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National level responses to climate change. How important is the UNFCCC?

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Abstract

International conventions are coming under increasing scrutiny to determine their effectiveness in bringing about changes at the national level. This paper reviews the perceived changes that have occurred in different nations in response to the United Nations Framework Convention on Climate Change (UNFCCC) and associated bodies and rules, through the myriad lenses of participants of the 8th UNFCCC Conference of Parties (COP8). The purpose of the research is to ascertain how the Convention affects different countries. Using Oran Young's institutional effectiveness framework a questionnaire was developed and twenty nine individuals representing delegates, business, environmental and development NGOs were interviewed during October and November 2002, at COP8 in New Delhi.

The majority of respondents felt that climate change was either becoming a priority issue in their country, or was already one, although few saw activities being undertaken to reflect this heightened prioritisation. Most seemed to accept the Convention as a valid and useful tool, although most indicated that it had a limited role in influencing national behaviour. Respondents identified that future actions to manage climate change risks must focus on both mitigation options and adaptation options nationally, particularly on finding ways to participate in Kyoto Protocol mechanisms such as CDM and JI and on identifying vulnerable groups and sectors within countries to specific threats. The majority of the respondents said that their current focus was on raising awareness about climate change on all levels – individual, NGO, private sector, public sector and government and to push for behavioural changes. It was felt that nationally focus needs to be given to integration of policies between government departments and on external impacts of foreign direct investments. Few respondents identified the need for greater global cooperation to deal with climate change, most focussed on national action.

We conclude that Young's framework shows that the Convention has not yet achieved success in terms of generating the desired result of reducing harm from dangerous climate change, however it has contributed to the heightened profile of the issue. National policies appear to be shaped by national issues rather than the Convention and it is clear from this research that there needs to be scope for national governments to shape their climate change and development policies in such a way as to allow themselves flexibility to reflect national issues.

1. Introduction

There has been a lot of recent interest in identifying the effectiveness of international environmental regimes (O'Riordan & Jordan 2002:81). Regimes refer to "social institutions that consist of agreed upon principles, norms, rules, decision-making procedures, and programs that govern the interaction of actors in specific issue areas" (Levy et al. 1995:274). Attempts to measure regime effectiveness have generally followed one of two paths. Either they have attempted to trace a causal connection between the existence of a regime and the consequences of that regime, or they have attempted to explore the factors leading to a change in an environmental variable, for example, the ozone hole (Young 2002a). Both approaches are heavily mired in difficulties associated with attributing social or environmental change to specific factors.

This paper explores the effectiveness and appropriateness of the UN Framework Convention on Climate Change (UNFCCC) and the associated rules and regulations; structures, such as the annual Conference of Parties (COP) and the subsidiary bodies; the associated conventions (e.g. Kyoto Protocol, Delhi Declaration on Sustainable Development); as well as the national governments; and the research, development, environmental and business NGOs who endeavour to shape the negotiation process. Henceforth in this paper, these institutions are collectively referred to as 'the Convention'. Effectiveness is investigated by focussing on how it is perceived to have influenced national level responses to climate change. Countries are preparing for climate change, through international negotiation and agreement, nationally through adaptation programmes and energy and transport policies, regionally through adaptation measures designed to minimise the initial impacts of changing weather patterns, and locally through changes in individual (Adger et al. 2005a, 2005b; Tompkins et al. 2005). Nonetheless the question remains unanswered about what is the optimal scale for climate change policy (Adger et al. 2005b). The difficultly in answering that question lies in the issue of how to attribute changes in behaviour or policy to specific events or causes – such as the Convention.

If we knew how to transform social behaviour, e.g. to reduce emissions of greenhouse gases and to prepare for hazards, then specific mechanisms could be implemented and social (and environmental) change would occur. However the drivers of social change are numerous and complex and hence those mechanisms are not obvious. The purpose of this paper is therefore to shed light on one aspect of motivation, namely the role of the Convention. The findings are drawn from interviews undertaken at the eighth annual Conference of Parties (COP8) of the United Nations Framework Convention on Climate Change (UNFCCC). COP8 took place in New Delhi, India, from 23rd October – 1st November 2002.

