O objetivo de proporcionar debates sem as amarras do processo formal de negociação não conseguiram levar a propostas inovadoras de combate às mudanças climáticas. As conclusões dos parlamentares giraram em torno das posições usualmente apresentadas nos debates internacionais sobre o tema.

Mesmo sendo constituída por representantes de várias correntes políticas, da situação e da oposição, a delegação brasileira não possui a legitimidade necessária para que suas decisões determinem o posicionamento do Congresso brasileiro a respeito do regime internacional de mudança global do clima. A atuação doméstica desses legisladores ficará restrita às suas usuais competências legislativas: ratificação de acordos internacionais, elaboração de legislação interna, fiscalização dos atos do Poder Executivo e alocação de recursos orçamentários para a mitigação e a adaptação às mudanças climáticas.



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## ANEXOS

### Anexo I

#### **Gleneagles Plan of Action Climate Change, Clean Energy and Sustainable Development**

1. We will take forward actions in the following key areas:

- Transforming the way we use energy
- Powering a cleaner future
- Promoting research and development
- Financing the transition to cleaner energy
- Managing the impact of climate change
- Tackling illegal logging

#### **Transforming the way we use energy**

2. Improvements to energy efficiency have benefits for economic growth and the environment, as well as co-benefits such as reducing greenhouse gas emissions, preventing pollution, alleviating poverty, improving security of energy supply, competitiveness and improving health and employment.

3. At Evian, we agreed that energy efficiency is a key area for G8 action. And following agreement at the Sea Island Summit in 2004, the 3Rs (Reduce, Reuse, Recycle) initiative was launched in Tokyo this April \$150; an important step towards encouraging more efficient use of resources and materials, which increases economic competitiveness whilst decreasing environmental impacts.

4. We also recognise the importance of raising consumer awareness of the environmental impact of their behaviour and choices including through international efforts such as the United Nations Decade of Education for Sustainable Development.

#### **Buildings**

5. To promote energy efficient buildings, we will:

1. invite the International Energy Agency (IEA) to review existing building standards and codes in developed and developing countries, develop energy indicators to assess efficiency, and identify policy best practices;
2. encourage the work of existing partnerships such as the Renewable Energy and Energy Efficiency Partnerships in outreach to developing countries; and,
3. develop domestic guidelines or standards for the procurement and management of public buildings in our respective countries.

#### **Appliances**

6. To encourage co-ordination of international policies on labelling, standard setting and testing procedures for energy efficiency appliances, we will:

1. promote the application of the IEA's 1 Watt Initiative;

2. ask the IEA to undertake a study to review existing global appliance standards and codes, building on its existing capacity on energy efficiency in appliances;
3. extend the use of clear and consistent labelling to raise consumer awareness of energy consumption of appliances;
4. work nationally and in co-operation with other countries to seek improvements in the efficiency and environmental performance of products in priority sectors; and,
5. explore the potential to co-ordinate standards with other countries, building on the examples provided by existing international bodies.

### **Surface transport**

7. We will encourage the development of cleaner, more efficient and lower-emitting vehicles, and promote their deployment, by:
  1. adopting ambitious policies to encourage sales of such vehicles in our countries, including making use of public procurement as appropriate to accelerate market development;
  2. asking the IEA to review existing standards and codes for vehicle efficiency and identify best practice;
  3. encouraging co-operation on technology research, development and, where relevant, deployment in areas including cleaner gasoline and diesel technologies, biofuels, synthetic fuels, hybrid technology, battery performance and hydrogenpowered fuel cell vehicles;
  4. continuing our discussions on these issues at the United Kingdom's international conference in November on cleaner, more efficient vehicles; and,
  5. raising consumer awareness of the environmental impact of their vehicle choices, including through clear and consistent labelling for relevant energy consumption, efficiency and exhaust emissions data, and encouraging the provision of clearer information on the result of driving behaviour and choices for mode of transport.

### **Aviation**

8. We will:
  1. undertake a programme of collaborative work to explore and accelerate the potential for operational advances (including air traffic control and ground operations) that will continue to enhance safety, improve fuel efficiency and reduce emissions in air transport;
  2. work with the IPCC to provide, as part of its forthcoming Fourth Assessment Report, an up-to-date assessment of the latest evidence on aviation's impacts on the climate;
  3. support climate science research, aimed at improving our understanding of specific issues such as contrails and cirrus cloud effects, to inform technological and operational responses;

4. encourage co-ordination among our existing national research programmes on long-term technology developments with the potential to significantly reduce emissions.

## **Industry**

### 9. We will:

1. Work with the multilateral development banks (MDBs) to expand the use of voluntary energy savings assessments as a part of major investments in new or existing projects in energy intensive sectors;
2. invite the IEA to develop its work to assess efficiency performance and seek to identify areas where further analysis of energy efficiency measures by industry sector could add value, across developed and interested developing countries;
3. develop partnerships, including sectoral and cross-border partnerships, with industry to reduce the greenhouse gas emissions intensity of the major industrial sectors of our economies; and (d) continue to support the work of the UNFCCC clearing house on technology transfer TT:Clear in disseminating information on available technologies, and cooperate further on sharing information on best practices and national policies to encourage the deployment of energy efficiency technologies.

## **Powering a Cleaner Future**

10. Reliable and affordable energy supplies are essential for strong economic growth, both in the G8 countries and in the rest of the world. Access to energy is also critical for poverty alleviation: in the developing world, 2 billion people lack access to modern energy services.

11. To respond to the scale of the challenges we face, we need to diversify our energy supply mix, including increased use of renewables. Fossil fuels will continue to be an important part of the global energy mix, and we will need to find ways to manage the associated air pollution and greenhouse gas emissions. We need to capitalise on all the opportunities available to improve the efficiency along the entire process chain, from extraction, to energy generation and transmission, and to maximise the large and untapped potential of lower-emitting alternative sources of energy.

12. We take note of the efforts of those G8 members who will continue to use nuclear energy, to develop more advanced technologies that would be safer, more reliable and more resistant to diversion and proliferation.

## **Cleaner Fossil Fuels**

13. We will support efforts to make electricity generation from coal and other fossil fuels cleaner and more efficient by:

1. supporting IEA work in major coal using economies to review, assess and disseminate widely information on energy efficiency of coal-fired power plants; and to recommend options to make best practice more accessible;
2. inviting the IEA to carry out a global study of recently constructed plants, building on the work of its Clean Coal Centre, to assess which are the most cost effective and have the highest efficiencies and lowest emissions, and to disseminate this information widely; and,

3. continuing to work with industry and with national and international research programmes and partnerships on projects to demonstrate the potential of advanced fossil fuel technologies, including clean coal.
14. We will work to accelerate the development and commercialization of Carbon Capture and Storage technology by:
1. endorsing the objectives and activities of the Carbon Sequestration Leadership Forum (CSLF), and encouraging the Forum to work with broader civil society and to address the barriers to the public acceptability of CCS technology;
  2. inviting the IEA to work with the CSLF to hold a workshop on short-term opportunities for CCS in the fossil fuel sector, including from Enhanced Oil Recovery and CO<sub>2</sub> removal from natural gas production;
  3. inviting the IEA to work with the CSLF to study definitions, costs, and scope for 'capture ready' plant and consider economic incentives;
  4. collaborating with key developing countries to research options for geological CO<sub>2</sub> storage; and,
  5. working with industry and with national and international research programmes and partnerships to explore the potential of CCS technologies, including with developing countries.
15. We will encourage the capture of methane, a powerful greenhouse gas, by:
1. supporting the Methane to Markets Partnership and the World Bank Global Gas Flaring Reduction Partnership (GGFR), and encouraging expanded participation; and,
  2. working bilaterally to support an extension of the World Bank's GGFR Partnership beyond 2006.

### **Renewable energy**

16. We will promote the continued development and commercialisation of renewable energy by:
1. promoting the International Action Programme of the Renewables 2004 conference in Bonn, starting with a Conference at the end of 2005, hosted by the Chinese government, and supporting the goals of the Renewable Energy Policy Network (REN 21);
  2. welcoming the work of interested parties, including in partnerships, to take forward the Johannesburg Plan of Implementation, including the Renewable Energy and Energy Efficiency Partnership (REEEP) and the Mediterranean Renewable Energy Partnership (MEDREP);
  3. working with developing countries to provide capacity-building assistance, develop policy frameworks, undertake research and development, and assess potential for renewable energy, including bioenergy;
  4. launching a Global Bioenergy Partnership to support wider, cost effective, biomass and biofuels deployment, particularly in developing countries where biomass use is prevalent following the Rome International Workshop on Bioenergy;



5. welcoming the establishment and further development of the range of IEA implementing agreements on renewable energy.

### **Electricity Grids**

17. We will work with the IEA to:

1. draw together research into the challenges of integrating renewable energy sources into networks and optimising the efficiency of grids, and produce a report; and,
2. identify and link “Centres of Excellence” to promote research and development in the developed and developing world; and,
3. promote workshops during 2006/07 aimed at evaluating and promoting means to overcome technical, regulatory and commercial barriers.

### **Promoting networks for research and development**

18. We recognise the need for increased commitment to, international cooperation in and co-ordination of research and development of energy technologies. We will continue to take forward research, development and diffusion of energy technologies in all the fields identified in the Evian Science and Technology Action Plan.

19. We express our support for research and development of technologies and practices that use hydrogen as an energy carrier. We encourage continued support for the work of the IEA and International Partnership for the Hydrogen Economy (IPHE) to co-ordinate research efforts in this area.

20. We take note of the Energy Research and Innovation Workshop held in Oxford in May 2005, and will:

1. work with the IEA to:
  - build on the work already underway through its implementing agreements to facilitate cooperation and share energy research findings;
  - reinforce links with the international business community and developing countries;
  - create an inventory of existing collaborative efforts to facilitate exchange on their effectiveness; and,
2. raise the profile of existing research networks and encourage broader participation where appropriate; and,
3. seek ways to improve the current arrangements for collaboration between developed and developing countries, and enhance developing country participation in existing networks.

### **Financing the transition to cleaner energy**

21. Positive investment climates and effective market models are critical to the uptake of new technologies and increased access to energy for economic growth. We recognise that there are a range of tools to support a market-led approach to cleaner technology and energy resources and that each country will select those appropriate to its national circumstances.

22. We will:

1. support a market-led approach to encouraging energy efficiency and accelerating investment and the deployment of cleaner technologies which will help transition to a low-emission future;
  2. adopt, where appropriate market-based policy frameworks which:
    - o support re-investment in capital stock turnover;
    - o remove barriers to direct investment;
    - o leverage private capital for clean development;
    - o use standards, or use pricing and regulatory signals to provide confidence in the near- and long-term value of investments, so as to reduce emissions of greenhouse gases and / or pollutants.
  3. We will promote dialogue on the role, suitability, potential synergies and timing of various policy approaches within the context of each country's national circumstances, including:
    - o developing long-term sectoral, national or international policy frameworks including goals;
    - o market-based instruments including fiscal or other incentives for the development and deployment of technologies, tradable certificates and trading of credits for reductions of emissions of greenhouse gases or pollutants; and,
    - o project-based and voluntary offset mechanisms.
23. Those of us who have ratified the Kyoto Protocol will:
1. work to strengthen and develop the implementation of the market mechanisms (including Joint Implementation, international emissions trading and the Clean Development Mechanism); and,
  2. use our best endeavours to ensure that the CDM Executive Board and related institutions to support emissions trading are adequately funded by the end of 2005.
24. We acknowledge the valuable role of the Global Environment Facility in facilitating co-operation with developing countries on cleaner, more efficient energy systems, including renewable energy, and look forward to a successful replenishment this year, along with the successful conclusion of all outstanding reform commitments from the third replenishment.
25. We will invite the World Bank and other multilateral development banks (MDBs) to increase dialogue with borrowers on energy issues and put forward specific proposals at their annual meetings to:
1. make the best use of existing resources and financing instruments and develop a framework for energy investment to accelerate the adoption of technologies which enable cleaner, more efficient energy production and use;
  2. explore opportunities within their existing and new lending portfolios to increase the volume of investments made on renewable energy and energy efficiency technologies consistent with the MDBs' core mission of poverty reduction;

3. work with interested borrower countries with significant energy requirements to identify less greenhouse gas intensive growth options which meet their priorities; and ensure that such options are integrated into Country Assistance Strategies;
  4. develop local commercial capacity to develop and finance cost-effective projects that promote energy efficiency and low-carbon energy sources.
26. We will continue to work through our bilateral development programmes, in line with our national priorities, to promote more sustainable energy policies worldwide.
27. We will work with Export Credit Agencies with a view to enhancing the economic and financial viability of cleaner and efficient energy projects.
28. We will build on the work in other fora, including the UNFCCC Experts Group on Technology Transfer, to support necessary capacity building, enabling environments and information dissemination.
29. We will also work through multi-stakeholder partnerships to develop the policy, regulatory and financing frameworks needed in the major developing countries to provide a commercially attractive balance of risk and reward to private investors.

#### **Managing the impact of climate change**

30. We reaffirm the importance of the Intergovernmental Panel on Climate Change and welcome the extensive analysis of research being undertaken to complete its Fourth Assessment Report by 2007.
31. All countries need further access to information and to develop the scientific capacity that will allow their governments to integrate climate, environmental, health, economic and social factors into development planning and resilience strategies. We note that Africa's data deficiencies are greatest and warrant immediate attention.
32. We note the work of the UNFCCC in supporting developing countries to improve their capacity for adaptation and mitigation, including through the adaptation priority of the Global Environment Facility.
33. We look forward to further discussions on how development and energy strategies can be strengthened to build resilience to climate impacts, including at the Millennium Review Summit in September 2005.

#### **Monitoring and Data Interpretation**

34. The G8 made a commitment at Evian to strengthen international cooperation on global Earth observations. We will continue to exercise leadership in this area, and welcome the adoption of the 10-year implementation plan for development of the Global Earth Observation System of Systems (GEOSS) at the Third Earth Observations Summit which took place in Brussels in February this year. We will:

1. move forward in the national implementation of GEOSS in our member states;
2. support efforts to help developing countries and regions obtain full benefit from GEOSS, including from the Global Climate Observing System (GCOS) such as placement of observational systems to fill data gaps, developing of in-country and regional capacity for analysing and interpreting observational data, and development of decision-support systems and tools relevant to local needs;

3. in particular, work to strengthen the existing climate institutions in Africa, through GCOS, with a view to developing fully operational regional climate centres in Africa.

### **Risk Management**

35. We will:

1. Invite the World Bank to develop and implement 'best practice' guidelines for screening their investments in climate sensitive sectors to determine how their performance could be affected by climate risks, as well as how those risks can best be managed, in consultation with host governments and local communities; and,
2. invite other major multilateral and bilateral development organisations to adopt the World Bank guidelines, or develop and implement similar guidance.

### **Tackling illegal logging**

36. We recognise the impacts that illegal logging has on the livelihoods of many in the poorest countries in Africa and elsewhere, on environmental degradation, biodiversity loss and deforestation and hence global sustainable development. We particularly recognise the importance of global carbon sinks, including the Congo Basin and the Amazon.

37. We agree that working to tackle illegal logging is an important step towards the sustainable management of forests. To tackle this issue effectively requires action from both timber producing and timber consuming countries.

38. We endorse the outcome of the G8 Environment and Development Ministerial conference on illegal logging. To further our objectives in this area we will take forward the conclusions endorsed at that meeting, with each country acting where it can contribute most effectively.

## **Anexo II**

### **Brussels Legislators' Forum Statement, 7 a 9 de julho de 2006**

The following Statement was agreed by consensus at the Brussels Legislators Forum and was submitted to the G8 heads of government.

Research by the World Bank and the International Energy Agency suggests that USD \$300 billion per year for the next 25 years will need to be invested to meet the energy needs of developing countries and economies in transition. If we are smart, the investment will be channelled to increase climate and energy security as well as meeting economic and development goals, including the Millennium Development Goals, in a low carbon way.

The World Bank estimates that adapting to the unavoidable impacts of climate change will require an additional USD 10-40 billion per year. If we do not take serious mitigation action now, this figure will increase dramatically and there will be severe impacts on public health and the availability of critical resources including water.

Against this background, our messages to the G8 leaders meeting in St Petersburg are:

- Action on climate change is urgent.
- Climate security and energy security are inextricably linked. We welcome the discussion at St Petersburg and encourage the integration of the energy security and climate change elements.
- Energy efficiency and diversification of energy sources are key responses to both. For developing countries access to energy is vital for sustainable economic development and poverty alleviation.
- We strongly recommend that energy security and climate security remain at the top of the international agenda for the forthcoming German and Japanese presidencies of the G8.
- We urge G8 leaders to show leadership by developing a clear framework that accelerates a shift to low carbon economies, including investment in low carbon R&D and business development, in line with the objective of establishing a long term stabilisation goal to avoid dangerous climate change.
- We urge the G8 to make adaptation a priority – it is the poor who are the most vulnerable to the impacts of climate change.
- We welcome the Mexican chairmanship of the Gleneagles Dialogue in 2006 and urge Heads of Government from the 20 participating countries to ensure that environment ministers, and particularly energy ministers, attend the ministerial summit in Mexico in October.
- We urge G8 finance ministers to meet in early 2007 to secure the necessary finance to drive forward the World Bank's Energy Investment Framework.

### **Anexo III**

#### **Washington Legislators' Forum Statement, 14-15 February 2007**

1. With the release of the report of Working Group 1 of the IPCC, and the Stern Review, we understand better than ever before the science and economics on climate change. As representatives of the legislatures of countries that account for around two thirds of global greenhouse gas emissions, we put forward this statement to G8 and +5 leaders:
2. The report from the Intergovernmental Panel on Climate Change, published on 2 February 2007, concludes that it is more than 90 per cent certain that human activities since 1750 have warmed the planet. In our view, the evidence that man is changing the climate is now beyond doubt.
3. It is also now clear that the cost of inaction will be greater than the cost of action. There is a compelling case for urgent action to reduce emissions as the only sure way to ensure sustainable growth for all economies.
4. Each year of delay in action to control emissions increases the risk of impacts that will steeper reductions in the future, at greater economic cost and social disruption. These impacts are likely to be exacerbated by “positive feedback” mechanisms as our climate warms.
5. Action on climate change needs to take account of the differing circumstances of developed, developing and poor economies, recognizing the need for economic growth and access to energy to alleviate poverty. But we must be clear that climate change is a global issue and there is an obligation on us all to take action, in line with our capabilities and historic responsibilities.
6. We underline the importance of action not just to increase climate security but to increase our energy security, improve our quality and our health and support biodiversity.
7. We know that we have the technologies today to reduce our emissions, given the right policy frameworks and incentives. To inform and guide our actions we need to generate an international consensus on the measures required to stabilize the climate. We urge G8 and +5 Governments to identify, at the G8 Summit in Heiligendamm, a measurable long-term goal to stabilize greenhouse gas concentrations in the atmosphere. Our belief is that this goal should be to stabilize concentrations at a level between 450 and 550 parts per million of CO<sub>2</sub> equivalent, while recognizing that meeting the EU's 2 degrees Celsius target would require stabilization at the lower end of this range.
8. To achieve this goal we will need a combination of a binding UN framework signed up to by all the major economies, together with bilateral and multilateral partnerships, recognizing the responsibility of developed countries to lead. We acknowledge the work of the Gleneagles Dialogue, the Asia Pacific Partnership, the international financial institutions including the World Bank and multilateral development banks and, the International Energy Agency. But we need to do more. We urge G8 and other governments to take urgent action at a national and international level in the following key policy areas:
9. Technology and innovation have vital roles to play. The IEA estimates that the most of the world's energy is still likely to come from hydrocarbons in 2050. Hence the particular importance of technology such as carbon capture and storage

(CCS) to decarbonise fossil fuels together with support for renewables, sustainable biofuels and energy efficiency technologies. The most efficient and powerful way to stimulate private investment in research, development and deployment of new and existing technologies is to adopt policies establishing a market value for greenhouse gas emissions over the long-term. The establishment of a global carbon price will stimulate a technology revolution and energy efficiency measures, rewarding those businesses which develop future technologies first, and will help to provide incentives to reduce deforestation. However, the carbon price is necessary, but not sufficient. Ambitious public-private partnerships to support R&D programmes that bring new technologies to market are also crucial. More needs to be done, too, on international cooperation to transfer existing technologies.

