PBL Netherlands Environmental Assessment Agency

FORKS IN THE ROAD

ALTERNATIVE ROUTES FOR INTERNATIONAL CLIMATE POLICIES AND THEIR IMPLICATIONS FOR THE NETHERLANDS

POLICY STUDIES

Forks in the Road

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Alternative Routes for International Climate Policies and their implications for the Netherlands

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Forks in the Road. Alternative Routes for International Climate Policies and their Implications for the Netherlands

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Preface

Environmental policies over the past forty years have managed to solve many problems that we were facing. Soil, water and air in the Netherlands, Europe and elsewhere have become much cleaner than they were before. Environmental regulations that are in place today will manage and reduce further pollution in the future.

Nevertheless, several remaining environmental problems on a global scale have proven difficult to solve. A very substantial reduction in resource use and environmental pressure will be necessary to solve these problems. This will require innovation and new technologies as well as changes in production and demand patterns within societies, on an unprecedented scale.

The huge challenge of environmental innovation on a global scale will not only require cooperation between societies worldwide, but will also involve tapping the energy of citizens, civil society and businesses on national, regional and local scales. Connecting these levels to form a web of policies and activities that will be able to turn today's environmental problems into new opportunities for businesses and more pleasant living conditions for citizens will require new steering philosophies that go beyond the top-down and bottom-up approaches of the past.

The debate about such steering philosophies has only just begun in recent years. With the report *The Energetic Society. In Search for a Steering Philosophy for a Clean Economy*, the PBL Netherlands Environmental Assessment Agency recently has contributed to the discussion in the Netherlands. This report, 'Forks in the Road', builds on this debate by focusing specifically on international climate policies. It investigates and tries to structure the wealth of ideas about the future of international climate policies that have been launched in recent years, and discusses the potential relevance of these ideas to international climate strategies for the Netherlands. We hope you will enjoy reading this report and will take part in the search for appropriate environmental policies of the future.

Prof. dr. Maarten Hajer

Director of the PBL Netherlands Environmental Assessment Agency

Contents

Dutch summary / Nederlandse samenvatting

In de afgelopen jaren zijn er veel hervormingen of 'alternatieve routes' voor het internationale klimaatbeleid voorgesteld, in reactie op de voor velen te langzame voortgang in de klimaatonderhandelingen. Bij deze voorstellen kunnen drie 'hoofdroutes' worden onderscheiden: (1) routes die hervormingen binnen het bestaande United Nations Framework Convention on Climate Change (UNFCCC) voorstellen; (2) routes die een afname van de uitstoot van broeikasgassen voornamelijk willen bereiken via organisaties buiten de UNFCCC om; en (3) zogenoemde *reframing routes*, waarbij het klimaatbeleid op zich niet langer centraal staat, maar juist meelift met andere beleidsgebieden, zoals 'groene groei', luchtbeleid of biodiversiteitsbeleid. Elk van deze hoofdroutes bestaat uit een aantal subroutes, met eigen kenmerken.

De conclusie van dit rapport is dat elk van de voorgestelde 'alternatieve routes' specifieke voordelen kan hebben wat betreft maatschappelijk draagvlak voor een reductie van de uitstoot van broeikasgassen. Niet een van deze routes heeft tot dusver een dusdanige vorm of draagvlak bereikt dat deze een substituut zou kunnen zijn voor klimaatonderhandelingen onder de UNFCCC. De voorgestelde alternatieve routes moeten daarom vooral worden gezien als aanvullingen op de klimaatonderhandelingen die op nationaal niveau kunnen worden ondersteund om een verdere afname van de uitstoot te bereiken.

De ontwikkeling van alternatieve routes suggereert dat het internationale klimaatbeleid in de toekomst onderdeel kan worden van een breder maatschappelijk debat waarin onderwerpen als biodiversiteit, luchtkwaliteit en nationale economische ontwikkeling een grotere rol gaan spelen. Daarbovenop kunnen de verbindingen met voorzieningszekerheid, werkgelegenheid, innovatie en kansen voor het bedrijfsleven van groter belang worden. Dat betekent dat 'klimaat' als beleidsonderwerp institutioneel meer ingebed raakt in niet primair milieugerichte beleidsdomeinen, zoals buitenlandse zaken en het economisch beleid. Ook houdt dat in dat andere actoren, zoals het bedrijfsleven en de samenleving, een grotere rol kunnen spelen dan voorheen.

De UNFCCC slaagt er op dit moment waarschijnlijk niet in een langetermijn-, bindend klimaatverdrag op te stellen, en de eerdere focus hierop is vervangen door een aanpak waarin vrijwillige emissiereducties door landen centraal staan. Voor wat betreft die rol en de verdere institutionele ontwikkeling van het internationale klimaatbeleid onderscheidt het rapport drie scenario's:

1. Een scenario 'Diversity Rules', waarin de huidige status-quo van de internationale klimaatonderhandelingen gehandhaafd blijft. Er vindt in dit scenario een langzame maar gestage voortgang plaats in de onderhandelingen in UNFCCC-verband. Hervormingen binnen de UNFCCC vinden stapje voor stapje plaats, andere multilaterale instituties waar klimaat besproken wordt dienen vooral als aanvulling op de UNFCCC. Verbindingen met andere milieuthema's op internationaal vlak blijven ad-hoc.
2. Een scenario 'De Facto Implosion', waarin de onderhandelingen instorten bijvoorbeeld omdat een belangrijke partij er uitstapt. In dat geval zal het relatieve belang van multilaterale organisaties waarin deelcoalities op klimaatgebied besproken worden en van reframing routes sterk toenemen. Het internationale klimaatbeleid wordt in dit geval sterk gefragmenteerd.
3. Een scenario 'Climate Umbrella', waarin verschillende internationale milieuthema's met elkaar verbonden worden onder een multilaterale institutionele paraplu. Klimaat kan hierin het verbindende thema worden, waarbij de UNFCCC zich kan ontwikkelen tot een clearing-house en internationaal beleidsbepalende organisatie. Dat gaat gepaard met grote interne hervormingen binnen de UNFCCC. Ook kan 'reframing' de overhand krijgen en kunnen verbindingen plaatsvinden onder een ander overkoepelend thema, zoals 'groene groei'. In het laatste geval zal de rol van de UNFCCC beperkter zijn en zullen de belangrijkste beleidslijnen op internationaal milieugebied elders worden uitgezet.

Mogelijke reacties van Nederland op elk van deze scenario's hangen af van de mate waarin klimaatbeleid op nationaal niveau als beleidsprioriteit wordt gezien. Een hoge prioriteit zou vertaald kunnen worden in een actieve rol van Nederland in verschillende 'coalitions of the willing' (ambitieuzer klimaatbeleid met een beperkte groep landen of op sectoraal niveau). Ook zou Nederland in dat geval een actieve rol kunnen spelen in het verbinden van verschillende milieuthema's op

multilateraal niveau, met daarbij een belangrijke rol voor klimaat. In het geval dat klimaatbeleid nationaal minder prioriteit heeft, kan klimaatbeleid meer worden vormgegeven via reframing routes waarbij reductie van broeikasgasemissies een co-benefit is. Kansrijke routes die verschillende maatschappelijke doelen voor Nederland kunnen verenigen zijn dan vooral: verbetering luchtkwaliteit en bescherming van de ozonlaag (gezondheid, filevorming, leefkwaliteit in steden, landbouw), voorzieningszekerheid (efficiënter gebruik van grondstoffen, innovatie), groene groei (innovatie, werkgelegenheid, kansen voor het bedrijfsleven) en klimaatinitiatieven op sub-nationaal niveau (gebruik maken van maatschappelijke dynamiek).

FINDINGS

Forks in the Road

Summary

In recent years many 'alternative routes' for international climate policies have emerged or have been suggested in response to a perceived too slow progress in the climate negotiations. In these proposals, three general pathways can be identified. One of these pathways proposes institutional reforms within the United Nations Framework Convention on Climate Change (UNFCCC). The second pathway contains emission reduction initiatives proposed by institutions outside the UNFCCC, and the third are so-called 'reframing routes' that focus on a different main policy topic but have greenhouse gas emission reductions as a co-benefit. Each of these general pathways can be subdivided into various sub-routes.

It is concluded that each of these 'alternative routes' offers specific advantages in terms of increasing societal support for greenhouse gas emission reductions or in reducing the complexity of multilateral negotiations. However, none of these routes, if followed in isolation, seem to have the potential to become a substitute for the UNFCCC negotiations, at this point in time. They should, therefore, be regarded as useful complements to, rather than substitutes for the international climate negotiations under the UNFCCC, which can be supported on national levels to achieve further progress in greenhouse gas emission reductions.

The development of alternative routes could be a signal that future international climate policies are becoming part of a broader societal debate in which non-climate factors, such as biodiversity, air quality and economic development will play an important role. In addition, the linkages with a secure supply of resources, employment, innovation and business opportunities are likely to become increasingly important. This could also imply that climate as a policy topic will become institutionally more embedded in other policy domains beyond the environment, such as foreign policy and economic policy, and that other actors in future climate policies will become more important, including businesses, non-governmental organisations and civil society.

Progress on a long-term, legally binding agreement in within the UNFCCC seems complicated, at this stage, and the focus on this route has been replaced by an approach of 'pledge and review'. What the exact future of the UNFCCC will be in this context remains to be seen. Taking into account the development of 'alternative routes' for international climate policies as discussed in this report, three scenarios for future institutional development of international climate policies and the role of the UNFCCC herein seem possible:

1. A 'Diversity Rules' scenario, in which the status quo of the climate negotiations is extrapolated into the foreseeable future as a continuous slow progress within the UNFCCC negotiations. Reforms within the UNFCCC in this scenario are incremental, other multilateral institutions, in particular those for which climate is a topic, serve as preparatory bodies for the UNFCCC, and links to other international environmental policy topics remain incidental;
2. A 'De Facto Implosion' scenario, in which the negotiations collapse; for example, following an important party's pull out. In such a case, the importance of reframing routes and multilateral routes in which partial climate coalitions are discussed ('coalitions of the willing') would increase. International climate policies would become more fragmented and the relative importance of other international environmental themes other than climate would rise;

3. A 'Climate Umbrella' scenario, where various international environmental policy topics will become more closely connected under one institutional umbrella. Climate can become the central connecting theme in such a scenario, with the UNFCCC as a clearing house for various environmental policies related to climate change. This will entail major internal reforms at the UNFCCC. Alternatively, 'reframing' of climate policies could become dominant. As a result, a closer integration of international environmental policy topics could be realised under a reframing route, such as 'green growth'. In that case, the role of the UNFCCC would be more limited and crucial international policy lines would be set out elsewhere.

Possible responses by the Netherlands to each of these scenarios would depend on the degree to which climate change as a policy topic is considered to be a priority area in the Netherlands. Awarding climate change a high priority as a policy topic could cause the Netherlands to take on an active role in climate coalitions of the willing (limited groups of ambitious countries; sectoral approach) and in creating a multilateral framework connecting various topics centred on climate. If other policy topics would be considered more important, national climate policies could still be pursued by increasing ambitions regarding alternative routes where climate change mitigation is a co-benefit. The alternative routes could combine several benefits for the Netherlands, particularly those related to air quality and ozone layer protection (health, traffic congestion, urban quality of life); security of supply (more efficient use of resources; innovation); green growth (innovation, opportunities for Dutch business) and non-state climate initiatives (activating support for climate policies within civil society).

General

- International climate policies have been coordinated by the United Nations Framework Convention on Climate Change (UNFCCC) since 1992. The theoretical reasons for a multilateral coordination of international climate policies (environmental effectiveness, cost reductions, climate as a global public good) still apply today. However, the complexity of the negotiations and differing interests of countries, in actual practice, has led to a pace of progress in emission reductions worldwide that by many is perceived as too slow.
- As a result, in recent years, many proposals and initiatives have been launched for alternative 'routes' to those of the current international climate negotiations that aim at improvements either inside or outside the UNFCCC process, with the overarching goal to improve societal support for international greenhouse gas emission reductions. Also, some alternative routes have emerged that have an influence on greenhouse gas emissions without taking climate policies as a focal point. For this report, first we categorised these alternative routes, followed by an assessment of their feasibility internationally, and finally we assessed them on their potential relevance to future Dutch international climate strategies.
- This report identifies three general pathways containing these alternative routes. In two of these pathways, climate remains the central policy topic, whereas in the third this it is not the case. These three pathways are:
  i. *Institutional pathways within the UNFCCC* - Proposals for procedural reforms within the UNFCCC process;
  ii. *Institutional pathways outside the UNFCCC* - Routes that seek progress in international climate policies via institutions or forums outside the UNFCCC;
  iii. *Reframing pathways* - Routes in which progress in international climate policies is primarily sought through a change in mindset, either regarding emission reductions as an spin-off or co-benefit of other policies, or seeing them as part of a larger policy approach directed at multiple criteria, such as economic growth and innovation, security of supply, poverty, biodiversity and air quality.

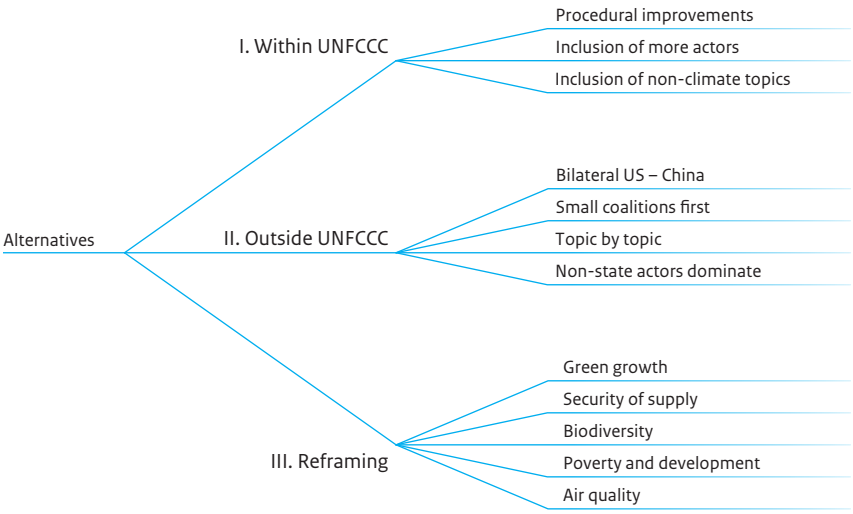
  Time frames of the proposed alternative routes are generally implicit. They all concern the post-2012 context (post-Kyoto), seem to aim at implementation as soon as possible – with the likeliness of such rapid implementation varying, depending on the degree of radicalness of each proposal. All of these alternative routes are likely to have consequences in the medium (2020) to long term (2050).
- Figure 1 shows the results of an inventory of existing or 'mainstream' routes and frames and alternative routes suggested. The proposals include approaches for mitigation as well as adaptation. In the following sections, the proposed alternative routes will be described in more detail, starting with an assessment of the status quo of 'mainstream' developments.

Alternative institutional routes within UNFCCC

- The mainstream route that is currently developing within the UNFCCC is that of national pledges, a 'bottom-up' approach to international climate policies in which each country is free to make its own contribution to emission reductions without a binding agreement or multilateral control and review mechanisms that could result in sanctions in the case of non-compliance.

Figure 1

Schematic of suggested alternative routes for international climate policies



- Proposed alternative routes are often based on specific arrangements in other multilateral processes that are regarded as successful. Often mentioned as an example of a successful multilateral agreement from which lessons have to be learned is the Montreal Protocol on Substances that Deplete the Ozone Layer. For example, the relationship between framework and protocol within the Montreal Protocol or its financing mechanism, are institutional arrangements that have been suggested for implementation also in the UNFCCC negotiations.
- Proposed reforms often have a procedural character and vary from very small to substantial. Examples of smaller adaptations are capacity building and increased transparency of formal and informal sessions. The major procedural reforms that have been suggested include a switch to majority voting for certain topics, or even further reaching, a new distribution of responsibilities over various organisations involved (e.g. UNFCCC, World Bank, IPCC), leaving a more limited role for the UNFCCC.
- Sometimes proposals are based on the suggested inclusion of more actors into the negotiations, such as businesses or civil society. Business involvement, in particular, is discussed since a major part of the finance for climate policies has to come from the private sector. Also suggested is a closer involvement of businesses in the technology mechanism to be established.
- Similar to the way that Russia was persuaded to ratify the Kyoto Protocol, it is also suggested that the possibilities for 'horse-trading' be examined in more detail, that is, broadening the UNFCCC negotiations to non-climate topics in order to increase the number of bargaining chips. These non-climate-related 'chips' – according to some parties – could include access of countries to the Security Council, agreements about currency exchange rates as well as other trade issues.
- Main advantages and disadvantages of some prominent suggested alternative routes within the UNFCCC negotiations are listed in Table 1.

Alternative institutional routes outside UNFCCC

- The most important existing 'mainstream' routes outside the UNFCCC context that have developed over recent years were the Major Economies Forum (MEF), the Asia Pacific Pact (APP) and the G8/G20 process. Of these routes, the APP terminated its activities in 2011. There are marked differences in the nature and degree of distance to the UNFCCC process between these existing routes[1].
- Suggested institutional alternative routes outside the UNFCCC, generally, are based on partial approaches, that is, they intend to make a start with smaller coalitions or less topics, in the hope of this leading to a more comprehensive approach in the future.
- Four general directions of these partial approaches are:
  - Partial coalitions ('coalitions of the willing', 'poly-centric approach', 'multistage regime'): starting with a limited number of parties with the possibility to include more parties at a later stage;

Table 1
Main advantages and disadvantages of alternative routes within the UNFCCC

	Main advantages	Main disadvantages
Procedural reforms, e.g. qualified majority voting	Potential to facilitate decision making; assumed efficiency increase by reduction in the number of actors	Criteria for what constitutes a 'qualified majority' difficult to agree on because of underlying different interests
Inclusion of more parties in the negotiations, e.g. businesses, civil society	Business and civil society as important stakeholders directly involved; Better representation of key stakeholders	Even more complex negotiations; Sectoral agreements so far have not worked; bureaucracy
Further broadening the discussion in the UNFCCC beyond climate, e.g. trade	Options for 'horse-trading' between several topics	Even more complex negotiations; lack of focus; bureaucracy

Table 2
Main advantages and disadvantages of alternative routes outside the UNFCCC negotiations

	Main advantages	Main disadvantages
Coalitions of the willing	Those nations pursuing ambitious climate action can proceed without being slowed down by 'less willing' parties	Ambitious action not 'automatically' followed by others
Topic by topic	Tailor-made approach possible for clearly outlined sectoral business coalitions	Seems only possible for a limited number of well-organised sectors with a limited number of actors
Coalitions of non-state actors	Using momentum for action within societies	Progress and expansion might be difficult if not supported on a national level
Bilateral agreements	If main adversaries (e.g. the US and China) reach agreement, others may follow	Other parties might feel excluded

  - Partial treatment of topics ('topic by topic', 'building blocks', 'orchestra of treaties'): starting with a limited number of topics or sectors with the possibility to include more topics at a later stage;
  - Coalitions of non-state actors, such as businesses or civil society: starting with non-state actors with the possibility to include also nations at a later stage;
  - Bilateral leadership of the United States and China as main emitters.
- Main advantages and disadvantages of prominent suggested alternative routes outside the UNFCCC negotiations are listed in Table 2.

Reframing routes

- The existing, dominant mindset within the UNFCCC negotiations is that of climate change effects. Negotiations aim to offer a solution to environmental problems of presumed (geophysical, economic, political) adverse effects of climate change in the future. However, opinions about causes and preferred solutions differ largely between countries and also between various groups of actors within countries. Similar differences in assumptions about the nature of problems and about preferred solutions can be found in 'reframing routes', in which greenhouse gas emission reductions occur rather as a co-benefit of other policies.
- The main reframing routes identified in this report are those of green growth, security of supply, biodiversity, poverty and development, and improving air quality and protecting the ozone layer (Table 3). Greenhouse gas emission reductions in these routes could be obtained by decoupling economic growth from emissions increases (green growth); by efficiency measures, increased exploration of resources or substitution (security of supply); reducing emissions from land use and deforestation (biodiversity); reducing inequality (poverty and development), and by applying end-of-pipe and structural measures in industry and transport (improving air quality and protecting the ozone layer).
- The reframing routes also have institutional consequences. Instead of the UNFCCC as the forum for greenhouse gas emission reductions, the main multilateral forums making decisions that would affect greenhouse gas emissions would be, for instance: UNCSD, UNEP and/or OECD for Green Growth; IEA, IEF and/or IRENA for Security of Supply; CBD and/or FAO for Biodiversity; UNDP for Poverty and Development; UNECE/LRTAP Gothenburg Protocol for Air Quality; Vienna Convention / Montreal Protocol for Protection of the Ozone Layer; and the WHO for health-related issues.

Table 3
Main advantages and disadvantages of reframing routes for greenhouse gas emission reductions

	Main drivers	Additional drivers	Potential disadvantages
Green Growth	Supposed comparative economic advantages of 'green' innovations	Economic growth; opportunities for businesses	Definition still unclear, leaving room for many different interpretations, each with its own environmental consequences
Security of Supply	Concerns about resource scarcity	Concerns in OECD about non-OECD countries; about terrorism	Definition still unclear, leaving room for many different interpretations of the concept, each with its own environmental consequences
Biodiversity	Concerns about nature, flora, fauna, tipping points	Ecosystem services, dependence of the poor on ecosystem services	Strength as a mobilising concept? Indicators as yet to be agreed on
Poverty and Development	Care for the poorest and economic development in developing countries	Trade relations with developing countries	Similar North-South differences of interest as in the climate issue
Air Quality and Protection of the Ozone Layer	Local air quality; health (air quality and ozone)	Congestion; quality of life; recreation (air quality)	Some air polluting substances contribute to climate cooling

Assessment of alternative routes

- The main alternative routes as shown in Figure 1 have been assessed on criteria, such as environmental effectiveness (contribution towards a two-degree climate target; measurable, reportable and verifiable), institutional effectiveness (contribution to multilateral decision making) and legitimacy / societal support (likeliness of support by most countries; likeliness of support by businesses and civil society)[2]. Table 4 presents an assessment summary. In addition, Table 5 shows an assessment of co-benefits of the suggested reframing routes.
- Assessment of the examined alternative routes has shown all to have specific advantages, but none of the routes score positive on all criteria applied. In addition, some of the routes consist of various concrete policy measures that may have either a positive or a negative effect on climate. For example, security of supply may lead to resource efficiency with a positive impact on climate, or to more coal power plants as a substitute for gas, which would have a negative climate impact.