The main theories that explain the role of international conventions and the drivers of change in national level policy are discussed in section 2. The context in which the interviews were undertaken is described in section 3, as well as the method of data collection, the quality of data is considered and the characteristics of respondents discussed. Section 4 reports on the findings of the interviews and explores the interview data to explain the effectiveness of the Convention, perceptions of policy change, motivators and drivers of change. Section 5 explores the implications of the findings identifying that: the role of the respondent at COP8 influences their responses; there are as yet few policy links between the Convention and individual

behavioural change; the focus of many nations is on reducing the supply of emissions rather than on reducing the demand for carbon-intensive technology or focussing on adaptation; few nations have integrated climate change into national policies; there is still a focus on raising awareness rather than on initiating change through other mechanisms. We conclude in section 6 that Young's framework proves useful to assess the effectiveness of the Convention. However, our analysis shows that the Convention has achieved little more than ratification. It exists as an 'international rule' but has yet to be transformed into change in behaviour. The issue of sovereignty needs to be considered when determining the optimal scale for climate policy. To ensure that there is flexibility for policy makers to ensure that local needs are being addressed in both adaptation and mitigation policies, such policies need to be developed at the national or local scale. Government policies at present seem to focussing on the 'information deficit' model, i.e. where it is assumed that by providing adequate information, societies will change their behaviour. Our knowledge of social learning shows us that simply filling the information gap is inadequate. There need to be other and more effective ways to help societies learn about the impacts of climate change and what they can do to tackle the causes and consequences of climate change.

2. The effectiveness and appropriateness of international environmental conventions

Institutions are both the structures that shape, organise and manage society such as schools, property rights, government and businesses, as well as the intangible glue that allows society to follow rules collectively, such as social networks or family ties and codes of conduct which could include driving on the same side of the road, marriage, or expectations of transparency of government. Institutions have been defined as: "a multitude of means for holding society together, for giving it a sense of purpose, and for enabling it to adapt" (O'Riordan & Jordan 1999:81) and as sets of formal and informal rules and norms that shape social interactions (Agrawal & Gibson 1999)(also in Bromley 1989; Adger et al. 2003). Institutions exist in many shapes including rules, regulations, policies, organisations, buildings, networks of people and behavioural norms. North (1990) broadly groups these elements into three categories: constitutional rules, operating rules, and normative behavioural codes. International environmental regimes are one form of governance institution.

The Convention is designed to influence institutions at other scales, including human behaviour, private sector behaviour and national policy making processes. There are many pressures exerted on the Convention, by those who wish to shape the outcomes to meet their own needs, by those who wish to lead the regime (Andresen & Agrawala 2002), as well as by the experts who advise (Jung 1999).

Research from the field of natural resource management suggests that understanding the institutional arrangements surrounding the utilisation of natural resources is central to designing better management strategies (Gezon 1997; Berkes & Folke 1998; Imperial 1999; Tompkins & Adger 2004). If the institutions that support decision making are weak or do not exist, then, it is argued, management is likely to be ineffective (Noble 2000). We assume that the institutions which support the management of climate change require similar attention.

To better understand the functioning and effectiveness of the Convention we test it against three criteria developed by Young (1999; 2002a), i.e. outputs, outcomes and impacts. The first criterion 'output of environmental regimes', can be considered as the legal framework or the rules developed, this relates to the ratification of regimes, regulations and the establishment of appropriate organisations. The second criterion is 'outcomes', this refers to the behavioural change resulting from the creation and operation of an international environmental regime. We view outputs in terms of behavioural change within three different groups; the government, private sector and individuals. The third criterion 'impacts' describes the extent to which the international regime addresses the problem. The last criterion assesses the extent to which the regime has led to 'measurable changes in the status of the problem a regime is designed to address' (Young 2002a:74). In the case of the UNFCCC this refers to the objective of the Convention described by Article 2, i.e. to stabilise greenhouse gases at a level to avoid dangerous interference with the climate system (United Nations 1992).

Effectiveness is also influenced by appropriateness of the institutions for the task that they have been set. Three further issues need investigation to assess the appropriateness of the institutions. Young (2002b; 2003) refers to these as fit, interplay and scale. 'Fit' refers to the closeness of properties of the ecosystem being managed and the institution given over to manage it. For example, it makes no sense for an international organisation to manage a local common property resource, such as a shared bay; neither does it make sense for a local NGO to attempt to tackle global climate change. 'Interplay' refers to the degree of integration of institutions, both horizontally (i.e. across institutions operating at the same scale of hierarchy), and vertically (across hierarchical levels). The institutions that manage multiple-use, open access or communally used, natural resources where there are potential resource use conflicts appear to function better when institutions are fully integrated. It ensures that all stakeholders have the opportunity to engage, but also ensures that other government policies and actions that affect the resource are known about and incorporated into decision making (e.g. see for example Brown et al. 2002). 'Scale' refers to different management and political scales at which institutions operate and the ability to transfer learning from one scale to another.

As both Ostrom (1990) and Young (2003) conclude, institutions that manage global environmental problems need to be fit for purpose and are likely to require much moulding and shaping to ensure that they develop appropriate cross-scale linkages, appropriate intra-scale linkages and to avoid policy mis-matches between political scales. This does not mean that new institutions are needed, simply that more effort may be required in evaluating the effectiveness and appropriateness of existing institutions, with a view to improving them for more effective governance, as suggested by Von Moltke (2001) and Najam (2003).

Hence we first ask the question, are the institutions which have developed to manage global climate change effective? Then we ask: are the institutions forming at the appropriate scale?