10. We welcome the progress made by the EU's Emissions Trading Scheme (ETS), the development of the Regional Greenhouse Gas Initiative in the US, other planned programmes in California and New Mexico and in Australia. We urge leaders to develop and strengthen the ETS, and to consider expanding the scheme to include more sectors. We also urge leaders to work towards a global carbon market, where appropriate, by linking the scheme in Europe with other emerging across the globe, to provide a deeper and more liquid market, helping to drive emissions at a least cost.
11. Energy efficiency is the most cost effective way to decrease greenhouse gas emissions. The IEA estimates that energy efficiency improvements alone can reduce the world's energy demand in 2050 by an amount equivalent to almost half of today's global energy consumption if governments are willing to implement measures that encourage the investment in energy efficient technologies. There is also potential for energy saving measures by business and in the home.
12. The World Bank estimates that adapting to the unavoidable impacts of climate change will require an additional USD 10-40 billion per year. If we do not act now to reduce emissions, this figure will increase dramatically and there will be severe impacts on public health and the availability of critical resources including water. Adaptation needs to be mainstreamed into development policies and should be linked to overseas development aid and supported by integrated financial mechanisms.
13. In order to ensure that the long-term goal is met, we urge the Governments of the G8 and the +5 countries, when they meet at the G8 Summit in Heiligendamm, to agree on the key elements of a post-2012 framework and to urge that global negotiations on such a framework be launched at the Bali meeting of the UNFCCC in November, to be concluded by 2009. We suggest that these elements should include:
  - a. Long-term targets for developed countries
  - b. Appropriate targets for developing economies
  - c. Incentives for measures to reduce deforestation
  - d. Incentives for sustainable development policies and measures in developing countries
  - e. Programs focusing on capacity building, access to technology and financial incentives – to help developing countries invest in more efficient and low carbon technologies

- f. For the most vulnerable developing countries, increased access to climate data, cooperative research on key technologies for adaptation in agriculture and health, giving priority to disaster prevention and improved resilience to climate variability.



## **Anexo IV**

### **Agreed Statement from the GLOBE G8+5 Legislators' Forum**

#### **Globe International, Berlin 3-4 June 2007**

In recent months the international debate on climate change has gained momentum. We welcome the publication of the IPCC's summary reports from Working Groups 2 (impacts and adaptation) and 3 (mitigation options) and applaud the leadership shown by the European Union (EU), under the presidency of Chancellor Merkel, at the Spring Council. In parallel we support the positive political movement in the US, with many draft Bills placed before Congress proposing mandatory national restrictions on greenhouse gases. In this context we welcome President Bush's constructive proposal, especially the call for a long-term emissions goal. It is critical that the G8, at Heiligendamm, demonstrates leadership by building on this momentum to convey a vision for a post-2012 UN framework in line with the five elements put forward by Chancellor Merkel:

- i) a long-term stabilisation goal
- ii) promotion of a global carbon market
- iii) increased support for technology research, development, deployment and transfer
- iv) increased support for adaptation, particularly in developing countries
- v) measures to reduce deforestation

We offer the following statement to G8 leaders on specific policy areas:

#### ***Carbon Markets***

Carbon markets are key to harnessing private sector energy and innovation to deliver mitigation options at least cost. We call on the G8 to:

\* Strengthen and extend existing carbon markets by encouraging links between emerging trading schemes e.g. between EU ETS and schemes in the US and elsewhere, and between national and sub-national entities; and encouraging broader participation

\* Recognize that carbon markets, although necessary, are not sufficient to deliver the low carbon investment required in a timeframe consistent with the scale of the challenge – supporting policies and instruments are needed, including strengthening of the CDM and mechanisms for increased co-financing of energy investments in developing countries by industrialized countries, as well as a step-change in public-private partnerships to develop transitional measures to drive down the technology cost curve

\* Acknowledge that carbon markets, to be effective, must be accompanied by ambitious emissions reduction targets and promote the setting of standards and transparency in carbon markets through independent ratings and valuations of carbon funds

#### ***Technology: Carbon Capture and Storage (CCS)***

We call on G8 leaders to accelerate the demonstration and deployment of CCS for fossil fuel power generation by:

\* Increasing support for national and international research programmes including through the IEA, CSLF, EU and the Gleneagles Plan of Action; and further practical collaboration between developed and developing countries to accelerate capacity building and demonstration

\* Urgently implementing an increasing number of large scale demonstration near zero emission fossil fuel plants and, by working with industry, ensure all new fossil fuel power plants from 2010 include the capability to install carbon capture equipment and are, as far as possible, located near to potential storage sites

\* Commissioning comprehensive geological mapping across the large coal using countries of the G8 and +5 countries to identify the potential, and most appropriate sites, for storage of carbon dioxide underground

\* Accelerating the development of the necessary legal, regulatory and financial framework for the development of CCS, accompanied by intensified information campaigns by stakeholders and policy makers to ensure public acceptance

### ***Technology: Energy Efficiency***

Much work has been taken forward under the Gleneagles Plan of Action, particularly with the IEA's programme of work. If the G8 is to retain credibility, the Heiligendamm Summit should be the point at which words translate into commitments to practical action to implement the IEA's recommendations (for example the 1 Watt initiative on stand-by power was endorsed at Gleneagles but is yet to be implemented by a G8 country). On that basis, we urge the G8 to:

\* Strongly support the European Commission's proposal to develop an international framework agreement on energy efficiency. An international agreement could focus on regulatory co-operation, energy efficiency measurement and evaluation, labelling and performance standards for internationally traded goods, vehicle fuel efficiency, benchmarking and development of sectoral agreements, co-operation on technology development and deployment and financing for energy efficiency. Such an agreement could be taken forward in the Gleneagles Dialogue process with a view to implementation in 2008.

\* Make commitments to move towards low- and zero-carbon emitting homes, recognizing regional or local responsibilities for building codes; only procure the best performing buildings for government use; also call on G8 to step up their efforts to raise the thermal efficiency of their existing housing stock which will form around three quarters of our homes in 2050

\* Expand the role of Combined Heat and Power including the provision of cooling.

### ***Technology: Renewables***

In order to address the barriers to renewable energy, we recommend the G8 to:

\* Take steps to remove incentives and other supports for environmentally harmful energy technologies, and develop and implement market-based mechanisms that address externalities, enabling renewable energy technologies and sustainable biofuels to compete in the market on a more equal and fairer basis

\* Ensure that technical and regulatory barriers are removed to allow distributed renewable energy better access to grid systems

\* Pursue further development of certification schemes for biofuels so as to ensure real greenhouse gas emissions reductions and avoid the negative impacts on biodiversity

\* Expand support for R&D of renewable energy technologies that address all sectors of the energy economy—buildings, industry, transport, and utility energy services. Co-

operation with developing countries on R&D will assist in technology transfer towards systems tailored for developing country use

We underline the good opportunities for both biomass and solar in many developing countries and support the abolishment of import tariffs on renewable energy.

In addition, we stress need for an integrated approach to the promotion of energy efficiency and the development of renewable energy.

### ***Adaptation***

Enhancing efforts to address adaptation should be a key component of a post-2012 framework. Policies should be taken forward in two main areas:

- \* under the UNFCCC (the Adaptation Fund and five-year adaptation programme), requiring a substantial increase in funding in order to be effective;

- \* integrating adaptation, with a focus on risk reduction and disaster prevention, into the full range of development aid

### ***Forestry***

We are determined to assist in reducing deforestation, responsible for around 20 per cent of global greenhouse gas emissions, as a cost-effective contribution towards mitigating greenhouse gas emissions, preserving biodiversity, promoting sustainable forest management and securing livelihoods. To this end we call on the G8 to:

- \* Commit to support the establishment of a Forest Carbon Partnership dedicated to create and test performance-based instruments to reduce emissions from deforestation in developing countries, while generating income for the local population, in support of and without prejudice to ongoing UN climate change discussions. We therefore urge the World Bank, in close cooperation with the G8, developing countries, the private sector, NGOs and other partners, to develop and implement respective public-private partnership pilot activities

- \* Continue to support existing processes to combat illegal logging, such as FLEGT, voluntary partnerships, government procurement and other legislative measures.

- \* Remain engaged in supporting developing countries to achieve their self-commitments for halting forest loss and to implement sustainable forest management, as stated in various regional initiatives, eg the Congo Basin and the Asian Forest Partnerships.

- \* We urge the international community to strengthen cooperation and the sharing of best practices bilaterally, at the regional level and multilaterally. Resources should be sufficient to provide the incentives to protect the forests, as well as to recover all implementation costs.

### ***Post-2012***

We reiterate the need for G8 leaders to support the negotiations on a post-2012 framework at the 13th Conference of the Parties to the UN Framework Convention on Climate Change in Bali in December 2007 with a view to completing those negotiations by 2009 at the latest.

## **Anexo V**

### **Chair's Report to the G8 Hokkaido Toyako Summit:**

#### **Gleneagles-Dialogue**

##### **on Climate Change, Clean Energy and Sustainable Development**

The Ministerial Meeting of the Dialogue on Climate Change, Clean Energy and Sustainable Development was launched at G8 summit at Gleneagles 2005. The first meeting was held in London in Oct. and Nov. 2005, followed by the second meeting in Monterey, Mexico in October. 2006, the third meeting in Berlin, Germany in September 2007 and the fourth and final meeting in Chiba, Japan in March 2008.

These meetings were attended by ministers and senior officials responsible for energy and environment issues from G8 countries, from Australia, Brazil, China, India, Indonesia, Mexico, Nigeria, Poland, Republic of Korea, South Africa, Spain and the Presidency of the Council of the EU (Finland at the second meeting, Portugal at the third meeting and Slovenia in the fourth meeting). We were joined by senior officials from international organizations including the International Energy Agency, the World Bank and Regional Development Banks, legislators from the GLOBE, related business groups and non-governmental organizations. IEA and the World Bank have continued their consideration to the process in accordance with the Gleneagles Plan of Action and continuously made their input to the Gleneagles Dialogues.

#### **Outcomes of the Dialogues**

Annex of this document is the Chair's summaries of the Gleneagles Dialogues. These summaries have been issued on the responsibilities of Chair of each Dialogue.

#### **Chairs' Conclusions from 1 November Ministerial meeting on the Dialogue on Climate Change, Clean Energy and Sustainable Development:**

Margaret Beckett, Secretary of State for Department of Environment, Food and Rural Affairs, UK; and Alan Johnson, Secretary of State for Department of Trade and Industry, UK.

Our meeting today marked the first Ministerial meeting of the Dialogue on Climate Change, Clean Energy and Sustainable Development launched at the G8 Summit at Gleneagles on 6-8 July.

It was attended by Ministers and senior officials with responsibility for energy and environmental issues from the G8 and from Australia, Brazil, China, India, Indonesia, Mexico, Nigeria, Poland, South Africa, South Korea, and Spain, and by senior officials from organisations including the World Bank, UN Framework Convention on Climate Change, Intergovernmental Panel on Climate Change, International Energy Agency, and the United Nations Environment Programme.

Our discussions were complementary to the UN Framework Convention on Climate Change, including its ultimate objective to stabilise greenhouse gases in the atmosphere at a level that prevents dangerous anthropogenic climate change, and to the Kyoto Protocol.

Our discussions focused on the serious and linked challenges of tackling climate change, promoting clean energy and achieving sustainable development globally.

#### **The Gleneagles Plan of Action on Climate Change Clean Energy and Sustainable Development**

We took note of the Plan of Action agreed by the G8 countries at Gleneagles, including the considerable progress since July in taking forward implementation. In particular, we took note of:

- the successful launch by the World Bank of work to develop a comprehensive framework for investment in clean energy and sustainable development;
- the analysis of the International Energy Agency on alternative energy strategies and the work programme it has agreed to promote action on energy efficiency and cleaner coal;
- the range of national and international activities undertaken by G8 countries to implement individual commitments in the Plan of Action, and their willingness to explore opportunities to build on this progress.

(Annex)

## **Strategic challenges of climate change, clean energy and sustainable development**

### **Roadmaps for the transition to a low-carbon economy**

We explored the timescales on which technologies need to be developed and deployed to meet our goals for a secure and sustainable energy future and to avoid the worst impacts of climate change.

We noted that greenhouse gas emissions must slow, peak and decline and will need to be reduced to well below the levels we see today. We heard that to stabilise greenhouse gas concentrations at, for example, twice their pre-industrial level, global emissions would have to peak in 2030.

We recognised the value of setting out clear pathways to achieve our shared goals for climate change, clean energy and sustainable development, including:

- the role of national strategies and action plans which set out the timescales to develop and deploy low carbon technologies;
- the need for roadmaps to help accelerate the development of lower-carbon technologies in particular sectors;
- the need to balance long-term goals with clear priorities for short term action;
- the need to motivate action by individuals and businesses, including through raising public awareness.

In addition, the use of fiscal instruments to exploit the huge potential of energy efficiency can bring about greater economic benefits for countries.

We identified a number of short-term priorities including interventions to stimulate the up-take of existing energy efficient products by consumers, and to avoid costly mistakes in the next generation of energy infrastructure investment.

The success of this transition to a low-carbon economy will require that the three policy communities of environment, energy, and economic policy work together in an integrate manner.

### **New approaches to technology cooperation**

We noted the importance of strengthening both research into new technologies and the deployment of existing technologies, which depend both on national policies and on international cooperation.

We explored the concept of new paradigms for international cooperation on climate change, put forward at Gleneagles by China, India, Brazil, South Africa and Mexico, to promote wider access to cleaner energy technologies and accelerate their deployment.

We heard about regional initiatives, such as the EU-China partnership (including action to develop and demonstrate near zero emission coal technologies), the EU-India Initiative, the Asia Pacific Partnership and work to scale up financing of low carbon infrastructure stimulated by the Economic Commission of Latin America and the Caribbean.

We agreed that it would be valuable to develop our work in this area, focusing on the ideas put forward today:

- identifying priority areas for cooperation between developed and developing countries and considering goals for short-, mid- and long-term cooperation on key areas;
- assisting developing countries to improve the enabling environment for the transfer of technology, including through the policy, financing and regulatory frameworks and through examining the role of intellectual property rights;
- exploring new approaches to finance technology acquisition and transfer.

### **Scaling up investment in clean energy technologies**

Major investment is needed in energy infrastructure to meet energy needs and tackle climate change. The majority of this investment will come from the private sector. Clear policy signals are needed to channel it towards lower carbon technologies.

We heard that there is no shortage of appropriate technologies that can be deployed in the short term to reduce our carbon emissions. The challenge is to create the incentives for private sector investment, including through market-based instruments and carbon finance. "Long, loud and legal" frameworks can accelerate the commercialisation of cleaner technologies.

We noted that emissions trading in Europe is going well and providing a powerful incentive for investment in reducing emissions in the near term. Parties to the Kyoto Protocol highlighted the importance of the Clean Development Mechanism and discussed proposals to reinforce it and improve its operation.

We welcomed work by the World Bank, regional development banks and Economic Commission of Latin America and the Caribbean to increase investment in lower carbon technologies in developing countries and emerging economies and to pilot new and innovative approaches.

We also noted the need for appropriate frameworks to provide incentives in R&D for the next generation of clean energy technologies, and to overcome the "valley of death" in which promising new technologies fail to achieve their commercial potential.

### **Next steps**

We acknowledged that the UNFCCC remains the appropriate forum for negotiating future action on climate change, and looked forward to working together to advance the global discussion on long-term cooperative action to address climate change at the UN Climate Change Conference in Montreal later this month.

The parties to the Kyoto Protocol also looked forward to their first meeting in Montreal and to ensuring that the Protocol is working effectively to deliver its contribution to the ultimate objective of the UNFCCC.

We welcomed the Russian decision to focus on energy as a key theme of its G8 Presidency in 2006, and the offer from Japan to receive a report on the Dialogue at its G8 Summit in 2008.

We noted that the World Bank will bring forward proposals to its Spring Meeting on a comprehensive framework for investment in climate change, clean energy and sustainable development, and that the IEA will deepen its work on alternative energy strategies and strengthen its outreach to developing countries. We welcomed the continued commitment of both organisations to work with interested countries to help ensure that cleaner technologies are deployed as quickly as possible.

We agreed that we should take forward and deepen our discussions on climate change, clean energy and sustainable development. We noted that Ministers and officials with other responsibilities, including for development and finance, might wish to become involved in taking forward discussion of relevant topics, including adaptation.

We welcomed the offer from Mexico to host a Ministerial meeting of this Dialogue in 2006.

### **Chairs' Conclusions from Ministerial Meeting on the Gleneagles Dialogue on Climate Change, Clean Energy, and Sustainable Development – 3 - 4 October 2006, Monterrey, Mexico**

#### **Summary**

The meeting we have chaired at Monterrey marks a significant step in the struggle of the international community to combat climate change. We heard authoritative presentations on

- the economics of climate change mitigation and adaptation,
- the costs of introducing new low-carbon technology sufficient to cut energy sector emissions consistent with stopping accelerating climate change, and
- the way the international finance institutions can organise public and private finance to help meet those costs.

We also heard from business, legislators and civil society, all of whom are looking for Governments to take a lead.

The overall message is one of increasing urgency. The basic science is no longer disputed. We now see that the economics demonstrate that early action is necessary. The increase in costs if we wait is rapid and substantial. Behind those costs lie real-world risks to growth and the health of populations, and the possibility of physical catastrophes. While there are still differences of view, the private sector is increasingly understanding that carbon emissions have a price. They can reflect that price in their activities and investment decisions, allowing the power of the market to be used to combat climate change, if they are clear that a carbon price is here to stay over the long term. It is therefore urgent to take forward the international negotiations so that the conditions for a tough but fair price are met.

#### **Introduction**

Our meeting on the 3<sup>rd</sup> and 4<sup>th</sup> of October was the second Ministerial session of the Dialogue on Climate Change, Clean Energy and Sustainable Development, which was launched at Gleneagles on 6-8 July 2005.

It was attended by Ministers, including the UK Foreign Secretary Margaret Beckett, and senior officials with responsibility for energy and environment issues from the G8 and from Australia, Brazil, China, India, Indonesia, Mexico, Nigeria, Poland, South Africa, South Korea, and Spain. We were joined by senior officials from organisations including the World Bank, Regional Development Banks, the UN Framework Convention on Climate Change (UNFCCC), the International Energy Agency (IEA), and the World Economic Forum (WEF) business group, as well as legislators from the Globe organisation.

Our discussions were complementary to the UNFCCC, particularly its ultimate objective of stabilising greenhouse gases in the atmosphere at a level that avoids dangerous climate change. Our discussions focused on the challenges of tackling the causes of dangerous climate change in our energy production and consumption systems and development pathways, and our need to promote economic growth and to adapt to long term changes, particularly in the developing countries.

The meeting was arranged around presentations by Sir Nick Stern on the economics of climate change (previewing his Report to be published shortly), Claude Mandil on the IEA's work on the costs and potential of low carbon technologies, and Kathy Sierra of the World Bank on the Bank's Energy Investment Framework. The last two presentations derived from work undertaken in response to the conclusions of the Gleneagles summit and the first Ministerial meeting of the Dialogue in November 2005. We also heard compelling presentations from a series of business leaders and representatives of civil society, who emphasised the need for urgency from both of their different perspectives.