Main overall conclusions from the assessment are:

- International climate policies in the future, more so than before, seem to become part of a broader societal debate in which not only various sustainability goals, such as biodiversity, air quality and poverty, will play a role, but also various socio-economic considerations, including security of supply of resources, employment and innovation, and opportunities for business. Climate change seems likely to move from a discussion mainly involving greenhouse gas emission reductions at the lowest possible costs, to a far more complicated multicriteria assessment in which several factors of a very different nature will have to be weighted politically. Furthermore, such a political assessment will have to take into account not only geopolitical developments affecting comparative advantages of countries, but also the fact that other actors, such as businesses and civil society, in the future, will play an increasingly important role in the development of international climate policies.
- The overall picture of the development of alternative routes suggests that all these routes may play a role in mobilising societal support for future climate change policies. Individually, none of these routes seem able to replace the present multilateral negotiations under the UNFCCC. Most of the suggested alternative routes explicitly aim to come to some kind of multilateral agreement in the future, and hence may be considered as feeding into the UNFCCC negotiations, rather than intending to replace them. Even more so, the mere existence of multilateral negotiations on climate change, such as the UNFCCC, may provide legitimation for the development of alternative routes elsewhere, as this is an indication of the international community, at the very least, recognising climate change as an international problem that has to be dealt with.
- For the near future, a binding agreement on emission reductions by all countries seems very improbable. A further development of international climate policies appears most likely to take place under the currently developing regime that builds on countries' voluntary pledges. Taking into account the current development of alternative routes, three scenarios of main directions

Table 4

Assessment of alternative routes according to the criteria of environmental effectiveness, institutional effectiveness and societal support

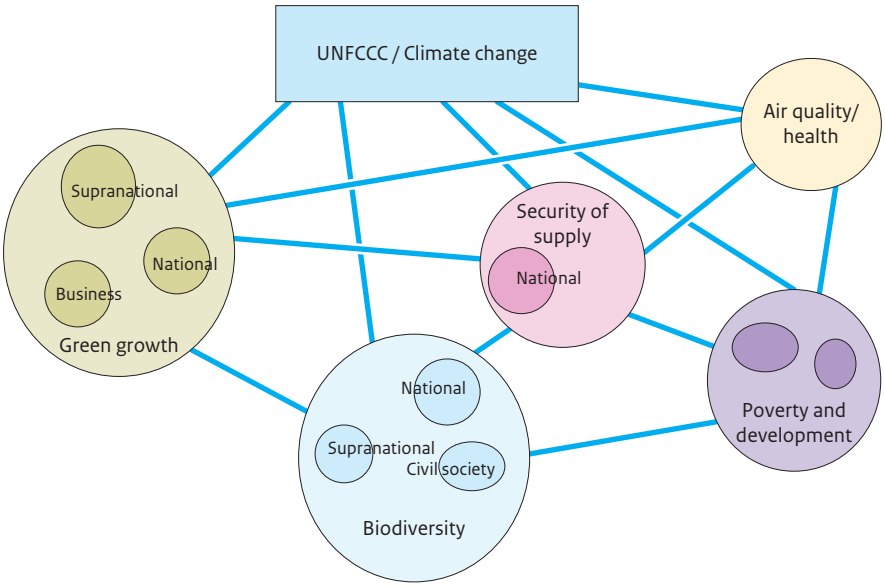
	Environmental effectiveness		Institutional effectiveness	Legitimacy / societal support	
	Two-degree target likely to be met?	**Contributing to measurable, reportable, verifiable emission reductions?**	**Facilitation of decision making / coalition building?**	**Likely to be supported by most countries?**	**Likely to be supported by civil society and businesses?**
Alternative routes within the UNFCCC					
Procedural reforms, e.g. majority voting	+ / -	+ /-	+	+ / -	+ / -
Inclusion of more parties, e.g. businesses	-	-	+ / -	+ / -	+
Inclusion of non-climate related topics	+ / -	+ / -	+	-	-
Alternative routes outside the UNFCCC					
Bilateral agreements	-	-	+	-	+ / -
Coalitions of the willing	+ / -	-	+	-	+ / -
Topic by topic	-	-	+	+ / -	+
Coalitions of non-state actors	-	-	+	+ / -	+
Reframing routes					
Green Growth	-	-	+ / -	+	+
Security of Supply	-	-	-	+ / -	+ / -
Biodiversity	+ / -	+ / -	+ / -	+ / -	+
Poverty and Development	+ / -	+ / -	+ / -	+ / -	+
Air Quality and Protection of the Ozone Layer	+ / -	+ / -	+ / -	+ / -	+

Table 5

Cross co-benefits of the reframing routes (0 = low expected direct impact)

	Impact on							
	Example	**National economy**	**Changes in energy use**	**Biodiversity**	**Global economic growth**	**Poverty**	**Air quality**	**Climate**
Green Growth	R&D innovation	+	+	0	+	+ / -	+	+ / -
Security of Supply	Coal plants, energy efficiency, renewable energy	+ / -	+ / -	0	+ / -	-	+ / -	+ / -
Biodiversity	Nature conservation	0	0	+	0	0	+	+ / -
Poverty and Development	Access to energy	-	+ / -	+ / -	+ / -	+	0	+ / -
Air Quality	End-of-pipe measures; structural measures	0	+ / -	0	0	0	+	+

Figure 2a
Diversity rules



for future international climate policies developing in the medium (2020) to long term (2050) seem feasible. These are:

1. *Diversity rules* – The status quo of the international climate negotiations is extrapolated into the foreseeable future. Capacity building and internal reforms within the UNFCCC proceed slowly, but do not lead to the major changes in procedures, for example, formal inclusion of other actors, such as businesses and civil society; a further pursuit of various initiatives with an impact on climate change (sectoral; coalitions of the willing, on national and sub-national levels); and implementation of policies that have emission reductions as co-benefits result in additional emission reductions. Other international organisations where climate is discussed mainly serve as preparatory forums for the UNFCCC, and do not result in multilateral coordination of alternative routes (Figure 2a).
2. *De Facto Implosion* – Slow progress in the climate negotiations, little belief in the urgency of the climate problem, and fundamental differences of opinion between countries, may lead one or more countries to fully withdraw from the negotiations, after which the multilateral climate negotiation system, in actual practice, will collapse, only to continue in a formal sense. In such a case, the importance of multilateral routes in which smaller climate coalitions ('coalitions of the willing') as well as reframing routes are likely to increase. International climate policies will become more fragmented and the relative importance of international environmental themes other than climate will rise (Figure 2b).
3. *Climate umbrella* – Under this scenario, various international environmental policy topics become more closely connected, fitting under one institutional umbrella. Climate becomes the central connecting theme in this scenario, with the UNFCCC as a clearing house for various environmental policies related to climate change. This would entail major internal reforms within the UNFCCC. Alternatively, a closer integration of international environmental policy topics could be realised under another reframing route, such as 'Green Growth'. In that case, the role of the UNFCCC would become limited, and crucial international policy lines would be set out elsewhere (Figure 2c).

- These scenarios all have different implications for the future development of the UNFCCC. In the first scenario, ad-hoc links between the UNFCCC and other multilateral bodies are likely, without a systematic mainstreaming of climate change into other international policy topics. In the second scenario, the UNFCCC is likely to proceed as a pro-forma multilateral body that will not be able to bring about any substantial international emission reductions. In the third scenario, the UNFCCC work will become part of a broader, integrated framework that includes all international policy issues that relate to climate change. Under the

Figure 2b
Climate implosion

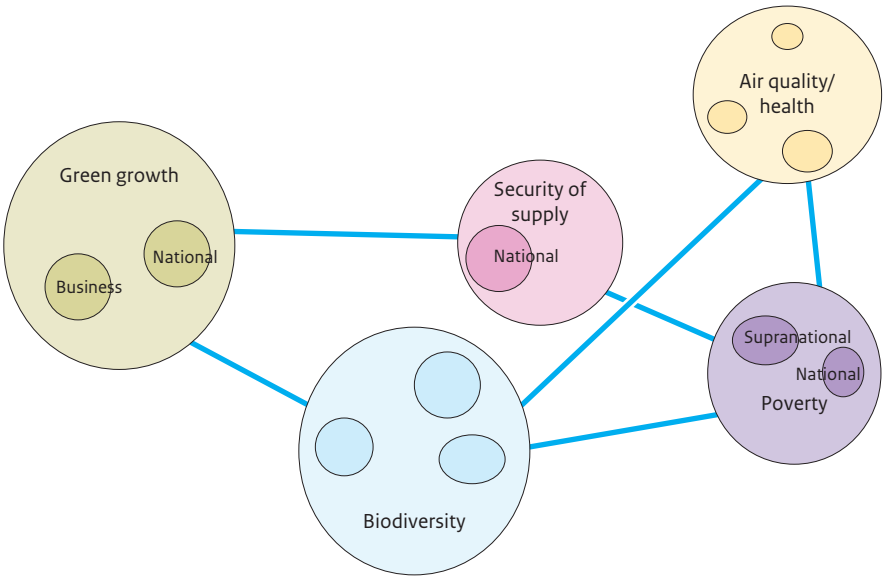
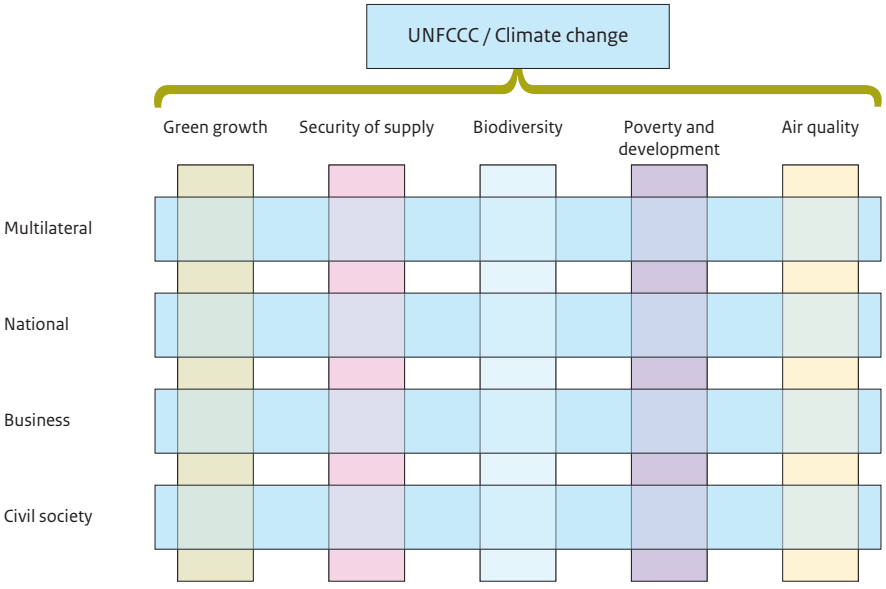


Figure 2c
Climate umbrella



last scenario, either UNFCCC will become the central coordinating body of international environmental policies related to climate, or coordination will take place elsewhere under another unifying theme, such as 'Green Growth', which would leave a more limited but still important role for the UNFCCC.

Relevance for the Netherlands

- Various strategies could be pursued by the Netherlands, in light of the possible developments in international climate policies and the alternative routes as outlined above (Table 6). Furthermore, the content

of such strategies would depend, particularly, on the degree of priority given to climate policies, compared to other policies on a national level. A high priority awarded to climate change as a policy topic could be translated into an active role of the Netherlands in climate-related coalitions of the willing (limited group of ambitious countries; sectoral approaches), and could create a multilateral framework connecting various related topics with a central role for climate. If other policy topics would be considered more important, climate policies could still be pursued by increasing ambitions in alternative routes of which climate change mitigation is a co-benefit.

- In each of the three scenarios, the Netherlands is likely to play its international role predominantly via the European Union. As one of the key proponents of international climate policies, in the 'diversity rules' scenario, the EU is likely to be part of a variety of coalitions of the willing. In the 'climate implosion' scenario, the EU will be increasingly isolated as one of the few remaining parties supporting active climate policies. And, finally, in the 'climate umbrella' scenario, the EU could play a role in establishing firm connections between various climate-related international policy fields.
- The alternative routes have also been assessed individually for their potential relevance for future international climate strategies of the Netherlands. This assessment has taken into account the following criteria: (i) potential impact of an alternative route on the Netherlands; (ii) influence of the Netherlands in the realisation of a certain alternative route; (iii) likely benefits within the Netherlands, in terms of innovation, health, quality of life, and opportunities for businesses and civil society. Overall, with respect to alternative routes *within the UNFCCC*, the direct impacts and the likely national benefits to the Netherlands are considered to be low. Examination of alternative routes *outside the UNFCCC* suggests that the Netherlands may exercise influence, if so desired, particularly in coalitions of the willing. In addition, some *reframing routes* (Green Growth, Security of Supply, Air Quality and Protection of the Ozone Layer) could provide non-climate benefits for the Netherlands.
- Routes that appear particularly promising to the Netherlands, based on this assessment, are those of Green Growth (innovation, opportunities for Dutch businesses), Security of Supply (more efficient use of resources; innovation); Air Quality and Protection of the (stratospheric) Ozone Layer (health, traffic congestion, urban quality of life); and non-state climate initiatives (activating support for climate policies in civil society). Reframing routes, including Biodiversity (increasing forest protection) and Poverty (raising incomes in developing countries), seem to have less direct benefits for the Netherlands.
- Implications of coherent strategies and measures for the Dutch Government regarding these alternative routes could be:

Green Growth
- Stimulation of North-West European networks; efficiency and renewables;
- Investigation of the potential of green growth for the Netherlands in terms of future employment and GDP;
- Focusing Dutch climate funds on the stimulation of Dutch (green) innovation capacities, instead of spending climate funds abroad (e.g. JI/CDM). In this way, also additional synergies with improvement of local air quality in the Netherlands could be obtained.

Security of Supply
- Contribute to an internationally accepted definition of security of supply and resource efficiency, with clear and measurable indicators;
- Stimulate the international debate about (energy) security of supply in the IEA and International Energy Forum (IEF);
- Stimulation of efficiency, renewables and nuclear energy under this concept (no coal or only coal with carbon capture and storage (CCS)); gas as a bridging fuel (with increasing CCS).

Initiatives by coalitions of non-state actors
- Stimulation and monitoring of initiatives by cities, businesses and NGOs;
- Removal of administrative barriers for these initiatives;
- Where necessary and possible, participation in PPS constructions to stimulate non-state initiatives.

Improving Air Quality and Protection of the Ozone Layer
- Engagement in stimulating international air quality targets;
- Inclusion of more substances under the ozone layer convention;
- More attention to air quality targets on a national level, as well as to attainment of targets at a local level;
- Promote structural and fuel shift measures above 'end-of-pipe' measures.

- For the future, a further close consideration and monitoring of the development of alternative routes in international climate policies appears useful. Emission reduction approaches as a singular policy topic could

be combined with approaches that score best in a multi-criteria societal cost-benefit analysis involving certain factors, such as innovation, security of supply, air quality and opportunities for businesses. This would imply a rethinking of one-dimensional least-cost approaches. Any of such approaches will also have to take into account that, in the future, it is unlikely that national government alone will be responsible for further development of international climate policies. Rather, society as a whole will have to take its responsibility. The theoretical reasons for seeking progress in international climate policies via the UNFCCC still apply. However, in the search for support for such policies, the 'road to Durban' or other UNFCCC cities is not a direct road, but one along which many forks appear ahead. At each one of these forks, the Netherlands has to decide which path would be the best way forward in order to arrive at the desired future destination.

Notes

[1] Coalitions such as 'BASIC' and 'G77' have been considered here as part of the UNFCCC process, rather than as alternative routes. The Cartagena Group, established in 2010, has been regarded as one of the 'new' alternative routes, as an example of a 'coalition of the willing'.

[2] Cost-efficiency was not included in the assessment, as it was considered very difficult to estimate for many of the routes.

FULL RESULTS

Introduction

1.1 Background

Current international climate policy (e.g. resulting from the UNFCCC climate convention, its Kyoto Protocol and related European and national policies) focuses on tackling climate change by setting global environmental targets accompanied by legally binding commitments from national governments. There are several underlying assumptions that have led to this approach:

- The climate is a global public good, the use of which is non-excludable and non-rivalrous. According to economic theory, global public cooperation therefore is the right approach to address global climate change (e.g. PBL, 2010b);
- Emission reductions by a limited group of countries, not representing the main part of international greenhouse gas emissions, will not be effective in reducing climate change to a maximum global temperature increase of two degrees Celsius as agreed, for example, in the 2009 Copenhagen Accord (UNEP, 2010);
- Reducing greenhouse gas emissions to levels that prevent dangerous anthropogenic interference with the climate system will require substantial efforts, associated with considerable costs. Lowest overall costs occur with the highest participation of countries (Hof et al., 2009).

The current approach in international climate policy fits in well with these assumptions; it ensures that, in negotiation processes between countries, the cost burden of climate policy (and climate change) is distributed fairly, also providing some certainty that countries will implement the policies that are agreed upon.

However, since the start of the UNFCCC process in 1992, progress in implementing this convention has been very slow. One may therefore question whether the current approach in international climate policy will prove to be sufficient to gain the international societal support needed for substantial greenhouse gas emission reductions in the future.
At the Copenhagen conference in 2009 no further agreement could be obtained other than a non-binding 'accord' with an annex containing a list of voluntary national emission reduction pledges. And although the damaged trust relationship between the parties in Copenhagen was partly restored at the Cancún conference one year later, it is very possible that a large gap will remain between the emission reductions needed to achieve the two-degree Celsius target and the reductions that are actually pledged by the various countries (UNEP, 2010).

Thus, it is not surprising that many adaptations and additions to international climate policies have been suggested and discussed in the literature in recent years, and have emerged in practice in initiatives worldwide on a variety of scales, from multilateral to sub-national, by a variety of parties. These theoretical adaptations and additions, together with emerging practical initiatives,

form a potentially very powerful patchwork of ideas from which future international climate policies may tap. However, as these ideas vary in intended impacts – from small suggested adaptations to the current UNFCCC framework to ambitious attempts to reframe mindsets about international climate policies as a whole – an order in this patchwork so far has been lacking.

This report, therefore, in the first place is an attempt to clarify the current discussion about alternative routes for international climate policies by making an inventory and taxonomy of suggested alternative routes. In the second place, the report seeks a practical application of this inventory through an ex-ante examination of potential 'alternative routes' for international climate policies. This examination is presented first in international context, followed by a discussion on potential alternative routes for international climate policies, on a national level, for future international climate strategies of the Netherlands.

In this way, the report contributes to the more general discussion about global environmental governance (cf. Biermann et al., 2010; Najam et al., 2006; Slingerland and Kok, 2011), as well as to the Dutch debate on a 'steering philosophy for a clean economy', initiated earlier this year by the PBL Netherlands Environmental Assessment Agency (PBL, 2011).

1.2 Objectives

The objectives of this project are threefold:

- To classify alternative routes that are suggested for international climate policies and, where possible, give an idea of potential quantitative consequences of these suggested routes;
- To examine these alternative routes for their potential contribution to international climate policies;
- To assess and discuss the alternative routes for their potential relevance to Dutch international climate strategies.

This report is aimed at Dutch and international policymakers, considering the future of international climate policies in a broader sustainability context. Rather than focusing on experts directly involved in the climate negotiations, this report was written for policymakers, politicians, and those members of the general public who do not require a detailed explanation of the complexity of the current climate negotiations in UNFCCC context, but who nevertheless are interested in the broader discussion on future international climate policies and/or their relevance to the Netherlands.

1.3 Method

The method applied in this report consists of two phases:

1. In the *inventory phase*, 'alternative routes' were collected by way of literature and web search, as well as through interviews with experts representing various actors in the Netherlands (in the field of policy, business and civil society). Results were used for classifying alternative routes. This classification was compared with the actual status quo of the climate discussion close to the UNFCCC negotiation circuit, by making an analysis of side events that were held at the Bonn climate negotiations from 6 to 17 June 2011, and by carrying out interviews with international experts at this meeting.
2. In the *assessment phase*, the main alternative routes found were scored based on the overall criteria of environmental effectivity, institutional effectivity and legitimacy/ societal support. An assessment was made based on expected main advantages and disadvantages of each proposal. Where possible, a quantitative idea of possible emission reduction effects of alternative routes was given. Finally, the overall feasibility of the proposals for international and Dutch climate policies was discussed.

1.4 Reader

Chapter 2 of this report briefly discusses the status quo of current UNFCCC negotiations and how the progress in these negotiations is perceived internationally. It suggests a basic taxonomy of alternative routes that have emerged in recent years and provides a quick scan of this classification compared with side events of the UNFCCC meeting in Bonn in June 2011. Chapters 3, 4 and 5 subsequently discuss the contents of the three main pillars of the suggested classification. Chapter 6 provides an overall assessment and discussion of the potential relevance of alternative routes to international climate policies. Finally, Chapter 7 discusses the potential relevance of alternative routes to future international climate strategies of the Netherlands.

TWO

Contribution of alternative routes

2.1 Status quo of current negotiations

Since 1992, the United Nations Framework Convention on Climate Change (UNFCCC) has been the main forum for international climate negotiations. In the years since then, several bifurcations have occurred in the institutional road of international climate policies. An important step was the ratification of the Kyoto Protocol in 1997, which proposed binding targets for the so-called Annex-I countries, but also introduced the use of international financial instruments. A major fork in the road of international climate policies occurred in 2001, when the United States decided against ratification of the Kyoto Protocol. Since that time, climate change negotiations take place along two separate tracks; those based on the 1992 Rio Convention, in which the United States participate, and those based on the 1997 Kyoto Protocol, in which the United States do not participate (Figure 2.1).

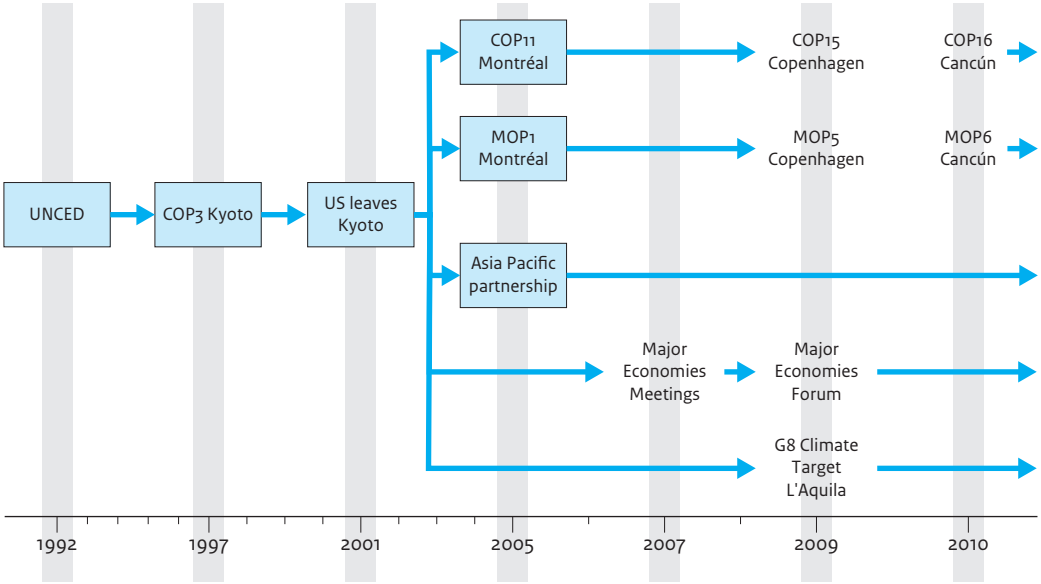
Other institutional routes at different distances to the official UNFCCC negotiation process have followed, over the years since 1997. In 2005, establishment of the Asia Pacific Partnership was formally announced, consisting of a group of countries cooperating on the development of new clean technologies, on a voluntary basis (APP, 2011). In 2007, 'Major Economies Meetings' of a group of large greenhouse gas emitting countries were initiated by the United States, which in 2009 gave way to the 'Major Economies Forum' (White House, 2007; MEF, 2011). In that year, the G8, the group of the world's leading economies, formally announced a global emission reduction target of 50%, and of 80% for developing countries, by 2050 (G8, 2009).