3. Surveys and data

COP8 took place at the Vigyan Bhawan centre, New Delhi, from 23rd October to 1st November 2002. During that 10 day period, 29 face to face interviews were completed using a prepared interview protocol (see Annex 1). The interviews were undertaken in the corridors of the Vigyan Bhawan centre, or vacant meeting rooms.

The small sample (n=29) is not representative of the composition of the annual UNFCCC Conference of Parties. However, the respondents include country delegates (15); environmental, developmental and research non-governmental organisations (NGOs)[1] (11); and business and industry NGOs (BINGOs)[2] (3). Of the 15 delegates, six were from Annex 1 countries, and nine were from non-annex 1 countries. For more details about the respondents, see Table 1.

Table 1 Information about respondents and corresponding codes

GEOGRAPHIC REGION	*ROLE*	*NEGOTIATING GROUP*	*DATE OF INTERVIEW*	*CODE USED IN TEXT*
Africa	delegate	G77&China	30 Oct 02	Delegate 1
Africa	delegate	OPEC	01 Nov 02	Delegate 2
Africa	delegate	AOSIS	2002	Delegate 3
Africa	RNGO	-	29 Oct 2002	NGO 1
Africa	RNGO	-	2002	NGO 2
Americas	delegate	UG	26 Oct 02	Delegate 4
Americas	ENGO	-	30 Oct 02	NGO 3
Americas	BINGO	-	24 Oct	NGO 12
Americas	BINGO	-	01 Nov 02	NGO 13
Asia	delegate	G77&China	25 Oct 02	Delegate 5
Asia	delegate	EIG	29 Oct 02	Delegate 6
Asia	delegate	G77&China	2002	Delegate 7
Asia	ENGO	-	25 Oct 02	NGO 4
Asia	ENGO	-	2002	NGO 5
Asia	ENGO	-	2002	NGO 6
Asia	ENGO	-	2002	NGO 7
Asia	DNGO	-	2002	NGO 8
Australasia	delegate	UG	30 Oct 02	Delegate 8
Australasia	delegate	UG	31 Oct 02	Delegate 9
Caribbean	delegate	AOSIS	29 Oct 02	Delegate 10
Caribbean	delegate	AOSIS	30 Oct 02	Delegate 11
Europe	delegate	EIG	26 Oct 02	Delegate 12
Europe	delegate	CG-11	31 Oct 02	Delegate 13
Europe	delegate	EU	2002	Delegate 14
Europe	ENGO	-	2002	NGO 9
Europe	ENGO	-	2002	NGO 10
Europe	DNGO	-	25 Oct 02	NGO 11
Europe	BINGO	-	29 Oct 02	NGO 14
Pacific	delegate	AOSIS	29 Oct 02	Delegate 15

[1] NGO's include development, environment, research and international non-governmental organisations.
[2] BINGOs refer to business and industry NGOs.

At least one representative from all the main negotiating groups[3] that existed in 2002 was interviewed. From the Alliance of Small Island States (AOSIS) four (4) individuals were interviewed; three (3) from the Group of 77 (G77& China); one (1) from the Organisation of Petroleum Exporting Countries (OPEC); one (1) from the European Union; three (3) from the Umbrella Group; one (1) from the Central European Group of 11 (CG-11); one (1) from the Environmental Integrity Group (EIG). The regional distribution of respondents was: five (5) from Africa; four (4) from the Americas; eight (8) from Asia; two (2) from Australasia; two (2) from the Caribbean; seven (7) from Europe and one (1) from the Pacific.

The interviews were structured to identify how both delegates and lobbyists perceived the appropriateness and effectiveness of the Convention. The interview protocol (see Annex 1) was structured to allow discussion about:

- the different political and geographical scales at which the negotiations generate effects;
- the effectiveness of the Convention;
- the appropriate scale of responses to climate change;
- the drivers and triggers of climate change responses within countries.

The interviews, based on individual opinion rather than factual reporting, reflected a range of perceptions about the scope of international agreements in influencing responses to climate change, both through mitigation and adaptation.

The interviews were transcribed verbatim and sent back to the original respondents to ensure that the transcribed dialogue reflected the views of that individual and that the individual was willing to have those views included in the research. The quality of the interviews varied according to many factors including:

- time constraints on the respondent
- respondent's ability to speak English
- interviewer's ability to understand Spanish, French and Portuguese,
- location of the interview (privacy, back ground noise)

These factors could not be controlled and as a result the interviews are of variable quality. The interviews were analysed using the programme Atlas.ti. The three key themes explored at this stage were the effectiveness of the Convention according to Young's (1999; 2002a) framework; the perceived motivators and drivers of change nationally; and perceptions of the optimal response to climate change issues.