### **(1) Economics of action to tackle climate change; mitigation, adaptation and economic growth**

Nick Stern's presentation of analysis from his forthcoming review of the economics of climate change helped us to explore the nature of the challenges of tackling climate change. In the discussion we explored how those challenges affect our investment choices and structures, and how this shows the need to develop appropriate and complementary national, regional and global policy frameworks that co-ordinate rather than compete with each other, strengthening the effectiveness of the measures. The main points discussed were:

#### **Shape of the problem**

- We are building consensus on the science of climate change, to reach an understanding of the economics of climate change.
- The financial effects of climate change are likely to be very damaging and very long lasting. The later we act, the more expensive it will be, but the costs are manageable if we begin now.
- The case for action is urgent – the window of opportunity for staying within a 450-550ppm range is closing. The costs of mitigation rise sharply for stabilization below this range, and for adaptation, the costs rise sharply beyond the upper limit of that range.

#### **Scale of investment**

- Climate change is an example of global market failure. Public policy, such as tax, trading or regulation, is required to send signals to the private sector to influence investment in lower carbon infrastructure in order to correct the market failure and reflect the social/global cost.



- Public and private investment flows, including the Global Environmental Facility (GEF), carbon finance and the Clean Development Mechanism (CDM), all play a key role in beginning to tackle some of incremental costs. The scale of future investment needs are much larger than current investment flows. There needs to be a substantial expansion of the global carbon market, including transforming the CDM to support much larger flows.
- We must look to cut emissions across all countries and sectors, including not just energy sector emissions but also emissions from other sources including forestry
- Existing institutions including the UNFCCC and the Kyoto Protocol provide a helpful basis for these discussions.
- International Financial Institutions (IFIs) have a key role to play in piloting new approaches and scaling up investment flows, but the expansion of the carbon market should come from deeper reduction goals from developed countries, with a longer-term vision and greater ambitions, and an imaginative approach to reducing transaction costs for CDM and similar mechanisms.

### **Growth and development**

- Emerging economies should not jeopardize their aspirations for growth and development, but a Business As Usual approach will actually impede development in the medium to long term.
- Economic growth is crucial, as it will provide the resources that will enable investment in technologies. Experience over the last ten years shows that there are diverse approaches to deal with climate change according to circumstances, but that we should focus on sustainable development as the best strategy.
- Inevitably, especially in the longer term, we will need adaptation. Adaptation is mainly driven by actions in the private sector, but public policy has a crucial role. The impacts of climate change of development also reinforce the importance of delivering on existing aid commitments.
- Adaptation has limits however and is not a substitute for mitigation. A framework of long term goals/objectives is needed to provide the incentives for adaptation as well as mitigation measures.
- The Gleneagles Dialogue is a valuable forum to make links and bridges between a long term goal and frameworks for adaptation and mitigation. These should include links between technology and financing, creation of more flexible and larger carbon markets, and a long term goal to provide certainty.

### **(2) New approaches to research, development and deployment of low carbon and adaptation technologies**

We heard the IEA's latest assessment of world energy demand and supply, prepared at the request of G8 leaders at the Gleneagles Summit. We heard that even with the most optimistic assumptions about the rate of technological development, most energy will still come from fossil fuels by 2050, and that without further action, carbon dioxide emissions in 2050 will be some 137% higher than in 2003. The cost associated with low carbon and adaptation technologies is not beyond reach; none of the energy technologies in development have incremental costs greater than \$25 per tonne of carbon dioxide.

The main points discussed were:

#### **Collaboration**

- We are convinced of the necessity of action, and that a more sustainable energy future is possible with known technology. The costs are not out of reach and coordination helps to reduce them.
- Collaboration between developed and developing countries is essential, and we should focus on identifying the most successful elements of existing technology projects and consider ways in which to replicate these projects on a wider scale. We should also consolidate and build on existing analysis about the way in which technology and policy measures can both help provide energy security and tackle climate change.
- Public and private sectors must act urgently to adopt concrete measures, provide clear and predictable incentives, and look for long term goals, involving international organisations. Technology agreements between governments and industry should be explored, including the role of carbon finance in facilitating such agreements.

### **Cost**

- It makes good economic and practical sense to adopt the lowest-cost measures first, as the cost of new technologies will be reduced over time by programmes (including standards and targets) to promote their use and by learning from this experience.
- Energy efficiency can make an immediate impact and provides significant value for money. Many energy efficiency measures offer savings.
- Governments need to offer clear and predictable policy frameworks which provide incentives to invest in low-carbon technology.

### **Access**

- Developing countries need better access to finance to develop and deploy technologies, which should be explored through proposals such as how a New Paradigm could be developed to address technology transfer barriers.
- Technology transfer needs redefining. It is not just a matter of transferring Intellectual Property (IP) or capital equipment, but involves know-how and capacity building, something market forces do not address. Countries are not currently tackling these issues fast enough.

### **(3) Investment Frameworks for a low carbon future**

We heard a presentation from the World Bank on the development and current state of their Energy Investment Framework (EIF) prepared following the Gleneagles discussions and the Plan of Action. The main points were:

- Countries welcomed the work being taken by the World Bank and Regional Development Banks, recognising the progress achieved so far and potential value for assisting developing countries in attracting the necessary public and private investment in low carbon energy and adaptation in line with national policy objectives.
- Mainstreaming climate change throughout the operations of IFIs is a key challenge for progressing the effectiveness of existing financing instruments and sources of finance, including monetary resources through the GEF as well as international carbon markets.
- Existing instruments should be scaled up to develop markets for energy efficiency and renewable energy technologies, once uncertainty about the future of the carbon market has been removed (through long term goals and commitments).
- There was a strong emphasis on the need for engaging the private sector, including private banks, in the EIF moving forward.

- Continued close cooperation between the IFIs is necessary to ensure a coherent approach to investment structures and initiatives.
- Given the scale of the challenge of adaptation and associated costs, climate risks need to be integrated within national planning processes and international finance.
- Governments recognised the need for long term frameworks to provide certainty to investors. Expanding the carbon market and providing certainty beyond 2012 is necessary to ensure low carbon investments, and it was noted that the EU Emissions Trading Scheme will continue longer-term and could allow for others to join in the future.

#### **(4) Next steps**

We thank the IEA for their analysis of the potential of new energy technologies. We look forward to further reports that will develop our understanding and inform policy developments, particularly:

- Further refinement of the analysis in Energy Technology Perspectives, especially on the incremental costs of low carbon technologies
- Development of tools to assist us in identifying the most effective policy options and best practice on energy efficiency, particularly the development of energy efficiency indicators and advice on international standards.

When developing these further reports, IEA should work closely with the World Bank and other multilateral initiatives such as REEEP, REN 21 and Medrep. It should also access expertise from business and wider civil society.

One area of particular concern to business and Governments, especially from the developing world, is the technical barriers and Intellectual Property Rights issues associated with research, transfer and deployment of new low carbon technology. We look forward to the continuation of work commissioned to identify the precise problems and their solutions.

We agree with the IEA's assessment of the crucial importance of progress with carbon capture and sequestration, and their view that significant improvements in energy efficiency will be fundamental if we are to reduce emissions cost-effectively. Improvements in energy efficiency will also bring benefits for global security of supply and competitiveness. We recognise the potential to develop a wider global initiative on energy efficiency. This idea should be discussed and developed further, through the Gleneagles dialogue and other forums. We welcome and support the European Commission's proposal to host a global conference on energy efficiency in January 2007.

We welcome the proposal coming from Mexico, Spain, the IADB, ECLAC, ESCAP, EBRD and the UK to create a working group to scale up responses to the energy and climate challenges ahead, examining programmatic approaches to the CDM, combining policies, finance and technologies, as well as identifying pilot activities under the IEF in energy efficiency, housing, carbon capture and storage and renewables.

We recognise the critical importance of an international cooperation framework for research, development, demonstration and deployment of low-carbon technologies. We welcome the extensive cooperation and collaboration already being taken forward through initiatives such as the IEA implementing agreements, the WIRE meetings, the Asia Pacific Partnership and Carbon Sequestration Leadership Forum. We need to develop an effective process to facilitate replication on a much wider scale.

We thank the World Bank for their work so far, and look forward to suggested next steps:

- The offer of the WEF and the World Business Council on Sustainable Development (WBCSD) to work with the Banks to engage the private sector in the EIF, including through their regional meetings, was welcomed and some practical next steps agreed.
- Recognising that the Banks have strengths in different areas it was suggested that this could provide a useful basis for practical coordination on the respective Investment Frameworks being developed. One way could be with a cross-bank working on a sectoral basis such as: energy efficiency; renewable energy; transport; power sector management; reducing emissions from coal use; and adaptation.
- There was a call on the Banks to work with the World Bank and other development agencies to identify and integrate climate risks within their investment portfolios. Guidelines should be developed to enable screening of projects for climate benefits and risks.
- The IFIs should work together, in particular on developing international standards and methodologies to assess the benefits of low carbon and energy efficiency projects and initiatives.
- The IFIs could have a key role in developing a long-term carbon market. It was proposed to set up a taskforce to examine how the CDM can be scaled up.

### **The wider climate change agenda**

The instruments and processes of the UNFCCC and (for those who have ratified it) the Kyoto Protocol are the primary fora for authoritative multilateral negotiations and agreement on climate change. However it is widely accepted that useful contributions to the work of those bodies or their procedures can be made by interested voluntary groupings. We therefore recommend that the conclusions, the information gathered and the ongoing work of this Gleneagles Dialogue should be taken into account in the workstreams started at the Montreal COP/MOP on the future of the Convention and on further developed country commitments.

In particular, while noting that there is no consensus as yet on the form of next steps in those international forums, we draw attention to the very widespread concern about the need to reduce uncertainty for the carbon markets and investment markets. We note the large number of participants and interested parties who have called for a longer-term goal or objective that will indicate the firm resolve of Governments to take further strong action on climate change beyond the end of the first Kyoto commitment period, and will help the markets perform the functions intended for them, including assistance to carbon-reducing projects under the CDM, which we believe needs rapid scaling-up to help provide a broader and more flexible carbon market. If there is to be no gap in the international climate regime, and therefore the value of carbon, after 2012, negotiations ought to be concluded in 2009.

We also note the great importance, in order for the international processes to move forward, of achieving clear progress in assisting the developing world to overcome its huge problems in adapting to long term climate change. There is specific business relating to the funding of adaptation, technology transfer, and the needs of Africa that requires to be successfully concluded at the Nairobi COP/MOP next month.

We further note strong concerns expressed about the shortage of worked-up models to provide negotiators with ideas and alternative approaches to Parties' commitments as part of current urgent work on the future of the UN Convention. It would be useful for more such models to be developed and placed on the table; and this Gleneagles Dialogue could

offer a location for voluntary discussion about them. However, we recognise the crucial importance of capacity building in developing countries to enable them to assess what these models might mean for them.

We are very encouraged by the close interest of civil society and business in the Gleneagles Dialogue work. We also welcome the work done by the G8 and +5 legislators in the parallel exchange of ideas of the GLOBE Climate Change Dialogue and look forward to receiving its results.

### **Conclusion**

We welcome the intention of the German Government to make progress with the issues covered by this Dialogue during their 2007 G8 Presidency, and to receive further reports and proposals from the World Bank, the IFIs and the IEA. The third meeting of this dialogue will take place in Germany in early summer 2007 (arrangements for preparations for this meeting will be made in the coming months). We hope this meeting will among other things receive a fuller report on the continued implementation by the countries and institutions of the Gleneagles Plan of Action. We welcome the intention of the Japanese Government to take forward the Dialogue in 2008, with a report to the G8 summit in the summer.

We believe this meeting in Mexico has been a useful contribution to the development of a practical approach to climate change that treats energy and climate policies as inextricably linked, and now adds finance to the mix. But there is a very long way to go, and it is clear that we are not yet on the right path to combat the increasingly urgent challenge that climate change poses for all of us. We look to build on the work we have done in Monterrey.

## **Gleneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development**

### **3rd Ministerial Meeting**

**Berlin, 9-11 September 2007**

#### **Chairs' Conclusions**

Our meeting from the 9th to the 11th of September 2007 was the third Ministerial session of the Dialogue on Climate Change, Clean Energy and Sustainable Development, which was launched at the G8 summit in Gleneagles in July 2005.

It was attended by Ministers and senior officials with responsibility for energy and environment issues from the G8 and from Australia, Brazil, China, India, Indonesia, Mexico, Nigeria, Poland, South Africa, Spain and Portugal, as current presidency of the EU. We were joined by senior officials from organisations including the World Bank, Regional Development Banks, the UN Framework Convention on Climate Change (UNFCCC), the International Energy Agency (IEA), and the World Business Council for Sustainable Development and the World Economic Forum (WEF) as business groups, non-governmental organisations, as well as legislators from the GLOBE organisation. The UN Secretary General's Special Envoys on Climate Change, Gro Harlem Brundtland and Ricardo Lagos provided important input to our meeting.

The chairs summarized the discussions as follows:

Our meeting concentrated on developing an integrated view on energy and climate policy with a focus on technology and investment in sustainable energy systems. We saw the need to move from the phase of strategy development to an era of implementation and foster

concrete activities to realise the huge emission reductions technologies can offer. We recognised an urgent need for clear and predictable policy frameworks on the national and international levels in order to spur more climate-friendly sustainable development pathways.

Our discussions were complementary and supportive to the UN climate process, underscoring the need for agreement on a strong process to develop a post-2012 framework.

### **Technology – Realising the potential**

We shared the view that the dual challenges of energy and climate security must be simultaneously addressed. Technologies are key to decoupling energy consumption from economic growth.

We reaffirmed that there is a huge potential for emission reductions at low or even negative costs with currently available technologies, especially in the field of energy efficiency. Renewable energy technologies also offer great potential for CO<sub>2</sub>- abatement and reduction of fossil fuel dependency. It was observed that a post-2012 regime, including a long-term carbon price signal and policy incentives, will be a main driver for an energy revolution based on efficiency and renewables.

Acknowledging the IEA's recommendations, we stressed the need to implement international and national policies and measures including standards, removal of environmentally harmful subsidies and trade barriers, market incentives and government procurement to accelerate the commercialisation and deployment of clean energy technologies. We also asked the IEA to report on progress to the Japanese G8 presidency. Increased R&D funding was also supported.

We agreed on the need for enhanced and more targeted innovative technology cooperation, especially between industrialized and developing countries. Speeding up implementation could help leapfrogging in key energy technologies. We need to better understand how to fund and finance the transformation of our energy systems including through innovative mechanisms such as buying down risk.

We noted with appreciation the EU Commission's offer to hold a multilateral meeting for an international initiative in the field of energy efficiency (Platform for International Cooperation on Energy Efficiency).

Follow up:

We invited the IEA and REEEP, REN21, national experts from Dialogue countries and interested stakeholders to explore in more detail the technology potentials in key sectors in Dialogue countries. Analysis will focus on how to ensure economic growth with a lower carbon footprint, including identifying specific innovative mechanisms for technology cooperation. The results will be reported to the Japanese G8 presidency. The analysis should:

- Focus on energy technologies in the area of efficiency, renewables and carbon capture and storage (CCS).
- Provide advice for the development of strategies or roadmaps to promote clean energy technology deployment, considering inter alia cost effective domestic policies and measures and the role of international cooperation, geared towards the specific needs of countries

### **Scaling up investment in climate protection**

Drawing on the results of the recent UNFCCC Report on investments and financial flows to address climate change, we recognised the scale of investment needed for effective climate protection from private as well as public sources.

In light of the need to shift future energy investment of \$20 trillion until 2030 to climate friendly development pathways, we supported the advancement of the International Financial Institutions' (IFIs) Clean Energy Development and Investment Frameworks. We noted the need for additional funding and also encouraged the IFIs to engage with the national development banks of G8 countries and continue working with private sector.

We recognised the need for clear and predictable policy frameworks on the national and international levels for attracting private sector investments in more climate friendly development pathways, as the biggest bulk of investments will need to come from private sources. Carbon finance is a necessary tool but will not be sufficient to achieve the needed transformation to reach our energy and climate security goals.

Additional finance will be required through e.g. venture capital as well as forms of public support. IFIs could contribute to financing the additional incremental costs that go along with the shift to a climate friendly energy system, with public finance acting as a catalyst along the way.

We discussed the interest and need for a scaled-up carbon market and identified ways to explore concretely how to match an expanded CDM with national sectoral and technological priorities. Deployment of energy technologies in the area of efficiency, renewables and carbon capture and storage (CCS) must be accelerated. For scaling up climate-friendly investment, we must demonstrate the potential for enhanced global and national action and support technological change that can simultaneously tackle the intertwined challenges of providing energy access, energy security and climate change.

Follow up:

We invited International Financial Institutions, in cooperation with national experts from Dialogue countries and the private sector, to analyse in depth the international cooperation toolbox, including:

- Expanding and scaling up mechanisms such as the CDM
- Sectoral approaches
- Blended public and private financing

We welcomed the invitation of the UK to host a workshop with IFIs on scaling up mechanisms such as the CDM, including the examination of reform proposals and programmatic and policy approaches, and invited IFIs to report on progress to the Japanese G8 presidency.

We stressed the urgent need for new and innovative approaches to finance adaptation and acknowledged Germany's announcement of a workshop on climate related micro-insurance projects in November 2007.

### **Policy framework post-2012**

We acknowledged the central role of the UN climate process for negotiating future global action on climate change. There was clear support for a comprehensive process to conduct negotiations on flexible and fair post-2012 agreement starting at the UN climate conference in Bali, December 2007, with the aim to reach global agreement in 2009.

We discussed principles and elements of a future regime. There was broad consensus that it should be fair and flexible, based on measurable, verifiable and quantifiable climate protection efforts and on the principle of common, but differentiated responsibilities and respective capabilities. Considering the ultimate objective of the UNFCCC, an integrated approach to climate protection, sustainable development and economic growth is necessary both for developing and industrialised countries. We acknowledged that for effective climate protection a wide range of tools needs to be taken up, considering different national circumstances.

We agreed that enhanced action on mitigation, adaptation, technology and investment is necessary.

- Adaptation should be treated as a high priority issue. We saw the urgent need to scale up efforts and develop innovative instruments to address the inevitable impacts of climate change, especially in those developing countries and regions which are most vulnerable.
- We acknowledged that developed countries must take the lead by committing to deeper absolute emission reductions. We noted that in addition, enhanced action by developing countries is necessary and stressed the need for positive incentives for such mitigation actions.
- Markets are a powerful tool to deliver the necessary technologies and investment flows for climate protection but will need to be accompanied by additional policies and measures as well as by efforts aimed at building capacity in developing countries.

We agreed on the need to develop a quantified global and long-term climate protection goal in line with environmental requirements. This is also needed to avert private sector uncertainty about the global regime post-2012, which would damage investment. There was strong commitment for the further development of the international regime while it was noted that we should not reinvent the wheel, but build on the existing architecture of the UNFCCC and the Kyoto Protocol.

We shared the view that reducing emissions from deforestation are another important element to be addressed; initiatives to develop innovative mechanisms such as the World Bank's Forest Carbon Partnership Facility were noted with appreciation.

We welcomed the proposals by the Global Leadership for Climate Action and GLOBE with many indicating support for their principles and recommendations for a post- 2012 framework.

Follow up:

We reaffirmed our willingness to actively contribute to a successful outcome of the Bali conference and to secure coherence of the various meetings in this respect.

We invited the G8 presidency to report on the Gleneagles Dialogue at the UN Climate Conference in Bali.

We welcomed the intention of the Japanese Government to host a meeting in the framework of this Dialogue in Chiba (14-16 March 2008), with the view to preparing a report to the G8 summit in Hokkaido.

## **Gleneagles-Dialogue on Climate Change, Clean Energy and Sustainable Development 4 th Ministerial Meeting**



## Chiba, JAPAN – 14-16 March, 2008

### Chairs' Conclusions

The Ministerial Meeting of the Dialogue on Climate Change, Clean Energy and Sustainable Development was launched at G8 summit at Gleneagles 2005. The first meeting was held in London in Oct. and Nov. 2005, followed by the second meeting in Monterey in Oct. 2006 and the third meeting in Berlin in Sep. 2007.