Within the UNFCCC process, at the 2009 Copenhagen climate conference, the 'Copenhagen Accord' was produced, an agreement that formally refers to the global climate change target of limiting temperature increases to two degrees Celsius, and invited countries to contribute to achieving this goal by pledging their own national emission targets (UNFCCC, 2010). In 2010, the Copenhagen Accord was worked out in more detail by the Cancún agreements. Decisions included the establishment of a Green Climate Fund, a Technology Mechanism and an Adaptation Framework (UNFCCC, 2010).

Up to 2011, a large number of countries submitted reduction targets or national mitigation plans, according to the 2009 Copenhagen Accord, which were subsequently incorporated by the UNFCCC in the Cancún Agreements Decisions of 2010. Almost all developed countries have pledged quantified economy-wide emission targets for 2020, and 44 developing countries have pledged mitigation actions. These pledges and mitigation actions have since become the basis for analysing the extent to which the global community is on track towards meeting the two-degree target, as outlined in the Copenhagen Accord.

The UNEP emissions gap report (UNEP, 2010) summarised the outcome of many different studies that have analysed

Figure 2.1
Main institutional routes of international climate policies, 1992 – 2010



the 2020 emission level that would result from the pledges (e.g. Den Elzen et al., 2011; Rogelj et al., 2010; Stern and Taylor, 2010; European Climate Foundation, 2010). The UNEP report concluded that 'it is estimated that, in order to have a likely chance (over 66%) of limiting global mean temperature increase to 2 °C, annual greenhouse gas emissions need to stay around 44 Gt CO_2 eq, by 2020'. Under a business-as-usual scenario, annual emissions of greenhouse gases are estimated to reach a level of around 56 Gt CO_2 eq by 2020. Fully implementing the pledges and intentions associated with the Copenhagen Accord could, at best, cut emissions to around 49 Gt CO_2 eq by 2020. This would leave a gap of around 5 Gt CO_2 eq, which needs to be bridged over the coming decade. In the worst case interpretation of the pledges as identified in the report – where countries follow their lowest ambitions and accounting rules set by negotiators are lax rather than strict – emissions could be as high as 53 Gt CO_2 eq by 2020, which is only slightly lower than in business-as-usual projections.

New international climate negotiations under the UNFCCC will take place in a meeting in Durban, at the end of 2011. A fundamental question for that meeting, next to many other questions in a large number of sub-areas, will be: To what extent could the 'emissions gap' be closed between the sum of national emission reduction pledges, on one hand, and the emission reductions needed for a two-degree Celsius scenario, on the other.

2.2 A glass half full or half empty?

The results from the Copenhagen Climate Conference in 2009 were received with disappointment by many (cf. Kleine-Brockhoff, 2009; Alessi et al., 2010; Massai, 2010). However, a normative judgement of the status quo of international climate negotiations under the UNFCCC very much depends on the criteria applied.

On the one hand, there is a large and difficult-to-close gap between current pledges and the two-degree target (UNEP, 2010). Also, the international financial crisis and continuing geopolitical conflicts of interest between countries may well substantially impede further progress in emission reduction agreements at the 2011 UNFCCC conference in Durban and beyond (Box 2.1). On the other hand, the international negotiation process continues to make incremental progress in many areas, and almost all countries worldwide now adhere to this process. In addition, the commitment of countries in the UNFCCC process to a climate change target of no more than two degrees Celsius may be seen as an important step forward.

Some of the 'alternative routes' for international climate policies that have emerged in recent years certainly will have been inspired by the idea that the glass of the current international climate negotiations is mostly half empty. Whatever normative judgement is made about the current status-quo of the UNFCCC climate

Text box 2.1 Some underlying conflicts of interest between countries affecting progress in international climate policies

- **Who is in control?** The emerging international political role of BASIC / BRICS
- **Who pays, who receives?** The North–South conflict regarding equity and development
- **What is internal, what external?** Multilateral control versus national sovereignty
- **Who is negatively affected by climate solutions?** The role of the fossil-fuel producing countries

Definition of alternative routes for international climate policies

All those ideas, proposals, policies and initiatives aiming to contribute, or contributing in actual practice, directly or indirectly, to greenhouse gas emission reductions on an international level.

negotiations, in light of the current emissions gap, the consideration that 'the glass would need to be fuller' to meet the politically agreed target of two degrees Celsius certainly holds.

2.3 A taxonomy of alternative routes

In order to classify the suggested 'alternative routes' for international climate policy, we first made an inventory of these routes. Proposed alternatives to the present status quo of the international UNFCCC climate negotiations were examined using literature and web search, as well as via interviews and analyses of side events to the UNFCCC negotiations during the Bonn meeting of 6 to 17 June 2011.

A large variety of proposals was found in scientific journals, including a special edition of Climate Policy dedicated to the steps following Copenhagen (Dubash and Rajamani, 2010), a collection of over 100 post-Cancùn analyses (Muñoz, 2011), a previous evaluation of alternative routes made by the VU University Amsterdam (Kuik et al., 2008), and on a variety of websites (e.g. Hertz, 2011; De Boer, 2011). Ideas about 'alternative routes' were also collected from a series of interviews with people from various backgrounds involved in climate discussions in the Netherlands (See the Appendix).

Much of the discussion about a future international climate regime currently takes place in the form of a supposed contrast between 'top-down' and 'bottom-up' approaches (Bodansky, 2010; Dubash and Rajamani, 2010). However, this dichotomy only partly reflects the variety between alternative routes proposed. Based on the inventory made for this report, three main alternative routes were found for proposals and initiatives (Figure 2.2).

These are:

1. *Institutional routes within UNFCCC:* Alternative routes primarily directed at reform within the UNFCCC process;
2. *Institutional routes outside UNFCCC:* Alternative routes directed at reform via institutions other than the UNFCCC;
3. *Reframing routes:* Alternative routes aimed at policy objectives other than climate change, but potentially having emission reduction as a co-benefit.

Each of these routes was found to consist of several sub-routes.

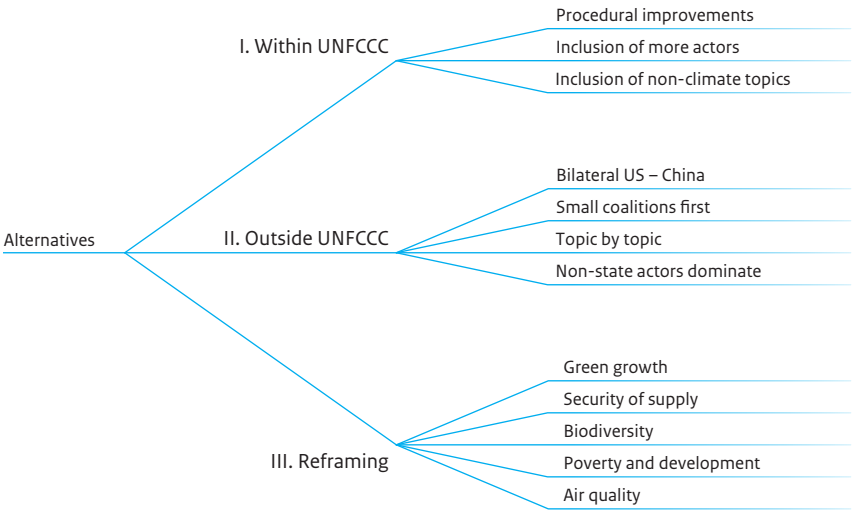
Institutional routes within the UNFCCC were found to consist mainly of a variety of procedural reforms. Sometimes these reforms entailed including other actors, such as civil society or business, in the climate negotiations. And in some cases reforms called for more topics to be included in the negotiations.

Institutional routes outside the UNFCCC were found to consist primarily of ideas and actions concerning various types of 'coalitions of the willing', formed by nations, using 'topic-by-topic' or sectoral approaches, involving a frontrunner role to be performed by a coalition of the United States and China, or international coalitions of non-state actors such as NGOs, businesses, cities and municipalities.

Reframing routes were found to consist of various policies centring mainly on the topics of green growth, security of supply, biodiversity, poverty and air quality.

In the following chapters, these routes are discussed in more detail.

Figure 2.2
Schematic of suggested alternative routes for international climate policies



2.4 The taxonomy tested: Alternative routes and UNFCCC side events

To illustrate the most recent status quo of the discussion about alternative routes, an analysis was made of topics and contents of the side events held during the UNFCCC climate negotiations of 6 to 17 June 2011 in Bonn. Our underlying assumption was that these side events often would reflect the main actual discussions on climate change held in the negotiations circuit.

Table 2.1 shows the main topics of the side events that were held in Bonn. The table shows the clear priorities regarding alternative routes in the scientific circuit close to the negotiations. Out of a total of 129 side events, 22 were on biodiversity and related topics, 14 on finance and 12 on capacity building. Another 16 events had topics related to various alternative routes identified (worked out in more detail in Table 2.2).

The analysis of side events shows that the difference between the three main alternative routes in the previous section within this circuit holds, in many cases. For instance, this report identifies biodiversity as one of the potential reframing routes, as it is a topic of international debate at CBD conferences, and new decisions around this topic were made at the most recent CBD conference, in Nagoya. As such, it is therefore a topic that stands on its own, also outside the climate circuit.
However, Table 2.1 shows that biodiversity and related subjects, such as agriculture, REDD+ and land use, currently, are also topics that stand out among the side events, which also points to a strong link with the UNFCCC negotiations themselves.
Similarly, discussions about emissions from aviation and shipping may be seen as topic-by-topic approaches outside the UNFCCC negotiations, as they are discussed in various institutions and forums, after which outcomes of such discussions are fed directly into the UNFCCC circuit.

Table 2.1
Topics of side events at the UNFCCC climate negotiations in Bonn, 6 to 17 June 2011

Topic	Number of events
Total*	129
Biodiversity, REDD, agriculture	22
Various alternative routes (Table 2.2)	16
Finance	14
Capacity building	12
Adaptation, general	8
CDM	6
Shipping / aviation	5
Air quality / health / ozone	5
Poverty / LDCs	4
Green growth	3
Other (e.g. status quo of pledges, renewables, country reports, technological cooperation, climate science developments)	43

* There is a certain overlap between topics

Table 2.2
Various alternative routes under discussion, represented as topics of side events during the Bonn climate negotiations, June 2011

	Name side event	Organiser	Route
1.	Local action leading global responses to climate change	ICLEI Local Governments for Sustainability	II sub-national
2.	The APP on the way to a low-carbon economy	CEPS	II existing
3.	Recapturing the Cancún momentum: New proposals for a post 2012 agreement and its market mechanisms	IGES	I
4.	Just transition in least developed countries	ITUC International Trade Union Confederation	III poverty
5.	From Cancún to Durban: CAN international views on operationalising agreements and filling the gaps	CAN international	I procedural
6.	Decision making in a changing climate	WRI	I
7.	Promoting civil society participation in climate governance	Transparency International	I inclusion of new actors
8.	False climate solutions increase hunger, pollution, biodiversity loss and land grabs	Econexus	III
9.	Governance for 100% renewable energy in cities and regions	HCU HafenCity University Hamburg	II sub-national
10.	Multilateral climate efforts beyond the UNFCCC	PEW Center	II
11.	Access to clean energy and green growth – key answers to the climate problem	Club de Madrid	III green growth, poverty
12.	Business perspectives on how the climate architecture should work	WBCSD	I inclusion new actors
13.	Key design elements of new market based mechanisms from an investors view	Liechtenstein	I
14.	Discussion on enhanced business engagement in the UNFCCC	ICC	I inclusion new actors
15.	Principles and challenges for the development of new market mechanisms	Environmental Defense Fund	I
16.	2050 Target: Fossils into the museum (plant-for-the-planet)	Global Marshall Plan Foundation	I

Nevertheless, the classification made in this report provides a basic distinction between alternative routes that is a useful basis for further discussion. The following chapters describe the assessment of these three main routes. Chapter 4 looks at proposed alternative routes within UNFCCC, Chapter 5 considers routes outside UNFCCC, and Chapter 6 discusses potential reframing routes. The final chapter discusses the relevance of the suggested alternative routes for international climate strategies for the Netherlands.

Institutional routes within UNFCCC

3.1 Current mainstream

In 2010, the main discussion within the UNFCCC about the architecture of a future climate regime focused on the question of whether this should be organised 'top-down' or 'bottom-up'; whether this would require a regime more resembling the current Kyoto Protocol approach, or one that is based on voluntary emission reduction contributions by countries (Dubash and Rajamani, 2010).

By mid-2011, the situation regarding the UNFCCC negotiations had shifted again. The meetings in Bangkok and Bonn failed to close the emissions gap (Höhne et al., 2011). In addition, they made very limited progress towards a legally binding structure for a future agreement. It seems, therefore, that the bottom-up 'pledges' approach is becoming the mainstream route for the international climate negotiations in the near future.

3.2 Alternative routes identified

Examining proposals and ideas directed at reforms within the UNFCCC negotiation process, three main sub-routes of such alternative routes were found:

1. Procedural reforms
2. Improved access to the negotiations for other actors
3. Broadening the UNFCCC with non-climate topics

These are discussed in more detail in the following sections.

3.2.1 Procedural reforms

The argumentation for proposed alternative routes addressing mainly procedural issues within the architecture of the UNFCCC regime follows several lines of reasoning. Their likely impact also varies from very small to very substantial.

Smaller proposed procedural reforms focus on particularly on capacity building for delegates from developing countries. By making certain changes to the procedures regarding meetings, for example, by having more translations and video broadcasting, the role of these delegates – who are often under-represented, compared to those from industrialised countries – could be strengthened (cf. 350.org, 2011). At the Bonn meeting in June 2011, many of such attempts were seen in the side-events circuit (see Chapter 2).

Procedural reforms are also suggested by Müller (2011), who particularly points to the need for legitimate representation in small negotiation groups involved in drafting negotiation texts (e.g. 'friends of the chair'), increased transparency at informal meetings, for instance through video broadcasts and providing documentation on these meetings, and a better political guidance for the high level segment, which should be limited to crunching key issues rather than getting involved into drafting texts.

Some further-reaching reform proposals aim to learn lessons from other multilateral processes. Winkler and Beaumont (2010), for instance, state the following:

'A mix of processes is needed to speed up the pace of decision making, combining well-established UN procedures with some innovative ideas including those from the theory and practice in other multilateral environmental agreements... e.g. the ***Stockholm Convention on Persistent Organic Pollutants*** *(procedures for country specific exemptions, carefully crafted relationship between the conference of the parties and the expert group, start with limited group of pollutants and addition of others in the future),* ***Rotterdam Convention on the Export of Hazardous Chemicals*** *(various creative modalities explored to unblock negotiations, including introducing voting procedures in the expert groups),* ***Montreal Protocol on substances that deplete the ozone layer*** *(political leaders took decisive action, despite scientific ambiguities, contribution of industry to research and assessment process).'*

The German Advisory Council on the Environment also states that features of the Vienna Convention for the Protection of the Ozone Layer and the associated Montreal Protocol should be regarded in the climate negotiations. In particular, the framework protocol relationship, the majority voting procedures and the establishment of a long-term financing mechanism are mentioned by the council (WBGU, 2010).[1]

Other suggested procedural reforms propose, for example, to focus on specific parts of the negotiations, leaving out the more difficult ones (Werksman, 2010): '... Instead, it is suggested that negotiators focus on strengthening the operation of the UNFCCC institutions and procedures designed to ensure the quality of data, harmonizing standards and policies, coordinating carbon markets, and reviewing the Parties' performance'. This is also in line with the ideas of Dai (2010), who stresses that it is not so much the progress that is important in the negotiation process, but rather the fact that the international community is negotiating: '... While scholars and policy-makers alike often look towards strong and powerful international institutions such as the IMF, the World Bank and the WTO for design inspiration, the majority of international institutions are those that in fact lack enforcement power. Despite these shortcomings, many of these institutions often influence national policies in a variety of indirect but effective ways. At the heart of these indirect mechanisms is the mobilization of domestic action...'

A completely different proposal, one that would have a very large impact on procedures and functioning of the UNFCCC process if implemented, is suggested by Busby (2010). He suggests a complete unravelling of functions of the existing global climate change institutions, in order to improve their performance: 'Global climate change institutions collectively need to perform five core functions to successfully reduce greenhouse gases and enhance the world's capacity to deal with the effects of climate change: 1) provide scientific information about the problem, causes, and likely consequences; 2) coordinate international policies, 3) mobilize and disperse finance and technology to support mitigation and adaptation; 4) monitor and evaluate compliance; 5) develop emissions-trading schemes compatible across regions and nations... For the UNFCCC process, this means incorporating more sites of deliberation.'

For the time being, the reform proposals have been shaped in the negotiations themselves; particularly in a proposal by Mexico and Papua New Guinea to introduce a 75% majority voting system. However, the proposal made in Bonn, in June 2011, is likely to face major hurdles according to Christiana Figueres, head of the UN Climate Change Secretariat (Lawrence, 2011).

Windows of opportunity

- Majority voting procedures;
- Improved capacity building of representatives;
- Better representation in all smaller 'text drafting' groups ('friends of the chair');
- More transparency of informal meetings;
- Better guidance of the high-level segment;
- Improved relationships between conference of the parties and expert committees;
- Institutional decoupling of functions;
- Focus on trust building, bottom-up approaches and the 'soft' power of the negotiation process.

3.2.2 Improved access for other actors to the negotiations

Environmental non-governmental organisations, traditionally, play an important role in the circuit around the UNFCCC negotiations. In recent years, however, the role of the business community has also become more pronounced. This is particularly the case as most of the USD 100 billion in annual contribution to the Green Climate Fund, as agreed on in Cancùn, has to come from the business community.

Former head of the UNFCCC secretariat, Yvo de Boer, now working for a private entity, therefore calls for a more formal access for the business community to the UNFCCC institutions (De Boer, 2011): 'It is a little odd that the private sector and financial institutions have no place at the table designing the Green Fund. (...). My sense is that if private sector finance is a significant part of the solution, then it should also have a significant say in how that solution is designed.'

In other parts of the negotiations, a closer cooperation with business also could be helpful. This concerns, in particular, the 'Technology Mechanism' to be erected, and rules for monitoring, reporting and verification to be designed. The International Chamber of Commerce, therefore, expects 'a closer cooperation with the private sector' by the UNFCCC, in the future (ICC, 2010). However, if such a more formal cooperation between the business community and the UNFCCC were to be acknowledged, for instance in the form of a consultative mechanism to be established, a similar arrangement for cooperation between UNFCCC and civil society seems likely.

Window of opportunity
- Support more formal consultative mechanisms in the UNFCCC process for businesses and NGOs.

3.2.3 Broadening the UNFCCC with non-climate topics

The idea of broadening the UNFCCC negotiations with non-climate issues partly has been derived from the way in which Russia acceded to the Kyoto Protocol in 2005, being influenced by a European offer to support Russian access to the WTO in the case of ratification. At the basis of this idea is the hypothesis that 'horse trading' between topics might help to realise a negotiators trick of, 'being unable to divide a cake, you have to make it bigger'. (Slingerland et al., 2008).

The vision that such 'horse trading' of topics beyond climate change is needed is worded, for instance, by Noreena Hertz, professor of globalisation, sustainability and finance at the Duisenberg school of finance (2011):

'Copenhagen was always bound to fail, partly – and this may sound strange at first – it is all about climate change. Although cuts in CO_2 emissions and agreement on funding and finance are necessary goals, the geopolitical reality is that climate change cannot be decoupled from trade or discussions on exchange rates, the IMF, reform of the UN, and so on. There is a quid pro quo that no one explicitly talks about but which must be addressed: trade-offs between these negotiations, not just within them. (...) This means taking the issue out of its current compartment and being realistic enough to understand that Brazil's position on cutting down rainforests, for instance, will be affected by whether or not it is given a seat in the UN Security Council. It means being sophisticated enough to understand that as long as China feels under pressure to stop propping up the renminbi, it is unlikely to deliver commitments on emission cuts. Widening the scope of the next round of negotiations so that much more can be used as bargaining chips would make the job of the negotiators considerably harder. But it would also give them considerably more to work with. In fact, there is no other way to prevent the process from remaining a zero-sum game.'

Other authors suggest that without broadening the negotiations, no solution can be found to the underlying North-South conflict that hampers the negotiations (Parks and Roberts, 2011): 'The climate negotiations must be broadened to include a range of seemingly unrelated development issues such as trade, investment, debt, and intellectual property rights agreements, since unchecked inequality undermines cooperation.' At this moment, however, a practical perspective on such a broadening of the climate negotiations is not at hand.

Window of opportunity
- Stimulate research into underlying drivers of the positions countries take regarding climate change, and into interconnections between various fields of international policy and climate change.

3.3 Main advantages and disadvantages of the routes

In the evaluation of the main advantages and disadvantages of the three different pathways of ideas for reform within the UNFCCC, several interesting features emerge (Table 3.1). Smaller procedural reforms that, for example, are aimed at capacity building, are likely to facilitate the negotiations and might be relatively easy to implement, but will not fundamentally change the course of the negotiations or lead to new breakthroughs. More fundamental procedural reforms, however, such as the introduction of majority voting or even an organisational redistribution of functions within the negotiations, will be very difficult for countries to agree on; as such decisions will meet with the same differences of interest between countries that exist within the current negotiations.

The second route for institutional reforms within the UNFCCC, the more formal inclusion of actors such as businesses and NGOs, would lead to a better representation of those that will be responsible for an important part of the actions required to achieve emission reductions. For example, it seems very unlikely that substantial funds may be obtained from the business community in contributions to the Climate Fund without their ability to take part in decisions regarding this fund. Nevertheless, their inclusion in the negotiations would again increase the number of opinions and visions that

Table 3.1
Main advantages and disadvantages of alternative institutional routes within UNFCCC

	Main advantages	Main disadvantages
Procedural reforms, e.g. qualified majority voting	Potential to facilitate decision making; assumed efficiency increase by a reduction in the number of actors	Criteria for what constitutes a 'qualified majority' are difficult to agree on because of underlying different interests
Inclusion of more parties in the negotiations, e.g. businesses, civil society	Business and civil society as one of the important stakeholders directly involved; Better representation of key stakeholders	Even more complex negotiations; Sectoral agreements, so far, have not worked; bureaucracy; also potentially may involve inclusion of parties who would frustrate the negotiations
Broadening the discussion in the UNFCCC beyond climate, e.g. incl. trade	Options for 'horse-trading' between several topics might emerge	Even more complex negotiations; lack of focus; bureaucracy

have to be taken into account for any decisions to be taken. Also, sectoral agreements by businesses, so far, have not led to fundamentally new pathways for emission reductions – something which does not bode well for businesses' ability to agree on substantial emission reductions needed in the future.