4. Findings from the survey

First we review the effectiveness of the Convention according to Young's (1999; 2002a) framework, i.e. in terms of outputs, outcomes and impacts. Then we review respondents' perceptions of what is motivating and driving national action on climate

[3] *European Union (EU)*: EU countries. *Umbrella Group (UG)*: Informal coalition of United States, Japan, Canada, Australia, New Zealand, Norway, Russia and Ukraine. *G77/China*: UN developing countries lobby (founded in 1964). China is not a member but an associate of the Group of 77. *Organization of Petroleum Exporting Countries (OPEC)*: Sub-set of G77 whose negotiating position is dominated by their interest in exporting oil and natural gas. *Alliance of Small Island States (AOSIS)*: Sub-set of G77 – consists of 42 low-lying and island developing countries. *Environmental Integrity Group (EIG)*: recently formed: Mexico, the Republic of Korea and Switzerland. *Central Group-11 (CG-11)*: no longer exists. Brought to together most Economy's in Transition (EITs) included in Annex I.

change. Table 2 provides an overview of the findings. It should be noted that the survey is based solely on perceptions; thus, while regulations and organisations to address climate change may exist nationally, if these were not discussed in the interview they will not be reflected in these results.

Table 2 shows those countries that have moved forward in addressing climate change. Any cell containing a letter reveals that a country has taken action in that area. Letter 'D' in any cell indicates that a Delegate perceives that action has been taken on that issue. An 'N' in any cell indicates the perception of an NGO. All the countries that have signed and ratified the Convention as indicated by either letter D (delegate) or N (NGO and BINGO) for each respondent under the appropriate region. Young's framework is shown in the Table as 'rules developed' (referring to his criterion 'output of environmental regimes'); 'outcomes/behavioural change' (referring to his criterion 'outcomes'); and 'impacts/problem solving' (referring to his criterion 'impacts').

Table 2 Perceived success in managing climate change at the national level by region

Criteria for success		Geographic regions							Total
		Africa	America	Asia	Austral asia	Caribbean	Europe	Pacific	
1. Outputs/ Rules developed	Ratific-ation	DDD NN	DNN N	DDD NNN NN	DD	DD	DDD NNN N	D	29
	Regula -tion	DN	DN	DDD NNN NN	DD	D	DDD NNN N	D	23
	Organi -sation	N	DN	DDN	DD	DD	D	D	12
2. Outcomes/ Behav-ioural change	Govern ment	DN	DNN	DDD N	DD	DD	DDD		16
	Private sector	N	DNN N	DNN NN	DD	D	DDN NNN	D	20
	Indiv-iduals	D	N		D	D	DD	D	7
3. Impacts/ problem solving		DDD NN	D	DDD NN	DD	DD	DDD NNN	D	22

Notes: D = the response of one delegate; N = the response of one NGO representative

In Table 2, outputs are shown as ratification of the Convention (Ratification), development of in-country legislation relating to climate change (Regulation); and the creation or shaping of organisations to better enable responses to climate change (Organisation). Outcomes included changes in behaviour by the government, private sector and individuals. Finally, the last criterion is impacts. For the purpose of this study, recognition of impact is given to countries that have made changes that are

required under the Convention. The high number of responses reflects the fact that most countries have undertaken national communications or National Adaptation Plans of Action as required by the Convention.

4.1 Rules developed

The majority of the respondents noted that the Convention has had an impact on their government and that a number of policies and organisations have been developed to meet the commitments of the Convention.

Four broad groups of policies were mentioned in the interviews; strategies, economic instruments, regulations and voluntary agreements. Economic instruments were the most widely adopted through economic policies such as environmental taxes (e.g. Delegate 14, NGO 7). The main focus of these policies responding to the Convention is on regulating the behaviour of industry, i.e. the supply side. This might be a reflection of the commitment under the Convention to increase the involvement of the private sector. There are few policies aimed at the demand side through regulating the behaviour of individuals, e.g. recycling schemes, transport, and fuel taxes. Respondents found it difficult to assess if new policies to reduce greenhouse gases were driven by the existence the Convention or other factors such as public pressure, or economic or social drivers in their country.

As Seyfang and Jordan (2002) note, the very existence of the Convention adds international pressure to national governments and manifests the global concern on climate change. Although all nations agree that they are concerned about climate change, there is no agreement on appropriate solutions to problem. Issues of national sovereignty and distrust among parties make the actual implementation of change harder to achieve. Negotiations stall over disagreements about the costs of adapting to climate change, the costs of participating in the Convention, the distribution of benefits from participating, and adverse impacts from participation. This is partly due to different ways in which climate change will be experienced, but also due to differing world views in terms of how the problems can best be solved (leave it to the market or give more power to national and international governments).

While the Convention is perceived to have raised the profile of climate change, it is not in itself perceived to be driving counties to change. However, the existence of an international agreement together with scientific evidence in form of IPCC appears to have had some impact on national level (Delegate 1, NGO 12, NGO 13).