During the past sessions of the Dialogue, the following general understandings had been shared, with the assistance of the inputs from the IEA and the World Bank;

- Both the development of new technologies and the deployment of existing technologies are equally important. Cooperation between developed and developing countries, and between public and private sectors are essential.
- Future investment is needed on a large scale. A wide range of policies should be implemented in a clear and predictable way in order to mobilize private investment.
- It is necessary to deal with sustainable development and climate change at the same time. Adaptation and reducing emissions from deforestation are also important.

It had been acknowledged that these discussions during the Dialogues in the past are useful inputs and complementary to the process under the UNFCCC for the post-2012 framework.

In order to wrap up these past 2-year discussions and prepare a report to the G8 Hokkaido Toyako Summit, the 4 th meeting was held in Chiba from the 14 th to the 16 th of March 2008, and focused on the issues on Technology, Finance and Investments, and post-2012 framework.

This meeting was attended by ministers and senior officials responsible for energy and environment issues from G8, from Australia, Brazil, China, India, Indonesia, Korea, Mexico, Nigeria, Poland, South Africa, Spain and Slovenia as current presidency of the EU. We were joined by senior officials from international organizations including the International Energy Agency, the World Bank, Regional Development Banks, and business groups from the World Business Council for Sustainable Development, Nippon Keidanren and the World Economic Forum, non-governmental organizations as well as legislators from the GLOBE.

Regarding the following issues discussed at this Dialogue, we;

#### ***Technology***

##### **[Energy Efficiency and Clean Energy]**

- Acknowledged the importance of improving energy efficiency, as one of the lowest cost and most effective means to immediately reduce GHG emissions, on a global scale including through cooperative sectoral approach, international partnership, and domestic actions for each country.
- Highlighted the necessity of technology deployment and transfer to developing countries.
- Acknowledged the importance of capacity building and discussed the role of IPR (Intellectual Property Rights).

- – Noted that countries which decided to choose the option for nuclear energy recognized the contribution of nuclear power to emission reduction while those which decided otherwise expressed their concern about security.
- Noted the importance of renewable energy.

#### **[Innovative Technology]**

- Exchanged information on international initiatives to develop innovative technologies.
- Shared the necessity of expanding and strengthening international cooperation and sharing road maps on technology RD & D.
- Emphasized the importance of CCS.

#### **[Sectoral Approach]**

- Provided experiences based on sectoral approach (e.g., APP).
- Discussed the effectiveness of sectoral approach and recognized the necessity to continue further discussion in order to reach common understanding.
- Emphasized the principle of common but differentiated responsibility and respective capability in the context of sectoral approach.

#### **[The Role of the IEA]**

- Appreciate the work of IEA and pointed out challenges to be addressed (including data collection and the future role of IEA).

#### **[Activities by Private Sector]**

- Appreciated business initiatives for implementation of sector-based activities (including data collection).

### ***Finance***

#### **[International Financial Mechanism for Mitigation and Adaptation]**

- Appreciated the work of the World Bank and Regional Development Banks under the framework for clean energy and development and encouraged them to continue and enhanced these efforts.
- Appreciated the initiatives by Japan, UK and US to create a new multilateral fund for climate change in collaboration with the World Bank.
- Exchanged views on governance of international funding arrangements.
- Acknowledged to coordinate various existing and new funds in order to avoid duplication.
- Recognized the need to prioritize financial support for adaptation to the most vulnerable countries such as Least Developed Countries and Small Islands Developing States.
- Noted the importance of exploring innovative financial mechanisms.
- Noted a Multinational Fund for Climate Change to support mitigation and adaptation activities proposed by Mexico.
- Noted the necessity of scaling up CDM while recognizing the need for improvement.

- Acknowledged the importance of mainstreaming mitigation and adaptation into development policy.
- Recognized the importance of maximizing co-benefits (e.g. air pollution reduction) in financial assistance.
- – Reaffirmed the necessity to give appropriate incentives for preventing deforestation and forest degradation.

#### **[Mobilization of Private Investment]**

- Recognized the importance of mobilization of private investment and the role of governments to remove the obstacles for investment.
- Discussed the relationship between carbon markets and private investments.

#### ***Post-2012 Framework***

##### **[Long-term Goal]**

- Acknowledged the importance of sharing a long-term goal.
- Shared the common understanding of the necessity to move toward sustainable low-carbon societies.
- Pointed out the necessity to identify a long-term policy which functions as a reliable and clear signal to the private sector.

##### **[Mid-term Goal]**

- Reaffirmed the principle of common but differentiated responsibilities and respective capabilities as a premise of the discussion.
- Noted the necessity to take into consideration the change of global situation from 1992 to 2008.
- Recognized the necessity to ensure equity to realize sustainable development and effective emission reduction.
- Shared the necessity to continue substantial discussion on sectoral approach, with the understanding that it does not replace quantified national target for GHGs emissions reductions.

##### **[Global Actions]**

- Noted developed countries will take the lead in combating climate change while ensuring the comparability of efforts among them.
- Acknowledged developing countries will take measurable, reportable and verifiable actions with support from developed countries.
- Shared that adaptation and mitigation are equally important, and technology and finance are necessary ways to achieve them.
- – Recognized in particular the unique role that the countries at the Gleneagles Dialogue can play in terms of initiatives and cooperation leading to emission reduction.
- Noted the importance of carbon market role.
- Acknowledged the importance of counter measures for deforestation and forest degradation particularly for developing countries.

**[Road to Copenhagen]**

- Appreciated the fruits of this dialogue (substantial contribution to the agreement on Bali Action Plan) and expected it to become a useful contribution to the discussion in the AWGLCA under the Convention.
- Highlighted the value of this dialogue and other such dialogues in contributing to a successful outcome in Copenhagen.

## Anexo VI

### GLOBE Working Group on Biofuels: Recommendations

Globally, biofuels and biomass could play an important role both in agricultural development and energy policy, while contributing to climate change mitigation and national energy security. Indeed, over the long-term, agriculture will become increasingly multifunctional with emphasis placed on the co-production of food, energy and other services. In the meantime biofuels and biomass are amongst the more technically viable options to reduce greenhouse gas emissions. In addition, they can provide an opportunity to enhance growth in many of the world's poorest countries. In order for biofuels to play an important role in the reduction of greenhouse gases, they must be produced in both an economically efficient manner and in a way that does not undermine sustainable development.

#### Political messages for G8 leaders

- **Expansion of biofuel production should be driven by full life-cycle CO<sub>2</sub> reductions relative to fossil fuel comparators using a level economic playing field in which key elements in the production process (land, water etc) are valued in economic terms**
- **Expansion should be within sustainability criteria which are credible, consistent, independent and able to be extended to all biomass and agriculture, not just biofuels**
- **Tariffs, subsidies and other relevant policies should be reviewed to allow those countries with a comparative advantage in producing sustainable biofuels, notably tropical and sub-tropical countries, to develop viable industries, thus helping to maximise least-cost carbon abatement and assist economic development**

#### Recommendations in full

1. *Credible, consistent and independent certification schemes to an international standard, with appropriate stakeholder engagement, should be introduced to ensure sustainable biofuel production.*
2. *Biofuels should be deemed environmentally and socially sustainable only if they meet the criteria outlined in 1.1 to 1.6 in Annex A.*
3. *Using the criteria outlined in 1.1 of Annex A, greenhouse gas savings over the full life cycle of the biofuel, should be **significant**, when compared with a fossil fuel comparator, to ensure biofuels offer cost-effective carbon abatement and stimulate adoption of best practice in biofuel production.*
4. *The direct and indirect effects of increasing biofuel use will need to be monitored carefully, and adjusted accordingly, to take into account the impact on food prices and patterns in land use.*
5. *It is important to ensure a “level” economic playing field in which key elements in the production of biofuels (especially land and water) are valued in economic terms, and risks and benefits are assessed.*
6. *In connection with 5 above, and subject to meeting the sustainability criteria outlined above, tariffs on biofuels should be reviewed as a matter of urgency, with a view to encouraging countries that have a comparative advantage in the*

*production of sustainable biofuels. This should be a priority issue for WTO negotiations under the Doha Development Agenda.*

7. *Investment in R&D for future generations of biofuels should be promoted including: improving the quality of feedstocks; policies associated with biofuels based on waste and residues, and use of soft-cellulose derived fuels; the efficiency of conversion; and the ecological impact and the economics of biofuels set in a broader socio-economic context.*
8. *More help should be provided to developing countries, via multilateral bodies and/or bilateral assistance, to assess and explore new financial instruments and to identify and exploit opportunities to use biofuels to enhance economic progress.*
9. *There is a need for evidence-based communications on the sustainability of biofuels to counter the often polarized and partial positions that characterize the debate in the media today.*

## **Annex A: Sustainability Criteria and Explanatory Notes**

### **Introduction**

As legislators from the G8 and major emerging economies, we believe that there should be a set of uniform sustainability criteria applicable to biofuels, via (a) consistent, credible and independent scheme(s), that determine whether or not their production represents an overall positive contribution to environmental security, taking into account climate change and other important environmental and socio-economic issues. Although these criteria do not guarantee success, they are a critical first step towards ensuring the economic, ecological and social sustainability of biofuel production. Alongside these criteria we believe that there should be: a review of trade regulations to promote certified biofuels as a viable and cost-effective option for reducing greenhouse gas emissions in the transport sector; an increase in R&D to speed the arrival of more efficient ‘future-generation’ biofuels; and more assistance to help developing countries identify opportunities to exploit biofuels to enhance economic growth and reduce poverty.

### **1. Sustainability Criteria**

Only credible sustainability criteria, with third party oversight will have any chance of successfully regulating biofuel production. Such criteria should be feedstock, technology and fuel type neutral but predicated on desired environmental and fuel performance attributes, thus serving as a market signal to producers to bring to market fuels with the highest performance and the smallest environmental footprint. Recognising that sustainability may be enhanced if the biofuel is a co-product of a crop that meets other needs as well, the criteria should include:

#### **1.1 Net life cycle greenhouse gas emissions**

If the land used for the cultivation of raw materials for biofuels has a high stock of carbon in its soil, or if vegetation is cut to make room for cultivation, there is a likelihood that carbon from the soil or vegetation will be released into the atmosphere, offsetting the positive effects of the biofuels in terms of reducing the use of fossil fuels. Further, land use changes associated with biofuel production may lead to additional emissions. The full carbon effects should therefore be taken

into account, including estimates of indirect effects, when calculating the greenhouse gas savings of individual biofuels.

Those types of land whose carbon stock on conversion could not be compensated, within a reasonable period, by the greenhouse gas savings of producing biofuels should not be converted for the production of biofuels.

The calculation of emissions from biofuel ( $E_B$ ) production should include:

- **cultivation of feedstock** (including tillage (preparation of the land), cultivation, collection of raw materials; additionally the carbon cost of waste and leakages, and production of chemicals or products used in extraction or cultivation)
- **carbon stock changes caused by direct and indirect land use change**
- **processing**
- **transport and distribution** (including emissions associated with transport and storage of raw and semi-finished materials as well as the transport and storage of finished materials)
- **end use**, compared with alternatives

LESS emissions saved from any **carbon capture and sequestration** and/or **excess electricity from cogeneration** together with an appropriate proportion of emissions saved through **co-products**.

These emissions should be compared with the use of a fossil fuel comparator ( $E_F$ ). The net saving will amount to:

$$E_F - E_B / E_F \times 100 \text{ per cent}$$

This will provide an overall percentage greenhouse gas saving. It is recognised that the methodology for making these calculations is not straightforward and may be controversial. Action will be required to achieve an unambiguous auditable methodology. In our view, the biofuel should only be considered sustainable if the greenhouse gas saving is **significant**.

## 1.2 Protection of biodiversity

The environmental goods and services provided by natural eco-systems, particularly in the tropics, are extremely valuable and are potentially vulnerable to conversion to other uses, including the production of biofuels. Such changes in land use damage the environmental credentials of biofuels. It is therefore necessary to ensure that cultivation of feedstocks for biofuels does not cause land of high biodiversity to be degraded. To meet sustainability criteria biofuels should not be made from raw material obtained by degrading land with recognised biodiversity value, including (but not exclusively):

- areas designated for nature protection purposes
- high biodiversity grassland
- forests undisturbed by significant human intervention.

## 1.3 Protection of land with a high carbon stock

Even if the net greenhouse gas emissions of a biofuel meets the standard set in 1.1 above, in order to provide the consumer with confidence and the producer with

clarity, the biofuel should be deemed unsustainable if it is produced from raw materials obtained from land with a high carbon stock, including:

- wetlands (land covered or saturated by water for at least a significant part of the year, including pristine peatland)
- continuously forested areas

#### **1.4 Impacts of land use**

Where possible, assess the broader issues of the impact of biofuel feedstock production on land use, recognising that attributing second- or third-order land use changes to biofuels production is difficult and speculative. There are many complex factors at play including population growth, logging, food and feed demand. Robust and effective tools should be sought to address land use changes more broadly, including improved tools to better understand and measure the effects of climate change, deforestation, water use and other environmental impact trends.

#### **1.5 Preservation of water and water quality**

Consideration of the impact of biofuel production on water supplies and water quality should be included in the sustainability assessment of biofuels. Water use should be managed and regulations/good practice guidance should be put in place to prevent water pollution.

#### **1.6 Social Sustainability**

Consideration should be given to the impact of biofuels on social sustainability, including impacts on women, indigenous people, and other socially disadvantaged groups.

#### **1.7 Yield**

It is important that every effort should be made to increase agricultural yields and do so with minimal use of fertiliser. Yield improvements are expected to continue to rise and reach 3 per cent per annum in the near future. Sustainability criteria should support, not impede, crop varieties and agricultural methods that serve to increase crop yields.

### **Monitoring/Verification**

Monitoring and verification are key to the successful implementation of sustainability standards. The capacity of countries to enforce environmental regulations, or even to enact them in the first place, is variable. In many developing countries, where much of the investment interest is focused, the pressure to reduce regulations and oversight in order to attract foreign investment is an additional challenge. It is important, therefore, to design standards that are effective but not so burdensome as to be beyond the capacity of developing countries. Enforcement of a certification scheme could be challenging. Nevertheless it is a critical step and lessons can be learned from similar schemes implemented in other policy areas.

## **2. Impact on food security**

If some of the current practices in use for first generation biofuel production were developed on a large scale, they could significantly increase agricultural commodity prices and, by displacing food production, could damage food security for some developing countries. For example, the International Monetary Fund (IMF) has acknowledged that demand for biofuels in the US and EU has resulted in



higher prices for a range of agricultural commodities due to the displacement of food. But the linkage is complex: while many food commodities are global, there are clear differences between commodities and they have different drivers (eg structural changes in demand, poor harvests, financially-driven crop choices, input factor cost changes and government policy interventions).

In the future, developments in biofuel technology might lessen the potential impacts on food security. For example, there is significant interest in the development of non-food crops that do not compete for the same agricultural requirements as food and fodder crops. There is interest too in greater use of plants that can grow on marginal land and that require fewer agricultural inputs such as fertilizer. This would expand the land available for biofuel production without necessarily decreasing the land available for food production. However, such crops might still displace food crops as farmers plant those crops which produce the most return and non-food biofuel crops could be grown on high grade agricultural land, even in times of food shortages.

### **3. Trade issues**

It is vital that the emerging biofuels industry is given greater market access so that developing countries, in particular the rural poor, may benefit. Many biofuels are exposed to tariffs, providing considerable distortions. These should be reviewed as a matter of urgency. Privileging domestic developed country production undermines trade and development objectives and does not result in the greatest, or least cost, greenhouse gas reductions. Support for biofuels should be based on their economic and environmental sustainability, including greenhouse gas savings.

#### **3.1 Classification for trade purposes**

Biofuels, including their feedstocks and other components of the value-added chain, are currently classed as “agricultural” (ethanol) or “industrial” (biodiesel) goods under the WTO. The biofuels classified as “agricultural” goods are exposed to relatively high tariffs when exported into the EU, US and some other major markets. This leads to stifled growth of the industry in developing countries, increased costs for consumers in the industrialised countries and, as a result, restricted access to ‘least cost abatement’ of greenhouse gases. As part of the recommended review of tariffs, consideration should be given to the issue of classification.

### **4. Research and Development in future biofuels**

Future generation biofuels use advanced technical processes and can be made from any lignocellulosic or other biomass feedstock, such as forest and crop residues, wood chips, food waste, municipal solid waste, chicken litter, straw and algae. Evidence shows that these fuels tend to offer lower full life-cycle greenhouse gas emissions than ‘first generation’ biofuels. Another route to future-generation biofuels is through new crops that can grow on marginal land and have no food value. In addition to not competing with food for land or resources they may also have the additional benefit of creating jobs in places where previously there was little employment. None of these approaches is in full commercial production at present but costs can be expected to fall over time.

### **5. Assistance for developing countries**

Biofuels can help reduce the dependence of developing countries on imported fossil fuels, freeing up capital that could be spent on health, education and other essential areas. The production of biofuels (or their feedstocks) can be for domestic use or for export, and some of the needs differ in these two cases.

Because of the advanced technology involved, production of some second generation biofuels may not be so accessible to poor countries. This problem could be tackled through intensified North-South and South-South technology cooperation.

Market access is another critical area that needs to be addressed if developing countries are to maximise the opportunities to exploit biofuel production to assist economic development and reduce poverty. See trade issues in section 3 above.

## **6. Evidence-based education and communications**

There is much rhetoric on biofuels in the media and among interested stakeholders. There is a need for more factual, evidence-based communications around biofuels and their sustainability, moving beyond the often polarised and simplified positions that have characterised the debate to date.

## **Anexo VII**

### **Recommendations to the G8 to address Illegal Logging**

The Bali agreement of the UNFCCC COP has recognised the importance of avoided deforestation and the value of forests as carbon sinks. New financial mechanisms are being considered and tested by the World Bank Forest Carbon Partnership. The political imperative to address climate change and the role of forestry as part of that response means that there is an even greater need to resolve illegal logging. We believe that tackling illegal logging and the international trade in illegally logged timber is an essential first step if forests are to play a key role in addressing climate change.

The following measures have been developed as part of the GLOBE G8 Illegal Logging Dialogue in conjunction with the GLOBE G8+5 Climate Change Dialogue and have been agreed at the GLOBE Brasilia G8+5 Legislators Forum.

#### **The Challenge:**

Tropical deforestation and degradation continue to be significant economic, environmental and social problems. Illegal logging denies governments, local communities and commercial forest enterprises of important present and future revenues, while forest loss and degradation contributes significantly to climate change, soil erosion and loss of ecosystem services and biodiversity. The challenge is to return the proper value of the forest to the people of the forest regions and to maintain their vital role in the life support system, of the planet.

#### **Our Vision for the Forestry Sector**

- Our vision for the forestry sector is one that is well regulated and well governed to ensure sustainable forest management. It should deliver a broad range of ecosystem goods and services for the benefit of local communities, national governments, the private sector and global society.
- Our vision is one where national legislative structures support sustainable forest management and where laws are implemented effectively within producing and consuming countries.
- Our vision is of robustly regulated markets for tropical forest goods and services, such as timber and carbon storage which ensure coherent demand for legal and sustainable products and services.
- Our vision is one of a transparent sector with independent oversight from an internationally supported organisation bringing international confidence and investment capital for long term projects that meet credible standards.

**Based on this vision legislators have developed the following set of policy proposals in consultation with legislators in tropical forest producing countries to be submitted to the Japanese G8 Summit.**

#### **Policy Proposals to the G8 from the GLOBE G8 Illegal Logging Dialogue**

##### **1. Legislative Measures:**

##### **1.1 Introduction of a Global System for Recognising Source Countries Licensing Schemes**

We propose that there should be a global system for recognising and supporting enforcement of producer country license schemes for legal timber, encompassing all

major timber source and consumer countries. To achieve this, we believe that the following steps are necessary:

- The development of a system that recognises and respects the laws of each producer country.
- Each source country to define clearly the scope of rights and obligations such as ownership, customary usage, authorised forest management, permitted species, export and customs regulations and taxation.
- A system of verification to establish that the laws of the relevant source country have been complied with.