Expanding on the topics in the UNFCCC negotiations in a top-down manner, finally, seems to be a fairly hypothetical option at this moment. Complexity and bureaucracy of the negotiations would further increase. However, considering 'horse-trading options' may provide heads of state with additional room to manoeuvre in the final stages of striking a 'grand deal' on climate change.

Note

[1] The Montreal Protocol is also interesting for other reasons. It not only serves as an example to the UNFCCC procedures for its architectural features, but the Protocol itself also has greenhouse gas emission effects (see Chapter 5).

Institutional routes outside UNFCCC

4.1 Current mainstream

After the decision by the United States not to ratify the Kyoto Protocol in 2001, several multilateral institutional routes addressing climate change, parallel to the UNFCCC circuit, were developed, in actual practice. The distance of these routes to the UNFCCC varies. Routes include, for instance, the Asia Pacific Partnership (APP) – in which the United States, China and several other countries seek cooperation in low-carbon technology development – and the Major Economies Forum (MEF), an informal discussion platform of a group of countries with high emissions. The APP initially seemed to be intended as an alternative to the UNFCCC negotiations, but was not able to develop substantial momentum over the years. It formally came to an end in April 2011, with participants stating that 'data collection, MRV, best practices, performance diagnosis, and capacity building' were the most successful projects of the APP (CEPS, 2011). The MEF has a much closer relationship with the UNFCCC, functioning as a forum for informal discussion by a group of countries, mainly running parallel to the negotiations.

Another multilateral forum that has set a quantitative target regarding climate change is the G8, where leaders in 2009 for the first time supported the two-degree climate target that was later also entered into the Copenhagen Accord, in an agreement to reduce emissions by 80%, up to 2050. Climate change has further been a topic of discussion at G20 meetings, although without the formulation of any new targets. More recently, the 'Cartagena dialogue' evolved as a discussion forum for countries aiming at more ambitious emission reductions.

4.2 Alternative routes identified

In an analysis of alternative institutional routes outside the UNFCCC, four main directions for such routes were identified. These routes all have in common that they are based on 'partial approaches', that is, they start with smaller fractions of the problem or with smaller coalitions of actors, and intend to build on these activities to trigger more comprehensive solutions later.

Identified routes are:

- *Partial coalitions*, starting with a limited number of countries to include more countries at a later stage;
- *Topic-by-topic approaches*, starting with a limited number of topics, or including a limited number of sectors, to be expanded at a later stage;
- *Bilateral agreements between the United States and China*, starting with cooperation and trust building between the main emitters United States and China, to include more countries at a later stage;
- *Coalitions of non-state actors*, such as cities, businesses and civil society, starting with voluntary action with the often implicit idea to contribute to more comprehensive emission reductions on national or multilateral levels.

These routes are discussed in the following sections.

4.2.1 Partial coalitions

Several reasons have been presented why attention of international climate policy should shift towards smaller coalitions, or 'coalitions of the willing'. Giddens (2009) states that '...There is no reason why coalitions of the willing should not be formed to pursue activities approved or condoned by most of the world community, but where a small proportion of the states need to be in the vanguard'. Winkler and Beaumont (2010) point to some more detailed reasons for a focus on smaller coalitions: '... smaller fora could have a more focused scope of discussion and treat the issues more in-depth. Limiting the number of participants allows for freer exchanges. (...). Twenty-five countries account for 83 percent of global greenhouse gas emissions, 71 percent of global population, and 86 percent of global income...'. In addition, Ostrom (2010) notes that 'polycentric approaches [smaller coalitions of countries and topic-based approaches] facilitate achieving benefits at multiple scales as well as experimentation and learning from experience with diverse policies'.

Most authors also stress that the suggested focus on smaller coalitions has to be seen as a way to help the UNFCCC forward, and not as replacement of these negotiations. Tangens and Hasselknippe in 2005 already saw a 'multistage regime' evolving: '... The differentiation of rights and duties likely in a bilateral context could over time transmute into the UNFCCC and one might see a multistage regime evolving. In the beginning any bilateral agreements linking national trading schemes will probably be established outside the UNFCCC. However, when such negotiations move forward and include more actors it could become a multilateral agreement that would co-exist with the UNFCCC, and help to define the caps under future protocols to the UNFCCC' (Tangen and Hasselknippe, 2005).

The Major Economies Forum, involving all major greenhouse gas emitting countries, and the Cartagena Group/Dialogue for Progressive Action are examples of this approach that have emerged in actual practice.

Window of opportunity

- Further dialogue and trust building between parties in discussion forums with a small number of parties, also examining opportunities for collective action outside these forums.

4.2.2 Topic-by-topic approaches

Another institutional approach to climate action outside the UNFCCC would be to separate the multitude of issues discussed in the climate negotiations into single topics, discussing them one by one. Examples of such an approach, suggesting to establish an 'Orchestra of Treaties' and a 'Building Blocks approach' are outlined by Sugiyama and Stinton (2010) and Falkner et al. (2010), respectively:

'...This scenario captures the dynamics that emerge when multiple efforts are pursued by flexible coordination of actors motivated through diverse incentives. The emerging regime, the Orchestra of Treaties, will consist of four building blocks, of which three grow outside of UNFCCC: 1) A group of Emission Markets begins with separate domestic markets without internationally imposed emission targets; 2) A 'Zero Emission Technology Treaty' addresses long-term technological change; 3) A 'Climate-wise Development Treaty' addresses the concerns of developing countries, which are development, adaptation, technological transfer and mitigation; 4) UNFCCC will serve as an information exchange arena, target funding *mechanism and a political focal point...'(Sugiyama and Stinton, 2010).*

'Fundamental to a building blocks approach is the recognition that, given the prevailing interests and power

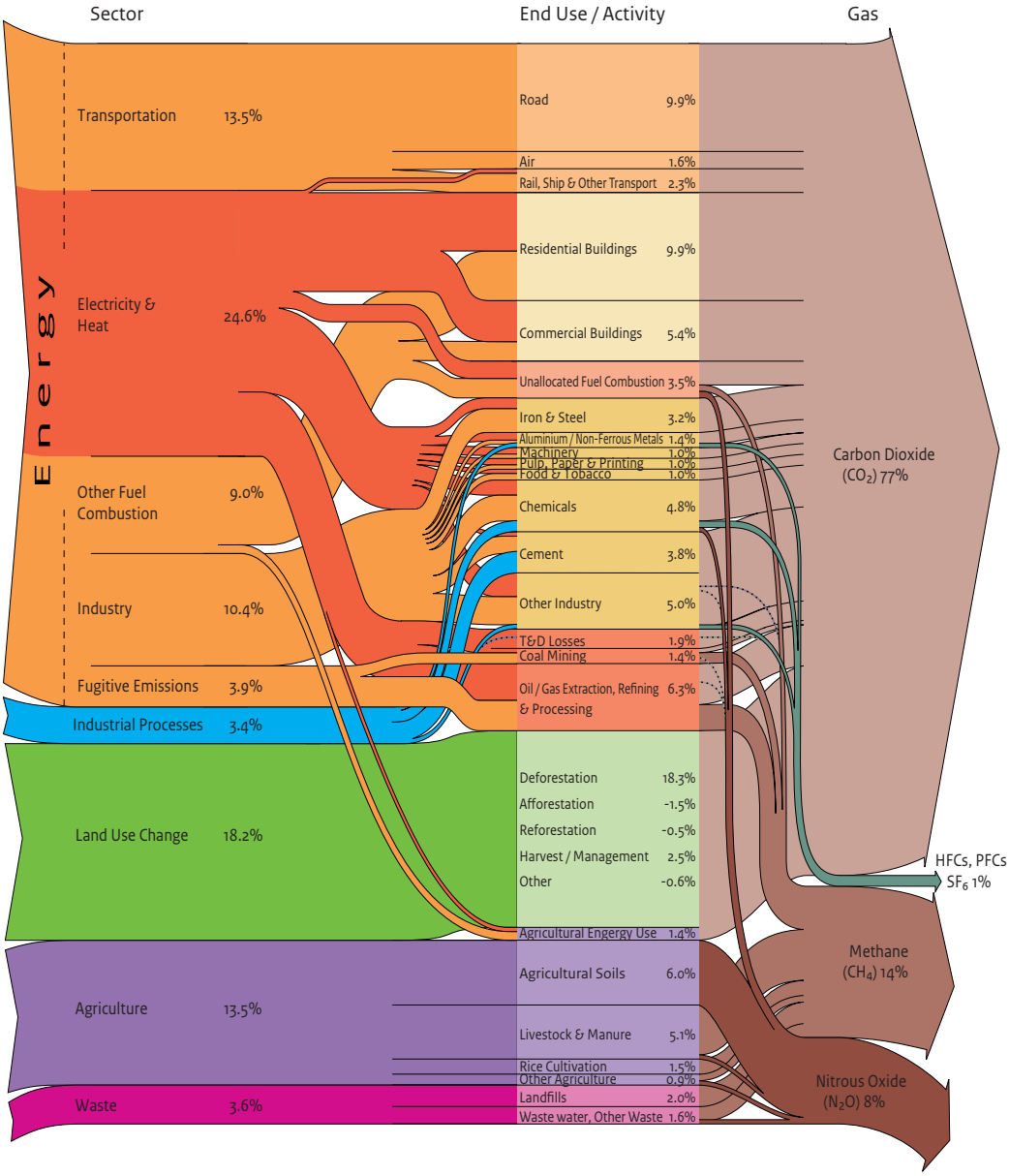
The Cartagena Group as a coalition of the willing

Participants to the Cartagena Group include developing countries (e.g. Costa Rica, Ethiopia, Indonesia), small island states (e.g. Marshall Islands, Samoa) and industrialised countries (e.g. Australia, New Zealand, several EU countries (including the United Kingdom, Germany, Spain and the Netherlands) and the European Commission). In total, 27 countries participate in this group that pleads for ambitious climate action.[1]

The potential quantitative impact of emission reductions by this 'coalition of the willing' is limited. If all countries within this group would decide unilaterally to reduce emissions by an additional 5% on top of their already pledged emission reductions, the gap between emission reductions pledged by countries worldwide and the two-degree climate target would close by 0.4 Gt CO_2 eq, which is not much compared to the total emission gap of 5 Gt CO_2 eq reported by the UNEP (2010) under the lowest ambitious scenario, and 9 Gt CO_2 eq under the highest ambitious scenario. The European Union would make up some 40% of these emission reductions by the Cartagena Group.[2]

Nevertheless, the political effect of such a hypothetical unilateral step by the Cartagena Group could be significant, as the group comprises both industrialised and developing countries. By agreeing to unilateral emission reductions, the group may give a signal that could help to overcome more fundamental differences of opinion between developing countries and industrialised countries.

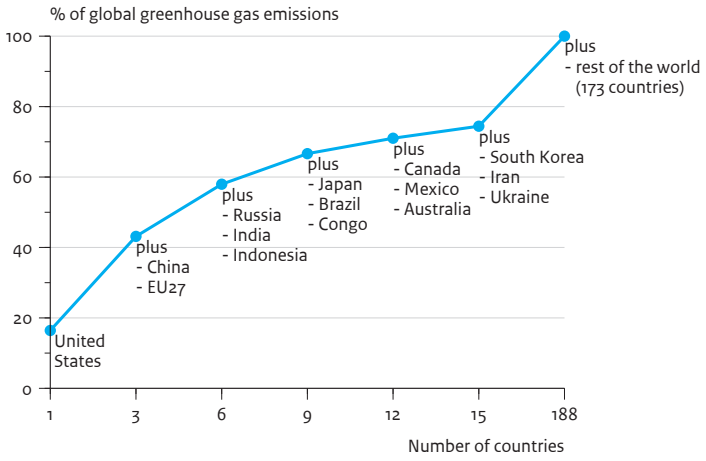
Figure 4.1
Relative contribution of various greenhouse gas emission flows, 2000



structures, a functioning framework for climate governance is unlikely to be constructed all at once, in a top-down fashion. (...) A 'building blocks approach' develops different elements of climate governance in an incremental fashion and embeds them in an international political framework (...). A real world analogy is the development of the GATT into the WTO...' (Falkner et al., 2010).

A practical example of a topic-wise approach is that of forestry. In addition to extensive discussions within the UNFCCC, the issue is also discussed in various other fora, such as the World Bank's Forest Carbon Partnership, the Interim REDD+ Partnership initiated by Norway, and the UN REDD programme. Forestry is also an important topic of discussion within the realm of biodiversity policies (see Chapter 5). Other examples of topic-by-topic or sectoral approaches that have been developed in recent years are those in aviation and shipping, in the cement and steel sectors, and initiatives such as the Carbon Sequestration Leadership Forum and the Methane to

Figure 4.2
Aggregate contributions by major greenhouse gas emitting countries, 2008



Markets Partnership. Furthermore, discussions about the supposed benefits of technology agreements compared to agreements on climate change, fit within this route (Coninck, 2009).

Windows of opportunity
- Continuation of on-going sectoral work;
- Other topics to be discussed and decided on separately, such as energy efficiency.

Interactions between sectors, end-use activities and gases
The opportunities and limitations of a topic-by-topic approach are illustrated by figure 4.1. Some sectors, end-use activities or gases might be selected for separate agreements e.g. because of the limited cross-links to other sectors, end-use activities and gases, o because of the limited number of actors involved and high degree of internal organization of a sector. Not all sectors, activities and gases however are fit for such an organizationally isolated approach.

4.2.3 Bilateral agreements between the United States and China

Some authors stress the specific importance of the bilateral relationship between the United States and China to progress in international climate policies. If these two actors would come to an agreement, they could take along others. Lewis (2010), for instance, states that '...Although bilateral cooperation between the United States and China alone cannot solve the global climate challenge, it is essential to working out key differences, facilitating dialogue among business and policy leaders, and implementing workable solutions to climate change in incremental but concrete steps... China has made some impressive accomplishments to date, and is poised to pursue even more aggressive plans to curb emissions growth and promote clean energy use...It is imperative that the United States take its clean energy cooperation with China seriously and devote substantial financial and human resources to its side of the effort...'.

Developments in the China–US relationship as of early 2011 do not suggest that a US–China cooperation is at hand in the field of climate change or in other policies. Some important points in the relationship, such as the reduction in trade and investment barriers, protection of intellectual property rights, and currency revaluation, fail to see any progress.
Elizabeth Economy (2011) on this subject notes that 'The dream of a robust US–China partnership to lead the world through the thicket of ever-proliferating global challenges remains. But for now, dreaming is no substitute for the hard work of negotiating reality'.

Window of opportunity
- Discussing climate change as an integral part of security-of-supply relationships between these two countries.

Table 4.1
Examples of climate-related initiatives by non-state actors

	Initiative / organisation / network	Resource efficiency scenarios
Cities	- ICLEI local governments for sustainability - Covenant of Mayors - C40 climate leadership group - US mayors climate protection agreement - Mexico City pact	- Local sustainability - Local sustainable energy - 'Tackling climate change' - 'Advance the goals of the Kyoto Protocol' - Reporting on voluntary local emission reduction obligations
Businesses	- WBCSD Business Council on Sustainable Development - European Business Council Sustainable Energy - 3C initiative - BLICC Business Leaders Initiative on Climate Change	- 'Effective development of long-term energy and climate policy' - 'A sustainable industrial society' - 'Combat climate change' - 'Share experiences in work on reducing carbon emissions'
NGOs / civil society	- CAN Climate Action Network	- 'information exchange and coordinated development of NGO strategy'

Effects of a US–China coalition that is supported by the EU
The United States, China and the EU, in the year 2008, together were responsible for more than 40% of global greenhouse gas emissions (see Figure 4.2). In the presently unlikely case of a bilateral rapprochement, their mutually agreed emission reductions certainly would have impact. Imagine that the United States and China would agree to reduce emissions both by an additional 10% or so with respect to their present pledges; this would mean that the United States would reduce by about 25% below their 2005 levels instead of their pledged 17% (increase from 4% to 13% below 1990 levels), and China would increase by up to 15% below their baseline (2020) emission projections instead of about 5% to 10% (found in many studies reported in the UNEP emissions gap report). If the EU would be triggered by this move to do the same and move to their conditional pledge of 30%, then the emissions gap would be reduced by 2 Gt CO_2 eq, from about 5 (most ambitious scenario) to about 3Gt CO_2 eq.
(Source: PBL internal analysis)

4.2.4 Coalitions of non-state actors

There are many initiatives and ideas on sub-national levels that are aimed at greenhouse gas emission reductions (Table 4.1). Some of these ideas consists of initiatives originating from sub-national actors, such as cities, NGOs or businesses that have managed to form international coalitions. Other sub-national initiatives have originated from benefactors (e.g. the Clinton Climate Initiative) or from supranational bodies (e.g. the EU initiated European Initiative on Smart Cities). Also, several environmental non-governmental organisations addressing climate change are themselves multinationals (e.g. Greenpeace International, Friends of the Earth International, Worldwide Fund for Nature), or have organised internationally in networks (e.g. Climate Action Network).

All these initiatives are by the actors themselves and, therefore, at least can count on the support of the participants. The fact that they are based on voluntary action suggests that they follow from some broader societal support. However, as the targets of most initiatives, generally, are broadly formulated, the degree to which they will be able to result in actual emission reductions is unclear.

Windows of opportunity
- Identifying and removing barriers to non-state initiatives;
- Support non-state initiatives by public–private partnerships.

Emission reductions by the C40 coalition
In quantitative terms, emission reduction initiatives by cities could have a significant impact on global emissions, as cities contain around 50% of the world's population, consume 75% of the world's energy, and produce 80% of its greenhouse gases (http://www.c40cities.org/cities/). The 'C40 Climate Leadership Group', for instance, comprises 40 major cities worldwide, together with some 19 affiliated smaller and larger cities. The participants include many of the largest cities worldwide, such as Cairo, Delhi, Jakarta, Mexico City, Mumbai, Paris and London. In April 2011, C40 and the Clinton Climate Initiative announced plans to merge their climate actions (http://www.c40cities.org/news/news-20110413.jsp). Participating cities in the C40 group have introduced important innovations to reduce carbon emissions, such as deep water cooling in Toronto, bus rapid transit in Jakarta and Bogotá, car-free days in Seoul, and innovative solid waste policies in Dhaka.

Table 4.2
Main advantages and disadvantages to alternative routes outside the UNFCCC negotiations

	Main advantages	Main disadvantages
Bilateral agreements	Easier negotiations; after agreement between main adversaries (e.g. US and China), others may follow	Other parties may feel excluded; China/US might not be interested in reaching a deal;
Coalitions of the willing	Those nations pursuing ambitious climate action can proceed	Ambitious action not 'automatically' followed by others
Topic by topic	Tailor-made approach possible for clearly outlined sectoral business coalitions	Seems only possible for a limited number of well-organised sectors with a limited number of actors; less options for horse-trading; less efficient
Coalitions of non-state actors	Using momentum for action within societies	Further progress may be difficult if not supported on a national level

To date, the C40 coalition has not formulated quantitative emission reduction targets, which makes it difficult to estimate the emission reduction effect of this initiative (http://www.c40cities.org/). Several individual participating and affiliated cities, however, have formulated ambitious quantitative emission reduction targets; for example, Buenos Aires (32.7% below 2008 baseline by 2030); Chicago (25% below 1990 levels by 2020); Melbourne (zero net emissions by 2020); Mexico City (12% emission reduction from 2008 levels by 2012) and London (60% below 1990 levels by 2025) (http://www.c40cities.org/ccap/). Question is to what extent the city initiatives are additional to, or part of, emission reduction targets on a national level.

4.3 Main advantages and disadvantages of the routes

Table 4.1 lists some important potential benefits and problems of institutional routes outside the UNFCCC. The general merit of institutional routes outside the UNFCCC is that an agreement by all parties on all topics is no longer needed. Rather, some enthusiasts can decide to act independently. It is hoped for that this lead, subsequently, will be followed by others.

However, the first part of this approach appears promising in that it may tap existing energies of businesses and citizens in societies worldwide, but the main potential weak point in this approach is found in the second part. There is, as yet, little evidence of the 'leader inspires follower' principle in international climate policies. Additional potential disadvantages of a 'fragmentation of global governance architectures', as identified by Biermann et al. (2009), are a possibly reduced ambition level, in the long term, as a result of quickly negotiated small-number agreements, implications to international competitiveness and trade regimes if one coalition opts for stringent measures while others not, an environmental 'race to the bottom' caused by pick-and-choose behaviour between regimes, for instance by the business community, and, finally, concerns about equity, as more powerful states may create mechanisms that best serve their own interests, while less powerful state may be unable to do so.

Notes

[1] See: http://www.minae.go.cr/ejes_estrategicos/ambiente/Cambio%20Climatico/Tercera%20reunion%20del%20Dialogo%20de%20Cartagena/Chairman%20s%20Statement%20COSTA%20RICA.pdf.

[2] Source: PBL internal analysis (2011) .

Reframing routes

This chapter examines the potentials of 'reframing routes', that is, the policy areas that do not have the primary intention to reduce greenhouse gas emissions, but could result in such reductions if policies were to be applied in a way that is coherent with climate change mitigation and adaptation. For each of these routes, the relationship with climate change policy is examined. These reframing routes are different from the 'co-benefits routes' that already have been discussed in the literature for quite some time (cf. PBL, 2009; OECD, 2009). These co-benefits, here, have been inversed; instead of focusing on the additional benefits of climate policies, the emphasis is on climate policies being the co-benefits of other policies.

5.1 Current mainstream

Current 'mainstream' international climate policies are based on concerns about the potential adverse effects of human-induced greenhouse gas emissions on the earth's climate, the nature and extent of which are still very uncertain. Apart from this very general notion, however, the underlying visions about causes and preferences regarding solutions within mainstream climate policies are far from homogeneous. Hulme (2009), for instance, distinguishes between six different views on the main causes of the climate change problem, with accompanying different main directions for solutions proposed. Each one of these routes, if pursued, is likely to have completely different effects on the future development of societies, worldwide (Table 5.1).

Furthermore, the precise effects of climate change differ over time and vary between participants in the climate change policy debate. Previously, mainly the physical effects of climate change appeared central to the discussion. The 'Stern report', however, triggered the debate on the economic dimension of the problem (Stern, 2006). A third dimension of climate change policies that has come into the debate in recent years is that of the geopolitical effects of climate change (e.g. Halden, 2007).

In addition to this existing, already large diversity in opinions and views on causes of and solution directions for climate change, a debate on 'reframing' of climate change policies also can be identified. In this debate, greenhouse gas emission reductions are no longer considered an overarching central policy goal, but rather as a by-product or co-benefit of other policies that are assumed to find more support within societies worldwide. Prins et al. (2010) formulate this as follows: '... It is now plain that it is not possible to have a 'climate policy' that has emissions reductions as the all-encompassing goal. However, there are many other reasons why the decarbonisation of the global economy is highly desirable'.