4.2 Outcomes and behavioural change

In the majority of countries, changes have taken place within the ministry of environment, although most hope that with increased awareness, other ministries will change. In several countries, climate change and environmental issues are cross-cutting themes that affect multiple government ministries. As a result some countries have established inter-ministerial working groups (Delegate 4, Delegate 5, Delegate 6, Delegate 10). These organisational structures bring all parts of the government together on a national level, coordinating all activities concerning climate change. These inter-ministerial committees also have the important task of coordinating climate change policies and measures across the different ministries (Delegate 6). Bringing different ministries together was perceived to have led to positive developments in terms of increased cooperation between the ministries. This was not

only relevant in terms of climate change and meeting commitments of the Kyoto Protocol and Convention, but that it also helped establish a clear view on international negotiations among the different government departments (Delegate 4). Hence the process relating to the Convention has spill-over to other areas in terms of increased integration and cooperation across ministries.

Countries have achieved different levels of horizontal and vertical integration within governmental organisations in response to managing climate change. Delegate 5, Delegate 6 and, Delegate 13 noted that the Convention has lead to integrated working structures between different sections of the government, whereas in other countries, Delegate 13 and, NGO 14 noted that climate change issues remain firmly within the ministry of the environment, and there is lack of integration with other government departments.

The perceptions of the level of change in the private sector ranged from 'no change at all' to 'companies are changing their behaviour'. Specific industries were identified as more likely to change their behaviour, because of: the vulnerability of their business to climate change; government policies imposing change; company leadership; and economic opportunities, see Box 1. It was argued that some behavioural change was forced upon businesses as an indirect result of national commitment under the obligation.

Box 1 Sectors most affected by climate change and climate change policies	
Agriculture and forestry	Direct impacts of climate change with potentially damaging impacts, e.g. deforestation
Aluminium	Government policies increasing costs
Coal	Government policies restricting use
Energy	Government energy policies changing industry shape
Insurance	Economic opportunities and issues of compensation from damage of adverse effects of climate change
Tourism	Direct impacts of climate change, e.g. sea level rise

The general opinion among the respondents was that it is difficult to change behaviour of individuals and that the process takes a long time. The awareness raising activities are seen as first steps towards changing behaviour.

> I think awareness is a must. It is of tremendous importance, we need to be able to tell them what is causing climate change and the impact of climate change, and we need to demonstrate that this is based on something authoritative. We have droughts and floods and so many things, but they do not necessarily know that this is because of climate change, so awareness has to be built a little bit more. (Delegate 5)

Because of the perceived importance of raising awareness of climate change, several governments have initiated public information programmes. The level of awareness and knowledge among individuals depends on the way in which climate change issues are communicated, especially in terms of scientific uncertainty concerning climate change (NGO 11). Most respondents argued that behavioural change results from increased awareness and knowledge, but whether increased levels of awareness have led to changes in behaviour remains uncertain.

4.3 Impacts

Table 1 shows that 22 out of the 29 interviewees noted that the Convention has had an impact on their country. For the purpose of this study, impacts are reflected as changes required under the Convention, this includes both emissions reductions and activities given in the text of the Convention. Due to this definition, it appears that the Convention has been successful, however, success can only be seen in countries performing activities described in the Convention – not in meeting the objectives of the Convention, i.e. reducing greenhouse gas emissions.

Several respondents noted that there has been a change in the willingness of politicians to introduce climate change policies. Subsequently, respondents were discussing whether the changes made reflected 'real changes' or merely minimal efforts to adhere to obligations under the Convention. There have been changes in government, government policies and government agencies. The first level of commitment undertaken by the Parties to the Convention is the exercise of writing the National Communications. The next commitment under the Convention is the development of national strategies and action plans for climate change, which some countries have yet to undertake. Several countries have also implemented programmes, both on a national and regional level to address the commitments of the Convention and other environmental issues (Delegate 15, NGO 2).

The impact of the Convention in terms of actually altering the exposure of individuals to climate change can only be judged in global terms and in terms of individual exposure to climate risks and vulnerability to those risks. These have not changed. In most countries, there has not been an actual change in behaviour (e.g. NGO 8).

> I think there are very few people who are changing their actual behaviour (NGO10).

It thus seems that official structures (organisations, policies, ministries) are changing, but there is not so much evidence for actual behavioural change on a large scale.

Respondents identified other factors that appear to be motivating nations to change their behaviour. These factors can be grouped into: political, economic, social and physical factors. These are reflected in Table 3 and are described in more detail below.