We consider that G8 countries should take the lead in establishing the legality of their own timber exports.

## **1.2 Introduction of Domestic Legislation within G8**

We propose that consumer countries should reinforce the legislation passed by producer countries. We believe that excluding illegal timber products from consumer markets has a critical role to play as one of a range of measures directed against illegal logging. We therefore propose:

- G8 countries should examine the introduction of simple and specific domestic legislation making the import of timber produced illegally according to the laws of foreign source countries an offence in the consumer country.

## **2. Markets for Legal and Sustainable Timber**

We believe that building protected markets for legal and sustainable timber products has an important part to play as one of a range of measures directed against illegal logging. We believe that this would have the effect of raising the market price for legal and sustainable timber. We propose the following market-orientated steps:

- G8 and other countries to use their public procurement policies to require legal and sustainable timber for all government contracts, and undertake moves towards harmonisation of technical specifications and their implementation and enforcement.
- G8 and other countries to use government building standards as a way of promoting the use of legal and sustainable building materials. Most existing systems should incorporate tougher requirements for legal and sustainable timber.
- G8 and other countries to encourage industry associations in consumer and producer states to give guidance to their members about the implementation of procurement policies that require evidence-based supply of legal and sustainable wood product that is congruent with public policy processes.
- G8 and other countries to call upon companies and industry associations in consumer and producer states to work together to develop supply chain systems that eliminate illegal products.
- G8 and other countries to develop common standards of legality verification
- G8 and other countries to have primary responsibility to assess which existing certification and legality verification systems satisfy their government's criteria for legality and sustainability.

## **3. Governance – Forest Sector Transparency**

We recommend that the G8 support the introduction of a global Forest Transparency Initiative (FTI). This should be developed with International Finance Institutions and pilot tested at a country level in Asia and Central and West Africa. This should be designed to establish parliamentary oversight through committees in producer and consumer countries and make available robust and relevant financial information that can improve accountability and governance of national forest resources.

We believe that for the FTI to succeed that there should be a requirement for public and private bodies to participate in/comply with the requirements of an FTI.

#### **4. Finance for sustainable forest management**

We believe that the costs of achieving credible, independently verified standards of sustainable forest management are relatively very high. Illegal logging depresses market values of timber product, weakening the competitiveness of sustainable timber product in a largely undiscerning market. There are significant inherent risks to investing in tropical developing countries. It is clear, therefore, that there are significant barriers to the flow of investment capital into tropical forestry sector projects. We therefore propose the following steps are taken to stimulate allocation of investment capital to the tropical forestry sector and assist in the transition of progressive timber companies to forest management companies:

- That the G8 should direct official development assistance to producer countries to support:
  - i. Capacity building
  - ii. appropriate forest management enterprises to implement credible, certified sustainable forest management activities.
  - iii. development of sustainable ‘value-adding’ timber processing capacity within the producer country rather than simply exporting raw timber.
  - iv. the transition of existing sustainable forest management operations from principally timber producers to multiple-revenue (goods- and services-based) forest management operations.
- That the G8 should create mechanisms through International Finance Institutions and other institutions such as the Global Environment Facility to encourage realistic private capital investment in sustainable tropical forestry projects, including carbon financing and financing to secure other ecosystem services.
- That the G8 should commit to develop options for financing sustainable forest management based on payments for ecosystem services (including analysis of viable eco-securitisation and risk mitigation instrument options) and consideration of a portfolio approach to forest management.

## Anexo VIII

### Recommendations of the GLOBE Adaptation Working Group

The following recommendations from GLOBE's Adaptation Working Group are split into 5 areas: general principles; funding; climate insurance; development; and capacity building.

#### Key message

Given the high estimated costs of adaptation in the developing world, **substantial new and additional resources should be committed by all industrialized countries** to assist adaptation in the developing world.

#### 1. General Principles

- Adaptation should be given equal prominence to mitigation in the post-2012 negotiations;
- There should be stronger coordination between existing international and regional bodies to advise the post-2012 discussions, assist with the development of international and national adaptation plans, allocate any implementation assistance made available under the Adaptation Fund, and maintain political pressure for action on adaptation (the issue of adaptation is, par excellence, a test of the multi-agency UN system and its coordination with regional and national bodies);
- Given the appropriate ownership by developing countries, any additional innovative funding sources for adaptation in developing countries should, as far as possible, be managed by the UN's Adaptation Fund
- Climate change adaptation strategies should build resilience of communities and be focused on reducing and managing risk for all sectors including natural hazards, coastal risk management and land use, resource management, public health, public displacement, agriculture and biodiversity;
- Adaptation strategies should build on the established international disaster risk reduction framework - the Hyogo Framework for Action - and take into account the Miami Declaration agreed by G8 Environment Ministers, whilst contributing to fairer terms of trade and helping to achieve the UN's Millennium Development Goals.

#### 2. Funding

The primary adaptation issue is how to generate the necessary funding to assist developing countries to adapt to climate change. The status of funding is currently woefully inadequate with, at best, 1 per cent of required funds likely to be available over the next few years via the UN's Adaptation Fund. There are additional sources of funding such as the Special Climate Change Fund and the Least Developed Country Fund, amounting to a combine total of USD 120 million, but still, major sources of additional funding must be generated. These additional sources must not come at the expense of current overseas development aid or other existing assistance.

- Estimated costs of adaptation for developing countries are in the tens of billions per annum – **USD28-67 billion per year<sup>47</sup>** in 2030 (UNFCCC) and **USD 86 billion per year<sup>48</sup>** by 2015 (UNDP Human Development Report 2008)

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<sup>47</sup> See [http://unfccc.int/files/meetings/dialogue/application/pdf/070828\\_smith.pdf](http://unfccc.int/files/meetings/dialogue/application/pdf/070828_smith.pdf)

- The Adaptation Fund, under the Kyoto Protocol, is generated using a levy on the Clean Development Mechanism (CDM)
- The Adaptation Fund is projected to contribute **USD 36 million** per annum, based on today's CDM project revenue
- The revenue from the CDM levy in the period 2008-2012 is expected to grow to **USD 80-300 million** per year
- How do we bridge the gap? Additional funds via a wider carbon trading levy, auctioning emissions allowances, a potential levy on aviation and/or shipping and financial contributions from Annex I countries as part of post-2012 framework.

We believe the following options have the potential to help bridge the funding gap:

### 2.1 Levy on aviation and/or maritime activity

Currently the UNFCCC's Adaptation Fund is financed via a 2 per cent levy on the Kyoto Protocol's Clean Development Mechanism (CDM). Although politically attractive due to the "self-financing" aspect, this tax is inefficient as it taxes activity that we want to encourage. It is anomalous that a mechanism that benefits developing countries and that already has high transaction costs should be given the additional competitive disadvantage of a levy on proceeds. Efficient taxes should target activities that we want to discourage (eg activity leading to increases in greenhouse gas emissions). At present, aviation and shipping, whose emissions are growing, are not included in the measures to reduce greenhouse gas emissions under the Kyoto Protocol. A paper by the Oxford Institute for Energy Studies proposes a levy on aviation – the International Air Travel Adaptation Levy (IATAL)<sup>49</sup>. The paper argues that a levy on aviation will have a double positive effect. Firstly, for demand-elastic short-haul flights, demand for aviation will be reduced, resulting in fewer flights and fewer greenhouse gas emissions. Secondly, for demand-inelastic air travel (long-haul business flights), significant funds will be raised. The proposal estimates that a EUR 5 levy on each air ticket could raise up to EUR 10 billion annually that could be used for adaptation (or other climate change related activity). The levy could be designed to promote efficiency by rewarding operators using more fuel-efficient aircraft and who have implemented other emissions-saving measures. When aviation enters the EU's emissions trading scheme, consideration of an exemption would be needed for flights captured by the scheme. Stochniol's International Maritime Emissions Reduction Scheme (IMERS) suggests the application of a similar levy for emissions from shipping.<sup>50</sup>

### **Recommendation:**

**That the IATAL and IMERS proposals be given serious consideration by legislators from the G8 and +5 as a meaningful way for the aviation and maritime sectors to contribute to combating climate change.**

### 2.2 Levy on carbon trading

The 2 per cent levy on credits sold through the CDM will generate between USD 80-300 million per year between 2008-2012 for the Adaptation Fund. Although a tax on emissions-producing activity as outlined in 2.1 is more efficient, given the urgent need to

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<sup>48</sup> See: <http://hdr.undp.org/en/reports/global/hdr2007-2008/>

<sup>49</sup> IATAL – see <http://www.oxfordenergy.org/pdfs/EV36.pdf>

<sup>50</sup> IMERS – see [www.imers.org](http://www.imers.org)

generate funds for adaptation it may be more politically acceptable, at least in the short-term, to extend the CDM levy to the wider emissions trading market (including the EU ETS and other developing markets). The EU ETS alone was worth around USD 30 billion in 2007<sup>51</sup>. A 2 per cent levy would have generated USD 0.6 billion in 2007 alone. Whilst still well below the estimated costs associated with adaptation in the developing world, the rapidly expanding carbon market could help to generate a significant contribution for the Adaptation Fund in the short-term.

**Recommendation:**

**Consideration of an extension of the 2 per cent levy on CDM activity to cover the wider emissions market in the short-term with a view to eventual replacement by a (ideally global) tax on emission-intensive activity, such as aviation and shipping.**

**2.3 Auctioning allowances under emissions trading schemes could help to raise funds for adaptation in developing countries**

The idea of using the value of allowances or revenues from an auctioning system to generate funds for climate related activity, including adaptation in developing countries, is being considered in several forums. For example, three proposals currently on the table include:

- In the US, the Lieberman-Warner Bill sets aside revenues from the auction of allowances worth around USD 2 billion in 2020 towards international adaptation and national security
- In Europe, the European Commission's ETS revision proposal suggests that at least 20% of the proceeds from the auction should be used for CCS, energy efficiency, renewable energy, avoided deforestation efforts, and adaptation in developing countries. This could amount to around Euros 10 billion annually by 2020
- The Norwegian Finance Minister has proposed that a portion of allowances from national emissions trading systems be set aside to generate revenue for adaptation and other specified purposes

Such proposals have several advantages:

- Payment for Adaptation would be more closely based upon the "polluter pays principle"
- The funding is more predictable - as long as the emissions trading system or tax operates, a funding source is potentially available
- The funding is more sustainable as long as efforts to reduce emissions continue

**Recommendation:**

**Legislators, when designing domestic or international emissions trading systems, should consider the use of a portion of any auction revenues to help fund adaptation in developing countries.**

**2.4 Financial contributions from Annex I countries as part of post-2012 framework**

To recognize the historic responsibility of industrialized countries, Annex I countries should be required to make a contribution towards the Adaptation Fund as part of their post-2012 commitments.

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<sup>51</sup> Source: IDEACarbon



### **Recommendation:**

**As part of a post-2012 framework, the commitments for industrialized countries should include a compulsory financial payment towards the UN's Adaptation Fund, based on historical responsibility and ability to pay (ie GDP per capita).**

### **3. Climate Insurance**

Climate 'insurance' is identified in the UNFCCC and the Kyoto Protocol as one means of adaptation. While intended primarily to provide relief after losses occur, insurance-type approaches could be designed to encourage proactive risk reduction efforts as well. Insurance payouts can stipulate the reconstruction of infrastructure, schools and housing in less vulnerable locations and to climate-resilient design standards; low cost adaptation techniques can be specified as a condition of insurance policies; and lower premiums can be charged for climate-resilient buildings, infrastructure and crops.

Only around 4 per cent of weather-related losses are covered in low-income countries. Barriers include cost – insurance products are only available to those who can afford them – and also the lack of appropriate insurance-related products. Insurance companies could develop new products that are better designed for the rural poor to help in the event of weather-related losses but also encourage proactive risk reduction. Such policies could include index-based insurance (see Annex A). Industrialised countries could, in partnership with the private sector, support insurance-type approaches in vulnerable countries by subsidizing premiums or by pledging reserve capital to reduce risks to private providers.

### **Recommendation:**

**To stimulate the development of insurance as a tool for climate change adaptation, governments should:**

- i) support pilot projects at local, national and regional levels that make affordable**

**insurance available to vulnerable individuals and governments and examine the potential of index-based insurance for agriculture-dependent economies in the developing world. Particular attention should be paid to ongoing pilot projects in India and the Horn of Africa.**

- ii) facilitate improved information-sharing and more relevant information collection. Insurance schemes have heavy information and modeling needs (meteorological, geological, climate predictive capacity, economic modeling data and weather monitoring data). Governments should support active information sharing between climate scientists, private sector insurance providers and governments.**

- iii) promote 'pro-poor' insurance conditions.**

**Insurance need not simply offset risk: insurance mechanisms can also be used to reinforce adaptation responses such as building in safer locations, construction of weather-resilient housing and crop diversification. Governments can assist by encouraging new and existing insurance and credit schemes to incorporate climate conditionality. Post-disaster reconstruction works can focus on reinforcing building codes, slum/neighbourhood improvement schemes and livelihood strategies that spread risks.**

### **4. Development**

The World Bank estimates that as much as 40 per cent of the development financed by overseas assistance and concessional loans is ‘sensitive to climate risk’. Absorbing the climate change impacts will hamper achievement of many of the United Nations Millennium Development Goals, including those on reducing poverty and child mortality and combating HIV/AIDS, malaria and other diseases.

It is imperative to stop viewing climate change adaptation and disaster risk reduction as mainly humanitarian aid-related activities, and rather integrate them into long-term development strategies. Today, aid flows are increasingly being diverted in support of disaster relief, partly as a result of the increasing number and severity of climate change-related disasters. However, prevention is better than cure. Acting early makes sense not least from an economic point of view. According to the 2007/2008 Human Development Report issues by the UNDP, every US dollar invested in pre-disaster risk management in developing countries can save USD 7.

However, the largely project-based approach of current funds dedicated to adaptation risks becoming a barrier to the further integration of climate change adaptation into development planning. More program-based assistance, including within the UNFCCC Adaptation Fund, is necessary to avoid the marginalization of adaptation as a standalone issue.

#### **Recommendations:**

- i) climate change adaptation and disaster risk reduction should be integrated across the full range of development-related assistance. This should include mandatory climate risk assessments for projects, including those financed with bilateral or multilateral support, to ensure the ‘climate-resilience’ of development aid. Approval for projects could be conditional on meeting a set of climate vulnerability criteria.**
- ii) The Adaptation Fund under the UNFCCC should move towards program-based rather than project-based assistance.**
- iii) A development-based approach should complement – and not replace – the UN approach via the Adaptation Fund**

#### **5. Capacity Building**

The direct impacts of climate change are felt locally and response measures must be tailored to local circumstances. However, for these efforts to be successful, they must be guided and supported by national and international strategies and policies. Even if the funding outlined above were available, many developing countries do not have the capacity to carry out the adaptation measures required. The capacity to implement successful adaptation strategies will be dependent on:

- i) Information – effective strategies must be based on the best available technical, social and scientific data on the nature and extent of likely physical, social, economic and health impacts over short- and long-term timeframes in given locales**
- ii) Technical and Planning Capacity – key priorities are to establish local, national and international networks (e.g. for flood protection), strengthen capabilities in the disciplines most relevant to understanding climate impacts and devising precautionary and response strategies, including local governance structures to deal with extreme events**
- iii) International Institutions – while adaptation must become a priority and be integrated across existing institutions, focal points are needed at the national and**

international level to collate expertise and coordinate broad-based planning and action

- iv) Technology – adaptation success depends, at least in part, on access to technologies - such as climate monitoring equipment - and the social and economic conditions necessary to apply them.

### **Annex A: Index-based insurance**

Index-based insurance is widely used in Europe, the US and Japan as a countermeasure for crop failure or sluggish sales of beverages and other consumer goods due to weather anomalies. This type of insurance is applicable to the risk of agricultural output fluctuation in developing economies.

For example, the cultivation of sugar cane, a material of sugar and bioethanol, largely depends on whether or not there is sufficient rainfall. It is known that, statistically, sugar cane production in north eastern Thailand decreases substantially when annual rainfall falls below 1,000mm. Farmers often take out loans to purchase farming machinery and equipment. A decreased output has an adverse impact on the living conditions of farming households, while at the same time hindering their debt servicing capabilities. If a scheme is introduced to compensate production losses for farmers in the event of rainfall of less than 1,000mm, it could support farming households by ensuring greater stability of their livelihoods and steady loan payments. This is weather index insurance.

What differentiates this type of insurance from other products is that it does not assess details of accidents; instead, payment is made when certain ‘trigger’ conditions occur.

Challenges associated with weather index insurance:

- **Data:** to create weather index insurance, it is essential to collect sufficient data over long periods of time on meteorological phenomena and crops. Developing countries are likely to have difficulty obtaining such data in quantity and quality.
- **Cost:** some farmers in developing countries do not have sufficient capacity to pay premiums

A feasibility study, based in northeastern Thailand, reported the following findings:

- In some regions, sufficient volume of meteorological data is available retrospectively. Local core cities, and some other towns and cities, have collected sufficient data.
- The agenda concerning meteorological data includes data quality and difficulty in cross-agency data collection.
- Local governmental agricultural banks provide loans to finance the purchase of farming machinery and equipment and have strong needs for weather index insurance, since reduced production caused by climate change leads to arrears in payments. They also have a keen interest in selling insurance products.
- Sufficient attention should be paid to farmers’ capacity to pay premiums.
- If the scope is limited to specific regions and crops, an actuarial model could be developed using currently available meteorological data. To create such a model for a wider region and for general crops, there is a need to provide assistance.
- Assistance is also needed to develop sales channels for insurance products.

## Anexo IX

### Recommendations of the GLOBE Market Mechanisms Working Group

#### Common Aspiration

The goal of market mechanisms should be to ensure that consumers and businesses are rewarded for making choices that result in low carbon, resource efficient economies.

Ultimately, in order for this to happen, carbon must be priced at appropriate levels across the whole economy.

#### Economic Context

The difficult economic circumstances currently being experienced, against the backdrop of the sub-prime mortgage problem in the US and the surge in oil prices, are likely to dominate the political and economic agenda for at least the next few months, including discussions at the Japanese G8 Summit in Toyako, Hokkaido next week. This paper has been written with the current global economic context in mind.

#### Examples of market mechanisms that work:

There are many examples where market mechanisms are seen to work:

- Emissions trading schemes (including the Clean Development Mechanism and the US sulphur market under the Clean Air Act);
- Production tax credits, investment tax credits, enhanced capital allowances, research and development tax credits;
- Obligations to meet a certain target or quota, e.g., renewable portfolio standards, renewable fuel standards, technology standards, building code requirements etc;
- Feed-in tariffs or hybrid mechanisms which provide a premium for green power;
- Financial incentives including capital grants and soft loans for research and development;
- “Gain-Share” commercial arrangements that incentivise risk and reward - ie, sharing of risks and costs for a fixed period of time during development of a project then sharing of gains over the long term.

What is evident from the numerous studies is that national circumstances<sup>52</sup> play a crucial role in determining whether such mechanisms are successful or not, as does the level of political commitment as to their nature and duration.

#### Recommendations

To harness the potential of market mechanisms in combating climate change, we believe that governments should consider the following:

1. Start by creating a “level playing field” by **removing distortions in domestic energy pricing and non-commercial tariff structures** which continue to exist in some markets (particularly in emerging economies). Efforts should also focus on ensuring that markets are competitive and attractive to private sector investors.
2. **Set clear, long-term targets for greenhouse gas emissions reductions.** Five-year intervals are insufficient for medium- to long-term capital investments and they

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<sup>52</sup> Natural resources, security of supply, retiring energy systems, economic, political, regulatory and social environments.

distort markets and carbon pricing by periodically introducing political and regulatory risk. Long-term targets will allow the private sector the flexibility to determine how to satisfy targets, including investments in low carbon technologies.