Although the first part of Prins' hypothesis is far from proven, it is clear that, in recent years, indeed many policies have developed that do not have greenhouse gas emission reductions as a central goal, but nevertheless may have a substantial effect on these emissions. These

Table 5.1
Different views on causes and solutions of climate change problems within mainstream climate policies

Climate change as	Dominant solution	Consequences for society
1. Market failure	Price carbon	Future society essentially assumed to be the same as that of today, action now
2. Technological hazard	Clean energy technology	
3. Mostly natural phenomenon	Adapt	Future society essentially assumed to be the same as that of today, action now
4. Planetary tipping point	Geo-engineering	
5. Global injustice	Convergence of emissions	Future major political and societal changes foreseen
6. Overconsumption	Prosperity without growth	

Source: Adapted from Hulme (2009)

'reframing routes' are the subject of examination in the following sections.

5.2 Alternative routes identified

An inventory of reframing routes, conducted for this report, showed a large array of potential routes to be examined. These have been grouped into five main policy themes:

- Green Growth
- Security of Supply
- Biodiversity
- Poverty and Development
- Air Quality and Ozone Protection

These five themes, for various reasons, currently are high on the agendas of policymakers, worldwide. 'Green growth' is a rapidly emerging theme in the discussion about steering philosophies for international environmental problems, and has been put on the agenda recently by various international organisations. Policy attention to 'Security of Supply' is also fairly recent, and over the last few years was shaped in various discussions on specific renewable and non-renewable resources, such as food, minerals and energy. Biodiversity and related issues, such as land use and deforestation, are a topic of interest, not only within the Convention on Biodiversity, but also within climate negotiations. Biofuels is a particularly recent policy topic in which relationships between biodiversity, land use and climate change are stressed.

Development and poverty issues have been on policymakers' agendas for a long time, already. Their relevance in an international policy context has been shown in recent years, not only by the formulation of the United Nations Millennium Development Goals, but also in the crucial link between greenhouse gas emissions and development. Furthermore, discussions in various international forums on air quality, on a global level, are increasing. The effects of various air pollution substances on the greenhouse effect are paramount.

For our study, we have regarded other policy themes that are currently also under discussion as being part of one or more of the five main reframing themes identified. For instance, 'Resource Efficiency', one of the flagship activities of the European Commission, can be seen to fit within the themes of Green Growth and Security of Supply. Sustainable agriculture can be regarded as part of the biodiversity and land-use discussion. Health, here, is primarily related to air quality, although it could also be linked to agriculture and food or to poverty.

In the following subsections, the reframing themes are discussed in more detail, and some 'windows of opportunity' for linking them to climate change policies are identified.

5.2.1 Green Growth

'Green growth', sometimes also labelled as 'green economy' or 'low-carbon economy', has become a fashionable topic in international environmental politics, in recent years. Several reports by various multilateral organisations also address the topic (OECD, 2010; UNEP, 2011; EC, 2011). Moreover, green growth was point of discussion at the G20 meeting in France, in 2011, and will become one of the two major topics of the 'Rio+20 Conference' in 2012.[1]

Broadly, the concept encompasses the use of economic growth and market powers to achieve environmental and social goals. As such, the interaction with greenhouse gas emission reductions is evident, even more so as concrete policies envisaged can encompass, for instance, renewable energy technologies, resource efficiency, and a variety of measures aimed at incorporating environmental and social goals into the functioning of markets. Using the forces and initiatives of businesses and civil society that, at present, are already shaping markets, the concept might be a powerful way to find

broad societal support for the achievement of 'sustainable development' goals.

However, the exact contents of the 'green growth' concept at this moment are still very vaguely defined, with various actors giving quite different meanings to the concept. For instance, the report for the first Preparatory Meeting of the UNCSD identifies four 'strands' of approaches to green growth (UN Prepcom, 2010; as quoted by ESSF, 2011): 'One strand approaches the question through the analysis of market failure and the internalization of externalities. Another takes a systemic view of the economic structure and its impact on relevant aspects of sustainable development. A third focuses on social goals (jobs, for example) and examines ancillary policies needed to reconcile social goals with the other objectives of economic policy. Finally, a fourth strand focuses on the macroeconomic framework and development strategy with the goal of identifying dynamic pathways towards sustainable development.'

A first challenge of integrating green growth and climate change targets, therefore, appears to that of establishing a definition of the exact contents and aims of green growth. If such a definition would also find broad international support – for instance, at the upcoming Rio+20 conference – this would provide an excellent basis for a rapid further expansion of green growth as a steering concept for addressing many global environmental problems, including climate change.

Key windows of opportunity

- Agree about a more exact definition of the concept of 'green growth' and discuss its consequences for greenhouse gas emissions;
- Rio+20 conference in 2012;
- Ongoing discussions on green growth in UNEP, OECD, G20, EU.

Indicators of Green Growth

The OECD suggests that progress in 'green growth' can only be measured by a range of indicators, taken together. Green growth indicators, according to the OECD, comprise the fields of air and climate; waste and materials; energy supply and efficiency; water resources; development aid; and research and technology development.

This multicriteria approach has the advantage of presenting a broader picture than climate change alone. It also raises the questions of whether and how the various indicators should be weighted against each other, and what information the combination of relative and absolute indicators actually provides. For instance, according to the green-growth indicators suggested by the OECD (OECD, 2011), a decoupling of economic growth from greenhouse gas emissions has been taking place in OECD countries, since 1990. Also, in these countries, greenhouse gas emission intensities in terms of emissions per monetary unit have decreased. Nevertheless, this relative decoupling of economic growth and greenhouse gas emissions does not indicate the extent to which national pledges of countries are being met, as these involve absolute reductions.

5.2.2 Security of Supply

Strategic resource security issues have been part of policy discussions in OECD countries, for many years. One particular issue in the United States, for instance, is oil supply security. Recently, however, the attention for this issue received a boost, due to several incidents. Examples of incidents that have encouraged the discussion on security of supply are a Russia–Ukraine gas crisis affecting gas supply to the EU, discussions about 'land grabbing' by non-OECD countries in Africa, a Chinese–Japanese territorial conflict in which the Chinese production of rare earth metals played a role, and a US–Mexican crisis involving maize used for biofuels or food (PBL, 2011b).

Characteristic of the international security of supply discussion is the often unclear definition of the term, and the party for which 'security of supply' is actually intended. Sovacool (2011), for example, identified some forty-five definitions of security of supply. Nevertheless, it is clear that the international discussion about security of supply involves both the supply and demand of resources. On the demand side, a key issue appears to be increasing competition over resources between OECD and non-OECD countries; in particular, because of the economic and political rise of the 'emerging economies', such as China, India, Brazil and South Africa. On the supply side, the discussion centres around the depletion of resource reserves in OECD countries. This leaves key reserves of resources in countries that, in the eyes of the OECD, might misuse their future economic power for political purposes. In some respects, therefore, the evolving international policy discussion could be interpreted as a 'cold conflict' between OECD and non-OECD countries, although to date neither of the two parties has formed a clear coalition on the issue.

This discrepancy between OECD and non-OECD countries regarding resource security is also, to a certain extent, reflected in multilateral organisations. Although the International Energy Agency was founded as early as in 1974, as an OECD response to the oil crisis of that time, there is as yet no multilateral organisation that addresses energy security as an integral issue, with the exception perhaps of the International Energy Forum, an all-inclusive but still weak forum of energy ministers worldwide that convenes once a year.

Table 5.2
Potential impacts of security of supply policies on climate change policies

Energy security of supply policies		Climate change policies	
General direction of security of supply policies	**Examples of measures**	**Potential positive impact on climate change policies**	**Potential negative impact on climate change policies**
Prevention	Improve foreign relations directed at security of supply (multilateral, bilateral)	Neutral	Neutral
Deterrence	Refer to UN security council	Neutral	Neutral
Containment	Diversification of resources	Positive in the case of increased use of renewables	Negative in the case of increased use of coal
	Increased exploration of domestic resources		Negative in the case of increased domestic exploration of fossil fuels
Crisis management	Emergency stocks of fossil fuels	Neutral	Neutral

Source: PBL (2011b); adapted from CIEP (2004)

Security of supply policies are closely related to climate change policies, particularly in the fields of energy and food security. Prevention, deterrence, containment and crisis management are general policy approaches to security of supply. Table 5.2 gives an example of concrete policy measures in these fields, with respect to energy. It shows that interactions are found particularly in the containment phase of security of supply policies, but that these interactions lead to mixed results. For example, negative impacts may occur especially as a result of increased exploration of fossil fuels, prompted by security of supply concerns, as well as by the substitution of oil and gas by coal. Positive interactions may occur if security of supply concerns leads to increased energy efficiency, and to a substitution of fossil fuels by renewable energy. Similar interactions exist between food security and climate change, in which, for example, biofuels policies play an important role.

Key window of opportunity

- Strengthening the dialogue between OECD and non-OECD parties about the relationship between resource security and climate change. For example, in the International Energy Forum (13th ministerial meeting in 2012, co-hosted by the Netherlands).

5.2.3 Biodiversity

Biodiversity seems to be a useful frame, in particular, to reinforce climate policies that either aim to address emissions from land-use change or increase the carbon uptake potential from the restoration of degraded areas. With the exception of biofuels, measures in these areas seem to serve both policy goals.

As a policy topic, biodiversity is addressed on an international level, specifically, by the Convention on Biological Diversity (CBD), during its most recent meeting in 2010, in Nagoya. Although at this meeting it was concluded that the CBD target (set in 2002) to 'significantly reduce' the loss of biodiversity by 2010 had not been achieved, new targets were agreed in a strategic plan for biodiversity for the 2011–2020 period (CBD, 2010). In this plan, 20 targets were set for either 2015 or 2020, the so-called 'Aichi biodiversity targets'. Included are the targets to halve the loss of natural habitats, to create a sustainable fish and agricultural management, to protect 17% of terrestrial areas and 10% of coastal and marine areas, as well as targets to meet the obligations to produce and implement plans for biodiversity, sustainable production and consumption. Many of these targets, however, still require a discussion and agreement about appropriate indicators for the targets (PBL, 2010c).

The targets set by the CBD in 2010, if implemented, will invariably have their effects on the emission of greenhouse gases. In addition, policies discussed in the UNFCCC climate negotiations will also have their effects on biodiversity. Such policies include implementation of the REDD mechanism which is aimed at reducing emissions from deforestation and forest degradation. Furthermore, there are also policy discussions about biofuels, sustainable production and consumption, and on other policies directly or indirectly affecting land use, which may be part of so-called nationally appropriate mitigation actions (NAMAs).

Hence, biodiversity and climate change policies are intrinsically linked. The link exists, especially, in relation to the issue of land-use change, with as a key underlying factor the increasing pressure from an expanding and wealthier population. Synergies between biodiversity and climate change policies, therefore, may be found, particularly, in policy measures aimed at reducing deforestation, increasing productivity in agriculture so that this is in line with increasing demand, reducing post-harvest losses, improving forest management, and in policies addressing dietary changes (PBL, 2010a; c). A topic that is receiving increased attention is the restoration of degraded areas, now one of the 20 Aichi targets. This target not only could contribute to reducing biodiversity loss, but also may increase carbon uptake from the atmosphere. The only trade-off seems to be in bio-energy, in which indirect effects (e.g. land-use change) limit or negate the gains for biodiversity from reduced climate change.

The links between biodiversity and climate change policies, in actual practice, have already resulted in an emerging cooperation between the two international policy domains. One sign of such cooperation is the multitude of discussions on land use, sustainable agriculture, REDD and biodiversity within the UNFCCC circuit (Chapter 2). However, in relation to the discussion on the potential merits of 'reframing', it is not certain if stressing the issue of biodiversity protection, in itself, would contribute to the achievement of climate policy targets. Illustrative in this respect is the case of 'ecosystem goods and services', which aims to show the benefits that ecosystems provide for people. This anthropocentric view towards biodiversity arose in response to the apparently limited power of biodiversity as a mobilising concept; for instance, indicated by the failure to achieve the 2010 biodiversity target, despite its very open formulation. Recently, the ecosystem services approach was strengthened by detailed economic research on the topic (TEEB, 2010). To date, however, policy decisions based on ecosystem goods and services and their physical and financial merits have been the exception rather than the rule (PBL, 2010b).

Key window of opportunity

- The 2015 implementation deadline for several Aichi biodiversity targets. For the shorter term, an agreement about indicators and measurements for several targets is required.

PBL (2010c) analysed a number of policy measures that would be beneficial to biodiversity and natural areas worldwide (Figure 5.1). The options shown here all lead to an additional net uptake of CO_2 by the biosphere, compared to the situation under the baseline scenario. Figure 5.2 illustrates their corresponding global benefits for biodiversity when expressed in mean species abundance (MSA^2). The results suggest that all main policy measures to stimulate biodiversity would have positive impacts on climate change mitigation, and that stimulating bio-energy only as a climate change mitigation option would have negative impacts on biodiversity.

5.2.4 Poverty and Development

Poverty and human development are overriding concerns that are linked to climate change, particularly for developing countries. The Millennium Development Goals (MDGs) form the leading global development framework directed at reducing extreme poverty and hunger, improving basic services, such as health, education and a healthy environment, and creating a global partnership to enable these goals to be achieved. Internationally, the link between achievement of the MDGs and climate change is clearly recognised. According to the UNDP, for instance, climate change negatively affects achievement of all MDGs; for example, through potential negative impacts on agricultural production and food security, sufficient access to clean water, and by creating more favourable conditions to prevent diseases (UNDP, 2011).

In addition, an increasing amount of literature identifies several areas of potential synergy between poverty reduction and climate change efforts, both in terms of overall planning strategies and in more detailed policies (e.g. Kok and De Coninck, 2007; Kok et al., 2008; UNDP, 2008; WB, 2010). Such synergies, for instance, may be found in integrating climate adaptation and the prevention of land degradation, promoting sustainable livelihoods, improving drought resistance, in flood protection, more efficient use of inputs, and in better resistance against pests and diseases.

One important route for the achievement of the MDGs is increasing access to modern sources of energy (electricity and liquid fuels, such as LPG or kerosene for heating and cooking, instead of traditional biomass) (AGECC, 2010). Access to electricity expands livelihood opportunities and income, and improves the provision of healthcare and education (Modi et al., 2005). Access to modern fuels for cooking and heating also reduces exposure to indoor air pollutants that cause approximately 2 million deaths, annually (WHO, 2009), and reduces time spent in obtaining these fuels (WHO, 2006). This goal does not necessarily conflict with climate targets. The International Energy Agency (2010) states that universal access to

Figure 5.1

Change in carbon in the biosphere compared to baseline scenario, 2050

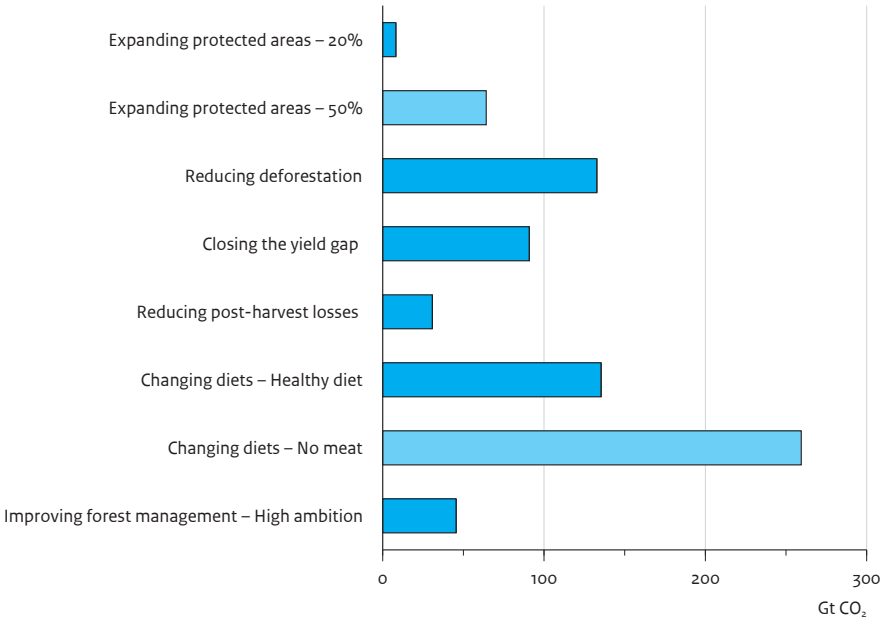
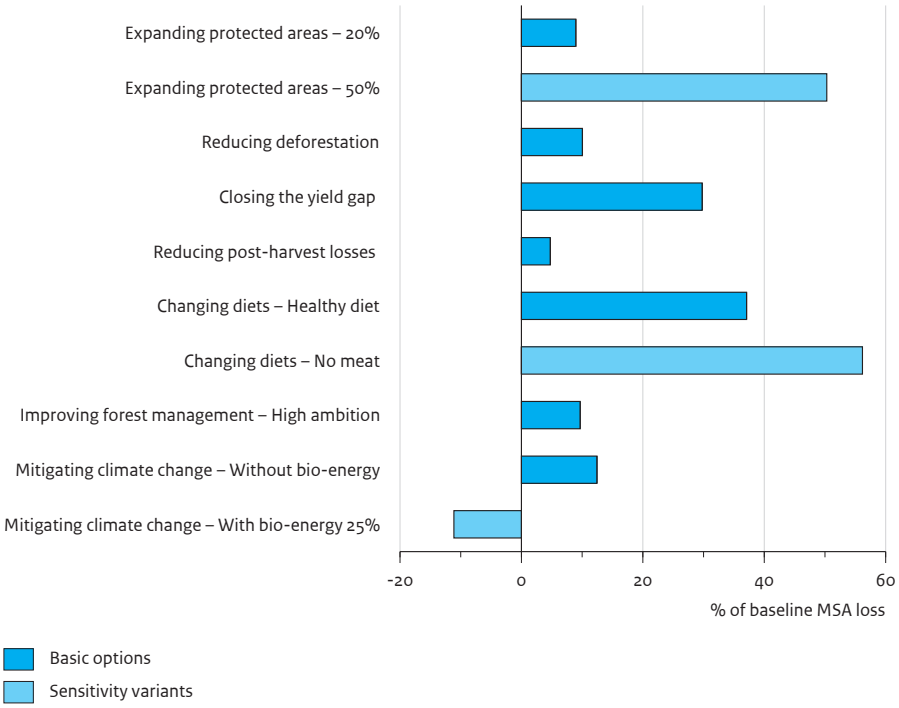


Figure 5.2

Prevented global MSA loss compared to baseline scenario, 2000 – 2050



Prevented global MSA loss of options expanding protected areas and reducing deforestation by 2030

modern energy services by 2030 would only result in an increase in global electricity demand of 2.9%, a 1% increase in oil demand, and 0.8% increase in global CO_2 emissions. At the same time, improved household air quality, due to the use of modern fuels, could avert an average of between 0.77 and 1.68 million premature deaths, annually, up to 2030 (GEA, 2011).

Poverty eradication is also a central element of green growth strategies to be discussed at the Rio+20 summit in 2012. As Mr Sha Zukang, Secretary-General of the conference, noted: 'the failure to tackle poverty can only lead to rising social tensions, ecological pressures and economic crisis, stressing the importance of a transition to a "green economy" that fosters sustainable development and poverty eradication' (UN, 2011).

Key windows of opportunity
- Combining MDGs and climate change policies;
- The 2015 Evaluation of MDGs;
- The 2012 Rio+20 Conference.

5.2.5 Air Quality and Ozone Protection

Air quality has been an matter of concern long before climate change became an issue. Traditionally, policies in this field are mainly locally driven, despite the fact that some measures have reached global acceptance and have been almost universally implemented (e.g., lead-free petrol, vehicle emission performance standards, sulphur reduction by coal-fired power plants). Early action typically involved end-of-pipe measures directed at local pollution caused by power plants. Gradually, however, the range of air quality policies changed from local to regional (e.g. 'acid rain'). This has led to several binding and non-binding air quality agreements on a regional level, of which the Convention on Long-Range Transboundary Air Pollution (LRTAP) is one. Parties to the LRTAP include the EU Member States, countries belonging to the former USSR, the United States and Canada.

The need for a comprehensive global atmospheric pollution convention has been debated, in recent years (GAPF, 2007). In the absence of such a global convention, at this moment, a process of de facto further integration of air quality policies seems to be taking place, which is demonstrated, for instance, by the adoption of the European emission standards for cars and trucks by other countries, and the adoption of air quality legislation in South Africa, based on LRTAP procedures. Currently, the LRTAP convention itself is at the centre of policy attention, because of the ongoing revision of its Gothenburg Protocol to include new emission ceilings for 2020 for five air polluting substances (sulphur dioxide, nitrogen oxides, volatile organic compounds and ammonia, as well as the newly added pollutant particulate matter ($PM_{2.5}$)). Emission levels of these pollutants also affect climate change policies.

The protection of the ozone layer has been regulated by the Vienna Convention of 1985, with its Montreal Protocol (1987) regulating the phasing out of several substances held responsible for depletion of the ozone layer. Because of its universal adoption and implementation, the Montreal Protocol has been hailed as an example of exceptional international cooperation, with former UN Secretary-General Kofi Annan stating in 2005 that 'perhaps the single most successful international agreement to date has been the Montreal Protocol' (TOH, 2011). The Montreal Protocol, currently, is of policy interest because of the discussion on whether HFCs, which are now part of the basket of gases under the Kyoto Protocol, also should be regulated under the Montreal Protocol.

Access to energy in relation to climate change

In 2010, a summit was held to evaluate progress regarding the Millennium Development Goals. The overall picture was mixed (UN, 2010). Although, on the one hand, it was recognised that 'developing countries made significant progress towards achieving the Millennium Development Goals', it was also acknowledged that 'much more needs to be done' and that 'without substantial international financial support, several of the goals are likely to be missed in many developing countries by 2015'.

The Summit's outcome document set out a number of cross-cutting interventions that drive progress across all the MDGs, particularly, investing in expanded opportunities for women and girls and improving access to energy. In the latter field, many individual measures may also lead to greenhouse gas emission reductions. Switching to advanced-combustion biomass stoves in India may avoid up to 4% of current greenhouse gas emissions (Venkataraman et al., 2010). Furthermore, with respect to universal modern energy access by 2030, the increase in greenhouse gas emissions from increased electricity use can almost completely be counterbalanced by the increased thermal efficiency and avoided deforestation of using improved biomass stoves or LPG and kerosene for cooking and heating (IEA, 2010). However, intensified efforts in this field are needed. The IEA (2010) projects that, without additional policies, by 2030, the number of people without access to electricity will have decreased from 1.4 to 1.2 billion. This will mean that 15% of the world's population still will lack access to electricity. Over the same period, the number of people dependent on traditional biomass will increase from 2.7 to 2.8 billion, which will result – due to household air pollution – in over 1.5 million premature deaths, annually.

Key windows of opportunity

- Revision of LRTAP Gothenburg Protocol to be concluded by early 2012;
- Discussion about HFC regulation under the Kyoto Protocol (climate) or the Montreal Protocol (ozone) (ongoing);
- Gradual bottom-up evolvement of regional air quality initiatives into global air quality policies (various forums).