Table 3 Perceived motivating factors on different parts of society

Motivators	Different parts of society		
	Government	Private sector	Individuals
International economic and regulatory motivators	Global trends Regulation set by one country could motivate change in another. Global nature of climate change motivate for global action.	MNCs' corporate environmental responsibility policies positively influencing national and local companies. Market competitiveness	
International agreements	Sense of duty to comply with	Motivation to be involved in	Encourage public pressure on

(UNFCCC and Kyoto Protocol)	Convention. Pressure from international community to adhere to Convention.	negotiations because they have implications for policies restricting industry action	government to change regulation and behaviour.
Economic and social motivating factors	Potential benefits from Kyoto Protocol mechanisms to national economy. Employment possibilities from developing new sectors, e. g. renewable energy	Potential benefits from Kyoto Protocol mechanisms Increased R&D because of anticipated future legislation	Poverty as restricting individuals' ability to live sustainable lifestyles. Desire for wealth (consumption) as motivator for unsustainable lifestyles.
Natural phenomena	Increased occurrence of extreme weather events	Effects of climate change forcing certain businesses to develop alternatives.	Increased occurrence of extreme weather events
In-country factors	Political motivation Resource abundance determines the need for alternative resource use.		

In terms of political drivers of change, the interviewees noted that the ability to transform the Convention into national action appears to depend on the national governments' willingness to be involved in climate change negotiations (NGO 3) which depends on public opinion (NGO 14). The government can shape this opinion and motivate and drive change among business and individuals, through leading by example (NGO 12), by implementing policies and engaging in international negotiations (NGO 3).

> Ultimately, I think it will be the government that plays the critical role, and I think it's probably the governments that are, if you like, farthest out ahead on this issue. (…) government policy is what is going to have to provide the signals to business and industry (NGO 10)

Respondents suggested that government alone can not drive social change, involvement by the private sector and individuals are essential (NGO 6). Advocacy coalitions can also play a role in generating social change. In one country, business is the powerful lobby driving the development of mitigation technology (NGO12). Environmental groups have been in some cases successful in driving change, but in many countries they remain outside the main sphere of influence (NGO5).

Global trends and can also influence behaviour. The drive for competitiveness may have positive or negative effects on climate change actions (NGO 8). Pressure from the international community could be a driver of change, as it could lead to impacts on market competitiveness (NGO 6). One respondent noted that the withdrawal of US from the Kyoto Protocol had led to domestic public pressure on the government to go further to address climate (NGO 7).

In the wider society, awareness raising, whether through media or education (Delegate 3), was noted by the majority of the respondents as one of the main ways in which large scale social change could be engineered. The importance of community leaders, e.g. religious, was also noted (Delegate 15). Awareness of climate change could provide people with the link between human actions and climate change and gives incentives to push for actions at local level as well as international level.

There was a general agreement among the respondents that past experience of extreme weather events (including storms, droughts, floods and heat waves), local pollution and scientific projections of future climate change have a big impact in motivating for change (Delegate 2, NGO 4). All four AOSIS respondents argued that motivation to address climate change in their states came from the occurrence of extreme weather events coupled with the predictions of more extreme weather and sea level rise. In their case, it was not the Convention, but the perceived threat of climate change that motivates action (Delegate 3, Delegate 10, Delegate 11, Delegate 15).

There was not general agreement on other motivating factors, these appeared to be country- and context-specific. For example, one respondent said that his country was motivated to change behaviour because it is a small, resource scarce country (NGO 7). Another interviewee said that it was difficult to involve his country in the climate change debate because it is such a large and geographically diverse country, as well as rich and technologically advanced, so that the adverse effects of climate change would not be that severe compared with in other countries (NGO 3).

While discussing the perceived motivators and drivers of national action on climate change, the respondents disagreed on who has the most power, but agreed that a large number of stakeholders must be included in any response.

> This is a joint process, and as such, the only way to carry it out is to involve the largest possible number of actors, from the political powers, from civil society, the private sector – everyone who is able to give a bit of hand in the process. (Delegate 3)

All respondents agreed that there needed to be society-wide buy-in to the climate change issue to achieve any real and lasting change in individual attitudes and behaviour to energy consumption and greenhouse gas emissions. However this buy-in requires concerted action from the government, the private sector and individuals.

This analysis reveals that there are few apparent links between changes in behaviour and the Convention. While this is difficult to measure, it could be seen as reflecting government programmes focussing on awareness raising, with the perception that closing the information gap will result in behavioural changes.

5. Discussion of effectiveness and appropriateness of climate change governance institutions

The role of respondents in the negotiations and their position as a delegate or member of an NGO was important as it appeared to influence their perceptions of vulnerability to risks and their perception of the priority of climate change. Delegates in general had a much more positive perception of the level of priority that climate change was given in their country than representatives of environmental, developmental and

research NGOs. The small island states delegates argued that there is a high level of awareness among the population mainly attributed to daily exposure to weather hazards, so climate change has a high priority in their states.