3. **Continue to support the establishment of a carbon price across all markets, sectors and jurisdictions** either through taxation policies that support innovation and investment in clean technologies, emissions trading schemes or indirectly through regulation. Whatever the approach, legislators should try to use markets creatively to encourage the right behaviours through pricing carbon at the appropriate levels and within appropriate timeframes. Clear and simple signals will ensure the market determines the most efficient allocation of capital to satisfy regulators' goals.
4. **Move towards “principles-based” regulation for the carbon market.** “Rules-based” regulation has proved counter-productive in the Clean Development Mechanism (CDM) and in the EU Emissions Trading Scheme (ETS). Both the CDM and the EU ETS are too prescriptive as to the number and type of projects that qualify for crediting. Both systems have produced market-failure through inappropriate regulation, particularly with respect to projects in the developing world. Countries that demonstrate the capacity to implement the accepted principles should be responsible for project approval and markets should be free to value project credits unrestrained by regulatory interference.
5. **Creation of a new, independent, regulatory body for the carbon market.** The current regulatory system for carbon trading has grown exponentially over the past few years and, if long-term stabilisation targets were agreed (to 2030 or 2050), it is estimated that CDM trades could rise to well over USD 100 billion (from around USD 5 billion today). This will require a stable and predictable regulatory regime together with a professional and efficient regulatory body respected by the corporate and financial sector: carbon must become like any other traded commodity. The UNFCCC's secretariat, based in Bonn, currently has responsibility for both the deliberative work of the UN climate treaty as well as managing the regulatory functions that oversee the CDM market. It makes sense to either separate these functions or, at a minimum, place clear firewalls between them. There is a need to develop a strong regulatory body to oversee all carbon transactions, develop clear guidelines for transactions and provide technical advice to countries, that operates under standards associated with commercial law and operations. Annex A provides an expansion of this idea.
6. **Introduce transitional mechanisms to drive down the cost of low carbon technologies.** The purpose of transitional mechanisms should be designed to push technology beyond what exists today. For maximum impact, these transitional interventions, and the timing of their introduction (and potential removal) should be designed to ensure that economically viable applications are also financially viable without them in the long run.
7. **Increase funding for low carbon technology.** A global finance facility should be created to develop a significant pipeline of clean energy projects by buying down the incremental investment costs of clean energy technologies through grants and concessional loans as well as increasing the creditworthiness of the future flows from carbon credits through partial guarantees. The World Bank and IFIs are already looking at innovative ways for generating the initial capital for this facility from both public and private sources. This work should be supported.

8. **Allocate a portion of funds from central banks to establish Clean Technology Innovation Centres.** The innovation centre should be established in +5 countries with close links to academic institutions in G8 countries. Substantial buy-in and coordination from +5 governments would ensure the products under development are consistent with a country's overall economic planning and to build capacity among local institutions on effective technology development and deployment. The technology centres could also be linked through web-based information technology tools to help share information.
9. **Deployment of new technologies** also requires sufficient access to enabling infrastructure, as well as skills and human resources to build, maintain and operate such technologies. **More needs to be done on education and skills to develop the capabilities to operate and maintain low carbon technologies, particularly in the developing world.**
10. **G8+5 governments should create demand for low carbon products and services** by making commitments to reduce their own energy use by, utilizing low and zero-carbon buildings and transport; and incorporating climate change objectives into national public procurement standards to lead markets. Creating demand will help to drive down costs more quickly.
11. **Support labelling of all electricity tariffs or products with carbon content information.** In many jurisdictions, suppliers, energy consumers, and government departments are applying different carbon footprint calculations – particularly in relation to low carbon electricity supply. It is important that a clear, simple and understandable system is introduced to enable buyers of electricity to choose between different sources of electricity generation. In practice, this would mean that the carbon content of all electricity tariffs or products would be displayed in the form of a colour coded A-G label (similar to how many electrical goods are labelled for energy efficiency purposes) and in gCO<sub>2</sub>/kWh.
12. **The role of market mechanisms in sectoral agreements.** The Bali Action Plan specifically refers to the need to explore the potential of sectoral agreements, particularly relevant to energy intensive sectors that are exposed to international competition. Market mechanisms, such as trading of credits against an efficiency benchmark, should be considered as these discussions develop.
13. Finally, there may be cases where it is the right economic and environmental decision for Governments to simply **buy-out and retire old heavy carbon emitting facilities or 'stranded assets'** (where unexpected changes in regulation have led to disadvantage), or at least ensure that transitional incentives are available for sectors/regions who through no fault of their own are disadvantaged.

Getting the balance of market intervention right will drive development and deployment of the appropriate technologies and behaviours.

### **Market Mechanisms for adaptation and energy efficiency**

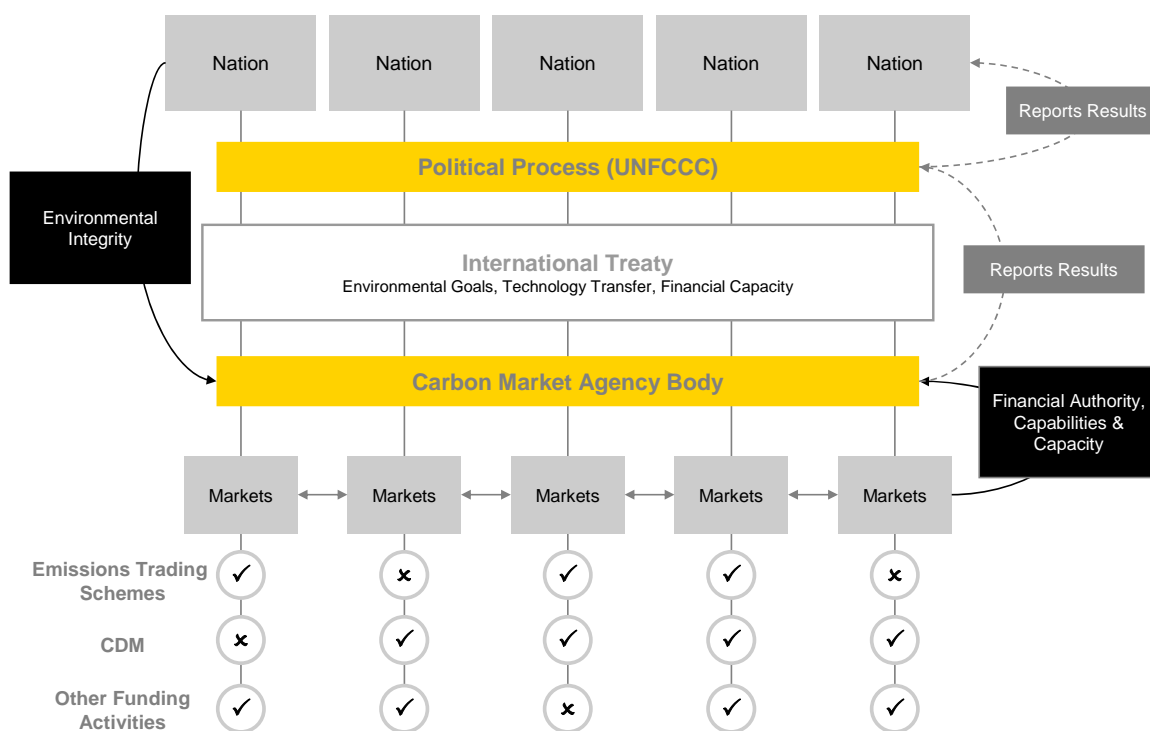
In addition to the recommendations in this paper about using market mechanisms to efficiently address climate change mitigation, recommendations from GLOBE's other working groups show how market mechanisms can be used to encourage efficient adaptation measures and increase energy efficiency.<sup>53</sup>

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<sup>53</sup> See GLOBE's Adaptation and Energy Efficiency Working group papers.

**Annex A - The need for an independent Carbon Market Agency Body.**

- While the ultimate objective of carbon markets is an environmental outcome, primarily it is a financial process, with the potential for major redistributions of wealth.
- As carbon markets grow in both size (i.e., financial value) and reach (i.e., more jurisdictions) the scope for market manipulation, gaming and corruption is enormous without good governance.
- To date carbon markets are overseen by regulatory bodies that tend to have very strong political, and environmental, governance structures in place, but they lack the necessary financial authority, capabilities and capacity.
- There needs to exist some form of Carbon Market Agency body that is able to address both environmental and financial integrity issues. This body should be independent of the political process.
- The goal of the new body should be to ensure that there is adequate accountability and transparency in carbon markets in their support of achieving policy objectives.
- The following diagram demonstrates how such a framework could look:



## Anexo X

### Recommendations of the GLOBE Efficiency Working Group

#### Background

Measures to increase energy efficiency are by far the most cost effective way to simultaneously improve energy security, reduce carbon emissions, increase competitiveness and stimulate the development of cutting edge energy efficient technologies and products. The EU alone wastes around 20 per cent of its energy. This represents a financial cost of around Euros 100 billion annually. Analysis by McKinsey Global Institute suggests that energy use could be cut by 20-24 per cent by 2020 and 7.9 billion tonnes of CO<sub>2</sub>e saved through energy efficiency investments that would more than pay for themselves. Capturing the energy efficiency opportunity globally would require projected additional annual investments of USD 170 billion but would generate over USD 900 billion in annual energy savings – a 17 per cent annual rate of return<sup>54</sup>. A global agreement on energy efficiency, led by the world's major economies must, therefore, be an essential, low cost element of the strategy to combat climate change.

#### Political context

The IEA has presented a total of 16 recommendations to G8 governments on measures to reduce energy use. Twelve of these recommendations were made at the 2007 G8 Summit in Heiligendamm in Germany which, if fully implemented globally, could save approximately 5,700 million metric tonnes of CO<sub>2</sub> annually by 2030 (equivalent to the US's total CO<sub>2</sub> emissions in 2004)<sup>55</sup>, and yet no G8 country has implemented all of these recommendations. The European Commission (EC)'s paper - "An Energy Policy for Europe"<sup>56</sup> - adopted on 10 Jan 2007, and endorsed by the European Council on 8 March 2007, identified an international agreement on energy efficiency as one of the key measures to promote a common effort on tackling climate change. The EC's proposal was noted in the G8 communique from Heiligendamm in June 2007. Legislators from the G8 and +5 supported the need for a global energy efficiency agreement when they met in Berlin in June 2007 (see Annex A). Japan has also been a strong advocate of energy efficiency, as evidenced by its implementation of the "Top Runner" programme, a summary of which can be found in Annex B. The "Top Runner" programme has delivered significant energy efficiency improvements in products such as video recorders (74 per cent), refrigerators (55 per cent) and passenger vehicles (23 per cent) by setting standards based on best-in-class. What is needed now is an international agreement to bring together the initiatives in Europe and Japan together with other national energy efficiency programmes to produce a coherent framework for energy efficiency standards across the globe, taking advantage of economies of scale and the combined power of coordinated standard-setting in the world's largest markets. Such a framework should be guided and overseen by the IEA.

#### Next steps

The largest energy-using countries, perhaps led by Europe, North America and Japan, should develop, in conjunction with the IEA, **a detailed proposal** for an energy efficiency agreement and a **clear process for agreement and implementation**. Cooperation by

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<sup>54</sup> Assuming oil at USD50 per barrel; higher oil prices would generate higher returns.

<sup>55</sup> Source: IEA Energy Efficiency Policy Recommendations to the G8 Summit, Heiligendamm, 2007.

<sup>56</sup> See [http://ec.europa.eu/energy/action\\_plan\\_energy\\_efficiency/index\\_en.htm](http://ec.europa.eu/energy/action_plan_energy_efficiency/index_en.htm) for the EU's energy efficiency action plan.



markets in Europe, North America and Asia would send a powerful signal to producers and manufacturers around the

world in both developed and developing countries. Such an agreement could be formulated through the G8, the US-led Major Economies Meetings or any post-Toyako G8 process, with strong progress towards implementation in advance of the Copenhagen summit.

### **Detail**

Legislators from the G8 and +5 believe that an international energy efficiency agreement should take the form of a modular structure, with participation in modules on a voluntary basis, according to national priorities. Oversight, including peer-review and promotion of best practice, could be given to the IEA. The agreement should cover the following sectors:

- Residential
- Commercial buildings
- Manufacturing
- Transport

We also call on financial institutions to cooperate on the setting of energy efficiency standards within these sectors, with a view to providing favourable financing if investments meet agreed energy efficiency criteria.

To support regulation and/or standards, national governments should consider the role of market mechanisms such as “White Certificates” or Energy Efficiency Credits to help achieve energy efficiency targets. These schemes, analogous to emissions trading, will help to achieve savings at least cost and should be designed to best suit national circumstances. See Annex C for an explanation of White Certificates.

### **Priority areas**

#### **1. Appliance and equipment labelling and minimum energy performance standards**

Designing energy performance standards based on the best standard value of each product currently available in the market, in a similar way to Japan’s “Top Runner” programme, for priority product groups including boilers, water heaters, consumer electronics, copying machines, televisions, standby modes, chargers, lighting, electric motors, air conditioning, refrigeration and washing machines. Products that do not meet the agreed minimum requirements may not be put on the market. These standards should be dynamic (reviewed every 4-5 years) and progressively stricter, giving manufacturers clear and predictable guidance for their design cycles. To encourage consumers to choose energy efficient products, a labelling system showing detailed energy efficiency performance for each product should be promoted.

#### **2. Building performance requirements and very low energy buildings**

Designing minimum performance requirements for new buildings and for renovations of existing stock, measured in kWh/m<sup>2</sup> or by performance value of each type of equipment. This should cover ALL buildings, not just those of an industrial scale. The aim should be for all new build and major renovations to be zero-carbon from 2015.

#### **3. Power generation and distribution**

The energy transformation sector uses around one third of all primary energy. Average transformation efficiency for electricity generation is around 40 per cent, thus there is great potential to improve efficiency. The agreement should develop minimum binding efficiency requirements for new electricity, including co-generation, waste heating and cooling recovery and encourage the connection of decentralised generation.

#### **4. Fuel efficiency of cars and small trucks**

98 per cent of the energy consumed in the transport sector is fossil fuel. It is also the fastest growing sector in terms of energy use. An agreement should set tough standards for the fuel efficiency of cars (eg the EU standard of 120g CO<sub>2</sub>/km for cars by 2012) and fuel standards, taking into consideration technological improvement trends by vehicle weight classifications in a similar way to Japan's "Top Runner" programme, and should be strengthened steadily and predictably over time. An agreement should also encourage the development of markets for cleaner vehicles, including hybrids (eg through use of public procurement standards, standardised labelling and, where appropriate, tax incentives), encourage maintenance of tyre pressure and improve efficiency of urban, rail, maritime and aviation transport systems as well as changing transportation behaviour through the formulation and promotion of an efficient public transport infrastructure. Special consideration could be made for the luxury car market if combined with tax reform to create effective financial incentives in favour of fuel-efficient cars.

#### **5. Sectoral Energy Efficiency Improvements**

Analysis of industrial sectors should be undertaken to determine best practice and scope for energy efficiency improvements with a view to setting efficiency targets. Such an approach would enable each country to set reasonable and achievable energy efficiency savings in each sector, drawing on best practice and supporting the energy efficiency indicator operated by the IEA. A sectoral approach, as put forward by Japan in 2008, could complement developed country emissions reduction targets and help to reduce emissions in key sectors, whilst facilitating technology transfer to developing countries.

#### **6. Facilitating financing for energy efficiency investments for small- and medium sized enterprises and Energy Service Companies**

Facilitate public-private partnerships with the private banking sector and IFIs to attract more funding to cover debt financing, guarantee instruments and venture capital applications for new energy efficient technologies; devise financial packages designed to finance the adoption of energy efficiency savings identified in energy audits. Eg guaranteed loans made available to finance energy efficiency measures, repayable when savings have covered costs; and preferential financing rates for investments that meet agreed standards.

#### **7. Coherent use of taxation to create incentives for energy efficient products and services**

National (and local, where appropriate) governments should integrate energy efficiency considerations into taxation policy. For example, relating vehicle taxation to emissions performance and reduced consumer taxation to specifically favour investments to improve energy efficiency.

#### **8. Commitment by national and local governments to use public procurement as a driver of markets for energy efficient buildings, products and services**

Government procurement is a strong driver of markets (eg gov't spending in the UK is around 43 per cent of GDP). All governments, at a national and regional level, should

produce energy efficiency procurement guidelines as part of their national procurement plans.

#### **9. Raising energy efficiency awareness**

Include climate change and energy efficiency in national schools curricula; support for community programmes; competitions among schools for most energy efficient. Consideration should be given to programmes such as the Japanese “Cool Biz” policy of wearing appropriate clothing for the seasons (eg not wearing ties in summer, wearing pullovers in winter etc) to reduce the need for air conditioning and heating.

#### **10. Promotion of innovative technological development**

To obtain a breakthrough in energy efficiency technology the direction of long-term technological development should be shared. Countries that lead technological development should further enhance cooperation, including through existing international cooperation channels, and further accelerate innovative technological development.

#### **11. Promotion of energy efficiency cooperation**

The improvement on energy efficiency should be promoted on a global basis. In particular, encouraging energy efficiency efforts and supporting the spread of energy efficiency technology by establishing energy management law systems are effective for countries with increasing energy demand. In addition, support for capacity building in such countries, including the development of human resources, is essential. Public-private partnerships should also be explored to promote energy efficiency.

#### **12. Facilitating energy efficiency measures in local government**

Local as well as national governments play an important role in influencing civil society behaviour and the design of urban systems, and can facilitate the preparation and implementation of action plans to tackle environmental issues, including reducing greenhouse gas emissions. Cities and towns that are leading the way in energy efficiency should be positioned as models of advanced energy efficiency to showcase successful technologies and policies with a view to spreading best practice.

### **Annex A: G8+5 legislators’ recommendations to G8 leaders on energy efficiency from the GLOBE Berlin forum, June 2007**

“Much work has been taken forward under the Gleneagles Plan of Action, particularly with the IEA's programme of work. If the G8 is to retain credibility, the Heiligendamm Summit should be the point at which words translate into commitments to practical action to implement the IEA's recommendations (for example the 1 Watt initiative on stand-by power was endorsed at Gleneagles but is yet to be implemented by a G8 country). On that basis, we urge the G8 to;

- Strongly support the European Commission's proposal to develop an international framework agreement on energy efficiency. An international agreement could focus on regulatory co-operation, energy efficiency measurement and evaluation, labelling and performance standards for internationally traded goods, vehicle fuel efficiency, benchmarking and development of sectoral agreements, co-operation on technology development and deployment and financing for energy efficiency. Such an agreement could be taken forward in the Gleneagles Dialogue process with a view to implementation in 2008.

- Make commitments to move towards low- and zero-carbon emitting homes, recognizing regional or local responsibilities for building codes; only procure the best performing buildings for government use; also call on G8 to step up their efforts to raise the thermal efficiency of their existing housing stock which will form around three quarters of our homes in 2050.
- Expand the role of Combined Heat and Power including the provision of cooling.”

### **Annex B: Japanese “Top Runner” programme**

The top runner program sets its target standard values for energy consumption efficiency in accordance with the Energy Conservation Law, calling for obligation by manufacturers and importers to enhance the energy consumption efficiency of their products. The manufacturers are obliged to surpass a weighted average value for all their products per category for each predetermined target year. This is one way of setting target standard values for the energy consumption efficiency of equipment and is based on the concept that "manufacturers produce products that are better than products with the highest energy consumption efficiency of all the products in the same group that are currently sold on the market." In Japan, target standard values for energy consumption efficiency of equipment have been set since 1998 using this method. As in other countries such as the US, EU, and Australia, energy consumption efficiency standards are legal obligations in Japan. However, in contrast to overseas requirements, Japanese standards do not preclude equipment that fails to meet the standards from the market. Japanese standards require that all targeted equipment meet the target standard values as a weighted average per category. If a manufacturer wants to produce products that fail to meet the standard, it needs to produce products that have much higher energy efficiency than the standard in order to meet the standard on a weighted average basis. The rationale behind this is to lead the product market in the right direction while retaining product diversification yet still boosting energy efficiency of all the products as a whole.