Air quality and climate

The links between air quality and climate change are complex. Some air pollutants such as SO_x and NO_x form aerosols that reflect the solar radiation, and therefore have a cooling effect on climate. Other air pollutants add to global warming. Methane (itself a powerful greenhouse gas, leaking for instance from gas pipelines) contributes to the formation of tropospheric ozone, which is both a greenhouse gas and an air pollutant (toxic to human and plant life). Black carbon (from fossil-fuel or biomass burning) absorbs heat from the sun, thus also contributing to warming, and is one of the compounds in particulate matter that damages human health. Hence, combating methane emissions and black carbon is beneficial to both human health and climate. Currently, an initiative has been started under the LRTAP to develop specific international policies on methane, tropospheric ozone and black carbon (in the northern hemisphere (Task Force on Hemispheric Air Pollution). Reduction in these emissions could possibly find more support on national levels than reduction in CO_2 emissions, as these are directed to health issues. However, there are also some caveats. Since the atmospheric lifetime of methane is relatively short (8 years) and lifetimes of tropospheric ozone and black carbon are even very short (a few weeks) compared to that of CO_2 (over a century), reduction in the long-lived CO_2 cannot be replaced by reductions in these short-lived substances, from a climate perspective. Meanwhile, studies that have addressed the co-benefits of accelerated air quality policies (e.g. Prinn et al., 2007; Bollen et al., 2009; 2010; 2011; Apsimon et al., 2009) have identified substantial benefits, especially with increasingly stringent air quality objectives. The latter may be explained by the fact that end-of-pipe reductions are often the preferred cost-effective solution. With increasing pressure to reduce air emissions, alternative solutions (fuel shift, energy savings options, zero-emissions technologies) become more attractive. Bollen et al. (2011) analysed the benefits for climate change of increasingly stringent air quality policies on particulate matter and tropospheric ozone. They concluded that, by 2050, 70% to 75% of avoided air quality impacts should come from structural changes, and that the rest could still be tackled through end-of-pipe policies. Stringent air quality policies, by 2050, would lead to an 82% reduction in CO_2 eq, reached by stringent climate change policies, and to 92% by 2100. The effect on temperature would be somewhat lower (75%), mainly due to the increased sulphur reduction (sulphur forms a strong cooling particle in the atmosphere).

Ozone and climate : HFCs from UNFCCC to Montreal Protocol?

The Montreal Protocol controls the worldwide phase-out of ozone–depleting substances (ODS). These include fluorocarbons (CFCs and HCFCs). In addition to the successful protection of the ozone layer, the Montreal Protocol has made large contributions toward reducing global greenhouse gas emissions. In 2010, the decrease in annual ODS emissions under the Montreal Protocol was estimated to have been about 10 Gt in avoided CO_2 equivalent emissions annually, which is about five times larger than the annual emissions reduction target for the first commitment period (2008–2012) of the Kyoto Protocol (WMO, 2011).

In future, however, this beneficial function of the Montreal Protocol could be largely undone by the growth in HFCs as a replacement of HCFCs in combination with economic growth in developing countries. This could lead to an increase in the contribution of HFCs to global warming (in terms of radiative forcing) from 1% relative to CO_2 in 2005 (IPCC, 2007) to over 10% by 2050 (Velders et al., 2009).

HFCs are now part of the 'Kyoto basket' under the UNFCCC. A phase down of HFCs under the UNFCCC would help but is not likely to occur, in part because of perverse incentives for their production in developing countries under the CDM.[3] Therefore, in 2009, some Parties[4] recommended to include the HFC phase out in the Montreal Protocol. This is thought to help avoid a potentially large growth in HFC emissions as the Montreal Protocol focuses on specific industrial processes (production, consumption) instead of emissions, something which may be less cumbersome to negotiate than baskets of emitted gases. Also, all industrial knowledge on alternatives for HFCs is available under the Montreal Protocol and its Technology & Economic Assessment Panel (TEAP)[5] and financial support may be available from its fully operational Multilateral Fund.[6]

5.3 Main advantages and disadvantages of the routes

In Table 5.3 advantages and disadvantages of the reframing routes are outlined. Advantages are to be found, particularly, in the additional drivers that the climate discussion could make use of. Potential disadvantages are the conceptual vagueness of some reframing routes, in particular, which could be used to the positive, but also to the negative. Other potential disadvantages of reframing routes are questions about the relative strength of these alternative routes as

Table 5.3
Main advantages and disadvantages of alternative frames for greenhouse gas emission reductions

	Main drivers	Additional drivers	Potential disadvantages
Green Growth	Supposed comparative economic advantages of 'green' innovations	Economic growth; opportunities for businesses	Definition still unclear, leaving room for many different interpretations of the concept, each with its own environmental consequences
Security of Supply	Concerns about resource scarcity	Concerns in OECD about non-OECD countries; about terrorism	Definition still unclear, leaving room for many different interpretations of the concept, each with its own environmental consequences
Biodiversity	Concerns about nature, flora, fauna, tipping points	Ecosystem services, dependence of the poor on ecosystem services	Strength as a mobilising concept? Indicators still to be agreed on
Poverty and Development	Care for the poorest and economic development in developing countries	Trade relations with developing countries	Similar North–South differences of interest as those in the climate issue
Air Quality and Protection of the Ozone Layer	Local air quality; health (air quality and ozone)	Congestion; quality of life; recreation (air quality)	Some air polluting substances contribute to climate cooling

mobilising concepts, compared to climate change. Does or does not biodiversity trigger more people, NGOs, businesses and nations into action than climate change? Is the current development of air quality policies to a global level strong enough to result in substantial greenhouse gas emission reductions worldwide? In addition, there are questions about the degree to which differences of interest between countries in the climate discussion are also encountered in the reframing route: Does putting poverty first resolve the North-South conflicts in the climate discussion? Furthermore, some air polluting substances contribute to global warming, whereas others have a cooling effect.

Notes

1 See http://www.uncsd2012.org/rio20.
2 MSA: a measure for biodiversity defined as the mean abundance of original species relative to their abundance in undisturbed ecosystems.
3 Reduction in HFC-23 emissions in the production of HCFC-22 are rewarded with credits under the CDM, which is an incentive to produce more HCFC-22, while the Montreal Protocol has agreed to phase out HCFCs.
4 http://climate-l.iisd.org/news/. ozone-meeting-begins-discussion-on-hfc-phase-down/
5 http://ozone.unep.org/teap/index.shtml.
6 http://www.multilateralfund.org/default.aspx.

Overall assessment of alternative routes

This chapter discusses the potential impacts of the emergence of alternative routes for international climate policies. First, the criteria used to assess the alternative routes are outlined (Section 6.1). Then, the three main directions of alternative routes are assessed separately (Section 6.2). Finally, based on the assessment, three overall scenarios for the future institutional development of international climate policies are discussed.

6.1 Criteria

Many of the proposed alternative routes identified in this report have been not realised in actual practice and, therefore, can only be evaluated ex-ante. We have chosen to carry out this ex-ante examination based on the general policy evaluation criteria of effectiveness, legitimacy and efficiency (e.g. Lieberherr, 2010; Wallner, 2008), as these are the criteria that must be met, one way or another, in order for an alternative route to contribute successfully to international climate policies in the future. These criteria subsequently were specified further, in order to make them suitable for our assessment of these alternative routes.

'Effectiveness' has been interpreted in terms of achieving the objective, in this case 'environmental effectiveness'. This was defined to consist of two factors: 1) The likeliness that a particular alternative route contributes to, or facilitates, achieving the quantitative goal set in the UNFCCC of limiting climate change to two degrees Celsius, and 2) The degree to which a route might contribute to accounting and controllability of achieving targets (contribution to 'measurable, reportable, verifiable' targets). The choice to include the two-degree target in the first evaluation factor could be seen as arbitrary, as even some of the proponents of alternative routes may not support the two-degree target either. However, as the two-degree target was explicitly mentioned in the Copenhagen Accord as well as the Cancún Agreement, we regarded it as a useful reference for this assessment.

The criterion 'efficiency' often is expressed as the degree of 'goal achievement per financial unit'. As the examined alternative routes are very different in nature – which makes it often impossible to say anything about financial consequences of a proposal – for our assessment we chose a different approach. Efficiency was translated as 'institutional efficiency', i.e. the degree to which a proposal might contribute to accelerating and facilitating current decision-making procedures. Determining factors are, for instance, the degree of bureaucracy likely to be caused by a proposal, and the number of parties involved, assuming that more parties will generally make the decision process more difficult.

'Legitimacy' is the third criterion used to assess the feasibility of alternative routes. This was interpreted as the degree of societal support that could be expected for a particular proposal. It is thought to consist of likely support by all or most nations, as well as that by non-state actors, such as businesses and civil society (Text box 6.1).

Text box 6.1 Assessment criteria for suggested alternative routes for international climate policies

Environmental effectiveness
- Does the suggested alternative route increase the probability that the target of limiting climate change to two degrees will be met?
- Does the suggested route improve accountability and controllability (MRV)?

Institutional effectiveness
- Is the suggested route likely to facilitate and accelerate current decision-making procedures (bureaucracy, number of parties involved)?

Legitimacy / societal support
- Is the route likely to be supported by most countries?
- Is the route likely to be supported by non-state actors (e.g. businesses and civil society)?

A successful application of reframing routes is particularly dependent on policy context, that is, the degree to which other policies may realise societal goals and, hence, may serve as effective carrying devices for climate policies. For reframing routes, therefore, an additional assessment was made of potential effects on climate policies of the realisation of some other policies, including energy policies, general national macroeconomic policies, development policies, air quality policies and biodiversity policies.

A quantitative assessment of alternative routes in many cases is not possible. Therefore, the assessment made in this report is generally made qualitatively and based on expert judgment of the authors and other staff of the PBL Netherlands Environmental Assessment Agency.

6.2 Alternative routes assessed

6.2.1 Alternative routes within the UNFCCC

Table 6.1 shows a summary of the assessment made of the examined alternative routes within the UNFCCC. Procedural reforms are thought to improve and facilitate decision making within the UNFCCC, for example, by capacity building of delegates from developing countries, by better regulating the process of informal groups within the UNFCCC, or by introducing majority voting. However, support for any substantial reforms within the UNFCCC and in particular for majority voting is uncertain. Furthermore, the reforms discussed, in themselves, would not contribute to a better environmental effectiveness in terms of controllability or ambitions of emission reductions.

Part of the business community is asking for more influence in the climate negotiations. Given the prominent role that businesses have in future financing of climate measures, a larger influence of the business community in future decision making could be considered. How this will be implemented, and the degree to which businesses will receive a formal role in this decision-making process remains to be seen. However, a more formal inclusion of business parties into the UNFCCC will increase diversity of interests in the negotiations and, therefore, may cause a decrease in ambitions and complicate the measurability of targets.

Including additional non-climate related topics (e.g. trade) into the UNFCCC negotiations, as is suggested by some authors, seems a distant target. In fact, many criticise the UNFCCC for being too complex (and too broad) already (e.g. issues such as REDD, biodiversity, sustainable development). The advantage of including more topics would be that this facilitates 'horse-trading' and 'matchmaking' opportunities; however, the downside is a further increase in complexity. Moreover, 'horse-trading' does not necessarily lead to more stringent climate policies.

6.2.2 Alternative routes outside the UNFCCC

Alternative routes outside the UNFCCC are intended to facilitate decision making in that they look for 'coalitions of the possible' (Chapter 5). A smaller group of actors, a smaller number of topics, a coalition of 'willing' non-state actors; all these routes are framed towards working with what seems feasible (Table 6.2). Spontaneous action in these areas is considered to contribute to institutional effectiveness, as it creates building blocks for climate actions that may lead to a larger international agreement in the future.

The alternative routes outside the UNFCCC examined here will certainly have the support of those actors that are engaged in the initial action. In this respect, topic-by-

Table 6.1
Alternative routes within UNFCCC assessed

	Environmental effectiveness		Institutional effectiveness	Legitimacy / societal support	
	Two-degree target likely to be met?	**Contributing to measurable, reportable, verifiable emission reductions?**	**Facilitation of decision making / coalition building?**	**Likely to be supported by most countries?**	**Likely to be supported by civil society and businesses?**
Alternative routes within UNFCCC					
Procedural reforms, e.g. majority voting	+ / -	+ /-	+	+ / -	+ / -
Inclusion of more parties, e.g. businesses	-	-	+ / -	+ / -	+
Inclusion of non-climate related topics	+ / -	+/ -	+	-	-

Table 6.2
Alternative routes outside UNFCCC assessed

	Environmental effectiveness		Institutional effectiveness	Legitimacy / societal support	
	Two-degree target likely to be met?	**Contributing to measurable, reportable, verifiable emission reductions?**	**Facilitation of decision making / coalition building?**	**Likely to be supported by most countries?**	**Likely to be supported by civil society and businesses?**
Alternative routes outside UNFCCC					
Bilateral agreements	-	-	+	-	+ / -
Coalitions of the willing	+ / -	-	+	+ / -	+ / -
Topic by topic	-	-	+	+ / -	+
Coalitions of non-state actors	-	-	+	+ / -	+

topic or sectoral approaches, as well as coalitions of non-state actors, seem to be framed particularly towards the involvement of businesses and other sub-national actors. However, any bilateral agreements, such as between the United States and China or other bilateral negotiations, if feasible at all, might meet with some scepticism of other countries about their apparent top-down character.

As Biermann et al. (2009) have outlined, the formation of building blocks does not necessarily imply facilitation of any follow-up action intended to scale-up the initial initiative or to merge it into a broader agreement. Another potential drawback of these approaches is that, as all these actions focus primarily on societal support and on voluntary action, none of them has implemented detailed MRV actions, nor sees a quantitative target as a primary goal.

6.2.3 Reframing routes

Table 6.3 shows the results of from the assessment of the reframing routes. The 'green growth' frame seems to have large support on a national policy level, as well as within the business community and civil society for its combination of ideas about 'greening' and economic growth. However, results in terms of emission reductions remain highly uncertain, due to the lack of a consistent and generally accepted definition of the concept. Many potential indicators of green growth have been formulated, for example by the OECD (2010), but as yet no link has been established to any accountability mechanism on a multilateral level.

A similar reasoning holds for security of supply, where the lack of an internationally accepted definition and the availability of policy options that have completely different effects in terms of greenhouse gas emissions, leaves a large variability in possible outcomes with respect to the two-degree target. The various interpretations of the concept – where security of supply for one country could implies a reduction in security of supply for another – also do not contribute to the decision-making process on an international scale.

Table 6.3
Reframing routes assessed

	Environmental effectiveness		Institutional effectiveness	Legitimacy / societal support	
	Two-degree target likely to be met?	**Contributing to measurable, reportable, verifiable emission reductions?**	**Facilitation of decision making / coalition building?**	**Likely to be supported by most countries?**	**Likely to be supported by civil society and businesses?**
Reframing routes					
Green Growth	-	-	+ / -	+	+
Security of Supply	-	-	-	+ / -	+ / -
Biodiversity	+/ -	+ / -	+ / -	+ / -	+
Poverty and Development	+ / -	+ / -	+ / -	+ / -	+
Air Quality and Protection of the Ozone Layer	+ / -	+ / -	+ / -	+ / -	+

Furthermore, several options to increase security of supply may actually increase greenhouse gas emissions.

It is highly questionable whether international progress on biodiversity policy-making is more likely than on climate change. So far, the internationally agreed 2010 CBD biodiversity target 'to substantially reduce biodiversity loss' was not achieved. Nor has incorporating the concept of ecosystem goods and services in biodiversity policies, so far, shown to generate much more support for this reframing route. Nevertheless, nature conservation and business opportunities via REDD may offer opportunities for support by civil societies and the business community, worldwide. This, in turn, could be used to further the goals of both the UNFCCC and CBD.

Biodiversity may have its advantages as a mobilising concept, but not attaining the internationally agreed 2010 biodiversity target 'to substantially reduce biodiversity loss' – despite its very broad formulation – also shows the limitations of this policy area as a vehicle for reframing climate policies.

Development policies on poverty reduction, worldwide, find societal support in most countries, and certain parts of civil society may even be more sympathetic towards development than to climate goals. However, in times of increased stress on budgets due to the international economic crisis, it may be just as difficult to generate the necessary funds for poverty reduction as for reducing greenhouse gas emissions. Similar to biodiversity and air quality policies, policies on development have set quantitative targets by way of the UN Millennium Development Goals. The overall achievements of these goals, so far, show mixed results.

Finally, with regard to air quality policy, support finds its basis in the direct consequences of air pollution for human health. Attainment of quantitative air quality and ozone protection targets, which have been set nationally and internationally, may find its resonance particularly in civil society. The quantitative targets that were set on regional scales, for various air pollutants and internationally for ozone protection, already have had their effects on climate change. If air pollution targets would be expanded to the global scale and, for ozone protection, would include more substances, they could contribute to a further reduction in greenhouse gas emissions.

The idea of reframing climate policies is largely based on assumed co-benefits from other policies. The extent to which these policies could serve as a useful vehicle for climate policies depends on two conditions. In the first place, this depends on the degree to which a reframing policy contributes to the effectiveness and legitimacy of climate policies. This has been discussed above. In the second place, the effectiveness of a reframing policy for climate change policies depends on its broader societal acceptance. Here, we assumed that, the more reframing policies contribute to the achievement of various societal goals, the higher the societal support for these reframing policies will be. Table 6.4 provides an indication of the contribution of the reframing routes to several societal goals. The table shows that green growth, in particular, may score high on several societal goals – depending on how the concept would be defined and worked out, in actual practice. Other reframing policies also may have their advantages for various several goals, although the exact effects remain difficult to assess.

In this context, it is also important to note that the timeframes – or desired timeframes – for potential benefits of reframing routes vary. Air pollution and

Table 6.4
Cross co-benefits of the reframing routes (o = low expected direct impact)

	Impact on							
	Example	**National economy**	**Changes in energy use**	**Biodiversity**	**Global economic growth**	**Poverty**	**Air quality**	**Climate**
Green Growth	R&D innovation	+	+	0	+	+ / -	+	+ / -
Security of Supply	Coal plants, energy efficiency, renewable energy	+ / -	+ / -	0	+ / -	-	+ / -	+ / -
Biodiversity	Nature conservation	0	0	+	0	0	+	+ / -
Poverty and Development	Access to energy	-	+ / -	+ / -	+ / -	+	0	+ / -
Air Quality and Protection of the Ozone Layer	End-of-pipe measures; structural measures	0	+ / -	0	0	0	+	+

unemployment may require a quick policy response; green growth, poverty and development could be addressed in medium to long-term policy; and for security of supply, the policy response could be in the short, medium or long term, depending on the context. This could also impact on the societal support for these policies. Reframing policies that lead to short-term benefits may be more attractive than those leading to longer term advantages.

6.3 Alternative routes and international climate policies

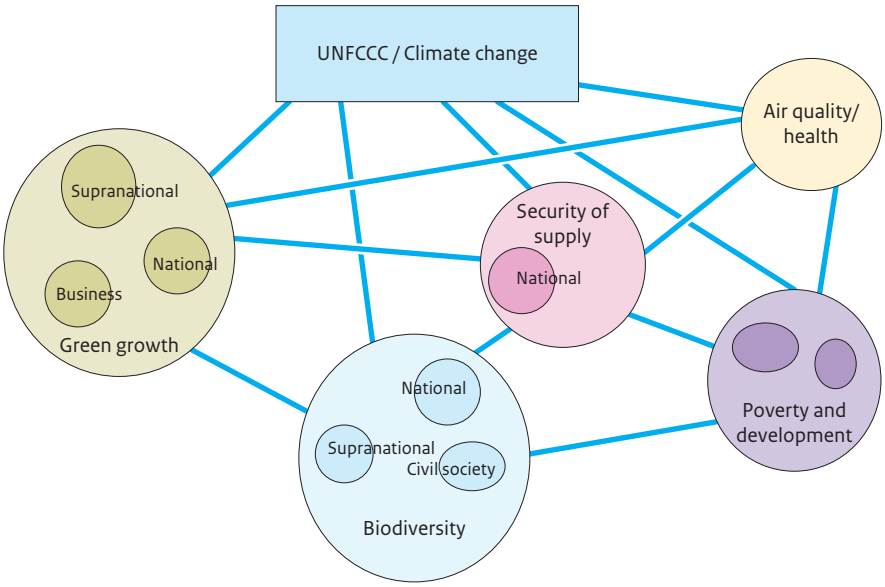
When taking together the developments regarding alternative routes for the international climate policies outlined previously, several conclusions can be drawn.

In the first place, future international climate policies, more so than in the past, seem to become part of a broader societal debate. In this debate, not only various sustainability targets, such as biodiversity, air quality and poverty, will play a role, but also various socio-economic considerations, including security of supply of resources, employment, innovation and opportunities for businesses. Climate change seems likely to move from being the subject of a discussion that mainly involves greenhouse gas emission reductions against the lowest possible costs, to becoming part of a far more complicated multicriteria assessment in which several factors of a very different nature are weighted politically. Furthermore, such a political assessment will have to take into account not only geopolitical developments that affect comparative advantages of countries, but also the fact that other actors, such as businesses and civil society, will play an increasingly important role in the future development of international climate policies.

In the second place, the overall picture of the development of alternative routes, currently, suggests that all these routes may play specific roles in mobilising societal support for climate change policies of the future. By themselves, none of these routes seem to be able to replace the present multilateral negotiations under the UN framework. Most of the alternative routes specifically aim at some kind of international agreement or framework in the future and, hence, may be considered as feeding into the UNFCCC negotiations, rather than intending to replace them. Furthermore, the simple existence of multilateral negotiations on climate change may provide legitimation for the development of alternative routes elsewhere; as their existence suggests that the international community recognises climate change at the least as an international problem that has to be dealt with.

Potential institutional consequences
Stressing the use of reframing routes in international climate policies would also have institutional consequences. Instead of the UNFCCC being the main forum for greenhouse gas emission reductions, other main multilateral forums may make decisions affecting greenhouse gas emissions, such as UNCSD, UNEP, OECD for green growth; IEA, IEF or IRENA for security of supply; CBD, FAO for biodiversity; UNDP for poverty and development; UNECE for air pollution, the Montreal Protocol for ozone layer protection and the WHO for health related issues.

Figure 6.1
Diversity rules



In the third place, the status quo in international climate negotiations under the UNFCCC and the development of alternative routes seem to suggest that a top-down 'Kyoto-style' international climate agreement in the near future is not likely to materialise. Rather, taking into account the development of alternative routes, so far, three broad scenarios for a further development of international climate policies in the medium (2020) to long term (2050) seem feasible. These scenarios are outlined below.

1. *Diversity rules* – The status-quo of international climate negotiations is extrapolated into the foreseeable future. Capacity building and internal reforms within the UNFCCC proceed slowly, but do not lead to major changes in procedures as, for example, formal inclusion of other actors, such as businesses and civil society; a further pursuit of various initiatives with an impact on climate change (sectoral; coalitions of the willing on national and sub-national levels); and implementation of policies with emission reductions as co-benefits result in additional emission reductions. Other international organisations where climate is discussed mainly serve as preparatory forums for the UNFCCC, and do not result in multilateral coordination of alternative routes.