A few delegates noted that climate change was not an important agenda item in their country. This assessment was mirrored by NGO representatives. Only two out of the 11 environmental, research and development NGOs interviewed perceived that climate change, the Convention and the annual COPs have a high priority in their country (NGO 2, NGO 10). It was noted that lack of interest in the climate change negotiations could be seen in the attendance of junior (as supposed to senior) political figures from some countries. Reasons given for this lack of perceived prioritisation included: low salience, i.e. there are other more pressing needs, also low expectations attached to the COP8.

The respondents gave examples of positive and negative changes resulting from increased globalisation. Multinational companies could force changes to local businesses through their activities in different countries, but simultaneously increased international competition might force businesses to act contrary to recommendations of the Convention.

The wider issue of economic development was discussed, and dual or conflicting views were revealed, portraying the need to generate wealth but at the same time take into account longer term impacts of growth. The two perceptions represented were; 'too poor to be green' and 'too high material aspirations to be green'. The adherents of the 'too poor to be green' discourse argued that people in the countryside were 'too poor to be green', and that the lack of resources and knowledge prevented sustainable development. The environmental Kuznets curve describes this phenomenon of a positive relation between economic growth and environmental concern. The conclusion is that economic growth is necessary to increase environmental concern, and that poor people are not able, because of economic constraints, to make choices that are the best for the environment.

In industrialised, economically advanced countries, the argument is reversed and it is argued that individuals have 'too high material aspirations to be green'. There concerns surround the 'consumer life-style'. Because people are richer, they demand more goods for consumption; buy less energy efficient cars and purchase more international travel. The arguments are therefore that economic growth will improve the environment, while too much wealth leads to unsustainable lifestyles. Clearly there is a wide gap in income level between the two positions from poverty on the one side, to high levels of income on the other, which unfortunately seems to suggest a 'no win' situation.

It is evident that there is a need for investigation into sustainable development pathways for different countries with different needs and resources. How to move towards these pathways and to achieve sustainable development is becoming increasingly critical. The focus has to be on long term planning.

5.1 Effectiveness of the convention

In terms of the rules developed, the Convention has been effective in ensuring that countries have developed a policy framework to deal with the threats of climate

change to their countries. Several of these new policies can be linked directly to the impacts of the Convention, whereas other developments might have occurred irrespective on the international efforts. From the responses, it is clear that countries have focussed more on developing legislation rather than at the same time developing an organisational framework which could support the regulations. The introduction of new policies does not say much about their effectiveness unless they are successfully implemented. And the deficiency in developing a supporting organisational framework could have implications for implementation of the policies (Noble 2000).

New policies and organisations can be seen as a manifestation of behavioural change on the part of the government. But a discussion about how these changes within the government translate to the wider society and industries is needed. It seems that the Convention has not had much impact yet, although interviewees perceived a shift in the prioritisation of climate change in their home countries. At the same time, priorities are given to more pressing issues.

Only a few respondents raised the question of whether meeting the objectives of the Convention will mean managing the risk of climate change. This is what Young (2002b) refers to as the problem of fit.

The context of the countries shapes the perceptions of change and effectiveness resulting from the Convention. For some countries, writing the National communications was a great achievement, whereas for other countries, forcing an actual change in industry production patterns and reduction in energy consumption is the greatest challenge.

It is arguable that many factors have lead to different nations preparing for climate change, one possible factor is the Convention, another is the availability of scientific information through the IPCC. Within the energy sector, the limited stock of fossil fuels is likely to be playing a role in the industry investment in low carbon energy technology. The existence of the Convention may have speeded up the adoption of new technology, although it should be recognised that in the absence of the Convention, other drivers could have lead to this change.

5.2 Appropriateness of scale

It emerged through the interviews that sustainable development initiatives are an important driver of change. This leads to the question, should there be a focus on these rather than ‘pure’ climate change initiatives? And which would be the appropriate scale for sustainable development initiatives?

In the national responses to the Convention there has been an ‘over-focus’ on raising awareness - and not much else. There appear to be very few big ideas about how to actually initiate large scale change that will allow individuals, or indeed the world, to reduce emissions. Perhaps this explains why the focus has been on filling the information gap. The transferral of information is not sufficient to start a process of behavioural change. There is also a need to address trust and legitimacy in the government and provide resources to support actions.

6. Conclusions

Young's framework for analysing the effectiveness and appropriateness of international environmental regimes worked well in eliciting information about the regimes and perceptions of success. The study of perceptions of delegates and other participants at the annual UNFCCC COP reveals that by 2002 the Convention had not penetrated very far.