Although the Top Runner programme sets tough targets by holding a dialogue with government and industry, feasible targets at the limits of technology are set, resulting in the promotion of technological innovation.

The top runner targeted products are, as of February 2008, passenger vehicles, and freight vehicles, air conditioners, fluorescent lights, electric refrigerators/freezers, TV sets, VCRs, copying machines, computers, magnetic disk units, hard-disk drives, space heaters, gas cooking appliances, gas water heaters, oil water heaters, electric toilet seats, vending machines, transformers, rice cookers, microwave ovens and DVD recorders.

### **Annex C: White Certificates**

White certificates are documents certifying that a certain reduction of energy use has been attained. In most applications, the white certificates are tradable and combined with an obligation to achieve a certain target of energy savings. Under such a system, producers, suppliers or distributors of electricity, gas and oil are required to undertake energy efficiency measures for the final user that are consistent with a pre-defined percentage of their annual energy deliverance. White certificates are given to the producer whenever an amount of energy is saved whereupon the producer can use the certificate for their own target compliance or can be sold to (other) obliged parties. Quite analogous to the closely related concept of emissions trading, the tradability in theory guarantees that the overall

energy saving is achieved at least cost, while the certificates guarantee that the overall energy saving target is achieved.

In Europe several countries have implemented a white certificate scheme or are seriously considering doing so. Italy started a scheme in January 2005; France a year later. The UK has combined its obligation system for energy savings with the possibility to trade obligations and savings. Denmark and the Netherlands are seriously considering introduction of a white certificate scheme in the near future.

In the UK, the Energy Efficiency Commitment (2002-2005) program required that all electricity and gas suppliers with 15,000 or more domestic customers must achieve a combined energy saving of 62 TWh by 2005 by assisting their customers to take energy-efficiency measures in their homes: suppliers must achieve at least half of their energy savings in households on income-related benefits and tax credits. In the current (2005-2008) EEC 2, energy saving targets were raised to 130 TWh suppliers, and here suppliers with at least 50,000 domestic customers (including affiliated licenses) are eligible for an obligation.

Potential benefits of a Tradable White Certificate system:

- Certification guarantees meeting the agreed target
- Tradability helps ensure least-cost achievement of targets
- The system could unlock energy saving potential and actors not unlocked by existing instruments
- Can stimulate market for Energy Service Companies (ESCOs)

## Anexo XI

### Globe Technology Working Group Recommendations:

#### Summary

#### Policy recommendations

- Creation of public-private incentives that lead to at least a **doubling** of global financial support for **technology R & D**
- Creation of a clean **technology fund, in the order of USD 25-50 billion per annum**, to support deployment of low-carbon technologies with priority given to investments in energy efficiency, renewables and CCS and capacity building in developing countries
- Promotion of **global energy efficiency agreements**, to increase international cooperation on product and fuel efficiency standards
- Promotion of a policy framework for the **responsible use of biofuels, based on economic and sustainability criteria** that sets an ambitious target for GHG savings, recognising the comparative advantage of tropical and sub-tropical countries
- Increased support for the **development and deployment of new technologies, such as carbon capture and storage (CCS)**, to reduce the emissions associated with burning fossil fuels, and address Intellectual Property Rights (IPR) issues in an equitable manner
- Leading CEOs from G8 and +5 countries have stipulated that, to deliver CCS we need:
  - Climate change strategies that guarantee a minimum carbon price of \$40/t CO<sub>2</sub>
  - Transition incentives, declining over time, to help cover the gap between the carbon price and the cost of CCS for the period of developing and demonstrating the technology
  - The commercial liability of leakage needs to be limited to a maximum of 30 years.

#### Detail

#### Increase Support for Energy R&D

Public support for energy R&D worldwide has decreased significantly in recent decades. Given the serious problems faced - both in terms of climate change, energy security and rising energy costs - a "Crash Program" is needed to help stimulate innovation and development of new energy technologies. As policymakers we should not try to pick winners. The support schemes therefore have to be general in nature and include a series of technology areas. However, solar technology merits special attention - both in the form of solar cells and solar-concentrated power (SCP). Both solar cells and SCP represent very promising technologies, not least in the context of many developing countries. For example, research from the IEA suggests that CSP installations covering just 1 percent of the world's deserts, if appropriately linked to demand centres, could theoretically meet entire global electricity demand in 2030.<sup>57</sup> The IEA, in its *Energy Technology Perspectives 2008* report, estimates that, for a stabilisation scenario that reduces emissions by 50 per cent by 2050 from 2005 levels, total Research, Development, Demonstration and

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<sup>57</sup> Sims et al., 2007, op. cit., p. 278, referring to Philibert, *Barriers to the diffusion of solar thermal technologies*, OECD and IEA Information Paper, 2006; and to IEA, *WEO*, 2006.

Deployment (RDD&D) investment costs for energy technologies will be between USD 13 and USD 16 trillion (and will be larger using a baseline of 1990 rather than 2005). Historically, government R&D investment is targeted on areas with high-risk and long-term perspectives, whereas private sector investment is targeted on the pre-competitive, short-term demonstration and commercialisation of technologies. However, the role of government energy R&D budgets is becoming more critical given that R&D activities in the private sector have reduced as a result of competitive pressure under energy market liberalisation.

Government leadership in development of new energy technologies is possible with relatively low investments. Given a supportive policy framework, relatively small government investments in R&D can:

- Signal government interest in broad policy goals
- Provide early leadership into technology frontiers
- Attract interest from potential participants
- Encourage private investment with early success
- Alter the course of technology development
- Result in strong public benefits over time

We recommend that legislators in G8 and +5 countries push for energy technology R&D to be increased, in coordination with other governments and the private sector, to ensure the scale of R&D is in line with the IEA's recommendations.

### **Global Technology Fund**

In its Human Development Report 2007/2008, UNDP identifies the need to mobilise \$25-50 Billion yearly to support transitions to a low-carbon economy in developing countries. The recent report from the IEA underlines the importance to move swiftly on technology development as well as investments in clean technology.

In the face of this level of urgency and need, we propose that G8 +5 legislators should recommend G8, and other industrialised countries, to establish a **Global Technology Fund**, with the objective of helping to enable developing countries to make early investments in low-carbon technology, including through public and private partnerships, to help achieve the Millennium Development Goals and address climate change.

The fund should be administered by a major multilateral institution, with significant representation of developing countries in terms of governance. Funds might be underwritten by partial proceeds from allocating allowances in carbon markets, and then channelled into clean energy and low carbon development projects. The proposed fund is a complement to the CDM, which - based on current estimates - will not be able to mobilise more than a fraction of the finance needed in the next decade to help low carbon investments in energy, transport and energy-intensive production in developing countries.

The recently proposals by the finance ministers of the US, Japan and the UK, for funding of clean technology, could form the nucleus of such a fund and we urge other G8 and other industrialised countries to join in mobilising the necessary funds to establish an effective Global Technology Fund.

### **Global Energy Efficiency Agreements**

International standard organisations, e.g. ISO, should be used to promote agreements to progressively establish global minimum efficiency standards for products, and work towards the convergence of quality standards of fuels, to facilitate clean technology.

Please see the recommendations of the GLOBE *Efficiency Working Group* on opportunities to improve efficiency through use of more efficient technologies, especially in areas of power generation and distribution, improving fuel efficiency in transport, electric appliances as well as through facilitating investment in clean technology particularly by small and medium-sized enterprises.

### **Responsible use of biofuels according to economic and sustainable criteria**

On biofuels, a subject that attracts much media attention and is currently at the top of the agenda due to possible links to rising food prices, GLOBE has convened a 'Biofuels Working Group' to examine the issue. The Working Group has produced a paper with some political recommendations, stressing the need to for economic and sustainability criteria as a pre-requisite to expanding biofuel production. The key recommendations are:

- Expansion of biofuel production should be driven by **full life-cycle CO<sub>2</sub> reductions** where key elements in the production process (land, water etc) are valued in economic terms
- Expansion should be within **sustainability criteria** which are credible, consistent, independent and able to be extended to all biomass and agriculture, not just biofuels
- **Policies, tariffs, subsidies should be reviewed** to allow those countries with a comparative advantage in producing sustainable biofuels, notably tropical and sub-tropical countries, to develop viable industries, thus helping to maximise least-cost carbon abatement and assist with economic development

### **Carbon Capture and Storage**

#### **Key messages**

- CCS can be seen as **bridging technology** while new technology is being developed
- As coal-fired power stations have useful lives of c40 years, recent and near-term investments may well be contributing still to 2050 global emissions burden. This emphasises a need to **demonstrate CCS technology early** and on a **large scale**.
- Increased support for **national and international research programmes** is needed, including via IEA, CSLF<sup>58</sup>, EU, with practical cooperation in G8 +5 to accelerate demonstration and capacity building in all countries.
- Put in place urgently a significant number and scale of CCS demonstration plants, working to **ensure all new fossil fuel power plants from 2015 can be capture-ready. Demo-plants should be located in different parts of the world.**

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<sup>58</sup> CSLF is the Carbon Sequestration Leaders Forum, an international climate change initiative, launched in June 2003, focused on development of improved cost-effective technologies for the separation and capture of carbon dioxide, and for its transport and long-term safe storage, with the purpose of making these technologies broadly available internationally. Currently CSLA comprises 22 members, 21 countries and the European Commission. Countries are Australia, Brazil, Canada, China, Colombia, Denmark, France, Germany, Greece, India, Italy, Japan, Korea, Mexico, Netherlands, Norway, Russia, Saudi Arabia, South Africa, United Kingdom, and the United States.



- **Retrofit options should be considered at planning stages**, allowing sufficient space and access for extra facilities needed. Pre-investment economics will depend on early intention to retrofit. CO<sub>2</sub> transport and storage logistics should be identified.
- IEA estimates the potential to reduce cost of CCS to below \$25/t by 2030 under most favourable conditions, so carbon markets might provide sufficient incentive in the long-term. But, the early implementation of CCS, that is essential to achieve the mitigation of CO<sub>2</sub> emissions needed, will depend on **supportive packages of regulations and incentives** becoming available, this especially so for early projects to demonstrate all elements of CCS technologies, and in both developed and developing countries
- Authorities have a crucial role in authorising, implementing and assuring **infrastructure for CO<sub>2</sub> transport and storage** needed for wide implementation of the CCS technology.
- Governments of G8 +5 countries, relying on coal, should undertake **comprehensive geological mapping** to identify potential suitable sites for geological CO<sub>2</sub> storage.
- **Public acceptance** of CO<sub>2</sub> storage will require transparent communication of risk assessments.
- The scope to **extend CCS technology to energy-intensive industry sectors** depends on:
  - Contribution of the respective sector to global emissions and mitigation opportunities
  - Separation efficiency, depending on CO<sub>2</sub> concentration in separation stream
  - Vulnerability of a sector to global market competition and product imports
  - Ability of the sector to pass through the extra costs to its market customers
- It is important that **IPR protection** will not become a barrier to implementing CCS. A global technology fund - presented above - should help reward innovation and development of CCS, taking account of financial support OECD countries are already providing.

Leading CEOs from G8 and +5 countries have stipulated that, to deliver CCS we need:

- Climate change strategies that guarantee a minimum carbon price of \$40/t CO<sub>2</sub>
- Transition incentives, declining over time, to help cover the gap between the carbon price and the cost of CCS for the period of developing and demonstrating the technology
- The commercial liability of leakage needs to be limited to a maximum of 30 years.

See Annex A for more background relating to CCS

## **Annex A: Promoting Carbon Capture and Storage (CCS) as a Key Technology to Mitigate Emissions from Fossil Fuels**

### **1. Global Framework Context**

The aim of the policies, measures and commitments proposed in Globe's International Framework for Post-2012 is to drive research, development, diffusion and deployment of

technology that is essential for combating climate change. One of the recommendations is to:

- Support developing and deploying **new technologies, such as CCS**, to reduce emissions from fossil fuels including addressing **Intellectual Property Rights**

The reference scenario of the IEA World Energy Outlook 2007 suggests the world's energy needs could be 50% higher by 2030 than today, with fossil fuels continuing to dominate the fuel mix. To meet the challenge for all countries of making the transition to more secure, lower-carbon energy systems, WEO identifies a need for CCS as one technology to allow continued use of fossil fuels while mitigating resulting emissions.

BP has advanced the view that CCS has potential to contribute up to 25% of reduction needed even to just stabilise GHG emissions at the 2000 level of 7Gtpa, mitigating ca. 2Gtpa of reduction in global emissions. CCS is potentially essential technology even to take this first step towards delivering the UNFCCC target to stabilise at a safe level.

This annex aims to identify how CCS might be promoted for early global diffusion to meet this challenge, ensuring Intellectual Property Rights IPR do not become barriers.

## **2. IEA's World Energy Outlook of 2007 Sees a Fossil Energy Future to 2030**

The WEO reference scenario sees the world's primary energy need increasing by 55% from 2005 to 2030, at an average annual rate of 1.8%pa, with fossil fuels remaining dominant, and representing 84% of the overall increase in demand over that period.

Overall, some \$22tn investment in energy infrastructure by 2030 would be required to meet global energy demand, with developing countries needing more than half of this.

Following spectacular growth in recent years, coal sees the biggest absolute increase in demand by 73% between 2005 and 2030, pushing its share of total energy demand from 25 to 28%. Developing country economies contribute 74% of increased global primary energy use, with China and India alone accounting for 45% of this increase.

It is clear this IEA reference scenario is unsustainable, in that it is incompatible with meeting the main objective of the UNFCCC convention, of stabilising GHG in the atmosphere at levels that are assessed as needed to avoid dangerous climate change.

Purely economic and energy security reasons will lead some countries to use domestic coal supplies, but there will be major implications for CO<sub>2</sub> emissions, unless these can be mitigated by technology, especially as coal plants can have lives of over 40 years.

## **3. Emissions Consequences and Need to Deploy CCS Technology Early**

Growing fossil-fuel use will continue to drive up global energy-related CO<sub>2</sub> emissions unless urgent concerted action is taken to both curb energy demand and its associated emissions. Action needs to focus on curbing the rapid growth in CO<sub>2</sub> emissions from coal-fired power stations, as the primary cause of the recent surge in global emissions.

The IEA WEO reference scenario points to CO<sub>2</sub> emissions as increasing by 57% from 2005 to 2030 from unchecked growth in fossil fuel use. USA, China, Russia and India contribute 2/3rds of the increase in emissions, with China becoming by far the biggest contributor, overtaking the USA as the world's biggest emitter during 2007. The IEA scenario projects India becoming the third-largest emitter by about 2015, but with per capita emissions for both India and China remaining well below those within OECD.

Energy efficiency and conservation will need to play a central role in curbing soaring electricity demand and emissions from power generation, with non-fossil alternative\_fuels

also able to make major contributions. Clean coal technology, and especially CCS, is seen as one of the most promising ways of mitigating emissions in the longer term, especially where use of coal is growing the fastest, and there will be a need to reconcile continuing burning of coal with the need to cut emissions in the longer term.

As coal-fired power stations have useful lives of over 40 years, recent and near-term investments may well still be contributing to the global CO<sub>2</sub> emissions burden in 2050 and beyond. This raises the following issues about impacts and availability of CCS:

- Need for early demonstration of CCS technology on a sufficiently large scale
- Economic and efficiency impacts of deploying different CCS technologies
- Incentives needed to encourage sufficient and early investment in CCS
- Whether and to what extent IPR issues might hinder early deployment of CCS
- Scope for retrofitting CCS technology to existing or pre-prepared plants, with implications for economic and energy efficiency impacts on power production
- Scope for applying CCS technology more widely to energy-intensive plants.

#### 4. Status of CCS Technology, with Scope and Plans for its Development

There are 4 main CCS technology approaches, focusing on whether CO<sub>2</sub> is separated before or after the combustion process and whether hydrogen (H<sub>2</sub>) is generated as fuel

- **Post-combustion:** CO<sub>2</sub> scrubbed from combustion flue gas, 15% CO<sub>2</sub> for coal
- **Oxy-fuel process:** fuel combustion in oxygen concentrates CO<sub>2</sub> for separation
- **Pre-combustion:** fuel is pre-reacted with air or oxygen to produce H<sub>2</sub> and CO that is further processed to a mixture of H<sub>2</sub> and CO<sub>2</sub> that can then be separated; H<sub>2</sub> can then fuel a combined cycle gas turbine, or be used directly in a fuel cell
- **Integrated gasification combined cycle (IGCC)** coal pre-combustion, with CCS, enables higher energy and CO<sub>2</sub> capture efficiency, with lower emissions.

There are significant issues to address in storing CO<sub>2</sub> securely, but these are mainly of regulatory regime to take account of relatively short time of commercial responsibility compared with the need for secure long-term storage of at least 100 years, and more realistically 1000 years and beyond, so needing authorities to take over responsibility.

CCS may be seen as bridging technology for the next 100 years while new technology is being developed, but has scope to demonstrate potential beyond this important role. The long-term role is particularly important for potential to produce H<sub>2</sub> as a clean fuel.

Public acceptability of CO<sub>2</sub> transport and storage will be a matter of measuring and communicating risk assessment. Existing technologies to monitor the stability of CO<sub>2</sub> plumes in geological formations will be a helpful part of transparency and assurance.

Norway, USA, EU, and Australia are taking the lead in proposing to demonstrate CCS technology, with the EU proposing to support 10-12 demonstration projects by 2015.

Important aspects will be mapping the geological potentials for secure storage of CO<sub>2</sub>, public policies of responsibility for safeguarding long-term storage, and ensuring that adequate infrastructure to transport CO<sub>2</sub> to secure geological storage is put into place.

#### 5. Existing Major CCS Projects

There are four major large-scale CCS projects already in operation around the world:

- **Weyburn** involves capture of 1.7mtpa CO<sub>2</sub> from a coal gasification plant in North Dakota, USA, then transporting it 330km by pipeline under pressure for enhanced oil recovery in EnCana's Weyburn field in Saskatchewan, Canada
- **Sleipner** began operating 1996, separating 1mtpa CO<sub>2</sub> from produced natural gas, injected and stored in a saline aquifer below this Norwegian Statoil field
- **In Salah** is a BP-operated project in Algeria that also separates CO<sub>2</sub> from gas produced, and stores it in a reservoir below the field at a rate of up to 1mtpa
- **Sn ohvit** is another Norwegian gas field with CCS; started to operate end 2007.

These projects are playing an important role in proving CCS technologies, especially building confidence in the efficiency and security of storage. Established oil seismic techniques are able to track migration and stability of CO<sub>2</sub> plumes in gas reservoirs. These projects also represent an interesting range of driving forces for CO<sub>2</sub> capture.

## 6. EU Commission Proposed a Strategy 'for Jumpstarting CCS in Europe'

EU Commission has proposed an ambitious strategy including the following elements

- Support for R&D to develop the components and integration of CCS elements
- Proposed on 23 January 2008 a regulatory framework for implementing CCS
- At least 10 demonstration plants to be operating in the EU by 2015 at the latest
- Propose no new coal-fired plants to be built in the EU after 2020 without CCS
- Meanwhile, new coal-fired power plants be constructed ready for CCS retrofit
- Cooperate in worldwide partnerships on this timeline of implementing strategy

If agreed, this would imply CCS becoming standard for coal-fired power plants in the EU from 2020, so able to offer proven CCS technology globally from 2025 onwards. The CCS regulatory framework post-2012 includes providing incentives via EU ETS.

One or more CCS demonstration plants might be in China and/or India, supported by the EU strategy in the context of existing partnership agreement with the EU and UK. Also, cooperation on geological mapping of potential storage sites is being discussed.