2. *De Facto Implosion* – Slow progress in the climate negotiations, little belief in the urgency of the climate problem, and fundamental differences of opinion between countries, may lead one or more countries to fully withdraw from the negotiations, after which the multilateral climate negotiation system in fact will collapse, only to continue in a formal sense. In such a case, the importance of multilateral routes in which smaller climate coalitions ('coalitions of the willing') as well as reframing routes are likely to increase. International climate policies will become more fragmented and the relative importance of international environmental themes other than climate will rise.

3. *Climate umbrella* – Under this scenario, various international environmental policy topics become more closely connected, fitting under one institutional umbrella. Climate may become the central connecting theme in this scenario, with the UNFCCC as a clearing house for various environmental policies related to climate change. This would entail major internal reforms within the UNFCCC. Alternatively, a closer integration of international environmental policy topics could be realised under another connecting theme, such as 'Green Growth'. In that case, the role of the UNFCCC would become limited, and crucial international policy lines would be set out elsewhere.

Figure 6.2
Climate implosion

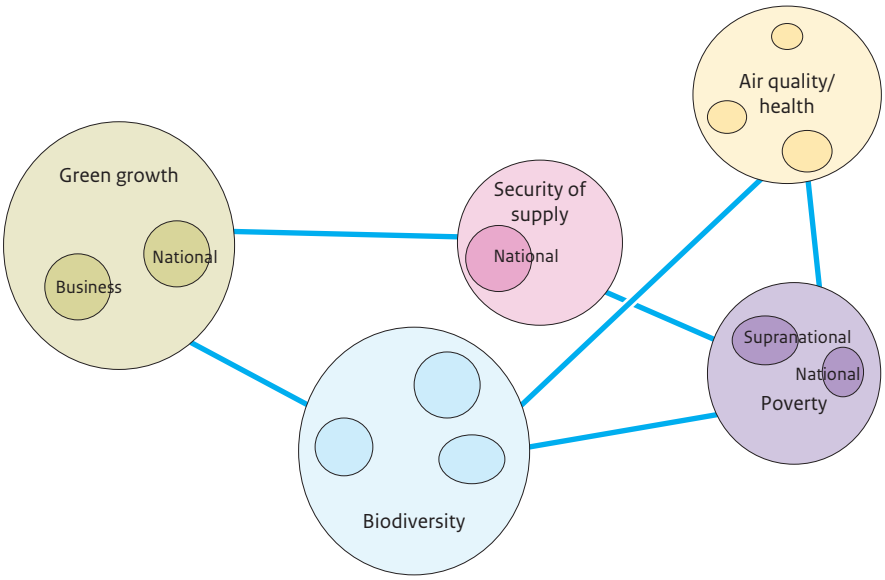
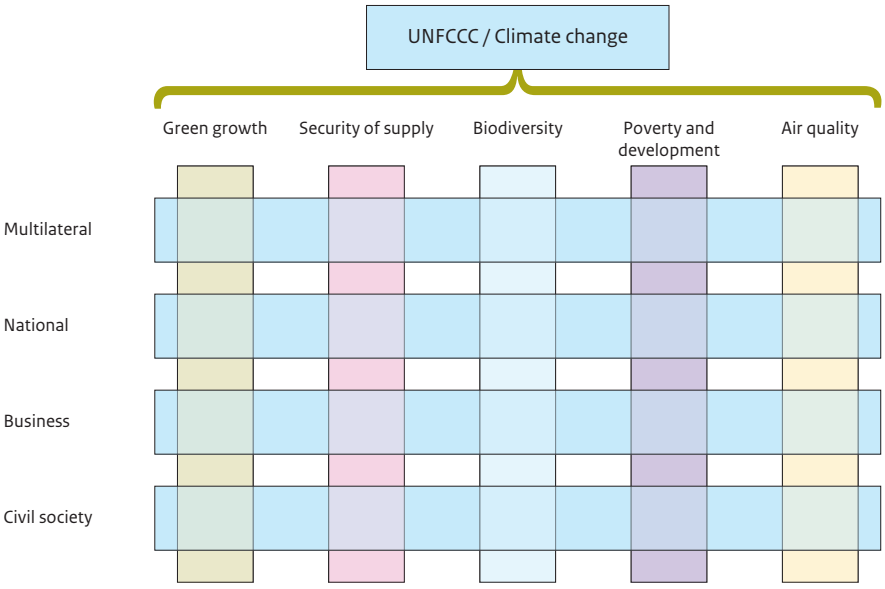


Figure 6.3
Climate umbrella



These scenarios each have different implications for the future development of the UNFCCC. In the first scenario, ad-hoc links between the UNFCCC and other multilateral bodies are likely, without a systematic mainstreaming of climate change into other international policy topics. In the second scenario, the UNFCCC is likely to proceed as a pro-forma multilateral body that will not be able to bring about any substantial international emission reductions. In the third scenario, the UNFCCC work will become part of a broader, integrated framework that includes all international policy issues that relate to climate change. Under the last scenario, either the UNFCCC will become the central coordinating body of international environmental policies related to climate, or coordination will take place elsewhere under a reframing route, such as 'Green Growth', which would leave a more limited but still important role for the UNFCCC.

SEVEN

Implications of alternative routes for the Netherlands

The previous chapters have described and assessed alternative routes for international climate policies, based on their relevance in an international context. Taking into account the emergence of these alternative routes, three potential scenarios for future development of international climate policies have been discussed.

This chapter addresses the potential roles for the Netherlands within these potential frameworks of future international climate policies. First, it examines potential criteria for an assessment of alternative routes on a national level. Second, based on these criteria, it assesses the alternative routes, individually. Finally, it discusses possible overall responses of the Netherlands to the changing institutional environment of international climate policies.

7.1 Criteria

The extent to which international climate policies and alternative routes are relevant to any country not only depends on the international context, but also on structural national factors (e.g. geography, economy and demography) and on changing national political preferences. This section discusses which criteria could be applied in an assessment of alternative routes based on structural factors, taking into account that the degree of political priority given to climate change as a policy topic is another crucial determining factor for national policy responses.

Recently, various attempts have been made to systematically examine potential roles of the Netherlands in an international context.

In a 2011 discussion paper about options for future Dutch development policies regarding 'global public goods' (e.g. climate change, biodiversity), the PBL Netherlands Environmental Assessment Agency identified four criteria that could be applied when discussing the needs for, and potential of such policies for the Netherlands (PBL, 2011c). The following criteria were identified: 1) Impact or 'footprint' of the Netherlands on the status quo of that global public good (e.g. greenhouse gas emissions, impact on global biodiversity loss); 2) Influence of the Netherlands on the delivery of that global good (potential policy influence); 3) Self-interest (e.g. national economic gains from solutions offered); and 4) Relevance for poverty reduction in developing countries.

A similar analysis was made by the Dutch Scientific Council for Government Policy (WRR) in search of a foreign policy strategy for the Netherlands that would match the changing balance of power in the world (WRR, 2010). In its report, the WRR identified three criteria for setting priorities in Dutch foreign policies: 1) What is important for the Netherlands; 2) What are the interests of other actors and what are they doing to pursue them; and 3) Where can the Netherlands make a difference? The report concluded that making transparent choices, making smarter use of Europe as the dominant arena for the Netherlands, and choosing an approach that makes

better use of the growing role of non-state actors, would help to reorient Dutch foreign policy to better reflect the changing balance of power in the world.

In 2006, the WRR also investigated Dutch climate policies in more detail (WRR, 2006). The WRR analysis suggested that, in the absence of certainty about climate change effects, a low-lying country such as the Netherlands should give high priority to the adaptation to a changing climate. Furthermore, a selection of promising global mitigation routes up to the year 2050 should be applied, consisting of the main routes of energy efficiency, changing the energy mix, forestry and land use, and addressing non-CO_2 greenhouse gases. Finally, according to the WRR, an improved international coordination would be necessary in order to exploit those routes successfully. Such an improvement would consist of the establishment of a permanent World Climate Council with diplomatic missions that would take over the current role of the UNFCCC, and of better use being made of a 'multi-coloured diversity' of existing initiatives that find societal support on national or sub-national levels, such as no-regret policies by coalitions of countries or initiatives by certain business sectors.

When applying these assessments to the arena of international climate policies of 2011, it is interesting to note that the ‚multi-coloured diversity' of initiatives suggests that a trend towards emerging alternative routes was already visible in 2006. However, the WRR suggestion to establish a permanent World Climate Council, to date, has not led to any significant action.

A further comparison of previous WRR and PBL analyses shows that they have several points in common. Both analyses recognise the need to adapt to changing international circumstance and relations, they identify the increasing roles played by, for example, businesses and civil society in international relations, and the need for Dutch external policies to focus on a limited number of priority areas.

Combining the results from both analyses led to three criteria for assessing the relevance of alternative routes in this report:

1. *Impact on the Netherlands* – To what extent is the Netherlands affected by the alternative routes in wider economic and political terms?
2. *Potential influence of the Netherlands* – When the Netherlands promotes a particular alternative route, how much of an impact would this have?
3. *Potential benefits within the Netherlands* – What additional benefits in other policy areas may the alternative routes have within the Netherlands?

With the use of these three criteria, the following section assesses the alternative routes for international climate policies, taking into account the specific Dutch context.

7.2 Alternative routes assessed

The alternative routes each score quite differently regarding their potential relevance to the Netherlands. A summary of these scores is provided in Table 7.1.

7.2.1 Alternative routes within the UNFCCC

Alternative routes that aim at reforms within the UNFCCC circuit may be helpful to facilitate progress in the negotiations. However, to date, their overall significance to the Netherlands has not been high, as the potential influence of the Netherlands in the achievement of such reforms is low and reforms within the UNFCCC do not seem to lead to additional benefits in other policy areas for the Netherlands, in the short term. The only way to exert influence on UNFCCC reforms, for the Netherlands, would be via the European Union. However, since the Copenhagen conference, EU influence on the overall climate negotiations seems to have been reduced (cf. Alessi et al., 2010; Haug and Berkhout, 2010; Schaik, 2010).

One area within the realm of the 'alternative routes within UNFCCC' that indirectly could be of interest to the Netherlands is that of a stronger role of the business community in the negotiations. Innovative Dutch businesses may also benefit from a more active Dutch role in promoting increased involvement of the business community in the climate negotiations. The role of, for instance, the World Business Council on Sustainable Development (WBCSD) in the negotiations, therefore, could be worthwhile to examine in more detail. In recent years, this council has developed from being a party that struggled to define common positions to a lobbying organisation that is taking part in key issues at the forefront of the negotiations, such as regarding the role of businesses in climate finance.

7.2.2 Alternative routes outside the UNFCCC

Based on the criteria identified, for the Netherlands, the significance of alternative routes outside the UNFCCC varies. Although the Netherlands may hardly party a role of any importance if the United States and China find ways to play a frontrunner role in emission reductions by way of a bilateral coalition, in other coalitions of the willing the Netherlands might well be able to play such a role.

The Cartagena Dialogue is an example of an existing coalition of the willing, very close to the current negotiation circuit, in which the Netherlands already is actively involved, but other coalitions within or outside the European Union

Table 7.1
Relevance for to the Netherlands of proposed alternative routes

	Impact on the Netherlands	Influence of the Netherlands	Likely benefits within the Netherlands
Alternative routes within UNFCCC			
Procedural reforms	-	+ / -	-
Inclusion of more parties	-	+ / -	-
Inclusion of non-climate-related topics	-	-	-
Alternative routes outside UNFCCC			
Bilateral agreements	-	-	-
Coalitions of the willing	+ / -	+	-
Topic by topic	+ / -	+ / -	-
Coalitions of non-state actors	+ / -	+ / -	+
Reframing routes			
Green Growth	+ / -	+ / -	+
Security of Supply	+ / -	+ / -	+
Biodiversity	+ / -	-	-
Poverty and Development	-	-	-
Air Quality and Protection of the Ozone Layer	+/ -	+ / -	+

seem quite feasible routes for the Netherlands, to engage in more ambitious emission reductions. Such coalitions could also focus on a topic-by-topic approach, as is the case in the existing Norwegian Climate and Forest Initiative. Other institutional routes that are further from the UNFCCC circuit, such as G8/G20 route, seem less suitable for Dutch interventions, as the Netherlands is not a formal member of these multilateral bodies.

One particular route of interest within the range of institutional routes outside the UNFCCC is that of non-state initiatives. In recent years, a variety of city and business initiatives were formed, which are aimed at greenhouse gas emission reductions. Examples are the Rotterdam Climate Initiative, the C40 Climate Coalition which includes the cities of Amsterdam and Rotterdam, and ‚De Groene Zaak' *(the green business)*, a business coalition aimed at sustainable business development. Using the ambitions and ideas of such initiatives that sprout from society itself, could generate benefits in the Netherlands in terms of new business opportunities and bottom-up involvement of citizens and businesses in the realisation of environmental targets without additional costs to national government.

7.2.3 Reframing routes

Several reframing routes fit well within multiple policy objectives in the Netherlands. The reframing routes of 'Green Growth', 'Security of Supply' and ‚Air Quality and Protection of the Ozone Layer', in particular, seem to offer advantages in this respect.

The 'Green Growth' route that is currently being worked out by OECD and UNEP, and will feature on the agenda of the Rio+20 meeting in 2012, starts with the notion of economic growth as a driver for greening economies. Such a notion could also strengthen the international competitive position of the Netherlands, on the condition that innovation under the heading of ‚green growth' contributes to making green technologies an important export product of the Netherlands. However, much depends on how this concept will be operationalised, as in its present form neither clear environmental objectives nor economic growth targets have been formulated.

'Security of Supply' can also be an interesting alternative route to the Netherlands for greenhouse gas emission reductions, especially as it fits in with the key objective of securing a long-term, stable energy supply for the Netherlands. In order to make security of supply work as a reframing option for climate policy, the policy options that will be stimulated have to be carefully considered. Renewable energies, nuclear energy and, in particular, a more efficient use of resources, all contribute to the synergy between security of supply and climate policies, and – only if combined with carbon capture and storage – to the stimulation of new coal-fired power plants.

Air quality in the Netherlands is also a point of interest. Local air quality still needs to be improved to meet European standards (VROM, 2009). Internationally, the currently discussed reform of the Gothenburg Protocol,

part of the agreement on Long Range Transboundary Air Pollution, offers possibilities to combine the potential health benefits of international air quality targets with greenhouse gas emission reductions. In addition, improvement of air quality is often related to a reduction in traffic congestion and an improvement of urban quality of life, in particular. A similar argumentation holds for the Montreal Protocol on substances that deplete the ozone layer. The wide acceptance of the latter could make that regulation of substances that are both detrimental to the ozone layer and are greenhouse gases, under the influence of the Montreal Protocol instead of the UNFCCC, would lead more rapidly to a reduction in their emissions, with health benefits also in the Netherlands.

Poverty reduction and biodiversity can be other ways of achieving emission reductions. In the field of poverty reduction this could be realised particularly by providing poor people, who are still dependent on traditional biomass for their fuel supply, with modern, renewable and more efficient energy sources. In the area of biodiversity, measures such as forest conservation and stimulating healthy diets could provide important synergies with greenhouse gas emission reductions. However, here, benefits for the Netherlands themselves seem less evident than with the other routes.

7.3 Alternative routes and the Netherlands

The analysis of the influence of the alternative routes on international climate policies combined with the assessment of the potential influence of these individual routes on the Netherlands shows that several lessons can be learned for future international climate policy strategies for the Netherlands.

In the first place, several alternative routes seem potentially relevant to the Netherlands, of which 'Green Growth', 'Security of Supply', ‚Air Quality and Protection of the Ozone Layer' and 'Coalitions of non-state actors' seem particularly promising. Text box 7.1 gives some examples of concrete national policy measures that could contribute to further development of these routes in the Netherlands. A green-growth frame, for instance, could lead to the consideration that Joint Implementation (JI) and the Clean Development Mechanism (CDM) under the Kyoto Protocol lead to cost-effective emission reductions in the short run, but do not contribute to innovation in the Netherlands in the long run. Application of this frame, therefore, may lead to a reallocation of JI and CDM funds. The security-of-supply frame could imply an increased attention to resource efficiency, renewable and nuclear energy, as well as engagement in a discussion about the exact meaning of this concept in a multilateral context. Stimulation of non-state initiatives would involve at least a careful monitoring and removal of administrative barriers to such initiatives, and, if pursued with higher ambition, also an engagement in the form of public–private partnerships. Following the air-quality frame, finally, would at least lead to stressing the health benefits of such policies, with increased attention to national targets and attainment of targets on a local level.

In the second place, the emergence of alternative routes stresses that climate policies of the future increasingly involve an active engagement in networks of all actors relevant to climate policies. Individual national governments will no longer determine the future of international climate policies. Rather, a multitude of actors from business, civil society and sub-national authorities will have to contribute to these policies in order to make them a success.

In the third place, the emergence of alternative routes seems to indicate that we are currently in a transitional phase in international climate policies. Some alternative routes will be defined more sharply and gain momentum, others will fade into insignificance. Furthermore, other alternative routes that currently are not yet in sight may emerge and replace existing ones.

In the absence of clarity about the further development of alternative routes to climate policies, the previous chapter outlined three overall institutional scenarios for future climate policies. Depending on the degree of priority given to the policy issue of climate change, several overall policy strategies could be pursued by the Netherlands, as a response to the development of alternative routes (Table 7.2). These would roughly vary from a mixed approach in the 'diversity rules' scenario (an approach in which emission reduction would become much more dependent on co-benefits of other policies), to a 'de facto implosion' scenario (in which official negotiations collapse), to an approach that would take a multicriteria analysis as the outset for an attempt towards a broader multilateral coordination and integration of environmental policies in the UNFCCC 'climate umbrella' scenario.
In all three scenarios, the Netherlands is likely to play its international role predominantly via the European Union. As one of the key proponents of international climate policies, in the 'diversity rules' scenario the EU could be part of a variety of coalitions of the willing. In the 'de facto implosion' scenario, the EU would be increasingly isolated as one of the few remaining parties supporting ambitious climate policies. In the 'climate umbrella' scenario, finally, the EU could play a role in establishing

Text box 7.1 Examples of concrete policy measures for the Netherlands potentially fitting with the stimulation of alternative routes for greenhouse gas emission reductions

Green Growth
- Stimulation of North-West European energy networks; resource efficiency and renewables;
- Investigation of the potential of green growth for the Netherlands in terms of future employment and GDP;
- Measurement of 'welfare' on a national level next to GDP to include 'green' factors;
- Reallocation of Dutch climate funds from JI and CDM to the stimulation of Dutch (green) innovation capacities.

Security of Supply
- Contribution to an internationally accepted definition of security of supply and resource efficiency, with clear and measurable indicators;
- Stimulation of the international debate about (energy) security of supply in the International Energy Agency (IEA) and the International Energy Forum (IEF);
- Stimulation of resource efficiency, renewables and nuclear under this concept (no coal-fired plants or only those with CCS); gas as a bridging fuel (with increasing CCS).

Coalitions of non-state actors
- Stimulation and monitoring of initiatives by cities, business and NGOs;
- Removal of administrative barriers to these initiatives;
- Participation in public–private partnerships to stimulate non-state initiatives, where necessary and possible.

Air Quality and Protection of the Ozone Layer
- Engagement in stimulating international air quality targets;
- Inclusion of more substances under the Montreal Protocol to protect the ozone layer;
- More attention to air quality targets on a national level as well as to attainment of targets at a local level;
- Promotion of structural and fuel-shift measures above 'end-of-pipe' measures.

Table 7.2
Scenarios for further development of alternative routes and possible policy responses of the Netherlands

International climate policy scenario	Possible Dutch policy response
Diversity rules	- Depending on priority given to climate and climate-related topics, various coalitions of the willing can be pursued; - Internal coordination of climate policies with other policies, on an incidental basis as needed; - Identifying and measuring the effects of non-climate policies on climate change.
De facto implosion	- Active or passive participation in a likely European coalition of the willing regarding climate; - Internal emission reduction measures should have co-benefits for Dutch businesses, RD&D, or in one of the reframing routes; - Climate becomes more dependent on the co-benefits of other policies.
Climate umbrella	- Stimulation of cooperation between various multilateral forums indirectly relevant to climate change (e.g. energy, air quality, biodiversity); - Closer coordination of reframing policies with climate policies on an international and national level; - Explicitly taking into account climate effects when considering other policies, with consequences for these policies if emission reduction targets are not met.

firm connections between various climate related international policy fields.

For the Netherlands it appears useful to closely monitor the development of emerging alternative routes to current international climate policies. Such routes should be carefully examined for their potential broader societal relevance to the Netherlands, thus preventing an uncritical switch to seemingly promising alternatives. Least-cost emission reduction approaches then will have to be weighted against approaches that score best in a multi-criteria societal cost–benefit analysis that will involve certain factors, such as innovation, security of supply, biodiversity, air quality and poverty. Such a cost–benefit analysis will need to factor in that individual national governments, in the future, no longer will be solely responsible for further development of international climate policies, but that society as a whole will also be involved.

In this way, the future of international climate policy strategies of the Netherlands is likely to become even more complex than it has been so far. The 'road to Durban' or other UNFCCC cities that lie ahead is not a direct road. Despite the fact that the theoretical reasons for seeking progress in international climate policies via the UNFCCC route may still apply, in seeking support for such policies, many forks in this road appear ahead. At each of these forks, the Netherlands has to decide which path would be the best way forward.

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Appendix: interviews[1]

Interview with Heleen de Coninck, ECN Energy research Centre of the Netherlands

9 March 2011

'It was clear from the beginning that the Copenhagen Climate Conference would not lead to a global agreement. There was a lack of 'reciprocity' between countries, a compensation of the costs of climate measures of the main emitting countries in the form of benefits – either relating to climate itself, or in the form of co-benefits in other policy areas. In the absence of such reciprocity, an agreement could only work via coercion by a multilateral organisation. However, such an organisation does not exist – the UN and UNFCCC both lack the mandate for any coercion in the climate (or any other environmental) field.

The present discussion about the legal status of an agreement, therefore, is surprising. In the absence of reciprocity or an organisation that could enforce an agreement, it would be irrelevant whether a climate agreement is 'legally binding'. Instead, a discussion about the governance of climate change would be important. Such a discussion, in which reciprocity should be a central theme, to date has not been sufficiently conducted in international politics. There is also a research gap in this area, as reciprocity is not included in any present quantitative climate models – all these models optimise a carbon price that will never be globally implemented. Countries don't care about cost-effectiveness; they care about the relation between costs and benefits, which can be quite diffuse. Political power, for example, can be a benefit but is hard to quantify.

The climate conference in Cancún somewhat improved the situation in the climate negotiations. The atmosphere between countries has improved and everything is still possible; nothing has been excluded. However, it is hard to say whether the glass is half full or half empty. It is too early to completely rule out the achievement of the two-degree target, but it is becoming quite improbable. This is in part due to a lack of reciprocity, but also to a lack of financial means.