Part of this may stem from the problem of national dependence on supply-side reduction of greenhouse gas emissions. By focussing on the supply side, i.e. the producers of greenhouse gases – energy providers and energy using industry such as the transport and utilities – governments have been working with business and industry to change production methods. Few respondents gave much attention to demand reduction, i.e. working with individuals as consumers to directly change their consumption habits through recycling schemes or transport and fuel taxes. Avoiding engaging greenhouse gas emitting consumers directly may have hindered the success of the Convention in meeting its objectives. There are many reasons why there has not been a focus on the demand-side. Most obviously, asking consumers who are either 'too poor to be green' or who have 'too high material aspirations to be green' could be electoral suicide. The easy option for policy makers is to work with producers and to focus on 'awareness raising' in the hope of generating higher levels of 'citizen' behaviour than 'consumer' behaviour. It appears from the failure of the Convention so far to meet its objectives that this approach may not be appropriate.

The effectiveness of the Convention may be hampered by the challenge of matching the scale of problem i.e. local level emissions of gasses with the scale of solution, i.e. global reduction in emission. Reducing the supply of carbon-intensive industry is probably best achieved through initiatives at the national scale. However, addressing the demand-side emissions reductions may not be best tackled at the international or the national level. Research on adaptation suggests that adaptations are best suited to local conditions when they are developed in the local context. The same could be true of demand-side emissions reductions. To convince consumers to change their behaviour the individuals need to see that options are available locally which they can understand and use, and there need to be incentives for the consumers to change their behaviour. These incentives can come in the form of the 'moral high ground', by 'doing the right thing', in the form of social pressure from peers who agree collectively to undertake certain behavioural changes, or in the form of economic incentives. The international scale of the Convention may not be appropriate to generate these local level initiatives, where local education campaigns; locally targeted pilot tests; investment in local support networks, having a local focal point may not be identified as a priority. Addressing this issue may be an important focus for COP11/MOP1.

We propose that there needs to be a shift away from the 'information deficit' approach to reducing greenhouse gas emission and there needs to be a focus on more local level initiatives. We propose that the eight elements approach promoted in Tompkins et al (2005 in press) may be an appropriate strategy to promote climate change mitigation through addressing demand side.

Irrespective of the approach adopted it is clear that there needs to some focus on the sovereignty issue. By this we mean that when focussing on reducing emissions there also needs to be a focus on local development priorities, whatever they are - poverty

eradication, environmental management, debt reduction etc. There also needs to be a long term focus in all planning to ensure that the longer term sustainability is taken into account.

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Annex 1: Interview protocol

How institutions and people respond to climate change?

SECTION 1: GENERAL

1 In your country or region how **high a profile** do you think these climate policy negotiations have?

SECTION 2: INFLUENCE OF THE CONVENTION AND OTHER FACTORS ON GOVERNMENT

2a. Do you think **The Convention** has affected any **government policies** in your country over the past 10 years? If yes, which policies? And how?

2b. Are there any **other** important **factors** that are **driving** change (for better or worse) in these **government policies**? If yes, what are they?

SECTION 3: INFLUENCE OF THE CONVENTION AND OTHER FACTORS ON THE PRIVATE SECTOR

3a. Thinking again about your country, do you think **The Convention** has affected **private sector** behaviour in any way? If yes, how?

3b. Are there any **other factors** that have **improved private sector** behaviour towards the environment?

3c. What are the **negative factors** that are making the **private sector** act **less responsibly** towards the environment in your country**?**

SECTION 4: INFLUENCE OF THE CONVENTION AND OTHER FACTORS ON INDIVIDUAL BEHAVIOUR/LIFESTYLES

4a How do you think the **Convention** has affected **individual lifestyles and behaviours** over the past 10 years in your country?

4b In your country, in the past, what **other factors** have proven **most successful** in encouraging people to adopt more **sustainable lifestyles**?

4c What **negative** factors do you think are making **people's behaviour / lifestyle less sustainable**?

SECTION 5: IMPORTANT STAKEHOLDERS

5a **Who** is it vitally important to **engage** to ensure that **your country meets its FCCC/KP obligations**?

5b **Who or what** do you think has the **most power** to ensure FCCC/KP obligations are met? Are these people different to those who are important (in 5a)?

5c How do you think these **important groups** can be **best engaged** to ensure that the FCCC obligations are met? What mechanisms?

SECTION 6: RESPONDING TO CLIMATE CHANGE

6 If we have not discussed it already, how do you think that **your country can best respond to the threats from climate change**?

SECTION 7: VIEW OF NATURE

To what extent do you agree or disagree with each of these statements. Please select **one** response per line.

Views about nature	Strongly agree	Agree a little	Neither agree nor disagree	Disagree a little	Strongly disagree
a) The environment is very adaptable and will recover from any harm caused by people.					
b) With expert management, we can prevent environmental disasters.					
c) The environment is very fragile and the slightest human interference will cause a major disaster.					
d) No matter what we do, the environment will change in unpredictable ways both for the better and the worse.					

Contact details for follow up purposes only: GET A BUSINESS CARD IF POSSIBLE

Thank you for taking the time to answer these questions. Do you have any additional thoughts about our ability to respond to climate change or the drivers of change in your country?