A Globe partner Vattenfall is promoting Oxy-fuel technology for early demonstration of CCS through a pilot plant at Schwarze Pumpe power station in Germany, operating by end of 2008. Vattenfall's vision is to develop essentially CO<sub>2</sub>-free coal-fired power stations as commercially viable by 2020, with a value of CO<sub>2</sub> allowances at less than \$20/t, with a capture rate of 95% of CO<sub>2</sub> emitted, with better technology still to come.

## 7. US Clean Coal Power Initiative, Carbon Sequestration Leadership Forum

Several interrelated initiatives being guided by the US Department of Energy (DOE) are focusing on clean power from coal, and scope for CCS technology to minimise CO<sub>2</sub> emissions. In particular, the Carbon Sequestration Leadership Forum (CSLF) is an international initiative, launched by the USA in June 2003, which was then endorsed by the G8 Group in July 2007, as part of the Gleneagles Plan of Action on Climate Change, Clean Energy and Sustainable Development.

Of three projects supported by DOE in the second round of clean coal power projects in 2004, two major projects aimed to demonstrate advanced IGCC technology. The third round of projects is focusing on developing CCS technology, and/or beneficial re-use of

CO<sub>2</sub>. In December 2007, DOE announced \$67m support for a large-scale CCS project to demonstrate safe, permanent storage of 1mt CO<sub>2</sub> at a site in Illinois.

On 4 February, as part of the 2009 budget proposed by President Bush, there would be a restructuring of support to demonstrate CCS technology. Instead of funding nearly  $\frac{3}{4}$  of the cost of a single demonstration project, US DOE's new budget would allocate \$156m to several facilities to help them demonstrate just the CCS component of power plants, with \$86m also proposed as an allocation to its Clean Coal Initiative.

#### **8. Western Australia Clean Coal Project, Launched by BP and Rio Tinto**

In May 2007, BP and Rio Tinto announced a feasibility study to plan a A\$1.5bn clean coal-fired power station, with integrated carbon capture and storage, to be based at BP Kwinana refinery in Western Australia. The plant will produce H<sub>2</sub> to generate power, capturing and permanently storing 90%, or 4mtpa of CO<sub>2</sub> produced, from about 2014.

The joint venture announcement made clear this power plant fuelled by H<sub>2</sub> will need both supportive policies and appropriate regulatory regime to help cover higher costs.

#### **9. Barriers to Deploying CCS Technology, and How to Overcome Them**

Major obstacles to deploying CCS technology are lack of demonstrating it so far on a full scale, and the efficiency losses implied, especially for the energy-intensive step of CO<sub>2</sub> separation. The latter issue will be of particular importance for economies with a rapidly increasing demand for power where both timing and efficiency will be critical.

The overall efficiency of pulverised coal combustion plants is crucially dependant on pressure and temperature of the steam cycle related to the critical point at which water turns to steam without boiling. Supercritical technology, of 40-45% energy efficiency, has become the norm for new plants in OECD countries, and increasingly so in China.

Supercritical plants are also planned in India. Ultra-supercritical technology now used in Japan, Germany and Denmark, is aiming to push overall efficiencies to above 50%.

But, IEA assesses current CCS technology as reducing a plant's thermal efficiency by at least 8-12% points, increasing fuel consumption, as well as substantially increasing investment costs /kW. Addition of CCS equipment significantly increases the capital cost for all coal technologies, in order to produce the same power at lower efficiency, with the estimated extra cost range increased from \$1,500-2,000 to \$2,000-3,500/kW.

Thermal efficiency should increase and capital cost decrease as CCS technology is developed, but both are likely to remain issues, especially for developing economies.

This underlines a need for economic incentives to implement CCS technology, which will depend on signals from global or local carbon prices, or other market mechanism.

IEA has estimated typical costs of CCS in power plants ranging from \$30-90/t CO<sub>2</sub> captured for most efficient technology, with retrofitting CCS equipment much higher. Adding transport and storage costs, it estimates \$50/t CO<sub>2</sub> as lowest cost achievable, with potential to reduce this to below \$25/t by 2030 under most favourable conditions.

It must be emphasised that such low cost numbers assume a favourable combination of technology development and efficiency improvement that is far from being proved.

This could put market incentives needed in the range of expected carbon prices, once CCS technology has been sufficiently developed and applied at full scale, also with support from implementation of transport and storage infrastructure for CO<sub>2</sub> captured.

It is clear, therefore, that demonstration and early implementation of CCS technology will need more support from authorities than application of carbon price mechanisms. Financial support will be particularly important to demonstrate CCS technology also in developing countries, so that early experience and capacity building can take place.

In particular, authorities will have a crucial role in authorising, implementing and assuring infrastructure for CO<sub>2</sub> transport and storage needed for CCS technology to be implemented sufficiently widely to achieve the mitigation impacts that will be needed.

A critical issue in achieving emissions reductions CCS technology can contribute will be whether coal-based power plants now being commissioned will be retrofitted later, and at what potential economic and efficiency costs that could influence that decision.

Coal-based plants typically have at least 40 year operating lives, so investments now being made are likely to be contributing still to the burden of CO<sub>2</sub> emissions in 2050.

In May 2007, IEA reported a study on CO<sub>2</sub> capture ready plants by E.ON-UK, Doosan Babcock and Imperial College London. This study of feasibility and action concluded:

- Retrofit options and potential pre-investment should be considered at planning
- Key issues are allowing sufficient space and access for extra facilities needed
- Economics of pre-investment will be improved by an intention to retrofit early
- Logistics for transport and secure storage of CO<sub>2</sub> captured should be identified

Overall, economics of retrofit can be critically dependent on the time before retrofit, time taken to implement and interruption caused by retrofit, and relative performance before and after retrofit, which will all play into the economics of choices made about pre-investments needed to ensure the power plant can be considered capture ready.

This means that any global strategy for mitigating CO<sub>2</sub> emissions that will depend on retrofitting CCS will need to critically pre-assess these economic and logistical issues.

## **10. Scope to Extend CCS Technology Beyond Power Production**

Some energy-intensive industry sectors combine both advantages and disadvantages, compared with the power sector, in terms of implementing CCS technology. Factors that need to be taken into account in choosing where to focus CO<sub>2</sub> mitigation include:

- Contribution of a sector to global GHG emissions and mitigation opportunities
- Efficiency separating CO<sub>2</sub>, that depends on concentration in separation stream
- Vulnerability of the sector products to global market competition and imports
- Ability of the sector to pass through extra cost of CCS to its market customers.

Cement manufacture produces flue gas with double the CO<sub>2</sub> concentration from coal-fuelled power production, so would significantly improve efficiency of CO<sub>2</sub> capture. But, cement has a relatively low added value for an energy-intensive product, limiting ability to recover cost in the market, though cement is less open to global competition.

But, steel and aluminium are much more open to global competition, as are chemicals, though in a more complex global market place. Paper and pulp are in an intermediate position in terms of global competition and ability to pass through costs to the market.

Crucial steps in making CCS technology economic in energy intensive sectors will be instruments to limit CO<sub>2</sub> emissions from that sector, so CCS becomes a viable option.

## **11. Intellectual Property Rights as a Barrier to CCS Technology?**

Intellectual property rights (IPR) are essential parts of rewarding, and so encouraging, technological innovation, and are protected in international trade through WTO rules. Where major investments are made in emerging and developing economies as joint ventures, IPR will normally be integrated as a normal part of a joint venture contract. In this case, IPR will hardly be a barrier; rather it will become part of the partnership.

Where equipment is purchased incorporating more advanced technology, the purchase price will cover use of the technology for that immediate purpose, with IPR protecting further exploitation and development of that technology. Our concern here is whether IPR might form a barrier to rapid diffusion of CCS as essential mitigation technology. The potential barrier is that part of the cost of CCS technology that should reward its development and innovation. This potential barrier can be reduced by an international technology fund, set up to reward innovation directly, or indirectly via the purchaser.

In the particular case of CCS technology, developed countries will be supporting the development and demonstration of the technologies needed, and this should be taken into account in the levels of remuneration appropriate for the IPR of CCS technology. An important choice will be whether CCS technology is first proved in the developed countries, before being offered to emerging and developing economies in commercial form. In view of urgent need for CCS to be widely deployed to mitigate emissions, it will be very appropriate for demonstration projects to provide early experience across the range of economies that will need it, to build confidence in use of this technology.

IEA WEO 2007 suggests that CCS will be particularly important for China and India, because of their rapidly increasing demand for energy and also likely reliance on coal.

**Anexo XII**  
**Combating Climate Change: An International Cooperation Framework**  
**Beyond 2012**  
**final version, 29<sup>th</sup> June 2008**

**1. Introduction**

This paper was commissioned at the GLOBE G8+5 legislators' meeting in the US Senate, Washington DC, in February 2007. It reflects discussion with G8+5 legislators and business leaders and draws on much existing work including the Pew Centre on Global Climate Change's Pocantico Dialogue<sup>59</sup> and on BASIC's "Sao Paolo" proposal. This latest revision takes into account the outcomes of COP13/MOP3 at Bali in December 2007, specifically the Bali Action Plan<sup>60</sup>. The paper is set out in four sections: first the principles that might underpin a post-2012 framework; second the possible elements that such a framework might include; third other international processes; and finally a section on next steps.

**CLAUSE PARAMOUNT**

It is a Clause Paramount of this document that the world can and must maintain human economic development and stabilise atmospheric greenhouse gases at a level that avoids dangerous climate change, informed by robust science; and that these twin objectives can and must be achieved through commitments or actions to increase carbon productivity<sup>61</sup> – the amount of wealth produced per tonne of CO2 equivalent emitted - that recognise the principle of common but differentiated responsibilities.

**2. Principles for a post-2012 framework**

There are a number of key principles that should underpin an international post-2012 framework, involving all countries:

**2.1 Common But Differentiated Responsibilities**

The G8 + 5 together account for 73% of current global greenhouse gas emissions. Further efforts by all of these countries are essential: developed countries should continue to take the lead in reducing greenhouse gas emissions in absolute terms, whilst developing countries should take actions to control their greenhouse gas emissions within the framework of sustainable development.

**2.2 Equity** – agreement on a post-2012 framework on climate change will be possible only if each participating country believes it to be equitable. This assessment is ultimately political but each country will judge equity in terms it believes it can defend both to its own people and to the global community. A post-2012 framework must recognize current, historical and per capita emissions of greenhouse gases, and the differing economic circumstances of developed and developing countries.

**2.3 Flexibility** – a post-2012 framework should accommodate different national strategies and circumstances.

**2.4 Urgency** – action is urgently needed to strengthen resilience to the adverse effects of a changing climate, achieve immediate cost-effective emission reductions and assist

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<sup>59</sup> See [www.pewclimate.org](http://www.pewclimate.org)

<sup>60</sup> For the full text of the Bali Action Plan, see [http://unfccc.int/files/meetings/cop\\_13/application/pdf/cp\\_bali\\_act\\_p.pdf](http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_act_p.pdf)

<sup>61</sup> See "The Carbon Productivity Challenge," McKinsey Global Institute (2008), [www.mckinsey.com/mgi](http://www.mckinsey.com/mgi)



development and deployment of breakthrough technologies to achieve deeper reductions in the future.

**2.5 Sustainable Development** – there need be no incompatibility between actions that serve development goals, including the Millennium Development Goals, and actions to combat climate change. Climate change should be addressed within the framework of sustainable development to seek economic development and poverty reduction and change the unsustainable pattern of consumption to harmonise economic growth and environmental protection. Developed countries should provide increased financial assistance and transfer technologies to developing countries to help the latter to contribute towards the objective of the UNFCCC.

**2.6 Adaptation** – the world is already experiencing the effects of climate change resulting from historical emissions of greenhouse gases. These impacts are falling most heavily on those least able to cope. Mechanisms are needed urgently to assist all countries, in particular the poorest, to adapt to climate change. Adaptation should, therefore, be given equal priority to mitigation in climate change discussions.

### **3. Possible elements**

Taking into account the principles outlined above, the following elements should form the basis of a post-2012 framework that would enjoy broad support from the international community.

#### **3.1 Long Term Climate Stabilisation**

We need to strengthen the way we implement the ultimate objective of the UNFCCC – to achieve the stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. This should be achieved within a timeframe sufficient to safeguard ecosystems, biodiversity, food production and economic development; and to give all sectors of society sufficient confidence to move towards a low carbon economy.

An agreed understanding of an ambitious long-term stabilisation level ought to be used to guide emission reductions, based on the principle of common but differentiated responsibility. Such an agreed level should be expressed in terms of a temperature target, concentration of greenhouse gases in the atmosphere or in terms of global emissions reductions, supported by medium term goals. The long-term stabilisation level should be based on the latest scientific evidence from the IPCC. Legislators from most G8 and +5 countries believe that a global reduction of at least 50% from 1990 levels by 2050 will be required.

However, a lack of such an agreed understanding on a global stabilisation level should not prevent developed countries from undertaking ambitious emission reductions targets. Similarly, developing countries must continue to take nationally appropriate actions within the framework of sustainable development.

#### **3.2 Adaptation**

Enhancing efforts to address adaptation in all countries should be a central component of a post-2012 framework and should be given equal priority to mitigation. However, we should recognise that the impacts of climate change will fall most heavily on those countries least able to cope on their own. Therefore industrialised countries should provide additional assistance to developing countries to help them adapt to climate change. The gap between available funds (cUSD37 million per year via the levy on the CDM to supply

the Adaptation Fund) and the estimated funding required (cUSD28-67 billion<sup>62</sup>) for developing countries to adapt to climate change is stark. Policies should be taken forward in three main areas: under the UNFCCC (eg measures to increase the contributions to the Adaptation Fund); ensuring climate change and disaster risk are taken fully into account in determining development aid; and through “climate insurance” eg committing stable additional funding for an international response fund and to support insurance-type approaches to reduce the risk of climate-related losses (see GLOBE’s Adaptation Working Group recommendations for more detail).

### **3.3 Creation of a global carbon market**

The private sector, as well as the public sector, will deliver many of the low carbon technologies, products and services required to tackle climate change. The most efficient and powerful way to stimulate private and public investment in research, development and deployment of low carbon technologies is to adopt policies establishing a market value for greenhouse gas emissions in the long term. A post-2012 framework should learn from the experience of the Kyoto mechanisms to strengthen the CDM; and should aim to link the EU’s Emissions Trading Scheme (EU ETS) with planned schemes in the US, Australia and elsewhere, with the overall aim of creating a global carbon market, including broader participation and the involvement of more sectors. Many countries will find other mechanisms such as taxation and mandatory measures appropriate for sectors such as transport or construction.

### **3.4 Commitments and Actions**

Action to combat climate change must take account of the circumstances of economies at different stages of development, recognising the need for economic growth and access to energy to alleviate poverty. But climate change is a global issue that should be addressed by the joint efforts of all members of the international community in line with their capabilities and historical responsibilities. In addition, but not as an alternative to binding emissions reduction targets for developed countries, it is important to explore the potential of sectoral approaches as a tool to implement emission reductions commitments or actions and to facilitate technology transfer.

#### **3.4.1 Commitments for developed countries (and other willing countries)**

Binding, ambitious absolute emission reductions for developed countries must form a central part of a post-2012 framework. These commitments should take into account all net emissions and should include an aggregate reduction target of between 25 and 40 per cent below 1990 levels by 2020 and at least 60-80 per cent below 1990 levels by 2050. Hard targets create demand in the carbon market, providing incentives for innovation and investment into low carbon energy sources, products and services. Developed countries should also provide financial assistance and technology transfer, in a measurable, reportable and verifiable manner, to developing countries to enable the latter’s efforts to mitigate and adapt to climate change.

#### **3.4.2 Actions for developing economies**

A post-2012 framework should support and encourage equitable contributions from developing economies. Such contributions should include nationally appropriate mitigation actions in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable

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<sup>62</sup> According to the UNFCCC: see [http://unfccc.int/files/meetings/dialogue/application/pdf/070828\\_smith.pdf](http://unfccc.int/files/meetings/dialogue/application/pdf/070828_smith.pdf)

manner. Such actions could include incentives to reduce deforestation and strengthen other carbon sinks, sustainable development policies and measures and “no-lose” emission reduction policies.

### 3.4.3 **Timeframe**

To increase confidence in low carbon investment, reduce risk and remove the need for substantial new negotiations every 5 years, there should be an automatic annual extension of commitments for developed countries, in line with the agreed understanding of a long term stabilisation level, and medium term targets, with formal compliance at 5 year intervals. Legislators from most G8 and +5 countries suggest that a 5-yearly compliance review could include a review of national circumstances to determine whether commitments and actions for all countries should be further enhanced.

### 3.5 **Research, Development and Deployment of Technology**

The aim of the measures outlined above is to drive the research, development, diffusion and deployment of the technology that is essential for combating climate change. The International Energy Agency estimates that, under business as usual, CO<sub>2</sub> emissions will be two and a half times the current levels by 2050. But the IEA’s work also demonstrates that by employing technologies that already exist, such as renewable energy, and developing new technologies such as carbon capture and storage, the world can be put onto a more sustainable path. For some countries, nuclear will play a role, taking into account security and proliferation concerns. A post-2012 framework should:

- provide incentives to at least double global financial support for Research and Development;
- create a **new technology fund** to support deployment of existing technologies, including renewables ,and capacity building in the developing world, respecting Intellectual Property Rights;
- promote technology transfer via market mechanisms such as the Clean Development Mechanism;
- support the development and deployment of new technologies, including carbon capture and storage (CCS), to reduce the emissions associated with burning fossil fuels;
- promote increased international cooperation on energy efficiency technologies, public procurement, buildings, products and appliances.

### 3.6 **Extending participation beyond national governments**

A post-2012 framework ought to promote the participation of specific sectors whose emissions cross international boundaries (eg **international aviation and maritime**) in accordance with the principles of the UNFCCC.

### 3.7 **Strategies for reducing deforestation**

Action on deforestation, which is responsible for around 20 per cent of global emissions of greenhouse gases, will be an essential part of the framework. In managing their natural resources sustainably, tropical forested countries have much to gain from potential market mechanisms that deliver a tangible transfer of funds for standing forests. Such market mechanisms should be part of a broader approach to the development of payment for ecosystem services. A necessary first step to delivering genuine forest carbon credits must be based on an increased focus on supporting the sovereign legal framework of each of the forest producing countries. This should lead to further efforts to address unsustainable

timber harvesting and result in a forest sector that operates with effective governance and transparency. The private sector should be supported in the transition from progressive timber companies to sustainable forest management companies. In addition measures developed in the GLOBE Yoshino/Gardiner paper on illegal logging should be supported, including the introduction of a global system for recognising and reinforcing the license schemes for legal timber established by source countries and other legislative and market measures.

#### **4. Other international processes**

Where it can be supportive of a post-2012 framework, climate change should be considered as a factor in other international processes within the principles of the UNFCCC.

#### **5. Next Steps**

Achieving the objectives set out in the Bali Action Plan will be a difficult task, requiring great political will from all countries. In order for such an agreement to be possible, the right political conditions must be created between now and the deadline for agreement. It is therefore essential that legislators from all of the major countries promote: the urgency and seriousness of the issue; the political framework needed to combat climate change, as outlined in this paper; and the level of ambition that must be associated with this framework in order to meet the ultimate objective of the UNFCCC – to avoid dangerous climate change.

The following steps should be taken between now and Copenhagen 2009:

- G8 Summit, Japan, summer 2008: G8 governments inject further momentum to the negotiations.
- Third meeting of the post-2012 negotiations, Ghana, August/September 2008
- COP 14, Poznan, Poland, Dec 2008: negotiations enter final phase
- G8 Summit, Italy, summer 2009: G8 governments send a clear signal about the core elements of a post-2012 framework and that negotiations must be completed at COP 15, Dec 2009.
- COP 15, Copenhagen, Dec 2009: completion of negotiations on a comprehensive post-2012 framework.