In the negotiations, technology perhaps could offer possibilities for reciprocation. For instance, the United States, China, India and the European Union could collaborate on pre-commercial technological options in the field of wind energy. Such a collaboration would resemble the 'coalitions of the willing' that are suggested by authors on climate governance. Another example would be the European Union, Brazil and Mozambique collaborating in the field of biofuels. Brazil has extensive knowledge in this area and a biofuel export potential that is stretching its limits, Mozambique has little capacity but a huge export potential in terms of available wastelands and sufficient water available, and the European Union has an increasing demand for sustainable biofuels and energy security, and has climate goals that are supported by the public opinion. The triangle of producer, market and knowledge, therefore, could serve all three countries and hence achieve a situation of reciprocity. The question is: What would be the future role for the UNFCCC if 'coalitions of the willing' or 'reciprocity agreements' would become the dominant collaboration format? Perhaps the UNFCCC could act in an administrative and intermediary role, as an 'accountant' and facilitator of such agreements.

In the past, the Netherlands played an important role in determining the European position regarding climate change. Apart from the mandate given by Dutch policies, the strong personalities of the Dutch negotiators also were important here. Today, this influence has decreased. Although the ambitions of the Dutch Government still exist in areas that may provide co-benefits to climate policies (e.g. energy innovation and security of supply), present budget reductions in energy innovation, and decisions on CCS are incongruent with these ambitions. Such inconsistencies do not make the country more credible or influential in international circles. What would be needed are policies of long-term consistency, independent of government constellation, as investments in energy transition and climate change are large, and private investors need to be assured of the long-term profitability of such investments.

Internationally, for future global climate policies to be successful, the United States in particular would need to take more action in this field. It would help if the United States would realise how vulnerable they are to climate

change – much research has been carried out in this field. For instance, the US State of Georgia already has large problems with droughts that could be seen as a prelude to what is to come. However, according to US public opinion, this is not being realised at all.'

Interview with Donald Pols, World Wildlife Fund Netherlands

15 March 2011

'A policy on CO_2 emissions will always be needed in order to limit global warming. Other and alternative policies can only be complementary. A recent report by the University of Tilburg, for example, shows that energy policies without climate policies may even lead to increasing emissions.[2] However, in the Netherlands, WWF is increasingly playing the card of clean technologies as a complement to CO_2 policies.

The climate conference in Cancún has been important in that it formalised the arrangements made in Copenhagen, but with regard to making further progress it has meant that another year has been lost. The main obstacle to further emission reduction is not so much the position of China or India, but rather the lack of interest of the United States. A deal between the European Union and China in the absence of US commitment seems very unlikely, as these actors have no interest in isolating the United States. Nor is a change in the position of the United States to be expected in the near future.

An illustration of the lack of US interest in any emission reduction agreement is the fact that they are also blocking an agreement in relation to REDD by insisting on the option of sub-regional projects instead of setting national baselines. Other countries, such as Canada, hide behind the United States to excuse their own non-compliance with Kyoto targets. Meanwhile, also the difference in opinion between northern and southern countries is an important factor for the lack of progress in the negotiations. As long as emission reduction is seen as adverse to development, a deal does not seem likely.

In fact, the present top-down perspective in the climate negotiations is also somewhat naïve. The differences in national circumstances are not sufficiently taken into account. There are too few interests on a national level that support emission reduction initiatives. Therefore, WWF is actively promoting the creation of such interests by stimulating the development of national clean technology and energy efficiency. Metaphorically speaking, the first approach could be compared to boxing, with business as the main opponent, whereas the second approach is rather similar to aikido; using the power of business to further the interest of emission reduction. The WWF approach is labelled the 'Climate Savers' initiative.

The risk of the Clean Technology approach is that it is quite imaginable that it would only lead to relative decoupling, with a resulting net increase in emissions. Therefore, national emission reduction targets remain necessary in addition to this approach.

WWF wants to maintain a good relationship with the Dutch Government, but finds its climate and energy ambitions rather disappointing. The energy targets set are not being met[3], nor was the reaction of Secretary of State Atsma to EU Commissioner Hedegaard's emission reduction proposal of 25% a positive sign for Dutch climate policies, according to WWF. WWF considers it to be a missed economic opportunity, as for instance the global wind energy industry will continue to grow – with or without Dutch involvement. What would be needed for the future, therefore, is to depoliticize energy policy, thus opening possibilities for a stable long-term national policy, independent of the political colour of any future Dutch Government.'

Interview with Philipp Pattberg, VU University Amsterdam

16 March 2011

'Expectations around the Copenhagen Climate Conference were too high, partly due to the extensive media coverage. In fact, it was not realistic to expect this conference to lead to a far-reaching climate agreement. However, a value judgment about the outcome of the conference depends on which measurement matrix you use. In terms of solving all climate problems, the results can be seen as a glass half empty, but in terms of political processes the glass could be regarded half full. Furthermore, although the political feasibility of reaching the two-degree target within the appropriate timeframe at this moment seems low, unexpected triggers may occur, such as the recent tsunami and subsequent nuclear disaster in Japan. The media certainly influence the outcome of the negotiations, but it has to be kept in mind that the media-attention cycle is much shorter than the negotiation cycle.

Bodanski (2011) outlines a picture of two possible futures for the negotiations: they will either result in a top-down agreement with targets and timetables, or in a bottom-

up pledge and review process that is brought about by voluntary national initiatives. At the moment, these two scenarios compete. In Cancún, the latter approach was institutionalised and might therefore become more feasible than the former, in which multilateral obligations dominate. However, it is also possible that, as a compromise, both approaches continue to run, concurrently.

The EU is finding it difficult to convince other countries of its approach of ambitious climate policies. Therefore, it might be clever tactics to 'sell' their method under another name; labelling climate policies not as a burden but as a clever investment. If such an approach will work, remains to be seen. If converging per-capita emissions is considered the final goal to be reached, then technological change as the only driver will be insufficient. A political signal would be needed, as well, resulting in some sort of binding multilateral agreement. This political signal should trigger the establishment of a long-term market for clean technologies. The temporary collapse of the carbon market after Copenhagen is an illustration of markets failing without a political signal. By the same token, a 'frontrunner approach', in which only one or a few countries take the lead, ultimately will only be successful if it is accompanied by an international political signal.

The dynamics of the transition into a post-carbon society can be compared to plate tectonics: small movements can suddenly and unexpectedly lead to major shifts. It is clear that, worldwide, small movements are already occurring, with all kinds of organisations undertaking action in this direction, even including unconventional organisations, such as many churches in the United States. However, it would be wrong to look at such movements in isolation, since they are all part of an interconnected system. They, therefore, cannot be an alternative to coordinated multilateral political action.

The Netherlands should stop thinking of climate change as a Dutch issue. Even the European Union, likely to be responsible for only some 5% of emissions in 2050, might be too small an actor to be influential. A reframing of the climate issue to other policy areas, such as security of supply, might be useful but is also dangerous. On the one hand, the overlap between these other policy areas and climate change is only partial. Hence, care has to be taken that these policies point into the right direction. On the other hand, the general public in the Netherlands and in other European countries still sees climate change as an environmental problem. A complete reframing, therefore, is not possible or might be counterproductive.

The Dutch position regarding gas does not prevent the country from taking a progressive point of view in terms of climate change. There might also be comparative advantages for the Netherlands in a shift towards a low-carbon society. However, the timing is important. The question is not so much whether or not Dutch gas reserves will be depleted, the key issue, rather, is how related revenues will be invested. Investing in a knowledge economy seems a clever way, although careful consideration has to be given to determine in which knowledge to invest.'

Interview with Frank Biermann, VU University Amsterdam

24 March 2011

'The policy process towards an international climate agreement is a long one, although not exceptionally so, compared to other international agreements. Establishing the international law of the sea, for instance, took several decades from agenda setting via negotiations to ratification. There are no alternatives to a future global agreement that, in some form, will be based on per-capita emissions and contain provisions about finance and adaptation.

Within the UNFCCC process, the introduction of qualified majority voting would be a major improvement. Examples of the fact that it is possible to achieve such a system of qualified majority voting, in actual practice, are the Montreal Protocol on ozone, and the IMO shipping rules.

The strongest motivation for reaching a climate agreement is likely to be fear of the effects of climate change, including that of climate refugees. The sense of global solidarity that such an agreement would contain is by no means exceptional – take the annual financial contribution by the Netherlands to the UN system. For the Netherlands, the benefits from this contribution are only indirect, but there is no one in the Netherlands who seriously questions the need for it.

The profitability of providing low-carbon technologies may form an additional motive for taking climate action, but it is secondary to the awareness of climate change being a global environmental problem. The concept of green growth as a driver is also questionable, if it is interpreted as a competition for green technologies. One country that is a frontrunner in these technologies could in theory profit from early action, but not all countries can be frontrunners.

Industrialised countries would need to take action to come to an agreement based on their much higher per-

capita emissions than developing countries. However, it is not very probable that the United States would sign an agreement in the near future that would be acceptable to developing countries. The US House of Representatives, in February 2011, even voted against continued US funding for the IPCC. However, the United States have a history of – in actual practice –complying with international agreements that they did not sign. Examples of such agreements are the many conventions on marine protection and that on child protection. These were not, or only later, ratified by the United States, but still adhered to in actual practice.

If the co-benefits of other policy areas, such as air pollution and security of supply, are used for the benefit of climate policies, this should be rather a way to improve communication with the public than a fundamental reframing of policy attention. Similarly, routes other than that of the UNFCCC, such as the Convention on Biological Diversity (CBD), G20 and G8, may be used as a preparation for UNFCCC negotiations, but they cannot constitute an alternative to these negotiations. A main problem with fragmented approaches is that an agreement between a limited number of parties might need to be renegotiated to make it attractive for other parties to participate (e.g. see the Montreal Protocol and the Multilateral Agreement on Investment, which both initially only included the industrialised countries and had to be renegotiated for the participation of developing countries).

The Netherlands still has a positive reputation with developing countries as a promoter of environmental interests, and hence could exert some influence in the climate negotiations. However, it should act in accordance with the EU. The European Union still makes the mistake of seeing itself predominantly as a junior partner of the United States. Rather, it should look for closer cooperation with emerging economies in a wider sense – including in educational systems.

Finally, an area of great future importance is that of adaptation governance. Issues such as food security, geoengineering, water, migration and health are only some of the main policy areas that increasingly will need global attention. The Netherlands also will have to participate in finding answers to these issues, as climate change becomes a reality in the future.'

Interview with Sible Schöne, Hier Klimaatcampagne[4]

24 March 2011

'Copenhagen was a 'reality check' for those who thought that the conference would deliver a binding new climate agreement. The actual outcome was dominated by the various national contexts of the participating countries. Taken together, the commitments add up to a climate change of between three and four degrees Celsius. In contrast, the text of the Copenhagen Accord suggests that the two-degree target might be too high and that one-and-a-half degrees might be more adequate. The gap between the two is huge.

In terms of greenhouse gas concentrations we have already arrived at a climate change representing a two-degree temperature increase. The concentration is now around 460 ppmv. If the one-and-a-half-degree target would be accepted, we would need to reduce greenhouse gas concentrations in the atmosphere to 400 ppmv, or 350 ppmv for CO_2.

A positive point of the Copenhagen process was that forests and land use were placed firmly on the political agenda. In the run-up to the Copenhagen Climate Conference, the European Climate Foundation published a cost curve pointing to the main issues that deserve attention: Most cost-effective are energy efficiency options, which could account for roughly one third of the solution, over the next decade, followed by forests (also one third), land use (one sixth) and, finally, the energy supply options of renewable energy, nuclear, and coal to gas (one sixth). Most policy attention often goes to renewable energies and other energy supply options, although these are in fact the most expensive options. They can only account for a small part of the total solution.

In Copenhagen, the negotiation context was more in line with the relative urgencies of the various options suggested according to this cost curve. There is a chance that the upcoming climate conference in Durban will bring more structural support for REDD options. Additional attention for the distribution of cost-effective options outside the UNFCCC context is needed. In addition to their inclusion in the climate treaty, forestry and land use, therefore, should also be addressed in the desertification treaty and in a biodiversity treaty.

A dual approach to climate change is needed with, on the one hand, a pragmatic climate treaty based on feasible commitments and co-benefits, and acceptance of

reframing approaches (green growth, sustainable development), and on the other hand a more fundamental approach. This second approach includes the willingness to reconsider the consequences of a century of climate change with temperature increases above three to four degrees Celsius. This is necessary as the two-degree target is in fact not taken seriously, let alone the target of one-and-a-half degrees. This more fundamental approach also includes the need to look at negative emissions. How could we reduce CO_2 in the atmosphere without further acidification of oceans? This includes methods such as biomass plus carbon capture and storage (CCS), biochar and olivine. We even need to discuss options of geoengineering, such as changing the albedo of the earth – if we are serious about the one-and-a-half degrees.

We also need to rethink the potential of energy efficiency. We see scenarios from Greenpeace and WWF that heavily rely on efficiency. We even see studies such as 'Nederland krijgt nieuwe energie' (The Netherlands will have new energy), which assume three to four per cent efficiency improvements in the Netherlands'. In my view, such approaches are too easy. We need to discuss unpleasant options, such as CCS, nuclear energy and large-scale use of biomass. The efficiency potential is also debated elsewhere. For example, a recent presentation by CE Delft, in which was demonstrated that the energy efficiency potential of existing buildings is much lower than generally thought, as in the least-isolated houses, fewer rooms are heated. Better insulation leads to houses being used differently. Also, transaction costs are underestimated. Direct regulation might tackle this problem.

A global opportunistic approach of energy efficiency may help. In China, potential future energy shortages could inspire climate action. It is already difficult to transport coal from the west of China to the east, and this is likely to become even more difficult in the near future. Direct radical energy efficiency regulation of equipment may prove easier for the Chinese Government than climate measures. Furthermore, the recent nuclear disaster in Japan is likely to lead to even stricter energy efficiency regulation in the future. Such national actions may change global products.

The influence of the European Union in the climate negotiations is limited, as in countries such as the United States, Russia and China, the influence of external politics on domestic action is very small. The best Europe can do is to lead by taking action within the EU. Perhaps this will support NGOs in other countries to take action directed at their respective national governments.

We need to think more about climate change as a communications problem. It takes 40 years before a certain emission level in the atmosphere leads to a corresponding change in global temperature, and a rise of sea level may well take between a hundred to many thousands of years. We are now facing the impacts of our emissions in the years up to 1970.

Furthermore, causes and solutions comprise a broad spectrum of options, the worst effects will not necessarily take place in the Netherlands and not all of the solutions are likely to be sympathetic to the public. All these aspects make that the risks of climate change are difficult to communicate to the general public. However, long lead times between causes and effects also offer the opportunity to look for 'overshoot scenarios', in which greenhouse gas concentrations will rise above 450 ppm (two degrees), for some decades.

The contribution of the 'Hier' climate campaign is based on collaboration between all parties and on stressing the positive side of climate change solutions. In this respect, it contrasts the more confrontational approach of, for instance, Greenpeace. Although organisations such as the latter might be useful in particular situations where a single political decision could provide a solution, the former could be more successful in long-term engagement of the business sector and consumers, something that is needed for climate change solutions.'

Interview with Frits de Groot, VNO NCW[5]

31 March 2011

'Dutch businesses, united in VNO NCW, see a successor to the Kyoto Protocol with global participation as the preferred way forward, to tackle the climate problem. Such an agreement should contain provisions on obligatory emission reductions per region that would have to result in a global level playing field for all businesses. An increase in the carbon price over time would be no problem, as long as all countries would have to pay this price. The market then would find the optimally efficient solutions to achieve the emission reductions needed. At COP10, VNO NCW already took this position, and, since then, has stayed with this point of view.

However, the conference in Cancún has showed that there will be no global climate agreement similar to the Kyoto Protocol. Only the European Union is still a proponent of such a top-down agreement and

increasingly gets into an isolated position. The question is, therefore, if the EU should maintain the current emission trading system after 2020. According to industry, this would only be possible under certain conditions. Either the 'non-sheltered' industries operating on the global market need to be compensated for the measures that will be taken, or a system of border taxes would be necessary to protect this European industry. Otherwise, 'carbon leakages' would occur, as industry would move to countries with less strict emission reduction measures. For the sheltered, non-internationally competing sectors, such measures would not be necessary.

Businesses united in VNO NCW have no problem with reducing emissions by 80% to 95%. The question is how this reduction could be achieved. Incremental measures are insufficient for such large reductions; needed are new production chains and the closing of loops – cradle-to-cradle production chains. This would require very high investments which will only occur in the right investment climate. In China, such investments are promoted by policies that are favourable to industry. In Europe, new investments by energy intensive industries are looked upon with suspicion rather than that they are stimulated.

The attractiveness of the so-called 'Green Growth' strategies varies per sector Some enterprises may turn higher energy prices into business opportunities, whereas other companies only incur higher costs that cannot be translated into higher end-user prices due to the fact that they are competing on international markets. Sectoral approaches could be interesting, as long as the participating companies are representative of their sector as a whole and can be managed by a sectoral organisation. They should also be supported by national legislation. However, one of the key problems with a sectoral approach is that of technology transfer. Furthermore, China and India are afraid that via sectoral agreements climate policies would 'enter through the backdoor' in their countries.

Within the UNFCCC system itself, businesses are not represented. This is not a major problem, as Dutch businesses have their own channels for approaching policymakers. For instance, even during the Copenhagen Climate Conference, the Dutch Environment Minister Cramer wanted to speak with representatives of the Dutch business community. However, perhaps preparatory meetings of businesses prior to the COP meetings certainly would be an improvement of the current system. At the COP meetings themselves, a majority voting system could be a way out of the current deadlock of the negotiations. Seeking climate solutions as a co-benefit of other policies probably would not lead to good results. Rather, one instrument should be used for one goal.

For the short term, businesses focus their attention regarding climate on Europe. There is not much wrong with the recent EU Roadmap Energy 2050, although it does not indicate that making business investments in Europe is a priority for policy makers. An effective investment policy would include a level playing field for all businesses, external trade policies to make sure that products can be traded globally, and a security of supply for raw materials.

Recent Dutch policies that consider the European level to be leading in climate policies, are welcomed by the business sector. However, they are a lot less positive about new Dutch policies regarding climate investments. Carbon capture and storage (CCS) is an important option for emission reductions, but the restriction of CCS to sea-based solutions by the current Dutch Government makes it an unattractive investment option. VNO NCW has no preferences regarding energy technologies that might become part of a future low-carbon energy market. All technologies face problems. Coal seemed a good solution seven years ago, under the then Minister Brinkman, for security of supply reasons as well as regarding price level, but this option now meets fierce resistance. Similarly, nuclear energy has waste and security problems. However, for reasons related to price, emissions and security, this option still remains attractive.'

Interview with Bert Metz, European Climate Foundation (ECF)[6]

10 May 2011

'It is very unlikely that a far-reaching climate agreement will be made in Durban, at the end of this year. Basically, there are three options to avoid a complete breakdown. One is an agreement where industrialised countries politically agree to a Kyoto 2 (without ratifying it) and where developing countries and the United States agree to negotiate a legally binding parallel agreement, in which countries formalise their earlier pledges and opt for further measures to be taken in 2015. A second and more attractive option would be a second Kyoto agreement without the United States, but including the developing countries with the action plans they already have announced. A third, but probably least-desired option would be to keep the existing Kyoto protocol in its current form alive by extending it for a number of years without new commitments for reduction. Apart from that, on certain sub-topics, such as land-use accounting, registries

or finances, agreements may be reached. The recent meeting in Bangkok, however, did not give rise to much hope that existing disagreements will be overcome.

The existing ‚mainstream' routes outside UNFCCC – Asia Pacific Pact (APP), G8, Major Economies Forum (MEF) - are in a deadlock, as well. The MEF is mainly a discussion forum that basically faces the same hurdles as the broader UNFCCC negotiations, the APP was dismantled in April 2011 and the G8 or G20 countries hardly discuss climate as a topic anymore, certainly not at the detailed level required. Apart from this, there are some other discussion forums (REDD partnership, Petersberg Mitigation and MRV platform, Petersberg adaptation platform, Carthagena dialogue) that may be useful because of their informal atmosphere and their contact function. They could lead to some practical progress outside the negotiations, but are not likely to provide new opportunities for a breakthrough.

An interesting and alternative institutional route might be the Clean Energy Ministerial led by the United States (cleanenergysolutions.org), which includes many OECD countries and emerging economies. Also, including HFCs, PFCs and SF6 in the Montreal Protocol could be an additional route, as the Montreal Protocol is based on production limits, in contrast to the UNFCCC, which is based on an emission-centred route. Implementation of the Montreal approach in UNFCCC negotiations, however, seems unlikely. Neither do procedural proposals, such as majority voting, stand much of a chance of being implemented, as they face the same differences of opinion as the current negotiations.

'Coalitions of the willing' consisting of private parties or actors, such as municipalities, might be another option, in addition to the UNFCCC negotiations. These coalitions may be formed around specific topics, such as electric vehicles, or around policy instruments, such as the ‚Get Fit' initiative of the Deutsche Bank concerning feed-in tariffs. ECF is also involved in this initiative, with a project on feed-in tariffs in South Africa. What these coalitions will need, in the end, however, is government involvement. This may take place in the form of PPS constructions for finance, but will also likely involve government regulation and removal of obstacles, in line with private initiatives.

Green growth is a very important frame that is quickly gaining support. It could become a major game-changing narrative, provided climate risks remain a key consideration. The green growth concept carries risks of window dressing, watering down of existing initiatives, and even the complete abolishment of climate policies. That should be prevented. A more concrete definition of the green growth concept, therefore, is necessary. Would this be a holistic concept that encompasses development, air quality, security of supply, biodiversity and climate risk? Or is its approach more limited and based on an economic competition regarding the perceived comparative economic advantages provided by ‚green' technology and product development? More limited (sub) frames, such as security of supply, air quality and biodiversity, may be helpful, as well. For security of supply, this only holds if defined properly, includes climate risks, and excludes the option of coal.

In the long term, green growth and 'coalitions of the willing' are useful additional climate routes for the Netherlands to pursue. The current Dutch Government, however, is not likely to stimulate green growth very actively, and less so if that would involve PPS constructions in which public money would be involved.'

Notes

1. All opinions expressed in the interviews are those of the interviewees. The PBL Netherlands Environmental Assessment Agency does not necessarily share or support the opinions expressed in these interviews.
2. http://arno.uvt.nl/show.cgi?fid=107340.
3. http://arno.uvt.nl/show.cgi?fid=107340.
4. The 'Hier' Climate Campaign is a Dutch non-governmental organisation that organises and stimulates local initiatives by citizens and companies around climate change. Activities include 'Climate street parties' for citizens, a 'CO_2 performance ladder' for companies and support services for local sustainability initiatives.
5. VNO NCW is the Confederation of Netherlands Industry and Employers.
6. The European Climate Foundation is a privately funded organisation supporting climate policy in Europe. It is affiliated with the US-based Climate Works Foundation, which aims at stimulating climate policies and climate initiatives worldwide.

In recent years, many ‘alternative routes’ have been suggested for international climate policies. This report inventories these routes and their potential advantages and disadvantages. Based on the inventory, three institutional scenarios for future international climate policies were developed, and a discussion is presented of the possible implications for the international climate strategy of the Netherlands.

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